Version 1 Release 1

IBM Advanced Archive for DFSMShsm User's Guide

SC27-4888-01

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

Second Edition (July 2018)

This edition applies to Version 1 Release 1 of IBM Advanced Archive for DFSMShsm (product number 5698-AAD) and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC27-4888-00.

Contents

Chapter 1. About this information

This guide provides instructions for configuring Advanced Archive for DFSMShsm, and describes how to use it.

Tip: To find the most current version of this information, always use IBM® Knowledge Center, which is updated more frequently than PDF books.

Topics:

Contacting IBM Software Support

If you have a problem with Advanced Archive for DFSMShsm, you want to resolve it quickly.

Go to the IBM Software Support site at https://www.ibm.com/support/home/.

To help IBM Software Support research any problems that you might have with this software, collect as much of the following information as possible and have the information available when you contact them:

- Advanced Archive for DFSMShsm version and release level (for more information, see "Running AXQMODLV to get a modification level report" on page 135)
- z/OS release number
- JCL that was submitted
- Job output and dump, if any was generated
- Any error message codes
- Other information that you think might be relevant

JCL example conventions

This guide and the Advanced Archive for DFSMShsm JCL sample libraries contain JCL and control statement examples. These examples might not be appropriate for every environment.

Most of these examples require some modification before they can function properly in your specific environment.

The fields that require modification are noted with the characters <<<== near the right margin, as shown in the following figure:

```
//AXQDBINI JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*//
//*                                                                    *//
//*      5698-AAD                                                      *//
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *//
//*      ALL RIGHTS RESERVED.                                          *//
//*                                                                    *//
//*      ADVANCED ARCHIVE - DATABASE, REQUEST QUEUE AND CLOUD          *//
//*                         DEFINITIONS DATABASE DEFINITIONS AND       *//
//*                         INITIALIZATION.                            *//
//*      ---------------------------------                             *//
//*                                                                    *//
//*      THIS SAMPLE JOB WILL INVOKE THE DATABASE. REQUEST QUEUE       *//
//*      AND CLOUD DEFINTIONS DATABASE DEFINITION AND                  *//
//*      INITIALIZATION FUNCTIONS                                      *//
//*                                                                    *//
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *//
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *//
//*            ENVIRONMENT                                             *//
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *//
//*                                                                    *//
//*--------------------------------------------------------------------*//
//*
//S010   EXEC PGM=AXQDBINI
//*
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//SYSIN   DD *
*INITIALIZE_ARCHIVE_DATABASE     <<<== UNCOMMENT TO PERFORM FUNCTION
*INITIALIZE_RESTORE_QUEUE        <<<== UNCOMMENT TO PERFORM FUNCTION
*INITIALIZE_CLOUD_DEFINITIONS_DB <<<== UNCOMMENT TO PERFORM FUNCTION
//
```

There might be other fields in the examples that require modification before use. For example, most of the data set names in the JCL examples must be changed before you can use these examples in your data center.

Chapter 2. Introduction to Advanced Archive for DFSMShsm

Understanding the features that are provided by Advanced Archive for DFSMShsm and how it works might help you to take full advantage of its functionality.

Topics:

What can Advanced Archive for DFSMShsm do for me?

Advanced Archive for DFSMShsm helps you increase the performance and efficiency of HSM environments that have large amounts of inactive data that must be retained for long periods.

You already know that DFSMShsm can be resource-intensive, requiring CPU, I/O, storage, and tape consumption. As the volume of data that is being managed by DFSMShsm becomes ever larger, DFSMShsm processing uses ever more resources because it is managing inactive data:

- Data that is related to completed projects
- Data that is not referenced for an extended period
- Data for which there is no known future access requirement

This inactive data might not qualify for deletion. It is not needed online, but it must remain easily accessible.

Advanced Archive for DFSMShsm automates the archiving of inactive L0 disk or ML2 data and manages that archived data according to existing DFSMS policies. Advanced Archive for DFSMShsm also provides a mechanism for adding an ML3-like policy to your existing management classes.

When the data is needed, archived data is easily restored to disk by Advanced Archive for DFSMShsm. You can use a batch job to restore the data or you can have Advanced Archive for DFSMShsm restore the data dynamically.

Your archive can reside on physical tape, on virtual tape, or in a cloud storage environment.

How does Advanced Archive for DFSMShsm work?

The Advanced Archive for DFSMShsm Archive process determines whether a candidate data set can be classified as inactive and moves the inactive data to the archive. The Restore process restores archived data when that data is needed.

How the Archive process works

The Archive process uses data set selection criteria to identify inactive data and then copies that data to the archive, which can reside on tape or in a cloud storage environment. You can also use the Archive process to create an ML3-like storage tier for your SMS management classes.

You determine what the criteria are for classifying data sets as inactive.

- You can specify the data selection criteria explicitly in the `CRITERIA` member of the parameter library or in the Archive job JCL. The data set selection criteria that identify inactive data sets can be based on any of the following data set attributes or any combination of these attributes:
  - Data set name or a data set name mask
  - Data set expiration date
  - Number of days since the data set was last referenced
  - Creation date or the number of days since the data set was created
  - Migration date or the number of days since the data set was migrated
  - Expiration date or the number of days that remain until the data set expires
  - Management class name
  - For inactive data that currently resides on L0 disk, storage group name and volume serial number
- If you are using the Archive process to add an ML3-like storage tier to your existing management classes, you can have Advanced Archive for DFSMShsm generate the data set selection criteria automatically, based on the management class names and values that you specify in parameter library member `AXQMCPOL`.

The Archive process reads the migration control data set (or a flat file that contains the unloaded contents of the MCDS), comparing records against your inactivity criteria, and identifies the data sets that meet your criteria.

Note: If you are archiving data sets from L0 disk, rather than reading the MCDS information, the Archive process uses the output from an IDCAMS **`DCOLLECT`** to generate a list of data sets that meet your inactivity criteria.

Advanced Archive for DFSMShsm then copies the selected data sets to the archive tapes or uses to a cloud storage environment.

Note: In most cases, for the copy operation, Advanced Archive for DFSMShsm uses REST APIs to connect to cloud storage environments. If the cloud storage environment is FTP, Advanced Archive for DFSMShsm uses standard passive FTP to connect to the cloud storage environment.

For each data set that is copied to the archive, a record is written to the Archive Database. The database record for each archived data set includes the following information:

- Data set name
- Location of the data set on the archive tape or in the cloud storage environment
- Creation date
- Date on which the data set was last referenced
- Expiration date
- Retention information, such as management class

After the inactive data set is copied to the archive and a record for that data set is written to the Archive Database, the Archive process deletes the data set from the migration control data set (or in the case of an L0 disk data set, deletes the data set) and creates an ICF catalog entry. The ICF catalog entry has an invented volume serial number that allows the data set to be tracked.

How the Restore process works

Advanced Archive for DFSMShsm provides multiple methods for restoring archived data when that data is needed.

Note: In most cases, Advanced Archive for DFSMShsm uses REST APIs to copy the selected data sets from cloud storage environments. If the cloud storage environment is FTP, Advanced Archive for DFSMShsm uses standard passive FTP to copy the selected data sets from the cloud storage environment.

For archived ML2 data sets, the Restore process writes the selected data sets to a new DFSMShsm ML2 tape and updates the MCDS with information about the restored data sets.

For archived L0 disk data sets, the Restore process restores the selected data sets to disk.

- For a non-VSAM data set, the data set is restored with the same SMS attributes that existed when the data set was archived.
- For a VSAM data set, the entire VSAM sphere that existed when the data set was archived is restored.

You can use any of these methods for restoring archived data:

- You can configure the `AXQTINIT` started task to restore archived data sets automatically whenever they are referenced. When an archived data set is referenced by the **LOCATE** SVC, the referencing address space requests that the `AXQTINIT` started task restore the referenced data set automatically. The data set restoration uses the values that are currently specified in the Advanced Archive for DFSMShsm parameter library. After the data set is restored to ML2 (or to disk, in the case of archived L0 disk data sets), the **LOCATE** operation continues and regular HSM processing occurs.

  Note:

  – If you choose to, you can exclude from automatic Restore processing data sets that were archived to the cloud. You can use the `AXQEDRGN` parameter library member to create a list of the cloud definition names (which are identified by the `GROUP_NAME` keyword value that was assigned when the data sets were archived) that you want excluded from automatic Restore processing.
  – When an archived data set is referenced for a delete operation and automatic Restore processing is enabled, Advanced Archive for DFSMShsm attempts to delete the data set from the archive without performing a Restore operation. If the referenced data set cannot be deleted when the request is made, Advanced Archive for DFSMShsm restores the data set, rather than allowing DFSMShsm to perform a delete.
- You can specify in the AXQRESTR batch job JCL the data set selection criteria that identify the archived data sets that you want restored to ML2 tape or to L0 disk. The criteria are very similar to those that are used to select data sets for the Archive process, but include some additional criteria that are based on the archive date or the number of days that have elapsed since the data set was

archived. Every data set whose attributes match the Restore criteria is read from the archive and written to a new DFSMShsm ML2 tape (or to disk, in the case of archived L0 disk data sets).

- You can use the Advanced Archive for DFSMShsm ISPF interface to display a list of archived data sets and then do either of the following:
  - Use the **RECOVER** command to restore selected data sets.
  - Use the **RECOVER ALL** command to restore all of the data sets that are included in the list.

Advanced Archive for DFSMShsm features

Advanced Archive for DFSMShsm provides the JCL for archiving, restoring, reporting, and database maintenance, an ISPF interface for setting up your archives, and full online help for the ISPF interface.

Customizable sample JCL

The Advanced Archive for DFSMShsm JCL sample library includes fully customizable sample JCL for these tasks:

- Archiving inactive data
- Restoring data from the archive to the ML2 tapes
- Creating reports
- Backing up, restoring, and cleaning up the Archive Database

ISPF interface

The Advanced Archive for DFSMShsm ISPF interface offers the following functionality:

- Provides easy access to the product settings that are used for moving data out of the archive and for defining cloud storage environments
- Lists the data sets that have been archived and (optionally) allows you to queue files for restore processing
- Lists the tape volumes that contain the archived data sets
- Provides a quick access method for generating the JCL to restore archived files that have been queued for restore processing
- Lists the archived files that are in the restore queue
- Provides the SMS Archive Policy Editor for updating the `AXQMCPOL` parameter library member that is used for implementing the ML3-like storage tier

Console command interface

The Archive, Restore, Recycle, and Cleanup processes support the use of console commands to display the status of the process or to halt an in-progress process.

The `AXQTINIT` started task supports console commands to alter its processing mode, display status information, refresh parameter settings, and shut down the started task.

Online help

Online help is available for all of the ISPF screens by pressing F1.

What's new in V1.1.0

Advanced Archive for DFSMShsm V1.1 introduces new features and functionality that have been added through PTFs.

New features and functionality:

- In addition to support for archiving and restoring inactive ML2 data sets, Advanced Archive for DFSMShsm now also supports archiving and restoring L0 disk data sets.
- Advanced Archive for DFSMShsm now supports the multithreading of I/O to and from these cloud storage environments:
  - Amazon S3
  - IBM Cloud Object Storage
- The ISPF interface's new SMS Archive Policy Editor provides a convenient method for specifying the information that the Archive process uses to build and apply the data set selection criteria to implement an ML3-like storage tier.
- Advanced Archive for DFSMShsm now supports zEDC compression for I/O to and from cloud storage environments.
- Advanced Archive for DFSMShsm now supports the use of IBM zIIP processors for I/O to and from cloud storage environments.
- Advanced Archive for DFSMShsm is compatible with z/OS® V2.3.
- These Cloud Definition options have been added to the Cloud Definition Entry panel:
  - **Prefix Host URL with Bucket Name** (for Amazon S3 cloud storage environments)
  - **TCP Port** (for all cloud storage environments)
  - **Retry Count** (for all cloud storage environments)
  - **Retry Wait** (for all cloud storage environments)
  - **Part Size** (for Amazon S3 and IBM Cloud Object Storage cloud environments)

The following table shows the enhancements with the relevant PTF and APAR numbers.

PTF/APAR	Date	Description
UI41857/PI69883	Oct 2016	Function for MGMTCLAS Policy extension
UI44388/PI74810	Feb 2017	Additional options for cloud connections • VHOSTURLSTYLE - prefix URL with bucket name • PORT 1-65535 • Retry Count/Wait
UI47356/PI80788	May 2017	Support for parallel processing
UI47471/PI77460	May 2017	Use zIIP for cloud I/O
UI50284/PI83010	Sept 2017	zEDC compression for cloud I/O • Part size S3/ICOS • Additional cloud connection error messages
UI50234/PI83366	Sept 2017	z/OS V2.3 support
UI53755/PI88666	Feb 2018	Support for archiving L0 disk data sets

PTF/APAR	Date	Description
UI53969/PI92712	Feb 2018	Add options for server-side encryption and multi-threading of Cloud I/O
UI54549/PI70533		Support for exclusion by `GROUP_NAME` from automatic restore

Where do I go next?

Here are links to information about all of the common Advanced Archive for DFSMShsm tasks.

Task	Where to find information
Install Advanced Archive for DFSMShsm	Instructions are provided in the *IBM Advanced Archive for DFSMShsm Program Directory*, which was included with your product distribution.
Configure Advanced Archive for DFSMShsm	Procedure for configuring the product, including the necessary information for specifying the required processing parameters: "Configuring Advanced Archive for DFSMShsm for use" on page 13 Explanation of all processing parameters: Chapter 10, "Parameters," on page 111 Example of an AT-TLS parameter setup: Appendix A, "Example of AT-TLS parameter setup," on page 207
Archive inactive data sets	Explanation of the process: "How the Archive process works" on page 4 There are three methods of archiving inactive data: • Procedure for archiving explicitly identified ML2 data sets: "Archiving explicitly identified ML2 data sets" on page 33 • Procedure for archiving L0 disk data sets: "Archiving L0 disk data sets" on page 36 • Procedure for setting up an ML3-like policy for SMS management classes: "Setting up an ML3-like policy for your SMS management classes" on page 39 There are three methods of determining which data sets were archived: • Procedure for using report and log information generated by Archive job: "Using Archive job report and log information to verify archive contents" on page 58 • Procedure for using the ISPF interface: "Using the ISPF interface to display a list of archived data sets" on page 59 • Procedure for using the Database Report: "Creating an Archive Database report" on page 85
Set up ML3-like storage tier	Explanation of how the feature works: "How the Archive process works" on page 4 Procedure for modifying the Archive job JCL to use `AXQMCPOL` as input: "Setting up an ML3-like policy for your SMS management classes" on page 39

Task	Where to find information
Restore archived data sets	Explanation of how automatic Restore works: "How the Restore process works" on page 5 There are three methods of restoring archived data sets: • Procedure for implementing automatic restore, including operator commands for controlling the process and an example of the summary log output from a successful Restore: "Restoring archived data sets automatically" on page 64 • Procedure for using a batch job, including verification of restored data sets: "Modifying and executing the Restore job JCL" on page 69 • Procedure for using the ISPF interface: "Using the RECOVER commands to restore archived data" on page 83 Procedure for determining why candidate data sets were not selected for Restore processing: "Creating a candidate rejection report" on page 133
Confirm that the right data sets were archived	There are three methods of determining which data sets were archived: • Procedure for using report and log information generated by Archive job: "Using Archive job report and log information to verify archive contents" on page 58 • Procedure for using the ISPF interface to list the archived data sets: "Using the ISPF interface to display a list of archived data sets" on page 59 • Procedure for running an Archive Database report: "Creating an Archive Database report" on page 85 Procedure for determining why candidate data sets were not selected for Archive processing: "Creating a candidate rejection report" on page 133
Back up and restore the Archive Database	Procedure for backing up the Archive Database: "Backing up the Archive Database" on page 99 Procedure for restoring the Archive Database: "Restoring the Archive Database" on page 99
Back up the Cloud Definition Database	Procedure for backing up the Cloud Definition Database: Chapter 8, "Backing up the Cloud Definitions Database," on page 101 **Note:** This task is relevant only if you have archived data sets to a cloud storage environment.
Expire eligible archived data sets	Procedure for determining which archived data sets are eligible for expiration and expiring empty archive tapes from the tape management system: "Running the Archive Database Cleanup program" on page 106
Recycle underused archive tapes	Procedure for copying archived data sets from underused tape and aggregating the copies onto a new tape: "Recycling archive tapes" on page 103 Procedure for determining why candidate data sets were not selected for Recycle processing: "Creating a candidate rejection report" on page 133
Look up an error message	"Messages" on page 137

Task	Where to find information
Ask a question or report a problem	“Contacting IBM Software Support” on page 1

Chapter 3. Configuring Advanced Archive for DFSMShsm

After you have installed Advanced Archive for DFSMShsm according to the instructions that are provided in the *IBM Advanced Archive for DFSMShsm Program Directory*, you must complete some configuration tasks before you can use Advanced Archive for DFSMShsm.

This chapter includes procedures for those tasks and information about the product data sets, system requirements, and the possible impact of using the product with your EBCDIC code tables.

Topics:

Product notes

Before you begin the configuration process, you might find it helpful to understand the software and authorization requirements, the product data set names, and important information about the impact of running Advanced Archive for DFSMShsm with your EBCDIC code tables.

Advanced Archive for DFSMShsm data sets

The names that were chosen for the Advanced Archive for DFSMShsm data sets during installation must be specified in various places during the configuration process.

If you are not the person who installed Advanced Archive for DFSMShsm, ask that person for a list of the data set names that were chosen.

These are the product data sets:

Note: Be aware that the user documentation and IBM Software Support staff refer to the files by the names shown in this list.

Active Log GDG
: Files that contain the logged updates to the Archive Database.

Archive Database GDG
: Backup versions of the Archive Database.

Active Log backup GDG
: Backup copies of the Active Log files.

Archive Database
: VSAM KSDS that contains entries for files that have been archived and for the archive tapes.

Cloud Definition Database
: VSAM KSDS that contains the definitions that are used to identify and communicate with the cloud storage environments. If you do not intend to archive files to a cloud storage environment, this file is unnecessary.

Restore Queue
VSAM KSDS that contains entries for archived files that have been selected through the ISPF interface for Restore processing.

prefix.**SAXQTENU**
ISPF dialog tables library.

prefix.**SAXQSAMP**
Sample JCL library.

prefix.**SAXQLOAD**
Load module library.

prefix.**SAXQMENU**
ISPF dialog messages library.

prefix.**SAXQPENU**
ISPF dialog panels library.

prefix.**SAXQPARM**
Parameter library.

prefix.**SAXQREXX**
ISPF dialog REXX library.

prefix.**SAXQSENU**
ISPF dialog skeleton library.

prefix.**SAXQEXP**
Program Binder exported symbols library.

System requirements

Before you begin the configuration of Advanced Archive for DFSMShsm, verify that your system meets the software requirements.

These are the known software requirements for Advanced Archive for DFSMShsm:

- Advanced Archive for DFSMShsm runs on IBM z/OS V1.13, or later.
- Advanced Archive for DFSMShsm supports these cloud environments for archiving and restoring data:
  - IBM Cloud Object Storage
  - IBM Softlayer
  - Hitachi Content Platform
  - Amazon S3
  - FTP server
- If you intend to archive inactive data to a cloud storage environment in which some functions require ICSF for hashing (for example, S3, Hitachi Content Platform, or IBM Cloud Object Storage), the IBM Integrated Cryptographic Service Facility (ICSF) must be present on your z/OS system and the ICSF started task must be running.

  Advanced Archive for DFSMShsm uses some functions of ICSF to perform hashing that is necessary for API requests in these environments. If ICSF is not running, storage requests fail with an error stating that the algorithm could not be performed. If such an error message is displayed, start the ICSF started task and try the process again.
- The Advanced Archive for DFSMShsm ISPF interface requires a TSO region of at least 6000 KB.

- If you intend to archive inactive data to tape, the Database Cleanup process requires that you are have DFSMSrmm or CA-1 active on the system.

APF authorization requirements

The Advanced Archive for DFSMShsm load library requires explicit APF authorization.

Determining the possible impact of running Advanced Archive for DFSMShsm with your EBCDIC code tables

Advanced Archive for DFSMShsm uses the USA EBCDIC code set for specification and display of EBCDIC characters and for the masking characters that you can use to specify values for data set selection criteria keywords.

If the code tables that are used by your installation are different, you must enter the EBCDIC character that is peculiar to your code tables that results in the binary value for the EBCDIC character specified in this guide.

Data that is supplied as input to batch programs or input to ISPF panels
For product code that is shipped in binary, when you are specifying input where the product takes special action based on specific characters, you must enter the EBCDIC character peculiar to your code tables that results in the binary value for the EBCDIC character specified in the product documentation, according to the USA EBCDIC code set. For example, if an exclamation mark (!) is called for, and your code tables do not translate the ! character to hexadecimal 5A, you must enter the character that your code table translates to 5A.

Distributed ISPF panels
Do not change the ISPF panels for the product. Program code might reference ISPF panel attribute bytes. A panel change that affects an attribute byte could cause a program error.

Product output
Depictions of the product that are shown in the *IBM Advanced Archive for DFSMShsm User's Guide* are based on USA EBCDIC code set. Actual output might differ from the depictions if your EBCDIC code tables are different.

Configuring Advanced Archive for DFSMShsm for use

Before you can use Advanced Archive for DFSMShsm, you must configure it appropriately for your environment.

These are the configuration tasks:

1. "Setting the APF authorization for the LOADLIB" on page 14
2. "Customizing the REXX library" on page 14
3. "Customizing the AXQUSETS member of the PARMLIB" on page 14
4. "Customizing the started task JCL" on page 21
5. "Defining system security access for Advanced Archive for DFSMShsm" on page 22
6. "Setting up AT-TLS for encryption and security" on page 23
7. "Starting the started task" on page 25
8. "Defining and initializing the Archive Database, Cloud Definition Database, and Restore Queue files" on page 26
9. "Creating cloud definitions and loading them into storage" on page 28

10. "Restricting access to product files" on page 29
11. Optional: "Setting EDM or VRS rules" on page 30
12. Optional: "Starting the ISPF interface for Advanced Archive for DFSMShsm" on page 31

Setting the APF authorization for the LOADLIB

The Advanced Archive for DFSMShsm LOADLIB must run with APF authorization under z/OS.

About this task

You can set the APF authorization for the load module library temporarily by issuing the z/OS **SETPROG** system command from a system console.

Important: The authorization established by the **SETPROG** command is lost every time that the system is restarted. Have the LOADLIB for Advanced Archive for DFSMShsm authorized permanently as soon as possible.

Procedure

From a system console, issue this command:

```
SETPROG APF,ADD,DSNAME=@HLQ.SAXQLOAD,VOL=vvvvvv
```

What to do next

Go on to "Customizing the REXX library."

Customizing the REXX library

You must customize the REXX library to use the appropriate data set name prefix for your installation.

Procedure

1. Edit the AXQISPF member of the Advanced Archive for DFSMShsm REXX library to change all occurrences of @HLQ in the product ISPF and LOADLIB libraries to the prefix that was specified during product installation.
2. Add the REXX library to the SYSEXEC or SYSPROC concatenations for your TSO logon procedures. Alternatively, the AXQISPF REXX EXEC can be executed directly from the Advanced Archive for DFSMShsm REXX library.

What to do next

Go on to "Customizing the AXQUSETS member of the PARMLIB."

Customizing the AXQUSETS member of the PARMLIB

Advanced Archive for DFSMShsm has many parameters that control the product's functions. For the most part, values for these parameters are determined by the built-in default values. If you need to change the default values, you can customize the AXQUSETS member of the product parameter library.

About this task

The following figure shows the contents of the unaltered AXQUSETS member of the Advanced Archive for DFSMShsm product parameter library.

```
************************************************************************
************************************************************************
* USER SET PARAMETERS
*
*  5698-AAD
*  © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.
*  ALL RIGHTS RESERVED.
*
************************************************************************
************************************************************************
*
ARCHIVE-DATABASE-CLUSTER-NAME                ADV.ARCHIVE.ARCHIVE.DB
ARCHIVE-DATABASE-NUMBER-OF-RECORDS           10000
*
ARCHIVE-ACTIVE-LOG-GDG-BASE-DSN              ADV.ARCHIVE.ACTIVE.LOG
ARCHIVE-DB-BKUP-GDG-BASE-DSN                 ADV.ARCHIVE.DBBKUP
ARCHIVE-LOG-BKUP-GDG-BASE-DSN                ADV.ARCHIVE.LOGBKUP
*
*ARCHIVE-TARGET                              TAPE
*
*CLOUDDEF-DATABASE-CLUSTER-NAME              ADV.ARCHIVE.CLOUDDEF.DB
*CLOUDDEF-DATABASE-NUMBER-OF-RECORDS         1000
*
*ARCHIVE-MINIMUM-SIZE                         0
*ARCHIVE-SELECTION-MAXIMUM-FILES              100000
*ARCHIVE-SELECTION-MAXIMUM-GB                 0
ARCHIVE-TARGET-SIZE                          99999
*
ARCHIVE-TAPE-DATA-SET-NAME                   ADV.ARCHIVE.ARCHIVE
ARCHIVE-TAPE-ALLOCATION-UNIT-NAME            3490
*ARCHIVE-TAPE-ALLOCATION-DATACLAS             NONE
*ARCHIVE-TAPE-ALLOCATION-MGMTCLAS             NONE
*ARCHIVE-TAPE-ALLOCATION-STORCLAS             NONE
*ARCHIVE-TAPE2-DATA-SET-NAME                  NONE
*ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME           NONE
*ARCHIVE-TAPE2-ALLOCATION-DATACLAS            NONE
*ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS            NONE
*ARCHIVE-TAPE2-ALLOCATION-STORCLAS            NONE
*ARCHIVE-TAPE3-DATA-SET-NAME                  NONE
*ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME           NONE
*ARCHIVE-TAPE3-ALLOCATION-DATACLAS            NONE
*ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS            NONE
*ARCHIVE-TAPE3-ALLOCATION-STORCLAS            NONE
*ARCHIVE-TAPE4-DATA-SET-NAME                  NONE
*ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME           NONE
*ARCHIVE-TAPE4-ALLOCATION-DATACLAS            NONE
*ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS            NONE
*ARCHIVE-TAPE4-ALLOCATION-STORCLAS            NONE
*
*DELETE-HSM-BACKUP-VERSIONS-AFTER-ARCHIVE     YES
*
DATA-CENTER-NAME                             DATA_CENTER
*
DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX       ADV.ARCHIVE
*DYNAMIC-ALLOCATION-UNIT                      3390
*DYNAMIC-ALLOCATION-VOLSER                    NONE
*DYNAMIC-ALLOCATION-DATA-CLASS                NONE
*DYNAMIC-ALLOCATION-MANAGEMENT-CLASS          NONE
*DYNAMIC-ALLOCATION-STORAGE-CLASS             NONE
*
*DYNAMIC-ALLOCATION-SORTWORK-UNIT             3390
*
DYNAMIC-ALLOCATION-VSAM-DATASET-NAME-PREFIX  ADV.ARCHIVE
*DYNAMIC-ALLOCATION-VSAM-DATA-VOLSER          NONE
*DYNAMIC-ALLOCATION-VSAM-INDEX-VOLSER         NONE
*DYNAMIC-ALLOCATION-VSAM-DATA-CLASS           NONE
*DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS     NONE
```

```
*DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS        NONE
*
*GREGORIAN-DATE-FORMAT                        MM/DD/YYYY
*
*ML2-MINIMUM-SIZE                            0
*ML2-TARGET-SIZE                             99999
*
ML2-TAPE-DATA-SET-NAME                       HSM.HMIGTAPE.DATASET
ML2-TAPE-ALLOCATION-UNIT-NAME                3490
*ML2-TAPE-ALLOCATION-DATACLAS                NONE
*ML2-TAPE-ALLOCATION-MGMTCLAS                NONE
*ML2-TAPE-ALLOCATION-STORCLAS                NONE
*
*RECYCLE-FROM-ARCHIVE-COPY-NUM               1
*RECYCLE-THRESHOLD-PERCENTAGE                20
*
*RESTORE-FROM-ARCHIVE-COPY-NUM               1
*RESTORE-SELECTION-MAXIMUM-FILES             100
*RESTORE-SELECTION-MAXIMUM-GB                0
*RESTORE-TO-DRIVE-DYNAMIC-HRECALL            YES
*
RESTORE-QUEUE-CLUSTER-NAME                   ADV.ARCHIVE.RESTORE.QUEUE
RESTORE-QUEUE-NUMBER-OF-RECORDS              10000
*
*----------------------------------DFSORT PARMS
SORT-PRODUCT-NAME                            DFSORT
SORT-PRODUCT-PARAMETERS-DDNAME               SORTCNTL
*----------------------------------SYNCSORT PARMS
*SORT-PRODUCT-NAME                           SYNCSORT
*SORT-PRODUCT-PARAMETERS-DDNAME              $ORTPARM
*
```

Chapter 10, “Parameters,” on page 111, provides a comprehensive list of the parameters that control Advanced Archive for DFSMShsm processing. The AXQUSETS member of the product parameter library contains the parameters for which you must specify values as part of the configuration process. An asterisk (*) in column 1 of a parameter definition line in the AXQUSETS member indicates that the parameter can be customized, but customization is not required.

Procedure

Specify appropriate values for these parameters:

Parameter	Description
ARCHIVE-DATABASE-CLUSTER-NAME	This parameter specifies the full VSAM cluster name of the Archive Database. The Archive Database holds records for the data sets that have been archived and the location information for those data sets. **Valid values:** Any valid VSAM cluster name that is 38 or fewer characters in length
ARCHIVE-DATABASE-NUMBER-OF-RECORDS	This parameter specifies the maximum number of records that are expected to be in the Archive Database. There should be one record for each data set that is archived and one record for each set of archive tapes. This parameter is used to determine the size of the database when the database is initially created and when it is restored. **Valid values:** Any integer in the range 0–99999999

Parameter	Description
ARCHIVE-ACTIVE-LOG-GDG-BASE-DSN	This parameter specifies the name of the GDG base for the Active Log (sometimes referred to as the Archive Database log). The Active Log is a GDG data set. All updates to the Archive Database are first logged to the Active Log data set, which is used for reporting and for the recovery of the Archive Database. **Valid values:** A valid GDG base name that is 35 or fewer characters in length
ARCHIVE-DB-BKUP-GDG-BASE-DSN	This parameter specifies the name of the GDG base for the Archive Database backup file. The backup file is a GDG data set. When the Archive Database backup program is run, the program backs up the live key database to the next generation of this GDG data set. This data set is necessary for recovery of the Archive Database. **Valid values:** A valid GDG base name that is 35 or fewer characters in length
ARCHIVE-LOG-BKUP-GDG-BASE-DSN	This parameter specifies the name of the GDG base for the Archive Database backup log. The backup log is a GDG data set. When the Archive Database backup program is run, the program consolidates all generations of the Active Log to the next generation of the backup log. This data set might be used during special recovery of the Archive Database (if the most current backup of the Archive Database is unusable and a previous backup must be used) and for reporting. **Valid values:** A valid GDG base name that is 35 or fewer characters in length

Parameter	Description
ARCHIVE-TARGET	This parameter establishes whether the Archive function writes the inactive data to a tape- or cloud-based device. If the data is being archived to a cloud-based device, the value that is assigned to the GROUP_NAME keyword determines which cloud definition is used. **Valid values:** • TAPE–All of the candidate data sets that meet the specified selection criteria are archived to one or more tape volumes. • CLOUD–The GROUP_NAME that is associated with the candidate data set is used to look up the cloud information in the Cloud Definition Database. – If the GROUP_NAME is found in the Cloud Definition Database, the candidate data set is archived to the corresponding cloud destination. – If the GROUP_NAME is not found in the Cloud Definition Database, the candidate data set is not archived. • GROUP–The GROUP_NAME that is associated with the candidate data set is used to look up the cloud information in the Cloud Definition Database. – If the GROUP_NAME is found in the Cloud Definition Database, the candidate data set is archived to the corresponding cloud destination. – If the GROUP_NAME is not found in the Cloud Definition Database, the candidate data set is archived to one or more tape volumes.
CLOUDDEF-DATABASE-CLUSTER-NAME	If you are not archiving data sets to a cloud storage environment, you do not need to customize this value. This parameter specifies the full VSAM cluster name of the Cloud Definition Database. The Cloud Definition Database holds records for definitions that are used to connect to cloud storage systems. **Valid values:** A valid VSAM cluster name that is 38 or fewer characters in length
CLOUDDEF-DATABASE-NUMBER-OF-RECORDS	If you are not archiving data sets to a cloud storage environment, you do not need to customize this value. This parameter specifies the maximum number of records that are expected to be in the Cloud Definition Database. There should be one record in the database for each cloud location that is defined. You may provide one or more definitions for each cloud storage system. The value that you assign to this parameter is used for the database size when the database is created or whenever the database is restored. **Valid values:** Any integer in the range 0-99999999
ARCHIVE-TAPE-DATA-SET-NAME	This parameter specifies the name of the primary copy of the tape data set that contains the archived data sets. This data set is not cataloged in the ICF catalog. **Valid values:** Any valid data set name

Parameter	Description
ARCHIVE-TAPE-ALLOCATION-UNIT-NAME	This parameter specifies the unit name that is used to allocate the tape data set that contains the archived data sets. **Valid values:** A valid esoteric or generic unit name
DATA-CENTER-NAME	This parameter specifies the data center name that appears on all report headings that are generated by Advanced Archive for DFSMShsm. **Valid values:** Any character string. The string is delimited by blank spaces. If you want to separate words within the string, use the underscore character (_) instead of a blank space. For example, `ACME_DATA_CENTER` is a valid value, but `ACME DATA CENTER` is not.
DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX	This parameter specifies which data set name prefix is used when Advanced Archive for DFSMShsm dynamically allocates a work file on DASD. **Valid values:** Any valid data set name prefix that is 26 or fewer characters in length
DYNAMIC-ALLOCATION-VSAM-DATA-VOLSER	This parameter specifies the DASD volume serial number to use when Advanced Archive for DFSMShsm needs to dynamically allocate a VSAM work file data component. **Valid values:** Specify either of the following values: • Specify `NONE` to have Advanced Archive for DFSMShsm to select an available volume serial number. • Specify any valid DASD volume serial number. **Note:** A value for this parameter is not required unless the allocation is to non-SMS DASD.
DYNAMIC-ALLOCATION-VSAM-DATASET-NAME-PREFIX	This parameter specifies the data set name prefix to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM work file on DASD. **Valid values:** Any data set name prefix that is 26 or fewer characters in length
DYNAMIC-ALLOCATION-VSAM-INDEX-VOLSER	This parameter specifies the DASD volume serial number to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM work file index component. **Valid values:** Specify either of the following values: • Specify `NONE` to have Advanced Archive for DFSMShsm select an available volume serial number. • Specify a valid DASD volume serial number. **Note:** A value for this parameter is not required unless the allocation is to non-SMS DASD.
DYNAMIC-ALLOCATION-VSAM-DATA-CLASS	This parameter specifies the SMS data class to be used for allocation during the definition and initialization of the Archive Database, the Cloud Definition Database, or the Restore Queue (or any combination of these). **Valid values:** `NONE` or any valid SMS data class

Parameter	Description
DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS	This parameter specifies the SMS management class to be used for allocation during the definition and initialization of the Archive Database, the Cloud Definition Database, or the Restore Queue (or any combination of these). **Valid values:** NONE or any valid SMS management class
DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS	This parameter specifies the SMS storage class to be used for allocation during the definition and initialization of the Archive Database, the Cloud Definition Database, or the Restore Queue (or any combination of these). **Valid values:** NONE or any valid SMS storage class
ML2–TAPE-DATA-SET-NAME	This parameter specifies the name of the DFSMShsm ML2 tape data sets. The specified name is used when Advanced Archive for DFSMShsm is archiving data sets from DFSMShsm ML2 tapes as well as when archived data sets are restored. **Valid values:** Any valid data set name
ML2–TAPE-ALLOCATION-UNIT-NAME	This parameter specifies the unit name that is used to allocate the ML2 data set that contains the restored data sets. **Valid values:** A valid esoteric or generic unit name
RESTORE-QUEUE-CLUSTER-NAME	This parameter specifies the full VSAM cluster name of the Restore Queue database. The Restore Queue holds records for the data sets that have been selected for Restore processing. **Valid values:** A valid VSAM cluster name that is 38 or fewer characters in length
RESTORE-QUEUE-NUMBER-OF-RECORDS	This parameter specifies the number of records that are expected to be in the Restore Queue database. The value of this parameter is used when the database is created. **Valid values:** Any integer in the range 0–99999999
SORT-PRODUCT-NAME	This parameter identifies the sort product that is installed. Advanced Archive for DFSMShsm uses this information to set up the appropriate dynamic interface for internal sorts. **Valid values:** DFSORT, SYNCSORT, or CASORT
SORT-PRODUCT-PARAMETERS-DDNAME	This parameter specifies the DD name that Advanced Archive for DFSMShsm assigns to the sort statement file that is used by the sort product. **Valid values:** Any valid DD name

What to do next

Go on to “Customizing the started task JCL” on page 21.

Customizing the started task JCL

Before you can use any of the Advanced Archive for DFSMShsm features, you must copy the started task member AXQTINIT from the SAXQSAMP library to a system procedure library and then customize the JCL appropriately for your environment.

Procedure

1. Copy member AXQTINIT from the SAXQSAMP runtime library to a system procedure library, such as SYS1.PROCLIB.
2. Open member AXQTINIT for editing.

```
//AXQTINIT  PROC SMODE=ACTDYN
//*
//*-------------------------------------------------------------------*
//*                                                                   *
//*      5698-AAD                                                     *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.         *
//*      ALL RIGHTS RESERVED.                                         *
//*                                                                   *
//*                                                                   *
//*      ADVANCED ARCHIVE STARTED TASK INITIALIZATION                 *
//*                                                                   *
//*                                                                   *
//*      THIS JOB IS USED TO INITIALIZE THE ADVANCED ARCHIVE STARTED  *
//*      TASK AND SHOULD BE STARTED BEFORE ANY TASKS THAT MIGHT       *
//*      ACCESS ARCHIVED FILES RUN, AFTER AN IPL.                     *
//*                                                                   *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                   *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR              *
//*            ENVIRONMENT                                            *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ               *
//*                                                                   *
//*      THE FOLLOWING VALUES FOR SMODE MAY BE SPECIFIED:             *
//*         PARM=ACTDYN - START WITH SYSTEM HOOKS AND DYNAMIC RESTORE *
//*                       FUNCTIONALITY ACTIVE                        *
//*         PARM=ACT    - START WITH SYSTEM HOOKS IN WARNING MODE FOR *
//*                       ARCHIVED DATA SETS                          *
//*         PARM=DEACT  - START WITH SYSTEM HOOKS INACTIVE            *
//*                                                                   *
//*-------------------------------------------------------------------*
//*
//AXQTINIT EXEC PGM=AXQTINIT,REGION=8M,TIME=1400,PARM='&SMODE'
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

3. Replace all occurrences of @HLQ with your data set prefix.
4. On the EXEC PGM= statement, specify REGION= and TIME= values that are appropriate for your environment. Specifying appropriate values for these parameters minimizes the likelihood of an abend occurring.
   - For the REGION= parameter, you may specify whatever value your environment requires; however, be aware that specifying a value that is less than 8M could cause storage-related abends when L0 disk data sets are being restored.
   - By specifying a value for the TIME= parameter, you ensure that the AXQTINIT step does not terminate because it had to wait for an excessive period of time. The default value is 1440 minutes. See the *z/OS MVS JCL Reference* for more information about this parameter.
5. Modify the SMODE value to control the default EXEC PARM that will be supplied at execution.
   - Specify ACTDYN if you want to restore archived data sets automatically. When a data set is referenced by the **LOCATE** SVC and is found to be archived, a request is made from the referencing address space to the started task to

perform an automatic Restore. The data set is restored, using the values that are currently specified in the product parameter library. When the data set has been restored to ML2, the **LOCATE** operation continues and regular HSM processing occurs. In addition to the normal activity logging that is performed by the batch Restore (see "Modifying and executing the Restore job JCL" on page 69), the automatic Restore process writes a line of summary information in the SUMMLOG DD data set that was allocated dynamically by the started task.

- Specify ACT if you do not want archived data sets to be restored automatically. In this mode, every time an archived data set is referenced by the **LOCATE** SVC, a warning message is issued to the referencing task, indicating that the data set is archived. The **LOCATE** operation fails with a return code that simulates a not found condition to the caller of the SVC.
- Specify DEACT if you do not want the **LOCATE** request to be interpreted. Running the started task in this mode can cause a program that references an archived data set to request a tape mount for the volume serial number RCHIVE (or whatever name was specified in the product parameter library).

  Note: Generally, you would not run the product in DEACT mode unless you have made other provisions for responding to the potential tape mount messages or for handling **LOCATE** requests for data sets that are cataloged to the RCHIVE volume serial number.

6. Start the AXQTINIT PROC after an IPL on each system where Advanced Archive for DFSMShsm processing will be executed and on any system where jobs might attempt to access files that have been archived.

What to do next

Go on to "Defining system security access for Advanced Archive for DFSMShsm."

Defining system security access for Advanced Archive for DFSMShsm

The Archive, Restore, and Cleanup batch functions require appropriate access authorities and the Advanced Archive for DFSMShsm started task must be defined to your security system.

Procedure

- The AXQTINIT started task must be added to your security system. Consult your systems administrator about how to do so.

  Note: The AXQTINIT started task requires a valid OMVS segment for the user ID that is assigned to the AXQTINIT started task.
- To archive and restore ML2 and L0 disk data sets, the user IDs that are used to run the batch Archive (AXQRCHIV) and Restore (AXQRESTR) processes and the AXQTINIT started task must have READ access to these RACF® FACILITY class profiles:
  - STGADMIN.ADR.RESTORE.BYPASSACS
  - STGADMIN.ADR.DUMP.TOLERATE.ENQF
  - STGADMIN.ADR.RESTORE.TOLERATE.ENQF
- To allow for reading the ML2 tapes during the Archive process and for creating new ML2 tapes during the Restore process, the user ID that is assigned to the started task must have ALTER authority for the data set name that is used by

the DFSMShsm ML2 tapes. This same user ID must have READ access to the STGADMIN.ARC.** RACF FACILITY class profiles.

- The user IDs that are used to run the batch Archive and Restore processes must also have ALTER authority for the L0 disk data set name or the data set name that is used by the DFSMShsm ML2 tapes, and READ access to the STGADMIN.ARC.** RACF FACILITY class profiles.
- The Database Cleanup process needs the following authorities:
  - READ access to STGADMIN.IGG.DELETE.NOSCRTCH
  - If your site runs DFSMSrmm for your tape management system, the Database Cleanup process also needs UPDATE access to STGADMIN.EDG.FORCE

What to do next

Go on to "Setting up AT-TLS for encryption and security."

Setting up AT-TLS for encryption and security

Advanced Archive for DFSMShsm uses Application Transparent Transport Layer Security (AT-TLS) to secure transmissions between the mainframe and cloud providers. Configuring and running AT-TLS enables SSL encryption to be performed on the TCP traffic coming from, and going to, Advanced Archive for DFSMShsm.

Preparing to use AT-TLS

Note: Other SSL/TLS automatic configuration solutions exist. If you are not using RACF, consult the documentation for your security management software.

The steps for setting up AT-TLS for use with Advanced Archive for DFSMShsm are listed here, along with a reference to each step's corresponding procedure.

1. Configure AT-TLS to ensure that a valid certificate is installed for each cloud provider: "Step 1: Configuring AT-TLS."
2. Verify that policy-based networking (PAGENT) is enabled: "Step 2: Enabling PAGENT" on page 24.
3. Establish rules for determining which traffic is to be encrypted: "Step 3: Defining encryption rules" on page 25.
4. Refresh the PAGENT started task to ensure that all changes are included: "Step 4: Refreshing the PAGENT started task" on page 25.

Step 1: Configuring AT-TLS

For each cloud provider that you plan to use for archiving inactive data, a valid certificate must be installed and configured.

Procedure

1. Use a web browser to retrieve valid certificates using either of these methods:
   - For each cloud provider that you intend to use for archiving inactive data, retrieve a certificate from a Secure Socket Layer (SSL) certificate provider (Geotrust, Digicert, and so on), acting as a Root Certificate Authority.
   - Alternatively, in the browser's location field, type the URL for the cloud provider and then use the browser's certificate export feature to export the certificate to an uploadable file. You must export the Root CA.
2. Upload each certificate to its own variable block flat file on the mainframe. If you are uploading more than one certificate, each certificate must be uploaded to a different file.

3. For each certificate, issue a command to define the certificate to your security management software. This is the RACF command:

   ```
   RACDCERT ADD('CERT.DATASET.NAME') CERTAUTH TRUST WITHLABEL('LABELNAME')
   ```

   where:

   CERT.DATASET.NAME
   Indicates the name of the data set into which you uploaded the certificate.

   LABELNAME
   Indicates whatever label you want to use to help identify the certificate in RACF.

4. Identify the keyring that will house all of the certificates in a single addressable entity:
   - If you choose to use an existing keyring, you can ignore this step and go on to step 5.
   - If you choose to create a new keyring for this purpose, issue the appropriate command for your security management software. This is the RACF command:

     ```
     RACDCERT ADDRING(RINGNAME)
     ```

     where *RINGNAME* is the name of the keyring that you want to define to RACF. *RINGNAME* can be whatever name you want.

5. Connect the certificates to the keyring. For each certificate, issue the appropriate command for your security management software. This is the RACF command:

   ```
   RACDCERT ID(SAFID) CONNECT(CERTAUTH LABEL('LABELNAME') RING(RINGNAME) USAGE(CERTAUTH))
   ```

   where:

   SAFID Indicates the name of the SAF ID that was used to add the certificate.

   LABELNAME
   Indicates the label that was used to add the certificate to RACF.

   RINGNAME
   - If you created and added a new keyring to RACF in step 4, *RINGNAME* is the name of that new keyring.
   - If you chose to use an existing keyring in step 4, *RINGNAME* is the name of that existing keyring.

6. Issue the appropriate refresh command for your security management software. This is the RACF command:

   ```
   SETROPTS RACLIST(DIGTRING) REFRESH
   ```

What to do next

Go on to "Step 2: Enabling PAGENT."

Step 2: Enabling PAGENT

AT-TLS requires that policy-based networking (PAGENT) be enabled.

Procedure

If you do not already have PAGENT enabled, see the *Policy-based networking* chapter of the *IBM z/OS Communications Server: IP Configuration Guide* (SC27-3650).

What to do next

Go on to "Step 3: Defining encryption rules."

Step 3: Defining encryption rules

AT-TLS uses rules to determine which traffic to encrypt. Encryption of Advanced Archive for DFSMShsm traffic requires a valid encryption rule.

Before you begin

Be aware that most cloud providers use port 80 for unencrypted HTTP traffic and port 443 for encrypted SSL/TLS traffic.

If you do not already have an AT-TLS rules data set in place, refer to the *AT-TLS policy configuration* section in the *IBM z/OS Communications Server: IP Configuration Guide* (SC27-3650).

Procedure

Define a valid encryption rule for Advanced Archive for DFSMShsm, using the information in Appendix A, "Example of AT-TLS parameter setup," on page 207 as an example and guideline.
As you define your encryption rule, keep the following general recommendations in mind:

- Because AT-TLS is invoked only if all conditions of a rule are met, it is recommended that you define the encryption rule to be as minimally restrictive as necessary.
- It is recommended that you use USERID as the primary method for determining which traffic AT-TLS encrypts. The USERID in your AT-TLS rule should be the SAF user ID of the Advanced Archive for DFSMShsm started task (`AXQTINIT`).

What to do next

Go on to "Step 4: Refreshing the PAGENT started task."

Step 4: Refreshing the PAGENT started task

After the AT-TLS encryption rules are in place, you must refresh the PAGENT started task to pick up any changes.

Procedure

Issue the following modify command:

```
F PAGENT,REFRESH
```

where *PAGENT* is the name of the PAGENT started task.

What to do next

Go on to "Starting the started task."

Starting the started task

Start the `AXQTINIT` started task, with `PARM` set to `ACT`, `DEACT`, or `ACTDYN`. It is strongly recommended that you add the startup of the Advanced Archive for DFSMShsm address space to your automated IPL procedures.

Before you begin

Note that if your site also uses IBM Advanced Allocation Management for z/OS, start the IBM Advanced Allocation Management for z/OS started task (ALLOCOPT) before you start AXQTINIT.

Procedure

Issue the following command: S AXQTINIT

Note: Should you need to shut down HSM, be aware that must first stop AXQTINIT.

What to do next

Go on to "Defining and initializing the Archive Database, Cloud Definition Database, and Restore Queue files."

Defining and initializing the Archive Database, Cloud Definition Database, and Restore Queue files

The Archive Database, Cloud Definition Database, and the Restore processing queue files must be defined and initialized before they can be used by the product functions.

Procedure

1. Verify that appropriate values have been set for these parameters in the AXQUSETS member of the product parameter library:
   - ARCHIVE-DATABASE-CLUSTER-NAME
   - ARCHIVE-DATABASE-NUMBER-OF-RECORDS
   - CLOUDDEF-DATABASE-CLUSTER-NAME
   - CLOUDDEF-DATABASE-NUMBER-OF-RECORDS
   - RESTORE-QUEUE-CLUSTER-NAME
   - RESTORE-QUEUE-NUMBER-OF-RECORDS
   - DYNAMIC-ALLOCATION-VSAM-DATA-CLASS
   - DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS
   - DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS

   If you intend to allocate to non-SMS DASD, verify also that appropriate values have been set for these parameters in the AXQUSETS member of the product parameter library:
   - DYNAMIC-ALLOCATION-VSAM-DATA-VOLSER
   - DYNAMIC-ALLOCATION-VSAM-INDEX-VOLSER
2. Open for editing the AXQDBINI member of the Advanced Archive for DFSMShsm JCL sample library.
3. Specify valid job card information.
4. Replace all occurrences of @HLQ with your data set prefix.
5. Delete the asterisk (*) in column 1 from the INITIALIZE_ARCHIVE_DATABASE SYSIN DD control statement.
6. Delete the asterisk (*) in column 1 from the INITIALIZE_RESTORE_QUEUE SYSIN DD control statement.

7. If you intend to archive data to a cloud storage environment, delete the asterisk (*) in column 1 from the INITIALIZE_CLOUD_DEFINITIONS_DB SYSIN DD control statement. The modified job should resemble the example shown in the following figure:

```
//AXQDBINI JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//            NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*-------------------------------------------------------------------*//
//*                                                                   *//
//*      5698-AAD                                                     *//
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.         *//
//*      ALL RIGHTS RESERVED.                                         *//
//*                                                                   *//
//*      ADVANCED ARCHIVE - DATABASE, AND REQUEST QUEUE AND CLOUD     *//
//*                         DEFINITIONS DATABASE DEFINITIONS AND      *//
//*                         INITIALIZATION                            *//
//*      ---------------------------------                            *//
//*                                                                   *//
//*      THIS SAMPLE JOB WILL INVOKE THE DATABASE. REQUEST QUEUE      *//
//*      AND CLOUD DEFINTIONS DATABASE DEFINITION AND                 *//
//*      INITIALIZATION FUNCTIONS                                     *//
//*                                                                   *//
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                   *//
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR              *//
//*            ENVIRONMENT                                            *//
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ               *//
//*                                                                   *//
//*-------------------------------------------------------------------*//
//*
//S010   EXEC PGM=AXQDBINI
//*
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//SYSIN   DD *
INITIALIZE_ARCHIVE_DATABASE     <<<== UNCOMMENT TO PERFORM FUNCTION
INITIALIZE_RESTORE_QUEUE        <<<== UNCOMMENT TO PERFORM FUNCTION
INITIALIZE_CLOUD_DEFINITIONS_DB <<<== UNCOMMENT TO PERFORM FUNCTION
//
```

8. Submit the job and verify that it completes successfully.

What to do next

If you will be archiving data to a cloud storage environment, go on to "Creating cloud definitions and loading them into storage" on page 28. Otherwise, ignore the *Creating cloud definitions and loading them into storage* topic and go directly to "Restricting access to product files" on page 29.

Upgrading the Archive Database and Cloud Definition Database

The Archive Database and/or Cloud Definition Database may need to be upgraded when Advanced Archive for DFSMShsm PTFs are applied. The SMPE ++Hold documentation will contain information about any required upgrades to the Archive Database and/or the Cloud Definition Database.

Procedure

1. Verify that appropriate values have been set for these parameters in the AXQUSETS member of the product parameter library:
   - ARCHIVE-DATABASE-CLUSTER-NAME
   - ARCHIVE-DATABASE-NUMBER-OF-RECORDS
   - CLOUDDEF-DATABASE-CLUSTER-NAME

- CLOUDDEF-DATABASE-NUMBER-OF-RECORDS
- DYNAMIC-ALLOCATION-VSAM-DATA-CLASS
- DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS
- DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS

If you intend to allocate to non-SMS DASD, verify also that appropriate values have been set for these parameters in the AXQUSETS member of the product parameter library:

- DYNAMIC-ALLOCATION-VSAM-DATA-VOLSER
- DYNAMIC-ALLOCATION-VSAM-INDEX-VOLSER

2. Open for editing the AXQDBUPG member of the Advanced Archive for DFSMShsm JCL sample library.
3. Specify valid job card information.
4. Replace all occurrences of @HLQ with your data set prefix.
5. To upgrade the Archive Database, delete the asterisk (*) in column 1 from the UPGRADE_ARCHIVE_MANAGER_DATABASE SYSIN DD control statement.
6. To upgrade the Advanced Archive for DFSMShsm Cloud Definition Database, delete the asterisk (*) from the UPGRADE_CLOUD_DEFINITIONS_DATABASE SYSIN control statement.
7. Submit the job and verify that it completes successfully.

Note: During the upgrade process a copy of each database upgraded will be retained, the data set names for these copies are:

- For Archive Database: <*dynamic-allocation-vsam-dataset-name-prefix*>.DCDB.<*job number*>
- For Cloud Definition Database: <*dynamic-allocation-vsam-dataset-name-prefix*>.DCCL.<*job number*>

These data set copies may be deleted after you are satisfied that Advanced Archive for DFSMShsm is functioning correctly after the upgrade process has completed.

Creating cloud definitions and loading them into storage

If you intend to archive data to and restore data from a cloud storage environment, you must create the cloud definitions and then load them into storage. Otherwise, you can ignore this step.

Before you begin

You must complete the steps in the following tasks before you can create the cloud definitions and load them into storage:

- "Defining and initializing the Archive Database, Cloud Definition Database, and Restore Queue files" on page 26
- "Customizing the REXX library" on page 14

Procedure

1. If you have already started the product's ISPF interface, you can ignore this step and go on to step 2; otherwise, at the **Option** prompt on the ISPF menu panel, type TSO AXQISP and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.
2. At the **Option** prompt on the Advanced Archive for DFSMShsm Main Menu panel, type 0 and press Enter.

3. At the **Option** prompt on the Settings Menu panel, type `4` and press Enter.
4. From the Cloud Definition List panel, begin creating a cloud definition by using either of these methods:
   - Use the **C** primary command to start a completely new cloud definition:
     a. Type `C` at the **Option** prompt and press Enter.
     b. At the **Select one** prompt on the Cloud Types pop-up panel, type the appropriate letter for the type of cloud definition that you want to create. Press Enter to display the Cloud Definition Entry panel.
   - Use a line command to start a cloud definition by modifying an existing cloud definition:
     a. Locate in the list a cloud definition of the appropriate type and type `C` in the **Cmd** column next to that definition.
     b. Press Enter to display the Cloud Definition Entry panel.

     Note: You cannot change the cloud definition type from the Cloud Definition Entry panel. If the list of existing cloud definitions does not contain a definition of the appropriate type, use the **C** primary command to create the new definition.

   Note: To modify an existing cloud definition without changing its name or type, use the **E** (Edit) line command.
5. On the Cloud Definition Entry panel, complete the fields by specifying the appropriate information in the text entry areas.

   Note: The fields that appear on the Cloud Definition Entry panel are specific to the cloud type. Press F1 to display field description information.
6. When you have completed your cloud definition, press F3 to save the definition and display the Cloud Definition List panel.
7. Press F3 to exit the Cloud Definition List panel and display the Settings Menu panel.
8. On the Settings Menu panel, type `X` at the **Option** prompt and press Enter.
9. On the Main Menu panel, type `X` at the **Option** prompt and press Enter.
10. Optional: This step is required *only* if you have cloud definitions that have changed after the `AXQTINIT` started task was started up in `ACTDYN` mode. Load the cloud definitions into storage by issuing this command:

    ```
    /F stcname,REFRESH,PARMS
    ```

What to do next

Go on to "Restricting access to product files."

Restricting access to product files

The critical Advanced Archive for DFSMShsm files need adequate protection against deletion and damage.

About this task

The Archive Database, Active Log, Cloud Definition Database (if you intend to archive to and restore from a cloud storage environment), and Archive Database backup files are essential for the proper function of Advanced Archive for DFSMShsm.

Because the archive tape files contain your archived data in a format that is very similar to the format in which the data was stored on the DFSMShsm ML2 tapes, you should provide these files with the same protections that you apply to the DFSMShsm ML2 tapes.

Procedure

1. Use the appropriate security profiles to limit CREATE, DELETE, and UPDATE access for these critical files to only those users who will be executing the Archive, Restore, and maintenance functions.
2. Verify that you have limited CREATE, DELETE, UPDATE, and READ access to only those users who require this type of access. Because the archive tape files could contain data from any file in your data center, restricting Read access to the archive tape files is a necessary precaution.

What to do next

If you need to set up EDM or VRS rules, go on to "Setting EDM or VRS rules." Otherwise, go on to "Starting the ISPF interface for Advanced Archive for DFSMShsm" on page 31.

Setting EDM or VRS rules

This is an optional step. You can specify EDM or VRS rules for archive and ML2 tape management.

About this task

When Advanced Archive for DFSMShsm archives files to tape, each tape is created with permanent retention (`EXPDT=99365`). When a tape no longer contains any valid archived files, Advanced Archive for DFSMShsm sets the tape expiration date to whatever value you specify for the `ARCHIVE-TAPE-EXPIRATION-DAYS` parameter. No EDM or VRS rules are required to control the retention of the archive tapes. If you want to establish EDM or VRS rules, the expiration process also releases the tape from those controls.

When Advanced Archive for DFSMShsm restores archived files, the files are unloaded to a new tape that is formatted like a DFSMShsm ML2 tape and the DFSMShsm control data sets are updated. These new ML2 tapes should have the same EDM or VRS rule management as the ML2 tapes that are created by DFSMShsm.

Procedure

- If you choose to set EDM or VRS rules for the archive tapes, reference program names `AXQRCHIV` and `AXQRCYCL`.
- If your EDM or VRS rules for ML2 tapes use only the data set name to identify the tape files that should be managed, no action is required. However, if your EDM or VRS rules for ML2 tapes reference job name or program name, you must add new rules that match the new ML2 tapes that are created by the Restore process. The name of the programs that create the new ML2 tapes is `AXQRESTR` and `AXQTINIT`.

What to do next

Go on to "Starting the ISPF interface for Advanced Archive for DFSMShsm" on page 31.

Starting the ISPF interface for Advanced Archive for DFSMShsm

(Optional) The ISPF interface provides convenient access to product settings and the SMS Archive Policy Editor. The ISPF interface also provides mechanisms for creating cloud definitions, displaying a list of archived data sets, a list of archive tape volumes, and the Restore queue.

Procedure

At the **Option** prompt on the ISPF menu panel, type this command and then press Enter: `TSO AXQISPF`

What to do next

You have completed the configuration tasks. Go on to Chapter 4, "Archiving inactive data," on page 33.

Chapter 4. Archiving inactive data

Advanced Archive for DFSMShsm supports multiple Archive scenarios.

In general, all of the archive scenarios involve identifying the inactive data sets and then moving those data sets to the archive. However, where the archive scenarios differ most is in how the inactive data sets are identified and selected for processing:

Explicit identification of inactive ML2 data sets
: In this scenario, you specify data set selection criteria that the Archive function compares to the MCDS records (either by reading the MCDS or reading a flat file that contains the unloaded contents of the MCDS) to evaluate the ML2 candidate data sets. Data sets that meet the selection criteria are moved to the archive.

Archiving L0 disk data sets
: In this scenario, you specify data set selection criteria that the Archive function compares to the output from an IDCAMS **DCOLLECT** to evaluate the candidate L0 disk data sets. Data sets that meet the selection criteria are moved to the archive.

Setting up ML3-like policy for your SMS management classes
: In this scenario, you assign archive policies and archive groups to your SMS management class definitions and the Archive function automatically builds the data set selection criteria that implement the ML3-like storage tier.

Because there are differences between the scenarios in how the candidate data sets are evaluated by the Archive process and in how you modify the Archive job JCL, the procedures for the scenarios are documented separately.

The procedures for verifying that the archive contains the correct data sets are the same, regardless of scenario.

Topics:

Archiving explicitly identified ML2 data sets

You specify the data set selection criteria that the Archive function compares to the MCDS records to evaluate the candidate ML2 data sets. Data sets that meet the criteria are then moved to the archive.

About this task

This topic tells you how to archive explicitly identified ML2 data sets. If you need to archive L0 disk data sets or use the Archive function to implement an ML3-like storage tier, your task is documented elsewhere:

- "Archiving L0 disk data sets" on page 36
- "Setting up an ML3-like policy for your SMS management classes" on page 39

Advanced Archive for DFSMShsm provides two methods for coding the data set selection criteria:

- You may code the data set selection criteria within the Archive job itself.
- You may code the data set selection criteria in the `CRITERIA` member of the product parameter library.

You can use console commands to monitor and control the Archive process as it executes. See step 10 for more information.

Note: Users at sites that use DFSMShsm ABARS should be aware that ABARS cannot back up directly from the archive media or restore directly to the archive media the way it does with DFSMShsm-migrated files. When automatic Restore is enabled, Advanced Archive for DFSMShsm becomes aware of the ABARS attempt to access the data set and restores it to DFSMShsm. When automatic Restore is not enabled, ABARS cannot back up the archived files. For these reasons, do not archive files that are likely to be backed up by ABARS.

Procedure

1. Determine what criteria you want to use for classifying ML2 data sets as inactive:
   a. Review the information and examples that are provided in "Selection criteria keyword reference for Archive function" on page 43, and decide which data set selection criteria are best suited for classifying inactive data at your site.
   b. For each of the data set selection criteria keywords that you decide to use, determine what values to use. Be aware that some data set selection criteria are applicable only when the inactive data resides on disk (L0).
   c. If you need to exclude some data sets from Archive processing, determine which data set selection criteria are best suited for identifying the exception data sets.
   d. For each of the exclusion criteria keywords that you decide to use, determine which values will successfully identify those data sets that you want excluded from the archive process.
2. Open `SAXQSAMP` library member `AXQRCHIV` for editing.
3. Provide appropriate job card information.
4. Replace all occurrences of `@HLQ` with your data set prefix.
5. Provide the data set selection criteria that will classify candidate data sets as inactive and the criteria that will exclude data sets from Archive processing. Use the information and examples that are provided in "Selection criteria keyword reference for Archive function" on page 43, as a guide for criteria keyword specification.
   - You may code the data set selection criteria in the job itself.
   - You may code the data set selection criteria in member `CRITERIA` of the product parameter library.
6. Add the `ARCHIVE_SOURCE=ML2` data set selection criteria to the rest of your data set selection criteria. Do not include any blank spaces in your specification. For example, `ARCHIVE_SOURCE=ML2` is valid, but `ARCHIVE_SOURCE= ML2` and `ARCHIVE_SOURCE = ML2` are not valid specifications.

Note: Your AXQRCHIV JCL can include multiple ARCHIVE_SOURCE= criteria, but Archive processing honors only the first occurrence. If you omit the ARCHIVE_SOURCE= criteria from the JCL, Archive processing assumes that the candidate data sets are ML2 data sets.

7. Optional: If you want the Archive process to use a flat file that contains the unloaded contents of the HSM MCDS, rather than the MCDS itself, add a //FLATMCDS DD statement to the JCL. Here is an example of a //FLATMCDS DD statement:

   ```
   //FLATMCDS DD DISP=SHR,DSN=dsname
   ```

   where *dsname* is the name of the flat file into which the MCDS contents were copied.

   Note: When the //FLATMCDS DD statement is present in the Archive JCL, Archive processing bypasses the function that determines the catalog status of the candidate data sets and the function that determines the calculated expiration date of the candidate data sets.

8. Optional: If you want to verify before archiving the data that your selection criteria are going to produce the expected result, run the Archive job in simulation mode:
   a. Add PARM=SIM to the EXEC control card in the JCL.
   b. Run the simulation job.
   c. Review the information that was written to the ARCHRPT DD to determine which data sets were selected for processing. This is an example of the information written to an ARCHRPT report:

```
VER 1.1                              A D V A N C E D  A R C H I V E  FOR  DFSMShsm            AXQRCHIV JOB09763
DATE: 10/10/2016.284  TIME: 05:11:01   CANDIDATE RECOREDS PASSED TO ARCHIVE TASK FOR PLEXZ0A            PAGE      1

 ML/2   BLK/ID   ORIG                DATA SET NAME                 EXP    SIZE IN KB             RESULTS
<VSER> <IN HEX> <VSER> <-----------------------------------------<-DATE-> <--------> <------------------------------>
-------------------------------------------------------------------------------------------------------------------
START OF GRUP:         GROUP01

VD0892 0000012D R1PD13 APPLTS.AXQ.AXQMAN02.PS.F0098               ********         16 ARCHIVED TO C10439 BID=00000001
VD0892 0000012E R1PD04 APPLTS.AXQ.AXQMAN02.PS.F0099               ********         16 ARCHIVED TO C10439 BID=00000004
VD0892 0000012F R1PD10 APPLTS.AXQ.AXQMAN02.PS.F0100               ********         16 ARCHIVED TO CL0439 BID=00000007

SIZE OF PROCESSED GROUP:          0.000GB #DATASETS IN GROUP:                  3
*******************************************************************************************************************

TOTAL ARCHIVED:                   0.000GB #DATASETS:                           3 #GROUPS PROCESSED:            1
```

   d. If the simulation results are not as you expected them to be, modify your selection criteria and repeat the simulation until the results are satisfactory.
   e. When the results confirm that your selection criteria are identifying all of the inactive data sets that you want to archive and all of the data sets that you want excluded from the Archive process, remove the SIM value from the EXEC control card then go to step 9.

   Note: Initially, it is likely that a large volume of data will meet the inactivity criteria that you specify. It is strongly recommended that you run the initial Archive job in simulation mode so that you can review the data that would be selected for archiving before any of the data is actually archived. Note that you can use the ARCHIVE-SELECTION-MAXIMUM-FILES or ARCHIVE-SELECTION-MAXIMUM-GB (or both) parameters to limit the amount of data that is processed by any one Archive job. See Chapter 10, “Parameters,” on page 111, for more information.

9. Submit the job for execution.

Note: Should you need to shut down HSM, you must first stop the Archive job.

10. Optional: To monitor or stop the Archive process, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Archive process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** `F jobname,STATUS` where *jobname* is the job name of the job currently executing.
HALT	When you issue the **HALT** command, the Archive process terminates after the current group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT` where *jobname* is the job name of the job currently executing.
HALT,I	When you issue the **HALT,I** command, the Archive process terminates when the current data set in the group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT,I` where *jobname* is the job name of the job currently executing.

What to do next

Follow the procedures in "Verifying the contents of the archive" on page 57 to confirm that the correct data sets were moved to the archive.

If the Archive function issues error messages or verification reveals that the Archive process did not produce the expected results, go on to "Creating a candidate rejection report" on page 133 to create a report that provides information about why candidate data sets were not processed.

Archiving L0 disk data sets

The Archive function compares your data set selection criteria to the output from an IDCAMS **DCOLLECT** to evaluate the candidate L0 disk data sets. Data sets that meet the criteria are moved to the archive.

About this task

This topic tells you how to archive L0 disk data sets. If you need to archive explicitly identified ML2 data sets or use the Archive function to implement an ML3-like storage tier, your task is documented elsewhere:

- "Archiving explicitly identified ML2 data sets" on page 33
- "Setting up an ML3-like policy for your SMS management classes" on page 39

By default, the Archive function invokes an IDCAMS **DCOLLECT** and uses the **DCOLLECT** output and your data set selection criteria to evaluate the candidate L0 disk data sets. However, you can specify that you want the Archive function to use the output from a earlier execution of **DCOLLECT** for this purpose.

You can use console commands to monitor and control the Archive process as it executes. See step 9 for more information.

Note:

- Users at sites that use DFSMShsm ABARS should be aware that ABARS cannot back up directly from the archive media or restore directly to the archive media the way it does with DFSMShsm-migrated files. When automatic Restore is enabled, Advanced Archive for DFSMShsm becomes aware of the ABARS attempt to access the data set and restore it to DFSMShsm. When automatic Restore is not enabled, ABARS cannot back up the archived files. For these reasons, do not archive files that are likely to be backed up by ABARS.
- When you archive VSAM L0 disk data sets, the entire VSAM sphere for the base cluster is archived; therefore requesting that an individual component of a VSAM sphere be archived can cause the request to be rejected.

Procedure

1. Open SAXQSAMP library member AXQRCHIV for editing.
2. Provide appropriate job card information.
3. Replace all occurrences of @HLQ with your data set prefix.
4. Provide the data set selection criteria that will classify candidate data sets as inactive and the criteria that will exclude data sets from Archive processing. Use the information and examples that are provided in "Selection criteria keyword reference for Archive function" on page 43, as a guide for criteria keyword specification.
   - You may code the data set selection criteria in the job itself.
   - You may code the data set selection criteria in member CRITERIA of the product parameter library.
5. Add the ARCHIVE_SOURCE=L0 data set selection criteria to the rest of your data set selection criteria. Do not include any blank spaces in your specification. For example, ARCHIVE_SOURCE=L0 is valid, but ARCHIVE_SOURCE= L0 and ARCHIVE_SOURCE = L0 are not valid specifications.

   Note: Your AXQRCHIV JCL can include multiple ARCHIVE_SOURCE= criteria, but Archive processing honors only the first occurrence. If you omit the ARCHIVE_SOURCE= criteria from the JCL, Archive processing assumes that the candidate data sets are ML2 data sets.
6. If you want the Archive process to invoke an IDCAMS **DCOLLECT** and compare your data set selection criteria against the DCOLLECT output to evaluate the candidate L0 disk data sets, go on to step 7. Otherwise, if you want the Archive process to use the output from an earlier IDCAMS **DCOLLECT** process to compare against your data set selection criteria, add a //FLATDCOL DD statement to the JCL. Here is an example of a //FLATDCOL DD statement:

   ```
   //FLATDCOL DD DISP=SHR,DSN=ADVARCV.DCOLLECT.OUTPUT
   ```

   where ADVARCV.DCOLLECT.OUTPUT is the name of the flat file that contains the output from the earlier DCOLLECT process.

   Note: When the //FLATDCOL DD statement is present in the Archive JCL, Archive processing bypasses the function that determines the catalog status of

the candidate data sets and the function that determines the calculated expiration date of the candidate data sets.

7. Optional: If you want to verify before archiving the data that the Archive process is going to produce the expected result, run the Archive job in simulation mode:
   a. Add PARM=SIM to the EXEC control card in the JCL.
   b. Run the simulation job.
   c. Review the information that was written to the ARCHRPT DD to determine which data sets were selected for processing. This is an example of the information written to an ARCHRPT report:

```
VER 1.1     ***SIMULATE***      A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQRCHIV JOB10487

DATE: 01/30/2018.030  TIME: 00:48:19    CANDIDATE RECORDS PASSED TO ARCHIVE TASK FOR RSPLEX0D           PAGE      1

 ORIG                 DATA SET NAME               SIZE IN KB             RESULTS
<VSER> <----------------------------------------> <--------> <----------------------------->

-------------------------------------------------------------------------------------------------------------------

START OF GROUP:        RAMSE434

R1PD01 TSTAXQ.AXQ.AXQSE434.PS02                          56 SIM: ARCHIVE FUNCTIONS BYPASSED
R1PD16 TSTAXQ.AXQ.AXQSE434.PS03                          56 SIM: ARCHIVE FUNCTIONS BYPASSED
R1PD05 TSTAXQ.AXQ.AXQSE434.PS04                          56 SIM: ARCHIVE FUNCTIONS BYPASSED
R1PD04 TSTAXQ.AXQ.AXQSE434.PS05                          56 SIM: ARCHIVE FUNCTIONS BYPASSED

SIZE OF PROCESSED GROUP:        0.000GB #DATASETS IN GROUP:                   4

*******************************************************************************************************************


TOTAL ARCHIVED:                   0.000GB #DATASETS:                          4 #GROUPS PROCESSED:          1

******************************** BOTTOM OF DATA ********************************************************************
```

   d. If the simulation results are not as you expected them to be, make one or both of these changes and then repeat the simulation until the results are satisfactory.:
      - Modify the data set selection criteria.
      - Use the output from a different IDCAMS **DCOLLECT** process to compare against your data set selection criteria.
   e. When the results confirm that the **DCOLLECT** output and the selection criteria are identifying all of the L0 disk data sets that you want to archive, remove the SIM value from the EXEC control card and then go to step 8.

   Note: Initially, it is likely that a large volume of data will be selected for archiving. It is strongly recommended that you run the initial Archive job in simulation mode so that you can review the data that would be selected for archiving before any of the data is actually archived. Note that you can use the ARCHIVE-SELECTION-MAXIMUM-FILES or ARCHIVE-SELECTION-MAXIMUM-GB (or both) parameters to limit the amount of data that is processed by any one Archive job. See Chapter 10, “Parameters,” on page 111, for more information.
8. Submit the job for execution.

   Note: Should you need to shut down HSM, you must first stop the Archive job.
9. Optional: To monitor or stop the Archive process, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Archive process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** `F jobname,STATUS` where *jobname* is the job name of the job currently executing.
HALT	When you issue the **HALT** command, the Archive process terminates after the current group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT` where *jobname* is the job name of the job currently executing.
HALT,I	When you issue the **HALT,I** command, the Archive process terminates when the current data set in the group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT,I` where *jobname* is the job name of the job currently executing.

What to do next

Follow the procedures in "Verifying the contents of the archive" on page 57 to confirm that the correct data sets were moved to the archive.

If the Archive function issues error messages or verification reveals that the Archive process did not produce the expected results, go on to "Creating a candidate rejection report" on page 133 to create a report that provides information about why candidate data sets were not processed.

Setting up an ML3-like policy for your SMS management classes

You assign archive policies and archive groups to your SMS management class definitions and the Archive function automatically builds the data set selection criteria that implement the ML3-like storage tier.

About this task

This section tells you how to use the Archive function to set up an "ML3" storage tier. If you need to archive explicitly identified ML2 data sets or archive L0 disk data sets, your task is documented elsewhere:

- "Archiving explicitly identified ML2 data sets" on page 33
- "Archiving L0 disk data sets" on page 36,

To use the Archive function to set up an "ML3" storage tier, you specify the SMS management class name, archive days, and archive group information in the `AXQMCPOL` member of theAdvanced Archive for DFSMShsm parameter library. The

Archive process builds the selection criteria automatically from the information in AXQMCPOL. You can code this information manually, or you can use the SMS Archive Policy Editor to code the information in the AXQMCPOL member of the parameter library.

To illustrate how automatic selection criteria generation works, consider an example in which you have coded the following information in the AXQMCPOL member of the parameter library:

```
*MGMTCLAS  ARCHIVE  ARCHIVE
*  NAME      DAYS    GROUP
*--------  -------  --------
STANDARD      720   COSGRP1
ARCHIVE        60     *
```

The AXQMCPOL member is ignored until you remove the CRITERIA DD from the AXQRCHIV job. When you submit the modified AXQRCHIV job, the Archive process reads the contents of the AXQMCPOL member and generates these selection criteria to compare against the ML2 candidate data sets:

```
//CRITERIA DD *
GROUP_NAME=COSGRP1
MGMTCLASS=STANDARD
#DAYS_SINCE_LASTUSED=00720-99999
GROUP_NAME=ARCHIVE
MGMTCLAS=ARCHIVE
#DAYS_SINCE_LASTUSED=00060-99999
```

Note: Users at sites that use DFSMShsm ABARS should be aware that ABARS cannot back up directly from the archive media or restore directly to the archive media the way it does with DFSMShsm-migrated files. When automatic Restore is enabled, Advanced Archive for DFSMShsm becomes aware of the ABARS attempt to access the data set and restore it to DFSMShsm. When automatic Restore is not enabled, ABARS cannot back up the archived files. For these reasons, do not archive files that are likely to be backed up by ABARS.

Procedure

1. Specify the appropriate policy information in AXQMCPOL:
   a. At the **Option** prompt on the ISPF menu panel, type TSO AXQISPF and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.
   b. Type 0 at the **Option** prompt on the Main Menu and then press Enter to display the Settings menu.
   c. Type 5 at the **Option** prompt on the Settings menu and then press Enter to display the SMS Archive Policy Editor panel. The SMS Policy Editor panel displays one row for every SMS management class.
      - If the management class already has an entry in AXQMCPOL, the corresponding **Archive Days** column shows a numeric value. Additionally, if an archive group was specified for that management class, the corresponding **Archive Group** column shows an alphanumeric value.
      - An asterisk (*) in the **Archive Group** column for a management class indicates that no value has been specified for that entry.
   d. Edit the information to assign archive policies and groups to the appropriate management classes.
      - To add an entry for a management class to the AXQMCPOL member, complete these steps:
        1) In the **Archive Days** column, type an integer in the range 1 - 99999.

2) In the **Archive Group** column, type an alphanumeric value (1 - 8 characters in length) that begins with an alphabetic character.

- To remove an entry from the AXQMCPOL member, remove the value from the corresponding **Archive Days** column. There is no need to remove the value from **Archive Group** column for that management class.

e. When you have completed your edits to the fields on the SMS Policy Editor panel, take the appropriate action.
   - To save your changes and exit the SMS Archive Policy Editor panel, type SAVE at the **Option** prompt and then press Enter.
   - To discard your changes and quit the SMS Policy Editor, type CANCEL at the **Option** prompt and then press Enter.

2. Open SAXQSAMP library member AXQRCHIV for editing.
3. Provide appropriate job card information.
4. Replace all occurrences of @HLQ with your data set prefix.
5. Remove the CRITERIA DD from the AXQRCHIV job.
6. Optional: If you want to verify before archiving the data that the Archive process is going to produce the expected result, run the Archive job in simulation mode:
   a. Add PARM=SIM to the EXEC control card in the JCL.
   b. Run the simulation job.
   c. Review the information that was written to the ARCHRPT DD to determine which data sets were selected for processing. This is an example of the information written to an ARCHRPT report:

```
******************************** TOP OF DATA ***************************************************************************
VER 1.1      ***SIMULATE***        A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQRCHIV JOB11405

DATE: 01/30/2018.030  TIME: 05:22:15      CANDIDATE RECORDS PASSED TO ARCHIVE TASK FOR RSPLEX0D           PAGE      1

 ML/2   BLK/ID   ORIG                 DATA SET NAME                    EXP    SIZE IN KB             RESULTS
<VSER> <IN HEX> <VSER> <---------------------------------------> <-DATE-> <--------> <------------------------------>

-------------------------------------------------------------------------------------------------------------------------

START OF GROUP:        COSGRP1

VD0900 000004B5 R1PD04 #AXQ.#AXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 00000982 R1PD00 @AXQ.@AXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 0000169D R1PD06 AAXQ.AAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 00001B9F R1PD08 GAXQ.GAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 0000205F R1PD02 JAXQ.JAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 0000251F R1PD15 PAXQ.PAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 000029DD R1PD00 VAXQ.VAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED
VD0900 00002E9D R1PD01 ZAXQ.ZAXQ001.SMS.PS                      ********        16 SIM: ARCHIVE FUNCTIONS BYPASSED

SIZE OF PROCESSED GROUP:          0.000GB #DATASETS IN GROUP:                 8

*************************************************************************************************************************


TOTAL ARCHIVED:                   0.000GB #DATASETS:                          8 #GROUPS PROCESSED:          1

******************************** BOTTOM OF DATA ************************************************************************
```

   d. If the simulation results are not as you expected them to be, modify your specifications in AXQMCPOL and repeat the simulation until the results are satisfactory.
   e. When the results confirm that all of the inactive data sets that you want to archive will be archived, remove the SIM value from the EXEC control card then go to step 8.

Note: Initially, it is likely that a large volume of data will meet the policy information that you specify in AXQMCPOL. It is strongly recommended that you run the initial Archive job in simulation mode so that you can review the data that would be selected for archiving before any of the data is actually archived. Note that you can use the ARCHIVE-SELECTION-MAXIMUM-FILES or ARCHIVE-SELECTION-MAXIMUM-GB (or both) parameters to limit the amount of data that is processed by any one Archive job. See Chapter 10, "Parameters," on page 111, for more information.

7. Submit the job for execution.

   Note: Should you need to shut down HSM, you must first stop the Archive job.

8. Optional: To monitor or stop the Archive process, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Archive process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** F *jobname*,STATUS where *jobname* is the job name of the job currently executing.
HALT	When you issue the **HALT** command, the Archive process terminates after the current group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** F *jobname*,HALT where *jobname* is the job name of the job currently executing.
HALT,I	When you issue the **HALT,I** command, the Archive process terminates when the current data set in the group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** F *jobname*,HALT,I where *jobname* is the job name of the job currently executing.

What to do next

Follow the procedures in "Verifying the contents of the archive" on page 57 to confirm that the correct data sets were moved to the archive.

If the Archive function issues error messages or verification reveals that the Archive process did not produce the expected results, go on to "Creating a candidate rejection report" on page 133 to create a report that provides information about why candidate data sets were not processed.

Selection criteria keyword reference for Archive function

The Archive process supports numerous selection criteria keywords that can be used to determine whether a given data set is selected for Archive processing. The keywords can also explicitly identify which data sets are to be excluded from Archive processing.

Wildcard support for specifying masks

For Archive processing, you may use wildcard characters in masks for data set names, volume serial numbers, management class names, and storage group names. For more information about using wildcards, see appendix Appendix B, "Wildcard support for specifying selection criteria keywords," on page 209.

Selection criteria keyword restrictions

There are some restrictions on the values that you may specify for selection criteria keywords. For detailed information about these restrictions, see appendix Appendix C, "Selection criteria keyword restrictions," on page 211.

Selection criteria keyword definitions

ARCHIVE_SOURCE=ML2|L0

The ARCHIVE_SOURCE= keyword specifies whether the candidate data sets for archiving reside on ML2 tape or on L0 disk.

You may specify the ARCHIVE_SOURCE= keyword multiple times in one job, but Archive processing accepts the first occurrence only.

Do not include blank spaces in your value specification. For example, ARCHIVE_SOURCE=L0 is a valid specification, but ARCHIVE_SOURCE= L0 and ARCHIVE_SOURCE = L0 are not valid specifications.

Note: If you do not include the ARCHIVE_SOURCE= keyword in your CRITERIA statements, Archive processing assumes that the candidate data sets reside on ML2 tape.

Supported wildcard characters: none
Example values: ML2, L0

GROUP_NAME=*name*

The GROUP_NAME= keyword begins a group of CRITERIA selection statements, where *name* is the group name. This is an optional keyword, but if you do not specify a value for name, Advanced Archive for DFSMShsm assigns GROUP_NAME=DFLT.

If you are archiving inactive data to a cloud storage environment (parameter ARCHIVE-TARGET=CLOUD|GROUP), GROUP_NAME=*name* identifies the cloud definition name that is used for the Archive operation. Be aware that you can configure parameter library member AXQEDRGN to exclude certain cloud definitions from automatic Restore processing (see "AXQEDRGN" on page 230 for more information).

The value that you specify for *name* must be a string that is 1 - 8 characters in length.

Supported wildcard characters: none
Example values: STANDARD, PRD22

DSN=*dsnameormask*

The DSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to select the candidate records to include in processing.

The value that you specify must be 1 – 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

DSN>*membername*

The DSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to include in processing. The data set names and masks that you specify in the contents of *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use %, *, and ** in the values that you specify for data set name masks.

Example value for *membername*: ARCHIV27
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

XDSN=*dsnameormask*

The XDSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to identify the candidate records to be excluded from processing.

The value that you specify must be 1 – 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

XDSN>*membername*

The XDSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to exclude from processing. The data set names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use %, *, and ** in the values that you specify for data set name masks.

Example value for *membername*: DONTSAVE
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

MGMTCLAS=*mgmtclasname*

The MGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want included in processing.

Supported wildcard characters: *, %
Example value: STAND*

MGMTCLAS>*membername*

The MGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to include in processing. The management class names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use % and * in the values that you specify for management class name masks.

Example value for *membername*: INCMCLAS
Example value for masks specified in the contents of member *membername*: STAND*

XMGMTCLAS=*mgmtclasname*

The XMGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want excluded from processing.

Supported wildcard characters: *, %
Example value: STAND*

XMGMTCLAS>*membername*

The XMGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to exclude from processing. The management class names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use % and * in the values that you specify for management class name masks.

Example value for *membername*: IGNORE62
Example value for masks specified in the contents of member *membername*: STAND*

#DAYS_SINCE_CREATE=*n*|*n-nn*

The value that is assigned to the #DAYS_SINCE_CREATE= keyword specifies a number of days, or a range of days, that have elapsed since the data set was created. Candidate data sets whose create dates are the specified number of days old are selected for processing.

- *n* represents an integer in the range 0 – 99999. The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

#DAYS_SINCE_LASTUSED=*n*|*n-nn*
The value that is assigned to the `#DAYS_SINCE_LASTUSED=` keyword specifies a number of days, or a range of days, that have elapsed since the data set was last used. Candidate data sets whose last-used dates match the value or fall within the range of values that are specified for this keyword are selected for processing.

- *n* represents an integer in the range 0 – 99999. The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

#DAYS_SINCE_MIGRATED=*n*|*n-nn*
The value that is assigned to the `#DAYS_SINCE_MIGRATED=` keyword specifies a number of days, or a range of days, that have elapsed since the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values that are specified for this keyword are selected for processing.

- *n* represents an integer in the range 0 – 99999. The migration date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The migration date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

#DAYS_UNTIL_EXPIRATION=*n*|*n-nn*
The value that is assigned to the `#DAYS_UNTIL_EXPIRATION=` keyword specifies a number of days, or a range of days, that remain until the data set expires. Candidate data sets with expiration dates that are this number of days in the future are selected for processing.

- *n* represents an integer in the range 0 – 99999. The current Julian date is subtracted from the expiration date of the candidate data set and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The current Julian date is subtracted from the expiration date of the candidate data set and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Note: Specifying 99999 as a value for this keyword causes the selection of data sets that have permanent expiration dates.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

MIGRATION_DATE=*date* | *startdate-enddate*
The value that is assigned to the `MIGRATION_DATE=` keyword specifies a date, or a range of dates, on or during which the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values that are specified for this keyword are selected for processing.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
  - Gregorian date values must fall within the range 01/01/1900 – 12/31/2999 (MM/DD/YYYY format), 01/01/1900 – 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 – 2999/12/31 (YYYY/MM/DD format).
- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (`-`) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033-2014.365` (note that `2014.033 - 2014.365` is not a valid value)

EXPIRATION_DATE=*date* | *startdate-enddate*
The value that is assigned to the `EXPIRATON_DATE=` keyword specifies a date, or a range of dates, on or during which the data set is scheduled to expire. Candidate data sets whose expiration dates match the value or values that are specified for this keyword are selected for processing.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.

    Note: There are two exceptions to the supported date value range for `EXPIRATION_DATE`.
    - You may specify `0000.000` to select data sets that have a null expiration date.
    - You may specify `9999.365` to select data sets that have a permanent expiration date.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD

– Gregorian date values must fall within the range 01/01/1900 – 12/31/2999 (MM/DD/YYYY format), 01/01/1900 – 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 – 2999/12/31 (YYYY/MM/DD format).

- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (-) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033-2014.365` (note that `2014.033 - 2014.365` is not a valid value)

STORGRP=*storagegroupname*

Note: The `STORGRP=` keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria `ARCHIVE_SOURCE=L0`).

The `STORGRP=` keyword specifies the storage group name that is to be captured from the IDCAMS `DCOLLECT` process or captured from the `DCOLLECT` output flat file. The value that you specify for *storagegroupname* must be a valid storage group name that is 1 - 8 alphanumeric characters.

Supported wildcard characters: `*`, `%`. Note that the IDCAMS `DCOLLECT` process ignores wildcard specifications, but the wildcards are interpreted by Advanced Archive for DFSMShsm during Archive processing.
Example value: `PRD%SET`

STORGRP>*membername*

Note: The `STORGRP>` keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria `ARCHIVE_SOURCE=L0`).

The `STORGRP>` keyword specifies the name of a parameter library member that contains the storage group names that are to be captured from the IDCAMS `DCOLLECT` process or captured from the `DCOLLECT` output flat file. The member name that you specify must be 1 - 8 alphanumeric characters.

Within the contents of member *membername*, storage group names may begin in any column and are delimited by blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use `%` and `*` in storage group name masks. Note that the IDCAMS `DCOLLECT` process ignores wildcard specifications, but the wildcards are interpreted by Advanced Archive for DFSMShsm during Archive processing.

Example value for *membername*: `PRDSET`
Example value for masks specified in the contents of member *membername*: `PRD%SET`

XSTORGRP=*storagegroupname*

Note: The `XSTORGRP=` keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria `ARCHIVE_SOURCE=L0`).

The XSTORGRP= keyword specifies the storage group name that is *not* to be captured from the IDCAMS DCOLLECT process or captured from the DCOLLECT output flat file. The value that you specify for *storagegroupname* must be a valid storage group name that is 1 - 8 alphanumeric characters.

Supported wildcard characters: *, %. Note that the IDCAMS DCOLLECT process ignores wildcard specifications, but the wildcards are interpreted by Advanced Archive for DFSMShsm during Archive processing.
Example value: PRD%SET

XSTORGRP>*membername*

Note: The XSTORGRP> keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria ARCHIVE_SOURCE=L0).

The XSTORGRP> keyword specifies the name of a parameter library member that contains the storage group names that are *not* to be captured from the IDCAMS DCOLLECT process or captured from the DCOLLECT output flat file. The member name that you specify must be 1 - 8 alphanumeric characters.

Within the contents of the specified parameter library member, storage group names may begin in any column and are delimited by blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use % and * in storage group name masks. Note that the IDCAMS DCOLLECT process ignores wildcard specifications, but the wildcards are interpreted by Advanced Archive for DFSMShsm during Archive processing.

Example value for *membername*: PRDSET
Example value for masks specified in the contents of member *membername*: PRD%SET

VOL=*volser*|*startvolser-endvolser*

Note: The VOL= keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria ARCHIVE_SOURCE=L0).

The value that is assigned to the VOL= keyword specifies a volume serial number, or a range of volume serial numbers, of candidate data set names to be captured from the IDCAMS DCOLLECT process or captured from the DCOLLECT output flat file. Candidate data sets whose volsers match the value or values that are specified for this keyword are selected for processing.

- *volser* represents a 1– to 6–byte volume serial number or a volume serial number mask to match against candidate records for inclusion in processing.
- *startvolser-endvolser* represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for inclusion in processing. IDCAMS DCOLLECT ignores ranges of values that are specified for the VOL= keyword, but the Archive job processes the ranges appropriately.

Supported wildcard characters: *, %. Note that the IDCAMS DCOLLECT process permits the selection of volumes.

- You may use % and * in individual volser masks. The Archive process translates the % character in the keyword value to * and then interprets the value string up to the first *.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: PRD*, 1%%A2, 200000–600000 (note that 200000 - 600000 is not a valid value)

VOL>*membername*

Note: The VOL> keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria ARCHIVE_SOURCE=L0).

The VOL> keyword specifies the name of the parameter library member that contains a list of any combination of the following: volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers of data sets to be captured from the IDCAMS DCOLLECT process or captured from the DCOLLECT output flat file for inclusion in processing.

Within the contents of member *membername*, the volume serial numbers that you specify may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as a range of values (*startvolser - endvolser*) where *startvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters: Note that the IDCAMS DCOLLECT process permits the selection of volumes.

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual volser masks. The Archive process translates % to * and then interprets the value string up to the first *.
  - You may not use wildcard characters in the values that are specified for *startvolser* or for *endvolser*.

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000–600000 (note that 20000 - 600000 is not a valid value)

XVOL=*volser* | *startvolser-endvolser*

Note: The XVOL= keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria ARCHIVE_SOURCE=L0).

The value that is assigned to the XVOL= keyword specifies a volume serial number, or a range of volume serial numbers, of candidate data sets that are *not* be captured from the IDCAMS DCOLLECT process or from the DCOLLECT output flat file. Candidate data sets whose volsers match the value or values that are specified for this keyword are excluded from processing.

- *volser* represents a 1– to 6–byte volume serial number or a volume serial number mask to match against candidate records for exclusion from processing.

- *startvolser-endvolser* represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for exclusion from processing. IDCAMS DCOLLECT ignores ranges of values that are specified for the XVOL= keyword, but the Archive job processes the ranges appropriately.

Supported wildcard characters: *, %. Note that the IDCAMS DCOLLECT process does not permit the exclusion of volumes, but the Archive process does.

- You may use % and * in individual volser masks. The Archive process translates the % character in the keyword value to * and then interprets the value string up to the first *.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: PRD*, 1%%A2, 200000–600000 (note that 200000 - 600000 is not a valid value)

XVOL>*membername*

Note: The XVOL> keyword is applied during Archive processing only when the candidate data sets reside on L0 disk (data set selection criteria ARCHIVE_SOURCE=L0).

The XVOL> keyword specifies the name of the parameter library member that contains a list of any combination of the following: volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers of data sets that are *not* be captured from the IDCAMS DCOLLECT process or from the DCOLLECT output flat file.

Within the contents of member *membername*, the volume serial numbers that you specify may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as a range of values (*startvolser-endvolser*) where *startvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters: Note that the IDCAMS DCOLLECT process does not permit the exclusion of volumes, but the Archive process does.

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual volser masks. The Archive process translates % to * and then interprets the value string up to the first *.
  - You may not use wildcard characters in the values that are specified for *startvolser* or for *endvolser*.

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000–600000 (note that 200000 - 600000 is not a valid value)

Rules for specifying criteria statements

The following rules apply to the specification of criteria statements:

- You may code the statements in any sequence, with the exception of the GROUP_NAME= statement. If you are specifying a GROUP_NAME= statement, it must be coded as the first statement of a criteria group.

- You may code only one keyword and its corresponding value per statement. For example:

#DAYS_SINCE_CREATE=100–200	Valid
#DAYS_SINCE_CREATE=100–200#DAYS_SINCE_LASTUSED=50	Not valid

- You may not include blank spaces on either side of the hyphen when specifying a range of values. For example:

#DAYS_SINCE_CREATE=100–200	Valid
#DAYS_SINCE_CREATE=100 – 200	Not valid
#DAYS_SINCE_CREATE=100– 200	Not valid
EXPIRATION_DATE=2014.150–2014.300	Valid
EXPIRATION_DATE=2014.150 – 2014.300	Not valid
EXPIRATION_DATE=2014.150 –2014.300	Not valid

- The hierarchy of the criteria statements is as follows:

TIER-1	
	GROUP_NAME=, ARCHIVE_SOURCE=
TIER-2	
	STORGRP=, STORGRP>
	XSTORGRP=, XSTORGRP>
	#DAYS_SINCE_LASTUSED=
	#DAYS_SINCE_MIGRATED=
	#DAYS_UNTIL_EXPIRATION=
	#DAYS_SINCE_CREATE=
	DSN=, DSN>
	XDSN=, XDSN>
	MGMTCLAS=, MGMTCLAS>
	XMGMTCLAS=, XMGMTCLAS>
	EXPIRATION_DATE=
	MIGRATION_DATE=
	VOL=, VOL>
	XVOL=, XVOL>

- Under a Tier-1 statement, one or more Tier-2 statements may be coded. Each Tier-2 statement is compared as an AND within the sphere of the Tier-1 statement.

  Example 1:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
ARCHIVE_SOURCE=L0
GROUP_NAME=GROUP1
DSN=ABC%.DE*.**
DSN=X*.D123*.HUK
/*
```

In this example, L0 disk data sets with names that match `ABC%.DE*.**` and data sets with names that match `X*.D123*.HUK` are selected as candidates for GROUP1.

Note: If `ARCHIVE_SOURCE=ML2` or the `ARCHIVE_SOURCE=` statement were omitted from the `CRITERIA` DD statement, ML2 data sets with names that match `ABC%.DE*.**` and data sets with names that match `X*.D123*.HUK` are selected as candidates for GROUP1.

Example 2:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP2
DSN>INCLDSN1
/*
//INCLDSN1 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

In this example, all data set names or patterns (or both) that exist in parameter library member `INCLDSN1` are selected as candidates for GROUP2.

Example 3:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP3
DSN=SYS*.CAT*.ONE.**
DSN>INCLDSN2
XDSN=SYS*.CAT1*.ONE.**
#DAYS_SINCE_CREATE=200
MIGRATION_DATE=04/19/2009-06/30/2010
/*
//INCLDSN2 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

In this example, candidate records that have data set names that match `SYS*.CAT*.ONE.**` or match the names or patterns (or both) in parameter library member `INCLDSN2` but do not match data set names that match `SYS*.CAT1*.ONE.**` and have a `#DAYS_SINCE_CREATE=` value of 200 and a `MIGRATION_DATE=` value in the range 04/19/2009–06/30/2010 are selected as candidates for GROUP3.

Example 4:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010 EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP4
XSTORGRP>EXCLSTGR
ARCHIVE_SOURCE=L0
/*
//EXCLSTGR DD *
DASDSTG*
DB2STG%%
/*
//
```

In this example, L0 disk candidates whose storage group names match `TSOGRP%%` are selected for Archive processing.

Example 5:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP2
STORGRP>INCLSTG1
ARCHIVE_SOURCE=L0
/*
//INCLSTG1 DD *
DASDSTG*
DB2STG%%
/*
```

In this example, L0 disk candidate records whose storage groups match DASDSTG* or DB2STG%% are selected as candidates for GROUP2.

Example 6:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP3
XSTORGRP=TSOGRP%%
ARCHIVE_SOURCE=L0
/*
```

In this example, L0 disk candidate records whose storage group matches TSOGRP%% are rejected as candidates for GROUP3.

Example 7:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP4
XSTORGRP>XCLDSTGR
ARCHIVE_SOURCE=L0
/*
//EXCLSTGR DD *
DASDSTG*
DB2STG%%
/*
```

In this example, L0 disk candidate data records whose storage group matches DASDSTG* or DB2STG%% are rejected for GROUP4.

Example 8:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP5
VOL=PRD*
ARCHIVE_SOURCE=L0
/*
```

In this example, L0 disk candidate records whose volume serial numbers match PRD* are selected for GROUP5.

Example 9:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP6
VOL>INCLVOL1
ARCHIVE_SOURCE=L0
/*
//INCLVOL1 DD *
134%%5
200000-600000
/*
```

In this example, L0 disk candidate records whose volume serial numbers match 134%%5 or fall in the range 200000-600000 are selected for GROUP6.

Example 10:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP7
XVOL=300000-400000
ARCHIVE_SOURCE=L0
/*
```

In this example, L0 disk candidate records whose volume serial numbers fall in the range 300000-400000 are rejected as candidates for GROUP7.

Example 11:

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP8
XVOL>EXCLVOL1
ARCHIVE_SOURCE=L0
/*
//EXCLVOL1 DD *
999*
AB0000-AB9999
/*
```

In this example, L0 disk candidate records whose volume serial numbers match 999* or fall in the range AB0000-AB9999 are rejected as candidates for GROUP8.

- At a minimum, one Tier-1 statement and one Tier-2 statement must be coded for a candidate to be selected for processing.
- For keywords that support value ranges, the values specified are always internally organized so that the lower of the two value specifications is compared first. For example, if `#DAYS_SINCE_CREATE=300–20` is coded, before the statement is used for comparison, it is reorganized as `#DAYS_SINCE_CREATE=20–300`.
- To code comment statements, code an asterisk (`*`) in the first position within the statement.

Verifying the contents of the archive

After you have successfully run the Archive job, you can confirm that the appropriate data sets were indeed archived.

You can use any of these methods to verify the contents of the archive:

- You can review the report and log information that is generated by the Archive job.
  - The `ARCHRPT` report is always generated by the Archive job, regardless of whether you ran it in simulation mode.
  - The `ARCHLOG` information is generated only for Archive jobs that are not run in simulation mode.

  For more information, see "Using Archive job report and log information to verify archive contents" on page 58.
- You use the ISPF interface to display a filtered list of the data sets in the archive, and optionally, you can list the archive tapes. For more information, see "Using the ISPF interface to display a list of archived data set tape volumes" on page 61 and "Using the ISPF interface to display a list of archived data set tape volumes" on page 61.
- You can run the Archive Database Report function to list the data sets that are currently in the Archive Database and list the tapes where the inactive data sets are archived. For more information, see "Using the Database Report to verify the contents of the archive" on page 62.

Using Archive job report and log information to verify archive contents

When any Archive job is run, it writes a report to the ARCHRPT DD, showing which candidate data sets were selected for processing. Archive jobs run in non-simulation mode also write information about the processing to the ARCHLOG DD.

About this task

As an alternative to using the ISPF interface's Data Set List panel, you can use either of these methods to verify archive contents:

- Use the ISPF interface to list the data sets in the archive. For more information, see "Using the ISPF interface to display a list of archived data sets" on page 59.
- Run an Archive Database report to confirm that the appropriate data sets were archived. For more information, see "Creating an Archive Database report" on page 85.

Procedure

Review the information that was written to the ARCHRPT DD, and if the Archive job was run in non-simulation mode, also review the information that was written to the ARCHLOG DD. The following figure shows an example of the ARCHRPT information for an Archive job that was not run in simulation mode:

```
VER 1.1                              A D V A N C E D  A R C H I V E  FOR  DFSMShsm            AXQRCHIV JOB09763
DATE: 10/10/2016.284  TIME: 05:11:01   CANDIDATE RECOREDS PASSED TO ARCHIVE TASK FOR PLEXDEV4            PAGE      1

 ML/2   BLK/ID   ORIG                DATA SET NAME                 EXP    SIZE IN KB            RESULTS
<VSER> <IN HEX> <VSER> <-----------------------------------------<-DATE-> <--------> <----------------------------->
-------------------------------------------------------------------------------------------------------------------
START OF GRUP:         GROUP01

VD0892 0000012D R1PD13 APPLTS.AXQ.AXQMAN02.PS.F0098               ********         16 ARCHIVED TO C10439 BID=00000001
VD0892 0000012E R1PD04 APPLTS.AXQ.AXQMAN02.PS.F0099               ********         16 ARCHIVED TO C10439 BID=00000004
VD0892 0000012F R1PD10 APPLTS.AXQ.AXQMAN02.PS.F0100               ********         16 ARCHIVED TO CL0439 BID=00000007

SIZE OF PROCESSED GROUP:          0.000GB #DATASETS IN GROUP:                  3
*******************************************************************************************************************

TOTAL ARCHIVED:                   0.000GB #DATASETS:                           3 #GROUPS PROCESSED:            1
```

The following figure shows an example of the log information that is written to ARCHLOG:

```
AXQ00500I ARCHIVE INITIALIZATION STARTED
AXQ00501I ARCHIVE INITIALIZATION COMPLETE

AXQ00560I PROCESSING DATA SET - APPLTS.AXQ.AXQMAN02.PSF0098
AXQ00564I DS IS PROPERLY CATALOGED TO MIGRAT

AXQ00687I THE ARCHIVE DEVICE PRIMARY VOLSER IS C10029

AXQ00664I DATA SET SUCCESSFULLY COPIED
AXQ00536I ARCHIVE DB DATA SET RECORD SUCCESSFULLY WRITTEN
AXQ00537I ARCHIVE DB TAPE RECORD SUCCESSFULLY WRITTEN
AXQ00649I ARC0182I NO BACKUP VERSION(S) DELETED FOR APPLTS.AXQ.AXQMAN02.PSF0098
AXQ00538I BDELETE SUCCESSFULLY PROCESSED
AXQ00540I HDELETE SUCCESSFULLY PROCESSED
AXQ00674I DATA SET SUCCESSFULLY CATALOGED TO RCHIVE
AXQ00580I DATA SET SUCCESSFULLY ARCHIVED
```

Using the ISPF interface to display a list of archived data sets

After you run the Archive job, you can use the ISPF interface Data Set List panel to confirm that the appropriate data sets that have been archived.

About this task

As an alternative to using the ISPF interface's Data Set List panel, you can use either of these methods to verify archive contents:

- Review the report and log information that is written by the Archive job to the `ARCHRPT` DD and the `ARCHLOG` DD, respectively. For more information, see "Using Archive job report and log information to verify archive contents" on page 58.
- Run an Archive Database report to confirm that the appropriate data sets were archived. For more information, see "Creating an Archive Database report" on page 85.

Procedure

1. At the **Option** prompt on the ISPF menu panel, type `TSO AXQISPF` and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.
2. From the Main Menu panel, type `1` at the **Option** prompt and press Enter. The Data Set List panel opens. For each data set that has been archived, the following information is shown:

   DSN Displays the name of the archived data set.

   Record Version
   Displays the database record version.

   Archive Date
   Displays the date on which the data set was archived.

   Archive Time
   Displays the time at which the data set was archived.

   Archive Type
   Displays the type of archive: `T` (tape) or `C` (cloud storage environment).

   Archive Tape Copy1
   You can create as many as four copies of the archive for backup and other security purposes. This field shows where the first copy of the archive resides.
   - For files that have been archived to tape, this field shows the volume serial number of the first copy of the tape.
   - For files that have been archived to a cloud storage environment, this field shows the pseudo volume serial number that is used to group within the cloud storage environment the first copy of the archived data.

   Archive Tape Copy2
   You can create as many as four copies of the archive tape for backup and other security purposes. This field shows the volume serial number of the second copy of the archive tape (if a second copy was created).

   Archive Tape Copy3
   You can create as many as four copies of the archive tape for backup and other security purposes. This field shows the volume serial number of the third copy of the archive tape (if a third copy was created).

Archive Tape Copy4
You can create as many as four copies of the archive tape for backup and other security purposes. This field shows the volume serial number of the fourth copy of the archive tape (if a fourth copy was created).

Starting Block ID
Displays the ID of the block on the tape where the archived data set begins.

Size in 16K BLKS
Displays the number of 16K blocks that are used to store the data set.

Creation Date
Displays the date on which the data set was created.

Last Used Date
Displays the date on which the data set was last referenced by an application, as recorded by HSM.

Last Used Time
Displays the time at which the data set was last referenced by an application, as recorded by HSM.

Expiration Date
Displays the expiration date that was originally assigned to the data set.

MGMTCLAS Name
Displays the name of the management class that was assigned to the data set when it was created.

Calculated Date
Displays the date on which Advanced Archive for DFSMShsm estimates that the data set will expire, based on existing attributes.

Migration Date
Displays the date on which the data set was migrated, as indicated by the HSM data.

Migration Time
Displays the time at which the data set was migrated, as indicated by the HSM data.

Migration Volume
Displays the volume serial number of the volume where the data set was migrated, as indicated by the HSM data.

3. Optional: If you want to filter the list of archived data sets so that it contains only those data set whose attributes match your filters, complete these steps:
   a. Type `Filter` in the **Command** line and press Enter to display the Filters panel. You can filter on any combination of the attributes that are listed for each data set.
   b. Enter your filter criteria in the panel and press Enter to display the Data Set List panel. The data set list now includes only those data sets whose attributes match the filter criteria that you specified.
4. Optional: At this point, you can use the Data Set List panel to specify which archived data sets you want placed in the Restore Queue. For instructions, see "Using the RECOVER commands to restore archived data" on page 83.
5. Press F3 to return to the Main Menu.

What to do next

If the contents of the archive are not what you expected them to be, you can modify the Archive job JCL to create a candidate rejection report that provides information about the data sets that were rejected by Archive processing. Go on to "Creating a candidate rejection report" on page 133.

If you would like to view a list of the tape volumes to which the archived data sets were written, go on to "Using the ISPF interface to display a list of archived data set tape volumes."

Using the ISPF interface to display a list of archived data set tape volumes

From the Tape List panel you can view a list of tape volumes to which the archived data sets have been written.

Procedure

1. At the **Option** prompt on the ISPF menu panel, type `TSO AXQISPF` and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.
2. From the Main Menu panel, type `2` at the **Option** prompt and press Enter. The Tape List panel opens, showing the following information for each tape volume:

   Archive Volser
   Displays the volume serial number for the tape.

   Archive Date
   Displays the date on which the archive tape was created.

   Archive Time
   Displays the time at which the archive tape was created.

   Group ID
   Displays the group ID for this archive tape, as defined by the archive criteria.

   Archive Tape Copy1
   You can create as many as four copies of the archive tape for backup and other security purposes. This field displays the volume serial number of the first copy of the archive tape.

   Archive Tape Copy2
   You can create as many as four copies of the archive tape for backup and other security purposes. This field displays the volume serial number of the second copy of the archive tape (if one was created).

   Archive Tape Copy3
   You can create as many as four copies of the archive tape for backup and other security purposes. This field displays the volume serial number of the third copy of the tape (if one was created).

   Archive Tape Copy4
   You can create as many as four copies of the archive tape for backup and other security purposes. This field displays the volume serial number of the fourth copy of the tape (if one was created).

Target Capacity
Displays the target capacity (in megabytes) that was assigned when the archive tape was created, based on the current value of the ARCHIVE-TARGET-SIZE parameter.

Used Capacity
Displays the amount of data (in megabytes) that was written to the archive tape when it was created.

Active capacity
Displays the amount of data (in megabytes) that is still valid (has not been expired by the Cleanup process (AXQCLNUP)) on the active tape.

Full? Indicates whether the archive tape was marked as full when the archive process completed.

3. Optional: If you want the list of tape volumes to include only those tape volumes whose attributes match your filters, specify filter criteria in the **VOLSER** and **GROUP ID** fields and press Enter. When the list is refreshed, it includes only those volumes whose attributes match your filter criteria.
4. Press F3 to return to the Main Menu.

Using the Database Report to verify the contents of the archive

The Database Report function generates a list of data sets that are currently in the Archive Database, a list of tapes where the inactive data sets are archived, and provides summary information.

About this task

As an alternative to running a Database Report, you can use either of these methods to verify archive contents:

- Review the report and log information that is written by the Archive job to the ARCHRPT DD and the ARCHLOG DD, respectively. For more information, see "Using Archive job report and log information to verify archive contents" on page 58.
- Use the ISPF interface to list the data sets in the archive. For more information, see "Using the ISPF interface to display a list of archived data sets" on page 59.

Procedure

Use the information in Chapter 6, "Archive Database reporting," on page 85 to generate an Archive Database report.

What to do next

If the contents of the archive are not what you expected them to be, you can modify the Archive job JCL to create a candidate rejection report that provides information about the data sets that were rejected by Archive processing. Go on to "Creating a candidate rejection report" on page 133.

Chapter 5. Restoring archived data

When archived data sets are needed for processing, you can restore them from the archive tapes or cloud storage environment to ML2 tape or, in the case of archived L0 disk data, to disk.

For archived ML2 data sets, the Restore process writes the selected data sets to a new DFSMShsm ML2 tape and updates the MCDS with information about the restored data sets.

For archived L0 disk data sets, the Restore process restores the selected data sets to disk.

- For a non-VSAM data set, the data set is restored with the same SMS attributes that existed when the data set was archived.
- For a VSAM data set, the entire VSAM sphere that existed when the data set was archived is restored.

If you so specify, Advanced Archive for DFSMShsm can drive an automatic DFSMShsm **HRECALL** of the file (for more information, see "RESTORE-TO-DRIVE-DYNAMIC-HRECALL" on page 131).

Advanced Archive for DFSMShsm provides these methods for restoring data sets from the archive tapes or a cloud storage environment to ML2 tape or to L0 disk:

Restore data sets automatically
: If the AXQTINIT started task is running in ACTDYN mode, a file is restored dynamically whenever an attempt is made to access it, much like DFSMShsm performing an **HRECALL** dynamically. If you choose to, you can exclude from automatic Restore processing data sets based on their archive group name. See "AXQEDRGN" on page 230 for more information about specifying a list of archive group names (which are identified by GROUP_NAME keyword values) to exclude from automatic Restore processing.

Restore data sets by executing a batch job
: You can edit the JCL in member AXQRESTR of the Advanced Archive for DFSMShsm JCL sample library to include the data set selection criteria for the Restore and submit the job for execution.

Restore data sets by using the RECOVER commands from the ISPF interface
: You can use the Advanced Archive for DFSMShsm ISPF interface to display a filtered list of archived data sets and then use the **RECOVER** commands to recover some or all of the archived data sets.

Note: Be aware that regardless of whether the automatic Restore feature is enabled, some utilities and programs recognize the archived data sets as non-VSAM data sets that are cataloged to a tape device and the utility or program might act accordingly.

Topics:

Restoring archived data sets automatically

You can configure the AXQTINIT started task so that whenever an archived data set is referenced, that data set is restored automatically to ML2 tape or, in the case of an archived L0 disk data set, to disk.

About this task

The automatic Restore function has three modes. You specify which mode you want the automatic Restore function to use by setting a start parameter during AXQTINIT started task JCL configuration (see "Customizing the started task JCL" on page 21):

ACTDYN mode

If the ACTDYN start parameter has been coded in the AXQTINIT started task, whenever an archived data set is referenced, it is restored automatically to ML2 tape or (in the case of archived L0 disk data sets) to disk.

Note:

- In general, running AXQTINIT in ACTDYN mode does not impact data set access significantly; however, you might notice some incompatibilities when the following commands are used:
  - The TSO **ALTER** or IDCAMS **ALTER** command
  - The TSO **DELETE** or IDCAMS **DELETE** command, particularly when it is used with the MASK keyword or generic data set names and with object- or entity-type keywords
  - The ISPF **BROWSE** command
- When an archived data set is referenced for a delete operation and you have enabled automatic Restore processing, Advanced Archive for DFSMShsm attempts to delete the data set from the archive without performing a Restore operation. If the referenced data set cannot be deleted from the archive when the request is made, Advanced Archive for DFSMShsm restores the data set, rather than allowing DFSMShsm to perform the delete.
- During an automatic Restore operation, Advanced Archive for DFSMShsm performs an automatic data set deletion without a Restore to DFSMShsm *only* if the user ID that is associated with the DELETE request has SAF authority to delete the data set.

ACT mode

If the ACT start parameter has been coded in the AXQTINIT started task, whenever an archived data set is referenced, a warning message is issued to the referencing program, but the archived data set is not restored to ML2 tape or (in the case of archived L0 disk data sets) to disk.

DEACT mode

If the DEACT start parameter has been coded in the AXQTINIT started task, no attempt is made to react to references to archived data.

Note:

- Be aware that regardless of whether the automatic Restore function is enabled, some utilities and programs recognize the archived data sets as non-VSAM data sets that are cataloged to a tape device and the utility or program might act accordingly.

- Be aware that AXQTINIT handles the following DD statements in a special manner and that they should be assigned to DUMMY:

  AXQSVBYP
  Temporarily bypasses **LOCATE** intercept processing for the job step, which has the effect of running the job step in DEACT mode.

  AXQTRACE
  Use this DD only at the direction of IBM Software Support. It enables diagnostic output for the job step in which it is coded.

Procedure

1. Read the information that is provided in "Operator command reference" on page 66 so that you are familiar with the console commands available for controlling the automatic Restore process.
2. Optional: If you want to explicitly exclude from automatic Restore processing data sets that were archived based on their archived group name (which is identified by the value that was assigned to the GROUP_NAME keyword when the data sets were archived), specify the archive group names in parameter library member AXQEDRGN. See "AXQEDRGN" on page 230 for more information about coding an exclusion list.
3. If AXQTINIT was not coded with the ACTDYN start parameter during product configuration, use the **ACTIVATE** operator command to enable automatic restore processing.
4. Optional: Use the operator commands to control restore processing. For more information about these commands, see "Operator command reference" on page 66.

   Note: Should you need to shut down HSM, you must first deactivate the automatic Restore process.

Example

The following figure shows an example of the summary log output from a successful automatic Restore of archived data set PDTEST.DYNREST.FILE0001:

```
  RESTORE    RESTORE    ARCH   BLK/ID                DATA SET NAME              SIZE IN KB          RESULTS
<--DATE--> <--TIME---> <VSER> <IN HEX> <-------------------------------------> <--------> <------------------------------>
2016.07.21 01.02.26.17 c20687 00000001 PDTEST.DYNREST.FILE0001                          49 RESTORED TO C20688 BID=00000001
```

The summary log output includes this information:

RESTORE DATE
The date on which the data set was restored, in YYYY.MM.DD format.

RESTORE TIME
The time at which the data set was restored, in HH.MM.SS.TT format.

ARCH VSER
The volume serial number of the archive tape or the internal identifier of the cloud storage location from which the data set was restored.

BLK/ID IN HEX
The internal identifier that was used to locate the data set on the archive device medium.

DATA SET NAME
The name of the data set that was restored.

SIZE IN KB
The size of the restored data set, including any metadata that was stored with it. The size is defined in kilobytes, where a kilobyte is defined as 1000 characters.

RESULTS
A brief description of the result of the Restore operation. Typically, the result has the format `RESTORED TO vvvvvv BID=bbbbbbbb`, where *vvvvvv* is the DFSMShsm ML2 tape volume serial number to which the data set was restored and *bbbbbbbb* is the internal block identifier that was used to locate the data set on the tape. For information about other possible results, see "Candidate report message reference" on page 203.

Operator command reference

Advanced Archive for DFSMShsm provides several operator commands for interacting with the `AXQTINIT` started task for automatic Restore operations.

ACTIVATE

Activates the Catalog Address Space hook, the **LOCATE** SVC intercepts, or both.

Syntax	`ACTIVATE ALLWARN|ALLDYN|LOCWARN|LOCDYN|CAS`
Operands	**ALLWARN** Activate the Catalog Address Space hook and the SVC 26 **LOCATE** hook, in warning mode. **ALLDYN** Activate the Catalog Address Space hook and the SVC 26 **LOCATE** hook, in dynamic restore mode. **LOCWARN** Activate only the SVC 26 **LOCATE** hook, in warning mode. **LOCDYN** Activate only the SVC 26 **LOCATE** hook, in dynamic restore mode. **CAS** Activate only the Catalog Address Space hook.
Note	It is recommended that the Catalog Address Space hook and the SVC 26 **LOCATE** hook both be in the same state. The hooks should both be activated or both be deactivated.

DEACTIVATE

Deactivates the Catalog Address Space hook, the **LOCATE** SVC intercepts, or both.

Syntax	`DEACTIVATE ALL|LOCATE|CAS`
Operands	**ALL** Deactivate the Catalog Address Space hook and the SVC 26 **LOCATE** hook. **LOCATE** Deactivate only the SVC 26 **LOCATE** hook. **CAS** Deactivate only the Catalog Address Space hook.
Note	It is recommended that the Catalog Address Space hook and the SVC 26 **LOCATE** hook both be in the same state. The hooks should both be activated or both be deactivated.

DIAG

Displays diagnostic and statistical information.

Syntax	`DIAG`
Operands	None
Note	Use only under the direction of IBM Software Support.

DISABLE

Disables subsystem activity or tracing. Disabling a subsystem is somewhat different from deactivating intercepts; **DISABLE** keeps the **LOCATE** intercept in its current state, but causes it to internally skip processing, which has the effect of disabling started task processing.

Syntax	`DISABLE SUBSYSTEM|TRACING`
Operands	**SUBSYSTEM** Keeps hooks in their current state but causes the **LOCATE** intercept to skip its processing. **TRACING** Disables product tracing.
Note	Use this command only under the direction of IBM Software Support.

DISPLAY

Displays various types of product information.

Syntax	`DISPLAY ALL|MODADDR|MODHDR|SUBSYSTEM|TRACING`
Operands	**ALL** Display the status of the subsystem and the status of product tracing. **MODADDR** *modname* Display the address of module *modname*. **MODHDR** *modname*|**ALL** Display header information for module *modname* or for all modules. **SUBSYSTEM** Display the status of the subsystem. **TRACING** Display the status of product tracing.
Note	Use the `MODADDR`, `MODHDR`, and `TRACING` operands only under the direction of IBM Software Support.

ENABLE

Enables previously disabled subsystem activity or enables product tracing.

Syntax	`ENABLE SUBSYSTEM|TRACING`

Operands	**SUBSYSTEM** Enable product intercept processing. **TRACING** Enable product tracing.
Note	Use this command only under the direction of IBM Software Support.

REFRESH

Refreshes the parameters that are passed to the automatic Restore program, as specified in the AXQPRLIB parameter data set, as well as in certain critical hook modules. The **REFRESH** command refreshes the same parameters as those that are passed to the batch Restore program.

The AXQCASHK and AXQCASHK2 modules manage the Catalog Address Space hooks, the AXQS1INT module manages the **LOCATE** SVC hook, and the AXQSVC26 module is the actual **LOCATE** SVC replacement code.

It is unnecessary to deactivate the hooks before refreshing the parameters or modules. The old modules are still used for any active processing, and new modules and parameters are used for the next invocation of a hook.

Syntax	REFRESH ALL|MODS|PARMS
Operands	**ALL** Refresh the parameter library values and the hook modules. **MODS** Refresh only the hook modules. **PARMS** Refresh only the parameter library values.
Note	Under normal circumstances, only the parameter library values should need to be refreshed while the started task is running. Use the MODS operand only under the direction of IBM Software Support.

SHUTDOWN

Shuts down the AXQTINIT started task and (optionally) produces an SVC **DUMP** of the address space. Alternatively, you can use the z/OS **STOP** command to request that the started task be shut down.

Syntax	SHUTDOWN [none]|DUMP
Operands	**[none]** Perform an orderly shutdown. **DUMP** Create an SVC DUMP and then perform an orderly shutdown.
Note	Use the DUMP operand only under the direction of IBM Software Support.

STATUS

Displays status information about the Catalog Address Space hook, the SVC 26 **LOCATE** hook, or both.

Syntax	STATUS ALL|LOCATE|CAS

Operands	**ALL**	Display the status of the Catalog Address Space hook and the SVC 26 **LOCATE** hook.
	LOCATE	Display the status of the SVC 26 **LOCATE** hook only.
	CAS	Display the status of the Catalog Address Space hook only.

STOP

Shuts down the product and (optionally) produces an SVC DUMP of the address space.

Syntax	STOP [none]|DUMP
Operands	**[none]** Perform an orderly shutdown. **DUMP** Create an SVC DUMP and then perform an orderly shutdown.
Note	Use the DUMP operand only under the direction of IBM Software Support.

Modifying and executing the Restore job JCL

One method of restoring archived data sets to ML2 tape or (in the case of archived L0 disk data sets) to disk is to edit and submit the batch Restore job in the AXQRESTR JCL sample library member. When you edit the JCL, you can specify the selection criteria that will identify the data sets that you want restored.

About this task

Automatic Restore is a function of the started task not the batch Restore job.

You can use console commands to monitor and control the Restore process as it executes. See step 8 for more information.

Procedure

1. Open JCL sample library member AXQRESTR for editing.
2. Provide appropriate job card information.
3. Replace all occurrences of @HLQ with your data set prefix.
4. Optional: Depending on the system default values that are set for your environment, you might need to add the SIZE= and TIME= parameters to the EXEC PGM= statement.
   - For the SIZE= parameter, you may specify whatever value your environment requires; however, be aware that specifying a value that is less than 8M could cause storage-related abends when L0 disk data sets are being restored.
   - By specifying a value for the TIME= parameter, you ensure that the AXQRESTR step does not terminate because it had to wait for an excessive period of time. The default value is 1440 minutes. See the *z/OS MVS JCL Reference* for more information about this parameter.

   The following figure shows the SIZE= and TIME= parameters coded:

   ```
   //S010     EXEC PGM=AXQRESTR,SIZE=8M,TIME=1440,PARM=SIM
   ```
5. Provide the data set selection criteria that will identify the candidate data sets that you want to restore and the criteria that will exclude data sets from

Restore processing. Use the information and examples that are provided in "Selection criteria keyword reference for Restore function" on page 72, as a guide for criteria keyword specification.

- You may code the data set selection criteria in the job itself.
- Alternatively, you may code the data set selection criteria in member CRITERIA of the product parameter library.

6. Optional: If you do not want to run the Restore in simulation mode, go directly to step 7. Otherwise, if you think it would be prudent to simulate the restoration of the archived data sets before you restore them, complete these steps:
   a. Add PARM=SIM to the JCL, as shown in the following figure.

```
//AXQRESTR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//            NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      56998-AAD                                                     *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      RESTORE FUNCTION                                              *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO SELECT FILES FROM THE ARCHIVE DATABASE    *
//*      TO BE RESTORED TO ML2.                                        *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQRESTR,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
//
```

   b. Run the simulation job.
   c. Review the report information that is written to the RSTRRPT DD to determine which data sets were selected for Restore processing. This is an example of the information written to the RSTRRPT report:

```
VER 1.1      ***SIMULATE***        A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQRESTR JOB04916

DATE: 10/24/2017.297  TIME: 12:19:22       CANDIDATE RECORDS PASSED TO RESTORE TASK FOR PLEXDEV4          PAGE      1

 ARCH   BLK/ID                 DATA SET NAME                 SIZE IN KB             RESULTS
<VSER> <IN HEX> <----------------------------------------> <---------> <----------------------------->

-------------------------------------------------------------------------------------------------------------------------

START OF GROUP:        JOE

CLD01G 00000001 DVNAME.AXQ0102.VSAMDB31                          1,114 SIM: RESTORE FUNCTIONS BYPASSED

SIZE OF PROCESSED GROUP:          0.001GB #DATASETS IN GROUP:                    1

*************************************************************************************************************************

START OF GROUP:        $GENGRPN

C10232 00000001 DVNAME.AXQ0102.VSAMDB30                          1,114 SIM: RESTORE FUNCTIONS BYPASSED

SIZE OF PROCESSED GROUP:          0.001GB #DATASETS IN GROUP:                    1

*************************************************************************************************************************


TOTAL RESTORED:                   0.002GB #DATASETS:                             2 #GROUPS PROCESSED:         2
```

d. If the simulation results are not as you expected them to be, modify the selection criteria appropriately and repeat the simulation until the results are satisfactory.

e. When the results confirm that your selection criteria are identifying all of the archived data sets that you want to restore, remove the `SIM` value from the `EXEC` control card and then go on to step 6.

7. Submit the job for execution.

   Note: Should you need to shut down HSM, you must first stop the Restore job.

8. Optional: To monitor or stop Restore processing, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Restore process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** `F` *jobname*`,STATUS` where *jobname* is the jobname of the job currently executing.
HALT	When you issue the **HALT** command, the Restore process terminates after the current group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F` *jobname*`,HALT` where *jobname* is the jobname of the job currently executing.

Console command	Description
HALT,I	When you issue the **HALT,I** command, the Restore process terminates when the current data set in the group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** F *jobname*,HALT,I where *jobname* is the jobname of the job currently executing.

9. To verify that Restore processing produced the expected results, review the information that the Restore job wrote to the RSTRRPT DD and to the RSTRLOG DD. See step 5 for an example of the RSTRRPT output. This is an example of the information that the Restore job writes to RSTRLOG:

```
AXQ00500I RESTORE INITIALIZATION STARTED
AXQ00501I RESTORE INITIALIZATION COMPLETE

AXQ00660I VALIDATING DATA SET - TSMJDA.RAM0102.VSAMDB30
AXQ00564I DS IS PROPERLY CATALOGED TO RCHIVE
AXQ00667I ARCHIVE DB DATA SET RECORD SUCCESSFULLY READ
AXQ00664I DATA SET SUCCESSFULLY VALIDATED

AXQ00709I RESTORING DATA SET - TSMJDA.RAM0102.VSAMDB30
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.VSAMDB30
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.D1111111.DATA
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.I1111111.INDEX
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.VSAMDB30.AIX
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.VSAMDB30.AIX.DATA
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.VSAMDB30.AIX.INDEX
AXQ00711I UNCATALOG SUCCESSFUL: TSMJDA.RAM0102.VSAMDB30.PATH
AXQ00701I REQUESTING ADRDSSU RSTR VSAM SPHERE: TSMJDA.RAM0102.VSAMDB30
AXQ00702I ADRDSSU RESTORE COMPLETED RC: 00000000
AXQ00664I DATA SET SUCCESSFULLY COPIED

AXQ00662I FINALIZING DATA SET - TSMJDA.RAM0102.VSAMDB30
AXQ00679I ARCHIVE DB DATA SET RECORD SUCCESSFULLY DELETED
AXQ00664I DATA SET SUCCESSFULLY FINALIZED

AXQ00596I TOTAL DATA SETS RESTORED....00000001
AXQ00597I TOTAL DATA SETS BYPASSED....00000000
AXQ00598I TOTAL DATA SETS PROCESSED...00000001

AXQ00599I RESTORE PROCESSING IS COMPLETE. HIGHEST RETURN CODE IS 00000000
```

What to do next

If the Restore results are not as you expected them to be, you can generate a candidate rejection report. For more information about candidate rejection reports, see "Creating a candidate rejection report" on page 133.

Selection criteria keyword reference for Restore function

The Restore process supports numerous selection criteria keywords that can be used to select archived data sets for restoration. You can also use selection criteria to explicitly exclude data sets from Restore processing.

Wildcard support for specifying masks

You may use wildcard characters in masks for data set names, volume serial numbers, and management class names. For more information about using

wildcards, see appendix Appendix B, "Wildcard support for specifying selection criteria keywords," on page 209.

Selection criteria keyword restrictions

There are some restrictions on the values that you may specify for selection criteria keywords. For detailed information about these restrictions, see appendix Appendix C, "Selection criteria keyword restrictions," on page 211.

Selection criteria keyword definitions

GROUP_NAME=*name*

The `GROUP_NAME=` keyword begins a group of `CRITERIA` selection statements, where *name* is the group name.

The value that you specify for *name* must be a string that is 1 – 8 characters in length.

Supported wildcard characters: none
Example values: `STANDARD`, `PRD22`

VOL=*volser*|*startvolser-endvolser*

The value that is assigned to the `VOL=` keyword specifies a volume serial number or a range of volume serial numbers of candidate data set names. Candidate data sets whose volsers match the value or values that are specified for this keyword are selected for processing.

volser represents a 1– to 6–byte volume serial number or a volume serial number mask to match against candidate records for inclusion in processing.

startvolser-endvolser represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for inclusion in processing.

Supported wildcard characters:

- You may use `%` and `*` in individual volser masks.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: `PRD*`, `1%%A2`, `200000–600000` (note that `200000 – 600000` is not a valid value)

VOL>*membername*

The `VOL>` keyword specifies the name of the parameter library member that contains a list of volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers of data sets (or any combination of these) to include in processing.

The volume serial numbers that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as a range (*startvolser-endvolser*) where *startvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that your specify for *membername*.
- Within the contents of member *membername*:
  - You may use `%` and `*` in individual volser masks.

– You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000–600000 (note that 200000 - 600000 is not a valid value)

XVOL=*volser*|*startvolser-endvolser*
The value that is assigned to the XVOL= keyword specifies a volume serial number or a range of volume serial numbers of candidate data set names. Candidate data sets whose volsers match the value or values that are specified for this keyword are excluded from processing.

volser represents a 1– to 6–byte volume serial number or a volume serial number mask to match against candidate records for exclusion from processing.

startvolser-endvolser represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for exclusion from processing.

Supported wildcard characters:

- You may use % and * in individual volser masks.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: PRD*, 1%%A2, 200000–600000 (note that 200000 – 600000 is not a valid value)

XVOL>*membername*
The XVOL> keyword specifies the name of the parameter library member that contains a list of volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers (or any combination of these) of data sets to exclude from processing.

The volume serial numbers that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as a range (*startvolser-endvolser*) where *startvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that your specify for *membername*.
- Within the contents of member *membername*:
  – You may use % and * in individual volser masks.
  – You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000–600000 (note that 200000 – 600000 is not a valid value)

DSN=*dsnameormask*
The DSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to select the candidate records for inclusion in processing.

The value that you specify must be 1 – 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

DSN>*membername*
The DSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to include in processing. The data set names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that your specify for *membername*.
- Within the contents of member *membername*, you may use *, **, and % in the values that you specify for data set name masks.

Example value for *membername*: ARCHIV27
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

XDSN=*dsnameormask*
The XDSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to identify the candidate records to be excluded from processing.

The value that you specify must be 1 – 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

XDSN>*membername*
The XDSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to exclude from processing. The data set names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that your specify for *membername*.
- Within the contents of member *membername*, you may use *, **, and % in the values that you specify for data set name masks.

Example value for *membername*: DONTSAVE
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

MGMTCLAS=*mgmtclasname*
The MGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want included in processing.

Supported wildcard characters: *, %
Example value: STAND*

MGMTCLAS>*membername*
The MGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to include in processing. The management class

names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use % and * in the values that you specify for management class name masks.

Example value for *membername*: INCMCLAS
Example value for masks specified in the contents of member *membername*: STAND*

XMGMTCLAS=*mgmtclasname*

The XMGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want excluded from processing.

Supported wildcard characters: *, %
Example value: STAND*

XMGMTCLAS>*membername*

The XMGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to exclude from processing. The management class names and masks that you specify in the contents of member *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use % and * in the values that you specify for management class name masks.

Example value for *membername*: IGNORE62
Example value for masks specified in the contents of member *membername*:STAND*

#DAYS_SINCE_CREATE=*n*|*n-nn*

The value that is assigned to the #DAYS_SINCE_CREATE= keyword specifies a number of days or a range of days that have elapsed since the data set was created. Candidate data sets whose create dates are the specified number of days old are selected for processing.

- *n* represents an integer in the range 0 – 99999. The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 – 12 is not a valid value)

#DAYS_SINCE_LASTUSED=*n* | *n-nn*

The value that is assigned to the #DAYS_SINCE_LASTUSED= keyword specifies a number of days or a range of days that have elapsed since the data set was last used. Candidate data sets whose last-used dates match the value or fall within the range of values that are specified for this keyword are selected for processing.

- *n* represents an integer in the range 0 – 99999. The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 – 12 is not a valid value)

#DAYS_SINCE_MIGRATED=*n* | *n-nn*

The value that is assigned to the #DAYS_SINCE_MIGRATED= keyword specifies a number of days or a range of days that have elapsed since the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values that are specified for this keyword are selected for processing.

- *n* represents an integer in the range 0 – 99999. The migration date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The migration date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 – 12 is not a valid value)

#DAYS_SINCE_ARCHIVE=*n* | *n-nn*

The value that is assigned to the #DAYS_SINCE_ARCHIVE= keyword specifies a number of days or a range of days that have elapsed since the data set was archived. Candidate data sets whose archive dates match the value or values that are specified for this keyword are selected for processing.

- *n* represents an integer in the range 0 – 99999. The archive date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The archive date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 – 12 is not a valid value)

#DAYS_UNTIL_EXPIRATION=*n* | *n-nn*

The value that is assigned to the `#DAYS_UNTIL_EXPIRATION=` keyword specifies a number of days or a range of days that remain until the data set expires. Candidate data sets with expiration dates that are this number of days in the future are selected for processing.

- *n* represents an integer in the range 0 – 99999. The current Julian date is subtracted from the expiration date of the candidate data set and if the difference is equal to *n*, the data set meets the selection criteria.
- *n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The current Julian date of the candidate data set is subtracted from the expiration date of the candidate data set and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

  Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 – 12` is not a valid value)

MIGRATION_DATE=*date* | *startdate-enddate*

The value that is assigned to the `MIGRATION_DATE=` keyword specifies a date or a range of dates on or during which the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values that are specified for this keyword are selected for processing.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
  - Gregorian date values must fall within the range 01/01/1900 – 12/31/2999 (MM/DD/YYYY format), 01/01/1900 – 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 – 2999/12/31 (YYYY/MM/DD format).
- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (**-**) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033–2014.365` (note that `2014.033 – 2014.365` is not a valid value)

EXPIRATION_DATE=*date* | *startdate-enddate*

The value that is assigned to the `EXPIRATON_DATE=` keyword specifies a date or a range of dates on or during which the data set is set to expire. Candidate data sets whose expiration dates match the value or values that are specified for this keyword are selected for processing.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.

Note: There are two exceptions to the supported date value range for `EXPIRATION_DATE`.

- You may specify `0000.000` to select data sets that have a null expiration date.
- You may specify `9999.365` to select data sets that have a permanent expiration date.

- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
  - Gregorian date values must fall within the range 01/01/1900 – 12/31/2999 (MM/DD/YYYY format), 01/01/1900 – 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 – 2999/12/31 (YYYY/MM/DD format).
- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (`-`) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033–2014.365` (note that `2014.033 - 2014.365` is not a valid value)

ARCHIVE_DATE=*date*|*startdate-enddate*

The value that is assigned to the `ARCHIVE_DATE=` keyword specifies a date or a range of dates on or during which the data set was archived. Candidate data sets whose archive dates match the value or values specified for this keyword are selected for processing.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
  - Gregorian date values must fall within the range 01/01/1900 – 12/31/2999. (MM/DD/YYYY format), 01/01/1900 – 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 – 2999/12/31 (YYYY/MM/DD format).
- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (`-`) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033–2014.365` (note that `2014.033 - 2014.365` is not a valid value)

Rules for specifying criteria statements

The following rules apply to the specification of criteria statements:

- You may code the statements in any sequence with the exception of the GROUP_NAME= statement. If you are specifying a GROUP_NAME= statement, it must be coded as the first statement of a criteria group.
- You may code only one keyword and its corresponding value per statement. For example:

#DAYS_SINCE_CREATE=100–200	Valid
#DAYS_SINCE_CREATE=100–200#DAYS_SINCE_LASTUSED=50	Not valid

- You may not include blank spaces on either side of the hyphen when specifying a range of values. For example:

#DAYS_SINCE_CREATE=100–200	Valid
#DAYS_SINCE_CREATE=100 – 200	Not valid
#DAYS_SINCE_CREATE=100– 200	Not valid
EXPIRATION_DATE=2014.150–2014.300	Valid
EXPIRATION_DATE=2014.150 – 2014.300	Not valid
EXPIRATION_DATE=2014.150 –2014.300	Not valid

- The hierarchy of the criteria statements is as follows:

TIER-1	
	GROUP_NAME=
TIER-2	
	#DAYS_SINCE_ARCHIVE=
	#DAYS_SINCE_LASTUSED=
	#DAYS_SINCE_MIGRATED=
	#DAYS_SINCE_CREATE=
	#DAYS_UNTIL_EXPIRATION=
	ARCHIVE_DATE=
	DSN=, DSN>
	MGMTCLAS=, MGMTCLAS>
	VOL=, VOL>
	XDSN=, XDSN>
	XMGMTCLAS=, XMGMTCLAS>
	XVOL=, XVOL>
	EXPIRATION_DATE=
	MIGRATION_DATE=

- Under a Tier-1 statement, one or more Tier-2 statements may be coded. Each Tier-2 statement is compared as an AND within the sphere of the Tier-1 statement.

  Example 1:

```
//AXQRESTR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRESTR,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP1
DSN=ABC%.DE*.**
DSN=X*.D123*.HUK
/*
```

In this example, data sets with names that match `ABC%.DE*.**` and data sets with names that match `X*.D123*.HUK` are selected as candidates for GROUP1.

Example 2:

```
//AXQRESTR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRESTR,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP2
DSN>INCLDSN1
/*
//INCLDSN1 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

In this example, all data set names or patterns (or both) that exist in parameter library member `INCLDSN1` are selected as candidates for GROUP2.

Example 3:

```
//AXQRESTR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//S010     EXEC PGM=AXQRESTR,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP3
VOL=300000-400000
XVOL=3A%%00
DSN=SYS*.CAT*.ONE.**
DSN>INCLDSN2
XDSN=SYS*.CAT1*.ONE.**
#DAYS_SINCE_CREATE=200
MIGRATION_DATE=04/19/2009-06/30/2010
/*
//INCLDSN2 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

In this example, candidate records that reside on volumes with volsers in the range 300000–400000, but do not reside on volumes whose volsers match `3A%%00`, and have data set names that match `SYS*.CAT*.ONE.**` or match the names or

patterns (or both) in parameter library member INCLDSN2, but do not match data set names that match SYS*.CAT1*.ONE.**, and have a #DAYS_SINCE_CREATE= value of 200 and a MIGRATION_DATE= value in the range 04/19/2009–06/30/2010 are selected as candidates for GROUP3.

- At a minimum, one Tier-1 statement and one Tier-2 statement must be coded for a candidate to be selected for processing.
- For keywords that support value ranges, the values specified are always internally organized so that the lower of the two value specifications is compared first. For example, if #DAYS_SINCE_CREATE=300–20 is coded, before the statement is used for comparison, it is reorganized as #DAYS_SINCE_CREATE=20–300.
- To code comment statements, code an asterisk (*) in the first position within the statement.

Using the ISPF interface to restore archived data sets

You can use the Advanced Archive for DFSMShsm ISPF interface to display a filtered list of archived data sets and then use the **RECOVER** commands to restore some or all of the archived data sets.

The ISPF interface also provides a convenient way to override processing parameter defaults for any single Restore job that is generated through the ISPF interface.

Overriding default settings for ISPF generated Restore jobs

If you want to override the default settings for the Restore jobs that were generated by using the ISPF interface, you can do so from the ISPF interface. Each user of the ISPF interface can customize the settings for their own use.

Procedure

1. At the **Option** prompt on the ISPF menu panel, type TSO AXQISPF and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.
2. From the Main Menu panel of the ISPF interface, type 0 at the **Option** prompt and press Enter to open the Settings panel.
3. Type 1 at the **Option** prompt and press Enter to open the Global Settings panel.
4. On the Global Settings panel, you can override the default job card information and the default date format:
   a. Optional: The **Jobcard** field displays the default job card that is used for the Advanced Archive for DFSMShsm batch Restore job that is built by using the ISPF interface. You can modify the default account information.
   b. Optional: The default format for displaying Gregorian dates is MM/DD/YYYY. To display dates in a format other than the default, specify that preferred format in the **OVERRIDE** field for the **Gregorian Date Format** parameter.
   c. When you have finished making changes on the Global Settings panel, press F3 to return to the Settings panel.
5. Type 2 at the **Option** prompt on the Settings panel and press Enter to open the ML2 Settings panel.
6. On the ML2 Settings panel, you can override the default values that are used to control the amount of archived data that is written to the ML2 tapes during the Restore process:

a. Optional: The **ML2 Minimum Size** field specifies the least amount of data that can be written to the ML2 tape volume. The default value of zero specifies that there is no minimum. To override the default value, specify the preferred value in the **OVERRIDE** field for this parameter.
b. Optional: The **ML2 Target Size** field specifies the maximum amount of data that can be written to each ML2 tape volume. The default value is 99999. To override the default target size, specify the preferred value in the **OVERRIDE** field for this parameter.
c. When you have finished making changes on the ML2 Settings panel, press F3 to return to the Settings panel.

7. Type 3 at the **Option** prompt and press Enter to open the ML2 Data Set Settings panel.
8. On the ML2 Data Set Settings panel, you can override the default values that are used to allocate the ML2 tape to which the data sets will be written during the Restore process:
   a. Optional: The **(Current Data Set)** field specifies the default name for the ML2 tape data set. To override the default name, specify a different name in the **ML2 Data Set** field.
   b. Optional: The **Allocation Unit Name** field specifies the default allocation unit (`CXCART`). To override the default, specify a different allocation unit name in the **OVERRIDE** field for this parameter.
   c. Optional: The **Allocation Data Class** field specifies the default allocation data class (`NONE`). To override the default, specify a different allocation data class in the **OVERRIDE** field for this parameter.
   d. Optional: The **Allocation Mgmt Class** field specifies the default allocation management class (`NONE`). To override the default, specify a different allocation management class in the **OVERRIDE** field for this parameter.
   e. Optional: The **Allocation Storage Class** field specifies the default allocation storage class (`NONE`). To override the default, specify a different allocation storage class in the **OVERRIDE** field for this parameter.
   f. When you have finished making changes on the ML2 Data Set Settings panel, press F3 to return to the Settings panel.
9. Press F3 to display the Main Menu panel.

What to do next

Go on to "Using the RECOVER commands to restore archived data."

Using the RECOVER commands to restore archived data

You can use the ISPF interface to display a list of archived data sets and then use the **`RECOVER`** line command for selected data sets or the **`RECOVER ALL`** primary command to restore all of the archived data sets in the list.

About this task

Be aware that regardless of whether the automatic Restore feature is enabled, some utilities and programs recognize the archived data sets as non-VSAM data sets that are cataloged to a tape device and the program or utility might act accordingly.

Procedure

1. At the **Option** prompt on the ISPF menu panel, type `TSO AXQISPF` and then press Enter to start the Advanced Archive for DFSMShsm ISPF interface.

2. On the Main Menu, type 1 at the **Option** prompt and press Enter to display the Data Set List panel.
3. Optional: You can define filters for the Data Set List panel so that only those data sets whose attributes match the filters appear in the list.
   a. Type `FILTER` in the **Command** line and press Enter.
   b. Use the online help (press F1) as a guide as you specify the appropriate information on the Filters panel.
   c. When you have completed your filter definitions, press Enter to display the filtered list of data sets on the Data Set List panel. The **Rows Hidden Due to Filter(s)** field shows how many data sets were excluded from the list because their attributes did not match the filters.
   d. If you want to further refine the list of data sets shown on the Data Set List panel, repeat steps a - d until the list contains only those data sets that you want to restore.
4. Specify which data sets you want restored:
   - If the list of data sets includes only data sets that you want to restore to ML2 tape, type `RECOVER ALL` in the **Command** line and press Enter.
   - If you want to restore some, but not all, of the data sets that are included in the list, type `R` in the **Cmd** line next to the name of each data set that you want to restore to ML2 tape. When you have selected all of the data sets that you want to restore, press Enter.
5. Press F3 to display the Main Menu panel.
6. On the Main Menu panel, type `Q` at the **Option** prompt and press Enter to display the Restore request queue.
7. If the list that is shown on the Restore Queue View panel includes all of the data sets that you want to restore, go directly to step 8. Otherwise, repeat steps 1 – 6 until the list on the Restore Queue View panel is complete and then go on to step 8.
8. Press F3 to display the Main Menu panel.
9. Type `G` at the **Option** prompt on the Main Menu and press Enter to display the Run in Simulation Mode panel.
   - If you want to run the Restore process in simulation mode, type `Y` in the text entry area and press Enter to display the JCL for the Restore job. Run the JCL.
   - If you want to run the Restore job, type `N` in the text entry area and press Enter.

   Note: Should you need to shut down HSM, you must first stop the Restore job.

Chapter 6. Archive Database reporting

You might find it useful to have reports that list the data sets that are currently in the Archive Database, list the tapes where the inactive data sets are archived, and provide summary information.

Create the Archive Database report by running the job in JCL sample library member AXQDBRPT, which produces two reports: the Archive Data Set Report and the Archive Tape Report. Both reports include summary information.

Topics:

Creating an Archive Database report

By running a single batch job, you can generate a report that provides a list the data sets that are currently in the Archive Database, a list the tapes where the inactive data sets are archived, and summary information.

About this task

The JCL for the Archive Database report job resides in member AXQDBRPT of the product JCL sample library. Unless you specify selection criteria to restrict the report to only those data sets whose attributes match the criteria, running the AXQDBRPT job generates a report that includes information for all records in the Archive Database.

Note: Alternative methods of confirming that all of the appropriate data sets were archived are described in "Verifying the contents of the archive" on page 57.

Procedure

1. To the JCL in AXQDBRPT, add appropriate job card information for your site.
2. Replace all occurrences of @HLQ with your data set prefix.
3. If you want all of the Archive Database records included in the report, ignore this step and go directly to step 4. Otherwise, provide the data set selection criteria that will identify the data sets whose Archive Database records you want included in the report and the criteria that will identify the data sets whose Archive Database records you want excluded from the report. Use the information and examples that are provided in "Selection criteria keyword reference for Archive Database reporting function" on page 87, as a guide for criteria keyword specification.
   - You may code the data set selection criteria in member CRITERIA of the product parameter library.
   - Alternatively, you may code the data set selection criteria in the job itself.
4. When you have finished modifying the AXQDBRPT JCL, submit the job for execution.

Results

The following figure shows an example of the Archive Data Set Report that is written to the DSETRPT DD. Note the summary information at the end of the report.

```
VER X.X                                  A D V A N C E D   A R C H I V E  FOR  DFSMShsm                  AXQDBRPT JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX          ARCHIVE DATA SET REPORT FOR COMPANY_NAME                        PAGE      1

DATA SET NAME                               ARCHVOL  ARCH DATE   ARCHSIZE IN K  CREATE DATE  LASTUS DATE  MGMT CLASS  CALC EXPDT
------------------------------------------  -------  ----------  -------------  -----------  -----------  ----------  ----------
AXBW0101.COPY                               VD0997   XX/XX/XXXX            868   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
AXBW0101.HTTT.WORK1                         VD0997   XX/XX/XXXX          3,260   XX/XX/XXXX   XX/XX/XXXX   TMMBKUP     XX/XX/XXXX
AXBW0101.HTTT.WORK2                         VD0997   XX/XX/XXXX          3,490   XX/XX/XXXX   XX/XX/XXXX   TMMBKUP     XX/XX/XXXX
AXBW0101.RZZ.MS.CLUSTER                     VD0997   XX/XX/XXXX             82   XX/XX/XXXX   XX/XX/XXXX   TMMBKUP     PERMANENT
AXBW0101.RZZ.MS.CLUSTER1                    VD0997   XX/XX/XXXX             82   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
AXBW0101.RZZ.Z00.CLUSTER                    VD0997   XX/XX/XXXX             82   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
AXBW0101.RZZ.Z00.CLUSTER1                   VD0997   XX/XX/XXXX             82   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
CSTS.CST1.B1.D140506.T030429.U415434        VD0710   XX/XX/XXXX             66   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
CSTS.CST1.B1.D141028.T040339.U013474        VD0710   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
CSTS.CST1.B1.D141028.T040507.U379072        VD0710   XX/XX/XXXX             66   XX/XX/XXXX   XX/XX/XXXX   STANDARD    PERMANENT
.
.
.
VER X.X                                  A D V A N C E D   A R C H I V E  FOR  DFSMShsm                  AXQDBRPT JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX          ARCHIVE DATA SET REPORT FOR COMPANY_NAME                        PAGE      5

DATA SET NAME                               ARCHVOL  ARCH DATE   ARCHSIZE IN K  CREATE DATE  LASTUS DATE  MGMT CLASS  CALC EXPDT
------------------------------------------  -------  ----------  -------------  -----------  -----------  ----------  ----------
TK.NO2310B.B1.D151023.T025532.U637697       VD0234   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX              PERMANENT
TK.NO2310B.B1.D151027.T025041.U069081       VD0234   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX              PERMANENT
TK.NO2310B.B1.D151028.T032536.U179692       VD0234   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX              PERMANENT
TK.NO2310B.B1.D151028.T072506.U808042       VD0234   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX              PERMANENT
TK.NO2310B.B1.D160412.T064600.U474755       VD0234   XX/XX/XXXX             49   XX/XX/XXXX   XX/XX/XXXX              PERMANENT


      TOTALS BY DATA SET EXPIRATION DATE

         DATA SETS EXPIRING THIS YEAR    NUMBER OF DATA SETS:         2    TOTAL SIZE IN MB:           7
         DATA SETS EXPIRING NEXT YEAR    NUMBER OF DATA SETS:         0    TOTAL SIZE IN MB:           0
         DATA SETS EXPIRING 3 - 5 YRS    NUMBER OF DATA SETS:         0    TOTAL SIZE IN MB:           0
         DATA SETS EXPIRING 5-10 YRS     NUMBER OF DATA SETS:         0    TOTAL SIZE IN MB:           0
         DATA SETS EXPIRING 10-20 YRS    NUMBER OF DATA SETS:         0    TOTAL SIZE IN MB:           0
         DATA SETS EXPIRING PAST 20YR    NUMBER OF DATA SETS:       247    TOTAL SIZE IN MB:         891


      TOTALS FOR ALL DATA SETS

                                         NUMBER OF DATA SETS:       249    TOTAL SIZE IN MB:         898
```

An example of the Archive Tape Report, which is written to the TAPERPT DD, is shown in the following figure. Note the summary information at the end of the report.

```
VER X.X                                  A D V A N C E D   A R C H I V E  FOR  DFSMShsm                  AXQDBRPT JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX                  ARCHIVE TAPE REPORT FOR COMPANY_NAME                              PAGE      1

ARCHVOL  ARCH DATE   ARCH TIME   GROUP     TARGET CAP     USED CAP     ACTIVE CAP   ACTIVE %  FULL  COPY2VOL  COPY3VOL  COPY4VOL
-------  ----------  ---------  --------  ------------  ------------  ------------  --------  ----  --------  --------  --------
VD0234   XX/XX/XXXX  XX:XX:XX   RTK         99,999,000             5             5      0%     Y     C10148    C60002
VD0710   XX/XX/XXXX  XX:XX:XX   CATDS       99,999,000             7             7      0%     Y     C10139    C60000
VD0955   XX/XX/XXXX  XX:XX:XX   NETSTHDS    99,999,000            10            10      0%     Y     C10144    C60001
VD0981   XX/XX/XXXX  XX:XX:XX   CATDS       99,999,000         1,091         1,091      0%     Y
VD0997   XX/XX/XXXX  XX:XX:XX   VSAM        99,999,000             8             8      0%     Y     C10152    C60003


   TOTALS FOR TAPE RECORDS

         ARCHIVE          NUM OF       TARGET         ACTIVE         ACTIVE
          GROUP           TAPES       MEGABYTES      MEGABYTES       PCT
         --------      ---------     -----------    -----------      ------
         RTK                   3     299,997,000             15         0%
         CATDS                 4     399,996,000          1,112         0%
         NETSTHDS              3     299,997,000             30         0%
         VSAM                  3     299,997,000             24         0%

         --------      ---------     -----------    -----------      ------
         *TOTALS*             13     299,987,000          1,181         0%
```

What to do next

If the Database Report results are not as you expected them to be, you can modify the Archive job JCL to generate a candidate rejection report. For more information about candidate rejection reports, see "Creating a candidate rejection report" on page 133.

Selection criteria keyword reference for Archive Database reporting function

The Archive Database reporting process supports numerous selection criteria keywords that can be used to select archived data sets for inclusion in the report. You can also use selection criteria keywords to explicitly exclude data sets from the report.

Wildcard support for specifying masks

You may use wildcard characters in masks for data set names, volume serial numbers, and management class names. For more information about using wildcards, see the appendix Appendix B, "Wildcard support for specifying selection criteria keywords," on page 209.

Selection criteria keyword restrictions

There are some restrictions on the values that you may specify for selection criteria keywords. For detailed information about these restrictions, see appendix Appendix C, "Selection criteria keyword restrictions," on page 211.

Selection criteria keyword definitions

GROUP_NAME=*name*

The GROUP_NAME= keyword begins a group of CRITERIA selection statements, where *name* is the group name.

The value that you specify for *name* must be a string that is 1 - 8 characters in length.

Note: Keep the following in mind when you are using the GROUP_NAME= statement to specify selection criteria in the JCL for an Archive Database Report job:

- Because the Archive Database Report function does not support grouping, only the first GROUP_NAME= statement is recognized (and all other GROUP_NAME= statements are ignored), all other criteria selection statements are processed as part of the first GROUP_NAME= statement.
- When the Archive Database Report function is being executed, multiple GROUP_NAME= statements for the Report function are detected and a one-time WTO message is issued, stating that multiple GROUP_NAME= statements were read from ddname CRITERIA.

Supported wildcard characters: none
Example values: STANDARD, PRD22

VOL=*volser*|*startvolser-endvolser*
The value that is assigned to the VOL= keyword specifies a volume serial number or a range of volume serial numbers of candidate data sets. Candidate data sets whose volsers match the value or values that are specified for this keyword are selected for inclusion in the report.

volser represents a 1- to 6-byte volume serial number or a volume serial number mask to match against candidate records for inclusion in the report.

startvolser-endvolser represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for inclusion in the report.

Supported wildcard characters:

- You may use % and * in individual volser masks.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: PRD*, 1%%A2, 200000-600000 (note that 200000 - 600000 is not a valid value)

VOL>*membername*
The VOL> keyword specifies the name of the parameter library member that contains a list of any combination of the following: volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers of data sets to include in the report.

The volume serial numbers that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as ranges (*startvolser-endvolser*) of volume numbers, where *statvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual volser masks.
  - You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000-600000 (note that 200000 - 600000 is not a valid value)

XVOL=*volser*|*startvolser-endvolser*
The value that is assigned to the XVOL= keyword specifies a volume serial number or a range of volume serial numbers of candidate data sets. Candidate data sets whose volsers match the value or values that are specified for this keyword are excluded from the report.

volser represents a 1- to 6-byte volume serial number or a volume serial number mask to match against candidate records for exclusion from the report.

startvolser-endvolser represents a range (with no blank spaces on either side of the hyphen) of volume serial numbers to match against the candidate records for exclusion from the report.

Supported wildcard characters:

- You may use % and * in individual volser masks.
- You may not use wildcard characters in the values that you specify for *startvolser* or for *endvolser*.

Example values: PRD*, 1%%A2, 200000-600000 (note that 200000 - 600000 is not a valid value)

XVOL>*membername*
The XVOL> keyword specifies the name of the parameter library member that contains a list of any combination of the following: volume serial numbers, ranges of volume serial numbers, or masks of volume serial numbers of data sets to exclude from the report.

The volume serial numbers that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces. You may specify volume serial numbers individually or as ranges (*startvolser-endvolser*) of volume serial numbers, where *startvolser* and *endvolser* are separated by a hyphen and no blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual volser masks.
  - You may not use wildcard characters in the values that are specified for *startvolser* or for *endvolser*.

Example values for *membername*: PRODVOLS, VOL15TST
Example values for masks specified in the contents of member *membername*: PRD*, 1%%A2, 200000-600000 (note that 200000 - 600000 is not a valid value)

DSN=*dsnameormask*
The DSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to select the candidate records for inclusion in the report.

The value that you specify must be 1 - 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

DSN>*membername*
The DSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to include in the report. The data set names and masks that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use *, **, and % in the values that you specify for data set name masks.

Example value for *membername*: ARCHIV27
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

XDSN=*dsnameormask*
The XDSN= keyword specifies a data set name or data set name mask against which the names in the raw candidate file are compared to identify the candidate records to be excluded from the report.

The value that you specify must be 1 - 44 characters in length.

Supported wildcard characters: *, **, %
Example value: TEST.B%B.**

XDSN>*membername*
The XDSN> keyword specifies the name of the parameter library member that contains a list of data set names or data set name masks (or both) to exclude from the report. The data set names and masks that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use *, **, and % in the values that you specify for data set name masks.

Example value for *membername*: DONTSAVE
Example value for masks specified in the contents of member *membername*: TEST.B%B.**

MGMTCLAS=*mgmtclasname*
The MGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want included in the report.

Supported wildcard characters: *, %
Example value: STAND*

MGMTCLAS>*membername*
The MGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to include in the report. The management class names and masks that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use * and % in the values that you specify for management class name masks.

Example value for *membername*: INCMCLAS
Example value for masks specified in the contents of member *membername*: STAND*

XMGMTCLAS=*mgmtclasname*

The XMGMTCLAS= keyword specifies the name of an SMS management class or a mask for SMS management class names that you want excluded from the report.

Supported wildcard characters: *, %
Example value: STAND*

XMGMTCLAS>*membername*

The XMGMTCLAS> keyword specifies the name of the parameter library member that contains a list of management class names or management class name masks (or both) to exclude from the report. The management class names and masks that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*, you may use * and % in the values that you specify for management class name masks.

Example value for *membername*: IGNORE62
Example value for masks specified in the contents of member *membername*: STAND*

ARCHDB_GRPID=*n* | *n-nn*

The ARCHDB_GRPID= keyword specifies the archive group ID or a range of archive group IDS of candidate records to include in the report.

n represents a 1- to 8-character group ID value or mask to match against candidate records for inclusion in processing.

n-nn represents a range of group ID values to match against the candidate records for inclusion in the report. The values in the range are separated by a hyphen (-) with no blank spaces on either side.

Supported wildcard characters:

- You may use % or * when you specify an individual archive group ID mask.
- You may not use wildcard characters to specify a range of archive group IDs.

Example values: GROUP17, ARCHGRP2*, GRP008-GRP012 (note that GRP008 - GRP012 is not a valid value)

ARCHDB_GRPID>*membername*

The ARCHDB_GRPID> keyword specifies the name of the parameter library member that contains a list of archive group IDs, a range of archive group IDs, or masks of archive group IDs of candidate records to include in the report.

The archive group IDs or masks (or both) that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces. Values that you specify for the start and end of a range of archive group IDs are separated by a hyphen (-) with no blank spaces on either side.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual archive group ID masks.
  - You may not use wildcard characters in the values that are specified as a range of values. Values that are specified for the start and end of the range are separated by a hyphen (-) and no blank spaces.

Example value for *membername*: ARCHGRPS
Example values for masks specified in the contents of member *membername*: PRD*GRP, GRP008-GRP012 (note that GRP008 - GRP012 is not a valid value)

EXCLUDE_ARCHDB_GRPID=*n* | *n-nn*

The EXCLUDE_ARCHDB_GRPID= keyword specifies the archive group ID or a range of archive group IDS of candidate records to exclude from the report.

n represents a 1- to 8-character group ID value or pattern to match against candidate records for exclusion from the report.

n-nn represents a range of group ID values to match against the candidate records for exclusion from processing. Values that you specify for the start and end of the range are separated by a hyphen (-) and no blank spaces.

Supported wildcard characters:

- You may use % or * when you specify an individual archive group ID mask.
- You may not use wildcard characters to specify a range of archive group IDs.

Example values: GROUP17, ARCHGRP2*, GRP008-GRP012 (note that GRP008 - GRP012 is not a valid value)

EXCLUDE_ARCHDB_GRPID>*membername*

The EXCLUDE_ARCHDB_GRPID> keyword specifies the name of the parameter library member that contains a list of archive group IDs, a range of archive group IDs, or patterns of archive group IDs of candidate records to exclude from the report.

The archive group IDs or masks (or both) that you specify in *membername* may start in any column and are terminated by three or more consecutive blank spaces. Values that you specify for the start and end of a range of archive group IDs are separated by a hyphen (-) with no blank spaces on either side.

Supported wildcard characters:

- You may not use wildcard characters in the value that you specify for *membername*.
- Within the contents of member *membername*:
  - You may use % and * in individual archive group ID masks.

– You may not use wildcard characters in the values that are specified as a range of values.

Example value for *membername*: ARCHGRPS
Example values for masks specified in the contents of member *membername*: PRD*GRP, GRP008-GRP012 (note that GRP008 - GRP012 is not a valid value)

#DAYS_SINCE_CREATE=*n* | *n-nn*
The value that is assigned to the #DAYS_SINCE_CREATE= keyword specifies a number of days or a range of days that have elapsed since the data set was created. Candidate data sets whose create dates are the specified number of days old are selected for inclusion in the report.

n represents an integer in the range 0–99999. The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.

n-nn represents a range of values in the range (0 – 99999) - (0 – 99999). The create date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 - 12 is not a valid value)

#DAYS_SINCE_LASTUSED=*n* | *n-nn*
The value that is assigned to the #DAYS_SINCE_LASTUSED= keyword specifies a number of days or a range of days that have elapsed since the data set was last used. Candidate data sets whose last-used dates match the value or fall within the range of values that are specified for this keyword are selected for inclusion in the report.

n represents an integer in the range 0–99999. The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.

n-nn represents a range of values in the range (0 – 99999) - (0 – 99999). The last-used date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

Note: Separate *n* from *nn* with a hyphen (-) and no blank spaces.

Supported wildcard characters: none
Example values: 12, 0–12 (note that 0 - 12 is not a valid value)

#DAYS_SINCE_MIGRATED=*n* | *n-nn*
The value that is assigned to the #DAYS_SINCE_MIGRATED= keyword specifies a number of days or a range of days that have elapsed since the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values specified for this keyword are selected for inclusion in the report.

n represents an integer in the range 0–99999. The migration date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.*n-nn* represents a range of values in the range (0 – 99999) - (0 – 99999). The migration date of the candidate data set is subtracted from the current

Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

#DAYS_SINCE_ARCHIVE=*n* | *n-nn*
The value that is assigned to the `#DAYS_SINCE_ARCHIVE=` keyword specifies a number of days or a range of days that have elapsed since the data set was archived. Candidate data sets whose archive dates match the value or values specified for this keyword are selected for inclusion in the report.

n represents an integer in the range 0–99999. The archive date of the candidate data set is subtracted from the current Julian date and if the difference is equal to *n*, the data set meets the selection criteria.

n-nn represents a range of values in the range (0 – 99999) - (0 – 99999). The archive date of the candidate data set is subtracted from the current Julian date and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

#DAYS_UNTIL_EXPIRATION=*n* | *n-nn*
The value that is assigned to the `#DAYS_UNTIL_EXPIRATION=` keyword specifies a number of days or a range of days that remain until the data set expires. Candidate data sets with expiration dates that are this number of days in the future are selected for inclusion in the report.

n represents an integer in the range 0–99999. The current Julian date is subtracted from the migration date of the candidate data set and if the difference is equal to *n*, the data set meets the selection criteria.

n-nn represents a range of values in the range (0 – 99999) - (0 – 99999). The current Julian date is subtracted from the migration date of the candidate data set and if the difference is equal to or greater than *n*, and is equal to or less than *nn*, the data set meets the selection criteria.

Note: Separate *n* from *nn* with a hyphen (**-**) and no blank spaces.

Supported wildcard characters: none
Example values: `12`, `0–12` (note that `0 - 12` is not a valid value)

MIGRATION_DATE=*date* | *startdate-enddate*
The value that is assigned to the `MIGRATION_DATE=` keyword specifies a date or a range of dates on or during which the data set was migrated to ML2. Candidate data sets whose migration dates match the value or values that are specified for this keyword are selected for inclusion in the report.

You can specify single dates and date ranges in the following formats:

- Julian dates:
  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 – 2999.365.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY

- DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
- YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
- Gregorian date values must fall within the range 01/01/1900 – 12/31/2999 (MM/DD/YYYY format), 01/01/1900 - 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 - 2999/12/31 (YYYY/MM/DD format).

• You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (**-**) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033-2014.365` (note that `2014.033 - 2014.365` is not a valid value)

EXPIRATION_DATE=*date*|*startdate-enddate*

The value that is assigned to the `EXPIRATON_DATE=` keyword specifies a date or a range of dates on or during which the data set is set to expire. Candidate data sets whose expiration dates match the value or values that are specified for this keyword are selected for inclusion in the report.

You can specify single dates and date ranges in the following formats:

• Julian dates:
- YYYY.DDD or YYYY.DDD - YYYY.DDD
- Julian dates must fall within the range 1900.001 - 2999.365.

  Note: There are two exceptions to the supported date value range for `EXPIRATION_DATE`.
  - You may specify `0000.000` to select data sets that have a null expiration date.
  - You may specify `9999.365` to select data sets that have a permanent expiration date.

• Gregorian dates:
- MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
- DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
- YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
- Gregorian date values must fall within the range 01/01/1900 - 12/31/2999 (MM/DD/YYYY format), 01/01/1900 - 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 - 2999/12/31 (YYYY/MM/DD format).

• You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (**-**) with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033–2014.365` (note that `2014.033 - 2014.365` is not a valid value)

ARCHIVE_DATE=*date*|*startdate-enddate*

The value that is assigned to the `ARCHIVE_DATE=` keyword specifies a date or a range of dates on or during which the data set was archived. Candidate data sets whose archive dates match the value or values that are specified for this keyword are selected for inclusion in the report.

You can specify single dates and date ranges in the following formats:

• Julian dates:

  - YYYY.DDD or YYYY.DDD - YYYY.DDD
  - Julian dates must fall within the range 1900.001 - 2999.365.
- Gregorian dates:
  - MM/DD/YYYY or MM/DD/YYYY - MM/DD/YYYY
  - DD/MM/YYYY or DD/MM/YYYY - DD/MM/YYYY
  - YYYY/MM/DD or YYYY/MM/DD - YYYY/MM/DD
  - Gregorian date values must fall within the range 01/01/1900 - 12/31/2999 (MM/DD/YYYY format), 01/01/1900 - 31/12/2999 (DD/MM/YYYY format), or 1900/01/01 - 2999/12/31 (YYYY/MM/DD format).
- You must use the same date format for both *startdate* and *enddate*. *startdate* and *enddate* are separated by a hyphen (**-**) and with no blank spaces on either side.

Supported wildcard characters: none
Example values: `12/01/2014`, `2014.033–2014.365` (note that `2014.033 - 2014.365` is not a valid value)

Rules for specifying criteria statements

The following rules apply to the specification of criteria statements:

- You may code the statements in any sequence with the exception of the `GROUP_NAME=` statement. If you are specifying a `GROUP_NAME=` statement, it must be coded as the first statement of a criteria group.
- You may code only one keyword and its corresponding value per statement. For example:

`#DAYS_SINCE_CREATE=100–200`	Valid
`#DAYS_SINCE_CREATE=100–200#DAYS_SINCE_LASTUSED=50`	Not valid

- You may not include blank spaces on either side of the hyphen when specifying a range of values. For example:

`#DAYS_SINCE_CREATE=100–200`	Valid
`#DAYS_SINCE_CREATE=100 – 200`	Not valid
`#DAYS_SINCE_CREATE=100– 200`	Not valid
`EXPIRATION_DATE=2014.150–2014.300`	Valid
`EXPIRATION_DATE=2014.150 – 2014.300`	Not valid
`EXPIRATION_DATE=2014.150 –2014.300`	Not valid

- The hierarchy of the criteria statements is as follows:

TIER-1	
	`GROUP_NAME=`
TIER-2	
	`#DAYS_SINCE_ARCHIVE=`
	`#DAYS_SINCE_LASTUSED=`
	`#DAYS_SINCE_MIGRATED=`
	`#DAYS_SINCE_CREATE=`
	`#DAYS_UNTIL_EXPIRATION=`

	ARCHDB_GRPID=, ARCHDB_GRPID>
	ARCHIVE_DATE=
	DSN=, DSN>
	EXCLUDE_ARCHDB_GRPID=, EXCLUDE_ARCHDB_GRPID>
	EXPIRATION_DATE=
	MIGRATION_DATE=
	VOL=, VOL>
	XDSN=, XDSN>
	XVOL=, XVOL>

- Under a Tier-1 statement, one or more Tier-2 statements may be coded. Each Tier-2 statement is compared as an AND within the sphere of the Tier-1 statement.

  Example 1:

```
//AXQDBRPT JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//S010     EXEC PGM=AXQDBRPT
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP1
DSN=ABC%.DE*.**
DSN=X*.D123*.HUK
/*
```

  In this example, data sets with names that match `ABC%.DE*.**` and data sets with names that match `X*.D123*.HUK` are selected as candidates for GROUP1.

  Example 2:

```
//AXQDBRPT JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//S010     EXEC PGM=AXQDBRPT
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP2
DSN>INCLDSN1
/*
//INCLDSN1 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

  In this example, all data set names or patterns (or both) that exist in parameter library member `INCLDSN1` are selected as candidates for GROUP2.

  Example 3:

```
//AXQDBRPT JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//S010     EXEC PGM=AXQDBRPT
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
GROUP_NAME=GROUP3
VOL=300000-400000
XVOL=3A%%00
DSN=SYS*.CAT*.ONE.**
DSN>INCLDSN2
XDSN=SYS*.CAT1*.ONE.**
#DAYS_SINCE_CREATE=200
MIGRATION_DATE=04/19/2009-06/30/2010
/*
//INCLDSN2 DD *
ABC%.DE*.**
X*.D123*.HUK
/*
```

In this example, candidate records that reside on volumes with volsers in the range 300000–400000, but do not reside on volumes whose volsers match `3A%%00`, and have data set names that match `SYS*.CAT*.ONE.**` or match the names or patterns (or both) in parameter library member `INCLDSN2`, but do not match data set names that match `SYS*.CAT1*.ONE.**`, and have a `#DAYS_SINCE_CREATE=` value of 200 and a `MIGRATION_DATE=` value in the range 04/19/2009–06/30/2010 are selected as candidates for GROUP3.

- At a minimum, one Tier-1 statement and one Tier-2 statement must be coded for a candidate to be selected for processing.
- For keywords that support value ranges, the values specified are always internally organized so that the lower of the two value specifications is compared first. For example, if `#DAYS_SINCE_CREATE=300–20` is coded, before the statement is used for comparison, it is reorganized as `#DAYS_SINCE_CREATE=20–300`.
- To code comment statements, code an asterisk (`*`) in the first position within the statement.

Chapter 7. Backing up and recovering the Archive Database

Periodically, you will need to perform the routine maintenance tasks of backing up and restoring the Archive Database.

Topics:

Backing up the Archive Database

JCL sample library member AXQDBBKP provides template JCL for backing up the Archive Database to the Database Backup file and the Active Log to the Log Backup file.

About this task

Database updates are logged automatically to the Active Log. The Active Log and the Database Backup file can be used together to restore the database to its most current state.

Procedure

1. Modify JCL sample library member AXQDBBKP according to the instructions that are provided in the comments.
2. Submit the job for execution.

Results

The following figure shows an example of the report that is created when the Archive Database is backed up successfully.

```
VER X.X                                  A D V A N C E D   A R C H I V E  FOR  DFSMShsm                AXQDBBKP JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX              ARCHIVE DATABASE BACKUP REPORT FOR COMPANY_NAME                      PAGE      1


ARCHIVE DATABASE WILL BE BACKED UP TO: TSTRAM.AXQ.V110.DBBKUP
BEGINNING BACKUP OF ARCHIVE DB TO THE BACKUP FILE
THE BACKUP OF THE ARCHIVE DATABASE WAS SUCCESSFUL
  NUMBER OF ARCHDB RECORDS COPIED TO BACKUP:        268

ACTIVE LOG(S) WILL BE BACKED UP TO: TSTRAM.AXQ.V110.LOGBKP
BEGINNING BACKUP OF ACTIVE LOG DATA SET(S) TO THE BACKUP LOG FILE
THE BACKUP OF THE ACTIVE LOG WAS SUCCESSFUL
  NUMBER OF ACTIVE LOG RECORDS COPIED TO BACKUP:          5

BEGINNING DELETE OF ALL ACTIVE LOG GENERATIONS
THE DELETE OF THE ACTIVE LOG WAS SUCCESSFUL


BACKUP OF ARCHIVE DATABASE WAS SUCCESSFUL
```

Restoring the Archive Database

AXQDBRST provides JCL that restores the database from the most current generation of the Database Backup generation data group and any existing generations of the Active Log generation data group.

About this task

The database is restored to the point in time of its last backup and then the changes that were captured in the Active Log are applied in date and time sequence to restore the database to its current state.

If the Archive Database exists when you run AXQDBRST, the database is deleted and then is rebuilt in its entirety from the backup files.

Procedure

1. Modify JCL sample library member AXQDBRST according to the instructions that are provided in the comments.
2. Submit the job.

Results

The following figure shows an example of the report that is issued when the Archive Database is restored successfully:

```
VER X.X                                    A D V A N C E D   A R C H I V E  FOR  DFSMShsm                 AXQDBRST JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX       ARCHIVE DATABASE RESTORE REPORT FOR COMPANY_NAME                      PAGE      1

WORKFILE DATA SET NAME: TSTRAM.AXQ.V110.ARCHDBWK
DATABASE BACKUP FILE USED: TSTRAM.AXQ.V110.DBBKUP.G0001V00

BEGINNING COPY OF ARCHDB BACKUP FILE TO THE WORK FILE

ARCHDB BACKUP SUCCESSFULLY COPIED TO WORK FILE
ARCHDB BACKUP: RECS COPIED TO WORK FILE       269

BEGINNING COPY OF ACTIVE LOG DATA SET(S) TO THE WORK FILE
ACTIVE LOG FILE(S) USED: TSTRAM.AXQ.V110.ACTLOG.G0001V00
ACTIVE LOG RECS IN THIS GDG GEN:         5

ACTIVE LOG SUCCESSFULLY COPIED TO WORK FILE
TOTAL ACTIVE LOG RECS COPIED TO BACKUP:          5

BEGINNING SORT OF ARCHDB WORKFILE
THE SORT OF THE WORK FILE WAS SUCCESSFUL

BEGINNING DELETE REDEFINE OF DATABASE
DATABASE DATA SET NAME: TSTRAM.AXQ.V110.ARCHIVE.DB                   WAS DELETED
THE DELETE AND REDEFINE OF THE DATABASE WAS SUCCESSFUL

BEGINNING RELOADING RECORDS TO DATABASE

DATABASE DATA SET NAME: TSTRAM.AXQ.V110.ARCHIVE.DB
THE DATABASE WAS SUCCESSFULLY RESTORED FROM THE BACKUPS

    RELOAD PHASE TOTAL RECS READ:        274

RELOAD PHASE DELETE RECS SKIPPED:          5
 RELOAD PHASE OLDER RECS SKIPPED:          1

   RELOAD PHASE ADD RECS WRITTEN:          0
RELOAD PHASE UPDATE RECS WRITTEN:          0
RELOAD PHASE UNLOAD RECS WRITTEN:        268

 RELOAD PHASE TOTAL RECS WRITTEN:        268


RESTORE OF DATABASE WAS SUCCESSFUL
```

Chapter 8. Backing up the Cloud Definitions Database

If you are using a cloud storage environment for your archive, during the configuration process you created the cloud definitions that are used to connect to the cloud storage device during Archive and Restore processing. These definitions are stored in the Cloud Definition Database, which should be backed up periodically.

Use whatever VSAM backup tool you deem appropriate for your environment (for example, a DFDSS full or logical backup, or IDCAMS Repro).

Important: If the cloud definitions that were used to archive your inactive data sets to the cloud storage environment are lost, recovery of the archived data sets might be impossible.

Chapter 9. Maintaining the archived data

Two data maintenance functions can help keep your archive environment efficient: Recycle and Cleanup.

- The Recycle function copies the files from under-utilized archive tapes and aggregates the copies onto a new tape.
- The Cleanup function determines which of the archived data sets are eligible for expiration and expires empty archive tapes from the tape management system.

Topics:

Recycling archive tapes

As archive tapes age, it is likely that some of the files on those tapes will be expired, which can leave the archive tape under-utilized.

The Recycle function aggregates and moves the unexpired archived files from the under-utilized tapes onto a new tape. After all of the unexpired archive files have been copied onto the new tape, you can use the Cleanup function to expire the empty archive tape.

If you want to see how Recycle will affect your archive tapes before you move any files, you can run the Recycle function in simulation mode.

Editing and submitting the AXQRECYC job

The `AXQRECYC` member of the JCL sample library provides template JCL for running the Recycle function.

Before you begin

The Advanced Archive for DFSMShsm Recycle function is controlled by the values that were specified for two parameters:

`RECYCLE-FROM-ARCHIVE-COPY-NUM`

The value that is assigned to this parameter determines which archive tape or copy is the input for the Recycle process. Consider an example in which you have two copies of all of your recycle tapes (copy 1 and copy 2). You can specify `RECYCLE–FROM–ARCHIVE–COPY–NUM 1` or `RECYCLE–FROM–ARCHIVE–COPY–NUM 2` to control which copy is used for input to Recycle processing. Such flexibility is useful in situations where one of the copies is stored offsite.

For more information about this parameter, see "RECYCLE-FROM-ARCHIVE-COPY-NUM" on page 130.

`RECYCLE-THRESHOLD-PERCENTAGE`

The value that is assigned to this parameter sets the threshold for tape under-utilization. When a tape's utilization percentage drops below this threshold, the tape qualifies for Recycle processing.

For more information about this parameter, see "RECYCLE-THRESHOLD-PERCENTAGE" on page 130.

If you did not customize the RECYCLE-FROM-ARCHIVE-COPY-NUM and RECYCLE-THRESHOLD-PERCENTAGE parameters in the Advanced Archive for DFSMShsm parameter library member AXQUSETS before the started task AXQTINIT was initialized, do one of the following:

- Customize RECYCLE-FROM-ARCHIVE-COPY-NUM and RECYCLE-THRESHOLD-PERCENTAGE in AXQUSETS and issue the F AXQTINIT-stcname,REFRESH,PARMS operator command to refresh the parameter settings..
- Alternatively, you can add a AXQPSETS DD to the AXQRECYC JCL and specify the RECYCLE-FROM-ARCHIVE-COPY-NUM and RECYCLE-THRESHOLD-PERCENTAGE parameters and their values there.

About this task

Note: You can use console commands to monitor and control the Recycle process as it executes. See step 7 for more information.

Procedure

1. Open JCL sample library member AXQRECYC for editing.
2. Provide the appropriate job card information.
3. Replace all occurrences of @HLQ with your data set prefix.
4. Verify that RECYCLE-FROM-ARCHIVE-COPY-NUM and RECYCLE-THRESHOLD-PERCENTAGE have been assigned the appropriate values.
5. Optional: If you want to run the Recycle job in simulation mode to produce a report that shows what would be selected for recycling and the expected results (see the *Example* section, below), based on your parameter settings, add PARM=SIM to the EXEC control card in the JCL and run the job.

```
//AXQRECYC JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ARCHIVE TAPE RECYCLE                                          *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO RECYCLE UNDERUTILIZED ARCHIVE TAPES       *
//*      BASED ON PERCENT UTILIZED.                                    *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQRECYC,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

If the simulation results are not as you expected them to be, adjust the parameter settings accordingly and run the simulation again. When the simulation results are as you expected them to be, remove the `SIM` value from the `EXEC` control card then go to step 6.

6. When you have finished editing the AXQRECYC JCL, submit the job for execution. Recycle processing writes the Candidate Records Passed to Recycle Task report to DD name `RCYCRPT` and the Recycle Report to DD name `RCYRPT`.

   Note: Should you need to shut down HSM, you must first stop the Recycle job.

7. Optional: To monitor or stop the Recycle process, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Recycle process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** `F jobname,STATUS` where *jobname* is the jobname of the job currently executing.
HALT	When you issue the **HALT** command, the Recycle process terminates after the current group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT` where *jobname* is the jobname of the job currently executing.
HALT,I	When you issue the **HALT,I** command, the Recycle process terminates when the current data set in the group of queued requests has been processed. Any remaining candidate data sets that are not yet queued for processing are ignored without any additional processing or reporting. **Syntax:** `F jobname,HALT,I` where *jobname* is the jobname of the job currently executing.

Example

The following figure shows an example of the Candidate Records Passed to Recycle Task report that was generated by running the Recycle function in simulation mode. The report is a high-level summary of each subgroup of files that were processed by Recycle.

```
VER X.X           ***SIMULATE***               A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQRECYC JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX         CANDIDATE RECORDS PASSED TO RECYCLE TASK FOR COMPANY_NAME                 PAGE      1

ARCHIVE   ARCH   BLK/ID                DATA SET NAME                SIZE IN KB  UT%                   RESULTS
<GRP ID> <VSER> <IN HEX> <-----------------------------------------> <--------> <--> <------------------------------------------------>

------------------------------------------------------------------------------------------------------------------------------------

START OF GROUP:

CATDS    VD0710 00000004 CSTS.CST1.B1.D140506.T030429.U415434                66   0% SIM: RECYCLE FUNCTIONS BYPASSED
CATDS    VD0710 00000008 CSTS.CST1.B1.D141028.T040339.U013474                49   0% SIM: RECYCLE FUNCTIONS BYPASSED
CATDS    VD0710 0000000B CSTS.CST1.B1.D141028.T040507.U379072                66   0% SIM: RECYCLE FUNCTIONS BYPASSED
CATDS    VD0710 0000000F CSTS.CST1.B1.D141028.T111251.U736589                49   0% SIM: RECYCLE FUNCTIONS BYPASSED
CATDS    VD0710 00000012 CSTS.CST1.B1.D141028.T111419.U867448                66   0% SIM: RECYCLE FUNCTIONS BYPASSED
CATDS    VD0710 00000016 CSTS.CST1.B1.D150417.T044822.U865088                49   0% SIM: RECYCLE FUNCTIONS BYPASSED
.
.
.
VER X.X           ***SIMULATE***               A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQRECYC JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX         CANDIDATE RECORDS PASSED TO RECYCLE TASK FOR COMPANY_NAME                 PAGE      4

ARCHIVE   ARCH   BLK/ID                DATA SET NAME                SIZE IN KB  UT%                   RESULTS
<GRP ID> <VSER> <IN HEX> <-----------------------------------------> <--------> <--> <------------------------------------------------>

------------------------------------------------------------------------------------------------------------------------------------

VSAM     VD0997 000001D2 AXBW0101.RZZ.MS.CLUSTER                             82   0% SIM: RECYCLE FUNCTIONS BYPASSED
VSAM     VD0997 000001D7 AXBW0101.RZZ.MS.CLUSTER1                            82   0% SIM: RECYCLE FUNCTIONS BYPASSED
VSAM     VD0997 000001DC AXBW0101.RZZ.Z00.CLUSTER                            82   0% SIM: RECYCLE FUNCTIONS BYPASSED
VSAM     VD0997 000001E1 AXBW0101.RZZ.Z00.CLUSTER1                           82   0% SIM: RECYCLE FUNCTIONS BYPASSED

SIZE OF PROCESSED GROUP:          0.008GB #DATASETS IN GROUP:                  7

************************************************************************************************************************************


TOTAL RECYCLED:                   0.893GB #DATASETS:                         156  #GROUPS PROCESSED:          2

TOTAL REJECTED:                   0.005GB #DATASETS:                          93
```

What to do next

If the Recycle results are not as you expected them to be, you can generate a candidate rejection report. For more information about candidate rejection reports, see “Creating a candidate rejection report” on page 133.

If the Recycle results are acceptable, you can run the Cleanup function to delete obsolete database records and expire the empty archive tapes from the tape management system. For more information, see “Running the Archive Database Cleanup program.”

Running the Archive Database Cleanup program

Run the Cleanup program periodically on the Archive Database to determine whether archived data sets are eligible for expiration. The Cleanup program also determines how full the archive tapes are, and if they no longer contain archived data, Cleanup expires the archive tape in the tape management system.

About this task

The Cleanup program processes every data set record in the Archive Database to determine whether the corresponding data set is eligible for expiration due to any of these circumstances:

- Its expiration date has passed.
- It no longer has an entry in the ICF catalog.
- Its ICF catalog entry does not specify `RCHIVE` as its volume serial number.
- It has met the conditions that were specified by the SMS management class to which it is assigned.

For every archived data set that is eligible for expiration, the Cleanup program does the following:

- Deletes the corresponding Archive Database record
- Deletes the corresponding ICF catalog entry (if an entry exists)
- Writes the data set information to the Cleanup report

For every archived data set that is *not* eligible for expiration, the Cleanup program adds to an active block counter the number of blocks that the data set occupies on the archive tape.

After all of the Archive Database records have been processed, the Cleanup program processes every archive tape record to determine whether the tape record has a matching entry in the active block counters.

- If there is no such entry in the active block counters, the tape can be expired and Cleanup performs the following tasks:
  - Deletes the tape's record in the Archive Database
  - Expires the tape's record (and the records for any secondary archive tape volumes) in the tape management system
  - Writes a record to the Cleanup report, listing the expired volumes
- If there is such an entry in the active block counters, the tape still contains archived data sets, so Cleanup updates the tape record with a newly calculated Active Capacity in megabytes.

Finally, the Cleanup process writes the summary totals to the Cleanup report.

Note:

- You can run the Cleanup program in simulate mode to generate a Cleanup report without updating the Archive Database, the ICF catalog, or the tape management system. While this is an optional step, reviewing the information in the Cleanup report before the Archive Database is modified can prevent accidental deletions.
- You can use console commands to monitor and control the Cleanup process as it executes. See step 3 for more information.

Procedure

1. Edit JCL sample library member `AXQCLNUP`:
   a. Provide valid job card information for the AXQCLNUP JCL.
   b. Replace all occurrences of `@HLQ` with your data set prefix.
   c. If you do not want to run Cleanup in simulate mode, go directly to step 2. Otherwise, add the `PARM=SIM` specification to the `EXEC` statement, as shown in the following figure.

```
//AXQCLNUP JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      CLEAN UP ARCHIVED FILES AND ARCHIVE TAPES                     *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO CLEAN UP ARCHIVED FILES THAT ARE          *
//*      ELIGIBLE FOR EXPIRATION  AND ANY ARCHIVE TAPES THAT ARE       *
//*      EMPTY.                                                        *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQCLNUP,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

d. Submit the job.

e. Review the Cleanup report to confirm that nothing that needs to be retained will be deleted from the database when Cleanup is run without the `SIM` parameter.

f. Remove `PARM=SIM` from the `EXEC` statement.

g. Go on to step 2.

2. Submit AXQCLNUP for execution.

   Note: Should you need to shut down HSM, you must first stop the Cleanup job.

3. To monitor or stop the Cleanup process, use the appropriate console command.

Console command	Description
STATUS	When you issue the **STATUS** command, the Cleanup process issues a WTO message that shows the following information: • The current number of requests that are queued • The number of requests that completed successfully • The number of requests that failed to complete **Syntax:** `F` *jobname*`,STATUS` where *jobname* is the jobname of the job currently executing.
HALT	When you issue the **HALT** command, the Cleanup process terminates after the current group of queued requests has been processed. Any remaining Archive Database records that have not yet been processed are ignored without any additional processing or reporting. **Syntax:** `F` *jobname*`,HALT` where *jobname* is the jobname of the job currently executing.

Example

The following figure shows an example Archive Expiration Report that was created by running Cleanup in simulate mode:

```
VER X.X           ***SIMULATE***               A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQCLNUP JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX              ARCHIVE EXPIRATION REPORT FOR COMPANY_NAME                          PAGE      1

                                                  ARCH     ARCHIVE      CREATE     LAST USED  EXPIRATION
DATA SET NAME                                     VOLUME   SIZE IN MB     DATE       DATE       DATE     MGMTCLAS  REASON
------------------------------------------------  ------  -----------  ----------  ----------  ----------  --------  ------------------
AAWP.CATERING.AAWP0301.DT.AP.DIS.G0352V00         V00001        0.492  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0301.DT.AP.DIS.G0353V00         V00001        0.524  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0301.DT.AP.DIS.G0355V00         V00001        0.524  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0304.CH.LWN.GL.G0087V00         V00001        0.672  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0304.CH.LWN.GL.G0091V00         V00001        0.492  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0305.HOSP.LWN.GL.G0088V00       V00001       13.009  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0305.HOSP.LWN.GL.G0090V00       V00001       13.238  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0306.FH.LWN.GL.G0084V00         V00001        1.999  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0306.FH.LWN.GL.G0085V00         V00001        1.802  XX/XX/XXXX  XX/XX/XXXX    -NONE-    GDG       NOT CATALOGED
AAWP.CATERING.AAWP0306.FH.LWN.GL.G0086V00         V00001        1.868  XX/XX/XXXX  XX/XX/XXXX  XX/XX/XXXX  GDG       EXPDT DATE PASSED
AAWP.CATERING.AAWP0306.FH.LWN.GL.G0087V00         V00001        0.803  XX/XX/XXXX  XX/XX/XXXX  XX/XX/XXXX  GDG       EXPDT DATE PASSED
AAWT.ACS.AZ                                       V00001       35.078  XX/XX/XXXX  XX/XX/XXXX  XX/XX/XXXX  MT6       NOT CATALOGED
AAWT.ACS.AZ.FTP                                   V00001        3.801  XX/XX/XXXX  XX/XX/XXXX    -NONE-    MT6       NOT CATALOGED
AAWT.AZ.BADGE                                     V00001        3.801  XX/XX/XXXX  XX/XX/XXXX    -NONE-    MT6       NOT CATALOGED
AAWT.AZ.BADGE.FTP                                 V00001       35.078  XX/XX/XXXX  XX/XX/XXXX    -NONE-    MT6       NOT CATALOGED
AAWT.EXPORT.BADGE.AZ                              V00001       35.078  XX/XX/XXXX  XX/XX/XXXX    -NONE-    MT6       NOT CATALOGED
ADRP.UPDADR.REPORT                                V00001        7.504  XX/XX/XXXX  XX/XX/XXXX    -NONE-    YR2       NOT CATALOGED
.
.
.
VER X.X           ***SIMULATE***               A D V A N C E D   A R C H I V E  FOR  DFSMShsm   ***SIMULATE***  AXQCLNUP JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX              ARCHIVE EXPIRATION REPORT FOR COMPANY_NAME                          PAGE    198

ARCHIVE TAPE(S) EXPIRED VOL=V00221  COPY 2 VOL=W00221  COPY 3 VOL=X00221  COPY 4 VOL=Y00221
ARCHIVE TAPE(S) EXPIRED VOL=V00222  COPY 2 VOL=W00222
ARCHIVE TAPE(S) EXPIRED VOL=V00223  COPY 2 VOL=W00223  COPY 3 VOL=X00223  COPY 4 VOL=Y00223
ARCHIVE TAPE(S) EXPIRED VOL=V00224
ARCHIVE TAPE(S) EXPIRED VOL=V00225  COPY 2 VOL=W00225  COPY 3 VOL=X00225
ARCHIVE TAPE(S) EXPIRED VOL=V00226  COPY 2 VOL=W00226
ARCHIVE TAPE(S) EXPIRED VOL=V00227  COPY 2 VOL=W00227  COPY 3 VOL=X00227  COPY 4 VOL=Y00227
ARCHIVE TAPE(S) EXPIRED VOL=V00228
ARCHIVE TAPE(S) EXPIRED VOL=V00229  COPY 2 VOL=W00229  COPY 3 VOL=X00229  COPY 4 VOL=Y00229
ARCHIVE TAPE(S) EXPIRED VOL=V00230  COPY 2 VOL=W00230
ARCHIVE TAPE(S) EXPIRED VOL=V00231  COPY 2 VOL=W00231  COPY 3 VOL=X00231
ARCHIVE TAPE(S) EXPIRED VOL=V00232
ARCHIVE TAPE(S) EXPIRED VOL=V00233  COPY 2 VOL=W00233  COPY 3 VOL=X00233  COPY 4 VOL=Y00233
ARCHIVE TAPE(S) EXPIRED VOL=V00234  COPY 2 VOL=W00234
ARCHIVE TAPE(S) EXPIRED VOL=V00235  COPY 2 VOL=W00235  COPY 3 VOL=X00235  COPY 4 VOL=Y00235
ARCHIVE TAPE(S) EXPIRED VOL=V00236
ARCHIVE TAPE(S) EXPIRED VOL=V00237  COPY 2 VOL=W00237  COPY 3 VOL=X00237
ARCHIVE TAPE(S) EXPIRED VOL=V00238  COPY 2 VOL=W00238
ARCHIVE TAPE(S) EXPIRED VOL=V00239  COPY 2 VOL=W00239  COPY 3 VOL=X00239  COPY 4 VOL=Y00239
ARCHIVE TAPE(S) EXPIRED VOL=V00240
ARCHIVE TAPE(S) EXPIRED VOL=V00241  COPY 2 VOL=W00241  COPY 3 VOL=X00241  COPY 4 VOL=Y00241
ARCHIVE TAPE(S) EXPIRED VOL=V00242  COPY 2 VOL=W00242
ARCHIVE TAPE(S) EXPIRED VOL=V00243  COPY 2 VOL=W00243  COPY 3 VOL=X00243
ARCHIVE TAPE(S) EXPIRED VOL=V00244
ARCHIVE TAPE(S) EXPIRED VOL=V00245  COPY 2 VOL=W00245  COPY 3 VOL=X00245  COPY 4 VOL=Y00245
ARCHIVE TAPE(S) EXPIRED VOL=V00246  COPY 2 VOL=W00246


                            ACTIVE         EXPIRED
                          -------------- --------------
ARCHIVED DATA SETS                     0         10,000
ARCHIVE TAPE VOLUMES                   0            636
ARCHIVE TAPE DATA (MB)                 0      5,719,262
ARCHIVE TAPE CAPACITY (MB)             0        636,000
```

Chapter 10. Parameters

Refer to this section to look up the names, definitions, and valid values for all parameters that are used by Advanced Archive for DFSMShsm processing.

The maximum length that is acceptable for a parameter value is 50 bytes unless otherwise specified.

Topics:

ARCHIVE-ACTIVE-LOG-GDG-BASE-DSN

This parameter specifies the name of the GDG base for the Active Log (sometimes referred to as the Archive Database log). The Active Log is a GDG data set.

All updates to the Archive Database are first logged to the Active Log data set. The Active Log data set is used in recovery of the Archive Database and for reporting.

Related parameters:	• ARCHIVE-DATABASE-CLUSTER-NAME • ARCHIVE-DB-BKUP-GDG-BASE-DSN
Valid settings:	A valid GDG base name; you may specify a maximum of 35 characters.
Default setting:	ADV.ARCHIVE.ACTIVE.LOG

ARCHIVE-DATABASE-CLUSTER-NAME

This parameter specifies the full VSAM cluster name of the Archive Database. The Archive Database holds records for the files that have been archived and the location information for the archived files.

Related parameters:	ARCHIVE-DATABASE-NUMBER-OF-RECORDS
Valid settings:	A valid VSAM cluster name; you may specify a maximum of 38 characters.
Default setting:	ADV.ARCHIVE.ARCHIVE.DB

ARCHIVE-DATABASE-NUMBER-OF-RECORDS

This parameter specifies the maximum number of records that are expected to be in the Archive Database.

There would be one record for each file that is archived and one record for each set of archive tapes. The value that you assign to this parameter is used to determine the size of the database when the database is initially created and whenever it is restored.

Related parameters:	ARCHIVE-DATABASE-CLUSTER-NAME
Valid settings:	Any integer in the range 0 - 99999999.
Default setting:	10000

ARCHIVE-DB-BKUP-GDG-BASE-DSN

This parameter specifies the name of the GDG base for the Archive Database backup file. The backup file is a GDG data set.

When the Archive Database backup program is run, it backs up the live Key database to the next generation of this GDG data set. The ARCHIVE-DB-BKUP-GDG_BASE-DSN data set is used in the recovery of the Archive Database.

Related parameters:	ARCHIVE-DATABASE-CLUSTER-NAME
Valid settings:	A valid GDG base name; you may specify a maximum of 35 characters.
Default setting:	ADV.ARCHIVE.DBBKUP

ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT

This parameter specifies how many DCOLLECT records are returned when you are archiving inactive L0 disk data sets (data set selection criteria ARCHIVE_SOURCE=L0).

The value that you assign to this parameter is an approximation only. The value is used to control the size of the candidate work file that will eventually be allocated.

Note: If B37-xx abends are encountered for the *<dynamic-allocation-dataset-name-prefix>*.JOB?????.CWRK data set, increase the value specified for this parameter and rerun the failing job.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 10000 – 4294967295.
Default setting:	200000

ARCHIVE-LOG-BKUP-GDG-BASE-DSN

This parameter specifies the name of the GDG base for the Archive Database backup log. The backup log is a GDG data set.

When the Archive Database backup program is run, it consolidates all generations of the Active Log to the next generation of the backup log. This data set might be used during special recovery of the Archive Database (if the most current backup of the Archive Database is unusable and a previous backup must be used) and for reporting.

Related parameters:	• ARCHIVE-DATABASE-CLUSTER-NAME • ARCHIVE-ACTIVE-LOG-GDG-BASE-DSN
Valid settings:	A valid GDG base name; you may specify a maximum of 35 characters.
Default setting:	ADV.ARCHIVE.LOGBKUP

ARCHIVE-MINIMUM-SIZE

This parameter establishes the minimum size in gigabytes of a "tape's worth" of data. Unless the selected group size is greater than or equal to the values of this parameter, the selected candidate group is rejected.

Related parameters:	ARCHIVE-TARGET-SIZE
Valid settings:	Any integer in the range 0 - 99999, representing the number of gigabytes.
Default setting:	0

ARCHIVE-SELECTION-MAXIMUM-FILES

This parameter establishes the maximum number of candidate data sets that can be selected for archiving. After this limit is reached, further selection of candidate data sets is curtailed and the candidates that have been selected already are passed on for archiving.

Related parameters:	ARCHIVE-SELECTION-MAXIMUM-GB
Valid settings:	Any integer in the range 0 - 99999, representing the number of data sets. **Note:** A value of zero (0) indicates that there is no maximum limit.
Default setting:	100000

ARCHIVE-SELECTION-MAXIMUM-GB

This parameter establishes the maximum size (in gigabytes) of candidate data sets that can be selected for archiving. After this limit is reached, further selection of candidate data sets is curtailed and the candidates that have already been selected are passed on for archiving.

Related parameters:	ARCHIVE-SELECTION-MAXIMUM-FILES
Valid settings:	Any integer in the range 0 - 99999, representing the number of gigabytes. **Note:** A value of zero (0) indicates that there is no maximum limit.
Default setting:	0

ARCHIVE-TAPE-ALLOCATION-DATACLAS

This parameter specifies the DFSMS data class name that is used to allocate the tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE-ALLOCATION-STORCLAS • ARCHIVE-TAPE-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS data class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE-ALLOCATION-MGMTCLAS

This parameter specifies the DFSMS management class name that is used to allocate the tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE-ALLOCATION-DATACLAS • ARCHIVE-TAPE-ALLOCATION-STORCLAS • ARCHIVE-TAPE-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS management class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE-ALLOCATION-STORCLAS

This parameter specifies the DFSMS storage class name that is used to allocate the tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE-ALLOCATION-DATACLAS • ARCHIVE-TAPE-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE-ALLOCATION-UNIT-NAME
Valid settings:	Any valid DFSMS storage class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE-ALLOCATION-UNIT-NAME

This parameter specifies the unit name that is used to allocate the tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE-ALLOCATION-DATACLAS • ARCHIVE-TAPE-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE-ALLOCATION-STORCLAS
Valid settings:	A valid esoteric or generic unit name.
Default setting:	3490

ARCHIVE-TAPE-DATA-SET-NAME

This parameter specifies the name of the primary copy of the tape data set that will contain the archived files. If you are archiving to a cloud storage environment, this parameter is used as the prefix of the file name that will contain the archived data.

This data set will not be cataloged in the ICF catalog.

Related parameters:	• ARCHIVE-TAPE-ALLOCATION-DATACLAS • ARCHIVE-TAPE-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE-ALLOCATION-STORCLAS • ARCHIVE-TAPE-ALLOCATION-UNIT-NAME
Valid settings:	Any valid data set name.
Default setting:	ADV.ARCHIVE.ARCHIVE

ARCHIVE-TAPE-EXPIRATION-DAYS

This parameter specifies the number of days that an expired archive tape will be retained by the tape management system.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 0-999.
Default setting:	3

ARCHIVE-TAPE2-ALLOCATION-DATACLAS

This parameter specifies the DFSMS data class name that is used to allocate the second tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE2-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE2-ALLOCATION-STORCLAS • ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS data class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS

This parameter specifies the DFSMS management class name that is used to allocate the second tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE2-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE2-ALLOCATION-DATACLAS • ARCHIVE-TAPE2-ALLOCATION-STORCLAS • ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS management class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE2-ALLOCATION-STORCLAS

This parameter specifies the DFSMS storage class name that is used to allocate the second tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE2-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE2-ALLOCATION-DATACLAS • ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS storage class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME

This parameter specifies the unit name that is used to allocate the second tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE2-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE2-ALLOCATION-DATACLAS • ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE2-ALLOCATION-STORCLAS

Valid settings:	A valid esoteric or generic unit name or NONE. **Note:** • You may not specify NONE when either of these situations is true: – ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME is not NONE. – ARCHIVE-TAPE2-DATA-SET-NAME is not set to NONE. • You may not specify a valid esoteric or generic unit name if ARCHIVE-TAPE2-DATA-SET-NAME is set to NONE.
Default setting:	NONE

ARCHIVE-TAPE2-DATA-SET-NAME

This parameter specifies the name of the second copy of the tape data set that will contain the archived files. This data set will not be cataloged in the ICF catalog.

Related parameters:	• ARCHIVE-TAPE2-ALLOCATION-DATACLAS • ARCHIVE-TAPE2-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE2-ALLOCATION-STORCLAS • ARCHIVE-TAPE2-ALLOCATION-UNIT-NAME
Valid settings:	Any valid data set name or NONE.
Default setting:	NONE

ARCHIVE-TAPE3-ALLOCATION-DATACLAS

This parameter specifies the DFSMS data class name that is used to allocate the third tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE3-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE3-ALLOCATION-STORCLAS • ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS data class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS

This parameter specifies the DFSMS management class name that is used to allocate the third tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE3-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE3-ALLOCATION-DATACLAS • ARCHIVE-TAPE3-ALLOCATION-STORCLAS • ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS management class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE3-ALLOCATION-STORCLAS

This parameter specifies the DFSMS storage class name that is used to allocate the third tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE3-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE3-ALLOCATION-DATACLAS • ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS storage class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME

This parameter specifies the unit name that is used to allocate the third tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE3-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE3-ALLOCATION-DATACLAS • ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE3-ALLOCATION-STORCLAS
Valid settings:	A valid esoteric or generic unit name, or NONE. **Note:** • You may not specify NONE when either of these situations is true: – ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME is not NONE. – ARCHIVE-TAPE3-DATA-SET-NAME is not set to NONE. • You may not specify a valid esoteric or generic unit name if ARCHIVE-TAPE3-DATA-SET-NAME is set to NONE.
Default setting:	NONE

ARCHIVE-TAPE3-DATA-SET-NAME

This parameter specifies the name of the third copy of the tape data set that will contain the archived files. This data set will not be cataloged in the ICF catalog.

Related parameters:	• ARCHIVE-TAPE3-ALLOCATION-DATACLAS • ARCHIVE-TAPE3-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE3-ALLOCATION-STORCLAS • ARCHIVE-TAPE3-ALLOCATION-UNIT-NAME
Valid settings:	Any valid data set name or NONE.
Default setting:	NONE

ARCHIVE-TAPE4-ALLOCATION-DATACLAS

This parameter specifies the DFSMS data class name that is used to allocate the fourth tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE4-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE4-ALLOCATION-STORCLAS • ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS data class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS

This parameter specifies the DFSMS management class name that is used to allocate the fourth tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE4-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE4-ALLOCATION-DATACLAS • ARCHIVE-TAPE4-ALLOCATION-STORCLAS • ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS management class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE4-ALLOCATION-STORCLAS

This parameter specifies the DFSMS storage class name that is used to allocate the fourth tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE4-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE4-ALLOCATION-DATACLAS • ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME
Valid settings:	A valid DFSMS storage class value or NONE.
Default setting:	NONE

ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME

This parameter specifies the unit name that is used to allocate the fourth tape data set that will contain the archived files.

Related parameters:	• ARCHIVE-TAPE4-ALLOCATION-DATA-SET-NAME • ARCHIVE-TAPE4-ALLOCATION-DATACLAS • ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE4-ALLOCATION-STORCLAS

Valid settings:	A valid esoteric or generic unit name or NONE. **Note:** NONE is invalid if ARCHIVE-TAPE4-DATA-SET-NAME is not set to NONE. A valid esoteric or generic unit name may not be specified if ARCHIVE-TAPE4-DATA-SET-NAME is set to NONE.
Default setting:	NONE

ARCHIVE-TAPE4-DATA-SET-NAME

This parameter specifies the name of the fourth copy of the tape data set that will contain the archived files. This data set will not be cataloged in the ICF catalog.

Related parameters:	• ARCHIVE-TAPE4-ALLOCATION-DATACLAS • ARCHIVE-TAPE4-ALLOCATION-MGMTCLAS • ARCHIVE-TAPE4-ALLOCATION-STORCLAS • ARCHIVE-TAPE4-ALLOCATION-UNIT-NAME
Valid settings:	Any valid data set name or NONE.
Default setting:	NONE

ARCHIVE-TARGET

This parameter determines how the Archive function routes the candidate file to its destination.

If the data is being archived to a cloud-based device, the GROUP_NAME value that was specified in the selection criteria for the Archive process determines which cloud definition is used.

Related parameters:	There are no related parameters.
Valid settings:	• TAPE–All of the candidate files that meet the specified selection criteria are archived to one or more tape volumes. • CLOUD–The GROUP_NAME that is associated with the candidate file is used to look up the cloud information in the Cloud Definition Database. If the GROUP_NAME is found in the Cloud Definition Database, the candidate file is archived to the corresponding cloud destination; if the GROUP_NAME is not found in the Cloud Definition Database, the candidate file is not archived. • GROUP–The GROUP_NAME that is associated with the candidate file is used to look up the cloud information in the Cloud Definition Database. If the GROUP_NAME is found in the Cloud Definition Database, the candidate file is archived to the corresponding cloud destination; if the GROUP_NAME is not found in the Cloud Definition Database, the candidate file is archived to one or more tape volumes.
Default setting:	TAPE

ARCHIVE-TARGET-SIZE

This parameter establishes the limit for a “tape’s worth” of data in terms of gigabytes. Candidate groups whose size exceeds this value will be cut off after the target size is reached. Remaining entries in the candidate group will be reevaluated after current group is processed.

Related parameters:	ARCHIVE-MINIMUM-SIZE
Valid settings:	Any integer in the range 1 - 99999, representing the number of gigabytes.
Default setting:	99999

CLOUDDEF-DATABASE-CLUSTER-NAME

This parameter specifies the full VSAM cluster name of the Cloud Definitions Database. The Cloud Definitions Database holds records for definitions that are used to connect to cloud storage systems. If you are not archiving files to cloud storage systems, you do not need to customize this value.

Related parameters:	CLOUDDEF-DATABASE-NUMBER-OF-RECORDS
Valid settings:	A valid VSAM cluster name; you may specify a maximum of 38 characters.
Default setting:	ADV.ARCHIVE.CLOUDDEF.DB

CLOUDDEF-DATABASE-NUMBER-OF-RECORDS

This parameter specifies the maximum number of records that are expected to be in the Cloud Definitions Database. There would be one record for each cloud location that is defined.

You may provide one or more definitions for each cloud storage system. The value that you assign to this parameter is used for the database size when the database is created or whenever the database is restored.

Related parameters:	CLOUDDEF-DATABASE-CLUSTER-NAME
Valid settings:	Any integer in the range 0 - 99999999.
Default setting:	1000

DATA-CENTER-NAME

This parameter specifies the data center name that will appear on all report headings generated by Advanced Archive for DFSMShsm.

Related parameters:	There are no related parameters.
Valid settings:	Any character string that is equal to or less than 20 characters in length. The string must be delimited by blank spaces. Within the character string, the value cannot contain blank spaces, but you can use the underscore character instead of blank spaces. For example, DATA-CENTER-NAME_DC_TWENTYTWO is a valid parameter value specification, but DATA-CENTER-NAME DC TWENTYTWO is not.
Default setting:	DATA_CENTER

DELETE-HSM-BACKUP-VERSIONS-AFTER-ARCHIVE

This parameter specifies whether the DFSMShsm backup copies of the files that are archived will be deleted.

Related parameters:	There are no related parameters.
Valid settings:	YES or NO.
Default setting:	YES

DELETE-WORK-DATASET-WHEN-FINISHED

This parameter specifies whether the Advanced Archive for DFSMShsm program work data sets are scratched at data set close time.

Related parameters:	There are no related parameters.
Valid settings:	• YES - Delete the work data sets when finished. • NO - Do not delete the work data sets when finished.
Default setting:	YES

DYNAMIC-ALLOCATION-DATA-CLASS

This parameter specifies which SMS data class is used when Advanced Archive for DFSMShsm dynamically allocates a work file on DASD.

Related parameters:	• DYNAMIC-ALLOCATION-MANAGEMENT-CLASS • DYNAMIC-ALLOCATION-STORAGE-CLASS • DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER
Valid settings:	Any valid SMS data class or NONE.
Default setting:	NONE

DYNAMIC-ALLOCATION-DATASET-NAME-PREFIX

This parameter specifies which data set name prefix is used when Advanced Archive for DFSMShsm dynamically allocates a work file on DASD.

Related parameters:	There are no related parameters.
Valid settings:	Any valid data set name prefix; you may specify a maximum of 26 characters.
Default setting:	ADV.ARCHIVE

DYNAMIC-ALLOCATION-GDG-LIMIT

This parameter specifies the default GDG limit setting to use in situations where a GDG base for a new data set name allocated on DASD is not found during Advanced Archive for DFSMShsm processing.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 1 - 255.

Default setting:	36

DYNAMIC-ALLOCATION-MANAGEMENT-CLASS

This parameter specifies the SMS management class to use when Advanced Archive for DFSMShsm dynamically allocates a work file on DASD.

Related parameters:	• DYNAMIC-ALLOCATION-DATA-CLASS • DYNAMIC-ALLOCATION-STORAGE-CLASS • DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER
Valid settings:	Any valid SMS management class or NONE.
Default setting:	NONE

DYNAMIC-ALLOCATION-RETRY-LIMIT

This parameter specifies the number of times that dynamic allocation for a given resource is retried before Advanced Archive for DFSMShsm terminates with a U0100 abend.

The conditions that cause dynamic allocation to retry the allocation are:

- Data set in use
- Unit unavailable
- DD name unavailable
- Data set is already allocated

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 0 - 9999999.
Default setting:	60

DYNAMIC-ALLOCATION-SORTWORK-UNIT

This parameter specifies the unit name to use when Advanced Archive for DFSMShsm dynamically allocates a sort work file.

Related parameters:	There are no related parameters.
Valid settings:	Any valid EDT unit name.
Default setting:	3390

DYNAMIC-ALLOCATION-SPACE-UNIT-TRACK-LIMIT

This parameter sets an upper limit on the number of tracks that are allowed for primary and secondary allocation requests for Advanced Archive for DFSMShsm program work files. If you specify a value other than NONE, work file allocation requests that exceed the limit are reduced in size to whatever value you specify for this parameter..

Related parameters:	There are no related parameters.

Valid settings:	Any integer in the range 1 - 65535 or NONE.
Default setting:	NONE

DYNAMIC-ALLOCATION-STORAGE-CLASS

This parameter specifies the SMS storage class to use when Advanced Archive for DFSMShsm dynamically allocates a work file on DASD.

Related parameters:	• DYNAMIC-ALLOCATION-DATA-CLASS • DYNAMIC-ALLOCATION-MANAGEMENT-CLASS • DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER
Valid settings:	• Any valid SMS storage class. • NONE - Indicates that the parameter is not in use.
Default setting:	NONE

DYNAMIC-ALLOCATION-UNIT

This parameter specifies the unit name to use when Advanced Archive for DFSMShsm dynamically allocates a work file.

Related parameters:	• DYNAMIC-ALLOCATION-DATA-CLASS • DYNAMIC-ALLOCATION-MANAGEMENT-CLASS • DYNAMIC-ALLOCATION-STORAGE-CLASS • DYNAMIC-ALLOCATION-VOLSER
Valid settings:	Any valid EDT unit name.
Default setting:	3390

DYNAMIC-ALLOCATION-VOLSER

This parameter specifies the DASD volume serial number to use when Advanced Archive for DFSMShsm dynamically allocates a work file.

Related parameters:	• DYNAMIC-ALLOCATION-DATA-CLASS • DYNAMIC-ALLOCATION-MANAGEMENT-CLASS • DYNAMIC-ALLOCATION-STORAGE-CLASS • DYNAMIC-ALLOCATION-UNIT
Valid settings:	• NONE - Advanced Archive for DFSMShsm tries to select an available volume serial number. • Any valid volume serial number.
Default setting:	NONE

DYNAMIC-ALLOCATION-VSAM-DATA-CLASS

This parameter specifies the SMS data class to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM data set.

Related parameters:	• DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER • DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS • DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS
Valid settings:	• Any valid SMS data class. • NONE - Indicates that the parameter is not in use.
Default setting:	NONE

DYNAMIC-ALLOCATION-VSAM-DATA-VOLSER

This parameter specifies the DASD volume serial number to use when Advanced Archive for DFSMShsm needs to dynamically allocate a VSAM work file data component.

Related parameters:	There are no related parameters.
Valid settings:	• NONE - Advanced Archive for DFSMShsm tries to select an available volume serial number. • Any valid DASD volume serial number.
Default setting:	NONE

DYNAMIC-ALLOCATION-VSAM-DATASET-NAME-PREFIX

This parameter specifies the data set name prefix to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM work file on DASD.

Related parameters:	There are no related parameters.
Valid settings:	Any data set name prefix; you may specify a maximum of 26 characters.
Default setting:	ADV.ARCHIVE

DYNAMIC-ALLOCATION-VSAM-INDEX-VOLSER

This parameter specifies the DASD volume serial number to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM work file index component.

Related parameters:	There are no related parameters.
Valid settings:	• NONE - Advanced Archive for DFSMShsm tries to select an available volume serial number. • Any valid DASD volume serial number.
Default setting:	NONE

DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS

This parameter specifies the SMS management class to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM data set on DASD.

Related parameters:	• DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER • DYNAMIC-ALLOCATION-VSAM-DATA-CLASS • DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS
Valid settings:	• Any valid SMS management class. • NONE - Indicates that this parameter is not in use.
Default setting:	NONE

DYNAMIC-ALLOCATION-VSAM-STORAGE-CLASS

This parameter specifies the SMS storage class to use when Advanced Archive for DFSMShsm dynamically allocates a VSAM data set on DASD.

Related parameters:	• DYNAMIC-ALLOCATION-UNIT • DYNAMIC-ALLOCATION-VOLSER • DYNAMIC-ALLOCATION-VSAM-DATA-CLASS • DYNAMIC-ALLOCATION-VSAM-MANAGEMENT-CLASS
Valid settings:	• Any valid SMS storage class. • NONE - Indicates that this parameter is not in use.
Default setting:	NONE

GREGORIAN-DATE-FORMAT

This parameter specifies the date format that Advanced Archive for DFSMShsm will use when displaying dates on the reports.

Related parameters:	There are no related parameters.
Valid settings:	• MM/DD/YYYY - American-style Gregorian date format. • DD/MM/YYYY - European-style Gregorian date format. • YYYY/MM/DD - Sortable-style Gregorian date format.
Default setting:	MM/DD/YYYY

L0-MINIMUM-SIZE

This parameter specifies the minimum amount of L0 disk data (in gigabytes) that is written to a single archive tape during Archive processing.

Any group or subgroup of data that is selected for archiving, but contains less data than the amount specified by this parameter, is excluded from Archive processing.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 0 - 99999, representing the number of gigabytes.

Default setting:	0

L0-TARGET-SIZE

This parameter specifies the minimum amount of L0 disk data (in gigabytes) that is passed to the Archive process per archive request.

If the amount of data that is selected for processing exceeds this value, the selected data is split into subgroups and each subgroup is archived to a separate tape.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 0 - 99999, representing the number of gigabytes.
Default setting:	99999

ML2-MINIMUM-SIZE

This parameter specifies the minimum amount of archived ML2 data (in gigabytes) that is written to a DFSMShsm migration level 2 tape during Restore processing.

Any group or subgroup of data that is selected for Restore but contains less data than is specified by this parameter is excluded from Restore processing.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 0 - 99999, representing the number of gigabytes.
Default setting:	0

ML2-TAPE-ALLOCATION-DATACLAS

This parameter specifies the DFSMS data class name that is used to allocate the ML2 data set that will contain the restored files.

Related parameters:	• ML2-TAPE-ALLOCATION-MGMTCLAS • ML2-TAPE-ALLOCATION-STORCLAS • ML2-TAPE-ALLOCATION-UNIT-NAME • ML2-TAPE-DATA-SET-NAME
Valid settings:	A valid DFSMS data class value or NONE.
Default setting:	NONE

ML2-TAPE-ALLOCATION-MGMTCLAS

This parameter specifies the DFSMS management class name that is used to allocate the ML2 data set that will contain the restored files.

Related parameters:	• ML2-TAPE-ALLOCATION-DATACLAS • ML2-TAPE-ALLOCATION-STORCLAS • ML2-TAPE-ALLOCATION-UNIT-NAME • ML2-TAPE-DATA-SET-NAME

Valid settings:	A valid DFSMS management class value or NONE.
Default setting:	NONE

ML2-TAPE-ALLOCATION-STORCLAS

This parameter specifies the DFSMS storage class name that is used to allocate the ML2 data set that will contain the restored files.

Related parameters:	• ML2-TAPE-ALLOCATION-DATACLAS • ML2-TAPE-ALLOCATION-MGMTCLAS • ML2-TAPE-ALLOCATION-UNIT-NAME • ML2-TAPE-DATA-SET-NAME
Valid settings:	A valid DFSMS storage class value or NONE.
Default setting:	NONE

ML2-TAPE-ALLOCATION-UNIT-NAME

This parameter specifies the unit name that is used to allocate the ML2 data set that will contain the restored files.

Related parameters:	• ML2-TAPE-ALLOCATION-DATACLAS • ML2-TAPE-ALLOCATION-MGMTCLAS • ML2-TAPE-ALLOCATION-STORCLAS • ML2-TAPE-DATA-SET-NAME
Valid settings:	A valid esoteric or generic unit name.
Default setting:	3490

ML2-TAPE-DATA-SET-NAME

This parameter specifies the name of the DFSMShsm migration level 2 tape data sets. It is used when archiving files from DFSMShsm ML2 tapes as well as when archived files are restored.

Related parameters:	• ML2-TAPE-ALLOCATION-DATACLAS • ML2-TAPE-ALLOCATION-MGMTCLAS • ML2-TAPE-ALLOCATION-STORCLAS • ML2-TAPE-ALLOCATION-UNIT-NAME
Valid settings:	Any valid data set name.
Default setting:	HSM.HMIGTAPE.DATASET

ML2-TARGET-SIZE

This parameter specifies maximum amount of data (in gigabytes) that is written to a DFSMShsm migration level 2 tape during Restore processing. If the amount of data that is selected for processing exceeds this value, the selected data is split into subgroups and written to separate tapes.

Related parameters:	There are no related parameters.

Valid settings:	Any integer in the range 1 - 99999, representing the number of gigabytes.
Default setting:	99999

RECYCLE-FROM-ARCHIVE-COPY-NUM

This parameter specifies which of the four archive volume copies are to be used by the AXQRECYC program that is currently executing.

Related parameters:	RECYCLE-THRESHOLD-PERCENTAGE
Valid settings:	Any integer in the range 1 - 4.
Default setting:	1

RECYCLE-THRESHOLD-PERCENTAGE

This parameter defines the utilization percent threshold value at which an Archive Database tape entry is considered ineligible for Recycle.

Related parameters:	RECYCLE-FROM-ARCHIVE-COPY-NUM
Valid settings:	Any integer in the range 0 - 100.
Default setting:	20

REPORT-PAGE-LENGTH

This parameter specifies how many lines are included in each report page.

Related parameters:	There are no related parameters.
Valid settings:	Any positive integer.
Default setting:	60

Note: If this parameter is set to a value greater than 999, Advanced Archive for DFSMShsm does not produce report headings.

RESTORE-FROM-ARCHIVE-COPY-NUM

This parameter specified which of the four archive volume copies are to be used by the program currently executing.

Related parameters:	There are no related parameters.
Valid settings:	Any integer in the range 1 - 4.
Default setting:	1

RESTORE-QUEUE-CLUSTER-NAME

This parameter specifies the full VSAM cluster name of the Restore Queue database. The Restore Queue holds records for the files that have been selected for Restore processing.

Related parameters:	RESTORE-QUEUE-NUMBER-OF-RECORDS

Valid settings:	A valid VSAM cluster name no longer than 38 characters in length.
Default setting:	ADV.ARCHIVE.RESTORE.QUEUE

RESTORE-QUEUE-NUMBER-OF-RECORDS

This parameter specifies the number of records that are expected to be in the Restore Queue database. The value of this parameter is used when the database is created.

Related parameters:	RESTORE-QUEUE-CLUSTER-NAME
Valid settings:	Any integer in the range 0 - 99999999.
Default setting:	10000

RESTORE-SELECTION-MAXIMUM-FILES

This parameter establishes the maximum number of candidate data sets that can be selected for Restore processing. After this limit is reached, the selection of candidate data sets is curtailed and the selected candidates are passed on for restoration.

Related parameters:	RESTORE-SELECTION-MAXIMUM-GB
Valid settings:	Any integer in the range 0 - 99999, representing the number of data sets. **Note:** A value of zero (0) indicates that there is no maximum limit.
Default setting:	100

RESTORE-SELECTION-MAXIMUM-GB

This parameter establishes the maximum size (in gigabytes) of candidate data sets that can be selected for Restore processing. After this limit is reached, the selection of candidate data sets is curtailed and the selected candidates are passed on for restoration.

Related parameters:	RESTORE-SELECTION-MAXIMUM-FILES
Valid settings:	Any integer in the range 0 - 99999, representing the number of data sets. **Note:** A value of zero (0) indicates that there is no maximum limit.
Default setting:	0

RESTORE-TO-DRIVE-DYNAMIC-HRECALL

This parameter controls whether Advanced Archive for DFSMShsm dynamically drives DFSMShsm **HRECALL** processing for files as they are restored to ML2.

Related parameters:	There are no related parameters.
Valid settings:	• YES - Drive **HRECALL** for files that are restored to ML2. • NO - Do not drive **HRECALL** for files that are restored to ML2.
Default setting:	YES

SORT-PRODUCT-NAME

This parameter specifies the sort product that is installed so that Advanced Archive for DFSMShsm can set up the appropriate dynamic interface for internal sorts.

Related parameters:	SORT-PRODUCT-PARAMETERS-DDNAME
Valid settings:	DFSORT, SYNCSORT, or CASORT
Default setting:	DFSORT

SORT-PRODUCT-PARAMETERS-DDNAME

This parameter specifies the DD name that Advanced Archive for DFSMShsm should assign to the sort statement file used by the sort product.

Related parameters:	SORT-PRODUCT-NAME
Valid settings:	Any valid DD name.
Default setting:	SORTCNTL

Chapter 11. Troubleshooting and messages

This section contains information that might help you resolve several common issues. It contains a list of the WTO messages that can be issued by Advanced Archive for DFSMShsm and a procedure for determining the current modification levels of your product modules.

If Advanced Archive for DFSMShsm encounters a situation where the only possible course of action is to abend, a user abend of U0100 might be issued. The abend might be accompanied by a dump and at least one diagnostic or error message; the error messages are described in this section.

If you are unable to resolve your issue after reviewing this information, contact IBM Software Support. If you contact IBM Software Support, have the following information available:

- Advanced Archive for DFSMShsm release, version, and PTF level (see "Running AXQMODLV to get a modification level report" on page 135)
- z/OS release number
- JCL that was submitted
- Job output and dump, if any was generated
- Any error message codes
- Any other information that you think might be relevant to understanding the problem

Topics:

Creating a candidate rejection report

The JCL for the Archive (`AXQRCHIV`), Restore (`AXQRESTR`), and Database Report (`AXQDBRPT`) functions can be modified to generate a candidate rejection report that explains why some candidate data sets were not processed.

About this task

The JCL for the Archive, Restore, and Database Report functions can be modified to create a list of data sets that were rejected because of the way that their selection criteria were defined.

The JCL for the Archive, Restore, and Recycle functions can be modified to create a list of data sets that were rejected for reasons other than selection criteria rejections.

Procedure

1. If you want to generate a rejection report that shows which candidate data sets were rejected because of the way the selection criteria were defined through the `//CRITERIA` DD statement for the Archive, Restore, or Database Reporting function, include `//CANDREJR DD SYSOUT=*` (or whatever `SYSOUT` class you want) in the JCL.

   Note: Be aware that including the `//CANDREJR` DD statement might generate a very large report.
2. To generate a rejection report that shows which candidate data sets were rejected by Restore or Recycle function processing for reasons other than failure to meet the selection criteria, you must add two DD statements to the JCL:
   a. Add a statement that allocates a rejection report DD statement:

Function	DD statement
Restore (AXQRESTR)	`//RSTRREJR DD SYSOUT=*`
Recycle (AXQRECYC)	`//RCYCREJR DD SYSOUT=*`

   b. Add a statement that allocates an input data set from which data set name masks are read. the data set name masks determine which rejected data sets were included in the report:

Function	DD statement
Archive (AXQRCHIV)	`//ARCHREJP DD *`
Restore (AXQRESTR)	`//RSTRREJP DD *`
Recycle (AXQRECYC)	`//RCYCREJP DD *`

   Within the input data set, data set name masks must adhere to these format rules:

   - The statement must include these elements:
     `REJECTION_DSN_PATTERN:`*`datasetname_or_mask`*

     where *datasetname_or_mask* is either a valid data set name or a data set name mask.
   - The `REJECTION_DSN_PATTERN:` statement can start at any position in the statement.
   - An asterisk (`*`) in the first position of the statement indicates a comment.
   - Mask statements support two wildcard characters, the asterisk (`*`) and the percent symbol (`%`). An asterisk is interpreted as 0–*n* characters at that position in the mask string; the characters can have any value that is valid for data set names. A percentage symbol is interpreted as a single non-blank character at that position in the mask string; the character can have any value that is valid for data set names.

     Consider an example data set name, `GLORF.PAYROLL.CYCLE23.YEAR.END.DATA`. A data set name mask that would match this data set (and therefore select it for inclusion in the rejection report) is `*.PAYROLL.%%%%%23*.**.DATA`.

     Now consider another example, in which you want to specify a mask that matches any data set name. You could specify `*.**`, which includes in the rejection report the names of all of the rejected data sets.

Note: When archiving data sets, the dd name ARCHREJR is dynamically allocated if it is not coded in the execution JCL. This is done to ensure that when data sets fail to be archived that the reason for the failure is reported on.

Running AXQMODLV to get a modification level report

You might be asked by IBM Software Support to run the AXQMODLV JCL to identify the current modification levels of the Advanced Archive for DFSMShsm modules. The AXQMODLV member resides in the product JCL sample library.

About this task

AXQMODLV identifies and displays the PTFs and enhancements that have been applied to the product software, based on information that is stored within the modules.

Be aware that only the most recent update contains the fix and revision number and the change date. All other fixes show the ID number only.

The following figure shows sample AXQMODLV JCL.

```
//AXQMODLV  JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      MODIFICATION LEVEL REPORT                                     *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO PRODUCE A REPORT THAT LISTS THE           *
//*      MODIFICATION LEVEL OF THE MODULES IN THE ADVANCED ARCHIVE     *
//*      LOADLIB.                                                      *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//*
//S010     EXEC PGM=AXQMODLV
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

Procedure

1. Provide appropriate job card information for your environment.
2. Replace all occurrences of @HLQ with the appropriate prefix for your data set.
3. Submit the job for execution.

Results

The following figure shows an example of the maintenance level report that is created when AXQMODLV is run.

```
VER X.X                                    A D V A N C E D   A R C H I V E  FOR  DFSMShsm                 AXQMODLV JOBXXXXX

DATE: XX/XX/XXXX.XXX  TIME: XX:XX:XX               MODIFICATION LEVEL REPORT FOR COMPANY_NAME                        PAGE      1

               LOAD LIBRARY                PROGRAM   ENTRY   PROGRAM ASSBLY PROGRAM PROGRAM PROGRAM           PROGRAM
              DATA SET NAME                  NAME    POINT     DATE   TIME  VERSION  FMID    LEVEL             NOTES
<------------------------------------------> <------> <------> <------------> <-----> <-----> <-----> <------------------------------>

=================================================================================================================================================

RSQA.AXQ.R110.SAXQLOAD                     AXQ$MAIN AXQ$MAIN XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQACTPR AXQACTPR XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQALOGR AXQALOGR XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQARCHK AXQARCHK XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQARGSZ AXQARGSZ XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCASHK AXQCASHK XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCDRVR AXQC0DRV XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCLNUP AXQCLNUP XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCLOUD AXQCLOUD XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCPUID AXQCPUID XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQCSHK2 AXQCSHK2 XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQDBBKP AXQDBBKP XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQDBINI AXQDBINI XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQDBRPT AXQDBRPT XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQDBRST AXQDBRST XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQISPF2 AXQISPF2 XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQLARCH AXQLARCH XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
          AXQLCB0U AXQLCB0U XX/XX/XX XX.XX VXRX    HAAEXXX BASELVL
```

U0100 abend

Advanced Archive for DFSMShsm issues a user abend of U0100 when it encounters a situation where the only possible course of action is to abend. The abend might be accompanied by a dump and at least one diagnostic or error message.

Several situations might cause Advanced Archive for DFSMShsm to produce a U0100 abend. A general message, starting with `XXX*`, is listed above the U0100 abend message in the JES job log. To help you determine the cause of the abend, the `XXX*` message describes the error that was encountered.

Contact IBM Software Support if you are unable to resolve the problem. Be prepared to send a copy of the job log and dump, if one exists.

S913 abend

Advanced Archive for DFSMShsm and the user ID under which the Advanced Archive for DFSMShsm jobs are submitted must be authorized to perform the product's functions. See the security information in Chapter 3, "Configuring Advanced Archive for DFSMShsm," on page 11, and verify that all configuration is complete. Verify that Advanced Archive for DFSMShsm is authorized to perform its functions and that it is run with an authorized user ID with sufficient clearance to perform all Advanced Archive for DFSMShsm functions.

"Hash algorithm could not be performed" message

A message stating `hash algorithm could not be performed` indicates that the IBM Integrated Cryptographic Service Facility (ICSF) is not present on the z/OS system where the inactive data currently resides or that the ICSF started task is not running (or both).

If you intend to archive inactive data to an S3 or an IBM Cloud Object Storage cloud storage environment, the IBM Integrated Cryptographic Service Facility (ICSF) must be present on your z/OS system and the ICSF started task must be running.

Advanced Archive for DFSMShsm uses some functions of ICSF to perform the hashing that is necessary for S3 and IBM Cloud Object Storage API requests. If ICSF is not running, S3 and IBM Cloud Object Storage requests fail with an error stating that the hash algorithm could not be performed. In this case, start the ICSF started task and try the process again.

Messages

Messages provide a short summary of a processing situation, an explanation of what might have caused the situation, and a recommended course of action.

All of the messages that are generated by Advanced Archive for DFSMShsm have a severity code printed as the last character of the message ID. This table describes these severity codes:

Severity code	Description
I	Information only message. No user action is required.
W	Warning message. Results might not be as expected.
E	Error message. Some error situations are user-correctable; the **User response** section of the message documentation provides the recommended course of action.
D	Diagnostic message. These messages provide information that IBM Software Support can use to diagnose problems.
A	Action required message. These WTOR messages require a response from the user before processing can continue.

If you want to suppress the issuance of messages, see "AXQMSGOV" on page 232 for information about modifying the AXQMSGOV parameter library member appropriately.

AXQ00001I INVALID ENTRY FOUND IN PARMLIB MEMBER: AXQMSGOV. STATEMENT IN ERROR FOLLOWS:

Explanation: Invalid statements were found in the AXQMSGOV member of the parameter library. Message "AXQ00002I" contains the text of the invalid statement.

User response: Use the information that is provided in the *PARMLIB members* appendix of the *IBM Advanced Archive for DFSMShsm User's Guide* to correct the statement that contains the error.

AXQ00002I *statement text*

Explanation: This informational message shows the statement that message AXQ00001I reported as being in error.

User response: Use the information that is provided in Appendix E, "PARMLIB members," on page 227, to correct the statement that contains the error.

AXQ00003I VECTOR TABLE WAS SUCCESSFULLY UPDATED

Explanation: The Advanced Archive for DFSMShsm initialization job successfully built or updated its vector table.

User response: No action is necessary.

AXQ00004E VECTOR TABLE NOT UPDATED: *text*

Explanation: The Advanced Archive for DFSMShsm initialization job failed without updating its vector table. A subsequent error message contains the reason for the error.

User response: If the information that is provided by the error messages is insufficient to diagnose and

resolve the problem, contact IBM Software Support for further assistance.

AXQ00005I *product* **V***z.z*

Explanation: This informational message is printed in the job log of each job. The message text shows the product name (*product*) and release (*z.z*) for this run.

User response: No action is necessary.

AXQ00006W NOT AN ADVANCED ARCHIVE TAPE VOL=*volser* **DSN=***dsn*

Explanation: Cleanup processing attempted to expire this tape, but the data set name (*dsn*) did not match any of the `ARCHIVE-TAPEn-DATA-SET-NAME` parameter settings.

System action: Expiration processing is bypassed.

User response: If this is not a Advanced Archive for DFSMShsm tape, then no action is necessary. If this is a Advanced Archive for DFSMShsm tape, then correct the `ARCHIVE-TAPEn-DATA-SET-NAME` settings and expire the listed tapes manually.

AXQ00007W ARCHIVE VOLUME ALREADY IN SCRATCH STATUS VOL=*volser*

Explanation: Cleanup processing attempted to expire this tape, but the tape is already in scratch status.

System action: Expiration processing is bypassed.

User response: No action is necessary.

AXQ00008W ARCHIVE VOLUME ALREADY EXPIRED VOL=*volser*

Explanation: Cleanup processing attempted to expire this tape, but the tape's expiration date is less than the "ARCHIVE-TAPE-EXPIRATION-DAYS" on page 116 parameter setting.

System action: Expiration processing is bypassed.

User response: No action is necessary.

AXQ00009E TAPE MANAGEMENT SYSTEM IS NOT SUPPORTED: *tms name*

Explanation: Cleanup processing detected an active tape management system (*tms name*) that is not supported by Advanced Archive for DFSMShsm.

User response: Contact IBM Software Support to determine whether support for that tape management system is available.

AXQ00010E NO TAPE MANAGEMENT SYSTEM DETECTED

Explanation: Cleanup processing was not able to detect any supported tape management system on this system.

User response: Contact IBM Software Support for assistance.

AXQ00011E GQSCAN CONSECUTIVE FAILURE LIMIT EXCEEDED, ABORTING

Explanation: During the processing that is associated with the GQSCAN function, a nonzero return code was received more times than expected.

User response: Have all job input and output available and contact IBM Software SupportTechnical Support for assistance.

AXQ00012E UNEXPECTED RETURN CODE FROM ISGENQ OBTAIN, ABORTING

Explanation: An unexpected return code was received from an ISGENQ **`OBTAIN`** request.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00013E DD STATEMENT IS MISSING: *ddname*

Explanation: A required DD statement (*ddname*) is not present in the job step that is currently executing.

User response: Add the missing DD statement and run the job again. Contact IBM Software Support for further assistance.

AXQ00014E DD STATEMENT MAY NOT BE DUMMY: *ddname*

Explanation: A required DD statement is incorrectly defined as `DUMMY`. *ddname* is the ddname of the incorrectly defined DD statement.

User response: Specify valid DD statement information and run the job again.

AXQ00015E UNABLE TO SCRATCH DATA SET: *dsname*

Explanation: An unsuccessful attempt by an internally invoked IDCAMS was made to scratch the cataloged data set *dsname*.

System action: This message is accompanied by IDCAMS messages in the `SYSPRINT` DD output.

User response: Review the IDCAMS messages to determine the cause of the failure and make the appropriate corrections. Contact IBM Software Support for further assistance.

AXQ00016E UNABLE TO SCRATCH UNCATALOGED DATA SET: *dsname volser*

Explanation: An unsuccessful attempt was made to scratch the uncataloged data set *dsname*. *volser* is the volume serial number of the volume that contains the uncataloged data set.

User response: Contact IBM Software Support for assistance.

AXQ00017E UNABLE TO *operation* **STORAGE R15=X'00000000' LEN=X'00000000' ADDR=X'00000000'***VVVVVV*

Explanation: A failed attempt was made to obtain or release storage (*operation* is either `OBTAIN` or `RELEASE`).

User response:

- If the failure was an attempt to obtain storage, increase the region available to the job (using `REGION=` on the job card) and try the job again.
- If the obtain failure reoccurs or if the failure was on a release action, contact IBM Software Support for assistance.

AXQ00018E FORMAT 1 DSCB NOT FOUND: *dsname volser*

Explanation: The format 1 DSCB for data set *dsname* on DASD volume serial number *volser* was not found.

User response: If data set *xxx* is migrated, recall it. Otherwise, contact IBM Software Support for assistance.

AXQ00019E UNABLE TO DEFINE REQUIRED GDG BASE: *basename*

Explanation: The dynamic GDG definition procedure failed. *basename* is the name of the GDG base that was being defined.

User response: Review the IDCAMS `SYSPRINT` to determine what caused the failure. Contact IBM Software Support for further assistance.

AXQ00020E UNABLE TO OBTAIN DEVICE UCB ADDRESS: *volser*

Explanation: The executing program was unable to determine the UCB device address for volume serial number *volser*.

User response: Contact IBM Software Support for further assistance.

AXQ00021E IDCAMS FUNCTION FAILURE — SEE SYSPRINT DD FOR SPECIFIC FAILURE AND DIAGNOSTIC INFORMATION

Explanation: A request to IDCAMS resulted in an unexpected return code.

System action: IDCAMS has printed diagnostic information to the `SYSPRINT` DD.

User response: Review the information that was written to the `SYSPRINT` DD. If that information is insufficient to resolve the problem, contact IBM Software Support for further assistance.

AXQ00022E VSAM FUNCTION FAILURE

Explanation: An internally invoked VSAM function failed to complete properly.

User response: Contact IBM Software Support for assistance.

AXQ00023E VOLSER=*volser* **IS NOT FOUND IN THE TAPE MANAGEMENT DATABASE**

Explanation: Tape volume serial number *volser* is not defined in the tape management system database.

User response: Verify that the volser is in the tape management system's database. If you do find the volser in the database and this message continues to be issued, contact IBM Software Support for assistance.

AXQ00024E DATA SET IS NOT CATALOGED: *dsname*

Explanation: The executing program was unable to retrieve system catalog information for data set *dsname*.

User response: Verify that installation settings are correct. Contact IBM Software Support for further assistance.

AXQ00025E CLOUD DRIVER *calltype* **FUNCTION ERROR FOR CLOUDDEF=***defname* **WITH VOLSER=***volser* **AND FILEPOS=***position***; R15=***retcode*

Explanation: An error occurred while the cloud driver allocate, delete, or free function call was being processed.

- *calltype* is the type of cloud driver function call: `ALLOCATE`, `DELETE`, or `FREE`.
- *defname* is the name of the cloud definition being processed.
- *volser* is the volume serial number.
- *position* is the file position.
- *retcode* is the return code.

System action: Message AXQ00026E is issued. AXQ00026E contains additional diagnostic information.

User response: Have all job output available and contact IBM Software Support for assistance.

AXQ00026E IORB DIAG INFO: RETC=*retcode* **RSNC=***rsncode* **INFO=***text* **ERRINFO=***infotext1* **ERRINFO2=***infotext2*

Explanation: An error occurred while the cloud driver allocate, delete, or free function call was being processed for the cloud definition; this message provides detailed diagnostic information. Message AXQ00025E, which was issued prior to AXQ00026E, contains the cloud definition name, volser, file position, and R15 value.

User response: Have all job output available and contact IBM Software Support for assistance.

AXQ00028D *diagnostic message*

Explanation: Diagnostic messages for a function were requested.

User response: Send the job log, including the diagnostic messages, to IBM Software Support for review.

AXQ00029E SSI QUERY ENCOUNTERED AN ERROR SS NAME: *ssid* **RC: x'00000000' RSN: x'00000000'** *diagnostic message*

Explanation: A subsystem interface query returned an unexpected error. *ssid* is the subsystem name and the message text includes the return code and reason code.

User response: Contact IBM Software Support for assistance.

AXQ00030E PARSE ERROR ON CRITERIA STMT: *statement*

Explanation: While the statements that were read from DD name `CRITERIA` were being parsed, an unrecoverable error occurred for statement *statement*.

User response: Make the necessary changes to statement *statement* and run the job again. Contact IBM Software Support for further assistance.

AXQ00031W ONE OR MORE CRITERIA STATEMENTS SPECIFIED ARE NOT VALID FOR EXECUTION MODE *processtype*

Explanation: One or more of the statements that were read from the `CRITERIA` DD statement are not applicable to execution mode *processtype*. *processtype* is `ARCHIVE`, `RESTORE`, or `REPORTS`.

User response: Review the input file for the `CRITERIA` DD and remove any criteria statements that do not apply to the execution mode, and then run the job again. If this does not resolve the problem, have all job input and output available and contact IBM Software Support.

AXQ00032W ONE OR MORE RECORDS READ FROM DDNAME: CRITERIA WERE REJECTED

Explanation: One or more criteria selection statements that were read from the ddname `CRITERIA` were rejected.

User response: Review the report that was written to ddname `ERREPORT`. Make the necessary modifications and run the job again.

AXQ00033W DATE/DAY FORMAT ON CRITERIA STATEMENT IS UNRECOGNIZED

Explanation: A criteria statement contained an unrecognized date format.

User response: Ensure that the date format conforms to the requirements of the criteria statement that was flagged as erroneous. Appendix C, "Selection criteria keyword restrictions," on page 211, provides comprehensive information about the supported date formats. Make any necessary corrections and run the job again.

AXQ00034E LOGIC ERROR, DATEFLD# IS CORRUPT

Explanation: A criteria statement contained an unrecognized date format. This flagged criteria statement was expecting a Julian date field in the form of YYYY.DDD.

User response: Ensure that the flagged date format conforms to the requirements for the criteria statement (Appendix C, "Selection criteria keyword restrictions," on page 211) to correct the date format and then run the job again.

AXQ00035E LOGIC ERROR, GREGORIAN DATE FORMAT POINT INVALID

Explanation: The date format on a criteria statement was not recognized. This flagged criteria statement was expecting a Gregorian date field in the form of MM/DD/YYYY, DD/MM/YYYY, or YYYY/MM/DD.

User response: Ensure that the flagged date format conforms to the requirements for the criteria statement (Appendix C, "Selection criteria keyword restrictions," on page 211). Make the necessary corrections and run the job again.

AXQ00036E LOGIC ERROR, ERR MSG NUMBER INVALID, ABORTING

Explanation: The error message text routine received an out-of-bounds message number because of an internal error.

User response: Collect all program input and contact IBM Software Support for assistance.

AXQ00037W MULTIPLE GROUP_NAME= KEYWORDS SPECIFIED FOR THE SAME GROUP

Explanation: A logic error in the failing program caused multiple group names to be generated for the same group number.

User response: Collect all program input and contact IBM Software Support for assistance.

AXQ00038E MORE THAN 2000 GROUP_NAME KEYWORDS DETECTED, ABORTING

Explanation: While the criteria statements from the `CRITERIA` DDNAME statement were being parsed, more than 2000 unique group names were detected. Such a large number might be the result of an internal error or an excessive number of selection groups being present in the `CRITERIA` input stream.

User response: If there are more than 2000 selection groups specified in the `CRITERIA` input stream, correct the situation and run the job again. Otherwise, collect all program input and output and contact IBM Software Support for assistance.

AXQ00039I SELECTION CRITERIA VERIFICATION ONLY SELECTED, CANDIDATE SELECTION WILL BE BYPASSED.

Explanation: The DD statement `//VERCRITO DD DUMMY` was coded in the execution JCL; therefore, only criteria validation is being performed.

User response: To permit the candidate selection process to perform selection, remove the `//VERCRITO DD DUMMY` statement from the job stream and submit the job again.

AXQ00040E DDNAME=*ddname,* NOT ALLOCATED, EXECUTION TERMINATED

Explanation: The ddname represented by *ddname*, which is either `SORTIN` or `SORTOUT`, was not allocated.

User response: Determine why the ddname was not allocated, correct the problem, and resubmit the job. If you are unable to determine why the ddname was not allocated, collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00041W MULTIPLE GROUP_NAME= STATEMENTS READ FROM DDNAME: CRITERIA DURING THE EXECUTION OF `AXQDBRPT`

Explanation: During the execution of the Database Reporting function and while the candidate selection criteria statements read from ddname `CRITERIA` were being parsed, more than one `GROUP_NAME=` statement was read.

System action: The excessive `GROUP_NAME=` candidate selection statements are ignored.

User response: No action is necessary.

AXQ00042E UNABLE TO LOCATE HSM QCT* CTRL BLK

Explanation: While querying the HSM address space, the program that issued this message was unable to locate the HSM QCT* control block.

System action: The job ends abnormally with a U0100 abend code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00043E RETC: *retcode* RSNC: *rsncode* MODID: *Modid* ON DSN: *dsname*

Explanation: An unrecoverable failure occurred within the CSI interface.

- *retcode* is the return code.
- *rsncode* is the reason code.
- *modid* is the module ID.
- *dsname* is the name of the data set that was being retrieved.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00044E CURRENTLY UNSUPPORTED SORT PRODUCT: *prodname*

Explanation: An unsupported sort product name was detected. *prodname* is the name of the unsupported sort product.

System action: This message is followed by a U0100 abend.

User response: Specify the correct sort product name and run the job again.

AXQ00045E INVALID FUNCTION CODE RECEIVED FROM CALLING PROGRAM

Explanation: Because of an internal logic error, the sort-merge interface was presented with an invalid function code.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00046E HSM DOES NOT APPEAR TO BE ACTIVE ON THIS SYSTEM

Explanation: During an attempt to query HSM, the program that issued this message was unable to determine the status of the HSM address space.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00047E DFSMS SUBSYSTEM REQUEST ERROR SSOBRETN=X'.....' SSSARSN=X'.....'

Explanation: A DFSMS subsystem request call returned unexpected results.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00048E UNABLE TO LOCATE GROUP#: *grpnumber* **IN GROUP NUMBER TABLE, ABORTING**

Explanation: Because of an internal logic error, the criteria parsing routine encountered a generated group number (*grpnumber*) that does not exist in its group number table.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00049E GROUP NUMBER HOLD TABLE IS EMPTY, ABORTING

Explanation: Because of an internal logic error, the group number hold table was not populated.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00050E *modid* **R0:** *register0* **R15:** *register15*

Explanation: During error recovery processing, the module that encountered the failure might issue this message.

- *modid* is the issuing module ID.
- *register0* is the contents of register 0.
- *register15* is the contents of register 15.

User response: No action is necessary.

AXQ00051E *modid* **PROCESSING ERROR CODE : YY**

Explanation: The parameter library processing routines detected a failure. *modid* is the failing module ID and *YY* is a 2-character identification of the point of failure.

User response: No action is necessary.

AXQ00052E PROCESSING ERROR OCCURRED: *text*

Explanation: A failure in the issuing module was detected. *text* is a character string that identifies the cause of the failure.

System action: This message is followed by a U0100 abend.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00053E INVALID SYSIN INPUT: *statement*

Explanation: The program issuing this message detected invalid data in the input file that was being read from the `SYSIN` DD statement. *statement* is the `SYSIN` statement in error.

User response: Make the necessary corrections to the statement and then run the job again.

AXQ00054I MAXIMUM NUMBER OF ENTRIES IN `AXQTBDEF` EXCEEDED

Explanation: The parameter library member `AXQTBDEF` has exceeded its maximum size.

User response: Collect all job-related input and output and contact IBM Software Support for assistance.

AXQ00055E DDNAME/MEMBER NAME NOT FOUND: *ddname/mbrname*

Explanation: An attempt to read from a DD name or read a member from the parameter library failed. *ddname* is the affected ddname and *mbrname* is the affected member name.

User response: No action is necessary.

AXQ00056W *modname membername* **FOUND IN WRONG PARMLIB, DSN:** *dsname*

Explanation: Module *modname* attempted to read member *membername* and found that member in the wrong parameter library. *dsname* is the data set name. This is a diagnostic message.

User response: No action is necessary.

AXQ00057W *modname* **MEMBER** *membername* **MAY NOT HAVE A DDNAME OVERRIDE**

Explanation: Module *modname* attempted to read member *membername* from a DD statement coded in the job stream. However, *membername* cannot be processed in this manner.

User response: No action is necessary.

AXQ00058I *modname* **MEMBER** *membername* **READ FROM DDNAME** *ddname* **BY:** *bymodule*

Explanation: A module (*modname*) attempted to read a parameter library member from a DD statement that was coded in the job stream. However, the member cannot be processed in this manner.

- *modname* is the module that attempted the read.
- *membername* is the member name.
- *ddname* is the DD name that would have been used.
- *bymodule* is the module on whose behalf the read was to be issued.

User response: No action is necessary.

AXQ00059I *modname* **MEMBER** *membername* **WRITTEN TO DDNAME:** *ddname* **BY:** *bymodule*

Explanation: A module (*modname*) attempted to write or update a parameter library member from a DD statement that is coded in the job stream. However, that member cannot be processed in this manner.

- *modname* is the name of the module that attempted the write or update.
- *membername* is the name of the parameter library member.
- *ddname* is the DD name that would have been used.
- *bymodule* is the module on whose behalf the write or update was to be issued.

User response: No action is necessary.

AXQ00060E FAILURE DURING IDCAMS DEFINE OR INITIALIZATION OF *filetype*

Explanation: A failure occurred during the IDCAMS DEFINE or initialization of the Archive Database or Restore queue. The file type that failed is *filetype*.

User response: Review the job output to determine the reason for the failure. Contact IBM Software Support for further assistance.

AXQ00061E *modname* **ERROR ATTEMPTING TO WRITE MEMBER:** *membername*

Explanation: *modname* is the module that attempted to write or update member *membername* in the parameter library.

System action: This message is followed by WTO messages AXQ00050E, AXQ00051E, and a U0100 abend.

User response: Collect all input and output from the failed job and contact IBM Software Support for assistance.

AXQ00062I RETC: *retcode* **RSNC:** *rsncode* **MODID:** *moduleID* **ON DSN:** *dsname*

Explanation: An error was returned during invocation of the Catalog Search Interface.

- *retcode* is the CSI return code.
- *rsncode* is the CSI reason code.
- *moduleID* is the is the CSI module ID.
- *dsanme* is the data set name.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00063E SORT FUNCTION FAILURE - SEE SORT SYSOUT DD FOR SPECIFIC FAILURE AND DIAGNOSTIC INFORMATION

Explanation: A call to SORT has failed.

User response: To determine the cause of the sort failure, check the `SYSOUT` DD for messages that are produced by the sort product. If you cannot identify and resolve the problem, contact IBM Software Support. For a review of the problem, the support staff will need access to the output that was written to the `SYSOUT` DD.

AXQ00064E ALLOCATION OF DDNAME/DSN: *ddname/dsname* **FAILED WITH RETURN CODE:** *retcode*

Explanation: A failed attempt was made to allocate an Advanced Archive for DFSMShsm candidate data set.

- *ddname* is the failing ddname.
- *dsname* is the data set name.
- *retcode* is the reason code for the failure.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00065E INTERNAL ERROR DETECTED IN *progname*, NULL/CORRUPT CRITERIA TABLE DETECTED, EXECUTION TERMINATED

Explanation: During the candidate selection process, the table that is supposed to contain the parsed `CRITERIA` selection statements was found to be empty or it contained corrupted data. *progname* is the name of the program that issued the message.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00066E ARCHIVE DATABASE RECORD MAX LENGTH EXCEEDED LEN=*length*

Explanation: After the Archive Database was opened, it was determined that the database's maximum record length is larger than the maximum expected value.

User response: Verify that the `ARCHIVE-DATABASE-CLUSTER-NAME` parameter specifies the correct data set name for the Archive Database. Contact IBM Software Support for further assistance.

AXQ00067E ARCHIVE DATABASE RECORD LENGTH EXCEEDED LEN=*length*

Explanation: During an attempt to query HSM, the program that issued this message was unable to locate either the HSM or HSM AUX address space.

System action: The job ends abnormally with a U0100 abend code.

User response: Verify that the `ARCHIVE-DATABASE-CLUSTER-NAME` parameter specifies the correct data set name for the Archive Database. Contact IBM Software Support for further assistance.

AXQ00068E ENTRY NOT FOUND IN EDITRTNS MATRIX: *routinename*

Explanation: An internal error was detected in the parameter library statement processing function. *routinename* is the name of an edit routine that could not be found.

System action: The issuing job is terminated with a U0100 abend and dump.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00069I ONE OR MORE PARAMETER VALUES ARE IN ERROR - SEE PARAMETER ERROR REPORT FOR SPECIFIC DIAGNOSTIC INFORMATION

Explanation: During parameter validation, one or more parameters were found to be in error. The Parameter Error Report lists all of the parameters that failed during validation.

User response: Review the Parameter Error Report to determine which parameters are in error and make the necessary corrections in your `AXQUSETS` member or the `AXQPSETS` DD statement.

AXQ00070E SEVERE ERROR HAS OCCURRED IN AXQL1100, EC: *error*

Explanation: An unrecoverable error occurred in AXQL1100.

System action: The issuing job ends abnormally with a U0100 abend code.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00071E VSAM ERROR ON DSN: *dsname*, EXECUTION TERMINATED

Explanation: An error condition was detected during an attempt to read the data set *dsname*.

System action: The error condition precludes continued processing. The issuing job is terminated with a U0100 abend.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00072I EDIT ROUTINE *routinenum* IS NOT DEFINED

Explanation: EDITRTNS specified undefined edit routine number *routinenum*. This error can be caused by a corrupted control block structure.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00073E FAILURE DURING DEFINE OF GDG BASE, FEEDBACK: *fdbkattr*, RSNCDE/LIMIT/ATTR: *text*

Explanation: During an attempt to define a GDG base, an error was detected.

- *fdbkattr* is the feedback attribute.
- *text* is the reason code, GDG limit, and the GDG attributes that were used to request the DEFINE of the GDG base.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00074W MANAGEMENT CLASS CONSTRUCT NOT FOUND FOR: *mgmtclas*

Explanation: The management class construct for management class *mgmtclas* was not found, which prevents the calculation of retention criteria for data sets that are assigned to that management class.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00075I UNABLE TO DELETE REQUESTED LOAD MODULE: *modname*

Explanation: The dynamic load module processing routine was unable to remove the requested load module from storage. *modname* is name of the load module that could not be deleted.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00076I INVALID LOAD OBJECT FUNCTION CODE *X* **FOR LOAD MODULE:** *modname*

Explanation: An invalid function code was passed to the dynamic load module processing routine. *X* is the code for the failing function. *modname* is the name of the affected load module.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00077I LOAD MODULE TABLE IS FULL - CONTACT SUPPORT FOR ASSISTANCE

Explanation: The program table that is contained within the dynamic load module processing routine is full.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00078W PARMLIB= FOUND ON EXEC PARM STMT, IGNORED

Explanation: The `PARMLIB=` parameter was found on the `EXEC` JCL statement.

System action: The `PARMLIB=` parameter is ignored.

User response: This is a warning message. No action is necessary.

AXQ00079E AXQPRLIB DD STATEMENT NOT FOUND

Explanation: The `AXQPRLIB` DD JCL statement was not found.

User response: Specify the `AXQPRLIB` DD JCL statement. Refer to the *IBM Advanced Archive for DFSMShsm User's Guide* for more information.

AXQ00080E SEVERE ERROR ENCOUNTERED DURING DATA SET PATTERN MATCHING, RC: *retcode* **DUMP FOLLOWS**

Explanation: A call to the data set pattern matching routine returned an unexpected return code (*retcode*).

System action: A U0100 abend was issued. The issuing job was terminated.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00081E ARCH_MGR LICENSE PERIOD HAS EXPIRED

Explanation: The system date is greater than the expiration date in the authorization code for this CPU.

User response: If more time is required for your use of this product, contact IBM Software Support for assistance.

AXQ00082I *parmname* **PARAMETER NAME ERROR**

Explanation: The `AXQUSETS` member or the `AXQPSETS` DD contains a parameter that is probably misspelled. *parmname* is the parameter name.

User response: Locate the parameter in your `AXQUSETS` member or the `AXQPSETS` DD. Correct the parameter name and run the job again.

AXQ00083I *parmname* **PARM VALUE MISSING FOR**

Explanation: A parameter that was entered in the `AXQUSETS` parmlib member or on the `AXQPSETS` DD statement did not contain a value. Parameter names and their corresponding values must be separated by one or more blank spaces. *parmname* is the name of the affected parameter.

User response: Locate the parameter in your `AXQUSETS` parmlib member or the `AXQPSETS` DD. Refer to the appropriate section in Chapter 10, "Parameters," on page 111, as you correct the parameter value specification and run the job again.

AXQ00084I PARAMETER VALUE CONTAINS AN INVALID CHARACTER

Explanation: During parameter value validation, an invalid character for a parameter was detected.

System action: This message is accompanied by messages AXQ00085I and AXQ00086I, which provide additional diagnostic information.

User response: Use the AXQ00085I and AXQ00086I messages to locate the parameter with the error in your AXQUSETS parmlib member or the AXQPSETS DD. Use the information in the appropriate section of Chapter 10, "Parameters," on page 111, to correct the parameter specification.

AXQ00085I PARAMETER NAME: *parmname*

Explanation: This message accompanies messages AXQ00084I and AXQ00088I. *parmname* is the name of the parameter that is being diagnosed.

User response: See the preceding messages for the suggested user action.

AXQ00086I PARAMETER VALUE: *parmval*

Explanation: This message accompanies messages AXQ00084I and AXQ00088I. The value *parmval* is the value of the parameter that is being diagnosed.

User response: See the preceding message or messages for the suggested user action.

AXQ00087I INVALID PARAMETER NAME IS SPECIFIED: *parmname*

Explanation: A program requested a parameter that is not defined in the internal parameter table. *parmname* is the name of the parameter.

User response: Verify that the LOADLIB and PARMLIB are of the same release, version, and maintenance level. Contact IBM Software Support for further assistance.

AXQ00088I *parmsource* **PARAMETER NUMERIC VALUE IS TOO LARGE**

Explanation: A program requested a parameter and the value that was specified for that parameter exceeds the maximum size allowed for that parameter. *parmsource* identifies the source from which the parameter and the parameter value were obtained.

User response: Use the information that is provided by the AXQ00085I and AXQ00086I messages to locate the parameter with the error in your AXQUSETS parmlib member or the AXQPSETS DD. Use the information in the appropriate section of Chapter 10, "Parameters," on page 111, chapter to correct the error.

AXQ00089I TABLE CONTINUATION ERROR: FIRST FIELD MAY NOT BE A CONTINUATION CHARACTER

Explanation: A continuation error exists in the parameter library member that is identified by the accompanying messages.

User response: Check the line indicated in the table specified in the error message and correct the continuation error. Contact IBM Software Support for further assistance.

AXQ00090I DD/MEMBER NAME= *membername* **LINE NUMBER=** *linenumber*

Explanation: This message accompanies messages AXQ00089I and AXQ00091I. *membername* is the name of the member where the error occurred. *linenumber* is the line number on which the error was found.

User response: See the accompanying messages for suggested user action.

AXQ00091I DATALINE= *linenumber*

Explanation: This message accompanies message AXQ00089I. *linenumber* is the line of the member where the error was found.

User response: See the accompanying messages for suggested user action.

AXQ00092I * SIMULATE MODE IN EFFECT, ALL UPDATES BYPASSED**

Explanation: This message is issued when the parameter PARM=SIM is coded on the JCL statement EXEC PGM= .

System action: All update functions, including calling the Advanced Archive for DFSMShsm Archive process, are bypassed.

User response: No action is necessary.

AXQ00093W ONE OR MORE VSM ERRS OCCURRED ON DSN: *dsname*, **SEE SNAPDUMP**

Explanation: A VSAM error was detected on the data set named *dsname*. A snap dump was written to ddname SNAPDUMP and the dump contains all information that is relevant to the failure. This message is written only once during the execution of the issuing program.

System action: A return code of 8 was set.

User response: Have all job related input and output available and contact IBM Software Support for assistance.

AXQ00094I DATASET OPEN FAILURE: RC=*retcode*

Explanation: A data set resource failed to open properly. *retcode* is the return code.

System action: This message is accompanied by messages AXQ00095I and AXQ00096I, which contain additional diagnostic information.

User response: To determine the cause of the failure, review the return code explanation that is documented in the *Non-VSAM Instructions* section of *DFSMS/MVS Macro Instructions for Data Sets*. Contact IBM Software Support for further assistance.

AXQ00095I DATASET NAME: *dsname*

Explanation: This message accompanies several error messages. *dsname* is the data set name that is being processed by the failing facility.

User response: See the preceding messages for the suggested user action.

AXQ00096I DDNAME: *ddname*

Explanation: This message accompanies several error messages. *ddname* is the DD name that is being processed by the failing facility.

User response: See the preceding messages for the suggested user action.

AXQ00097I RDJFCB FAILURE: RC=*retcode* **DDNAME:** *ddname*

Explanation: The MVS™ RDJFCB facility failed for the ddname specified as *ddname*. *retcode* is the return code.

User response: Contact IBM Software Support for assistance.

AXQ00098I DATASET CLOSE FAILURE: RC=*retcode*

Explanation: A data set resource failed to close properly. *retcode* is the return code.

System action: This message is accompanied by messages AXQ00095I and AXQ00096I, which provide additional diagnostic information.

User response: To determine the cause of the failure, review the return code explanation that is documented in the *Non-VSAM Instructions* section of *DFSMS/MVS Macro Instructions for Data Sets*. Contact IBM Software Support for further assistance.

AXQ00099I USER ABEND MODULE TRACE:

Explanation: This message accompanies other messages to provide diagnostic information.

User response: See the preceding messages for the suggested user action.

AXQ00100I PGM=*prgname* **LOAD ADDR=***addr* **DISPL=***displacement* **DIAGSTR:** *string*

Explanation: This message accompanies provides diagnostic information that is related to the messages that precede it:

- *prgname* is the program name.
- *addr* is the program load address.
- *displacement* is the call displacement.
- *string* is the assembly date/time stamp and level information.

User response: No action is necessary. Review the preceding messages for the suggested user response.

AXQ00101E THE MAXIMUM NUMBER OF CRITERIA GROUPS WITH A DSN PATTERN OF: ** HAS BEEN EXCEEDED, ABORTING

Explanation: More than 200 data set name patterns that match `DSN=**` have been detected in the failing job.

User response: Review the `CRITERIA` DD input statements and either remove or correct the statements. Run the job again. If you are unable to resolve the problem, contact IBM Software Support for assistance. Have all job related input and output available.

AXQ00102E PARAMETER VALUE IS INCONSISTENT WITH VALUE LOADED BY `AXQTINIT`; *text*

Explanation: The value that was specified in `AXQPSETS` for the listed parameter is different than the value that was loaded into the vector table by `AXQTINIT`. This is not allowed for processes that update the Archive Database.

User response: Correct or remove the parameter override in the `AXQPSETS` DD. If the `AXQPSETS` value is the correct value, run `AXQTINIT` with the updated value.

AXQ00103E INSUFFICIENT ABOVE-THE-LINE VIRTUAL STORAGE AVAILABLE

Explanation: Insufficient above-the-line storage is available.

User response: Increase the available region size and run the job again. Have all job input and output available and contact IBM Software Support for further assistance.

AXQ00104E DYNAMIC ALLOCATION ERROR: *prgname*

Explanation: An attempted dynamic allocation failed to complete properly. *prgname* is the name of the program where the failure occurred. This message is accompanied by messages AXQ00105I, AXQ00106I,

AXQ00107I, and sometimes AXQ00108I, which provide additional diagnostic information.

User response: Review the DD name, data set name, and member information given in the associated messages. Also review the dynamic allocation return code information that is documented in the IBM *OS/390® MVS Auth Assembler Services Reference*. If necessary, have all job input and output available and contact IBM Software Support for assistance.

AXQ00105I RETURN CODE: *retcode* **/ INFO CODES:** *infocode*

Explanation: This message accompanies message AXQ00104E. *retcode* is the error code and *infocode* is the information code returned by the failing facility.

User response: See the preceding AXQ00104E message for the suggested user action.

AXQ00106I FAILING DDNAME: *ddname*

Explanation: This message accompanies message AXQ00104E. *ddname* is the DD name that the dynamic allocation failed to allocate properly.

User response: See the preceding messages for the suggested user action.

AXQ00107I FAILING DSNAME: *dsname*

Explanation: This message accompanies message AXQ00104E. *dsname* is the data set name that the dynamic allocation failed to allocate properly.

User response: See the preceding messages for the suggested user action.

AXQ00108I FAILING MEMBER: *membername*

Explanation: This message accompanies message AXQ00104E. *membername* is the PDS member name that the dynamic allocation failed to allocate properly.

User response: See the preceding messages for the suggested user action.

AXQ00109E *libname* **IS NOT APF AUTHORIZED**

Explanation: The product LOADLIB *libname* is not APF authorized. The product LOADLIB must be APF authorized to run on your system.

User response: APF authorize the product LOADLIB, or ask your system administrator for assistance.

AXQ00110I AXQL0071 RECEIVED AN INVALID REQUEST CODE: *reqcode*

Explanation: The program AXQL0071 received an unsupported request code. *reqcode* is the request code that was passed to AXQL0071.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00111W ONE OR MORE ERRORS OCCURRED DURING THE CANDIDATE SELECTION PROCESS, SEE REPORT WRITTEN TO DDNAME: ERREPORT

Explanation: During the candidate selection process, one or more errors were detected. Specific error information was written to ddname `ERREPORT`.

User response: Correct the errors shown in the report written to ddname `ERREPORT` and run the job again. Contact IBM Software Support for further assistance.

AXQ00112E NON-ZERO RETURN CODE FROM EDTINFO RTNDEVN FACILITY: UNITNAME=*unitname* **R15=***X'register0'* **R0=***X'register15'*

Explanation: The MVS EDTINFO RTNDEVN facility has failed with the listed diagnostic information.

- *unitname* is the unit name that was not found in the EDT.
- *X'register0'* is the contents of register 15.
- *X'register15'* is the contents of register 0.

User response: To determine what caused the failure, review the return code and reason code explanations that are documented in the *IBM MVS Auth Assembler Services Reference*. Contact IBM Software Support for further assistance.

AXQ00113I UCBSCAN COPY FACILITY ERROR: RETURN CODE= *retcode* **REASON CODE=** *rsncode*

Explanation: The MVS UCBSCAN COPY facility has failed with the listed diagnostic information. *retcode* is the return code value and *rsncode* is the reason code value.

User response: To determine what caused the failure, review the return code and reason code explanations documented in *IBM's OS/390 MVS Auth Assembler Services Reference*.

AXQ00114I UCBSCAN ADDRESS FACILITY ERROR: RETURN CODE= *retcode* **REASON CODE=** *rsncode*

Explanation: The MVS UCBSCAN ADDRESS facility has failed with the listed diagnostic information. *retcode* is the return code value and *rsncode*is the reason code value.

User response: To determine what caused the failure, review the return code and reason code explanations documented in IBM's *OS/390 MVS Auth Assembler Services Reference*. If necessary, have all job input and

output available and contact IBM Software Support for assistance.

AXQ00115E NO DATA SET PATTERNS WERE ACCEPTED BY AXQL0580 ABORTING

Explanation: None of the data set name patterns that were specified for the DSN=, DSN>, or XDSN> criteria keywords were accepted.

System action: Execution cannot continue.

User response: Review the specified data set name patterns. Make the necessary corrections and run the job again. If the problem persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00116W ONE OR MORE *type* STMTS READ FROM: *name* DO NOT CONTAIN A MINIMUM OF 3 CONSECUTIVE BLANKS AFTER THE PATTERN VALUE

Explanation: One or more of the *xxx* (where *type* is either DSN or VOL) statements read from *name* (where *name* can be a parameter library member name or a DD name) do not contain a minimum of three consecutive blanks after the pattern value.

User response: Review the output written to ddname ERREPORT. Correct the identified errors and run the job again. If the problem persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00117E UNRECOVERABLE ERROR OCCURRED DURING: *phase*

Explanation: During the execution of the Database Report (AXQDBRPT) program, an unrecoverable error was detected. *phase* (where *phase* can be CRITERIA VALIDATION, CANDIDATE SELECTION, or FUNCTION TERMINATION) identifies the phase during which the error was detected.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00118I REQUESTED TABLE ENTRY NOT FOUND: *entryname*

Explanation: An internal program table entry that was expected to be present was not found. *entryname* is the table entry name.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00119I TABLE NAME: *tblname*

Explanation: This message shows the name of the program table (*tblname*) from which the entry was missing.

User response: See the preceding message AXQ00118I for the suggested user action.

AXQ00120E DDNAME: CRITERIA NOT ALLOCATED OR POINTED TO AN EMPTY/NULL FILE, EXECUTION ABORTED

Explanation: This message is issued when the CRITERIA DD either was not found in the JCL or it did not contain any control statements. For Archive and Restore processing, selection criteria control statements are required.

User response: Specify selection criteria control statements in the ddname CRITERIA and run the job again.

AXQ00121E UNRECOVERABLE ERROR OCCURRED IN AXQL0430, FAILURE DETECTED AT OFFSET: *X'offset'*

Explanation: An unrecoverable error was encountered while AXQL0430 was executing. *offset* is the offset within AXQL0430 where the failure was detected.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00122I DDNAME: *ddname* - PRIMARY SPACE REDUCED

Explanation: The primary allocation size for the work files has been reduced from the number of tracks requested to the number of tracks that were specified in the DYNAMIC-ALLOCATION-SPACE-UNIT-TRACK-LIMIT parameter. *ddname* is the ddname that is affected.

System action: The secondary allocation is set to the number of tracks.

User response: No action is necessary.

AXQ00123I PAUSING *n* SECONDS, RETRIES LEFT: *numretries*

Explanation: This message is issued when the dynamic allocation subprogram has encountered a dynamic allocation failure that can be recovered and retried. *n* is the number of seconds that the dynamic allocation subprogram waits before it retries the allocation. *numretries* is the number of retries remaining for this dynamically allocated resource to be successfully allocated. The maximum retry counter is defined by the DYNAMIC-ALLOCATION-RETRY-LIMIT parameter in the product parameter library.

System action: When the retry counter reaches 0 and the resource is not successfully allocated, the job abends with a U0100 abend and produces a dump.

User response: Check the log for the failing job for IKJ messages that more fully describe the reasons why the dynamic resource was not allocated. Correct the problem with the failing resource and resubmit the job. If further assistance is required, have all job input and output available and contact IBM Software Support.

AXQ00124W NO CANDIDATES WERE SELECTED FOR: *processtype*, BASED ON SELECTION CRITERIA SPECIFIED, EXECUTION TERMINATED

Explanation: During execution of *processtype* (where *processtype* is either ARCHIVE or RESTORE) process, no candidates were selected, based on the selection criteria specified.

User response: Review the selection criteria and make any changes that are deemed necessary, and then run the job again. If you are unable to resolve the issue, have all job input and output available and contact IBM Software Support.

AXQ00125E ERROR DETECTED DURING CRITERIA STATEMENT VALIDATION, EXECUTION TERMINATED

Explanation: During the execution of an Archive or Restore request, one or more errors were detected in the selection criteria statements that were specified.

User response: Review the selection criteria and all SYSOUT data sets. Make any changes that are deemed necessary and run the job again. If you are unable to resolve the issue, have all job input and output available and contact IBM Software Support.

AXQ00126W ONE OR MORE UNSUPPORTED CRITERIA KEYWORDS WERE DETECTED FOR THE JOB BEING EXECUTED

Explanation: The Archive, Restore, and Database Report functions share a general set of selection criteria keywords. In addition to these shared selection criteria keywords, each function supports a small set of keywords that are unique to that function. Specification of a keyword that is not supported by the function being executed results in this message.

User response: Review selection criteria and all SYSOUT data sets.

- For comprehensive information about criteria keywords for the Archive process, refer to "Selection criteria keyword reference for Archive function" on page 43.
- For comprehensive information about criteria keywords for the Restore process, refer to "Selection criteria keyword reference for Restore function" on page 72.
- For comprehensive information about criteria keywords for the Database Reporting process, refer to "Selection criteria keyword reference for Archive Database reporting function" on page 87.

Make any changes that are deemed necessary and run the job again. If you are unable to resolve the issue, have all job input and output available and contact IBM Software Support.

AXQ00127W ONE OR MORE RECYCLE CANDIDATES WERE REJECTED

Explanation: The candidate selection process detected that one or more archive database volumes were eligible to be recycled. However, the archive volume selected by the RESTORE-FROM-ARCHIVE-COPY-NUM parameter had a blank volume serial number.

User response: Add the CANDREJR DD statement to the JCL and run the job again to determine which volumes were rejected. Review output of the job and adjust the RECYCLE-THRESHOLD-PERCENTAGE parameter to increase or decrease the number of candidates that are selected, and then run the job again, as necessary. For more information, see "Creating a candidate rejection report" on page 133.

AXQ00128E UNEXPECTED RC:X'*retcode*' DETECTED ON ENTRY TO MAIN ERROR ROUTINE

Explanation: On entry to its main routine, the issuing program detected an unexpected return code (*retcode*).

System action: This message is followed by a U0100 abend and a dump.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00129E ARCHIVE DATABASE MISSING ARCHT RECORD FOR VOL=*volser*

Explanation: After processing archived data set records from the Archive Database that were archived to volume serial number *volser*, the corresponding archive volume record was not found in the database.

User response: Contact IBM Software Support for assistance.

AXQ00130E UNABLE TO OBTAIN/RELEASE DB_ALLOC/DB_ACCESS ENQ RC:*x'retcode'* **RSN:***x'rsncode'*

Explanation: A failed attempt was made to obtain or release an ENQ that is associated with Archive Database logging.

User response: Contact IBM Software Support for assistance.

AXQ00131E ARCHIVE DATABASE ACTIVE LOGGER FAILURE RC=*x'00'*

Explanation: A failed attempt was made to update the Archive Database Active Log.

System action: The job halts immediately.

User response: Review the preceding messages to identify the source of the problem. Contact IBM Software Support for further assistance.

AXQ00132I DSN: *dsname* **DOES NOT EXIST**

Explanation: During an attempt to perform an ENQ on data set *dsname*, the program determined that the data set does not seem to exist.

User response: Determine why the program could not find the named data set. Correct the problem and run the job again. If you are unable to determine why the data set does not seem to exist, or you are unable to correct the problem, have all job input and output available and contact IBM Software Support.

AXQ00133E RMM API FAILURE: *suffix* **DSN/VOL RETCODE:** *retcode* **RSNCODE:** *rsncode*

Explanation: This message indicates a failure in an RMM API call.

- *suffix* is the suffix of the load module where the failure occurred.
- *retcode* is the return code from the command.
- *rsncode* is the reason code.

System action: AXQ00134I will be issued with additional information.

User response: Check the RMM API manual of the *DFSMSrmm Guide and Reference* for the explanation of the return code and reason code listed in the message (*DFSMSrmm TSO Subcommand Return and Reason Codes*). Contact IBM Software Support for further assistance.

AXQ00134I CMD: *RMM command string*

Explanation: This message is issued in response to a failure in an RMM API call. The message text shows the command that was being processed when the failure occurred.

User response: See the documentation for message AXQ00133E.

AXQ00135I *RMM-msg-ID RMM-msg-text*

Explanation: This message is issued in response to a failure in an RMM API call. The message text shows the RMM message ID and message text that correspond to the RMM command, return code, and reason code.

User response: See the documentation for message AXQ00133E.

AXQ00136I MAP *found* **SKIPPING FROM** *sfiexpected* **LOOKING FOR** *sfireturned*

Explanation: The RMM API returned an SFI that did not match the next expected SFI. The returned SFI is searched for in the list of other expected SFIs. If the returned SFI is not found in the list, that SFI is added to the end of the list.

- *found* indicates whether the SFI was found in the data returned for a volser request or a data set request.
- *sfiexpected* is the expected SFI value.
- *sfireturned* is the SFI value returned by the RMM API.

User response: Contact IBM Software Support to ensure that the SFI is included in the next maintenance release of the product. No other user action is necessary.

AXQ00137I MAP *found* **LOOPING TO TOP LOOKING FOR** *sfi*

Explanation: During a search of the expected SFI table for an out-of-order RMM API SFI, the end of the table was reached. Processing loops back to the beginning of the table. *found* indicates whether the SFI was found in the data that was returned for a volser request or a data set request. *sfi* is the SFI value that was returned by the RMM API.

User response: Report the receipt of this message to IBM Software Support to assure that the SFI is included in the next maintenance release of the product. No other user action is necessary.

AXQ00138I MAP *found* **HAS NO MAPPING FOR SFI** *sfi*

Explanation: After the entire list of expected RMM API SFIs was searched, SFI *sfi* was not found. SFI *sfi* is added to the end of the expected SFI list. *found* indicates whether the SFI was found in the data that was returned for a volser request or for a data set request. *sfi* is the SFI value that was returned by the RMM API.

User response: Report the receipt of this message to IBM Software Support to assure that the SFI is included in the next maintenance release of the product. No

other user action is necessary.

AXQ00139I RMM INVENTORY MANAGEMENT IS ACTIVE, WAITING FOR 15 MINUTES

Explanation: RMM rejected an update command because Inventory Management functions were currently active.

System action: After a waiting period of 15 minutes, the update command is reissued.

User response: No action is necessary.

AXQ00140E FAILED TO OBTAIN EXCLUSIVE ENQUEUE ON: ARCHMVSM / *archiveDBname*

Explanation: During an attempt by Advanced Archive for DFSMShsm to serialize on the shared Archive Database, the enqueue failed. *archiveDBname* is the name of the Archive Database.

User response: The job that issued the message terminates with a U0100 abend.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00141E ADVANCED ARCHIVE DATABASE UPGRADE UNSUCCESSFUL

Explanation: The Archive Database upgrade function failed to complete successfully.

User response: Examine the console logs and the reports that were written to ddname `SYSPRINT`. If the log and report information is insufficient to determine why the upgrade failed, contact IBM Software Support for assistance.

AXQ00142I ADVANCED ARCHIVE DATABASE UPGRADED SUCCESSFULLY

Explanation: The Archive Database upgrade function completed successfully.

User response: No action is necessary.

AXQ00145E UNRECOGNIZED VALUE SPECIFIED FOR ARCHIVE_SOURCE= CRITERIA STATEMENT

Explanation: The Archive candidate selection process encountered an `ARCHIVE_SOURCE=` criteria statement that was set to something other than ML2 or L0.

System action: Candidate selection processing stops.

User response: Set the `ARCHIVE_SOURCE=` statements in the `CRITERIA` DD statement to either ML2 or L0 and then run the job again. If the error persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00146W MULTIPLE ARCHIVE_SOURCE= CRITERIA STATEMENTS READ, ONLY THE FIRST WILL BE HONORED

Explanation: The Archive candidate selection process encountered multiple `ARCHIVE_SOURCE=` criteria statements.

System action: Only the first `ARCHIVE_SOURCE=` statement is processed.

User response: Remove all but one of the `ARCHIVE_SOURCE=` statements in the `CRITERIA` DD statement. If the error persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00147I NO ARCHIVE_SOURCE= CRITERIA STATEMENTS WERE SPECIFIED, SELECTION OF ML2 DATA SETS WILL BE DONE

Explanation: The Archive candidate selection process encountered no `ARCHIVE_SOURCE=` criteria statements.

System action: Selection of ML2 data sets is performed.

User response: If you want to archive L0 disk data sets, add the`ARCHIVE_SOURCE=` statement to the `CRITERIA` DD statement and run the job again; otherwise, no action is necessary. If the problem persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00148W PARMLIB MEM: AXQEDRGN INV VALUE: *statement*

Explanation: During processing of the `AXQEDRGN` parameter library member, an invalid statement (*statement*) was detected.

System action: The invalid statement is ignored.

User response: Take the following actions:

1. Make any necessary changes to the content of `AXQEDRGN` to ensure that every statement in `AXQEDRGN` is either a cloud definition or a group name that is 1 - 8 characters in length and is terminated with at least one blank space.
2. Issue a **`MODIFY`** command to the `AXQTINIT` started task, specifying `REFRESH` with the `PARMS` operand, to refresh the parameters.
3. If the problem persists, contact IBM Software Support for further assistance.

AXQ00150E CAPACITY OF VSAM L0 COMPONENT TABLE EXCEEDED, EXECUTION TERMINATED.

Explanation: During the candidate selection process for archiving L0 disk data sets, the capacity of the VSAM component table was exceeded.

System action: The job terminates with a U0100 abend.

User response: Adjust the data set selection criteria in such a way that fewer L0 disk data sets are selected for Archive processing and then run the job again. If the error persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00151D THE STARTING BLOCK=*string*

Explanation: During execution of AXQT0500, invalid input was read from ddname SYSIN. *string* is reason the input was invalid. *string* has one of these values:

STATEMENT NOT FOUND
The starting block was not found in the SYSIN data set.

CONTAINS INVALID VALUE
The value that was coded on the STARTING BLOCK= statement was either less than 1 or greater than 99999.

DOES NOT POINT AT ATCCR RECORD
The value that was coded on the STARTING BLOCK= statement to position the input tape incorrectly positioned the input file.

User response:

- If *string* is STATEMENT NOT FOUND, specify a valid value for the STARTING BLOCK= statement in the SYSIN data set and run the job again.
- If *string* is CONTAINS INVALID VALUE, specify a value in the range 1 - 99999 for the STARTING BLOCK= statement and then run the job again.
- If *string* is DOES NOT POINT AT ATCCR RECORD, specify for the STARTING BLOCK= statement the block ID value for the archive data set that is being extracted, and then run the job again.

AXQ00151E THE STARTING BLOCK=*string*

Explanation: During execution of AXQT0500, invalid input was read from ddname SYSIN. *string* is reason the input was invalid. *string* has one of these values:

STATEMENT NOT FOUND
The starting block was not found in the SYSIN data set.

CONTAINS INVALID VALUE
The value that was coded on the STARTING BLOCK= statement was either less than 1 or greater than 99999.

DOES NOT POINT AT ATCCR RECORD
The value that was coded on the STARTING BLOCK= statement to position the input tape incorrectly positioned the input file.

User response:

- If *string* is STATEMENT NOT FOUND, specify a valid value for the STARTING BLOCK= statement in the SYSIN data set and run the job again.
- If *string* is CONTAINS INVALID VALUE, specify a value in the range 1 - 99999 for the STARTING BLOCK= statement and then run the job again.
- If *string* is DOES NOT POINT AT ATCCR RECORD, specify for the STARTING BLOCK= statement the block ID value for the archive data set that is being extracted, and then run the job again.

AXQ00152I ADVANCED ARCHIVE DYNAMIC RESTORE EXCLUDE CLOUD NAME TABLE HAS BEEN BUILT/REBUILT WITH *number* ENTRIES

Explanation: The AXQEDRGN parameter library member has been processed and one or more (*number*) cloud definition names have been added to the internal exclusion table.

User response: If *number* is not the value that you expected, examine the console log, looking for AXQ00148W messages and make the necessary corrections. For further assistance, contact IBM Software Support.

AXQ00153I ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT VALUE EXCEEDS 65535 TRKS, TRKS REDUCED TO 65535

Explanation: The value specified for the parameter ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT resulted in a potential allocation request which would have exceed 65535 DASD tracks. The allocation request was reduced to 65535 tracks and execution proceeded.

User response: Review the value specified for the ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT parameter and correct as required for future executions of the job that issued the message.

AXQ00153E ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT VALUE SPECIFIED EXCEEDS 65535 DASD TRKS, ABORTING

Explanation: The value specified for the parameter ARCHIVE-DEFAULT-L0-DCOLLECT-RECORD-COUNT would have resulted in more than 65535 tracks being allocated.

User response: Change the value of the parameter to a value that is less than or equal to 14100000 and rerun the failing job. If the problem persists, have all job

input and output available and contact IBM Software Support for assistance.

AXQ00154E FAILURE DURING SCRAMBLE/ UNSCRAMBLE PROCESING RC: X'*ccccccc***' – *rrrr...rrrre***

Explanation: During the scramble/unscramble processing an unexpected failure occurred, the return code: *ccccccc* and character form of the return code *rrrr...rrrr* are displayed in the message.

The following are the possible values for each return code:

- RC=1 ADDR SOURCE PASSWORD = 0
- RC=2 ADDR SOURCE PASSWORD LEN = 0
- RC=3 ADDR MASK ID ZERO
- RC=4 ADDR TARGET PASSWORD = 0
- RC=5 ADDR CLOUD NAME = 0
- RC=6 SRC PWRD LEN NE CALCULATED LEN
- RC=7 SRC PWRD LEN = 0
- RC=8 CALCUALTED CLOUD NAME LEN = 0
- RC=9 CALCULATED CLOUD NAME LEN > 8
- RC=10 MASK ID VALUE > 9
- RC=12 VALUE OF PASSED MASKID = 0
- RC=13 VALUE OF PASSED MASKID > 9
- RC=14 ADDR REQUEST_ID ZERO
- RC=15 REQUEST_ID NE S | U
- RC=16 UNSUPPORTED RETURN CODE
- RC=17 CLOUD DB REQUIRES UPGRADE

Return codes 1 – 16 pertain to errors identified within the called API. Return code=17 indicates that the Archive Manager Cloud Database needs to be upgraded. To upgrade the Archive Manager Cloud Database, tailor and execute the JCL library member AXQDBUPG, and then issue a console modify command to the AXQTINIT STC in the form: "F AXQTINIT,REFRESH,PARMS" (where AXQTINIT is the name selected for the Archive Manager started task).

User response: As indicated in the Explanation section, a return code of 17 indicates that the Archive Manager Cloud Database requires an upgrade. Once the upgrade has completed successfully and the console modify command issued to the AXQTINIT STC, rerun the failing job. If the problem persists and for other return codes, please have all job input and output along with the console log available and contact IBM Software Support for assistance.

AXQ00155W ARCHIVE MANAGER CLOUD DATABASE REQUIRES UPGRADE

Explanation: During the scramble/unscramble processing, an unexpected failure occurred because the Archive Manger Cloud Database requires an upgrade.

To upgrade the Archive Manager Cloud Database, tailor and execute the JCL library member AXQDBUPG, and then issue a console modify command to the AXQTINIT STC in the form: "F AXQTINIT,REFRESH,PARMS" (where AXQTINIT is the name selected for the Archive Manager started task).

User response: Once the AXQDBUPG job has been run and completed successfully, and the console modify command issued to the AXQTINIT STC, rerun the failing job. If the problem persists please have all job input and output along with the console log available and contact IBM Software Support for assistance.

AXQ00156I ARCHIVE MANAGER CLOUD DATABASE UPGRADED SUCCESSFULLY

Explanation: The Archive Manager Cloud Database upgrade was completed successfully.

User response: No action is necessary.

AXQ00157E ADVANCED ARCHIVE DATABASE UPGRADE UNSUCCESSFUL

Explanation: The Archive Manager Cloud Database upgrade function failed to complete successfully.

User response: Examine the console logs and the reports that were written to ddname SYSPRINT. If the log and report information is insufficient to determine why the upgrade failed, contact IBM Software Support for assistance.

AXQ00160E CA 1 IS INACTIVE

Explanation: CA 1 is inactive. CA 1 must be active or batch active for processing to continue.

User response: Confirm that CA 1 is in an active or batch active state and run the job again.

AXQ00161E CA 1 INVALID VOLUME SERIAL NUMBER: *volser* **R1:***x'00000000'*

Explanation: Volume *volser* was not found in the CA 1 database or an error occurred while reading the CA 1 database. The R1 and messages that follow provide additional information for problem diagnosis. If any of the CA 1 API calls fail, this information is displayed to help determine the reason for the failure.

User response: If this is unexpected behavior, contact IBM Software Support for assistance.

AXQ00162I CA 1 *function* **FAILURE: ABEND:***x'00000000'* **REAS:***x'00000000'* **SECURITY RC:***x'000000000'* **SECURITY REAS:***x'00'*

Explanation: This informational message is for CA 1 problem diagnosis purposes. If any of the CA 1 API

calls fail, this information is provided to help determine the reason for the failure. *function* is the name of the CA 1 API function that failed.

User response: See the documentation for the preceding messages for suggested user action.

AXQ00163I CA 1 ABEND MESSAGE TEXT: *string*

Explanation: This informational message is for CA 1 problem diagnosis purposes. If any of the CA 1 API calls fail, this information is provided to help determine the reason for the failure. *string* is the abend message text.

User response: See the documentation for the preceding messages for suggested user action.

AXQ00164A CA 1 AUDIT DATA SET THRESHOLD REACHED, CONTINUE? (YES/NO)

Explanation: This message is issued because the CA 1 API received a response indicating that the TMS Audit Threshold had been reached or exceeded.

User response: Perform your CA 1 audit data set maintenance procedures and then reply `YES` to allow processing to continue. Replying `NO` causes the job to end immediately with a U0100 abend. A reply of `YES` or `NO` is required.

AXQ00165I NON-ZERO RETURN CODE FROM CA 1 CALL — TMRTNCDE: *x'00'*

Explanation: This informational message is for CA 1 problem diagnosis purposes. If any of the CA 1 API calls fail, this information is provided to help determine the reason for the failure.

User response: See the documentation for the preceding messages for the recommended user action.

AXQ00166E ARCHIVE DB *action* **ATTEMPT FAILED RC=***x'00'* **RPLFDBK=***x'00000000'* **KEY=x-45–x**

Explanation: An attempt to *action* (where *action* is `UPDATE`, `DELETE`, or `INSERT`) a record in the Archive Database failed. The RC, RPLFDBK, and KEY values provide additional diagnostic information.

User response: If the diagnostic information is insufficient for you to identify and correct the problem, contact IBM Software Support for assistance.

AXQ00167E ERROR CONDITION(S) ENCOUNTERED DURING *process* **PROCESSING, REVIEW JOB OUTPUT FOR DETAILS**

Explanation: During *process* processing, one or more error conditions were encountered and reported in the job output.

User response: Review the job output to determine the source of the errors. Contact IBM Software Support for assistance.

AXQ00168W WARNING CONDITION(S) ENCOUNTERED DURING *process* **PROCESSING, REVIEW JOB OUTPUT FOR DETAILS**

Explanation: During *process* processing, one or more warning conditions were encountered and reported in the job output.

User response: Review the job output to determine the source of the warnings. Contact IBM Software Support for further assistance.

AXQ00169I FAILED TO LOAD MEM: *membername*, **FROM DSN:** *dsname*, **R0:** *register0* **/ R15:** *register15*

Explanation: A failed attempt was made to load a module from a data set.

- *membername* is the member that was being loaded into storage.
- *dsname* is the name of the data set from which the module was to be loaded.
- *register0* is the contents of register 0 at the time of failure.
- *register15* is the contents of register 15 at the time of failure.

User response: Verify that the module is contained in the data set that is being referenced. If the problem persists, have all job input and output available and contact IBM Software Support.

AXQ00170I MAINT LEVEL DATA NOT FOUND FOR MEM: *membername*, **IN:** *dsname*

Explanation: The expected maintenance level structure was not found in member *membername*, which is being loaded into storage from data set *dsname*.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00171E UNEXPECTED FAILURE DURING FIELD EXTRACTION IN: *modname*, **EXECUTION ABORTED**

Explanation: While a data structure was being parsed, a failure occurred in the field extraction process in module *modname*.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00172E THE VECTOR TABLE HAS NOT BEEN INITIALIZED, RUN SAXQSAMP(AXQTINIT)

Explanation: An Advanced Archive for DFSMShsm job has been run, but during initialization it found that the Advanced Archive for DFSMShsm vector table has not been initialized. You must start the AXQTINIT started task prior to running any other jobs.

User response: Follow the procedure in "Starting the started task" on page 25, to start the AXQTINIT started task. After the AXQTINIT task has been started, run the Advanced Archive for DFSMShsm job again.

AXQ00173E PARSED CRITERIA TABLE IS CORRUPTED, FIRST ENTRY IS NOT: GROUP, EXECUTION TERMINATED

Explanation: When the parsed criteria table was read, it was determined that the first record in the table was not a GROUP statement. The first record in the table must be a GROUP statement.

System action: Processing terminates with a U0100 abend and a dump.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00174E ALL CRITERIA STATEMENTS READ HAVE BEEN REJECTED; CONTINUED EXECUTION IS NOT POSSIBLE

Explanation: Evaluation of the criteria statements that were read from the CRITERIA DD statement resulted in all of the supplied criteria statements being rejected. Continued execution of the current job is not possible.

User response: Review the output written to the CRITREPT and ERREPORT DD statements, make the appropriate changes to the CRITERIA statement, and resubmit the job. If you are unable to resolve the identified problem, have all job input and output available and contact IBM Software Support.

AXQ00175E INVALID ERRORFLG/ERRORTXT VALUE FOUND AT: X'*progaddr*', ABORTING

Explanation: The issuing program detected an invalid value at program address *progaddr*.

System action: This message is followed by a U0100 abend and a dump.

User response: Have all job-related input and output available and contact IBM Software Support.

AXQ00176E RECYCLE SYNCHRONIZE CCW TO OUTPUT FILE *filenum* FAILED

Explanation: After each file to be recycled is successfully copied, a **Synchronize** channel command is issued. If any of the file's data blocks remain in the tape drive cache, the **Synchronize** command forces all of the file's data blocks onto the physical tape media. This message means that the **Synchronize** attempt failed for output file *filenum* (where *filenum* is an integer in the range 1–4).

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00177E LOCATE BLKID CHANNEL PGM FAILED DURING RECYCLE

Explanation: A **Locate Blkid** channel command was issued to the input tape to position the tape at the first block of the file that is to be copied. The **Locate Blkid** command failed.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00178I INVALID RECORD LENGTH FOR PARMLIB MEMBER *membername* LRECL *reclength*

Explanation: This message is issued when a member is read from AXQPRLIB whose LRECL is not 80 bytes in length. *membername* is the member name and *reclength* is the LRECL of the data set.

System action: A U0100 abend occurs.

User response: Correct the record length of the identified AXQPRLIB data set that contains the member name and run the job again.

AXQ00179E READ BLKID CHN PGM TO OUTFILE 1 FAILED IN RECYCLE

Explanation: To verify that the tape is correctly positioned, a **READ BLKID** channel command was issued to the first output tape. The **READ BLKID** command failed.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00180E RECYCLE: READ OF INPUT FILE FAILED

Explanation: While the Recycle process was copying an input file, a **READ** command to the input file failed.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00181E RECYCLE: WRITE TO OUTPUT FILE FAILED

Explanation: While the Recycle process was copying an input file, a **WRITE** command to the output file failed.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00182E RECYCLE: 1ST BLK OF INPUT DATA SET HAS HEADER ERROR

Explanation: While the Recycle process was copying an input file, a verification check determined that the first block of the file was not a valid Advanced Archive for DFSMShsm header record.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00183E RECYCLE: LAST BLK OF INPUT DATA SET TRAILER ERROR

Explanation: While the Recycle process was copying an input file, a verification check determined that the last block of the file was not a valid Advanced Archive for DFSMShsm trailer record.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00184E RECYCLE: OUTPUT FILE BLK# POSITIONING ERROR

Explanation: At the start of a new file copy operation, an attempt to correctly position the output file failed.

System action: The Recycle operation is terminated.

User response: Contact IBM Software Support.

AXQ00185W NO INITIALIZATION CONTROL STATEMENTS DETECTED, EXECUTION TERMINATED

Explanation: No initialization control statements were found while reading the file that is pointed to by ddname `SYSIN`. At least one uncommented initialization control statement is required for the issuing job to be executed.

System action: The job terminates with an RC=4.

User response: Correct the ddname `SYSIN` control statements. If you are unable to correct this problem, have all job input and output available and contact IBM Software Support.

AXQ00186I INTERNAL LOGIC ERROR, DUMP WILL FOLLOW

Explanation: An unexpected condition was detected.

System action: The program terminates abnormally with a U0100 abend.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00187W *filetype* **ALREADY EXISTS, DSN:** *dsname*

Explanation: The Archive Database or Restore Queue data set name *dsname* was found in the ICF catalog, which prevents `AXQDBINI` from creating and initializing the file. *filetype* is the file type.

User response: If the corresponding parameter specifies the wrong name, make the appropriate change to the name and run `AXQDBINI` again; otherwise, delete the existing file and run `AXQDBINI` again. Contact IBM Software Support for further assistance.

AXQ00188E RECYCLE: ARCHIVE-TAPE-ALLOCATION-UNIT-NAME IS NONE FOR OUTPUT1

Explanation: The value of the user parameter `ARCHIVE-TAPE-ALLOCATION-UNIT-NAME` for the first output data set was `NONE`, which is not a valid unit name.

System action: The Recycle operation is terminated.

User response: Specify a valid tape drive unit name for the `ARCHIVE-TAPE-ALLOCATION-UNIT-NAME` parameter and run the job again.

AXQ00189I INVALID DATA= *string*

Explanation: A field is being extracted from a data area and the content of the field is not valid for usage after extraction. *string* displays up to 80 characters of the data area being processed. This message is usually caused by a user modification to a parameter library member or to a data set that is concatenated as a product parameter library member.

System action: This error message is followed by a U0100 abend.

User response: Review the parameter library for members that have recent changes. The variable data that is displayed in the error message can be used to determine what member or data set contains the error. If you can determine what caused the error, correct the entry and run the procedure again; otherwise, collect all job input and output that is available and contact IBM Software Support.

AXQ00190E *prodname* **IS NOT AUTHORIZED FOR CPU** *serialnum model-type*

Explanation: Product *prodname* is not authorized to run on the specified CPU serial number *serialnum* or model and type *model-type*, or both.

User response: Contact IBM Software Support for information about receiving an authorization code for this system. Be prepared to provide the output from this job.

AXQ00191W *prodname* **LICENSE PERIOD WILL EXPIRE IN** *n* **DAY(S)**

Explanation: The authorization code for product *prodname* expires in *n* days.

User response: If more time is required for your use of this product, contact IBM Software Support for assistance.

AXQ00192I NO SELECTION CRITERIA WAS PROVIDED FOR AXQDBRPT FUNCTION, AS A DEFAULT ALL RECORDS WILL BE SELECTED

Explanation: The JCL that was used to execute the AXQDBRPT function contained a //CRITERIA DD statement that did not contain or point to any criteria selection statements.

System action: All records in the Archive Database are included in the report.

User response: If you want to restrict the report to a subset of the Archive Database records, provide selection criteria statements by coding them after the //CRITERIA DD statement; otherwise, no action is necessary. For further assistance, have all job related input and output available and contact IBM Software Support.

AXQ00193E FAILURE DETECTED DURING QUERY OF HSM ADDRESS SPACE, TERMINATING, WITH DUMP

Explanation: During execution of the Restore function, a failed attempt was made to query the HSM address space.

User response: Determine whether HSM is active on the system where the failing Restore function was run. If HSM is not active, arrange for HSM to be activated and run the Restore function again. If the problem persists, have all job related input and output available and contact IBM Software Support for further assistance.

AXQ00194E ARCHIVE DATABASE IS EMPTY, EXECUTION NOT POSSIBLE

Explanation: When the Archive Database was opened, it was determined that the database was empty.

System action: The program issuing this message terminates with a U0100 abend.

User response: Determine why the Archive Database was empty. Have all job input and output available and contact IBM Software Support.

AXQ00195E RECYCLE: WRITE TO OUTPUT FILE HIT END OF TAPE

Explanation: As files were being copied to the output tape by the Recycle process, the end of the tape was reached before all of the selected files could be copied. Each call to the Recycle task can copy only as many files as can fit on a single output tape. This situation can arise when the value of the ARCHIVE-TARGET-SIZE parameter is set to a value that exceeds the capacity of the output media.

User response: To avoid future occurrences of this situation, specify a smaller value for the ARCHIVE-TARGET-SIZE parameter. The files that were not processed by this Recycle task are eligible to be reselected the next time that you run a Recycle job. Contact IBM Software Support for further assistance.

AXQ00196E UNABLE TO FIND A JOBLIB, STEPLIB OR LOADLIBS DD STATEMENT POINTING TO LIBRARY TO BE PROCESSED

Explanation: The issuing program was trying to determine which load library to use to generate the module level report and was unable to find a //JOBLIB DD, //STEPLIB DD, or //LOADLIBS DD.

System action: The issuing program terminates abnormally with a user U0100 abend.

User response: Add a //JOBLIB, //STEPLIB, or //LOADLIBS DD statement with the DSN= parameter that points to the load library that contains the programs for which you want to list module levels.

AXQ00197I ANOMALOUS LOGIC ERROR CODE: *errcode*

Explanation: An unexpected condition was detected. These are the possible values of *errcode*:

- 06 — GQSCAN SCOPE=LOCAL macro returned unexpected results.
- 08 — GQSCAN SCOPE=GLOBAL macro returned unexpected results.

System action: The program terminates abnormally with a U0100 abend.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00198W ONE OR MORE *processtype* TASKS WERE NOT ABLE TO PROCESS SOME FILES, REVIEW THE JOB OUTPUT FOR DETAILS

Explanation: During Archive or Restore processing, an Archive or Restore task (identified by *processtype*) was unable to process all of the files that were passed from the main Archive or Restore process.

User response: Review the job output to determine why the files were not processed. Contact IBM Software Support for further assistance.

AXQ00199E ONE OR MORE *processtype* TASKS WERE NOT ABLE TO PROCESS ANY FILES, REVIEW THE JOB OUTPUT FOR DETAILS

Explanation: During Archive or Restore processing, an Archive or Restore task (identified by *processtype*) was unable to process any of the files that were passed from the main Archive or Restore process. In most cases, this indicates a problem that is not specific to a single file (for example, the tape could not be mounted).

User response: Review the job output to determine why the files were not processed. Contact IBM Software Support for further assistance.

AXQ00200I TOTAL CANDIDATE RECORDS REJECTED: *n*

Explanation: This message can be issued by the `AXQRCHIV` and `AXQRESTR` programs to show the number of candidate records (*n*) that were rejected when the candidate rejection report DD statement was not in the job stream that is being executed.

This message is always issued by the `AXQDBRPT` program, regardless of whether the candidate rejection report DD statement is included in the JCL stream that is being executed.

User response: No action is necessary. However, see the "Candidate report message reference" on page 203 for information about generating a candidate rejection report. Contact IBM Software Support for further assistance.

AXQ00201I CANDIDATE SELECTION PROCESS CURTAILED, THRESHOLD: *parmvalue*

Explanation: When candidate selection is curtailed due to the limits imposed by either the archiving or restoring of ML2 data sets, the parameter value that was reached is shown in the text message as *parmvalue*:

- For the Archive candidate selection process, *parmvalue* is one of the following:
  - `ARCHIVE-SELECTION-MAXIMUM-FILES REACHED`, if the maximum number of files were selected.
  - `ARCHIVE-SELECTION-MAXIMUM-GB REACHED`, if the maximum number of gigabytes were selected.
- For the Restore candidate selection process, *parmvalue* is one of the following:
  - `RESTORE-SELECTION-MAXIMUM-FILES REACHED`, if the maximum number of files were selected.
  - `RESTORE-SELECTION-MAXIMUM-GB REACHED`, if the maximum number of gigabytes were selected.

User response: Use the information that is provided in the Parameters chapter to set or modify the settings for these parameters appropriately.

Note: Because altering the default values for these parameters can cause unexpected consequences, be certain that you understand what the parameters do before you alter their settings.

AXQ00202I ADVANCED ARCHIVE *status*

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, Recycle, and Database Reporting functions have two parts: the selection of candidates for the requested function and then the execution of the function against the selected candidates. Because the functions can have long execution times, the status message *status* is issued at the start and end of each function. *status* can be any of the following:

```
CANDIDATE SELECTION STARTED
CANDIDATE SELECTION COMPLETED
ARCHIVE STARTED
ARCHIVE COMPLETED
RESTORE STARTED
RESTORE COMPLETED
DATABASE RECYCLE STARTED
DATABASE RECYCLE COMPLETED
DATABASE REPORTING STARTED
DATABASE REPORTING COMPLETED
```

User response: No action is necessary.

AXQ00203E VSAM POINT FAILURE OR NO RECORD FOUND IN ARCHIVE DATABASE, EXECUTION TERMINATED

Explanation: A failure occurred while the VSAM **`POINT`** function attempted to access the Archive Database.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00204W ONE OR MORE *processtype* **CANDIDATES WERE REJECTED** *ddstatement*

Explanation: One or more candidate records were rejected for reasons other than not matching the specified selection criteria and the appropriate rejection DD statement not being included in the JCL stream that was being executed.

processtype is one of the following:

RESTORE
ddstatement is `ADD //RESTREJR DD SYSOUT=* TO SEE REJECTION REPORT.`

RECYCLE
ddstatement is `ADD //RCYCREJR DD SYSOUT=* TO SEE REJECTION REPORT.`

User response: Add the appropriate DD statement to the JCL and run the job again to generate a rejection report. See the "Candidate report message reference" on page 203 for information about generating a candidate rejection report. Contact IBM Software Support for further assistance.

AXQ00205I *process* **CONSOLE INTERFACE IS ACTIVE**

Explanation: This message is issued when Advanced Archive for DFSMShsm enables its console interface to accept modify commands. *process* can be any of the following:

- `AXQRCHIV`
- `AXQRESTR`
- `AXQRECYC`
- `AXQCLNUP`

User response: No action is necessary.

AXQ00206E VSMIO *conditiontype* **FAILURE, EC:** *conditionqualifier*

Explanation: During the call to the generic VSAM IO module, condition *conditiontype* was detected. *conditionqualifier* is a qualifier that amplifies and expands on the reason for the named condition that was detected.

System action: One or more RX000000? messages precede or follow this message. These RX000000? messages provide additional information about why the AXQ00206E message was issued.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00207D VSMIO DC: *tracepoint*

Explanation: During the execution of the generic VSAM IO module, diagnostic tracing was requested. *tracepoint* is the diagnostic trace point.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00208E VSMIO ERROR: *type***, ENCOUNTERED WHILE PROCESSING THE VSM FILE, RPLFDBWD=***value*

Explanation: During the a call to the generic VSAM IO module, error type *type* was encountered. *value* is the RPL feedback value.

User response: Collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00209D *programname* **R0:** *register0* **/ R15:** *register15*

Explanation: This message is issued in conjunction with other error messages. It identifies the issuing program and the contents of register 0 and register 15 at the time at which certain errors are encountered.

User response: Have all job input and output available and contact IBM Software Support for assistance.

AXQ00210I UNABLE TO LOCATE DSN: *dsname*

Explanation: While attempting to open the data set named *dsname* , the program issuing this message was unable to locate that data set.

User response: Review the parameters that are specified by `AXQPSETS` or `AXQUSETS` (or both) for correctness; Chapter 10, "Parameters," on page 111, provides comprehensive information about the parameters and valid settings for them. Determine whether the named data set exists. Make any necessary corrections and run the job again. If the problem persists, have all job input and output available and contact IBM Software Support for assistance.

AXQ00211I MODIFY COMMAND: *text* **IS NOT VALID FOR THIS PROGRAM AND WILL BE IGNORED**

Explanation: The Advanced Archive for DFSMShsm Cleanup function detected that the text (*text*) that was retrieved from the communications control block contained a value that was not valid for the AXQCLNUP program.

System action: The issuing program continues processing and the console interface remains active.

User response: No action is necessary.

AXQ00212E READ OF THE INPUT TAPE ENCOUNTERED AN ERROR

Explanation: An error was encountered while the Advanced Archive for DFSMShsm tape was being read.

System action: The job terminates.

User response: Report the problem to IBM Software Support.

AXQ00213I LAST BLOCK ON TAPE WAS NOT A TRAILER RECORD

Explanation: The final record on an Advanced Archive for DFSMShsm tape was not a trailer record. The last archived data set on the tape was not successfully written because the tape had insufficient space available. The last archived data set has been written to another tape.

User response: No action is necessary.

AXQ00214E A DATA BLOCK WAS A HEADER/TRAILER RECORD

Explanation: While an Advanced Archive for DFSMShsm tape was being read, it was determined that what should have been a DFDSS data block was instead an Advanced Archive for DFSMShsm header or trailer record.

System action: The job terminates.

User response: Contact IBM Software Support for assistance.

AXQ00215E TAPE ANALYZE PROGRAM GOT A TERMINATING ERROR

Explanation: While an Advanced Archive for DFSMShsm tape was being read by an Advanced Archive for DFSMShsm program, a terminating error was encountered.

User response: Contact IBM Software Support for assistance.

AXQ00216I SYSOUT FOR DDNAME: *ddname* **REDIRECTED TO:** *destination*

Explanation: The `SYSOUT` for ddname *ddname* has been redirected to *destination* as a result of an entry in the `AXQRPTAL` parameter library member.

User response: If the redirection is unwanted, use the information in "AXQRPTAL" on page 233 to update the `AXQRPTAL` parameter library member. Contact IBM Software Support for further assistance.

AXQ00217E HEADER RECORD WAS INVALID

Explanation: While an Advanced Archive for DFSMShsm tape was being read, an Advanced Archive for DFSMShsm header record was determined to be invalid.

System action: The job terminates.

User response: Contact IBM Software Support for assistance.

AXQ00218E TRAILER RECORD WAS INVALID

Explanation: While an Advanced Archive for DFSMShsm tape was being read, an Advanced Archive for DFSMShsm trailer record was determined to be invalid.

System action: The job terminates.

User response: Contact IBM Software Support for assistance.

AXQ00219I #DATA SET RCRDS PROCESSED: *dsrequests* **#TAPE RCRDS PROCESSED:** *taperequests*

Explanation: The Advanced Archive for DFSMShsm Cleanup function issues this message in response to a modify console command that requests that the program display the status of its function. *dsrequests* is the current number of cleanup data set requests processed and *taperequests* is the number of tape requests processed.

User response: No action is necessary.

AXQ00220I #RQSTS QUEUED: *numqueued* **#RQSTS PROCESSED:** *numsprocessed* **#RQSTS FAILED:** *numfailed*

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, and Recycle functions issue this message in response to a modify console command that requests that the program display the status of their respective functions.

- *numqueued* is the number of Archive or Restore candidates that are currently queued for processing.
- *numprocessed* is the number of Archive or Restore candidate requests processed.
- *numfailed* is the number of Archive or Restore candidate requests that failed.

User response: No action is necessary.

AXQ00221I CSI CALL FAILED WHILE GETTING GDG INFO, RE-DIRECTION BYPASSED FOR DDNAME: *ddname*

Explanation: A failed attempt was made to get the GDG information for ddname *ddname* through the CSI interface.

System action: The requested redirection for ddname *ddname* is bypassed.

User response: If the problem persists, have all job input and output available and contact IBM Software Support for assistance.

AXQ00222I IDCAMS *req* FAILED, RE-DIRECTION BYPASSED FOR DDNAME: *ddname*

Explanation: A failed attempt was made to issue the IDCAMS request *req* for ddname *ddname*.

System action: The requested redirection for ddname *ddname* is bypassed.

User response: If the problem persists, collect all job input and output that is available and contact IBM Software Support for assistance.

AXQ00223E DETACH OF *taskname* SUBTASK FAILED RC: X'*retcode*', ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function subtask that is identified by *taskname* failed to detach properly after it finished its processing. The return code for the DETACH request is *retcode*.

System action: The message is followed by an abend dump and a U0100 abend code.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00224E COM ECB CONTAINS INVALID VALUE, ECB@: X'*badaddr*' ECB VALUE: x'*badvalue*', ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function detected that the communications ECB contained an unacceptable address (*badaddr*) or that the ECB had an unacceptable value (*badvalue*).

System action: This situation produces a return code equal to or greater than 8. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00225E COM CIB PTR INVALID: X'*badvalue*', ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function detected that the communications control block contained an unacceptable value (*badvalue*).

System action: This situation results in a return code equal to or greater than 8. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00226W UNRECOGNIZED CIB VERB: X'*verbval*'

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function detected that the communications control block contained an unacceptable verb value (*verbval*).

System action: This situation results in a return code equal to or greater than 4. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00227W MODIFY COMMAND TEXT NOT RECOGNIZED: *badvalue*

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function detected that the text that was retrieved from the communications control block contained an unacceptable value (*badvalue*).

System action: This situation results in a return code greater than or equal to 4. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00228E CIB DELETE FAILED, RC: X'*retcode*' CIB BLK VALUE: X'*blkvalue*' CIB PTR VALUE: X'*ptrvalue*', ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function attempted to delete a CIB after it was completely processed.

- *retcode* is the non-zero return code that was produced by the attempt.
- *blkvalue* is the CIB BLK value at the time of the request.
- *ptrvalue* is the CIB PTR value.

System action: This situation results in a return code equal to or greater than 8. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00229E CIB DATALEN INVALID: X'*textlength*', ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm Archive, Restore, or Recycle function attempted to parse the text that was provided in the console command and determined that the text length (*textlength*) was unacceptable.

System action: This situation results in a return code equal to or greater than 8. The issuing program continues processing, but the console interface terminates.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00230E THE ARCHIVE ACTIVE LOG HAS EXPANDED TO MORE THAN 24 GENERATIONS. PROCESSING MUST BE STOPPED.

Explanation: The Active Log reached its maximum of 25 generations. It cannot go on to another generation.

System action: Database updates are not allowed.

User response: Run the Advanced Archive for DFSMShsm backup job (`AXQDBBKP`) to back up the Archive Database and the Active Log, and delete the current generations of the Active Log, which allows a new Active Log to be created. Contact IBM Software Support for further assistance.

AXQ00231I THE ARCHIVE ACTIVE LOG HAS EXPANDED TO *n* GENERATIONS. BACKUP OF ARCHIVE DB SHOULD BE TAKEN.

Explanation: The Active Log GDG data set has reached *n* generations.

User response: Run the Archive Database backup job (`AXQDBBKP`; for more information about backing up the database, see "Backing up the Archive Database" on page 99) to delete all active GDGs of the Active Log, which allows the Active Log to start again at generation 1.

AXQ00232I THE ARCHIVE ACTIVE LOG HAS EXPANDED TO *n* GENERATIONS.

Explanation: The Active Log GDG data set now has *n* generations.

User response: No action is necessary.

AXQ00233E NECESSARY ENQUEUES NOT IN PLACE. ARCHIVE DB UPDATES AND LOGGING PREVENTED. INTERNAL ERROR

Explanation: An internal error is preventing updates to the Archive Database.

User response: Contact IBM Software Support.

AXQ00234E ERROR WRITING ARCHIVE DB RECORD TO THE ACTIVE LOG. PROCESSING MUST STOP

Explanation: An internal error occurred while Advanced Archive for DFSMShsm was trying to update the Archive Database. The Archive Database can no longer be updated.

User response: Contact IBM Software Support.

AXQ00235E UNABLE TO DEFINE ACTIVE LOG GDG BASE

Explanation: The Advanced Archive for DFSMShsm Active Log is used to hold copies of the updates to the Archive Database. Advanced Archive for DFSMShsm made a failed attempt to define the Active Log as a GDG data set using user-specified parameters.

User response: Determine why the attempt to define the GDG failed. If necessary, specify different values for the parameters. Contact IBM Software Support for further assistance.

AXQ00236E INVALID REQUEST TO LOGGER FUNCTION. INTERNAL ERROR

Explanation: An internal error occurred while Advanced Archive for DFSMShsm was trying to update the Archive Database.

System action: The Archive Database can no longer be updated.

User response: Contact IBM Software Support.

AXQ00237E INVALID OR NOT-INITIALIZED RVT/RVTE/ANCHOR BLK

Explanation: The Advanced Archive for DFSMShsm logger detected an invalid vector table structure and cannot continue.

System action: Updates to the database will not be allowed.

User response: Contact IBM Software Support.

AXQ00238E THE ARCHIVE ACTIVE LOG COULD NOT BE CREATED

Explanation: The logging function was unable to create the Active Log.

User response: Correct the problem or contact IBM Software Support for assistance.

AXQ00239E DB NAME OR ACTIVE LOG GDG BASE PARM MISSING

Explanation: Either the Archive Database name or the Active Log name was not specified in the AXQUSETS member of the product parameter library.

User response: Specify appropriate values for these user parameters and run the job again.

AXQ00240E INTERNAL ERROR, LOGGER UNABLE TO LOCATE CWA

Explanation: Advanced Archive for DFSMShsm has experienced an internal error.

User response: Contact IBM Software Support.

AXQ00241I MODIFY COMMAND: *cmdtext* **ACKNOWLEDGED**

Explanation: The Advanced Archive for DFSMShsm function detected a **HALT** or **HALT,I** command, where *cmdtext* is the command text.

System action: Processing continues and the console interface remains active.

User response: No action is necessary.

AXQ00242E CALL TO AXQL0570 RETURNED NON-ZERO RETURN CODE, RC: X'*retcode***'**

Explanation: While the IDCAMS DCOLLECT process was being executed an unexpected return code (*retcode*) was returned.

User response: To determine what caused the problem, review the output that was written to the SYSPRINT ddname. If you can correct the problem, do so, and then run the job again. If the error persists, have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00243I ADVANCED ARCHIVE CLOUD DEFINITION DATABASE IS: *text*

Explanation: The Advanced Archive for DFSMShsm Cloud Definition Database is not usable. *text* is one of the following:

not defined
The data set name that was specified for the Cloud Definition Database could not be found.

empty The Cloud Definition Database was found, but it contained no definitions.

System action: Message AXQ00251I is issued in conjunction with AXQ00243I.

User response: Ensure that the correct Cloud Definition Database was specified for the CLOUDDEF-DATABASE-CLUSTER-NAME parameter in the AXQUSETS or AXQPSETS member of the product parameter library. Use the information that is provided in "Defining and initializing the Archive Database, Cloud Definition Database, and Restore Queue files" on page 26 to create the database or to determine why the database is empty. If you can correct the problem, do so and then run the job again. If the error persists, have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00244E VSAM READ FAILURE, DSN=*dsname*

Explanation: A VSAM read failure occurred for data set *dsname* during an attempt to read the Cloud Definition Database.

User response: Review the console logs and the job output to determine what might have caused the failure. If the logs and job output do not provide sufficient information to resolve the problem, have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00245W CLOUD DEFINITION NOT FOUND FOR NAME=*defname*

Explanation: The requested cloud definition name, *defname*, could not be found in the Cloud Definition Database.

User response: If you are unable to determine why *defname* was not found in the Cloud Definition Database, have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00246E CLOUD DEFINITION TABLE NOT FOUND

Explanation: The Cloud Definition table could not be located, which indicates that the cluster that was identified by parameter CLOUDDEF-DATABASE-CLUSTER-NAME either did not exist or was empty at initialization time.

User response: Verify that the Cloud Definition Database is defined and populated. If it is, have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00247E INTERNAL ERROR, UNABLE TO LOCATE CWA

Explanation: The Advanced Archive for DFSMShsm Common Work Area could not be located using Name/Token Services.

User response: Have available all job-related input and output and contact IBM Software Support for assistance.

AXQ00248E AXQTINIT IS ALREADY RUNNING

Explanation: The AXQTINIT task is already active on this system.

System action: A second instance of AXQTINIT cannot be started.

User response: Stop the current instance of AXQTINIT before attempting to start a new instance.

AXQ00249E FAILED TO SET CIB QUEUE DEPTH, ABORTING EXECUTION

Explanation: The Advanced Archive for DFSMShsm function made a failed attempt to set the CIB QUEUE DEPTH.

System action: The issuing program terminates with a U0100 abend.

User response: Retain all job-related input and output and contact IBM Software Support for assistance.

AXQ00250E ERRORS ENCOUNTERED IN MEMBER=*member_name*

Explanation: The specifications in the parameter library member *member_name* are not correct.

System action: This message is followed by message AXQ00189I, which lists the lines in member *member_name* that contain errors.

User response: Correct the erroneous specifications and run the job again.

AXQ00251I ADVANCED ARCHIVE CLOUD DEFINITION DATABASE: *dbname*

Explanation: This message is issued in conjunction with message AXQ00243I. *dbname* is the name of the Cloud Definition Database, as it was specified for the CLOUDDEF-DATABASE-CLUSTER-NAME parameter in the AXQUSETS or AXQPSETS member of the product parameter library.

User response: Refer to message AXQ00243I for additional information.

AXQ00252E NO TYPE=*rectype* **RECORDS IN DATABASE, EXECUTION NOT POSSIBLE**

Explanation: The Recycle program encountered a situation where there were no type *x* (where *rectype* is either T (tape) or D (data set)) records found in the Archive Database.

System action: AXQRCYCL ends with a U0100 abend code.

User response: Wait until the Archive Database contains files that have been archived to tape and then run AXQRCYCL to recycle archive tapes.

AXQ00290I JOB *jobname/jobnumber* **IS WAITING FOR RESOURCES OWNED BY** *owningjobname* **ON** *systemname***.**

Explanation: The Advanced Archive for DFSMShsm job that is identified by job name *jobname* and job number *jobnumber* is waiting for resources owned by job name *owningjobname* on system name *systemname*.

System action: This message will be issued every 60 seconds for up to 10 times.

User response: Wait for job name *aaaaaaaa* to release its resources.

AXQ00291E JOB *jobname/jobnumber* **CANNOT OBTAIN REQUIRED RESOURCES CURRENTLY OWNED BY** *owningjobname* **ON** *systemname*

Explanation: The Advanced Archive for DFSMShsm job that is identified by *jobname/jobnumber* cannot obtain the resources that it requires because they are owned by *owningjobname* on *systemname*.

System action: An unable to continue condition has been detected and the issuing job terminates.

User response: Determine whether the job that is identified by *owningjobname* is currently waiting for resources also, and if so, determine why. Wait until the job identified by *owningjobname* or *systemname* terminates and then resubmit the job. If the problem continues, have all job input and output from job *owningjobname* on *systemname* and *jobname/jobnumber* available and contact IBM Software Support for assistance.

AXQ00292E GQSCAN FUNCTION RETURNED RETCODE > X'0C', ABORTING

Explanation: The issuing program issued a GQSCAN macro and received a return code greater than x'0C'.

User response: Resubmit the job. If the problem occurs again, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00303D *modname* **RETRIEVED PARM:** *parmname*

Explanation: This diagnostic message is issued when the module *modname* reads the parameter *parmname* from the product parameter library.

User response: No action is necessary.

AXQ00312I *dsname* **IN USE BY JOBNAME/USERID:** *joboruser* **ON SYSTEM:** *system*

Explanation: An attempt was made to scratch pre-existing data set *dsname*; however, the data set was

in use by another job or user (*joboruser*) on system *system*.

User response: Wait for the job or user to relinquish control of the named data set and run the affected job again.

AXQ00313I DSN: *dsname* **HELD BY EXCL ENQUEUE BY JOBNAME:** *jobname* **ON SYSTEM:** *system*

Explanation: During an attempt by the Archive Database I/O routine to get exclusive control of the shared Archive Database, it was determined that the database (*dsname*) is owned by another job (*jobname*). *system* identifies the system on which *jobname* is running.

User response: No action is necessary.

AXQ00314E UNABLE TO DETERMINE JOBNAME/ID HOLDING EXCL ENQUEUE ON ARCHMGR DSN: *dsname*

Explanation: During an attempt by the Archive Database I/O routine to get exclusive control of the shared Archive Database, the holder of the exclusive enqueue on the Archive Database could not be determined.

System action: A U0100 abend and a dump occur.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00369W FAILURE DURING NAME/TOKEN *calltype* **NAME 1:** *namepart1* **NAME 2:** *namepart2*

Explanation: During the Advanced Archive for DFSMShsm `DCOLLECT` process, a call was made to z/OS NAME/TOKEN services and the result was a nonzero return code.

- *calltype* is the call type.
- *namepart1* and *namepart2* are the two 8–byte parts of the token name.

User response: Collect all job-related input and output that is available and contact IBM Software Support for assistance.

AXQ00378E PARM=SIM IS NOT SUPPORTED BY THIS PROGRAM, TERMINATING

Explanation: A program was executed with `PARM=SIM` coded on the execute statement; however, that program does not support execution in simulation mode.

User response: Remove the `PARM=SIM` from the execute statement and run the job again. Contact IBM Software Support for further assistance.

AXQ00412E ERRORS FOUND IN 'AXQDSNAL' MEMBER IN AXQPRLIB

Explanation: An error was found in the member that contains intercepts and overrides for dynamic allocation.

User response: Review the `//ALLOCDSN` report, titled `CONTENT OF AXQ.PARMLIB(AXQDSNAL)`. Find the entry that contains the error, correct the error in the `AXQDSNAL` member, and run the job again. If you are unable to resolve the problem, contact IBM Software Support for assistance.

AXQ00414E IMPROPER CALL TO BINARY TREE LOOKUP ROUTINE

Explanation: The binary tree lookup routine encountered invalid calling data. This error message is associated with an internal error.

User response: Collect the job's runtime messages and the program dump, and then contact IBM Software Support.

AXQ00415E BINARY TREE LOOKUP ROUTINE FOUND CORRUPTED DATA, TABLE=*tablename*

Explanation: The binary tree lookup routine encountered a table with incorrect chaining or record counts. This error message is associated with an internal error.

User response: Collect the job's runtime messages and the program dump, and contact IBM Software Support.

AXQ00416E PRODUCT NOT SUPPORTED ON Z/OS *V.R*

Explanation: The product has determined that it is executing under a release of z/OS that the product does not support.

User response: Contact IBM Software Support for assistance with obtaining maintenance to add support for this z/OS system.

AXQ00423I *text* **REQUIRES MODE=31**

Explanation: An internal error occurred. Internal checks on a calling parameter discovered that the wrong form of the parameter list was passed.

User response: Contact IBM Software Support for assistance.

AXQ00434I INVALID OR EXCESSIVE INPUT READ FROM IDCAMS SUBTASK DEBUGPRM DD STATEMENT, DEBUG REQUEST IGNORED

Explanation: While control statements were being

read from the DEBUGPRM DD, an invalid statement was detected.

System action: Execution continues. The invalid statements are written to the SYSPRINT DD.

User response: No action is necessary.

AXQ00500I *processtype* **INITIALIZATION STARTED**

Explanation: Archive or Restore (*processtype*) initialization processing has successfully begun.

User response: No action is necessary.

AXQ00501I *process* **INITIALIZATION COMPLETE**

Explanation: Initialization processing completed successfully for *process*. *process* is either ARCHIVE or RESTORE.

User response: No action is necessary.

AXQ00502E UNABLE TO OBTAIN STORAGE FOR PRODUCT PROCESSING

Explanation: Archive or Restore processing was unable to obtain enough virtual memory to perform processing successfully.

User response: Increase the above-the-line region size. If the problem persists, contact IBM Software Support for assistance.

AXQ00503E OPEN FAILED FOR ARCHIVE DATABASE

Explanation: The Advanced Archive for DFSMShsm database (as defined by the ARCHIVE-DATABASE-CLUSTER-NAME parameter) could not be opened successfully.

User response: Ensure that the ARCHIVE-DATABASE-CLUSTER-NAME parameter specifies the correct cluster name. If the name is correct, verify that the cluster is available and is not in a corrupted state. If the problem persists, contact IBM Software Support for assistance.

AXQ00504E UNABLE TO *operation* **STORAGE FOR** *cntrlblkid***; R15=***retcode* **(HEX)**

Explanation: The product was unable to either obtain successfully or release successfully the specified control block storage.

- *operation* is either OBTAIN or RELEASE.
- *cntrlblkid* is the internal control block ID.
- *retcode* is a hexadecimal return code.

User response: When *operation* is OBTAIN, increase the above-the-line region size. If increasing the region size does not resolve the problem, contact IBM Software Support for assistance.

AXQ00505E ARCHIVE PARAMETER LIST ERROR — FIELD CODE=*internalvalue*

Explanation: An internal error has occurred with a parameter list. The hexadecimal value *internalvalue* is an internal value that defines the specific parameter.

User response: Contact IBM Software Support.

AXQ00506E ARCHIVE PLIST ADDRESS IS NULL

Explanation: An internal parameter list error has occurred.

User response: Contact IBM Software Support.

AXQ00507E ARCHIVE LOG DCB ADDRESS IS NULL

Explanation: An internal archive log error has occurred.

User response: Contact IBM Software Support.

AXQ00508E ARCHIVE LOG DCB IS NOT OPEN

Explanation: An internal error has occurred while accessing the archive log.

User response: Contact IBM Software Support.

AXQ00509E RESTORE PARAMETER LIST ERROR — FIELD CODE=*internalvalue*

Explanation: An internal error has occurred with a parameter list. *internalvalue* is an internal value that defines the specific parameter.

User response: Contact IBM Software Support.

AXQ00510E RESTORE PLIST ADDRESS IS NULL

Explanation: An internal parameter list error has occurred.

User response: Contact IBM Software Support.

AXQ00511E RESTORE LOG DCB ADDRESS IS NULL

Explanation: An internal parameter list error has occurred.

User response: Contact IBM Software Support.

AXQ00512E RESTORE LOG DCB IS NOT OPEN

Explanation: An internal error has occurred while accessing the Restore log.

User response: Contact IBM Software Support.

AXQ00521E NO MCD RECORD FOUND IN MCDS FOR DATA SET

Explanation: An unsuccessful attempt was made to locate an MCD record in the HSM MCDS for the data set that is being archived.

System action: `NO MCD RECORD FOUND FOR DS` is written to the candidate selection report.

User response: Run the HSM **AUDIT** command against the ML2 tape that contains the data set that is being archived. Also run the HSM **AUDIT** command against the HSM MCDS. Correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00522E READ FAILED FOR MCD RECORD; RC=*retcode* (HEX)

Explanation: A `READ` operation for an MCD record from the HSM MCDS data set failed with a return code that is specified by the hexadecimal value *retcode*.

System action: `READ FAILED FOR MCD RECORD` is written to the candidate selection report.

User response: Run the HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00523E INTERNAL DELETE TABLE FULL - ID=*errcode*

Explanation: During post-processing for a Restore operation, an error occurred while an internal control block was being processed. The value *errcode* defines the internal error code.

User response: Contact IBM Software Support for assistance.

AXQ00525E NO MCA RECORD FOUND IN MCDS FOR DATA SET

Explanation: A `READ` operation for an MCA record from the HSM MCDS data set failed with a `no record found` condition.

System action: `NO MCA RECORD FOUND FOR DS` is written to the candidate report.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00526E READ FAILED FOR MCA RECORD; RC=*retcode* (HEX)

Explanation: A `READ` operation for an MCA record from the HSM MCDS data set failed with a return code that is specified by the hexadecimal value *retcode*.

System action: `READ FAILED FOR MCA RECORD` is written to the candidate report.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00527I MCA KEY IS — *mcakey*

Explanation: This message is preceded by message AXQ00525E or AXQ00526E. *mcakey* is the key of the MCA record that received the preceding error message and is the name of the data set that is being archived.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00529E READ FAILED FOR MCO RECORD; RC=*retcode* (HEX)

Explanation: A `READ` operation for an MCO record from the HSM MCDS data set failed with a return code that is specified by the hexadecimal value *retcode*.

System action: `READ FAILED FOR MCO RECORD` is written to the candidate report.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00530I MCO KEY IS — *mcokey*; FIRST BYTE IS X″12″

Explanation: This message is preceded by message AXQ00525E or AXQ00526E. *mcokey* is the key of the MCO record that received the preceding error message and is the associated data set name of the data set being archived.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00531E NO TTOC RECORD FOUND FOR ML2 VOLUME

Explanation: The TTOC record for the HSM ML2 volume that is associated with a data set that is being archived could not be located in the HSM OCDS data set.

System action: `NO TTOC RECORD FOUND FOR ML2 VOL` is written to the candidate report.

User response: Run an HSM **AUDIT** command against the HSM MCDS data set and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00532E READ FAILED FOR *rectype* RECORD; RC=*retcode* (HEX)

Explanation: A READ for the record type *rectype* failed with the return code specified by the hexadecimal value *retcode*.

System action: READ FAILED FOR TTOC RECORD is written to the candidate report.

User response: Run an HSM **AUDIT** against the HSM CDS data sets and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support.

AXQ00533I TTOC KEY IS — *ttockey*

Explanation: This message is preceded by message AXQ00531E or AXQ00532E. *ttockey* is the key of the TTOC record that encountered the error.

User response: Run an HSM **AUDIT** command against the HSM CDS data sets and associated ML2 tape. Correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00534I ASSOCIATED NAME IS — *assocname*

Explanation: The HSM associated name that is related to a data set being archived could not be located in the TTOC record for the volume specified as containing the data set. *assocname* is the associated name of the data set that could not be located.

System action: NO TTOC DS ENTRY FOUND FOR DS is written to the candidate report.

User response: Run an HSM **AUDIT** command against the HSM CDS data sets and associated ML2 tape and correct the errors that are found. If this does not resolve the problem, contact IBM Software Support for assistance.

AXQ00535E WRITE FAILED FOR ACHIVE DB *rectype* RECORD; RPLFDBWD=*ff-rr-cc-ss* (HEX)

Explanation: A WRITE operation for the record type *rectype* failed with the return and reason codes *ff-rr-cc-ss*.

System action: UNABLE TO INSERT ARCHDB DS REC is written to the candidate report.

User response: If the *rr* value in the RPLFDBWD field contains the value 08 and the *ss* value in the RPLFDBWD field contains the value 1C, the Archive Database that was specified in the parameter ARCHIVE-DATABASE-CLUSTER-NAME is full and could not be extended. Increase the size of the VSAM data set and try again. If this does not resolve the problem or any other errors are indicated, contact IBM Software Support for assistance.

AXQ00536I ARCHIVE DB DATA SET RECORD SUCCESSFULLY WRITTEN

Explanation: For a data set being archived, a data set record was created successfully in the Archive Database.

User response: No action is necessary.

AXQ00537I ARCHIVE DB TAPE RECORD SUCCESSFULLY WRITTEN

Explanation: For one or more data sets being archived, a tape record was created successfully in the Archive Database.

User response: No action is necessary.

AXQ00538I BDELETE SUCCESSFULLY PROCESSED

Explanation: Backup data sets that were associated with the data set that is being archived were deleted successfully, as requested by the DELETE-HSM-BACKUP-VERSIONS-AFTER-ARCHIVE parameter.

System action: BDELETE SUCCESSFUL is written to the candidate report.

User response: No action is necessary.

AXQ00539E BDELETE FAILED; RETURN CODE=*retcode*; REASON CODE=*rsncode* (HEX)

Explanation: A failure, with hexadecimal return code *retcode* and reason code *rsncode*, occurred while attempting to delete backup data sets associated with a data set that is being archived, as requested by the DELETE-HSM-BACKUP-VERSIONS-AFTER-ARCHIVE parameter.

System action: BDELETE FAILED is written to the candidate report.

User response: Contact IBM Software Support.

AXQ00540I HDELETE SUCCESSFULLY PROCESSED

Explanation: An HDELETE of the ML2 data set that is associated with the data set being archived was successful.

System action: HDELETE SUCCESSFUL is written to the candidate report.

User response: No action is necessary.

AXQ00541E HDELETE FAILED; RETURN CODE=*retcode*; REASON CODE=*rsncode* (HEX)

Explanation: A failure with hexadecimal return code *retcode* and reason code *rsncode* occurred while

attempting to delete the ML2 data set that is associated with a data set that is being archived.

System action: `HDELETE FAILED` is written to the candidate report.

User response: Contact IBM Software Support.

AXQ00542E ATTEMPT TO CATALOG *object* TO RCHIVE FAILED; RC=*retcode* CTGREASN=*rsncode* (HEX)

Explanation: During Archive processing for a data set, object type *object* was unable to be cataloged to the volume serial number `RCHIVE`. *object* is one of the following:

- `DATA SET`
- `BASE DATA OBJECT`
- `BASE INDEX OBJECT`
- `AIX CLUSTER`
- `AIX DATA OBJECT`
- `AIX INDEX OBJECT`
- `AIX PATH`
- `BASE PATH`

The return code is the hexadecimal value *retcode* and the catalog reason code is the hexadecimal value *rsncode*.

System action: `REQUEST TO CATALOG DS FAILED` is written to the candidate report.

User response: Following are some possible reasons for failure, as indicated by the hexadecimal return code *retcode*:

Return code	Cause
`X'04`	Either the catalog does not exist or the catalog is not open.
`X'08'`	The user is not authorized.
`X'14'`	The catalog data set is full.
`X'1C'`	One of the following occurred: • An unrecoverable catalog error • A parameter list error • A **`GETMAIN`** failure Increase the region size and try the Archive operation again.

If you are unable to identify or correct the problem, contact IBM Software Support for assistance.

AXQ00543I *dstype* SUCCESSFULLY CATALOGED TO RCHIVE

Explanation: The object type *dstype* was successfully cataloged to the volume serial number `RCHIVE`. *dstype* is one of the following:

- `DATA SET`
- `BASE DATA OBJECT`
- `BASE INDEX OBJECT`
- `AIX CLUSTER`
- `AIX DATA OBJECT`
- `AIX INDEX OBJECT`
- `AIX PATH`
- `BASE PATH`

User response: No action is necessary.

AXQ00544W NO DATA SETS ARE ELIGIBLE FOR *func* PROCESSING

Explanation: No data sets passed qualification for *func* processing, where *func* is either `ARCHIVE` or `RESTORE`.

User response: Review the messages in the Archive or Restore log to determine why data sets were ineligible for processing. Contact IBM Software Support for further assistance.

AXQ00545W ARCHIVE MEDIA IS FULL; DATA SET WILL NOT BE ARCHIVED

Explanation: While a data set was being archived, the archive media became full.

System action: `ARCHIVE MEDIA FULL, SKIPPING DS; ARCH MEDIA FULL, DS NOT ARCHIVED; ARCH TAPE FULL, DS NOT ARCHIVED` is written to the candidate report.

User response: Run Archive processing again to archive the remainder of the data sets.

AXQ00546E RESTORE FAILED; NO DATA SETS WILL BE RESTORED

Explanation: The Restore operation encountered a failure.

System action: No data sets are restored.

User response: Examine the messages that preceded this one for the cause of the failure and the actions to be taken. Contact IBM Software Support for further assistance.

AXQ00547I *entity* ARCHIVE ASSOCIATION RECORD SUCCESSFULLY WRITTEN

Explanation: A record that associates a VSAM object with its base cluster has been written successfully to the Archive Database. *entity* can be any of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

User response: No action is necessary.

AXQ00548I *entity* **ARCHIVE ASSOCIATION RECORD SUCCESSFULLY DELETED**

Explanation: A record that associates a VSAM object with its base cluster has been removed successfully from the Archive Database. *entity* can be any of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

User response: No action is necessary.

AXQ00553E TTOC UPDATE FAILURE - KEY=*key_value* **RC=***retcode*

Explanation: During post-processing for a Restore operation, an error occurred while updating the HSM OCDS TTOC record. *key_value* specifies the 44-character key that encountered the error. *retcode* is an 8-byte internal return code, in hexadecimal.

User response: Contact IBM Software Support for assistance.

AXQ00554E DYNAMIC *func* **FAILED FOR ARCHIVE DB; DSNAME=***dsname*

Explanation: *func* (ALLOCATE or UNALLOCATE), failed for the Archive database. The database data set name is dsname, as specified for the ARCHIVE-DATABASE-CLUSTER-NAME parameter.

User response: Review the dynamic allocation error and information codes that are provided in message AXQ00555E. If the codes do not provide sufficient information for you to diagnose and correct the error, contact IBM Software Support for further assistance.

AXQ00555E R15 IS *retcode*, **ERRCODE=***errcode* **(HEX), INFOCODE=***infocode* **(HEX)**

Explanation: An allocation or unallocation error occurred for the Archive Database that was specified by the ARCHIVE-DATABASE-CLUSTER-NAME parameter. This message is preceded by the message AXQ00554E.

- *retcode* is the hexadecimal return code from dynamic allocation.
- *errcode* is the hexadecimal dynamic allocation error code from the S99ERROR field of the dynamic allocation request block.
- *infocode* is the hexadecimal dynamic allocation information code from the S99INFO field of the dynamic allocation request block.

User response: Review the dynamic allocation error and information codes. If the codes do not provide sufficient information for you to diagnose and correct the error, contact IBM Software Support for further assistance.

AXQ00558E ATTEMPT TO DELETE *object* **ARCHIVE CATALOG ENTRY FAILED: RC=***retcode*, **CTGREASN=***rsncode* **(HEX)**

Explanation: During Restore delete processing for a data set, object type *object* could not be deleted from the volume serial number RCHIVE. *object* is one of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

The return code is the hexadecimal value *retcode*. The catalog reason code is hexadecimal value *rsncode*.

System action: DELETE FROM ARCHIVE FAILED is written to the candidate report.

User response: The hexadecimal return code value *retcode* could indicate these possible reasons for failure.

Return code	Cause
X'04'	Either the catalog does not exist or the catalog is not open.
X'08'	The user is not authorized.
X'14'	The catalog data set is full.

Return code	Cause
X'1C'	One of the following occurred: • An unrecoverable catalog error • A parameter list error • A **GETMAIN** failure Increase the region size and try the Restore delete operation again.

If you are unable to determine what caused the problem or you cannot correct the problem, contact IBM Software Support for assistance.

AXQ00559I *dstype* **ARCHIVE CATALOG ENTRY SUCCESSFULLY DELETED**

Explanation: Object type *dstype* was successfully deleted from the volume serial number RCHIVE. *dstype* is one of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

User response: No action is necessary.

AXQ00560I PROCESSING DATA SET — *dsname*

Explanation: Data set *dsname* is being archived.

User response: No action is necessary.

AXQ00561I DATA SET WILL NOT BE *func*

Explanation: The data set currently being processed by *func* (ARCHIVED, RESTORED, or DELETED) is bypassed.

User response: The messages that precede this one might contain sufficient information for you to determine why processing is bypassing the data set. Contact IBM Software Support for further assistance.

AXQ00562E DUPLICATE *rectype* IN ARCHIVE DB

Explanation: A duplicate record was encountered in the Archive Database that was defined by the ARCHIVE-DATABASE-CLUSTER-NAME parameter. *rectype* is either DSNAME or TAPE.

System action: DUPLICATE VOLSER IN ARCHIVE DB, DUPLICATE DSNAME IN ARCHIVE DB is written to the candidate report.

User response: Contact IBM Software Support for assistance.

AXQ00563E READ FAILED FOR ARCHIVE DB *rectype* RECORD; RPLFDBWD=*errcode* (HEX)

Explanation: A READ operation for the Archive Database (defined by the ARCHIVE-DATABASE-CLUSTER-NAME parameter) failed with the hexadecimal error code *errcode*.

System action: READ FAILED FOR ARCHIVE VOL REC, READ FAILED FOR ARCHIVE DS REC is written to the candidate report.

User response: Contact IBM Software Support for assistance.

AXQ00564I DS IS PROPERLY CATALOGED TO *volser*

Explanation: The data set that is being archived or restored is allocated correctly to the HSM volume serial number of *volser*, where *volser* is either RCHIVE (for Archive operations) or MIGRAT (for Restore operations).

User response: No action is necessary.

AXQ00565E DATA SET IS NOT CATALOGED

Explanation: The required catalog entry for the ML2 data set that is being archived could not be located.

System action: DS IS NOT CATALOGED is written to the candidate report.

User response: Determine why the expected catalog entry for the data set that is being archived is not available. Correct the problem and then run the Archive process again.

AXQ00566E MIGRAT CHECK FAILED; LOCATE RETURNED A VOLUME COUNT GREATER THAN 1 (*volcount*)

Explanation: While verifying that the catalog entry for a data set that is being archived is defined as MIGRAT, it was determined that the catalog entry indicated that there was more than one volume for the data set. The volume count was expected to be one, but was instead *volcount* in hexadecimal.

System action: DS CATALOG VOLUME COUNT IS >1 is written to the candidate report.

User response: Correct the catalog entry and then run the Archive process again.

AXQ00567E DATA SET SHOULD BE CATALOGED TO MIGRAT, BUT IS CATALOGED TO *volser*

Explanation: The data set that is being archived is expected to be cataloged to the HSM volume serial number MIGRAT, but is instead cataloged to the volume serial number *volser*.

System action: DS IS NOT CATALOGED TO MIGRAT is written to the candidate report.

User response: Determine why the catalog entry is incorrect, correct the error, and then run the Archive process again.

AXQ00568E MIGRAT CHECK FAILED; CATALOG (LOCATE) RC=*errcode* (HEX)

Explanation: An unexpected error (hexadecimal value *errcode*) occurred while verifying that the catalog entry for the data set being archived contains the value MIGRAT.

System action: CATALOG LOCATE FOR DS FAILED is written to the candidate report.

User response: Following are some possible reasons for failure, as indicated by the hexadecimal return code *errcode*:

Return code	Reason
X'04'	Either the catalog does not exist or is not open.
X'08'	The user is not authorized.
X'14'	The catalog data set is full.
X'1C'	One of the following occurred: • An unrecoverable catalog error • A parameter list error • a **GETMAIN** failure Increase the region size and try the Archive process again.

If you are unable to identify or correct the problem, contact IBM Software Support for assistance.

AXQ00569I DATA SET SUCCESSFULLY DELETED FROM CATALOG

Explanation: During a Restore delete operation, the data set catalog entry was successfully deleted from the catalog.

User response: No action is necessary.

AXQ00570E DELETE OF NON-CLUSTER ALIEN VSAM ENTRY NOT ALLOWED

Explanation: A DELETE operation was attempted for a VSAM cluster object other than the base cluster itself, and the entity type was not specified. This message is issued by the automatic Restore process when it attempts a dynamic delete of an archived data set without performing the actual Restore.

System action: DELETE NOT FOR BASE CLUSTER is written to the candidate report. The DELETE is not performed.

User response: To delete a component of a VSAM cluster other than the base cluster itself, specify the entity type on the DELETE command.

AXQ00580I DATA SET SUCCESSFULLY ARCHIVED

Explanation: The data set that is currently being processed was successfully archived.

System action: ARCHIVED TO *vvvvvv* BID=*nnnnnnnn* is written to the candidate report.

Note: *vvvvvv* is a volume serial number and *nnnnnnnn* is a decimal media block identification.

User response: No action is necessary.

AXQ00581W TTOC RECORD IS FULL; REMAINING DATA SETS WILL BE BYPASSED

Explanation: While restoring data sets, the HSM TTOC record for the new ML2 volume became full. The current data set and all subsequent data sets are not restored.

System action: TTOC RECORD FULL; SKIPPING DS is written to the candidate report.

User response: Run the Restore process again to write the bypassed data sets to a new ML2 volume.

AXQ00584I CAS INTERCEPT *n* - STATE: *state*; VOLSER: *volser*; HB: *internalvalue*

Explanation: This message is issued in response to one of the following actions:

- Execution of the **STATUS CAS** or **STATUS ALL** operator command
- Initialization of the AXQTINIT started task

n, which is either 1 or 2, identifies the specific Catalog Address Space hook.

If *state* is INACTIVE, no other information is provided in the message text.

If the *state* is ACTIVE:

- *volser* is the volume serial number RCHIVE.
- *internalvalue* is an internal diagnostic value that is meaningful only to IBM Software Support.

User response: If the CAS intercept state is as you want it, then no action is necessary. Otherwise, issue the **ACTIVATE** or **DEACTIVATE** operator command to set the status to the appropriate state.

AXQ00586E CAS INTERCEPT *n* ACTIVATION FAILED; RC=*internalretcode* (HEX)

Explanation: The product was unable to install the Catalog Address Space intercept (*n*). *internalretcode* is an internal diagnostic code that is meaningful only to IBM Software Support.

System action: The Catalog Address Space hook is not installed.

User response: Contact IBM Software Support for assistance.

AXQ00587W FREEMAIN FAILED FOR WORKAREA

Explanation: A request to release storage failed.

User response: If the error persists, contact IBM Software Support for assistance.

AXQ00588I CAS INTERCEPT *n* SUCCESSFULLY {ACTIVATED | RE-ACTIVATED}

Explanation: A request to activate or re-activate the Catalog Address Space intercept was successful. *n* is a numeric intercept identifier.

User response: No action is necessary.

AXQ00589I *codetype codevalue*

Explanation: A request to activate or re-activate the CAS intercept was successful. *codetype* is a diagnostic code type and *codevalue* is a diagnostic code value. The code type and value might be useful if any CAS intercept problems arise. The values are meaningful to IBM Software Support only.

User response: No action is necessary.

AXQ00590E FREEMAIN FAILED FOR 24–BIT WORKAREA

Explanation: A request to release below-the-line storage has failed.

System action: Processing continues.

User response: If the problem persists, contact IBM Software Support for assistance.

AXQ00592I CAS INTERCEPT *n* IS ALREADY INACTIVE

Explanation: A **DEACT** request was made for the CAS intercept, but the intercept was already inactive. *n* is a numeric intercept number.

User response: Unless this message is issued in error, no action is necessary. Otherwise, contact IBM Software Support for assistance.

AXQ00593E CAS INTERCEPT *n* DE-ACTIVATION ERROR; RC=*diagcode* (HEX)

Explanation: A request to deactivate the CAS intercept failed. *n* is a numeric intercept identifier. *diagcode* is an internal diagnostic code that describes the nature of the error and is meaningful to IBM Software Support only.

User response: Contact IBM Software Support and provide the diagnostic code.

AXQ00594I CAS INTERCEPT *n* SUCCESSFULLY DE-ACTIVATED

Explanation: A request to deactivate the CAS intercept was successful. *n* is a numeric intercept identifier.

User response: No action is necessary.

AXQ00595W FREEMAIN FAILED FOR *ctrlblkname*

Explanation: A request to release storage related to the CAS intercept failed. *ctrlblkname* is the name of the control block for which the **FREEMAIN** failed.

System action: Processing continues.

User response: If the error persists, contact IBM Software Support for assistance.

AXQ00596I TOTAL DATA SETS *func*....*n*

Explanation: Processing for the specified function *func* (ARCHIVE, RESTORE, or DELETE) has completed for *n* data sets.

User response: No action is necessary.

AXQ00597I TOTAL DATA SETS BYPASSED....*n*

Explanation: *n* data sets were bypassed by Archive or Restore processing.

User response: No action is necessary.

AXQ00598I TOTAL DATA SETS PROCESSED....*n*

Explanation: *n* data sets were evaluated for Archive or Restore processing.

User response: No action is necessary.

AXQ00599I *func* **PROCESSING IS COMPLETE. HIGHEST RETURN CODE IS** *retcode*.

Explanation: *func* (ARCHIVE or RESTORE) processing has completed with a return code of *retcode*. A return code of 0 indicates that all data sets were successfully processed. A return code other than 0 indicates that some of the data sets might not have been archived or restored.

User response: A return code of 4 indicates that at least one (but not all) of the evaluated data sets was successfully archived or restored. A return code of 8 indicates that no data sets were successfully archived or restored. If *retcode* is any value other than 4 or 8, contact IBM Software Support for assistance.

AXQ00600E ARCHIVE MEDIA (*dev*) ALLOCATION ERROR—ARCHIVE TERMINATED

Explanation: An allocation error occurred for the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: ARCH ALLOC ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00600E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00601E ARCHIVE MEDIA (*dev*) CONNECTION ERROR — ARCHIVE TERMINATED

Explanation: An error occurred while connecting to or opening the archive media device indicated by *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ0610E contains additional information about the error.

System action: ARCH CONN ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00601E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00602E ARCHIVE MEDIA (*dev*) INFO REQUEST ERROR — DS BYPASSED

Explanation: An error occurred while obtaining device information for the archive media device *dev* (PRIMARY, BACKUP1, BACKUP2, or BACKUP3, corresponding to the parameters that are prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: ARCH INFO ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00602E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00603E ML2 DEVICE DISCONNECT ERROR — ARCHIVE TERMINATED

Explanation: An error occurred while disconnecting from or closing the ML2 device corresponding to the parameters that are prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 DISC ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00603E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00604E ML2 DEVICE FREE ERROR — ARCHIVE TERMINATED

Explanation: An error occurred while freeing the ML2 device corresponding to the parameters that are prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 FREE ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00604E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00605E ML2 DEVICE ALLOCATION ERROR — ARCHIVE TERMINATED

Explanation: An error occurred while allocating the ML2 device corresponding to the parameters that are prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 ALLOC ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00605E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00606E ML2 DEVICE CONNECT ERROR — ARCHIVE TERMINATED

Explanation: An error occurred while connecting to or opening the ML2 device corresponding to the parameters that are prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 CONN ERR; DS NOT ARCHIVED is written to the candidate report. Archive processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00606E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00607E ML2 POSITIONING ERROR ON BLOCK=*blknumber*

Explanation: An error occurred while trying to position the ML2 media device to the data set being archived. The ML2 device is specified using the parameters that are prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error. The hexadecimal value *blknumber* is the block number to which the ML2 device was being positioned.

System action: ML2 POSI ERR; DS NOT ARCHIVED is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00607E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support.

AXQ00608W FATAL MEDIA ERROR; DATA SET WILL NOT BE ARCHIVED

Explanation: A serious error occurred while processing either the ML2 or Archive media device.

System action: FATAL MEDIA ERROR; SKIPPING DS is written to the candidate report. The data set that was being processed when the error occurred is not archived.

User response: Examine error messages that were issued prior to this one to determine what type of error occurred. If the error can be corrected, run the Archive processing again. Otherwise, contact IBM Software Support for assistance.

AXQ00609E ML2 DEVICE READ ERROR — DS BYPASSED

Explanation: An error occurred while reading from the ML2 media device corresponding to the parameters prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 ICDD RD ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00609E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00610E RETURN CODE=*retcode* REASON CODE=*rsncode* DIAG CODE=*diagcode* ERR1=*err1info* ERR2=*err2info*

Explanation: An error occurred while accessing a media device during Archive or Restore processing. These codes provide more detailed information about the error. All values shown in the message text are hexadecimal values.

User response: For information that is associated with allocation or freeing of a media device that corresponds to a tape device:

- The first two hexadecimal bytes of the ERR1 information are the values that were obtained from the S99ERROR field from the dynamic allocation request block.
- The last two hexadecimal bytes of the ERR1 information are the values that were obtained from the S99INFO field of the dynamic allocation request block.
- The ERR2 value contains the values that were obtained from the S99ERSN field from the dynamic allocation request block.

- If you cannot resolve errors that are related to the allocation or freeing of a device, contact IBM Software Support.

For information that is associated with a cloud allocation, contact IBM Software Support.

AXQ00611E EXPECTED CDD BLOCK NOT READ — DS BYPASSED

Explanation: An error occurred while reading a data block from the ML2 media device that corresponds to the parameters prefixed with the characters ML2–TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 NCDD RD ERR; DS NOT ARCHIVED is written to the candidate report. The data set is bypassed.

User response: If error messages issued previous to AXQ00611E contain sufficient information to resolve the issue, correct the error and run Archive processing again. Otherwise, contact IBM Software Support for assistance.

AXQ00612E CONTROL START (*dev*) WRITE ERROR — DS BYPASSED

Explanation: An error occurred while writing control information for the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: ARCH IRAMC ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00612E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00613E ARCHIVE MEDIA (*dev*) WRITE ERROR — DS BYPASSED

Explanation: An error occurred while writing data information for the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00613E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00614E CONTROL END (*dev*) WRITE ERROR — DS BYPASSED

Explanation: An error occurred while writing control information for the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: ARCH WRITE ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00614E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00615E ARCHIVE BLOCK INFO REQUEST ERROR — DS BYPASSED

Explanation: An error occurred while retrieving device positioning information for the primary archive media device corresponding to the parameters prefixed with the characters ARCHIVE-TAPE. Message AXQ00610E contains additional information about the error.

System action: ARCH BLOCK ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00615E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00616E UNEXPECTED EOF ON ML2 DEVICE — DS BYPASSED

Explanation: An unexpected end of file occurred while processing the ML2 device corresponding to the parameters prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 IRD EOF ERR; DS NOT ARCHIVED or ML2 EOF ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00616E, for

further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00617E ERROR READING ML2 DEVICE — DS BYPASSED

Explanation: An unexpected error occurred while reading data from the ML2 device corresponding to the parameters prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 READ ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: If messages issued prior to AXQ00617E provide sufficient information to resolve the problem, correct the error and run Archive processing again. Otherwise, contact IBM Software Support for assistance.

AXQ00618E ARCHIVE MEDIA (*dev*) SYNC ERROR— DS BYPASSED

Explanation: A synchronization error occurred while writing data for the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: ML2 SYNC ERR; DS NOT ARCHIVED is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00618E, for further information concerning the error. Correct the error and run Archive processing again. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00619E ARCHIVE MEDIA (*dev*) DISCONNECT ERROR

Explanation: A disconnect or close error occurred while processing the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: If possible, processing of the current data set continues.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00619E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00620E ARCHIVE MEDIA (*dev*) FREE ERROR

Explanation: An error occurred while freeing the archive media device *dev* (PRIMARY, COPY1, COPY2, or COPY3, corresponding to the parameters prefixed with the characters ARCHIVE-TAPE, ARCHIVE-TAPE2, ARCHIVE-TAPE3, or ARCHIVE-TAPE4). Message AXQ00610E contains additional information about the error.

System action: If possible, processing of the current data set continues.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00620E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00621E ML2 DEVICE TERM DISCONNECT ERROR

Explanation: An error occurred while disconnecting from or closing the HSM ML2 device *dev* corresponding to the parameters prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error.

User response: If possible, termination processing continues. Examine the message AXQ00610E, which is issued immediately following AXQ00621E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support.

AXQ00622E ML2 DEVICE TERM FREE ERROR

Explanation: An error occurred while freeing the HSM ML2 device *dev* corresponding to the parameters prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error.

System action: If possible, termination processing continues.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00622E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00623E UNEXPECTED CDD BLOCK READ — DS BYPASSED

Explanation: An error occurred while reading a data block from the ML2 media device *dev* corresponding to the parameters prefixed with the characters ML2-TAPE. Message AXQ00610E contains additional information about the error.

System action: ML2 CDD ERR; DS NOT ARCHIVED is written to the candidate report. The data set is bypassed.

User response: If previous messages provide sufficient

information for you to resolve the issue, correct the error and run Archive processing again. Otherwise, contact IBM Software Support for assistance.

AXQ00624E ML2 DEVICE ALLOCATION ERROR — RESTORE TERMINATED

Explanation: An allocation error occurred for the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00624E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00625E ML2 DEVICE CONNECTION ERROR — RESTORE TERMINATED

Explanation: An error occurred while connecting to or opening the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00625E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00626E ML2 INFO RETRIEVAL ERROR — DS BYPASSED

Explanation: An error occurred while retrieving device information for the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Restore processing bypasses the current data set.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00626E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00627E ARCH DEVICE DISCONNECT ERROR — RESTORE TERMINATED

Explanation: An error occurred while disconnecting from or closing the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCH DISC ERR; DS NOT RESTORED` is written to the candidate report. Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00627E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00628E ARCH DEVICE FREE ERROR — RESTORE TERMINATED

Explanation: An error occurred while freeing the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCH FREE ERR; DS NOT RESTORED` is written to the candidate report. Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00628E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00629E ARCH DEVICE ALLOCATION ERROR — RESTORE TERMINATED

Explanation: An error occurred while allocating the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCH ALLOC ERR; DS NOT RESTORED` is written to the candidate report. Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00629E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00630E ARCH DEVICE CONNECTION ERROR — RESTORE TERMINATED

Explanation: An error occurred while connecting to or opening the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCH CONN ERR; DS NOT RESTORED` is written to the candidate report. Restore processing is terminated.

User response: Examine the message AXQ00610E,

which is issued immediately following AXQ00630E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00631E ML2 POSITIONING ERROR ON BLOCK=*blknumber* — DS BYPASSED

Explanation: An error occurred while trying to position the ML2 media device to the data set that is being restored. The ML2 media device is specified using the parameters that are prefixed with the characters `ML2–TAPE`. The hexadecimal value *blknumber* is the block number to which the ML2 device was being positioned. Message AXQ00610E contains additional information about the error.

System action: `ARCH POSI ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being restored when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00631E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00632E UNEXPECTED EOF ON ATCCR READ — DS BYPASSED

Explanation: An unexpected end of file condition was encountered while reading the archive device that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`.

System action: `ARCH IRDEOF ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Contact IBM Software Support.

AXQ00633E ARCH DEVICE ATCCR READ ERROR — DS BYPASSED

Explanation: An unexpected error was encountered while reading the archive device that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCH ICCRRD ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00633E, for further information concerning the error. If the error cannot be resolved, contact IBM Software Support for assistance.

AXQ00634E EXPECTED ATCCR RECORD NOT FOUND — DS BYPASSED

Explanation: An expected control record was not found while reading the archive media that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`.

System action: `ATCCR READ ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Contact IBM Software Support.

AXQ00635E UNEXPECTED EOF ON ARCHIVE DEVICE — DS BYPASSED

Explanation: An unexpected end of file condition was encountered while reading the archive media that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`.

System action: `ARCH EOF ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Contact IBM Software Support.

AXQ00636E ERROR READING ARCHIVE DEVICE — DS BYPASSED

Explanation: A READ error occurred while copying data from the archive media that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ARCHIVE RD ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00636E, for further information concerning the error. If the message provides sufficient information to resolve the issue, correct the error and run the Restore processing again. Otherwise, contact IBM Software Support.

AXQ00637E ML2 TAPE IS FULL — DS BYPASSED

Explanation: The end of the tape media was encountered while creating a new HSM ML2 tape that is associated with the parameters that are prefixed with the characters `ARCHIVE-TAPE`.

System action: `ML2 TAPE FULL; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred and all of the subsequent data sets are bypassed.

User response: To process the bypassed data sets, run Restore processing again.

AXQ00638E ML2 WRITE ERROR — DS BYPASSED

Explanation: An error occurred while writing data to the HSM ML2 media device that is associated with the parameters that are prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ML2 WRITE ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00638E, for further information concerning the error. If the message provides sufficient information to resolve the issue, correct the error and run the Restore processing again. Otherwise, contact IBM Software Support.

AXQ00639E ML2 BLOCK INFO REQUEST ERROR — DS BYPASSED

Explanation: An error occurred while requesting positioning information for the HSM ML2 media device that is associated with the parameters that are prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ML2 BLOCK ERR; DS NOT RESTORED` is written to the candidate report. The data set that was being processed when the error occurred is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00639E, for further information concerning the error. If the message provides sufficient information to resolve the issue, correct the error and run the Restore processing again. Otherwise, contact IBM Software Support.

AXQ00640E RESTORE BLOCK COUNT MISMATCH; ACTUAL=*blkcount* EXPECTED=*expectedcount*

Explanation: While performing a restore, the number of blocks that were restored from the archive media did not match the expected number of blocks. The hexadecimal value *blkcount* is the actual block count. The hexadecimal value *expectedcount* is the expected block count.

System action: `ML2 BLK CNT ERR; DS NOT RESTORED` is written to the candidate report.

User response: Contact IBM Software Support.

AXQ00641E ARCHIVE DEVICE DISCONNECT ERROR

Explanation: During termination processing, an error occurred while disconnecting from or closing the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Termination processing continues.

User response: Examine the message AXQ00610E, which is issued immediately after AXQ00641E, for further information concerning the error. If AXQ00610E does not provide sufficient information to correct the error, contact IBM Software Support for assistance.

AXQ00642E ARCHIVE DEVICE FREE ERROR

Explanation: During termination processing, an error occurred while freeing the archive media device that is associated with the parameters prefixed with the characters `ARCHIVE-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Termination processing continues.

User response: Examine the message AXQ00610E, which is issued immediately after AXQ00642E, for further information concerning the error. If AXQ00610E does not provide sufficient information to correct the error, contact IBM Software Support for assistance.

AXQ00643E ML2 DEVICE DISCONNECT ERROR

Explanation: During termination processing, an error occurred while disconnecting from or closing the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Termination processing continues.

User response: Examine the message AXQ00610E, which is issued immediately after AXQ00643E, for further information concerning the error. If AXQ00610E does not provide sufficient information to correct the error, contact IBM Software Support for assistance.

AXQ00644E ML2 DEVICE FREE ERROR

Explanation: During termination processing, an error occurred while freeing the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2-TAPE`. Message AXQ00610E contains additional information about the error.

System action: Termination processing continues.

User response: Examine the message AXQ00610E, which is issued immediately after AXQ00644E, for further information concerning the error. If AXQ00610E does not provide sufficient information to correct the error, contact IBM Software Support for assistance.

AXQ00645E FATAL MEDIA ERROR; DATA SET WILL NOT BE RESTORED

Explanation: A serious error occurred while processing either the ML2 or the Archive media device.

System action: `FATAL MEDIA ERROR; SKIPPING DS` is

written to the candidate report. The data set currently being processed is not restored.

User response: The error messages that were issued prior to this one might contain sufficient information for you to diagnose and resolve the problem. If you can resolve the problem, run the Restore process again. Otherwise, contact IBM Software Support for assistance.

AXQ00646E MESSAGE INTERCEPT UNINSTALL ERROR: *errvalue*

Explanation: HSM message intercept uninstall processing encountered an error during termination processing, as indicated by the *errvalue* hexadecimal value.

System action: Termination processing continues.

User response: Contact IBM Software Support.

AXQ00647W MESSAGE INTERCEPT ALREADY INSTALLED

Explanation: An attempt was made to install the HSM message intercept, but it has already been installed.

System action: Processing continues.

User response: Contact IBM Software Support.

AXQ00648W MESSAGE INTERCEPT ALREADY ACTIVATED

Explanation: An attempt was made to activate the HSM message intercept, but it has already been activated.

System action: Processing continues.

User response: Contact IBM Software Support.

AXQ00649I *hsm-msg-text*

Explanation: *hsm-msg-text* displays HSM messages that were issued in response to an internal **HDELETE**, **BDELETE**, or **HRECALL** command.

User response: No action is necessary.

AXQ00650W ML2 VOLUME *volser* **IS IN USE; DATA SET WILL NOT BE ARCHIVED**

Explanation: While attempting to archive a data set, it was determined that the HSM ML2 volume (*volser*) on which the data set resides is already in use and cannot be accessed. The data set currently being processed, and all subsequent data sets that reside on volume *volser*, are bypassed by Archive processing.

System action: `ML2 VOLUME IN USE; SKIPPING DS` is written to the candidate report.

User response: To determine whether volume *volser* is still in use, issue operator command `D GRS,RES=(SYSZVOLS,volser)`. When the volume is no longer in use, run the Archive process again to write the bypassed data sets to a new archive volume.

AXQ00651W HALT COMMAND DETECTED; DATA SET WILL NOT BE ARCHIVED

Explanation: A **HALT** command was issued to a batch Archive operation.

System action: The Archive operation terminates in an orderly manner and any remaining Archive operations that were detected after the **HALT** was issued are bypassed.

User response: No action is necessary.

AXQ00652W HALT COMMAND DETECTED; DATA SET WILL NOT BE RESTORED

Explanation: A **HALT** command was issued to a batch Restore operation.

System action: The Restore operation terminates in an orderly manner and any remaining Restore operations that were detected after the **HALT** was issued are bypassed.

User response: No action is necessary.

AXQ00653W HALT COMMAND DETECTED; DATA SET WILL NOT BE RECALLED

Explanation: A **HALT** command was issued to a batch Restore operation during an automatic data set HSM **RECALL**.

System action: The **RECALL** operations terminate in an orderly manner and any remaining HSM **RECALL** operations that were detected after the **HALT** was issued are bypassed.

User response: No action is necessary.

AXQ00654E CLOUD DEFINITION READ ERROR - RETURN CODE: *retcode*

Explanation: During an attempt to dynamically restore a data set from a cloud provider, an error (identified by the hexadecimal value *retcode*) was encountered.

System action: The data set is not restored.

User response: Ensure that the cloud definition has been correctly defined to the product. If you find errors in the cloud definition, correct them, issue the **REFRESH PARMS** operator command, and try the Restore operation again. If you cannot determine the cause of the error, contact IBM Software Support for assistance.

AXQ00655W ARCHIVE DATA SET CLEANUP ERROR - RETURN CODE: *retcode*

Explanation: After a successful Restore, the deletion of a data set that had been archived to the cloud storage environment was unsuccessful and resulted in the return code *retcode*.

System action: It is possible that the data set was not removed successfully from the cloud storage environment.

User response: If the data set was not removed from the cloud storage environment, remove it manually, using the appropriate method for the cloud storage environment provider. If errors continue to occur, contact IBM Software Support for assistance.

AXQ00656W ARCHIVE DATA SET CLEANUP SUCCESSFULLY COMPLETED

Explanation: After a successful Restore, the deletion of a data set that had been archived to the cloud storage environment completed successfully.

User response: No action is necessary.

AXQ00657W AUTO-RESTORE BYPASSED DUE TO EXCLUSION

Explanation: During automatic restore processing, the group name that was associated with the data set at archive time matches a goup name in the exclusion list in parameter library member `AXQEDRGN`.

System action: The data set is not restored. `BYPASSED DUE TO EXCLUSION` is written to the candidate report.

User response: No action is necessary.

AXQ00658E AUDIT WRITE FAILURE; DATA SET WILL NOT BE ARCHIVED

Explanation: During an attempt to archive a data set, a write to the audit file failed.

System action: `AUDIT WRITE FAILURE; SKIPPING DS` is written to the candidate report. The requested data set is bypassed and not archived.

User response: Correct the problem with the audit file and then run the Archive process again to archive the data set.

AXQ00660I VALIDATING DATA SET — *dsname*

Explanation: Validity checking is being performed on data set *dsname* before Restore processing begins.

User response: No action is necessary.

AXQ00661I COPYING DATA SET — *dsname*

Explanation: Data set *dsname* is being copied from the archive tape to the HSM ML2 tape as part of the Restore process.

User response: No action is necessary.

AXQ00662I FINALIZING DATA SET — *dsname*

Explanation: During Restore processing of data set *dsname*, processing has begun for finalizing the data to HSM.

User response: No action is necessary.

AXQ00663E ML2 SYNC ERROR — DS BYPASSED

Explanation: A synchronization error occurred while data was being written to the HSM ML2 media device that is associated with the parameters prefixed with the characters `ML2–TAPE`. Message AXQ00610E contains additional information about the error.

System action: `ML2 SYNC ERR; DS NOT RESTORED` is written to the candidate report. The data set that is currently being processed is bypassed.

User response: Examine the message AXQ00610E, which is issued immediately following AXQ00663E, for further information concerning the error. If the message provides sufficient information to resolve the issue, correct the error and run the Restore processing again. Otherwise, contact IBM Software Support.

AXQ00664I DATA SET SUCCESSFULLY *func*

Explanation: Function *func* (`VALIDATED`, `COPIED`, or `FINALIZED`) was completed successfully for the data set that was being processed during an Archive or Restore operation.

System action: `RESTORED TO` *vvvvvv* `BID=`*nnnnnnnn* is written to the candidate report during a normal Restore. `DELETED FROM ARCHIVE` is written to the candidate report for a Restore with delete.

Note: *vvvvvv* is a volume serial number and *nnnnnnnn* is a decimal media block identification.

User response: No action is necessary.

AXQ00665E MCD RECORD ALREADY EXISTS IN HSM MCDS FOR DATA SET

Explanation: During data set validation processing for a Restore operation, an existing HSM MCD record was found in the HSM MCDS data set. This is an unexpected condition.

System action: `MCD RECORD ALREADY EXISTS FOR DS` is written to the candidate report.

User response: Run an HSM **`AUDIT`** command against

the HSM MCDS data set and correct any reported problems. If the problem persists, contact IBM Software Support.

AXQ00666E NO DATA SET RECORD FOUND IN ARCHIVE DB FOR DATA SET

Explanation: During data set validation processing for a Restore operation, an expected data set record was not found in the Archive Database that is identified by the ARCHIVE-DATABASE-CLUSTER-NAME parameter.

System action: ARCHIVE RECORD NOT FOUND FOR DS is written to the candidate report.

User response: Verify that the correct Archive Database was specified as the value for parameter ARCHIVE-DATABASE-CLUSTER-NAME. If the parameter does point to the correct Archive Database, contact IBM Software Support.

AXQ00667I ARCHIVE DB DATA SET RECORD SUCCESSFULLY READ

Explanation: During data set validation processing for a Restore operation, the expected data set record was successfully located in the Archive Database that is identified by the ARCHIVE-DATABASE-CLUSTER-NAME parameter.

User response: No action is necessary.

AXQ00668E *rectype* **RECORD ALREADY EXISTS FOR VOLUME** *volser*

Explanation: Restore processing found that record type *rectype* (MCV or TTOC) already exists for the volume serial number *volser*, which is associated with the HSM ML2 tape.

System action: Restore processing terminates.

User response: Run an HSM **AUDIT** against the HSM MCDS and OCDS data sets. Correct any errors that are reported by **AUDIT**. Also verify that the volume that is assigned to the Restore operation as the new HSM ML2 tape is not already defined to HSM. Correct the identified errors and run the Restore process again. If the problem persists, contact IBM Software Support.

AXQ00669W ML2 TAPE VOLUME IS FULL; DATA SET WILL NOT BE RESTORED

Explanation: While restoring data sets, the new ML2 volume became full. The current data set and all subsequent data sets are not restored.

System action: ML2 TAPE FULL; SKIPPING DS is written to the candidate report.

User response: Run the Restore process again to write the bypassed data sets to another tape volume.

AXQ00670E WRITE FAILED FOR *rectype* **RECORD FOR VOLUME** *volser*; **RC=***retcode* **(HEX)**

Explanation: While finalizing the new HSM ML2 tape, an error occurred writing to either the HSM MCDS or OCDS.

- *rectype* shows the record type (MCV or TTOC).
- *volser* is the volume serial number of the tape.
- *retcode* is the hexadecimal return code value that describes the error condition.

System action: Restore processing terminates.

User response: If previous messages provide insufficient information to diagnose and correct the problem, contact IBM Software Support.

AXQ00671I *rectype* **RECORD SUCCESSFULLY WRITTEN**

Explanation: A record of type *rectype* (MCV or TTOC) was written successfully to the HSM MCDS or OCDS data set during termination processing for a Restore operation.

User response: No action is necessary.

AXQ00672E WRITE FAILED FOR *rectype* **RECORD; RC=***retcode* **(HEX)**

Explanation: During post-processing for a Restore operation, a record of type *rectype* (MCO or MCD) could not be written to the HSM MCDS. The hexadecimal value *retcode* describes the error condition.

System action: WRITE FAILED FOR MCD RECORD is written to the candidate report.

User response: If previous messages provide insufficient information to diagnose and correct the problem, contact IBM Software Support for assistance.

AXQ00673I *rectype* **RECORD SUCCESSFULLY WRITTEN FOR DATA SET**

Explanation: During post-processing for a Restore operation, a record of type *rectype* (MCO or MCD) was written successfully to the HSM MCDS.

User response: No action is necessary.

AXQ00674I DATA SET SUCCESSFULLY CATALOGED TO *volser*

Explanation: During an Archive or a Restore operation, the data set was successfully cataloged to *volser*. For Archive operations, *volser* is RCHIVE. For Restore operations, *volser* is MIGRAT.

User response: No action is necessary.

AXQ00678E DELETE FOR ARCHIVE DB DATA SET RECORD FAILED; RPLFDBWD=*retcode* (HEX)

Explanation: During post-processing for a Restore operation on a data set, a data set record could not be deleted from the Archive Database that is identified by the parameter ARCHIVE-DATABASE-CLUSTER-NAME. The hexadecimal value *retcode* is the return code from the delete operation.

System action: ARCHIVE DB DS REC DELETE FAILED is written to the candidate report. The data set is not restored.

User response: Contact IBM Software Support for assistance.

AXQ00679I ARCHIVE DB DATA SET RECORD SUCCESSFULLY DELETED

Explanation: During post-processing for a Restore operation on a data set, a data set record was deleted successfully from the Archive Database that is identified by the parameter ARCHIVE-DATABASE-CLUSTER-NAME.

User response: No action is necessary.

AXQ00680E ATTEMPT TO CATALOG *object* TO MIGRAT FAILED; RC=*retcode* CTGREASN=*rsncode* (HEX)

Explanation: During post-processing for a Restore operation on a data set, an object of type *object* could not be cataloged to the HSM volume serial number MIGRAT. *object* is one of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

The hexadecimal value *retcode* is the return code. The hexadecimal value *rsncode* is the catalog reason code.

System action: CATALOG TO MIGRAT FAILED FOR DS is written to the candidate report.

User response: The data set that is currently being processed is not restored. Following are some possible reasons for failure, as indicated by the hexadecimal return code (*retcode*):

Return code	Reason
X04	The catalog either does not exist or is not open.
X'08'	The user is not authorized.
X'14'	The catalog data set is full.
X'1C'	One of the following occurred: • An unrecoverable catalog error • A parameter list error • A **GETMAIN** failure Increase the region size and try the Restore operation again.

If you are unable to identify or correct the problem, contact IBM Software Support for assistance.

AXQ00681E WRITE FAILED FOR MCA RECORD FOR object — RC=*retcode* (HEX)

Explanation: During post-processing for a Restore operation on a data set, an MCA record could not be written to the HSM MCDS data set for the object of type *object*. *object* is one of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

retcode is the return code.

System action: WRITE FAILED FOR MCA RECORD is written to the candidate report. The data set that is currently being processed is not restored.

User response: Contact IBM Software Support.

AXQ00682I MCA RECORD SUCCESSFULLY WRITTEN FOR *object*

Explanation: During post-processing for a Restore operation on a data set, an MCA record was written successfully to the HSM MCDS data set for the object of type *object*. *object* is one of the following:

- DATA SET
- BASE DATA OBJECT
- BASE INDEX OBJECT
- AIX CLUSTER
- AIX DATA OBJECT
- AIX INDEX OBJECT
- AIX PATH
- BASE PATH

User response: No action is necessary.

AXQ00683I ENTITY NAME IS *dsname*

Explanation: This message is issued subsequent to message AXQ00682I. *dsname* provides the name of the object that was referenced in AXQ00682I.

User response: No action is necessary.

AXQ00685E UNABLE TO *func acctype*; **ENQ RC=***retcode*, **RSN=***rsncode* **(HEX)**

Explanation: The Archive Database that is identified by the `ARCHIVE-DATABASE-CLUSTER-NAME` parameter could not be synchronized properly with other tasks that were also attempting access.

- *func* is the function type, which is either `OBTAIN` or `RELEASE`.
- *acctype* is the access type, which i one of the following:
  - `DB-ALLOC`
  - `DB-ACCESS`
  - `SV5Q_ENQ`
  - `INTCP_ACC`
  - `DSN_UOW`
- *retcode* is the hexadecimal return code of the ENQ/DEQ macro.
- *rsncode* is the hexadecimal reason code from the ENQ/DEQ macro.

System action: Archive or Restore processing is terminated.

User response: Verify that only one Archive, Restore, or Recycle process is running at a time. If multiple processes are running simultaneously, wait for those processes to finish and then run the Archive or Restore process again. Otherwise, contact IBM Software Support.

AXQ00686E REQUEST TO WRITE AUDIT LOG RECORD FAILED, RC=*retcode* **(HEX)**

Explanation: During Archive or Restore processing, an attempt to write a record to the audit log failed. The hexadecimal value *retcode* is the return code.

System action: `AUDIT WRITE FAILED` is written to the candidate report. The data set that is currently being archived or restored is bypassed.

User response: If the audit log data set is defined incorrectly, redefine the log data set and run the Archive or Restore process again. Otherwise, contact IBM Software Support for assistance.

AXQ00687I THE ARCHIVE DEVICE *dev* **VOLSER IS** *volser*

Explanation: *volser* is the volume serial number of the newly created archive media (*dev*, which can be `PRIMARY`, `COPY1`, `COPY2`, or `COPY3`).

User response: No action is necessary.

AXQ00688I THE NEW ML2 VOLSER IS *volser*

Explanation: *volser* is the volume serial number of the newly created HSM ML2 tape.

User response: No action is necessary.

AXQ00689I RECALL SUCCESSFULLY PROCESSED

Explanation: An automatic **HRECALL** of a restored data set was successful. Automatic **HRECALL** is specified for the parameter "RESTORE-TO-DRIVE-DYNAMIC-HRECALL" on page 131.

User response: No action is necessary.

AXQ00690E HRECALL FAILED; RETURN CODE=*retcode*; **REASON CODE=***rsncode* **(HEX)**

Explanation: An automatic **HRECALL** of a restored data set failed with hexadecimal values *retcode* as the return code and *rsncode* as the reason code. Automatic **HRECALL** is specified for the parameter "RESTORE-TO-DRIVE-DYNAMIC-HRECALL" on page 131.

System action: `ARCHIVED TO` *vvvvvv* `BID=`*nnnnnnnn*`*` or `RESTORED TO` *vvvvvv* `BID=`*nnnnnnnn*`*` is written to the candidate report.

Note: *vvvvvv* is a volume serial number and *nnnnnnnn* is a decimal media block identification. The asterisk (*) indicates that the Archive or Restore process was successful, but the **HRECALL** failed.

User response: Contact IBM Software Support.

AXQ00691E PROCESSING RECALL FOR *dsname*

Explanation: An **HRECALL** is being performed for data set *dsname*. Automatic **HRECALL** is specified by the parameter "RESTORE-TO-DRIVE-DYNAMIC-HRECALL" on page 131.

User response: No action is necessary.

AXQ00692I FINALIZING ML2 VOLSER *vvvvvv*

Explanation: Final processing has begun for the restored ML2 tape identified by the volume serial number *vvvvvv*.

User response: No action is necessary.

AXQ00693E ML2 VOLUME COUNT EXCEEDS 255 (*nnnnnnnn***)**

Explanation: The number of tapes required to restore the requested data sets to ML2 tapes exceeds the maximum allowable limit of 255. The value *nnnnnnnn* specifies the number of tapes required.

System action: Restore processing is terminated.

User response: Specify a fewer number of data sets to be restored to an ML2 tape such that the total number of volumes does not exceed 255.

AXQ00695E ML2 VOLUME BLOCK COUNT INFO REQUEST ERROR

Explanation: An error occurred retrieving block count information for a restored ML2 tape. MessageAXQ00610E contains additional information about the error.

System action: Restore processing is terminated.

User response: Examine the message AXQ00610E, which is issued immediately followingAXQ00695E, for further information concerning the error. If the error cannot be resolved, contact Customer Support for assistance.

AXQ00699E MESSAGE NOT DEFINED —*msgid*

Explanation: During Archive or Restore processing, an attempt was made to write a message whose ID is *msgid*. The text for this message could not be determined.

User response: Record the message ID and contact IBM Software Support.

AXQ00700I REQUESTING ADRDSSU DUMP: *dsname*

Explanation: During Archive processing, a request was made to ADRDSSU to dump the data set named *dsname*.

User response: No action is necessary.

AXQ00702I ADRDSSU *requesttype* **COMPLETED RC:** *retcode*

Explanation: During Archive or Restore processing, a request to dump or restore (*requesttype*) a data set completed with return code *retcode*.

User response: No action is necessary.

AXQ00703W ADRDSSU DUMP COMPLETED WITH NON-ZERO RC: *retcode*

Explanation: During Archive processing, a request to ADRDSSU to dump a data set completed with nonzero return code *retcode*.

User response: Examine the contents of the JCL log and the `ARCHLOG` and `SYSPRIN2`. If those contents provide sufficient information to determine what caused the nonzero return code, make the appropriate corrections and run the job again; otherwise, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00705E ISSUE WITH RETURNED COMPONENT TABLE: *reason* **DSN=***dsname*

Explanation: During Archive processing, a request to ADRDSSU to dump a VSAM sphere and the output from ADRDSSU was unexpected. *dsname* is the name of the data set. *reason* is one of the following reasons:

`RETURNED COMPONENT TABLE EMPTY`
No entries were extracted from the ADRDSSU output.

`MFT OF COMPONENT TABLE INVALID`
One or more entries in the ADRDSSU output were unexpected.

`FMT OF CLUSTER COMP INVALID`
The format of the `CLUSTER COMPONENT` of the ADRDSSU output was unexpected.

`FMT OF AIX COMPONENT INVALID`
The format of the `AIX COMPONENT` of the ADRDSSU output was unexpected.

`FMT OF PATH COMPONENT INVALID`
The format of the `PATH COMPONENT` of the ADRDSSU output was unexpected.

`FMT OF CATALOG COMPONENT INVALID`
The format of the `CATALOG COMPONENT` of the ADRDSSU output was unexpected.

`FMT OF COMPONENT NAME INVALID`
The format of the `COMPONENT NAME` of the ADRDSSU output was unexpected.

`FMT OF NVSAM COMP INVALID`
The format of the `NONVSAM COMPONENT DSNAME` of the ADRDSSU output was unexpected.

`NO MATCH WITH CAND_CMP_TABLE`
One or more component data set name entries in the ADRDSSU output failed to match the table of candidate names to be archived.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00706E UNRECOGNIZED DCAT REQUEST TYPE: *retcode* **(HEX)**

Explanation: During the processing of an Archive request, a request to uncatalog a data set resulted in the unexpected return code *retcode*.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00707E CMPTABLE INVREC, FLGS: *flagbites* **(HEX) REC:** *recordname*

Explanation: During Archive processing, an invalid component table entry was detected. *flagbites* are the internal flag bites associated with the failing records. *recordname* is the name of the invalid record.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00709I RESTORING DATA SET - *dsname*

Explanation: Restore processing has requested that data set *dsname* be scheduled for restoration to L0 DASD.

User response: No action is necessary.

AXQ00710E ATTEMPT TO UNCATLG *dsname* **FAILED; RC=***retcode* **CTGREASN=***rsncode* **(HEX)**

Explanation: Restore processing unsuccessfully attempted to uncatalog a data set.

- *dsname* is the name of the data set.
- *retcode* is the return code.
- *rsncode* is the reason code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00711I UNCATALOG SUCCESSFUL: *dsname*

Explanation: Restore processing successfully uncataloged data set *dsname*.

User response: No action is necessary.

AXQ00712E ATTEMPT TO RECATALOG *dsname* **FAILED; RC=***retcode* **CTGREASN=***rsncode* **(HEX)**

Explanation: Archive processing unsuccessfully attempted to recatalog a data set.

- *dsname* is the data set name.
- *retcode* is the catalog return code.
- *rsncode* is the catalog reason code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00713E ATTEMPT TO ALTER CATLG *dsname* **FAILED; RC=***retcode* **CTGREASN=***rsncode* **(HEX)**

Explanation: Archive processing unsuccessfully attempted to alter the catalog for a data set.

- *dsname* is the data set name.
- *retcode* is the catalog return code.
- *rsncode* is the catalog reason code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00714E THE NUMBER OF ASSOCIATION RECORDS FOR *dsname* **EXCEEDS 180, CLUSTER SKIPPED**

Explanation: Archive processing encountered a VSAM cluster that had more than 180 entities associated with it. The number of associated entities exceeded an internal limit.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00715E READ FAILED FOR ARCHIVE DB REC: *dsinfo* **RECORD; RPLFDBWD=***feedbackword*

Explanation: Restore processing attempted to read a record from the Advanced Archive for DFSMShsm VSAM database and experienced a nonzero return code. *dsinfo* is the record type and name of the data set that was being read. *feedbackword* is the VSAM RPL Feedback word.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00718E IEFSSREQ FAILED, *failurecode* **RETC;** *retcode* **(HEX) RSNC=***rsncode* **(HEX)**

Explanation: Restore processing attempted to retrieve SMS management class information and experienced a nonzero return code.

- *failurecode* is the failure code.
- *retcode* is the nonzero return code.
- *rsncode* is the reason code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00719E SMS MANAGEMENT CLASS: *mgmtclass* IS NOT DEFINED ON SYSTEM, DSN=*dsname*

Explanation: Restore processing made a failed attempt to restore to L0 disk data set *dsname*. The attempt failed because SMS management class *mgmtclass*, which existed when the data set was archived, no longer exists.

System action: Data set *datsetname* is not restored.

User response: Determine why SMS management class *mgmtclass* no longer exists. If possible, recreate the management class and run the job again. If the problem persists, have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00721E CATASTROPIC FAILURE WHILE CONSTRUCTING ADRDSSU CONTROL STATEMENTS, RESTORE TERMINATED

Explanation: Restore processing encountered a catastrophic failure during an attempt to restore a data set to L0 disk.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ00722E FAILURE DURING NAME/TOKEN *function* RC: *retcode* (HEX)

Explanation: Restore processing encountered a failure during name/token manipulation. *function* is the name of the function that was being performed. *retcode* is the return code.

User response: Have all job-related input and output available and contact IBM Software Support for assistance.

AXQ01000E ACRONYM CHECK FAILED WHILE ATTEMPTING TO FREE *ctrlblk*, DATA=*diaginfo1* -*diaginfo2*

Explanation: During product initialization, an internal error occurred within the product while the control block (*ctrlblk*) was being freed. *diaginfo1* and *diaginfo2* provide diagnostic information.

User response: Contact IBM Software Support for assistance.

AXQ01001E FAILURE OCCURRED DURING FREEMAIN FOR *ctrlblk* - *ssid*

Explanation: An internal error occurred during the attempt to free the control block *ctrlblk* for subsystem ID *ssid*.

User response: Contact IBM Software Support for assistance.

AXQ01002E INVALID STORAGE REQUEST FOR CONTROL BLOCK *ctrlblk* - *ssid*

Explanation: An internal error occurred during the attempt to obtain control block *ctrlblk* for subsystem ID *ssid*.

User response: Contact IBM Software Support for assistance.

AXQ01003E INSUFFICIENT VIRTUAL STORAGE FOR CONTROL BLOCK *ctrlblk* - *ssid*

Explanation: Insufficient storage was available to obtain the required control block *ctrlblk* for subsystem ID *ssid*.

User response: Try to increase above-the-line or below-the-line storage for the job that caused this message to be issued and run the job again. If the problem persists, contact IBM Software Support for assistance.

AXQ01004W ACTIVE SUBSYSTEM(S) DETECTED: PRODUCT-LEVEL MODULE(S) NOT RE-INITIALIZED

Explanation: This message is issued when Advanced Archive for DFSMShsm initializes and determines that other active modules are available for reuse.

User response: No action is necessary.

AXQ01005E UNABLE TO OBTAIN STORAGE FOR COMMON AREA ROUTINE, RC=*retcode*

Explanation: During Advanced Archive for DFSMShsm initialization, a failed attempt was made to obtain above-the-line CSA storage for loading a required product routine. The failed attempt produced an internal return code of *retcode*.

User response: Investigate and correct the shortage of above-the-line CSA storage and then restart Advanced Archive for DFSMShsm. If the problem persists, contact IBM Software Support for assistance.

AXQ01006E BLDL FAILED FOR *modname*, RC=*retcode*

Explanation: During Advanced Archive for DFSMShsm initialization, a failed attempt was made to locate a required load module (*modname*). The failed attempt produced an internal return code of *retcode*.

User response: Verify that the load modules for Advanced Archive for DFSMShsm are accessible in a `STEPLIB` in the product started task or in the system `LINKLIST` concatenation, and then restart Advanced Archive for DFSMShsm.

AXQ01007E UNABLE TO DETERMINE ORIGIN OF *modname*

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered while the product load module *modname* was being processed.

User response: Verify that the load modules for Advanced Archive for DFSMShsm are accessible in a `STEPLIB` in the product started task or in the system `LINKLIST` concatenation, and then restart Advanced Archive for DFSMShsm.

AXQ01008I *modname* HAS BEEN LOADED AT *addr*

Explanation: Load module *modname* was loaded at hexadecimal address *addr*.

User response: No action is necessary.

AXQ01009E PRIVATE LOAD FAILED FOR *modname*

Explanation: During Advanced Archive for DFSMShsm initialization, a failed attempt was made to process product load module *modname*, which was expected to be located in above-the-line private storage.

User response: Verify that the Advanced Archive for DFSMShsm load modules are accessible in a `STEPLIB` in the product started task or in the system `LINKLIST` concatenation, and then restart Advanced Archive for DFSMShsm.

Also check the amount of above-the-line private storage that is available for the product started task. Correct the problem and then restart Advanced Archive for DFSMShsm. If you cannot determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01010E COMMON LOAD FAILED FOR *modname*

Explanation: During Advanced Archive for DFSMShsm initialization, a failed attempt was made to process product load module *modname*, which was expected to be located in above-the-line common storage.

User response: Verify that the Advanced Archive for DFSMShsm load modules are accessible in a `STEPLIB` in the product started task or in the system `LINKLIST` concatenation, and then restart Advanced Archive for DFSMShsm.

Also check the amount of above-the-line common storage that is available for the product started task. Correct the problem and then restart Advanced Archive for DFSMShsm. If you cannot determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01011E ERROR OCCURRED DURING SWAREQ PROCESSING FOR SIOT, RC=*errcode*

Explanation: An internal error (*errcode*) was encountered during an attempt to access a system control block.

User response: Contact IBM Software Support for assistance.

AXQ01012E GSSB FAILED ACRONYM CHECK

Explanation: During Advanced Archive for DFSMShsm initialization, an internal error was encountered when an attempt was made to access a product control block.

User response: Contact IBM Software Support for assistance.

AXQ01013E PARMLIST ADDRESS IS ZERO

Explanation: During Advanced Archive for DFSMShsm initialization, an internal error was encountered when an attempt was made to access a product control block.

User response: Contact IBM Software Support for assistance.

AXQ01014E GSSB ADDRESS IS ZERO

Explanation: During Advanced Archive for DFSMShsm initialization, an internal error was encountered when an attempt was made to access a product control block.

User response: Contact IBM Software Support for assistance.

AXQ01015E INSUFFICIENT VIRTUAL STORAGE FOR PRODUCT PROCESSING

Explanation: Advanced Archive for DFSMShsm initialization was unable to obtain the required above-the-line storage.

User response: Increase the amount of available above-the-line storage and then restart Advanced Archive for DFSMShsm. If increasing the amount of available above-the-line storage does not fix the problem, contact IBM Software Support for assistance.

AXQ01016E ERROR OCCURRED IN CROSS-MEMORY INITIALIZATION

Explanation: An internal error occurred during the main task startup.

User response: Contact IBM Software Support for assistance.

AXQ01017E ATTACH FOR AXQRSRP FAILED, RC=*errcode* -*ssid*

Explanation: During an attempt to attach a service subtask for subsystem ID *ssid*, an internal error (*errcode*) was encountered within the main product task.

User response: Contact IBM Software Support for assistance.

AXQ01018I SUBSYSTEM IS ACTIVE AND ENABLED

Explanation: The main Advanced Archive for DFSMShsm task started successfully and is now active.

User response: No action is necessary.

AXQ01019I SUBSYSTEM INITIALIZATION IS COMPLETE

Explanation: The main Advanced Archive for DFSMShsm task successfully completed initialization processing.

User response: No action is necessary.

AXQ01020I PRODUCT TERMINATION HAS BEEN REQUESTED

Explanation: A command to stop Advanced Archive for DFSMShsm has been received successfully.

User response: No action is necessary.

AXQ01021I POSTING RSRP SUBTASK TO SHUTDOWN

Explanation: During shutdown, a service subtask is being terminated. This message is issued only when diagnostics are requested.

User response: No action is necessary.

AXQ01022I WAITING FOR RSRP SUBTASK TO END

Explanation: During shutdown, a service subtask is being terminated and the main task is waiting for the subtask to terminate successfully. This message is issued only when diagnostics are requested.

User response: No action is necessary.

AXQ01023I DETACHING RSRP SUBTASK

Explanation: During shutdown, a service subtask is being terminated. This message is issued only when diagnostics are requested.

User response: No action is necessary.

AXQ01024I UNABLE TO DETERMINE O/S LEVEL; PROCESSING CONTINUES

Explanation: During startup, Advanced Archive for DFSMShsm could not determine the operating system level.

System action: Processing continues.

User response: No action is necessary.

AXQ01025I O/S MODE: *currentOS*

Explanation: *currentOS* shows the current operating system.

User response: No action is necessary.

AXQ01026I O/S LEVEL: *prgname prgfmid* **(***prgversion***)**

Explanation: This message shows the operating system level information for the control program:

- *prgname* is the name of the control program.
- *prgfmid* is the FMID of the control program.
- *prgversion* is control program version and release.

User response: No action is necessary.

AXQ01027I JOB ENTRY: *name*

Explanation: *name* is the name of the primary job entry subsystem.

User response: No action is necessary.

AXQ01028I SAF PRODUCT: *prodname*

Explanation: *prodname* is the name of the active security product.

User response: No action is necessary.

AXQ01029E NON-ZERO RETURN CODE FROM SYSEVENT, RC=*errcode* -*ssid*

Explanation: During Advanced Archive for DFSMShsm subsystem initialization, an error (*errcode*) was encountered when an attempt was made to make the product started task address space non-swappable for subsystem *ssid*.

User response: Contact IBM Software Support for assistance.

AXQ01030E INVALID COMMAND SPECIFIED - *cmd* -*ssid*

Explanation: A null or unrecognized product subsystem command (*cmd*) was issued to the started task for subsystem ID *ssid*.

User response: Correct the command specification and issue the command again.

AXQ01031E INVALID COMMAND SYNTAX SPECIFIED - *ssid*

Explanation: The command that was entered contains incorrect syntax. The product subsystem that was processing the command was *ssid*.

User response: Correct the command syntax and issue the command again.

AXQ01033E COMMAND VERB NOT UNIQUE - *cmd* **-***ssid*

Explanation: There exists more than one command that matches the abbreviation specified (*cmd*) for the command. Product subsystem *ssid* was processing the command.

User response: Issue the command again, using a command verb abbreviation that more uniquely identifies the intended command.

AXQ01034E EXCESSIVE OPERANDS SPECIFIED FOR COMMAND - *cmd* **-***ssid*

Explanation: Too many operands were specified for the **DISPLAY** command (*cmd*) that was issued to the Advanced Archive for DFSMShsm started task for subsystem ID *ssid*.

User response: Issue the command again, using the correct number of operands.

AXQ01035E INSUFFICIENT OPERANDS SPECIFIED FOR COMMAND - *cmd* **-***ssid*

Explanation: Too few operands were specified for the command *cmd*. *ssid* is the subsystem ID.

User response: Issue the command again, using the correct number of operands.

AXQ01036E INVALID OPERAND SPECIFIED FOR COMMAND - *cmd* **-***ssid*

Explanation: The command *cmd* contained an incorrect operand. *ssid* is the subsystem ID.

User response: Issue the command again, using the correct operands.

AXQ01037I SUBSYSTEM IS {ACTIVE | INACTIVE} AND {ENABLED | DISABLED} -*ssid*

Explanation: This message is issued in response to the **DISPLAY SUBSYSTEM** or **DISPLAY ALL** operator command. The message text shows the status (`ACTIVE` or `INACTIVE`) of subsystem *ssid* and whether that subsystem is enabled or disabled.

User response: No action is necessary.

AXQ01038I THERE ARE CURRENTLY NO SUBSYSTEMS -*ssid*

Explanation: When the **DISPLAY SUBSYSTEM ALL** operator command was issued, no subsystems were located.

User response: No action is necessary.

AXQ01039I SUBSYSTEM *ssid* **IS {ACTIVE | INACTIVE} AND {ENABLED | DISABLED} -***ssss*

Explanation: This message is issued in response to the **DISPLAY SUBSYSTEM ALL** operator command. The message text shows the status (`ACTIVE` or `INACTIVE`) of each product subsystem (*ssid*) and whether that subsystem is enabled or disabled.

User response: No action is necessary.

AXQ01040E INVALID MODULE NAME SPECIFIED - *modname*

Explanation: The command that was entered contained an incorrect module name.

User response: Correct the module name and issue the command again.

AXQ01041I MODULE *modname modver fmid date time*

Explanation: This message shows the module header information:

- *modname* is the module name.
- *modver* is the module version.
- *fmid* is the FMID.
- *date* is the assembly date.
- *time* is the assembly time.

User response: No action is necessary.

AXQ01042I MODULE *modname* **LOCATED AT** *addr stgloc*

Explanation: This message shows the module address with the offset, if one was specified:

- *modname* is the module name.
- *addr* is the virtual storage address.
- *stgloc* is the storage location (`PRIVATE` or `COMMON`).

User response: No action is necessary.

AXQ01043I PRODUCT-LEVEL TRACING IS {ENABLED | DISABLED} -*ssid*

Explanation: This message is issued in response to the **DISPLAY TRACING** operator command to subsystem ID *ssid*. The message text shows whether the product tracing facility is enabled or disabled.

User response: No action is necessary.

AXQ01044I SUBSYSTEM-LEVEL TRACING IS {ENABLED | DISABLED} - *ssid*

Explanation: This message is issued in response to the **DISPLAY TRACING** operator command to subsystem ID *ssid*. The message text shows whether the subsystem tracing facility is enabled or disabled.

User response: No action is necessary.

AXQ01045I SUBSYSTEM IS NOW ENABLED -*ssid*

Explanation: This message indicates that the **ENABLE SUBSYSTEM** operator command to subsystem ID *ssid* was successful.

User response: No action is necessary.

AXQ01046I TRACING FOR PRODUCT IS NOW ENABLED -*ssid*

Explanation: This message is issued in response to the **ENABLE TRACING** or **ENABLE TRACING ALL** operator command for subsystem ID *ssid*, and indicates that product-level tracing is now enabled.

User response: No action is necessary.

AXQ01047I TRACING FOR SUBSYSTEM IS NOW ENABLED -*ssid*

Explanation: This message is issued in response to the **ENABLE TRACING ALL** operator command for subsystem ID *ssid* and indicates that subsystem-level tracing is now enabled.

User response: No action is necessary.

AXQ01048I SUBSYSTEM IS NOW DISABLED -*ssid*

Explanation: This message is issued in response to the **DISABLE SUBSYSTEM** operator command for subsystem ID *ssid* and indicates that subsystem is now disabled.

User response: No action is necessary.

AXQ01049I TRACING FOR PRODUCT IS NOW DISABLED -*ssid*

Explanation: This message is issued in response to the **DISABLE TRACING** or **DISABLE TRACING ALL** operator command for subsystem ID *ssid* and indicates that product-level tracing is now disabled.

User response: No action is necessary.

AXQ01050I TRACING FOR SUBSYSTEM IS NOW DISABLED -*ssid*

Explanation: This message is issued in response to the **DISABLE TRACING ALL** operator command for subsystem ID *ssid* and indicates that subsystem-level tracing is now disabled.

User response: No action is necessary.

AXQ01056I GPB IS LOCATED AT *addr* **-***ssid*

Explanation: This message is issued in response to the **DIAG** operator command for subsystem ID *ssid*. The message text shows the hexadecimal address (*addr*) of the GPB product control block.

User response: No action is necessary.

AXQ01057I GSSB IS LOCATED AT *addr* **-***ssid*

Explanation: This message is issued in response to the **DIAG** operator command for subsystem ID *ssid*. The message text shows the hexadecimal address (*addr*) of the GSSB product control block.

User response: No action is necessary.

AXQ01058I RSRE READ COUNT..... *numberblks* **-***ssid*

Explanation: This message is issued in response to the **DIAG** operator command for subsystem ID *ssid*. The message text shows that *numberblks* RSRE product control blocks were processed.

User response: No action is necessary.

AXQ01061I AXQMAIN ESTAE ENTERED -*ssid*

Explanation: This message is issued when an error occurs in the main started task for subsystem ID *ssid*.

System action: Recovery processing will occur and might include taking an SVC dump of the product started task address space.

User response: If an SVC dump of the started task address space was taken, retain the dump and contact IBM Software Support for assistance. Shut down the started task and restart it.

AXQ01062E UNABLE TO OBTAIN VIRTUAL STORAGE FOR WORKAREA

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered when an attempt was made to obtain above-the-line common storage for a started task subtask.

User response: Investigate a potential shortage of above-the-line common storage and then restart Advanced Archive for DFSMShsm. If the problem persists, contact IBM Software Support for assistance.

AXQ01063E PRIVATE LOAD FAILED FOR *modname*

Explanation: During Advanced Archive for DFSMShsm initialization, product load module *modname* could not be loaded in above-the-line private storage.

User response: Verify that the load modules for the product are accessible in a STEPLIB in the product started task, or in the system LINKLIST concatenation, and then restart the product.

If there is a shortage of above-the-line private storage that is available for the product started task, correct the problem and then restart the product.

If the cause of the error cannot be determined, contact IBM Software Support for assistance.

AXQ01064E UNABLE TO OBTAIN 24-BIT WORKAREA FOR PRODUCT PROCESSING

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered when an attempt was made to obtain a below-the-line common storage area for a started task subtask.

User response: Investigate a potential shortage of below-the-line common storage and then restart the product. If the problem persists, contact IBM Software Support for assistance.

AXQ01065E UNABLE TO OPEN RESTORE LOG

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered when an attempt was made to open the restore log data set that is assigned to DD RESTLOG. RESTLOG should have DUMMY or SYSOUT assigned to it.

User response: Ensure that the RESTLOG DD is included in the product started task. Contact IBM Software Support for further assistance.

AXQ01066E UNABLE TO OPEN SNAP OUTPUT

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered when an attempt was made to open the diagnostic output data set that is assigned to DD SNAPLOG. SNAPLOG should have DUMMY or SYSOUT assigned to it.

User response: Ensure that the SNAPLOG DD is included in the product started task. Contact IBM Software Support for further assistance.

AXQ01067E UNABLE TO OPEN SUMMARY LISTING FILE

Explanation: During Advanced Archive for DFSMShsm initialization, an error was encountered when an attempt was made to open the summary log data set that is assigned to DD SUMMLOG. SUMMLOG should have SYSOUT assigned to it.

User response: Ensure that the SUMMLOG DD is included in the product started task. Contact IBM Software Support for further assistance.

AXQ01068I SHUTTING DOWN

Explanation: Product termination has been requested and the dynamic restore subtask is shutting down in an orderly manner. This message is displayed only when diagnostic messaging has been requested.

User response: No action is necessary.

AXQ01069E ESTAE ENTERED

Explanation: An error occurred during post-processing in a product subtask.

User response: Have available all dumps and output listings and contact IBM Software Support for assistance.

AXQ01070E INSUFFICIENT OPERATING SYSTEM LEVEL; Z/OS 1.13 OR HIGHER REQUIRED

Explanation: The operating system level does not meet the minimum requirements.

System action: Product initialization is terminated.

User response: Run the product at z/OS level V1.13 or later.

AXQ01071E PRODUCT IS NOT RUNNING APF-AUTHORIZED

Explanation: Product initialization determined that the libraries from which the product is being loaded are not APF-authorized.

User response: Run the product from APF-authorized libraries. For more information about APF authorization, see the *MVS Programming: Authorized Assembler Services Guide*.

AXQ01072E INSUFFICIENT VIRTUAL STORAGE FOR PRODUCT PROCESSING

Explanation: Product initialization was unable to obtain the required above-the-line storage for main task initialization.

User response: Check the amount of above-the-line private storage that is available for the product started task. Correct the problem and then restart the product. If you cannot determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01073E INSUFFICIENT VIRTUAL STORAGE FOR PRODUCT PROCESSING

Explanation: Product initialization was unable to obtain the required below-the-line storage for main task initialization.

User response: Check the amount of below-the-line private storage that is available for the product started task. Correct the problem and then restart the product. If you cannot determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01074I TRACING ENABLED VIA START PARAMETERS

Explanation: Product and subsystem tracing was enabled at initialization by use of `EXEC` startup parameters.

User response: No action is necessary.

AXQ01075I INIT0500 GSSB LOCATED AT *addr*

Explanation: An preexisting GSSB internal product control block was located at the hexadecimal address *addr*. This message is issued only when diagnostic tracing has been requested.

User response: No action is necessary.

AXQ01076E PRIVATE LOAD FAILED FOR *modname*

Explanation: During product initialization, when an attempt was made to load product intercept modules, an error was encountered while module *modname* was being loaded.

User response: Verify that the load modules for the product are accessible in a `STEPLIB` in the product started task or in the system `LINKLIST` concatenation, and then restart the product.

Also check the amount of above-the-line private storage that is available for the product started task. Correct the problem and then restart the product. If you cannot determine the cause of the error, contact IBM Software Support for assistance.

AXQ01077E ATTACH FOR AXQMAIN FAILED, RC=*errcode*

Explanation: During product initialization, the startup of an internal task failed with an internal error code of *errcode*.

User response: Examine the other error messages that were issued at the same time as this message. If these other messages contain insufficient information for you to determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01078I DEACTIVATING INTERCEPTS

Explanation: Product termination is underway and the product intercepts are being deactivated and removed.

User response: No action is necessary.

AXQ01079I PRODUCT TERMINATION IS COMPLETE

Explanation: The product shutdown command has been issued and termination processing completed successfully.

User response: No action is necessary.

AXQ01080E INVALID START PARAMETERS SPECIFIED; IGNORED

Explanation: During Advanced Archive for DFSMShsm initialization, an unrecognized start parameter construction was encountered in the `PARM` keyword of the `EXEC` statement.

System action: The invalid parameters are ignored.

User response: Correct the invalid parameter and restart the product.

AXQ01081E INVALID PARM SPECIFIED - *parmname*

Explanation: During Advanced Archive for DFSMShsm initialization, an unrecognized start parameter (*parmname*) was encountered in the `PARM` keyword of the `EXEC` statement.

User response: Correct the invalid parameter and restart the product.

AXQ01082E REQUIRED DELIMITER "=" IS MISSING - *keyword*

Explanation: During Advanced Archive for DFSMShsm initialization, it was determined that an equal sign (=) is missing from the *keyword* keyword in the product options.

User response: Add the equal sign to the specification for the *keyword* keyword and restart the product.

AXQ01083I START PARAMETER SPECIFIED - *parm*

Explanation: During Advanced Archive for DFSMShsm initialization, the `TRACING` parameter that is specified by *parm* was processed.

User response: No action is necessary.

AXQ01084E INVALID VALUE SPECIFIED FOR PARAMETER - *parmname*

Explanation: During Advanced Archive for DFSMShsm initialization, the invalid parameter

parmname was detected while the TRACING keyword was being processed.

User response: Correct the invalid parameter and restart the product.

AXQ01087I START PARAMETER SPECIFIED - *parmname*

Explanation: The *parmname* start parameter was specified and recognized at product initialization. *parmname* can be ACT, ACTDYN, or DEACT.

System action:

- When *parmname* is ACT, a warning message is issued when the product encounters an archived data set.
- When *parmname* is ACTDYN, the product dynamically restores any data set that is referenced after it was archived.
- When *parmname* is DEACT, the product starts with no active intercepts. Any reference to an archived data set is processed as if it the data set were located on a tape device with a volume serial number of RCHIVE.

User response: No action is necessary.

AXQ01090E ERROR IN NAME/TOKEN RETRIEVAL PROCESSING, RC=*errcode*

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error (*errcode*) was encountered when an attempt was made to establish the product.

User response: Contact IBM Software Support for assistance.

AXQ01091E NAME/TOKEN ALREADY EXISTS, BUT TOKEN IS ZERO

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error was encountered while the product was being established.

User response: Contact IBM Software Support for assistance.

AXQ01092E NAME/TOKEN ALREADY EXISTS, BUT TOKEN DOES NOT POINT TO A VALID PRODUCT BLOCK

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error was encountered as the product was being established. The most likely cause of the error is that after the current IPL, an older incompatible version of the product was started before the current version was started.

User response: IPL the system before starting the current version of the product. If the problem persists, contact IBM Software Support for assistance.

AXQ01094E UNABLE TO OBTAIN STORAGE FOR PRODUCT CONTROL BLOCK, RC=*errcode*

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error (*errcode*) was encountered during an attempt to obtain above-the-line storage for a critical product control block.

User response: Try to increase the above-the-line storage for the product started task and then start Advanced Archive for DFSMShsm again. If the problem persists, contact IBM Software Support for assistance.

AXQ01096E ERROR IN NAME/TOKEN CREATE PROCESSING, RC=*errcode*

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error (*errcode*) was encountered during an attempt to establish a product control block.

User response: Contact IBM Software Support for assistance.

AXQ01097E ERROR IN MODULE LOAD PROCESSING RC=*errcode*

Explanation: During Advanced Archive for DFSMShsm initialization, an internal system error (*errcode*) was encountered during an attempt to load common area modules.

User response: Verify that the load modules for the product are accessible in a STEPLIB in the product started task, or in the system LINKLIST concatenation, and the restart the product. If the error persists, contact IBM Software Support for assistance.

AXQ01098W MAXIMUM ACTIVE SUBSYSTEMS EXCEEDED (1)

Explanation: Startup of the current instance of the product exceeds the limit of only one concurrently active instance on a single z/OS system.

System action: Startup for the current instance stops.

User response: Before this instance of the product can be started, you must terminate all other instances. If doing does not resolve the problem, contact IBM Software Support for assistance.

AXQ01099E DUPLICATE SUBSYSTEM FOUND FOR SSID=*ssid*

Explanation: During Advanced Archive for DFSMShsm initialization, a duplicate product control block for the subsystem *ssid* was encountered.

User response: Contact IBM Software Support for assistance.

AXQ01100E GSSB RE-USE ATTEMPTED, BUT KEYS DO NOT MATCH

Explanation: During Advanced Archive for DFSMShsm initialization, a existing product control block was being prepared for reuse, but could not be reused because the storage keys did not match.

User response: Contact IBM Software Support for assistance.

AXQ01101I RE-USING PREVIOUSLY EXISTING GSSB

Explanation: During Advanced Archive for DFSMShsm initialization, a existing product control block was successfully reused. This message is issued only when diagnostic tracing is requested.

User response: No action is necessary.

AXQ01102E PARAMETER REFRESH ERROR - RC:*errcode*

Explanation: Error *errcode* was encountered after a **REFRESH PARMS** command was issued.

System action: The **REFRESH** was not performed.

User response: Contact IBM Software Support for assistance.

AXQ01103I PARAMETER LIST SUCCESSFULLY REFRESHED

Explanation: The **REFRESH PARMS** command successfully refreshed the parameter settings for the started task.

User response: No action is necessary.

AXQ01104E PRIVATE LOAD FAILED FOR *modname*

Explanation: The **REFRESH MODS** operator command failed to process the product load module (*modname*). Module *modname* was expected to be located in above-the-line private storage.

User response: Verify that the load modules for the product are accessible in a STEPLIB in the product started task, or in the system LINKLIST concatenation, and then restart the product.

Also determine whether sufficient above-the-line private storage is available for the product started task.

Make the necessary corrections and restart the product. If you cannot determine the cause of the problem, contact IBM Software Support for assistance.

AXQ01105I MODULE *modname* **SUCCESSFULLY RELOADED**

Explanation: The **REFRESH MODS** operator command successfully reloaded the load module (*modname*).

User response: No action is necessary.

AXQ01106E ERROR OCCURRED DURING SWAREQ PROCESSING FOR SCT, RC=*errcode*

Explanation: During the interception of a **LOCATE** request, an internal error (*errcode*) was encountered while attempting to access a system control block.

User response: Contact IBM Software Support for assistance.

AXQ01107E LOCATE FAILED; DATA SET IS ARCHIVED - DSN: *dsname*

Explanation: During the interception of a **LOCATE** request while the product started task is running in ACT mode, the **LOCATE** request terminated with an error code of not found because the data set *dsname* was archived by Advanced Archive for DFSMShsm.

User response: If you intended to use ACT mode for the started task, no action is necessary.

However, if you want the data set to be restored dynamically, one of the following actions must be taken:

- The product started task must be initialized in ACTDYN mode.
- You must use the **ACTIVATE** operator command with the ALLDYN or LOCDYN parameters to change the processing mode.

AXQ01108E NON-ZERO RETURN CODE FROM SYSEVENT RC=*errcode* **-***ssid*

Explanation: While a **LOCATE** request was being processed, error *errcode* was encountered. The process that issued the **LOCATE** request was attempting to make its address space non-swappable for subsystem *ssss*.

System action: The **LOCATE** request fails.

User response: Contact IBM Software Support for assistance.

AXQ01109E NON-ZERO RETURN CODE FROM SYSEVENT, RC=*errcode* **-***ssid*

Explanation: While a **LOCATE** request was being processed, error *errcode* was encountered. The process that issued the **LOCATE** request was attempting to make its address space swappable for subsystem *ssid*.

System action: The **LOCATE** request fails.

User response: Contact IBM Software Support for assistance.

AXQ01110E ERROR RESTORING ARCHIVED DATA SET: *errcode dsname*

Explanation: While a **LOCATE** request was being processed in DYNACT (archived data sets are restored automatically) mode, error *errcode* was encountered. The error prevented the successful restore of data set *dsname*.

System action: The **LOCATE** request fails.

User response: Determine whether there is sufficient additional error and diagnostic information in message "AXQ01111E" to diagnose the problem. The summary restore information in the SUMMLOG data set for the started task might provide additional information about why the restore failed. Contact IBM Software Support for additional assistance.

AXQ01111E RETURN CODE: *errcode* **ERRRETC:** *retcode* **ERRRSNC:** *rsncode* **ERRADDR:** *addr*

Explanation: While a **LOCATE** request was being processed in DYNACT (archived data sets are restored automatically) mode, error *errcode* was encountered. The error prevented the successful restore of the archived data set.

This message provides additional diagnostic information that can help IBM Software Support staff to identify the cause of the failure:

- *errcode* is the error.
- *retcode* is the hexadecimal return code.
- *rsncode* is the hexadecimal reason code.
- *addr* is the hexadecimal address.

Asterisks (********) indicate that there is no pertinent information for that field. This message is preceded by message AXQ01110E.

User response: The summary restore information in the SUMMLOG data set for the started task might provide additional information about why the restore failed. If the information that is provided by messages AXQ01110E and AXQ01111E and the SUMMLOG data set is insufficient to determine what caused the problem, contact IBM Software Support for additional assistance.

AXQ01112I *func* **ARCHIVED DATA SET:** *dsname*

Explanation: Function *func* (RESTORING or DELETING) on data set *dsname* has started automatically because one of the following is true:

- The started task was initialized in ACTDYN mode.
- The **ACTIVATE LOCDYN** or **ACTIVATE ALLDYN** operator command was issued.

User response: No action is necessary.

AXQ01113I ARCHIVED DATA SET SUCCESSFULLY *func* **- DSN:** *dsname*

Explanation: An automatic Restore of archived data set *dsname* resulted in the successful completion of function *func* (RESTORED or DELETED). The automatic Restore was performed because one of the following is true:

- The started task was initialized in ACTDYN mode.
- The **ACTIVATE LOCDYN** or **ACTIVATE ALLDYN** operator command was issued.

User response: No action is necessary.

AXQ01114W ARCHIVED DATA SET ALREADY *func* **- DSN:** *dsname*

Explanation: An automatic Restore of data set *dsname* was started, but it was determined that the data set had already been processed by *func* (RESTORED or DELETED). This situation can be the result of multiple restore requests being received in a short period of time, either dynamically or in a batch Restore. The automatic Restore was performed because one of the following is true:

- The started task was initialized in ACTDYN mode.
- The **ACTIVATE LOCDYN** or **ACTIVATE ALLDYN** operator command was issued.

User response: No action is necessary.

AXQ01115E UNABLE TO OBTAIN STORAGE FOR PRODUCT PROCESSING

Explanation: The **LOCATE** intercept management program was unable to obtain above-the-line storage.

User response: Try to increase the above-the-line storage for the product started task and then restart the product. If the problem persists, contact IBM Software Support for assistance.

AXQ01115W DELETE REQUEST CONVERTED TO RESTORE - DSN: *dsname*

Explanation: A Restore for delete request was converted to a normal Restore request. This situation can arise when either of the following are true:

- The type of object for which a delete is being requested is invalid for the particular type of HSM-migrated object.
- A data set delete is requested by a user ID that does not have ALTER authority.

User response: No action is necessary.

AXQ01116E DELETE OF NON-CLUSTER COMPONENT NOT VALID - DSN: *dsname*

Explanation: A DELETE operation was attempted for an object named dsname, which is part of a VSAM cluster other than the base cluster itself and the entity type was not specified. This message is issued by the automatic Restore process when it attempts a dynamic delete of an archived data set without performing the actual Restore.

System action: The DELETE is not performed.

User response: To delete a component of a VSAM cluster other than the base cluster itself, specify the entity type on the DELETE command.

AXQ01116I LOCATE INTERCEPT SUCCESSFULLY DE-ACTIVATED

Explanation: A **DEACTIVATE ALL** or **DEACTIVATE LOCATE** operator command has successfully deactivated the product **LOCATE** intercept.

System action: No more automatic restores are performed and no additional archived data set warning messages are issued.

User response: No action is necessary.

AXQ01117I LOCATE INTERCEPT IS ALREADY INACTIVE

Explanation: The **LOCATE** intercept was already deactivated when a **DEACTIVATE ALL** or **DEACTIVATE LOCATE** operator command has issued.

System action: No automatic restores are performed and no archived data set warning messages are issued.

User response: No action is necessary.

AXQ01117W RESTORE BYPASSED DUE TO EXCLUSION - DSN: *dsname*

Explanation: During automatic restore processing, the group name that was associated data set *dsname* at archive time matches a group name in the exclusion list in parameter library member AXQEDRGN.

System action: The data set is not restored.

User response: No action is necessary.

AXQ01118I LOCATE HOOK IS NOT INITIALIZED OR ACTIVE

Explanation: In response to a **STATUS ALL** or **STATUS LOCATE** operator command, the product **LOCATE** intercept was found to be either uninitialized or initialized but deactivated.

User response: No action is necessary.

AXQ01119I LOCATE HOOK IS INITIALIZED AND ACTIVE IN *string* **MODE**

Explanation: In response to a **STATUS ALL** or **STATUS LOCATE** operator command, the product **LOCATE** intercept was found to be initialized and has been activated. *string* is one of the following:

- RESTORE, which indicates that the product has been started with the option to Restore data sets dynamically
- WARNING, which indicates that the product will fail most attempts to access the data set and will issue a warning message

User response: No action is necessary.

AXQ01120I LOCATE HOOK IS INITIALIZED BUT NOT ACTIVE

Explanation: In response to a **STATUS ALL** or **STATUS LOCATE** operator command, the product **LOCATE** intercept was found to be initialized but has not been activated.

User response: No action is necessary.

AXQ01121E FREEMAIN FAILED FOR WORKAREA

Explanation: A storage area could not be freed while the product **LOCATE** intercept was performing a management function.

System action: Processing continues.

User response: No action is necessary.

AXQ01122E UNABLE TO OBTAIN STORAGE FOR S1 INTERCEPT, RC=*errcode*

Explanation: While the product **LOCATE** intercept was being initialized, error *errcode* was encountered during an attempt to obtain above-the-line storage for the intercept.

System action: The intercept was not installed.

User response: Try increasing the above-the-line storage for the product started task and then restart Advanced Archive for DFSMShsm. If the problem persists, contact IBM Software Support for assistance.

AXQ01123I S1 INTERCEPT ALLOCATED AT *addr*

Explanation: The product **LOCATE** intercept control block was allocated at hexadecimal address *addr*. This message is issued only when diagnostic messaging has been requested.

User response: No action is necessary.

AXQ01124E SVCUPDTE FAILED, RC=*errcode*

Explanation: While the product **LOCATE** intercept was being initialized, error *errcode* was encountered during an attempt to update the SVC table.

System action: The intercept was not installed.

User response: Contact IBM Software Support for assistance.

AXQ01125E UNABLE TO LOCATE LPDE FOR IGC0002F

Explanation: While the product was being initialized, the started task could not locate a required pointer to an operating system module.

User response: Contact IBM Software Support for assistance.

AXQ01126E SVCUPDTE RESTORE FAILED, RC=*errcode*

Explanation: While the product **LOCATE** intercept was being removed, error *errcode* was encountered when an attempt was made to update the SVC table.

System action: The intercept was not removed.

User response: Contact IBM Software Support for assistance.

AXQ01127W ENTRY POINT IN IGC0002F'S LPDE DOES NOT MATCH VCON REFERENCES

Explanation: While the product was being initialized, a non-fatal internal error was encountered during an attempt to establish a product intercept.

System action: The intercept is established.

User response: No action is necessary; however, contact IBM Software Support for assistance if improper product processing related to automatic restore or archived data set warning messages is encountered after initializing the product in `ACT` or `ACTDYN` mode.

AXQ01128I LOCATE INTERCEPT SUCCESSFULLY *string* **IN** *mode* **MODE**

Explanation: The product **LOCATE** intercept was successfully `ACTIVATED` or `REACTIVATED` (*string*) in `RESTORE` or `WARNING` mode (*mode*). This message is issued at initialization time when one of the following is true:

- `ACT` or `ACTDYN` was specified as a startup parameter.
- The **ACTIVATE** operator command was issued.

User response: No action is necessary.

AXQ01130W RESTORE BYPASSED DUE TO EXCLUSION DSN: *dsname*

Explanation: A dynamic restore of data set *dsname* was bypassed because it was excluded by the data set selection criteria.

System action: Data set *dsname* is not restored.

User response: No action is necessary.

AXQ01131I DELETING ROLLED-OFF ARCHIVED GDS - DSN: *dsname*

Explanation: Because of the roll-in of a new generation data set or an IDCAMS ALTER of the `GDG LIMIT` for a generation data group, the archived data set *dsname* is being deleted as specified by the `SCRATCH` specification for the generation data group.

System action: The archived generation data set *dsname* is deleted.

User response: No action is necessary.

AXQ01132I ROLLED-OFF ARCHIVED GDS DELETE SUCCESSFUL - DSN: *dsname*

Explanation: Because of the roll-in of a new generation data set or an IDCAMS ALTER of the `GDG LIMIT` for a generation data group, the archived data set *dsname* was successfully deleted as specified by the `SCRATCH` specification for the generation data group.

System action: The archived generation data set *dsname* was deleted.

User response: No action is necessary.

AXQ01133E ERROR DELETING ROLLED-OFF ARCHIVED GDS - DSN: *dsname*

Explanation: Because of the roll-in of a new generation data set or an IDCAMS ALTER of the `GDG LIMIT` for a generation data group, a failed attempt was made to delete the archived data set *dsname*, as specified by the `SCRATCH` specification for the generation data group.

System action: The archived generation data set *dsname* was not deleted.

User response: In the job log for the job step or in the summary log for the product started task, review any previous messages that are associated with the delete operation. If you cannot determine what caused the error or cannot determine what action to take to resolve the error, contact IBM Software Support for assistance.

AXQ01134E ROLL-OFF SCRATCH FAILED FOR ARCHIVED GDS - DSN: *dsname*

Explanation: Because of the roll-in of a new generation data set, a failed attempt was made to delete the archived data set *dsname*, as specified by the `SCRATCH` specification for the generation data group.

System action: The archived generation data set *dsname* was not deleted.

User response: In the job log for the job step or in the summary log for the product started task, review any previous messages that are associated with the delete operation. If you cannot determine what caused the error or cannot determine what action to take to resolve the error, contact IBM Software Support for assistance.

AXQ01135E ERROR OCCURRED DURING ALLOC ENQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue required by the product for a dynamic Restore or delete operation was unsuccessful. *retcode* is the return code and *rsncode* is the reason code.

System action: The dynamic Restore or delete is not performed.

User response: Contact IBM Software Support for assistance.

AXQ01136E ERROR OCCURRED DURING DELETE PROCESSING: RC=*retcode* **RSN=***rsncode*

Explanation: Because of a roll-in of a new generation data set, an error occurred during an attempt to delete an archived generation data set. *retcode* is the return code and *rsncode* is the reason code from the delete request.

System action: The delete operation is not performed.

User response: Contact IBM Software Support for assistance.

AXQ01137E ERROR OCCURRED DURING DSNUOW ENQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue required by the product for a dynamic Restore or delete operation was unsuccessful. *retcode* is the return code and *rsncode* is the reason code from the enqueue request.

System action: The dynamic Restore or delete is not performed.

User response: Contact IBM Software Support for assistance.

AXQ01138W PARTIAL ROLL-IN; DELETING ARCHIVED GDS - DSN: *dsname*

Explanation: An error occurred during the roll-in operation of a new generation data set. However, the new generation data set was successfully rolled in and cataloged, so the oldest generation data set (*dsname*), which had been archived, will be deleted as requested by the `SCRATCH` option for the generation data group.

System action: The archived generation data set is deleted.

User response: No action is necessary.

AXQ01139E UNABLE TO RESTORE ARCHIVE CATALOG ENTRY - DSN: *dsname*

Explanation: An error occurred during the roll-in operation of a new generation data set. However, the new generation data set was not successfully rolled in and not cataloged. However, the catalog entry for the old archived generation data set (*dsname*) was deleted and could not be restored.

System action: The catalog entry for the archived generation data set was not restored.

User response: Examine the preceding error messages for information that might indicate what caused the error. So that you can continue to access the archived data set, you can restore the catalog entry manually by using IDCAMS. Contact IBM Software Support for additional assistance.

AXQ01140E ERROR OCCURRED DURING SYSDSN ENQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue required by the product for a dynamic Restore or delete operation was unsuccessful. The enqueue request return code is *retcode* and the reason code is *rsncode*.

System action: The dynamic Restore or delete operation is not performed.

User response: Contact IBM Software Support for assistance.

AXQ01142E ERROR OCCURRED DURING SYSDSN DEQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue required by the product for a dynamic Restore or delete operation could not be released. The dequeue request return code is *retcode* and the reason code is *rsncode*.

System action: The dynamic Restore or delete operation continues.

User response: Contact IBM Software Support for assistance.

AXQ01143E ERROR OCCURRED DURING DSNUOW DEQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue required by the product for a dynamic Restore or delete operation could not be released. The dequeue request return code is *retcode* and the reason code is *rsncode*.

System action: The dynamic Restore or delete operation continues.

User response: Contact IBM Software Support for assistance.

AXQ01144E ROLL-IN SUCCESSFUL BUT DELETE OF ARCHIVED GDS FAILED: RC=*retcode*

Explanation: The roll-in of a new generation data set was successful, but the delete of the rolled-off archived generation data set failed with return code *retcode*.

System action: The roll-in succeeds, but the delete of the archived data set is not performed.

User response: Examine the preceding error messages for an indication of what might have caused the error. You can choose to delete the data set manually. Contact IBM Software Support for further assistance.

AXQ01145I GDS NAME: *dsname*

Explanation: *dsname* is the name of the generation data set that was referenced in a preceding message.

User response: No action is necessary.

AXQ01146E ROLL-IN FAILED WITH UNKNOWN STATUS; ARCHIV ED GDS CATALOG ENTRY REMOVED

Explanation: An error occurred during the roll-in operation of a new generation data set. The status of the new generation data set that was to be rolled in is unknown, so the catalog entry for the archived generation data set that was rolled off was removed, but the archived data set remains in the archive.

System action: The catalog entry for the archived generation data set is removed.

User response: Examine the preceding messages for an indication of what might have caused the error. To maintain access to the archived data set, you can use IDCAMS to restore the catalog entry manually. Contact IBM Software Support for further assistance.

AXQ01147I RECAT PHASE 1 COMPLETE - DSN: *dsname*

Explanation: This message is issued when diagnostics have been requested by IBM Software Support.

User response: No action is necessary.

AXQ01148I RECAT PHASE 2 COMPLETE - DSN: *dsname*

Explanation: This message is issued when diagnostics have been requested by IBM Software Support.

User response: No action is necessary.

AXQ01149E ERROR OCCURRED DURING ALLOC DEQUEUE: RC=*retcode* **RSN=***rsncode*

Explanation: An enqueue acquired by the product for a dynamic Restore or delete operation could not be released. *retcode* is the return code and *rsncode* is the reason code.

System action: The dynamic Restore or delete continues.

User response: Contact IBM Software Support for assistance.

AXQ01150E UNABLE TO OBTAIN SVC ATL WORKAREA, RC=*retcode*

Explanation: An above-the-line storage area that is required for operation of the product could not be obtained. The return code from the attempt is *recode*.

System action: The dynamic Restore or delete is bypassed.

User response: Increase the size of the above-the-line region for the affected job. If the problem persists, contact IBM Software Support for further assistance.

AXQ01151E GDG LIMIT ALTER FAILURE; CHECK ARCHIVED GDS CATALOG ENTRY

Explanation: As the reduction of the `GDG LIMIT` value for a generation data group was being processed, an unknown error occurred during the roll-off of archived generation data sets.

System action: The archived data sets are retained.

User response: To determine the cause of the failure, examine the output of the alter operation. If the `GDG LIMIT` was successfully reduced, you can manually delete the archived data set catalog entries, which in turn causes the deletion of the data sets from the archive. Contact IBM Software Support for further assistance.

AXQ01152I GDG BASE: *dsname*

Explanation: *dsname* is the name of the generation data group referenced in the preceding message.

User response: No action is necessary.

AXQ01153E ALTER ROLL-OFF OF ARCHIVED GDS FAILED FOR DSN: *dsname*

Explanation: The successful alteration of the GDG LIMIT for a generation data group that was defined with the SCRATCH option resulted in the deletion of archived generation data sets. However, the delete operation failed for generation data set *dsname*.

System action: The archived generation data set was not deleted.

User response: Review the preceding messages that are associated with the delete operation in the job log for the job step or in the summary log for the product started task. If you cannot determine the cause of the error or the corrective action to take, contact IBM Software Support for further assistance.

AXQ01154E ERROR OCCURRED DURING LOCATE PROCESSING: RC=*retcode* **RSN=***rsncode* **FN=***function*

Explanation: An error was received for an internal **LOCATE** request.

- *retcode* is the return code.
- *rsncode* is the reason code.
- *function* is the function returning the error.

System action: The dynamic Restore or delete is not performed.

User response: Contact IBM Software Support for assistance.

AXQ01155W ARCHIVED GDS DELETE EXCLUSION BYPASS - DSN: *dsname*

Explanation: The dynamic delete of the archived generation data set *dsname* was bypassed because of an exclusion in the product parameter.

System action: The dynamic delete is not performed.

User response: No action is necessary.

AXQ99999E *text*

Explanation: This message is issued when debugging or tracing has been requested by IBM Software Support.

User response: Send all requested debugging and trace output to IBM Software Support.

Candidate report message reference

Messages that are written to the candidate report have corresponding error messages that are written to the archive or restore log report.

See "Creating a candidate rejection report" on page 133 for more information about creating candidate rejection reports.

Report message	Error message
ARCH ALLOC ERR; DS NOT ARCHIVED	AXQ00600E
ARCH ALLOC ERR; DS NOT RESTORED	AXQ00629E
ARCH BLOCK ERR; DS NOT ARCHIVED	AXQ00615E
ARCH CONN ERR; DS NOT ARCHIVED	AXQ00601E
ARCH CONN ERR; DS NOT RESTORED	AXQ00630E
ARCH DISC ERR; DS NOT RESTORED	AXQ00627E
ARCH EOF ERR; DS NOT RESTORED	AXQ00635E
ARCH FREE ERR; DS NOT RESTORED	AXQ00628E
ARCH ICCRRD ERR; DS NOT RESTORED	AXQ00633E
ARCH INFO ERR; DS NOT ARCHIVED	AXQ00602E
ARCH IRAMC ERR; DS NOT ARCHIVED	AXQ00612E
ARCH IRDEOF ERR; DS NOT RESTORED	AXQ00632E
ARCH MEDIA FULL; DS NOT ARCHIVED	AXQ00545W
ARCH POSI ERR; DS NOT RESTORED	AXQ00631E
ARCH TAPE FULL; DS NOT ARCHIVED	AXQ00545W
ARCH WRITE ERR; DS NOT ARCHIVED	AXQ00614E
ARCHIVE DB DS REC DELETE FAILED	AXQ00678E

Report message	Error message
ARCHIVE MEDIA FULL; SKIPPING DS	AXQ00545W
ARCHIVE RD ERR; DS NOT RESTORED	AXQ00636E
ARCHIVE RECORD NOT FOUND FOR DS	AXQ00666E
ARCHIVED TO *vvvvvv* BID=*nnnnnnnn*	AXQ00580I
ARCHIVED TO *vvvvvv* BID=*nnnnnnnn**	AXQ00690E
ATCCR READ ERR; DS NOT RESTORED	AXQ00634E
AUDIT WRITE FAILED	AXQ00686E
AUDIT WRITE FAILURE; SKIPPING DS	AXQ00658E
BDELETE FAILED	AXQ00539E
BDELETE SUCCESSFUL	AXQ00538I
BYPASSED DUE TO EXCLUSION	AXQ00657W
CATALOG LOCATE FOR DS FAILED	AXQ00568E
CATALOG TO MIGRAT FAILED FOR DS	AXQ00680E
DELETE FROM ARCHIVE FAILED	AXQ00558E
DELETE NOT FOR BASE CLUSTER	AXQ00570E
DELETED FROM ARCHIVE	AXQ00664I
DS CATALOG VOLUME COUNT IS > 1	AXQ00566E
DS IS NOT CATALOGED	AXQ00565E
DS IS NOT CATALOGED TO MIGRAT	AXQ00567E
DUPLICATE DSNAME IN ARCHIVE DB	AXQ00562E
DUPLICATE VOLSER IN ARCHIVE DB	AXQ00562E
FATAL MEDIA ERROR; SKIPPING DS	AXQ00608W
FATAL MEDIA ERROR; SKIPPING DS	AXQ00645E
HALT DETECTED; SKIPPING DS	AXQ00651W, AXQ00652W
HDELETE FAILED	AXQ00541E
HDELETE SUCCESSFUL	AXQ00540I
MCD RECORD ALREADY EXISTS FOR DS	AXQ00665E
ML2 ALLOC ERR; DS NOT ARCHIVED	AXQ00605E
ML2 BLOCK ERR; DS NOT RESTORED	AXQ00639E
ML2 BLK CNT ERR; DS NOT RESTORED	AXQ00640E
ML2 CDD ERR; DS NOT ARCHIVED	AXQ00623E
ML2 CONN ERR; DS NOT ARCHIVED	AXQ00606E
ML2 DISC ERR; DS NOT ARCHIVED	AXQ00603E
ML2 EOF ERR; DS NOT ARCHIVED	AXQ00616E
ML2 FREE ERR; DS NOT ARCHIVED	AXQ00604E
ML2 ICDD RD ERR; DS NOT ARCHIVED	AXQ00609E
ML2 IRD EOF ERR; DS NOT ARCHIVED	AXQ00616E
ML2 NCDD RD ERR; DS NOT ARCHIVED	AXQ00611E
ML2 POSI ERR; DS NOT ARCHIVED	AXQ00607E
ML2 READ ERR; DS NOT ARCHIVED	AXQ00617E
ML2 SYNC ERR; DS NOT ARCHIVED	AXQ00618E

Report message	Error message
ML2 SYNC ERR; DS NOT RESTORED	AXQ00663E
ML2 TAPE FULL; DS NOT RESTORED	AXQ00637E
ML2 TAPE FULL; SKIPPING DS	AXQ00669W
ML2 VOLUME IN USE; SKIPPING DS	AXQ00650W
ML2 WRITE ERR; DS NOT RESTORED	AXQ00638E
NO MCA RECORD FOUND FOR DS	AXQ00525E
NO MCD RECORD FOUND FOR DS	AXQ00521E
NO TTOC DS ENTRY FOUND FOR DS	AXQ00534I
NO TTOC RECORD FOUND FOR ML2 VOL	AXQ00531E
READ FAILED FOR ARCHIVE DS REC	AXQ00563E
READ FAILED FOR ARCHIVE VOL REC	AXQ00563E
READ FAILED FOR MCA RECORD	AXQ00526E
READ FAILED FOR MCD RECORD	AXQ00522E
READ FAILED FOR MCO RECORD	AXQ00529E
READ FAILED FOR TTOC RECORD	AXQ00532E
REQUEST TO CATALOG DS FAILED	AXQ00542E
RESTORED TO *vvvvvv* BID=*nnnnnnnn*	AXQ00664I
RESTORED TO *vvvvvv* BID=*nnnnnnnn**	AXQ00690E
TTOC RECORD FULL; SKIPPING DS	AXQ00581W
UNABLE TO INSERT ARCHDB DS REC	AXQ00535E
WRITE FAILED FOR MCA RECORD	AXQ00681E
WRITE FAILED FOR MCD RECORD	AXQ00672E

Note: *vvvvvvvv* is a volume serial number and *nnnnnnnn* is a decimal media block identification. The asterisk (*) indicates that the Archive or Restore process was successful, but the **HRECALL** failed.

Appendix A. Example of AT-TLS parameter setup

If you are enabling SSL encryption for any of the TCP/IP cloud traffic, IBM's Communication Server enables control through the Application Transparent Transport Layer Security (AT-TLS). This topic provides an example of the parameter setup for a TTLS Rule that enables an SSL/TLS encryption policy.

```
TTLSRule                          Default_AXQ
{
LocalAddr                         ALL
RemoteAddr                        ALL
LocalPortRangeRef                 portR1
RemotePortRange                   443
Userid                            SAFID  <=== should be user ID for AXQTINIT
Direction                         Both
Priority                          255
TTLSGroupActionRef                gAct1~AXQ
TTLSEnvironmentActionRef          eAct1~AXQ
TTLSConnectionActionRef           cAct1~AXQ
}
TTLSGroupAction                   gAct1~AXQ
{
TTLSEnabled                       On
Trace                             255
}
TTLSEnvironmentAction             eAct1~AXQ
{
HandshakeRole                     Client
EnvironmentUserInstance           0
TTLSKeyringParmsRef               AXQ_keyring
Trace                             255
}
TTLSConnectionAction              cAct1~AXQ
{
HandshakeRole                     Client
TTLSCipherParmsRef                cipher-AXQ
TTLSConnectionAdvancedParmsRef    cAdv1~AXQ
CtraceClearText                   Off
Trace                             2
}
TTLSConnectionAdvancedParms       cAdv1~AXQ
{
ResetCipherTimer                  0
SecondaryMap                      Off
}
TTLSKeyringParms                  AXQ_keyring
{
Keyring                           CLOUDrng
}
TTLSCipherParms                   cipher1~Default_Ciphers
{
V3CipherSuites                    TLS_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                    TLS_DHE_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                    TLS_DH_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                    TLS_DHE_DSS_WITH_AES_256_CBC_SHA
V3CipherSuites                    TLS_DH_DSS_WITH_AES_256_CBC_SHA
V3CipherSuites                    TLS_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                    TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                    TLS_DH_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                    TLS_DHE_DSS_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                    TLS_DH_DSS_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                    TLS_RSA_WITH_AES_128_CBC_SHA
V3CipherSuites                    TLS_DHE_RSA_WITH_AES_128_CBC_SHA
```

```
V3CipherSuites                  TLS_DH_RSA_WITH_AES_128_CBC_SHA
V3CipherSuites                  TLS_DHE_DSS_WITH_AES_128_CBC_SHA
V3CipherSuites                  TLS_DH_DSS_WITH_AES_128_CBC_SHA
}
TTLSCipherParms                   cipher-AXQ
{
V3CipherSuites                TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256
V3CipherSuites                TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384
V3CipherSuites                TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
V3CipherSuites                TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
V3CipherSuites                TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
V3CipherSuites                TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384
V3CipherSuites                TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
V3CipherSuites                TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
V3CipherSuites                TLS_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                TLS_DHE_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                TLS_DH_RSA_WITH_AES_256_CBC_SHA
V3CipherSuites                TLS_DHE_DSS_WITH_AES_256_CBC_SHA
V3CipherSuites                TLS_DH_DSS_WITH_AES_256_CBC_SHA
V3CipherSuites                TLS_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                TLS_DH_RSA_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                TLS_DHE_DSS_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                TLS_DH_DSS_WITH_3DES_EDE_CBC_SHA
V3CipherSuites                TLS_RSA_WITH_AES_128_CBC_SHA
V3CipherSuites                TLS_DHE_RSA_WITH_AES_128_CBC_SHA
V3CipherSuites                TLS_DH_RSA_WITH_AES_128_CBC_SHA
V3CipherSuites                TLS_DHE_DSS_WITH_AES_128_CBC_SHA
V3CipherSuites                TLS_DH_DSS_WITH_AES_128_CBC_SHA
}
PortRange                     portR1
{
Port                          1024-65535
}
PortRange                     portR2
{
Port                          1024-65535
}
```

Appendix B. Wildcard support for specifying selection criteria keywords

Advanced Archive for DFSMShsm supports the use of two wildcard characters when specifying selection criteria keywords for archiving, restoring and reporting. The wildcard characters can be used in masks for data set names, volume serial numbers, management class names, and storage class names for the STORGRP keyword.

The following table describes how Advanced Archive for DFSMShsm interprets these wildcard characters.

Character	Interpretation
*	A single asterisk (*) represents a qualifier, or one or more characters within a qualifier, a volume serial number, a management class name, a storage class name, or an archive database group ID, at the specified location within the data set name or management class name. The asterisk may precede or follow a string of characters.
**	A double asterisk (**) represents zero or more qualifiers at the specified location within a data set name. A double asterisk may not be preceded or followed by character strings; the double asterisk must be preceded by a period (.) and followed by a period or at least one blank space.
%	A single percent sign (%) represents a single alphanumeric or national character at the specified location in the data set name, volume serial number, management class name, storage group name, or archive database group ID. These are the restrictions on the use of the percent sign in masks: • You may specify up to eight percent signs within each data set name qualifier specification. • You may not use masks when you are specifying a range of volume serial numbers. • You may not use masks when you are specifying dates or values for any of the #DAYS_UNTIL or #DAYS_SINCE keywords.

Appendix C. Selection criteria keyword restrictions

This section summarizes data set selection criteria keyword support and the restrictions on keyword value specification for the Archive, Restore, and Database Reporting functions.

Keyword name	Valid for Archive	Valid for Archive from L0	Valid for Restore	Valid for Archive Database Reporting	Value length in bytes	Minimum/Maximum values	Notes
ARCHIVE_SOURCE	✓	✓			2-3	L0|ML2	
GROUP_NAME	✓	✓	✓	✓	1 - 8	1 - 8 alphanumeric characters	1
DSN	✓	✓	✓	✓	1 - 44	1 - 44 alphanumeric characters	2, 7
XDSN	✓	✓	✓	✓	1 - 44	1 - 44 alphanumeric characters	2, 7
MGMTCLS	✓	✓	✓	✓	1 - 8	1 - 8 alphanumeric characters	6, 7
XMGMTCLS	✓	✓	✓	✓	1 - 8	1 - 8 alphanumeric characters	6, 7
#DAYS_SINCE_CREATE	✓	✓	✓	✓	1 - 5	0 - 99999	6
#DAYS_SINCE_LASTUSED	✓	✓	✓	✓	1 - 5	0 - 99999	6
#DAYS_UNTIL_EXPIRATION	✓	✓	✓	✓	1 - 5	0 - 99999	6
#DAYS_SINCE_MIGRATED	✓		✓	✓	1 - 5	0 - 99999	6
EXPIRATION_DATE	✓	✓	✓	✓	8 - 10	A Julian date in the format YYYY.DDD A Gregorian date in the MM/DD/YYYY, DD/MM/YYYY or YYYY/MM/DD	3, 4, 6
MIGRATION_DATE	✓		✓	✓	8 -10	A Julian date in the format YYYY.DDD A Gregorian date in the MM/DD/YYYY, DD/MM/YYYY or YYYY/MM/DD	3, 4, 6
ARCHIVE_DATE			✓	✓	8 - 10	A Julian date in the format YYYY.DDD A Gregorian date in the MM/DD/YYYY, DD/MM/YYYY or YYYY/MM/DD	3, 4, 6
#DAYS_SINCE_ARCHIVE			✓	✓	1 - 5	0 - 99999	6
VOL		✓	✓	✓	1 - 6	1 - 6 alphanumeric characters	5, 7
XVOL		✓	✓	✓	1 - 6	1 - 6 alphanumeric characters	5, 6, 7
ARCHDB_GRPID				✓	1 - 8	1 - 8 alphanumeric characters	6, 7
EXCLUDE_ARCHDB_GRPID				✓	1 - 8	1 - 8 alphanumeric characters	6, 7
STORGRP		✓			1 - 8	1 - 8 alphanumeric character storage group name to be included from the IDCAMS DCOLLECT process during Archive processing	7
XSTORGRP		✓			1 - 8	1 - 8 alphanumeric character storage group name to be included from the IDCAMS DCOLLECT process during Archive processing	7

Notes:

1. May contain any combination of alphanumeric characters.
2. Data set names must conform to the standards for data set names as defined in the IBM manual, *z/OS DFSMS Using Data Sets*.
3. Julian date values must be in the range 1900.001 – 2999.365. For the Archive, Restore, and Reporting functions, you may specify these special values for the `EXPIRATION_DATE=` keyword:
   - `0000.000` to select data sets that have a null expiration date
   - `9999.365` to select data sets that have a permanent expiration date
4. Gregorian date values must be in these ranges:
   - MM/DD/YYYY: 01/01/1900 – 12/31/2999
   - DD/MM/YYYY: 01/01/1900 – 31/12/2999
   - YYYY/MM/DD: 1900/01/01 – 2999/12/31

Note: If you specify a range of dates, you must use the same date format for both the starting value and the ending value.

5. Volume serial numbers must conform to the standards for volume serial numbers as defined in the IBM manual, *z/OS MVS JCL Reference*.
6. Values for this keyword may be specified as a range of valid values.
7. Value may be the name of a member in the parameter library data set (for example, DSN>*membername*).

Appendix D. JCL sample library members

This appendix provides copies of the JCL sample library members that were shipped with Advanced Archive for DFSMShsm.

Topics:

AXQACTPR

The AXQACTPR job generates a report from the Active Log or from the backup logs.

```
//AXQACTPR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ADVANCED ARCHIVE DATABASE LOG REPORT JOB                      *
//*                                                                    *
//*                                                                    *
//*      THIS JOB EXECUTES THE ADVANCED ARCHIVE DATABASE LOG REPORT    *
//*      PROGRAM LISTING LOG RECORDS IN CHRONOLOGICAL ORDER.           *
//*                                                                    *
//*      IT WILL REPORT FROM ALL GENERATIONS OF THE ACTIVE LOG         *
//*      OR THE LOG FILE POINTED TO BY LOGFILE DD (IF PRESENT)         *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQACTPR
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQCLNUP

The AXQCLNUP job performs cleanup on the Archive Database.

For every archived data set, AXQCLNUP determines whether the data set is still cataloged or is eligible for expiration. Every data set that is either not cataloged or is eligible for expiration is removed from the Archive Database. Next, AXQCLNUP calculates the number of blocks that are still active on each archive tape, and if an archive tape no longer has any active blocks, that archive tape is expired.

```
//AXQCLNUP JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      CLEAN UP ARCHIVED FILES AND ARCHIVE TAPES                     *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO CLEAN UP ARCHIVED FILES THAT ARE          *
//*      ELIGIBLE FOR EXPIRATION  AND ANY ARCHIVE TAPES THAT ARE       *
//*      EMPTY.                                                        *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQCLNUP
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQDBBKP

The AXQDBBKP job backs up the Archive Database.

```
//AXQDBBKP JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ADVANCED ARCHIVE DATABASE BACKUP JOB                          *
//*                                                                    *
//*                                                                    *
//*      THIS JOB EXECUTES THE ARCHIVE BACKUP PROGRAM TO               *
//*        1. BACKUP THE VSAM DATABASE TO A FLAT FILE                  *
//*        2. CONSOLIDATE ALL GENERATIONS OF THE ADVANCED ARCHIVE      *
//*           ACTIVE LOG TO THE BACKUP LOG                             *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
```

```
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQDBBKP
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQDBINI

The AXQDBINI job starts the Archive Database, the Cloud Definition Database, and request queue definition and initialization processes.

```
//AXQDBINI  JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//            NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*//
//*                                                                    *//
//*      5698-AAD                                                      *//
//*      @ ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *//
//*      ALL RIGHTS RESERVED.                                          *//
//*                                                                    *//
//*      ADVANCED ARCHIVE - DATABSE, REQUEST QUEUE AND CLOUD           *//
//*                         DEFINITIONS DATABASE DEFINITIONS AND       *//
//*                         INITIALIZATION.                            *//
//*      --------------------------------                              *//
//*                                                                    *//
//*      THIS SAMPLE JOB WILL INVOKE THE DATABASE. REQUEST QUEUE       *//
//*      AND CLOUD DEFINTIONS DATABASE DEFINITION AND                  *//
//*      INITIALIZATION FUNCTIONS                                      *//
//*                                                                    *//
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *//
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *//
//*            ENVIRONMENT                                             *//
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *//
//*                                                                    *//
//*--------------------------------------------------------------------*//
//*
//S010   EXEC PGM=AXQDBINI
//*
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//SYSIN   DD *
*INITIALIZE_ARCHIVE_DATABASE     <<<== UNCOMMENT TO PERFORM FUNCTION
*INITIALIZE_RESTORE_QUEUE        <<<== UNCOMMENT TO PERFORM FUNCTION
*INITIALIZE_CLOUD_DEFINITIONS_DB <<<== UNCOMMENT TO PERFORM FUNCTION
//
//
```

AXQDBRPT

The AXQDBRPT job generates reports about the records in the Archive Database and summary information.

```
//AXQDBRPT JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD
//            CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                     *
//*      5698-AAD                                                       *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.           *
//*      ALL RIGHTS RESERVED.                                           *
//*                                                                     *
//*                                                                     *
//*      ADVANCED ARCHIVE DATABASE REPORT                               *
```

```
//*                                                                   *
//*                                                                   *
//*      THIS JOB IS USED TO PRODUCE A REPORT THAT PRINTS THE         *
//*      RECORDS IN THE ADVANCED ARCHIVE DATABASE AND TWO             *
//*      SUMMARY REPORTS.                                             *
//*                                                                   *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                   *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR              *
//*            ENVIRONMENT                                            *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ               *
//*                                                                   *
//*-------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQDBRPT
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
*
*CRITERIA         USAGE                                EXAMPLE
*---------------- ------------------------------------ --------
*
*GROUP_NAME=      SPECIFIES 8 CHARACTER GROUP_NAME      GROUP001
*
*VOL=             INCLUDE SINGLE VOLSER NUMBER         123456
*                 INCLUDE SINGLE VOLSER NUMBER PATTERN 1%%A2
*                 INCLUDE RANGE OF VOLSER NUMBERS      200000-600000
*
*VOL>             NAMES A PARAMETER LIBRARY MEMBER     VOL>DDNAME
*                 WHICH CONTAINS ONE OR MORE VOL=
*                 VALUES TO BE INCLUDED
*
*XVOL=            EXCLUDE VERSION OF 'VOL='
*
*XVOL>            EXCLUDE VERSION OF 'VOL>'
*
*DSN=             INCLUDE SINGLE DSN                   AAA.BBB.CCC
*                 INCLUDE SINGLE DSN PATTERN           AAA.B%B.**
*
*DSN>             NAMES A PARAMETER LIBRARY MEMBER     DSN>DDNAME
*                 WHICH CONTAINS ONE OR MORE DSN=
*                 VALUES TO BE INCLUDED
*
*XDSN=            EXCLUDE VERSION OF 'DSN='
*
*XDSN>            EXCLUDE VERSION OF 'DSN>'
*
*MGMTCLAS=        INCLUDE SINGLE MGMTCLAS              STANDARD
*                 INCLUDE SINGLE MGMTCLAS PATTERN      STAND*
*
*MGMTCLAS>        NAMES A PARAMETER LIBRARY MEMBER     MGMTCLAS>DDNAME
*                 WHICH CONTAINS ONE OR MORE MGMTCLAS
*                 VALUES TO BE INCLUDED
*
*XMGMTCLAS=       EXCLUDE VERSION OF 'MGMTCLAS='
*
*XMGMTCLAS>       EXCLUDE VERSION OF 'MGMTCLAS>'
*
*ARCHDB_GRPID=    INCLUDE SINGLE GRPID                 GROUP01
*                 INCLUDE GRPID PATTERN                GROUP*
*
*ARCHDB_GRPID>     NAMES A PARAMETER LIBRARY MEMBER    ARCHDB_GRPID>DDNAME
*                  WHICH CONTAINS ONE OR MORE
*                  'ARCHDB_GRPID=' VALUES TO BE INCLUDED
*
*EXCLUDE_ARCHDB_GRPID=      EXCLUDE VERSION OF 'ARCHDB_GRPID='
*
```

```
*EXLUDE_ARCHDB_GRPID>       EXCLUDE VERSION OF 'ARCHDB_GRPID>'
*
*NOTE: SPECIFICATION OF CRITERIA STATEMENTS WITH THE INDIRECTION
*      CHARACTER ">" POINTING TO A PARAMETER LIBRARY MEMBER CAN
*      ALSO POINT TO A DDNAME IN THE INPUT JOB STREAM FROM WHICH
*      THE CRITERIA STATEMENTS MAY BE READ, AS LONG AS THE DDNAME
*      SPECIFIED ALSO EXISTS AS A MEMBER IN THE PARAMETER LIBRARY.
*
*      I.E. //INCLDSNS DD *    (INCLDSNS IS ALSO THE NAME OF A
*                              MEMBER IN THE PARAMETER LIBRARY)
*
*           DSN>INCLDSNS       WILL READ THE DATASET NAMES AND/OR
*                              DATASET NAME PATTERNS TO BE INCLUDED
*                              FROM //INCLDSNS DD * IN THE JOB STREAM
*
*
*CRITERIA                 USAGE                   EXAMPLE
*------------------------ ----------------------- --------
*
*#DAYS_SINCE_CREATE=      SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_SINCE_LASTUSED=    SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_SINCE_MIGRATED=    SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_SINCE_ARCHIVE=     SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_UNTIL_EXPIRATION=  SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*MIGRATION_DATE=          JULIAN DATE             YYYY.DDD
*                         JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                         GREG DATE               MM/DD/YYYY
*                         GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*EXPIRATION_DATE=         JULIAN DATE             YYYY.DDD
*                         JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                         GREG DATE               MM/DD/YYYY
*                         GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*ARCHIVE_DATE=            JULIAN DATE             YYYY.DDD
*                         JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                         GREG DATE               MM/DD/YYYY
*                         GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*
*NOTE: VALID VALUES FOR DATES SPECIFIED IN;
*      JULIAN FORMAT ARE     1900.001 TO 2999.365
*      MM/DD/YYYY FORMAT ARE 01/01/1900 TO 12/31/2999
*      DD/MM/YYYY FORMAT ARE 01/01/1900 TO 31/12/2999
*      YYYY/MM/DD FORMAT ARE 1900/01/01 TO 2999/12/31
*
//
```

AXQDBRST

The AXQDBRST job uses the latest database backup and the Active Log files to restore the Archive Database.

```
//AXQDBRST JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*-------------------------------------------------------------------*
```

```
//*                                                                   *
//*      5698-AAD                                                     *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.         *
//*      ALL RIGHTS RESERVED.                                         *
//*                                                                   *
//*                                                                   *
//*      ADVANCED ARCHIVE DATABASE RESTORE JOB                        *
//*                                                                   *
//*                                                                   *
//*      THIS JOB EXECUTES THE ADVANCED ARCHIVE RESTORE/RECOVER       *
//*      PROGRAM, TO RESTORE THE ADVANCED ARCHIVE VSAM DATABASE       *
//*                                                                   *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                   *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR              *
//*            ENVIRONMENT                                            *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ               *
//*                                                                   *
//*-------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQDBRST
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQDBUPG

If your Archive Database was created before you applied PTF UI47356 for APAR PI80788, run this job to upgrade the structure of your Archive Database.

```
//AXQDBUPG JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*-------------------------------------------------------------------*
//*                                                                   *
//*      5698-AAD                                                     *
//*        ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.         *
//*      ALL RIGHTS RESERVED.                                         *
//*                                                                   *
//*                                                                   *
//*      ADVANCED ARCHIVE - DATABASE UPGRADE UTILITY                  *
//*                                                                   *
//*                                                                   *
//*      THIS JOB EXECUTES THE DATABASE UPGRADE UTILITY PROGRAM       *
//*      TO BRING THE DATABASE STRUCTURE UP TO THE CURRENT LEVEL      *
//*      OF SUPPORT.                                                  *
//*                                                                   *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                   *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR              *
//*            ENVIRONMENT                                            *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ               *
//*         3) REMOVE THE "*" FROM THE DESIRED UPGRADE FUNCION        *
//*            STATEMENT IN THE //UPGRDCTL  DD * DATASET                 *
//*                                                                   *
//*-------------------------------------------------------------------*
//*
//S010   EXEC PGM=AXQDBUPG
//*
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//UPGRDCTL    DD *
*UPGRADE_ARCHIVE_MANAGER_DATABASE     <<REMOVE "*" TO PERFORM FUNCTION
*UPGRADE_CLOUD_DEFINITIONS_DATABASE   <<REMOVE "*" TO PERFORM FUNCTION
//

//
```

AXQMODLV

The AXQMODLV job identifies and lists the PTFs and enhancements that have been applied to the product software.

The following is an example of the JCL for this job:

```
//AXQMODLV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      MODIFICATION LEVEL REPORT                                     *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO PRODUCE A REPORT THAT LISTS THE           *
//*      MODIFICATION LEVEL OF THE MODULES IN THE ADVANCED ARCHIVE     *
//*      LOADLIB.                                                      *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQMODLV
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQRCHIV

The AXQRCHIV job selects data sets and archives them.

```
//AXQRCHIV JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ARCHIVE FUNCTION                                              *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO SELECT FILES FROM ML2 FOR ARCHIVAL        *
//*      AND THEN PERFORM THE ARCHIVAL PROCESS.                        *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*                                                                    *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQRCHIV,PARM=SIM
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
```

```
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*/CRITERIA DD *
*
*CRITERIA         USAGE                                EXAMPLE
*---------------- ------------------------------------ --------
*
*ARCHIVE_SOURCE=  SPECIFIES WHETHER CANDIDATE DATA      ARCHIVE_SOURCE=L0
*                 SETS ARE L0 OR ML2
*
*GROUP_NAME=      SPECIFIES 8 CHARACTER GROUP_NAME      GROUP001
*
*DSN=             INCLUDE SINGLE DSN                    AAA.BBB.CCC
*                 INCLUDE SINGLE DSN PATTERN            AAA.B%B.**
*
*DSN>             NAMES A PARAMETER LIBRARY MEMBER      DSN>DDNAME
*                 WHICH CONTAINS ONE OR MORE DSN=
*                 VALUES TO BE INCLUDED
*
*XDSN=            EXCLUDE VERSION OF 'DSN='
*
*XDSN>            EXCLUDE VERSION OF 'DSN>'
*
*MGMTCLAS=        INCLUDE SINGLE MGMTCLAS               STANDARD
*                 INCLUDE SINGLE MGMTCLAS PATTERN       STAND*
*
*MGMTCLAS>        NAMES A PARAMETER LIBRARY MEMBER      MGMTCLAS>DDNAME
*                 WHICH CONTAINS ONE OR MORE MGMTCLAS
*                 VALUES TO BE INCLUDED
*
*XMGMTCLAS=       EXCLUDE VERSION OF 'MGMTCLAS='
*
*XMGMTCLAS>       EXCLUDE VERSION OF 'MGMTCLAS>'
*
*
*NOTE:  SPECIFICATION OF CRITERIA STATEMENTS WITH THE INDIRECTION
*       CHARACTER ">" POINTING TO A PARAMETER LIBRARY MEMBER CAN
*       ALSO POINT TO A DDNAME IN THE INPUT JOB STREAM FROM WHICH
*       THE CRITERIA STATEMENTS MAY BE READ, AS LONG AS THE DDNAME
*       SPECIFIED ALSO EXISTS AS A MEMBER IN THE PARAMETER LIBRARY.
*
*       I.E. //INCLDSNS DD *     (INCLDSNS IS ALSO THE NAME OF A
*                                MEMBER IN THE PARAMETER LIBRARY)
*
*            DSN>INCLDSNS        WILL READ THE DATASET NAMES AND/OR
*                                DATASET NAME PATTERNS TO BE INCLUDED
*                                FROM //INCLDSNS DD * IN THE JOB STREAM
*
*CRITERIA                 USAGE                   EXAMPLE
*------------------------ ----------------------- --------
*
*#DAYS_SINCE_CREATE=      SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_SINCE_LASTUSED=    SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_SINCE_MIGRATED=    SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*#DAYS_UNTIL_EXPIRATION=  SINGLE VALUE            12
*                         RANGE OF VALUES         0-12
*
*MIGRATION_DATE=          JULIAN DATE             YYYY.DDD
*                         JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                         GREG DATE               MM/DD/YYYY
*                         GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
```

```
*EXPIRATION_DATE=         JULIAN DATE             YYYY.DDD
*                         JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                         GREG DATE               MM/DD/YYYY
*                         GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*NOTE: VALID VALUES FOR DATES SPECIFIED IN;
*      JULIAN FORMAT ARE     1900.001 TO 2999.365
*      MM/DD/YYYY FORMAT ARE 01/01/1900 TO 12/31/2999
*      DD/MM/YYYY FORMAT ARE 01/01/1900 TO 31/12/2999
*      YYYY/MM/DD FORMAT ARE 1900/01/01 TO 2999/12/31
*
* ********************************************************************
*
* START OF CRITERIA STATEMENTS ASSOCIATED WITH ARCHIVE OF L0 DATA SETS
*
* ********************************************************************
*
*STORGRP=                 SMS STORAGE GROUPS    1-8 BYTE CHARACTER VALUE
*                         GO INCLUDE IN THE
*                         IDCAMS DCOLLECT
*                         PROCESS
*
*STORGRP>                 NAMES A MEMBER IN     1-8 BYTE MEMBER NAME
*                         IN THE PARAMETER
*                         WHICH CONTAINS THE
*                         SMS STORAGE GROUP
*                         NAMES TO INCLUDE
*                         IN THE IDCAMS
*                         DCOLLECT PROCESS
*
*NOTE: STORGRP IS TRANSLATED TO STORAGEGROUP | STOG KEYWORDS WHEN PRESENTED
*      TO THE IDCAMS DCOLLECT PROCESS.
*
*XSTORGRP=                SMS STORAGE GROUPS    1-8 BYTE CHARACTER VALUE
*                         TO EXCLUDE FROM THE
*                         IDCAMS DCOLLECT
*                         PROCESS
*
*XSTORGRP>                NAMES A MEMBER IN     1-8 BYTE MEMBER NAME
*                         IN THE PARAMETER
*                         WHICH CONTAINS THE
*                         SMS STORAGE GROUP
*                         NAMES TO EXCLUDE
*                         FROM THE IDCAMS
*                         DCOLLECT PROCESS
*
*NOTE: WHILE THERE IS NOT AN IDCAMS DCOLLECT KEYWORD TO EXCLUDE STORAGE
*      GROUPS FROM THE DCOLLECT PROCESS THE ARCHIVE MANAGER CRITERIA
*      SELECTION PROCESS WILL PERFORM THE EXCLUSION OF STORAGE GROUP NAMES.
*
*VOL=                     NAME A VOLSER OR      1-6 BYTE VOLSER OR
*                         RANGE OF VOLSERS TO   TWO 1-6 BYTE VOLSER
*                         BE INCLUDED IN THE    VALUES DELIMITED BY
*                         IDCAMS DCOLLECT       A "-" CHARACTER
*                         PROCESS
*
*VOL>                     NAMES A MEMBER IN     1-8 BYTE MEMBER NAME
*                         IN THE PARAMETER
*                         WHICH CONTAINS THE
*                         VOLSER VALUES TO
*                         INCLUDE IN THE
*                         IDCAMS DCOLLECT
*                         PROCESS
*
*XVOL=                    NAME A VOLSER OR      1-6 BYTE VOLSER OR
*                         RANGE OF VOLSERS TO   TWO 1-6 BYTE VOLSER
*                         BE EXCLUDED FROM THE  VALUES DELIMITED BY
```

```
*                        IDCAMS DCOLLECT       A "-" CHARACTER
*                        PROCESS
*
*XVOL>                   NAMES A MEMBER IN     1-8 BYTE MEMBER NAME
*                        IN THE PARAMETER
*                        WHICH CONTAINS THE
*                        VOLSER VALUES TO
*                        EXCLUDE FROM THE
*                        IDCAMS DCOLLECT
*
*NOTE: THE IDCAMS DCOLLECT PROCESS DOES NOT SUPPORT RANGES OF VOLSERS AND
*      AS SUCH SPECIFICATION OF VOLSER RANGES WILL BE IGNORED BY THE
*      IDCAMS DCOLLECT PROCESS BUT WILL BE PROCESSED BY THE ARCHIVE MANAGER
*      CRITERIA SELECTION PROCESS
*
*
*NOTE: SPECIFICATION OF WILDCARD CHARACTERS FOR THE L0 CRITERIA STATEMENTS
*
*       1.IDCAMS DCOLLECT DOES NOT PERMIT THE STORAGEGROUP | STOG KEYWORDS TO
*         CONTAIN WILDCARD CHARACTERS BUT THE ARCHIVE MANAGER CRITERIA PROCESS
*         DOES ACCEPT AND PROCESS THEM. IF THE STORGRP= KEYWORD IS SPECIFIED
*         WITH WILDCARD CHARACTERS THEY WILL BE IGNORED BY THE IDCAMS DCOLLECT
*         PROCESS BUT THEY WILL BE PROCESSED BY THE ARCHIVE MANAGER SELECTION
*         CRITERIA PROCESS
*
*       2.WILDCARD CHARACTERS ARE NOT PERMITTED WHEN VOLSERS ARE SPECIFIED AS
*         A RANGE OF VOLSERS
*
*       3.WHILE THE IDCAMS DCOLLECT PERMITS ONE OR MORE "*" CHARACTERS AS
*         WILDCARD CHARACTERS WHEN SELECTING OR EXCLUDING VOLSERS THE ARCHIVE
*         MANAGER PROCESSES BOTH "*" AND "%" AS WILDCARD CHARACTERS. PRIOR TO
*         PASSING THE VOLUME STATMENTS TO THE IDCAMS DCOLLECT PROCESS IT
*         WILL TRANSLATE ANY "%" WILDCARD CHARACTERS DETECTED TO "*" AND
*         AND THEN UTILIZE THE BYTES SPECIFIED BY THE VOL= KEYWORD UP TO THE
*         FIRST "*" DETECTED.
*
* ********************************************************************
*
* END OF CRITERIA STATEMENTS ASSOCIATED WITH ARCHIVE OF L0 DATA SETS
*
* ********************************************************************
*
/*
```

AXQRECYC

The AXQRECYC job copies the files from under-used archive tapes and aggregates the copies onto a new tape.

The following is an example of the JCL for this job:

```
//AXQRECYC JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*      © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ARCHIVE TAPE RECYCLE                                          *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO RECYCLE UNDERUTILIZED ARCHIVE TAPES       *
//*      BASED ON PERCENT UTILIZED.                                    *
```

```
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQRECYC
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

AXQRESTR

The AXQRESTR job restores archived data sets.

```
//AXQRESTR JOB (ACCT1,ACCT2),'PROG.NAME',REGION=0M,TYPRUN=HOLD,
//             NOTIFY=&SYSUID,CLASS=A,MSGCLASS=A,MSGLEVEL=(1,1)
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*        ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      RESTORE FUNCTION                                              *
//*                                                                    *
//*      THIS JOB IS USED TO SELECT FILES FROM THE ARCHIVE DATABASE    *
//*      TO BE RESTORED TO ML0 OR ML2.                                 *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//S010     EXEC PGM=AXQRESTR,PARM=SIM
//*
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//*
//CRITERIA DD *
*
*CRITERIA         USAGE                                EXAMPLE
*---------------- ------------------------------------ --------
*
*GROUP_NAME=      SPECIFIES 8 CHARACTER GROUP_NAME      GROUP001
*
*VOL=             INCLUDE SINGLE VOLSER NUMBER         123456
*                 INCLUDE SINGLE VOLSER NUMBER PATTERN 1%%A2
*                 INCLUDE RANGE OF VOLSER NUMBERS      200000-600000
*
*VOL>             NAMES A PARAMETER LIBRARY MEMBER     VOL>DDNAME
*                 WHICH CONTAINS ONE OR MORE VOL=
*                 VALUES TO BE INCLUDED
*
*XVOL=            EXCLUDE VERSION OF 'VOL='
*
*XVOL>            EXCLUDE VERSION OF 'VOL>'
*
*DSN=             INCLUDE SINGLE DSN                   AAA.BBB.CCC
*                 INCLUDE SINGLE DSN PATTERN           AAA.B%B.**
*
*DSN>             NAMES A PARAMETER LIBRARY MEMBER     DSN>DDNAME
```

```
*                WHICH CONTAINS ONE OR MORE DSN=
*                VALUES TO BE INCLUDED
*
*XDSN=           EXCLUDE VERSION OF 'DSN='
*
*XDSN>           EXCLUDE VERSION OF 'DSN>'
*
*MGMTCLAS=       INCLUDE SINGLE MGMTCLAS               STANDARD
*                INCLUDE SINGLE MGMTCLAS PATTERN       STAND*
*
*MGMTCLAS>       NAMES A PARAMETER LIBRARY MEMBER      MGMTCLAS>DDNAME
*                WHICH CONTAINS ONE OR MORE MGMTCLAS
*                VALUES TO BE INCLUDED
*
*XMGMTCLAS=      EXCLUDE VERSION OF 'MGMTCLAS='
*
*NOTE:  SPECIFICATION OF CRITERIA STATEMENTS WITH THE INDIRECTION
*       CHARACTER ">" POINTING TO A PARAMETER LIBRARY MEMBER CAN
*       ALSO POINT TO A DDNAMEIN THE INPUT JOB STREAM FROM WHICH
*       THE CRITERIA STATEMENTS MAY BE READ, AS LONG AS THE DDNAME
*       SPECFIED ALSO EXISTS AS A MEMBER IN THE PARAMETER LIBRARY.
*
*       I.E. //INCLDSNS DD *    (INCLDSNS IS ALSO A THE NAMEOF A
*                               MEMBER IN THE PARAMTER LIBRARY)
*
*            DSN>INCLDSNS       WILL READ THE DATASET NAMES AND/OR
*                               DATASET NAME PATTERNS TO BE INCLUDED
*                               FROM //INCLDSNS DD * IN THE JOB STREAM
*
*
*CRITERIA                USAGE                   EXAMPLE
*----------------------- ----------------------- --------
*
*#DAYS_SINCE_CREATE=     SINGLE VALUE            12
*                        RANGE OF VALUES         0-12
*
*#DAYS_SINCE_LASTUSED=   SINGLE VALUE            12
*                        RANGE OF VALUES         0-12
*
*#DAYS_SINCE_MIGRATED=   SINGLE VALUE            12
*                        RANGE OF VALUES         0-12
*
*#DAYS_SINCE_ARCHIVE=    SINGLE VALUE            12
*                        RANGE OF VALUES         0-12
*
*#DAYS_UNTIL_EXPIRATION= SINGLE VALUE            12
*                        RANGE OF VALUES         0-12
*
*MIGRATION_DATE=         JULIAN DATE             YYYY.DDD
*                        JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                        GREG DATE               MM/DD/YYYY
*                        GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*EXPIRATION_DATE=        JULIAN DATE             YYYY.DDD
*                        JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                        GREG DATE               MM/DD/YYYY
*                        GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*ARCHIVE_DATE=           JULIAN DATE             YYYY.DDD
*                        JULIAN DATE RANGE       YYYY.DDD-YYYY.DDD
*                        GREG DATE               MM/DD/YYYY
*                        GREG DATE RANGE         MM/DD/YYYY-MM/DD/YYYY
*
*
*NOTE:   VALID VALUES FOR DATES SPECIFIED IN;
*        JULIAN FORMAT ARE     1900.001 TO 2999.365
*        MM/DD/YYYY FORMAT ARE 01/01/1900 TO 12/31/2999
```

```
*        DD/MM/YYYY FORMAT ARE 01/01/1900 TO 31/12/2999
*        YYYY/MM/DD FORMAT ARE 1900/01/01 TO 2999/12/31
*
//
```

AXQTINIT

The AXQTINIT started task initializes the product after an IPL but before any jobs are run.

```
//AXQTINIT PROC SMODE=ACTDYN
//*
//*--------------------------------------------------------------------*
//*                                                                    *
//*      5698-AAD                                                      *
//*        ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.          *
//*      ALL RIGHTS RESERVED.                                          *
//*                                                                    *
//*                                                                    *
//*      ADVANCED ARCHIVE STARTED TASK INITIALIZATION                  *
//*                                                                    *
//*                                                                    *
//*      THIS JOB IS USED TO INITIALIZE THE ADVANCED ARCHIVE STARTED   *
//*      TASK AND SHOULD BE STARTED BEFORE ANY TASKS THAT MIGHT        *
//*      ACCESS ARCHIVED FILES RUN, AFTER AN IPL.                      *
//*                                                                    *
//*      BEFORE YOU RUN THIS JOB, DO THE FOLLOWING:                    *
//*         1) ENSURE THAT THE JOBCARD IS VALID FOR YOUR               *
//*            ENVIRONMENT                                             *
//*         2) SUBSTITUTE YOUR DATA SET PREFIX FOR @HLQ                *
//*                                                                    *
//*      THE FOLLOWING VALUES FOR SMODE MAY BE SPECIFIED:              *
//*         PARM=ACTDYN - START WITH SYSTEM HOOKS AND DYNAMIC RESTORE  *
//*                       FUNCTIONALITY ACTIVE                         *
//*         PARM=ACT    - START WITH SYSTEM HOOKS IN WARNING MODE FOR   *
//*                       ARCHIVED DATA SETS                           *
//*         PARM=DEACT  - START WITH SYSTEM HOOKS INACTIVE             *
//*                                                                    *
//*--------------------------------------------------------------------*
//*
//AXQTINIT EXEC PGM=AXQTINIT,PARM='&SMODE',REGION=8M,TIME=1440
//STEPLIB  DD DISP=SHR,DSN=@HLQ.SAXQLOAD
//AXQPRLIB DD DISP=SHR,DSN=@HLQ.SAXQPARM
//
```

Appendix E. PARMLIB members

This appendix describes the PARMLIB members that were shipped with Advanced Archive for DFSMShsm.

Topics:

AXQDSNAL

The AXQDSNAL member is used to override new file allocations for Advanced Archive for DFSMShsm. The purpose pf this member is to give you limited allocation control over data sets that are dynamically allocated by Advanced Archive for DFSMShsm. Most Advanced Archive for DFSMShsm disk data sets can be changed through this member.

Overall logical statement layout

Logical statements have the following layout:

- A data set name or a data set name mask (a data set name that uses wildcard characters)
- One or more keyword-value pairs

Logical transaction format details

Note the following about logical transaction formatting:

- Each statement within the AXQDSNAL data is a data set name or a data set name mask that is followed by subordinate keyword and value clauses.
- The data set name mask can be a specific data set name or a data set name that includes wildcard characters.
- Statements are free-form in the sense that keyword position and order do not matter.
- Statements can be continued from one row to the next by using the hyphen (-) continuation character. A statement ends when a given row is not continued.
- The overrides are limited to new data sets; you cannot override allocation information for existing data sets.

Statement coding rules

These are the statement coding rules:

- Every statement must begin with a data set name. The data set name must match a data set that belongs to Advanced Archive for DFSMShsm. A mistyped data set name renders the statement useless.
- The data set name may begin in any column.
- The data set name may contain wildcard characters: `*`, `**`, `%`
- The first entry in `AXQDSNAL` that matches a given Advanced Archive for DFSMShsm data set name is used for overriding the allocation. If duplicate entries exist, only the first occurrence is used.
- An entry whose wildcard characters make the data set name very generic could match an allocation request other than that for which it was intended.
- If the file being overridden is a generation data set, specify the generation data set base name; do not use wildcards to identify the G0000V00.
- Keyword-value pairs are separated by one or more blank spaces. The keyword, equal sign (`=`), and keyword value are not separated from each other by blank spaces (`keyword=value`, for example). Every keyword and its value must begin and end in a single statement.
- An asterisk (`*`) in column 1 is interpreted as a comment.
- Errors are reported in a report DD `//ALLOCDSN`.

Useful applications

Advanced Archive for DFSMShsm uses the size of the Archive Database to determine the space allocation that it requests when it creates a backup of the Archive Database. By using `AXQDSNAL`, you can alter the requested space allocation to better suit your environment. For example:

```
ADV.ARCHV.DBBKUP ALLOC=CYL PRIMARY=1000 SECONDARY=100
```

Supported keywords

Keyword	Description
`ALLOC=`	Change the default allocation type to TRK or CYL. **Example:** `ALLOC=CYL` or `ALLOC=TRK` **JCL equivalent:** `SPACE=(CYL,...)` **Notes:** If this keyword is specified, its value must be either TRK or CYL.
`PRIMARY=`	Specify a different primary allocation. **Example:** `PRIMARY=10` **JCL equivalent:** `SPACE=(CYL,(10))` **Notes:** The value can be any positive integer that is less than or equal to 16,777,215. Space must be available.
`SECONDARY=`	Specify a different secondary allocation or nullify a secondary allocation. **Example:** `SECONDARY=5` **JCL equivalent:** `SPACE=(CYL,(10,5))` **Notes:** The value can be any positive integer that is less than or equal to 16,777,215. Space must be available. In some cases, it might be useful to specify 0.

Keyword	Description
DIRBLKS=	Specify a different quantity for PDS directory blocks. **Example:** DIRBLKS=50 **JCL equivalent:** SPACE=(CYL,(10,5,50))
RLSE=	Specify whether you want space released when a data set is closed. **Example:** RLSE=YES, RLSE=NO **JCL equivalent:** SPACE=(CYL,(10,5,50),RLSE)
VOLCOUNT=	Specify the maximum number of volumes to which a data set can extend. **Example:** VOLCOUNT=3 **JCL equivalent:** VOLUME=(,,,3) **Notes:** UNIT=(SYSDA,3) and VOLUME=(,,,3) are functionally equivalent.
FREE=	Specify whether you want the data set to be deallocated when it is closed. **Example:** FREE=CLOSE, FREE=NONE **JCL equivalent:** FREE=CLOSE **Notes:** FREE=NONE can be used to nullify specification of FREE=CLOSE.
PREEXIST=	Specify whether you want an existing data set to be scratched. **Example:** PREEXIST=SCRATCH, PREEXIST=NOSCRATCH **JCL equivalent:** DISP=(MOD,DELETE,DELETE), preceding new allocation.
DATACLAS=	Specify the SMS data class. Advanced Archive for DFSMShsm specifies the data class using DYNAMIC-ALLOCATION-DATA-CLASS; this parameter granularly specifies a different data class. DATACLAS=NONE causes the parameter to be ignored. **Example:** DATACLAS=DATACLAS **JCL equivalent:** DATACLAS=DATACLAS **Notes:** You must specify a valid SMS data class.
STORCLAS=	Specify the SMS storage class. Advanced Archive for DFSMShsm specifies the storage class using DYNAMIC-ALLOCATION-STORAGE-CLASS; this parameter granularly specifies a different storage class. STORCLAS=NONE causes the parameter to be ignored. **Example:** STORCLAS=STORCLAS **JCL equivalent:** STORCLAS=STORCLAS **Notes:** You must specify a valid SMS storage class.
MGMTCLAS=	Specify the SMS management class. Advanced Archive for DFSMShsm specifies the management class using DYNAMIC-ALLOCATION-MANAGEMENT-CLASS; this parameter granularly specifies a different management class. MGMTCLAS=NONE causes the parameter to be ignored. **Example:** MGMTCLAS=MGMTCLAS **JCL equivalent:** MGMTCLAS=MGMTCLAS **Notes:** You must specify a valid SMS management class.

Keyword	Description
VOLSER=	Specify a target volume serial number. Advanced Archive for DFSMShsm specifies volume serial number based on DYNAMIC-ALLOCATION-VOLSER; this parameter granularly specifies a different volume serial number. VOLSER=NONE causes the parameter to be ignored. **Example:** VOLSER=V00001 **JCL equivalent:** VOLSER=V00001 **Notes:** You may specify only one volume serial number.
UNIT=	Specify a unit type. Advanced Archive for DFSMShsm allocates the unit type based on DYNAMIC-ALLOCATION-UNIT; this parameter granularly specifies a different unit type. **Example:** UNIT=3390 **JCL equivalent:** UNIT=3390
LRECL=	Specifies a different record length than the one that was specified by Advanced Archive for DFSMShsm. **Example:** LRECL=999 **JCL equivalent:** LRECL=999 **Notes:** You many specify any positive integer in the range 1 – 32760.
BLKSIZE=	Specifies a different record length than the one that was specified by Advanced Archive for DFSMShsm. **Example:** BLKSIZE=999 **JCL equivalent:** BLKSIZE=999 **Notes:** You many specify any positive integer in the range 0 – 32760. If you specify 0, block size is determined when the data set is opened and closed.
DSORG=	Specifies a different data set organization type than the one that was specified by Advanced Archive for DFSMShsm. **Example:** DSORG=PS, DSORG=PO **JCL equivalent:** DSORG=PS, DSORG=PO
RECFM=	Specifies a different record format than the one that was specified by Advanced Archive for DFSMShsm. **Example:** RECFM=FB **JCL equivalent:** RECFM=FB **Notes:** E, V, U, B, A, and M are supported record formats.

AXQEDRGN

AXQEDRGN stores archive group names that you want to exclude from automatic Restore processing.

For every archive group name (each of which is identified by the value assigned to the GROUP_NAME keyword when the data sets were archived) that you want

excluded from automatic Restore processing, add one statement to AXQEDRGN. Each statement must conform to these coding rules:

1. You may code only one statement per line.
2. An asterisk (*) in column 1 indicates a comment.
3. Each statement can contain only one archive group name (GROUP_NAME):
   - The name of the archive group must be 1 - 8 characters in length.
   - The archive group must be followed by one or more blank spaces. Everything that you code after the delimiting blank space or spaces is treated as a comment.

```
* ********************************************************************
*
* DYNAMIC RESTORE EXCLUDE GROUP NAME TABLE
*
*  © ROCKET SOFTWARE, INC. OR ITS AFFILIATES 2014-2018.
*  ALL RIGHTS RESERVED.
*
* ********************************************************************
*
* CLOUD/GROUP NAMES THAT APPEAR IN THIS MEMBER WILL NOT BE RESTORED WHEN
* REFERENCED DURING DYNAMIC RESTORE OPERATIONS ONLY.
*
*
* FORMAT RECORD LAYOUT:
*
* STATEMENT CODING RULES:
*
*   - AN ASTERISK (*) IN COLUMN 1 INDICATES A COMMENT LINE
*
*   - THE FIRST BLANK DELIMITED VALUE ON EACH NON-COMMENT LINE WILL
*     BE PROCESSED AS A GROUP NAME TO EXCLUDE FROM DYNAMIC RESTORE
*     PROCESSING
*
*   - SECONDARY BLANK DELIMITED VALUES ON EACH NON-COMMENT LINE WILL
*     BE TREATED AS COMMENTS
*
*
* EXAMPLES:
*
* CURRQTR            -  GROUP FOR CURRENT 3 MONTH CYCLE
* HISTGRP1           -  GROUP FOR HISTORICAL ARCHIVE DATA
*
* ********************************************************************
*
```

AXQMCPOL

The AXQMCPOL member is used to specify the statements that Advanced Archive for DFSMShsm uses to build CRITERIA statements to extend you SMS management class policies to implement an additional "ML3" archive tier of storage.

How it works

To illustrate how automatic selection criteria generation works, consider an example in which you have coded the following in the AXQMCPOL member of the parameter library:

```
*MGMTCLAS  ARCHIVE  ARCHIVE
*  NAME      DAYS    GROUP
*--------  -------  --------
STANDARD      720   COSGRP1
ARCHIVE        60     *
```

The AXQMCPOL member is ignored until you remove the CRITERIA DD from the AXQRCHIV job. When you submit the modified AXQRCHIV job, the Archive process reads the contents of the AXQMCPOL member and generates these selection criteria to compare against the ML2 candidate data sets:

```
//CRITERIA DD *
GROUP_NAME=COSGRP1
MGMTCLASS=STANDARD
#DAYS_SINCE_LASTUSED=00720-99999
GROUP_NAME=ARCHIVE
MGMTCLAS=ARCHIVE
#DAYS_SINCE_LASTUSED=00060-99999
```

AXQMSGOV

The AXQMSGOV member is used to override the issuance of most WTO messages and the associated condition codes, or the WTO routing and descriptor codes, or both the messages and the routing and descriptor codes.

Format records have this general layout:

- The first field is the message ID.
- The second field is the condition code for the message.
- The third field is the suppression indicator.
- The fourth field is for the routing codes.
- The fifth field is for descriptor codes.

These are the statement coding rules:

- An asterisk (*) in column 1 indicates a comment.
- You may list only one message ID per line.
- Fields are delimited by blanks and can begin anywhere.
- The first three fields are required. The fourth and fifth fields are optional.
- The message ID must be 1–8 characters in length, including wildcards. Only the first eight characters of the message ID are matched. The first entry that matches the message ID is used.
- The condition code must be a decimal value in the range 0 – 4095 or an asterisk (*), which indicates no override. For a message that is suppressed, an asterisk is the same as specifying 0. The condition code is set regardless of the suppression indicator.
- The suppression indicator must be one of these values:
  - Y|YES, indicating that the message is to be suppressed.
  - N|NO, indicating that the message is not to be suppressed.
- Entries for a message that result in an immediate abend are ignored.
- Routing codes are optional. If a routing code is specified, it must be one of these values:
  - *, indicating no override.
  - A list of comma-separated routing codes in the range 1 - 16.
- Descriptor codes are optional. If a descriptor code is specified, it must one of these values:
  - *, indicating no override.
  - a list of comma-separated descriptor codes in the range 1 - 16.
- The routing and descriptor code fields are ignored when the suppression indicator is Y or YES.

AXQPSETS

The AXQPSETS member is intended to serve as a default PARMLIB member, when the AXQPSETS DD name has not been specified in the JCL to provide parameter values that should override the AXQUSETS and DEFAULT parameter settings.

This member can be used to pass parameter values to programs that do not have a AXQPSETS DD name listed in the JCL.

AXQRPTAL

The AXQRPTAL member is used to redirect the SYSOUT from the specified job, program, or DD name (or all three) to either DASD data sets or SYSOUT data sets with other than the default criteria.

The structure of this table is field-oriented with the individual fields separated by blanks; invalid entries are displayed by WTO message on the console and ignored.

The table fields are described in the following table:

Field	Usage
1	Job name for which the SYSOUT request redirected. You may use wildcard characters in the specified jobname.
2	Program name.
3	DD name.
4	GDG limit. Use 0 to indicate that a non-GDG data set should be created. Use 1 - 255 to create a GDG base with the specified limit. **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
5	Primary allocation, in cylinders. Specify an integer in the range 1 – 99999. **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
6	Secondary allocation, in cylinders. Specify an integer in the range 1 – 99999. **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
7	Volume count. Specify an integer in the range 1 – 59. **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
8	SMS data class or NONE (for no data class designation at allocation). **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
9	SMS management class or NONE (for no management class designation at allocation). **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.
10	SMS storage class or NONE (for no storage class designation at allocation). **Note:** You must code this field if you want the SYSOUT for the job name, program name, and DD name to be redirected to a DASD data set.

When the SYSOUT for the above job name, program name, and DD name is to be redirected to SYSOUT, you must code one of the following SYSOUT formats:

- SYSOUT=A-Z|0-9|*|$ CLASS
- SYSOUT=(A-Z|0-9|*|$) CLASS

- SYSOUT=(A-Z|0-9|*|$,XXXX) CLASS & FORM NAME
- SYSOUT=(A-Z|0-9|*|$,,YYYYYYYY) CLASS & WRITER
- SYSOUT=(A-Z|0-9|*|$,XXXX,YYYYYYYY) CLASS, FORM NAME & WRITER

These are the statement coding rules:

- An asterisk (*) in column 1 indicates a comment.
- Fields are delimited by blanks and can begin anywhere.
- The first three fields are required. The remaining fields are determined by the redirection type (DASD or SYSOUT).

AXQTBDEF

AXQTBDEF contains table definitions and should not be modified manually.

AXQUSETS

The AXQUSETS member allows you to override Advanced Archive for DFSMShsm default settings at initialization time.

The format record has these fields:

- The first field is the parameter name.
- The second field is the parameter value.

These are the statement coding rules:

- You must specify a value that is valid for the parameter. See Chapter 10, “Parameters,” on page 111, for detailed information about the values that may be specified for parameters.
- Anything that you specify beyond the second field is treated as a comment.
- An asterisk (*) in column 1 indicates a comment.

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Index

Special characters

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

V

W

X

Z

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