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Preface

Oracle’s StorageTek Enterprise Library Software (ELS) is a solution consisting of the following base software:

- Oracle’s StorageTek Storage Management Component (SMC)
  (includes the product formerly known as StorageTek HTTP Server)
- Oracle’s StorageTek Host Software Component (HSC)
- Oracle’s StorageTek Virtual Tape Control Software (VTCS)
- Oracle’s StorageTek Concurrent Disaster Recovery Test (CDRT)

Additionally, the following software is provided with the ELS package:

- Oracle’s StorageTek Library Content Manager (LCM). LCM includes an enhanced version of the product formerly known as Offsite Vault Feature.
- Oracle’s StorageTek Client System Component for MVS Environments (MVS/CSC)
- Oracle’s StorageTek LibraryStation

This publication describes commands, control statements, and utilities provided by ELS base software products; SMC, HSC, VTCS and CDRT. It is intended for storage administrators, system programmers and operators responsible for configuring and maintaining ELS.

To perform the tasks described in this publication, you should already understand the following:

- z/OS operating system
- JES2 or JES3
- Enterprise Library Software (ELS)
Related Documentation

StorageTek Enterprise Library Software (ELS)
- Introducing ELS
- Installing ELS
- ELS Syntax Quick Reference
- ELS Messages and Codes
- ELS Programming Reference
- ELS Legacy Interfaces Reference
- Configuring HSC and VTCS
- Managing HSC and VTCS
- Configuring and Managing SMC
- ELS Disaster Recovery and Offsite Data Management Guide

StorageTek Library Content Manager (LCM)
- LCM User’s Guide
- LCM Messages and Codes
- LCM Quick Reference

StorageTek Client System Component for MVS Environments (MVS/CSC)
- MVS/CSC Configuration Guide
- MVS/CSC Messages and Codes Guide
- MVS/CSC Operator’s Guide
- MVS/CSC Syntax Quick Reference
- MVS/CSC System Programmer’s Guide

StorageTek LibraryStation
- LibraryStation Configuration and Administration Guide
- LibraryStation Syntax Quick Reference
## Documentation, Support, and Training

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Additional Information

Conventions for Reader Usability

Typographic

Some JCL examples in this guide include *italic* type. Italic type is used to indicate a variable. You must substitute an actual value for these variables.

The use of mixed upper and lower case characters for commands, control statements, and parameters indicates that lower case letters may be omitted to form abbreviations. For example, you may simply enter POL when executing the POLicy command.

Syntax Flow Diagrams

Syntax flow diagramming conventions include the following:

Flow Lines

Syntax diagrams consist of a horizontal base line, horizontal and vertical branch lines, and the text for a command, control statement, macro, or utility. Diagrams are read left to right, and top to bottom. Arrows indicate flow and direction.

Single Required Choice

Branch lines (without repeat arrows) indicate that a single choice must be made. If one of the items to choose from is positioned on the baseline of the diagram, one item must be selected.
Single Optional Choice

If the first item is positioned on the line below the baseline, one item may be optionally selected.

![Diagram of single optional choice]

Defaults

Default values and parameters appear above the baseline.

![Diagram of defaults]

Some keyword parameters provide a choice of values in a stack. When the stack contains a default value, the keyword and the value choices are placed below the baseline to indicate that they are optional, and the default value appears above the keyword line.

![Diagram of stacked keyword parameters]

Repeat Symbol

A repeat symbol indicates that more than one choice can be made or that a single choice can be made more than once. The following example indicates that a comma is required as the repeat delimiter.

![Diagram of repeat symbol]
**Keywords**

All command keywords are shown in all upper case or in mixed case. When commands are not case sensitive, mixed case implies that the lowercase letters may be omitted to form an abbreviation.

**Variables**

Italic type is used to indicate a variable.

**Alternatives**

A bar ( | ) is used to separate alternative parameter values.

**Optional**

Brackets [ ] are used to indicate that a command parameter is optional.

**Delimiters**

If a comma (,), a semicolon (;), or other delimiter is shown with an element of the syntax diagram, it must be entered as part of the statement.

**Ranges**

An inclusive range is indicated by a pair of elements of the same length and data type, joined by a dash. The first element must be strictly less than the second element.

A hexadecimal range consists of a pair of hexadecimal numbers (for example, 0A2-0AD, or 000-0FC).

A decimal range consists of a pair of decimal numbers (i.e., 1-9, or 010-094). Leading zeros are not required. The decimal portion is referred to as an incremental range. The character positions of the incremental portion of both range elements must match, and the non incremental characters of the first element must be identical to those of the second element.

A numeric VOLSER range (vol-range) consists of a pair of VOLSER elements containing a decimal numeric portion of 1 to 6 digits (for example, ABC012-ABC025, or X123CB-X277CB). The decimal portion is referred to as an incremental range. The following additional restrictions apply:

- The character positions of the incremental portion of both range elements must match.
- The non incremental characters of the first element must be identical to those of the second element.
- You cannot increment two portions of a range element. If 111AAA is the first element, you cannot specify 112AABB for the second element.
If a VOLSER range contains more than one decimal portion, any portion is valid as the incremental range. For example:

- A0B00: The largest range that can be specified is A00B00 through A99B99.
- A0B0CC: The largest range that can be specified is A0B0CC through A9B9CC.
- 000XXX: The largest range that can be specified is 000XXX through 999XXX.

An alphabetic VOLSER range (vol-range) consists of a pair of VOLSER elements containing an incremental portion of 1 to 6 characters (for example, 000AAA-000ZZZ, or 9AAA55-9ZZZ55). This portion is referred to as an incremental range. The following additional restrictions apply:

- The character positions of the incremental portion of both range elements must match.
- The non-incremental characters of the first element must be identical to those of the second element.
- You cannot increment two portions of a range element. If 111AAA is the first element, you cannot specify 112ABB for the second element.
- The alphabetic portion of the VOLSER range is defined as being from character A to Z. To increment multi-character sequences, each character increments to Z. For instance, ACZ is part of the AAA-AMM range. Examples are:

  - A00A0-A99A0: Increments VOLSERs A00A0 through A09A0, then A10A0 through A99A0.
  - 9AA9A-9ZZ9A: Increments VOLSERs 9AA9A through 9AZ9A, then 9BA9A through 9ZZ9A.
  - 111AAA-111ZZZ: Increments VOLSERs 111AAA through 111AAZ, then 111ABA through 111ZZZ.
  - 999AM8-999CM8: Increments VOLSERs 999AM8 through 999AZ8, then 999BA8 through 999CM8.
  - A3BZZ9-A3CDE9: Increments VOLSERs A3BZZ9 through A3CAA9, then A3CAB9 through A3CDE9.
  - AAAAAA-AAACCC: Increments VOLSERs AAAAAA through AAAAAZ, then AAAABA through AAACCC.
  - CCCNNN-DDDNNN: Increments VOLSERs CCCNNN through CCCNZ, then CCCNOA through DDDNNN *

* Caution: This is a very large range.
The number of volumes in an alphabetic VOLSER range depends on the number of 
elements in the incrementing portion of the VOLSER range. For an A to Z range in each 
character position, the number of volumes can be calculated by 26 to the power of the 
number of positions that are being incremented.

A-Z  
261  26

AA-ZZ  
262  676

AAA-ZZZ  
263  17,576

AAAA-ZZZZ  
264  456,976

AAAAA-ZZZZZ  
265  11,881,376

AAAAAA-ZZZZZZ  
266  308,915,776

Lists
A list consists of one or more elements. If more than one element is specified, the 
elements must be separated by a comma or a blank space, and the entire list must be 
enclosed in parentheses.

Blanks
Keyword parameters and values may be separated by any number of blanks.

Control Statements
The standard syntax conventions for control statements are as follows:
- The only valid control statement information area is from column 1 to column 72. 
  Columns 73-80 are ignored.
- Parameters may be separated by one or more blanks or a comma.
- A value is associated with a parameter by an equal (=) sign or by enclosing the value 
  in parentheses, and concatenating it immediately after the parameter.
- Case (upper or lower) is ignored in actual control statements.
- Continuations are supported by including a plus (+) sign at the end of the line to be 
  continued. A control statement is terminated if the statement is not continued.
- /* and */ can be used to enclose comments in the job stream. Comments can be 
  continued over multiple lines, but cannot be nested.
- PARMLIB members must include a /*...*/ comment as the first control statement. 
  Otherwise, the old format is assumed. Comments in the old format must begin with 
  an asterisk (*) in column 1.
- For definition data sets (e.g., VOLATTRs, UNITATTRs and TAPEREQs), comments 
  must be in the new format /*...*/.
- Asterisk (*) comments are not allowed.
- A /*...*/ comment in the first line is not required.
- The maximum length for a control statement is 1024 characters.
What’s New?

This publication includes information about the following ELS enhancements:

**Revision 02**

- The SMC Display RC command is used to display information about the meaning of an SMC return or reason code, or an HSC/VTCS UUI reason code.
  
  See “Display RC” on page 76.

- The PITCOPY command uses a utility snapshot feature to produce a point-in-time copy of the CDS.
  
  See “PITCOPY” on page 508.

- The VVAUDIT command synchronizes the vault allocation map with vault volume records.
  
  See “VVAUDIT” on page 624.

- The ACTMVCgn command includes the ALL parameter, used to request that READONLY(ON) and READONLY(OFF) control statements are generated for all non-empty MVCs.

  Additionally, the optional SLUSMAUD definition statement specifies that AUDIT utility control statements are generated for all non-empty MVCs, except for those in EXPORT status.

  See “ACTMVCgn” on page 173.

- The CONFlg GLOBAL command includes the LOCKTOUT parameter, used to specify the minimum number of minutes that a resource is locked before a status message is issued.

  See “CONFlg GLOBAL Statement” on page 212.

- The VOLRpt command includes the NOVOL parameter, used to specify a display of summary and/or subpool totals without producing volume detail.

  See “VOLRpt” on page 603.
Revision 01

- Support for Oracle’s StorageTek T10000C tape drive.
  See Appendix A, “MEDia, RECtech, and MODeI Values”.

Revision AA

- Library Location in Decimal Format
  See “Library Identification” on page 709

- Dynamic reclaim support for T10000B media
  See:
  - “CONFIg” on page 209
  - “CONFIg RECLAIM Statement” on page 219
  - “STORclas Control Statement” on page 441
  - “REClaim” on page 512
  - “POOLPARM Control Statement” on page 568

- New SMC commands to provide XAPI support:
  See “Display DRIVE_INFO” on page 279 and “Display VOLUME_INFO” on page 341.

- The SMC Help command displays help information for SMC commands and messages.
  See “Help” on page 81.

- TAPEPlex commands required at SMC Startup
  In SMC 7.1 the ability to derive TapePlex definitions based on locally defined subsystems is removed. Instead, all TapePlexes must be defined using the TAPEPlex command. If no TAPEPlex commands are found at SMC startup, the SMC subsystem terminates.
  See “TAPEPlex” on page 139.

- Advanced VSM management features
  By default, advanced VSM management features are **automatically enabled** for ELS 7.1. The FEATures command, included in previous ELS releases, is no longer valid.
CHAPTER 1

ELS Command Interfaces

This chapter describes the various interfaces you can use to issue ELS commands. It is organized in the following sections:

- Unified User Interface (UUI) Support
- SMC Command Interfaces
- HSC/VTCS Command Interfaces

Unified User Interface (UUI) Support

Certain SMC, HSC, and VTCS commands described in this publication are supported by the UUI (Unified User Interface).

The ELS UUI interface is designed to standardize both internal and external interfaces into SMC, HSC and VTCS functions. The UUI allows you to do the following:

- Execute commands via a utility.
- Invoke commands from a programmatic interface.
- Request output in text, XML or Comma Separated Values (CSV) format.
- Invoke commands to an HSC server from a remote client.

ELS expands the commands available through the UUI interface to include all functions previously supported by the HSC PGMI and batch API interfaces. Although the existing interfaces will continue to be supported for an undetermined number of future releases, these interfaces will not be enhanced to add new data items.

Note –
- Refer to the ELS Programming Reference for detailed information about the UUI.
- See “Unified User Interface Utility (SMCUUUI)” on page 630 for information about the SMCUUUI utility, used to issue UUI supported SMC, HSC, and VTCS commands from a batch job.
SMC Command Interfaces

This section includes the following topics:
- Issuing SMC Commands from the Console
- Specifying SMC Commands in the SMCCMDS or SMCPARMS Data Sets
- SMC Commands that Specify JOBname, STEPname, and PROCstep
- Issuing SMC Commands from a Utility

Issuing SMC Commands from the Console

Issuing Commands Using an SMC Command Prefix

Use an SMC command prefix to issue a command from the SMC console.

To define your prefix, specify the SMC CMDDef command with the PREFIX parameter in the SMCPARMS data set.

In the following example, the command prefix is defined as B@F$:

```
CMDDEF PREFIX(B@F$)
```

**Note** – The PREFIX parameter can only be specified in the SMCPARMS data set. See “CMDDef” on page 69 for more information about the CMDDef command.

Use the following format to issue a SMC command using a command prefix:

```
PREFIX command-name [parameter]
```

- PREFIX is the command prefix.
- command-name indicates a SMC operator command.
- parameter indicates an optional or required command parameter.

The command must appear immediately following (concatenated to) the prefix character.

A null character can be specified as the command prefix character. In this case, you must use the MVS MODIFY command to issue commands. See “Issuing SMC Commands Using the MVS Modify Command” on page 47.
Issuing SMC Commands Using the MVS Modify Command

Use the following command format to issue a SMC command from the MVS console using the MVS Modify (F) command:

\[ F \text{ started-task-name,command-name [parameter]} \]

- \text{F} indicates the MVS Modify command
- \text{started-task-name} indicates the SMC started task name.
- \text{command-name} indicates a SMC operator command.
- \text{parameter} indicates an optional or required command parameter.

\textbf{Note} –
- The started task name and command name \textbf{must} be separated with a comma. Spaces are not allowed between the subsystem name and command name.
- Parameters and values may be separated with any number of spaces, and may optionally include an equal (=) sign. Values may also be included in parentheses.

The following are equivalent commands:

- F SMC1MVS,MSGDEF LVL 4
- F SMC1MVS,MSGDEF LVL=4
- F SMC1MVS,MSGDEF LVL(4)

\section*{Keyword Parameters}

Keyword parameters that require or allow a user-supplied value can be specified in either of following formats:

- Enclosing the user-supplied value(s) in parentheses and concatenating it to the keyword. For example,
  \textit{MINLVL(minlevel)}

- Concatenating the user-supplied value(s) to the keyword with an equal sign. For example,
  \textit{MINLVL=minlevel}

\textbf{Note} –
- Unless otherwise specified, a list of user-supplied values must be enclosed in parentheses. See “Lists” on page 42 for more information about specifying lists.
- Except as noted, parameters can be separated by a comma or a blank. Consecutive blanks following either of these delimiters are ignored.
- Commands and parameters can be entered in any combination of uppercase and lowercase letters.
- Command replies are always sent to the issuing console and, in some cases such as mounts and dismounts, are routed to other consoles such as the tape library console and tape pool console.
Specifying SMC Commands in the SMCCMDS or SMCPARMS Data Sets

SMC operator commands specified in the SMCPARMS or SMCCMDS data set are automatically processed at startup.

- The **SMCCMDS** data set specifies user-configured settings that can be changed while the SMC is active. Issue the READ command from the console to reprocess the SMCCMDS data set at any time.

  The following is a sample SMCCMDS member entry:

  ```
  MSGDEF CASE(MIXED) LVL(4)
  TAPEPLEX NAME(HSCPLEX) LOCSUB(HSC0)
  READ DSN('MY.PARMLIB(POL)')
  TREQDEF DSN('MY.PARMLIB(TREQ)')
  RESYNCHRONIZE
  ```

- The **SMCPARMS** data set specifies user-configured items that **cannot** be changed while the SMC is active. SMCPARMS **cannot** be reprocessed using the READ command.

  The following is a sample SMCPARMS member entry:

  ```
  CMDDEF PREFIX(B@F$)
  ```

**Note** –

- It is recommended that you include only the CMDDef PREFIX and USERMsg ID parameter settings in the SMCPARMS data set. Specify all other commands in the SMCCMDS data set.

- See “Control Statements” on page 42 for syntax conventions used when specifying commands in the SMCPARMS or SMCCMDS data set.
SMC Commands that Specify JOBname, STEPname, and PROCstep

SMC ALLOCJOB, MSGJOB, and TRACE commands allow specification of JOBname, STEPname, or PROCstep. These commands are evaluated by the SMC in order of most specific to least specific job name specification. Therefore, commands can be entered in any order. Consider the following example:

Two ALLOCJob commands are entered:

```
ALLOCJOB JOBNAME=NOALLOC* MINLVL=4
ALLOCJOB JOBNAME=NOALLOC1 MINLVL=3
```

Regardless of the order in which these commands are entered, job name NOALLOC1 is processed with MINLVL 3 because this command’s job name is more specific than job name NOALLOC*.

**Note** –
- If an SMC ALLOCJOB or MSGJOB command is entered specifying only JOBname, STEPname, or PROCstep, the command is interpreted as if LIST had also been specified.
- The above behavior does not apply to TAPEREQ statements, which are always evaluated in the order in which they appear in the TREQDEF DD.

Issuing SMC Commands from a Utility

Use the SMCUUUI utility to issue UUI-supported SMC, HSC, and VTCS commands in a batch job. These commands can be routed to a local or remote HSC TapePlex.

The SMCUUUI utility can generate several types of output, including plain text, structured XML, and Comma Separated Values (CSV).

See “Unified User Interface Utility (SMCUUUI)” on page 630 for more information about the SMCUUUI utility.

**Note** – SMC commands cannot be issued from the utility administrator (SLUADMIN).
HSC and VTCS Command Interfaces

This section includes the following topics:

- Issuing HSC and VTCS Commands from the Console
- Issuing HSC and VTCS Commands from a Utility
- Issuing HSC and VTCS Commands from PARMLIB
- HSC Service Levels

Issuing HSC and VTCS Commands from the Console

Use any of the following methods to issue HSC and VTCS operator commands:

- Issue commands using the MVS Modify command
- Issue commands using a command prefix

Issuing HSC and VTCS Commands Using a Command Prefix

Use a command prefix to issue a HSC or VTCS command from the console. This prefix is assigned during the LIBGEN process. Examples include ",," and ",#".

Use the SET COMPRFX command to define a new prefix. This command specifies the 2-character hexadecimal code of the command prefix.

- The command prefix is not valid until the HSC or VTCS system is recycled.
- See TABLE 3-16 on page 537 for a list of characters associated with each code.
- See “SET COMPRFX” on page 536 for more information about the SET COMPRFX command and prefix restrictions.

Use the following format to issue a command using a command prefix:

```
PREFIX command-name [parameter]
```

- PREFIX is the command prefix.
- command-name indicates a HSC or VTCS operator command.
- parameter indicates an optional or required command parameter.

The command must appear immediately following (concatenated to) the prefix character.

A null character can be specified as the command prefix character. In this case, you must use the MVS Modify command to issue commands.

**Note** – The VT command prefix is no longer required for VTCS commands. If entered, it is ignored.
Issuing HSC and VTCS Commands Using the MVS Modify Command

Use the following format to issue a command from the console using the MVS Modify (F) command:

```
F started-task-name,command-name [parameter]
```

- F indicates the MVS Modify command
- `started-task-name` indicates the entry in the subsystem name table for the HSC.
  - A system programmer specifies this one- to four-character HSC subsystem name by adding an element to the IEFSSNxx entry in the SYS1.PARMLIB (e.g., SLS0).
- `command-name` indicates a HSC or VTCS operator command.
- `parameter` indicates an optional or required command parameter.

Keyword Parameters

Keyword parameters that require or allow a user-supplied value can be specified in either of the following formats:

- Enclosing the user-supplied value(s) in parentheses and concatenating it to the keyword. For example,
  ```
  HOSTID(host-id)
  ```
- Concatenating the user-supplied value(s) to the keyword with an equal sign. For example,
  ```
  HOSTID=host-id
  ```

**Note** –

- Unless otherwise specified, a list of user-supplied values must be enclosed in parentheses. See “Lists” on page 42 for more information about specifying lists.
- Except as noted, parameters can be separated by a comma or a blank. Consecutive blanks following either of these delimiters are ignored.
- Commands and parameters can be entered in any combination of uppercase and lowercase letters.
- Command replies are always sent to the issuing console and, in some cases such as mounts and dismounts, are routed to other consoles such as the tape library console and tape pool console.
Issuing HSC and VTCS Commands from a Utility

HSC and VTCS contain utility functions designed to help you manage library resources. Certain HSC and VTCS commands are used to initiate these utilities. These commands are specified using the utility administrator (SLUADMIN).

Additionally, you can use the SMCUUUI utility to issue UUI-supported SMC, HSC, and VTCS commands in a batch job. These commands can be routed to a local or remote HSC TapePlex.

Both SLUADMIN and SMCUUUI can generate several types of output, including plain text, structured XML, and Comma Separated Values (CSV).

---

**Note** —

- SWSADMIN and SWUADMIN are alias names for SLUADMIN, and are still honored.
- See “Utility Administrator (SLUADMIN)” on page 664 for more information about the SLUADMIN utility.
- See “Unified User Interface Utility (SMCUUUI)” on page 630 for more information about the SMCUUUI utility.
Issuing HSC and VTCS Commands from PARMLIB

Certain HSC/VTCS commands can be defined in a user-defined sequential data set or single partitioned data set (PDS) member that is processed when HSC is initialized. These commands enable you to tailor HSC startup options to meet your requirements.

Unless otherwise specified, options defined in this user-defined PARMLIB data set can be dynamically changed during normal operations by issuing the corresponding operator command from the console.

PARMLIB commands are invoked by specifying MEMBER(xx) or M(xx) on the input parameter in the startup procedure. The suffix “xx” is concatenated with SLSSYS to form a name. The name is used as the ddname in the startup procedure.

- If the data set named in the SLSSYSxx DD is a partitioned data set (PDS), you MUST specify the member name containing the commands.
- If the SLSSYSxx DD is a sequential data set, only the data set name (DSN) needs to be specified.
- If the ddname is not specified in the startup procedure, then the SYS1.PARMLIB data set is dynamically allocated and a search for the member name is made in that data set.

When HSC is initialized, it reads the PARMLIB data set to obtain its operating parameters.

**Note** — Although you can define PARMLIB commands in SYS1.PARMLIB, it is recommended that a user-defined data set, other than SYS1.PARMLIB, be used.

The following JCL examples for HSC execution contain DD statements defining data sets and members that contain PARMLIB command definitions:

```
//IEFPROC EXEC PGM=SLSBINIT,
//            TIME=1440,
//            REGION=2000K,
//            DPRTY=(7,5),
//            PARM='E(E086) F(23) M(00)'
//*
//STEPLIB DD DISP=SHR,DSN=your.sea.SEALINK
//*
//SLSSYS00 DD DISP=SHR,DSN=parmlib0data set
//SLSSYS01 DD DISP=SHR,DSN=parmlib1data set
//SLSSYS02 DD DISP=SHR,DSN=parmlib2data set
```

**FIGURE 1-1** Example JCL Defining Sequential PARMLIB Data Sets
Note –

- At HSC startup, a specific parmlib member can be specified at your discretion by specifying the 'M(nn)' startup parameter.
- Sample SLSSYSxx command streams and PARMLIB commands are contained in member SLSSYS00 of the ELS SAMPLIB.

FIGURE 1-2 Example JCL Defining Partitioned PARMLIB Data Sets
HSC Service Levels

The HSC subsystem can operate at either base or full service level.

Base Service Level Functions

The base service level is the nucleus of the HSC subsystem. It provides the functions necessary to execute as an extension of the operating system, and satisfies the requirements defined by the operating environment in place at the time of execution.

All HSC commands can be issued with the HSC executing at the base service level. However, commands that involve library hardware cannot perform their function completely.

VTCS commands cannot be issued with the HSC executing at the base service level.

Mount Requests Intercepted During Base Service Level Operations

Mount messages intercepted by the SMC while the HSC is operating at the base service level are not sent to the HSC, but are left pending until the HSC reaches the full service level.

When the SMC recognizes that the HSC has reached the full service level, the mounts are redriven. These mount messages that occur with SMC intervention, and that are subsequently redriven when the HSC reaches the full service level, have their subpool specification honored.

Full Service Level Functions

The full service level of operation for the HSC provides all of the functions available and necessary to invoke and sustain complete library operations. These functions include:

- mount/dismount processing
- CAP processing
- cartridge and cell inventory management
- LMU access
- library resource recovery
- support for all library utilities
- support for all HSC and VTCS commands

Note – All VTCS commands require a HSC executing at FULL service level.
SMC Commands and Control Statements

This chapter contains reference information about SMC commands and control statements.

See Chapter 4, “SMC Utilities” for information about SMC utilities.
ALLOCDef

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The ALLOCDef command is used to specify default allocation settings for the SMC subsystem.
Syntax

Optional Parameters:
- **MINLvl**: MIN level
- **SEPLvl**: SEP level
- **SMS**: Switch Management System
- **FAILnoinfo**: Fail no information
- **MIAcompat**: MIA compatibility
- **CA1rts**: CA1 Rule Table
- **DEFer**: DEFer
- **FETCHmsg**: FETCH message
- **EXTVOLesot**: ESOTeric VOL
e
- **ZEROscr**: ZERO screen
- **CAVTAPe**: CAVTape

**FIGURE 2-1** ALLOCDef syntax
Parameters

LIST

- optionally, lists current default allocation settings.
- LIST is the default when no parameters are specified on the ALLOCDef command.
- LIST may be specified with other parameters. In this case, the LIST is generated after the other parameters are processed.

OFF

- optionally, resets all default allocation values to original SMC default settings.
- Specify LIST with this parameter to list these settings.

MINLVL

- optionally, specifies the minimum level of drive exclusion. If a job is not allocatable at the minimum exclusion level, the SMC still excludes drives to the minimum level and allows the job to fail.

  minlevel

  - the minimum allocation exclusion level. Valid values are 0-8. 2 is the default value.

Note –

- Setting MINLVL=0 indicates that the job will not be failed by the SMC even if the device and specific volume are incompatible. MINLVL=0 may be used to force SMC to allow allocation to succeed when a “foreign” tape cartridge has the same volume serial number as an existing library or virtual volume.
- Increasing minlevel has no effect unless message SMC0045 or SMC0091 has been issued for a specific job step.
- Refer to the publication Configuring and Managing SMC for more information about SMC exclusion levels.

SEPLVL

- optionally, specifies the exclusion level at which affinity and GDG chains are separated.

  seplevel

  - an exclusion level between the minimum and maximum levels. When sufficient drives exist, the SMC attempts to separate chains at this level. This value cannot be less than the minlevel value.

MAX

- Affinity and GDG chains for conflicting exclusion criteria are separated whenever sufficient drives are available. This is the default.

MIN

- Affinity and GDG chains are not separated beyond the minimum level.
Note –

- If HSC or MVS/CSC allocation previously specified UNITAFF(NOSEP) and GDGALL(NOSEP), the default SMC exclusion tables can specify SEPLvl=3 in order to preserve existing behavior for scratch affinity chains with different media types.
- Refer to the publication Configuring and Managing SMC for more information about SMC exclusion levels.

SMS

optionally, enables or disables the DFSMS interface. When the DFSMS interface is enabled, the SMC invokes the DFSMS ACS routines. The returned constructs are used to influence device allocation of data sets. See “SMSDef” on page 133 for information about using specific SMS features.

OFF

disables the DFSMS interface. This is the default.

ON

enables the DFSMS interface.

FAILnoinfo

optionally, specifies whether the SMC fails a job step during allocation when a communication failure prevents the retrieval of volume information from a TapePlex, or when no TapePlexes are available.

OFF

SMC does not fail the job step.

ALL

SMC marks all devices ineligible and fails the job step.

SPECIFIC

If a communication failure occurs during the volume lookup process for a specific volume, or if no TapePlexes are available and the step contains allocations for specific volumes, the SMC marks all devices ineligible and fails the job step. If the job step contains only scratch allocations, then the job step is allowed to proceed and allocation is based solely on SMC tape policy specifications.

MIACompat

optionally, specifies whether the EDL is updated at SSI24 time for compatibility with Computer Associates Unicenter CA-MIA Tape Sharing for z/OS and OS/390 product. This parameter is not valid in JES3 environments with TAPE SETUP processing.

OFF

The EDL is not updated at SSI24 time. This is the default.

ON

The EDL is modified at SSI24 time. Specify this value if you use Unicenter CA-MIA.
CA1rts
optionally, specifies whether the DEFER processing is performed at SSI24 time for compatibility with Computer Associates Real Time Stacking feature of its CA-1 tape management system. This parameter is not valid in JES3 environments with TAPE SETUP processing.

OFF
DEFER status is not updated at SSI24 time. This is the default.

ON
DEFER status is updated at SSI24 time. Specify this value if you use the Real Time Stacking feature of CA-1.

DEFer
optionally, enables or disables deferred mount processing for library mounts. With deferred mounting enabled, a library resident volume is mounted when the data set is opened. If the data set is not opened, the cartridge is not mounted, freeing the robot to perform other work If the data set is opened, however, the job waits until the cartridge is mounted.

ON
enables deferred mount processing. This parameter overrides the user’s JCL and defers all ACS mounts until the data set is opened. This is the default.

JES3
In a JES3 (with SETUP) environment, all mounts are JES3 deferred until a step begins execution.

OFF
disables deferred mount processing and honors user JCL specifications.

---

Note –
- On the JES3 SETPARAM initialization statement, set the DEFERCT parameter to YES to ensure that jobs requiring deferred mounts are included in SDEPTH job counts.
- Refer to IBM JES3 publications for detailed information about SETPARAM:
  - JES3 Initialization and Tuning Reference
  - JES3 Command Reference Summary
  - JES3 Commands
  - JES3 Messages
FETCHmsg

optionally, for JES3 with SETUP environments that use volume fetch, specifies whether fetch messages are issued for tape volumes that are allocated to a library drive.

OFF
Fetch messages are not issued for volumes allocated to library drives. Fetch messages are still issued for volumes allocated to nonlibrary drives. This is the default.

ON
Fetch messages are issued for all volumes, regardless of whether they are allocated to library or nonlibrary drives.

NONLIB
Fetch messages are issued for nonlibrary volumes allocated to a library transport. If the drive and volume both reside inside the library (i.e., the volume can be automatically mounted) then the fetch message is suppressed. Queries to the library subsystem(s) are required to determine volume location, and may have a negative impact on performance.

EXTVOLesot

optionally, directs the SMC to use a specified esoteric to allocate a specific external volume (i.e., a volume that is not in a TapePlex). When this esoteric is used depends upon the setting of the modifier value specified after the esoteric, as well as whether the specified esoteric is valid (intersects with the original esoteric specification).

OFF
EXTVOLesot processing is disabled. Nonlibrary drives are selected, if possible, when a specific external volume is allocated. This is the default.

esoteric,USEREXIT
specifies an esoteric to be used to allocate a specific external volume when the “use specvol” (UX08) or “use library drives” (UX13) return code is specified. If the specific volume user exit returns the “use specvol” (UX08) or “use library drives” (UX13) return code for this DD, then any drives in the specified esoteric that intersect with the original esoteric will be selected for allocation. This is the default if esoteric is specified.

esoteric,ALL
Whenever an external volume is allocated, drives in the specified esoteric are selected.
**ZEROscr**

optionally, specifies the exclusion action when there are no scratch volumes in any TapePlex (ON or OFF), or in one or more ACSs within a TapePlex in a multiple ACS environment (INside or OUTside).

**ON**

This is the default. ON indicates one of the following:

- If scratch subpools are not being used, and one or more ACSs contain zero scratch volumes, then drives in those ACSs are excluded from the list of eligible devices.
- If a scratch subpool is being requested (either through TAPEREQ or User Exit 02/04), and one or more ACSs contain zero scratch volumes in the requested subpool, then drives in those ACSs are excluded from the list of eligible devices.
- In JES3 with SETUP environments only, drives in the ACS with the largest number of available scratch volumes remain eligible. All other drives are excluded from selection.

**INside**

All nonlibrary drives are excluded when there are no scratch volumes in any ACS, and there are library drives eligible for allocation. This is the default.

**OUTside**

All library drives are excluded when there are no scratch volumes in any ACS, and there are nonlibrary drives eligible for allocation.

**OFF**

All drives in all ACSs are to remain eligible for selection.

**INside**

All nonlibrary drives are excluded when there are no scratch volumes in any ACS, and there are library drives eligible for allocation. This is the default.

**OUTside**

All library drives are excluded when there are no scratch volumes in any ACS, and there are nonlibrary drives eligible for allocation.
CAVTAPe

optionally, specifies whether scratch user exit 02 or specific user exit 08 are called when an SMC POLICY object is found that applies to the allocation event.

OFF

If an SMC POLICY object applies to an allocation event, then user exit 02 and user exit 08 are not called, even if active. The SMC POLICY object supplies all of the SMC tape policy is such instances. This is the default.

ON

If an SMC POLICY object applies to an allocation event, then the scratch user exit 02 or specific user exit 08 are called and any non-conflicting user exit policy is applied to the same allocation event.

Note –

■ This setting is recommended only for those customers with CA-Vtape installed who are using a default SMC POLICY object but where CA-Vtape supplied user exits are required.

■ Only non-conflicting policies from the user exit are applied. Thus, if the SMC POLICY specifies an ESOTERIC, or a TAPEPLEX name, and user exit 02 or user exit 08 also specifies an ESOTERIC or TAPEPLEX name, the SMC POLICY specifications will apply. Refer to the publication Configuring and Managing SMC for more information about SMC interaction with CA-Vtape.
**ALLOCJob**

**Interfaces:**
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

**Subsystem Requirements:**
Active SMC required, or may be input to the SMCUSIM utility

**Description**
The ALLOCJob command is used to override SMC default allocation parameters by job name, step name, and PROC step.

**Note** – The SMS parameter is no longer supported for this command. If necessary, code your SMS ACS routines to select jobnames.

**Syntax**

```
ALLOCJob

Optional Parameters:

- OFF
- JOBname(jobname)
- STEPname(stepname)
- PROCstep(procstep)

Note: BYPass cannot be specified with the MINLvl or SEPLvl parameter. It is only valid when JOBname is also specified.
```

**FIGURE 2-2** ALLOCJob syntax
Parameters

**List**

- optionally, lists current default allocation settings and override settings (in the order they are processed) by job name, step name, and PROC step.
  - List is the default when no parameters are specified on the ALLOCJob command.
  - List may be specified with other parameters. In this case, the List is generated after the other parameters are processed.

**OFF**

- optionally, removes all job name, step name, and PROC step overrides for allocation
  - If no other parameters are specified, allocation overrides are removed for all jobs.
  - If only JOBname is specified, allocation overrides are removed for ALL ALLOCJob entries for that job name.
  - If JOBname, STEPname and PROCstep are specified, allocation overrides are removed only for the specified entry.

Global allocation settings are not affected by this parameter.

**JOBname**

- optionally, specifies a job name.
  - This parameter is required unless List or OFF is specified.

  - *jobname*

  - the job name. The value entered must be one to eight characters in length. An asterisk (*) can be used as a wildcard when included as the last character. ALLOCJob is set for all jobs whose job names match the characters preceding the asterisk.

**STEPname**

- optionally, specifies a step name. This parameter is only valid when JOBname is also specified. It is not valid in JES3 environments with TAPE SETUP processing.

  - *stepname*

  - the step name. The value entered must be one to eight characters in length. An asterisk (*) can be used as a wildcard when included as the last character.

**PROCstep**

- optionally, specifies a PROC step. This parameter is only valid when JOBname and STEPname are also specified. It is not valid in JES3 environments with TAPE SETUP processing.

  - *processtep*

  - the PROC step.

  - The value entered must be one to eight characters in length. An asterisk (*) can be used as a wildcard when included as the last character.
BYPass

optionally, specifies that SMC allocation influencing is not performed for the indicated job (job step, step name, PROC step).

This parameter cannot be specified with the MINLvl, SEPLvl, or SMS parameter. It is only valid when JOBname is also specified.

**Note** – It is recommended that you use MINLVL=0 instead of BYPASS, except when no mounts will be performed (i.e., IEFBR14 jobs).

MINLvl

optionally, specifies the desired minimum level of drive exclusion. If a job is not allocatable at the minimum exclusion level, the SMC still excludes drives to the minimum level and allows the job to fail.

This parameter cannot be specified with the BYPass parameter. It is only valid when JOBname is also specified.

`minlevel`

the desired minimum allocation exclusion level. Valid values are 0-8. 0 indicates that the SMC will not exclude any drives, even if all drives would be excluded during level 1 exclusion processing. The default is the current value of the ALLOCDEF MINLVL setting. Refer to the publication Configuring and Managing SMC for more information about SMC exclusion levels.

**Note** –

- Setting MINLVL=0 indicates that the job will not be failed by the SMC even if the device and specific volume are incompatible. MINLVL=0 may be used to force SMC to allow allocation to succeed when a “foreign” tape cartridge has the same volume serial number as an existing library or virtual volume.
- Increasing `minlevel` has no effect unless message SMC0045 or SMC0091 has been issued for a specific job step.

SEPLvl

optionally, specifies the exclusion level at which affinity and GDG chains are separated. This parameter cannot be specified with the BYPass parameter. It is only valid when JOBname is also specified.

MIN

Affinity and GDG chains are not separated beyond the minimum level.

MAX

Affinity and GDG chains are separated for conflicting exclusion criteria whenever sufficient drives are available. This is the default.

`seplevel`

an exclusion level between the minimum and maximum levels. When sufficient drives exist, the SMC attempts to separate chains at this level. Refer to the publication Configuring and Managing SMC for more information about SMC exclusion levels.

**Note** – The `seplevel` value cannot be less than the `minlevel` value.
CMDDef

Interfaces:
Console, utility, or SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required

Description
The CMDDef command is used to assign a SMC command prefix.

Syntax

```
CMDDef

<table>
<thead>
<tr>
<th>LIst</th>
<th>optionally, lists the current command prefix.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This is the default if no parameters are specified. It cannot be specified with any other parameter.</td>
</tr>
</tbody>
</table>

| PREFIX(command-prefix) | optionally, specifies a command prefix for the SMC subsystem. |

Note — This parameter may only be specified in the SMCPARMS data set.
```

command-prefix
the command prefix. The value entered must be one to eight characters in length and meet the following requirements:

- Valid characters include:
  A-Z 0-9 @ $ # , / ( ) <> * & $ - = | ! ; : “ % _ ?
The command prefix **cannot** include a command string, a command abbreviation, or any string that invokes a command.

The command prefix **cannot** include a string that is a subset or superset of an existing prefix beginning with the same character.

**Note** – The MVS command, DISPLAY OPDATA, displays all active command prefixes and their corresponding subsystem name.
COMMtest

Interfaces:

Console, utility, or SMCCMDS/SMCParms data set  
UUI: Yes (No XML/CSV output)

Subsystem Requirements:

Active SMC required, or may be input to the SMCUSIM utility

Description

The COMMtest command is used to perform an end-to-end communication test between SMC and defined TapePlexes or VLEs. This command can generate a request for all paths to all TapePlexes, regardless of their status. The COMMtest command does not update any error statistics or path status, but does display messages indicating the communication result.

**Note** – Only HSC TapePlexes or VLEs are eligible for the COMMtest command.

Syntax

![COMMtest Syntax Diagram](image)

**Note:** PORTrange cannot be specified with the LOCalpath or ALLpaths parameter.

**FIGURE 2-4** COMMtest syntax
Parameters

TAPEPlex
optionally, restricts communication to the specified TapePlex. By default, communication with all defined TapePlexes is attempted.

name
the TapePlex name as defined by the SMC TAPEPlex command. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.

STORMNGR
optionally, restricts communication to the specified VLE. By default, communication with all defined VLEs is attempted.

name
a VLE name as defined by the SMC STORMNGR command.

Note – TAPEPlex and STORMNGR are mutually exclusive.

SERVer
optionally, restricts communication to the specified server path. When specifying this parameter, TAPEPlex or STORMNGR must also be specified. By default, communication with all server paths is attempted.

name
the server path name as defined by the SMC SERVer command. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.

LOCalpath
The local server path, if any, is tested. By default, only defined remote server paths are tested.

ALLpaths
All server paths, both local and remote, are tested.

ANYSTATus
Communication is attempted on all communication paths, including paths that were disabled by an operator command or by the SMC. By default, the communications test is performed on any communication path that is active, inactive, or never active. Specification of ANYSTATus also includes disabled communication paths.
**PORTrange**

optionally, specifies that communication for a remote server path be tested from the specified port or range. The specified PORTrange may be different from the TCPip PORTrange specification to allow testing of a firewall setup.

---

**Note** – PORTrange is mutually exclusive with LOCalpath and ALLpaths.

*nnnnn* or *nnnn-nnnnn*

the port number or port number range to be used for communication.

If omitted, a port in the defined TCPip PORTrange is used. If no such port is defined, any ephemeral port is used. If a port range is specified, then communication is attempted on each port number.
Display DRIve

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UII: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The Display DRIve command is used to request SMC drive attribute and TapePlex ownership information.

**Note** – TapePlex drive information can also be obtained by issuing the HSC Display DRIves command via the SMC Route command.

Syntax

![Diagram of Display DRIve syntax]

**FIGURE 2-5** Display DRIve syntax
Parameters

*devnum*, *devnum-range*, *devnum-list*

indicates the device number(s) to be processed. If specified, all device addresses specified are displayed. The *devnum* form of the Display DRive command is the only way that defined devices that are not TapePlex owned, or not defined by an SMC UNITAttr command, can be displayed.

TAPEPlex

optionally, lists only devices owned by the specified TapePlex.

name

the TapePlex name. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.

Real

optionally, lists only “real” (i.e. nonvirtual) devices owned by the specified TapePlex.

Virtual

optionally, lists only virtual devices owned by the specified TapePlex.

ALL

optionally, lists all devices owned by the specified TapePlex. This is the default if no parameters are specified.

Real

optionally, lists only “real” (i.e. nonvirtual) devices owned by SMC-defined TapePlexes.

Virtual

optionally, lists only virtual devices owned by SMC-defined TapePlexes.

Nonlib

optionally, lists only “real” devices that are not owned by any SMC-defined TapePlex, but have UNITATTR statements defined.

ALL

optionally, lists all devices owned by SMC-defined TapePlexes.

ACTive

optionally, lists only drives currently mounted or awaiting mounts according to SMC internal data.

**Note** – If a Display DRive command is issued without any parameters, by default, the SMC lists all real and virtual devices owned by SMC-defined TapePlexes.
Display RC

Interfaces:

Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (supports XML and CSV)

Subsystem Requirements:

Active SMC required, or may be input to the SMCUSIM utility

Description

The Display RC command is used to display information about the meaning of an SMC return or reason code, or an HSC/VTCS UUI reason code.

Syntax

![Display RC syntax](FIGURE 2-6  Display RC syntax)
Parameters

X or HEX
optionally, specifies that the reason/return code value or range is specified as a hexadecimal number.

nnnn, nnnn-nnnn
optionally, lists the return codes for which the explanation is to be displayed.
- If X or HEX is specified, the value may contain hexadecimal characters 0-9 and A-F.
- If X or HEX is not specified, the value may contain only numeric characters.
A range specified from the console may contain a maximum of 16 values.

ALL
optionally, indicates that all defined return or reason codes are to be listed.
ALL is permitted only from a utility.

Note – ALL and H/HEX are mutually exclusive.

DETail
optionally, indicates that detailed information about the requested codes is to be listed.
Display Volume

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The Display Volume command is used to request volume attribute and TapePlex ownership information.

Note –
■ TapePlex volume information is also available by issuing the HSC Display Volume command via the SMC Route command.
■ When the server is ACSLS, this command displays NONE for MEDIA and RECTECH.

Syntax

Parameters

\textit{volser, volser-range, volser-list}

indicates the volser, volser range, or volser list to be processed. If multiple volumes are specified, only the first 100 are queried.

\textit{ALLtapeplex}

optionally, specifies that all active TapePlexes are queried for the specified volser(s).
If specified, multiple display lines may be listed for the same volser if it is defined in multiple TapePlexes.

If this parameter is not specified, the Display Volume command queries TapePlexes in the order they are defined and lists only the first occurrence of the volume.
DRIVemap

Interfaces:

Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:

Active SMC required, or may be input to the SMCUSIM utility

Description

The DRIVemap command is used to map client drive addresses to server drive addresses. This command allows users to specify different MVS device addresses on different hosts for the same TapePlex or virtual drives in client-server mode.

Note – Refer to the publication Configuring and Managing SMC for more information about drive mapping and for information about using DRIVemap commands and the HSC DRVHOST parameter when client and server addresses differ.

Syntax

FIGURE 2-8 DRIVemap syntax

Optional Parameters:

- OFF
- Client(devnum)
- devnum-range
- devnum-list
- Server(devnum)
- devnum-range
- devnum-list
- List

Optional Parameters:
Parameters

List

optionally, lists all current DRIVemap mappings.

- List is the default when no parameters are specified on the DRIVemap command. In this case, all DRIVemap entries are listed.
- List may be specified with other parameters. In this case, the List is applied after the other parameters are processed.

OFF

optionally, removes all current DRIVemap mappings. When specified with CLient, this parameter removes DRIVemap ranges specified in the CLient parameter.

CLient

optionally, specifies the device numbers mapped by the DRIVemap command.

```
devnum, devnum-range, devnum-list
```

the device number, device number range, or device number list.

SERVER

optionally, specifies the device numbers that are defined on the HSC server.

```
devnum, devnum-range, devnum-list
```

the device number, device number range, or device number list.

The ranges and lists must match those in the CLient parameter. For example:

CL(AA0-AA2) SE(BA0-BA2) is valid;
CL(AA0-AA2) SE(BA0, BA1, BA2) is invalid.
Help

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The Help command is used to display SMC command and message information.

Syntax

![Diagram of Help syntax]

FIGURE 2-9 Help syntax

Parameters

**Note** – If you enter the Help command without any parameters, information is displayed for all available SMC commands.

- **command-name**
  optionally, an SMC command name.

- **nnnn**
  optionally, the four-digit numerical portion of an SMC message identifier. Leading zeros are not required.

- **nnnn-nnnn**
  optionally, a range of SMC messages specified using the four-digit numerical portion of the message identifier.
**SMCnnnn**
optionally, a full SMC message identifier.

**SMCnnnn-SMCnnnn**
optionally, a range of SMC messages specified using full message identifiers.
HTTP

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required

Description
The HTTP command is used to specify an SMC as an HTTP server for other SMC systems operating on other hosts. The SMC HTTP command must only be executed on hosts where there is an active TapePlex, otherwise, this command has no effect.

Syntax

![HTTP Syntax Diagram]

Tuning Parameters:
Note: May be included with STArt or after HTTP startup

FIGURE 2-10  HTTP syntax
Parameters

**List**
optionally, displays HTTP Server status information and interval statistics.

**DETAIL**
optionally, lists I/O, error, accept and reject counts, and CGI module use count information in addition to information displayed in the **List** command.

**START**
optionally, starts the SMC HTTP server.

**PORT**
optionally, specifies the port number to be listened to for incoming requests.

  **nnnn**
the TCP/IP port number. It is recommended that you do not specify well known TCP/IP port numbers. If not specified, the default is 8080.

**STOP**
optionally stops the SMC HTTP server.

**FORCE**
optionally, directs SMC to process the HTTP STOP command even if the status of the SMC HTTP Server is not active. Use this parameter only if there has been an unrecoverable HTTP service task termination and the normal SMC HTTP STOP command has been rejected.

Optional Tuning Parameters

**Note** – It is **strongly recommended** that you do not change the default values for these parameters unless directed by Oracle StorageTek Software Support.

**HSIOtasks**
optionally, specifies the maximum number of SMC HTTP socket I/O tasks to start.

  **n**
the number of I/O tasks.

**Note** – The HSIOtasks parameter CANNOT be specified after HTTP server startup, it must be specified as part of the HTTP START command. However the remaining tuning parameters, MAXClients, SQUELEN, and WQUELEN may be changed after HTTP server startup has completed.

**MAXClients**
optionally, specifies the maximum number of connected requests that will be allowed at one time.

  **nnnn**
the number of requests. This value must be between 1 and 100. The default value is 100.
SQUELEN(nnn)
Optionally, specifies the maximum HTTP server I/O queue length before task balancing forces tasks into synchronous I/O mode.

nnnn
the queue length. The default value is 500.

Note — The current and highest I/O queue length can be determined by issuing an SMC HTTP LIST DETAIL command and looking to the line beginning with “Socket I/O reqs”; “quecurr” lists the current I/O queue length, and “high” lists the high I/O queue length.

WQUELEN(nnn)
Optionally, specifies the maximum HTTP server I/O queue length before task balancing is attempted by forcing selected tasks to wait after queueing an I/O request.

nnnn
the queue length. The default value is 200.

The current and highest I/O queue length can be determined by issuing an SMC HTTP LIST DETAIL command and looking to the line beginning with “Socket I/O reqs”; “quecurr” lists the current I/O queue length, and “high” lists the high I/O queue length.
IDAX

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The IDAX command is used to control SMC behavior during IDAX (MVS Interpreter/Dynamic Allocation Exit) processing.

Syntax

FIGURE 2-11 IDAX syntax
Parameters

List
optionally, lists current SMC IDAX settings.
- List is the default when no parameters are specified on the IDAX command.
- List may be specified with other parameters. In this case, the List is applied after the other parameters are processed.

OFF
optionally, resets all IDAX settings to original SMC default settings. Specify List with this parameter to list these settings.
OFF cannot be specified with any other parameter.

POLicy
optionally, specifies whether SMC TAPEREQ/POLicy command processing is performed during IDAX.
OFF
TAPEREQ/POLicy command processing is not performed during IDAX. This is the default.
ON
TAPEREQ/POLicy command processing is performed during IDAX.

Note – SMC policy processing at IDAX using a DFSMS ACS routine MGMTCLAS as a policy name is controlled by the MGMTPol parameter of the SMSDef command.

SEQuence
optionally, specifies the relative sequence of SMC and IBM DFSMS ACS routine invocation during IDAX (Interpreter/Dynamic Allocation Exit) processing.
LAST
SMC invokes the DFSMS ACS routines after IBM. This is the default.
FIRST
SMC invokes the DFSMS routines before IBM. This parameter allows your SMC DFSMS routines to assign tape esoterics to data sets with no specified esoteric, or to data sets that would otherwise be SMS-managed if IBM invoked the DFSMS routines before the SMC.

MOD
optionally, specifies whether the POLicy IDAXESOT parameters or SMC DFSMS esoteric substitution applies to DISP=MOD data sets as well as DISP=NEW data sets.
OFF
SMC POLicy IDAXESOT parameters or SMC DFSMS esoteric substitution do not apply to DISP=MOD data sets. This is the default.
ON
SMC IDAX parameters and SMC DFSMS esoteric substitution (if specified) apply to all DISP=MOD data sets when the first reference to the data set in the job’s JCL specifies either DISP=MOD or DISP=NEW.
Note – During SMS IDAX substitution, the SMC cannot determine whether a MOD data set exists.

VTVMAXvol

optionally, specifies whether the volume count for a new allocation is set to 255 if the derived esoteric contains at least one virtual device. The derived esoteric is obtained from the JCL specification, the POLicy command IDAXESOTERIC value, or the SMC DFSMS ACS routine value.

OFF

Volume count is not adjusted for virtual allocations. This is the default.

ON

Volume count is set to 255 if the JCL (or IDAX-substituted) esoteric contains virtual devices for a scratch allocation.
**LIst**

**Interfaces:**
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

**Subsystem Requirements:**
Active SMC required, or may be input to the SMCUSIM utility

**Description**
The SMC LIst command is used to display storage accessible from the SMC started task address space.

**Syntax**

```
LIst Address(address) Length(length) CB(control-block-name) TASKs FUNIT(uuuu)
```

**FIGURE 2-12** LIst syntax
Parameters

Address
optionally, specifies the address at which to begin listing SMC memory contents.

(address)
the address. The value entered must be a valid hexadecimal address.

Length
optionally, specifies the length of SMC memory (bytes) to be listed. Length is required if Address is specified.

(length)
the length. The value entered must be a valid hexadecimal value between 1 and FFFF. Memory is listed beginning at the location specified in the Address parameter. The default value is 100 (decimal 256).

CB
optionally, specifies the internal SMC control block to be listed.

control-block-name
the control block name.

SMC control blocks are listed for diagnostic purposes. Specify control-block-name only as directed by Oracle StorageTek Software Support.

TASKs
optionally, lists the tasks in the SMC subsystem address space.

FUNIT
optionally, lists SMC control blocks associated with the specified unit address(es).

uuuu or uuuu-uuuu
the unit address(es).
LOG

Interfaces:
Console, utility, or SMCCMD5/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required

Description
The SMC LOG command logs data communications from either or all of the following:
- SMC Library Interface Component
- SMC Client Configuration Component
- SMC HTTP Server Component
- SMC Operator Command Component

These communication transactions are logged to the SMC log file.

This command is intended to be used primarily as directed by Oracle StorageTek Software Support.
Syntax

**FIGURE 2-13** LOG syntax

### Parameters

**List**

- optionally, displays HTTP Server status information and interval statistics.
- List is the default when no parameters are specified on the LOG command.
- List may be specified with other parameters. In this case, the List is applied **after** the other parameters are processed.

**OFF**

- optionally, resets all LOG settings to original SMC default settings. OFF closes the LOG, turns off all record TYPES, and sets the LRECL to 0. If a subsequent LOG START command is issued after the OFF command, no records are logged until specific LOG TYPES are specified.
**TYPE**

Optionally, specifies what record types are to be logged. Valid values are:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLS</td>
<td>For local LIBTRANS XML transactions sent from the SMC Library Interface Component</td>
</tr>
<tr>
<td>LLR</td>
<td>For local LIBTRANS XML responses received by the SMC Library Interface Component</td>
</tr>
<tr>
<td>CLS</td>
<td>For remote LIBTRANS XML transactions sent from the SMC Client Communication Component</td>
</tr>
<tr>
<td>CLR</td>
<td>For remote LIBTRANS XML responses received by the SMC Client Communication Component</td>
</tr>
<tr>
<td>CUS</td>
<td>For remote UUI transactions sent from the SMC Client Communication Component</td>
</tr>
<tr>
<td>CUR</td>
<td>For remote UUI responses received by the SMC Client Communication Component</td>
</tr>
<tr>
<td>CER</td>
<td>For all errors detected by the SMC Client Communications Component</td>
</tr>
<tr>
<td>SAS</td>
<td>For all data sent outbound by the SMC HTTP Server Component</td>
</tr>
<tr>
<td>SAR</td>
<td>For all data received inbound by the SMC HTTP Server Component</td>
</tr>
<tr>
<td>SER</td>
<td>For all errors detected by the SMC HTTP Server Component</td>
</tr>
<tr>
<td>CMD</td>
<td>For all operator commands received by the SMC Operator-Command Component</td>
</tr>
<tr>
<td>ALL</td>
<td>Turns on all types</td>
</tr>
<tr>
<td>OFF</td>
<td>Turns off all types</td>
</tr>
</tbody>
</table>

**Note** – LOG TYPE commands are cumulative. For example, if you specify LOG TYPE(CMD,UUI) followed by LOGTYPE(CLS,CLR), the resulting LOG TYPE setting is LOG TYPE(CLS,CLR,CMD,UUI). To unselect record types from logging, you must enter LOG TYPE(OFF) to unselect all record types, and enter one additional LOG TYPE command to re-specify the log type records to log.
LRECL

optionally, specifies the line length written to the LOG file.

OFF

The maximum line length is controlled by the DCB LRECL. The LOG record is appended to the log date and time stamp. This is the default.

nnnnn

a value from 80 to 32767, used to limit the logical line length.

If the data sent or received exceeds the specified LRECL, then multiple lines are written. If LRECL is specified, then the log date and time stamp are written as separate LOG records. If this value exceeds the DCB LRECL, then the DCB LRECL is used.

EOFREstart

optionally, specifies the response when the LOG file reaches End of File (EOF).

OFF

Logging stops at EOF.

ON

The LOG file closes and re-opens at EOF, and logging continues.

STArt

optionally, starts logging.

APPend

optionally, specifies that data is appended to the current LOG file when logging is started. If not specified, then data is added to the LOG file from the beginning of the log file, and any data currently in the log file is lost. APPend can only be specified when STArt is also specified.

STOp

optionally, stops logging. Current LOG settings are preserved.
MONitor

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
■ Active SMC required
■ Cannot be input to the SMCUSIM utility

Description

The SMC MONitor command defines parameters associated with SMC monitoring.

Syntax

FIGURE 2-14 MONitor syntax
Parameters

List
Optionally, lists the current MONitor command settings.

OFF
Optionally, resets all MONitor parameters to their default values.

INTerval
Optionally, specifies the base SMC monitor scan interval in seconds.
The default value is 60.
At each monitor interval, SMC performs the following actions:
1. SMC attempts to find an active communication path for any inactive TapePlex or STORMNGR.
2. If PREFprimary(ON) is set, SMC attempts to change the communication path from a non-primary path to the primary server.
3. SMC checks to ensure that the SMC IEFJFRQ exit is active, so that SMC is influencing tape allocation.
4. SMC clears orphaned task tokens.
5. SMC attempts to re-drive pending mounts.

Note – It is strongly recommended that you do not set the MONitor INTerval to 0 or OFF. With these values set, SMC is not able to re-drive pending mounts, honor the PREFprimary setting automatically, or verify that the IEFJFRQ exit is active.

ACTivecheck
Optionally, specifies the interval in seconds after which SMC should verify that communication is still accessible on an active communication path that has had no activity since the prior active check. The default value is 180, or 3 times the INTerval value.
If ACTivecheck is set to 0 or OFF, SMC does not monitor active communication paths. If the ACTivecheck interval is not a multiple of the base INTerval, it is rounded up to a number of seconds that is a multiple of the INTerval value.

LOWscratch
Optionally, specifies the interval in seconds after which SMC should report on server scratch subpools that are below their threshold value. The default value is 0.
If LOWscratch is set to 0 or OFF, SMC does not perform scratch threshold checking. If the LOWscratch interval is not a multiple of the base INTerval, it is rounded up to a number of seconds that is a multiple of the INTerval value.
**PREFprimary**

Optionally, indicates whether SMC attempts to establish communication on a higher priority server path when communication is currently active on a server that is not the first defined server for a TapePlex. The default value of ON indicates that at each MONitor INTerval, SMC attempts to communicate on the first defined server path if that is not the current active path.

If PREFprimary is set to OFF, then SMC continues to communicate on an active path even if one defined earlier becomes available.

The PREFprimary setting also controls the behavior of the RESYNChronize command. When PREFprimary(ON) is set, a RESYNChronize attempts to communicate to the first defined server. When PREFprimary(OFF) is set, a RESYNChronize does not change the current active communication path, if one exists.
MOUNTDef

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC MOUNTDef command is used to control message processing (i.e., mount/dismount) options previously controlled by the HSC MNTD command, HSC input parameters and LIBGEN options, and the MVS/CSC ALTER command and input parameters. The MOUNTDef command also applies to VTVs.

These options control the following:
- automation of pending mounts
- delete disposition at dismount time
- whether mount and dismount messages are issued
- when mount messages are rolled off of the console
- swap processing behavior
Syntax

Optional Parameters:

- AUTOpendmount(ON, OFF)
- DISMSRReal(OFF, ON)
- DISMSRVirt(ON, OFF)
- VOLWatch(ON, OFF)
- ROLLmsg(OFF, ON)
- VTVCompletemsg(ON, OFF)
- SWAPAutoreply(OFF, ON)
- SWAPLimit(1, mn, OFF)
- SWAPReuse(ON, OFF)

**FIGURE 2-15** MOUNTDef syntax
Parameters

**List**

optionally, lists current SMC MOUNTDef settings.

- List is the default when no parameters are specified on the MOUNTDef command.
- List may be specified with other parameters. In this case, the List is generated after the other parameters are processed.

**OFF**

optionally, resets all MOUNTDef settings to original SMC default settings. Specify List with this parameter to list these settings.

**AUTOPendmount**

optionally, specifies whether the pending mounts are automated for library or virtual drives found when SMC is first initialized and the owning TapePlex is first activated.

**ON**

Pending mounts are automated. This is the default.

**OFF**

Pending mounts are not automated.

*Note* – If AUTOPendmount is OFF, you must issue an HSC MOUNT command to complete any pending mounts found when a TapePlex is first activated.

**DISMSCRReal**

optionally, specifies how the SMC interprets the delete disposition on a dismount message for real (nonvirtual) volumes.

*Note* – The DISMSCRReal and DISMSCRVirt parameters replace the DELDISP= parameter of the HSC LIBGEN SLILIBRY macro.

**OFF**

The real cartridge is retained as nonscratch when MVS indicates delete disposition in the dismount message. This is the default, and is recommended for CA-1 or CA-TLMS users to leave volumes in a consistent nonscratch status during the CA-1 and CA-TLMS grace period.

**ON**

The real cartridge is scratched when MVS indicates delete disposition in the dismount message.
DISMSCRVirt

optionally, specifies how the SMC interprets the delete disposition on a dismount message for VTVs.

---

**Note** – The DISMSCRRReal and DISMSCRVirt parameters replace the DELDISP= parameter of the HSC LIBGEN SLILIBRARY macro.

---

**OFF**

The VTV is retained as nonscratch when MVS indicates delete disposition in the dismount message. This is the default.

**ON**

The VTV is scratched when MVS indicates delete disposition in the dismount message.

VOLWatch

optionally, specifies whether an SMC message is issued when a library volume is to be mounted on a nonlibrary drive.

**OFF**

No message is issued when a library volume is to be mounted on a nonlibrary drive.

**ON**

A console message is issued when a library volume is to be mounted on a nonlibrary drive.

ROLLmsg

optionally, specifies whether mount messages handled by the SMC are allowed to roll off the operator console before mount requests are satisfied.

**ON**

Mount messages are allowed to roll off the console screen before mounts are satisfied. This is the default.

---

**Note** – You can limit the rolling of specific mount messages (e.g., TMS007) by presetting the messages xxxxRCDC (Request to Change Descriptor Codes) flag word xxxxRBFB1. The SAMPLIB includes a sample MPF USEREXIT to preset the xxxxRCDC flag.

---

**OFF**

Mount messages remain on the console screen until mount requests are satisfied.

VTVCompleteMsg

optionally, specifies whether VTV mount and dismount messages are issued.

**OFF**

VTV mount (SLS5075I) and VTV dismount (SLS5076I) messages are not issued on the host where the server is running. This is the default.

**ON**

The VTV mount (SLS5075I) and VTV dismount (SLS5076I) messages are issued on the host where the server is running.
SWAPAutoreply

optionally, specifies whether the SMC enhanced swap process automatically responds "NO" to the IBM "IGF500D - REPLY 'YES' DEVICE OR 'NO' message when no compatible swap-to device is found.

ON
SMC automatically replies "NO" to the IBM "IGF500D - REPLY 'YES' DEVICE OR 'NO' message after the SMC fails to find compatible devices and issues its own "SMC0108 No compatible drive found for SWAP processing" message. This is the default.

OFF
SMC does not automatically reply to the IBM "IGF500D - REPLY 'YES' DEVICE OR 'NO' message after the SMC fails to find compatible devices.

SWAPLimit

optionally, specifies the maximum number of system initiated swaps before the SMC gives up on the current jobstep + volser swap series and returns to MVS.

nn
a swap value of 0-99. If a non-zero value is specified then only that number of system initiated swaps are allowed before SMC gives up and returns to MVS.

Any operator initiated swaps do not count towards the specified number, however, their swap-to devices are recorded. Specifying a value of 0 is the equivalent to specifying "OFF" (see below). The default value is 3.

OFF
specifies that an unlimited number of system initiated swaps are possible, however, only the last 16 devices used are recorded to track possible swap-to device exclusion.

SWAPReuse

optionally, specifies whether previously used swap-to devices are to be excluded as possible swap-to devices for the current jobstep + volser swap series.

OFF
Previously used swap-to devices are excluded as possible swap-to devices for the current jobstep + volser swap series. If no eligible device is found then SMC issues its own "SMC0108 No compatible drive found for SWAP processing" message and return to MVS. This is the default.

ON
Previously used swap-to devices are eligible to be used for the current jobstep + volser swap series.
MSGDef

Interfaces:

Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description

The SMC MSGDef command defines the appearance of SMC system messages, and controls which messages are displayed and suppressed.

Syntax

![MSGDef Syntax Diagram]

Optional Parameters:

- CASE(UPPER/MIXED)
- LV1(level)
- ECHOmtnerr(OFF/ON)
- SMCWtorpx(ON/OFF)
- VERBOSE(ON/OFF)
- LIST

FIGURE 2-16 MSGDef syntax
Parameters

**List**

optionally, lists current default SMC message settings.

- **List** is the default when no parameters are specified on the MSGDef command.
- **List** may be specified with other parameters. In this case, the **List** is generated after the other parameters are processed.

**OFF**

optionally, resets all MSGDef values to original SMC default settings. Specify **List** with this parameter to list these settings. MSGDef cannot be specified with any other parameter.

**CASE**

optionally, specifies the message case. Valid values are **UPPER** or **MIXED**.

**UPPER**

specifies upper case. This is the default.

**MIXED**

specifies mixed case.

**LV1**

optionally, specifies the default level used to control which SMC messages are displayed and suppressed.

**level**

the default level. Valid values include the following:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Display error messages only.</td>
</tr>
<tr>
<td>4</td>
<td>Display error and warning messages from the SMC subsystem.</td>
</tr>
<tr>
<td>8</td>
<td>Display all SMC subsystem messages and allocation job log warning messages. This is the default if the MSGDef parameter is not specified.</td>
</tr>
</tbody>
</table>

If no value is specified, the default value of 8 is used.

**Note** – Levels higher than 8 are used for diagnostic purposes and should only be specified as directed by Oracle StorageTek Software Support.
ECHOmnterr

optionally, specifies whether mount errors generated by the HSC are echoed directly to the console for the SMC client.

ON

Mount errors generated by the HSC are echoed to the console for the SMC client.

OFF

Mount errors generated by the HSC are not to the console for the SMC client. This is the default.

Note – This parameter is valid for both local and remote servers.

SMCWtorpfx

optionally, specifies whether the SMC0137 prefix is displayed for HSC WTOR messages generated by WTORDEST(CLIENT) on the TAPEPlex command.

ON

The SMC0137 prefix is displayed. This is the default.

OFF

The SMC0137 prefix is not displayed.

VERBOSE

optionally, specifies whether SMC0190 and SMC0191 messages are displayed whenever any SMC settings are altered.

ON

SMC0190 and SMC0191 messages are displayed.

OFF

SMC0190 and SMC0191 messages are not displayed.
MSGJob

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC MSGJob command allows an override of the default message level by job name, step name, and PROC step.

Syntax

![MSGJob Syntax Diagram]

Optional Parameters:

- JOBname(jobname)
- STEPname(stepname)
- LVL(level)
- PROCstep(procstep)
- OFF
- LIST

**FIGURE 2-17** MSGJob syntax
Parameters

LIst
optionally, lists current default SMC message settings and job name, step name, and PROC step exceptions (in the order of evaluation).
- LIst is the default when no parameters are specified on the MSGJob command.
- LIst may be specified with other parameters. In this case, the LIst is generated after the other parameters are processed.

OFF
optionally, removes MSGJob overrides.
- If no other parameters are specified, MSGJob overrides are removed for all jobs.
- If only JOBname is specified, MSGJob overrides are removed for ALL MSGJob entries for that job name.
- If JOBname, STEPname and PROCstep are specified, MSGJob overrides are removed only for the specified entry.
The global MSGDef is not affected by this parameter.

JOBname
optionally, specifies a job name.

jobname
the job name.
The value entered must be one to eight characters in length. An asterisk (*) can be used as a wildcard when included as the last character. In this case, the message level is set for all jobs whose job names match the characters preceding the asterisk.

STEPname
optionally, specifies a step name. It is only valid when JOBname is also specified (may be “JOB=*”).

stepname
the step name.
The value entered must be one to eight characters in length. This parameter is only valid if JOBname is also specified.

PROCstep
optionally, specifies a PROC step. It is only valid when JOBname and STEPname are also specified. It is not valid in JES3 environments with TAPE SETUP processing.

processtep
the PROC step.
The value entered must be one to eight characters in length. This parameter is only valid if JOBname and STEPname are also specified.
LVL

optionally, specifies the default level used to control which SMC messages are displayed. This parameter is required when JOBname is specified.

**level**

is the default level. Valid values include the following:

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Display error messages <strong>only</strong>.</td>
</tr>
<tr>
<td>4</td>
<td>Display error and warning messages from the SMC subsystem.</td>
</tr>
<tr>
<td>8</td>
<td>Display all SMC subsystem messages and allocation job log warning messages.</td>
</tr>
</tbody>
</table>

If no value is specified, the default value of 8 is used.

**Note** – Levels higher than 8 are used for diagnostic purposes and should **only** be specified as directed by Oracle StorageTek Software Support.
POLicy

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC POLicy command is used to specify all tape policy specifications in a single named policy object. It can be used with SMC TAPEREQ statements or SMC DFSMS routines to associate a named policy with an allocation or mount event. Additionally, the POLicy VALIDate option can be used to validate policy objects.

Note –
- Refer to the publication Configuring and Managing SMC for more information about the use of SMC policies.
- Policies defined using the SMC POLicy command create SMC policy objects that can be referenced by name from either SMC TAPEREQ control statements using the TAPEREQ POLicy parameter, or from IBM DFSMS ACS routines using the management class. A policy name may be associated with two policy objects: a scratch policy with the specified name, and a specific policy with the specified name.
- Policies referenced from SMC TAPEREQ control statements must be defined prior to executing the TREQDEF command that processes the TAPEREQ control statements.
- When a policy to be added to the SMC contains a policy specification error, for example, specifying a scratch subpool name with VOLTYPE(SPECIFIC), the SMC still creates the policy object. However, the SMC marks the policy object in error, allowing any reference to the named policy object to find it. However, the returned policy will be empty, indicating that the default tape policy attributes will be applied to the event.
- To update an SMC policy, enter a new SMC POLicy command for the given policy NAME and VOLType. Be aware that the new POLicy command replaces the existing scratch or specific policy object. Therefore, when updating a policy, you must enter all values you wish to preserve.

For example, if the original scratch policy object is defined as:
POLICY NAME(POL1) VOLTYPE(SCRATCH) MEDIA(VIRTUAL) MGMTCLAS(MGMT1)
and you wish to add a subpool to the policy, you must enter:
POLICY NAME(POL1) VOLTYPE(SCRATCH) MEDIA(VIRTUAL) MGMTCLAS(MGMT1)
SUBPOOL(SUBP1)
This behavior allows you to modify one or more POLicy commands in a file and reload all policies using the SMC READ command.
When an SMC policy object to be updated contains a policy specification error, for example, specifying a scratch subpool name with VOLTYPE(SPECIFIC), the SMC will not update any part of the existing policy object. The policy object is not marked in error, and the complete update is discarded.

DEVTPREF is not supported on this command. However, you can use an esoteric list to specify preferencing for different device types.
Syntax

FIGURE 2-18 POLicy syntax
Parameters

List

optionally, displays all policy information. Additional parameters allow you to limit which policies are listed, and how much detail is displayed.

Name

optionally, specifies the name of the policy to be displayed. If the last character is an asterisk (*), all policies that begin with the prefix are displayed. For example, POL LI NA V*.

Detail

optionally, displays audit detail information about the policy, including last update date, time, and source.

Terse

optionally, lists only policy names and whether each policy name applies to scratch, specific, or all allocations.

Error

optionally, displays each policy in error status.

When a policy to be added to the SMC contains a policy specification error, for example, specifying a scratch subpool name with VOLTYPE(SPECIFIC), the SMC still creates the policy object. However, the SMC marks the policy object in error, allowing any reference to the named policy object to find it. However, the returned policy will be empty, indicating that the default tape policy attributes will be applied to the event. Error lists only those policies that contain an error.

VOLType

optionally, specifies whether the list applies to scratch or specific policy types.

Scratch or Nonspec

List only scratch (nonspecific) policies.

Specific

List only specific policies.

Note –

- Matching policies are listed in alphabetic order, regardless of the order in which they were defined to the SMC. When specified with other parameters, the L1st is performed after the other parameters have been processed.
- DETail and TERse are mutually exclusive.
VALidate
 optionally, validates and lists POLICY information against the current TAPEPLEX environment. Additional parameters allow you to limit which policies are validated, and whether all results or just warnings and errors are displayed.

NAME
 optionally, specifies the name of the policy to be validated. If the last character is an asterisk (*), all policies that begin with the prefix are displayed. For example, POL VAL NA V*.

VOLType
 optionally, specifies whether the list applies to scratch or specific policy types.

SCRatch or Nonspec
 List only scratch (nonspecific) policies.

SPECific
 List only specific policies.

LIst
 optionally, specifies whether only warnings and errors are listed, or all tested policies are listed. If not specified, then only a single line for each POLICY that generates a warning or error message is listed.

Note –

■ VALidate produces a return code for each tested POLICY VOLTYPE.
  ■ 0 indicates the POLICY is correct, could not be validated due to certain environmental conditions, or was assumed correct.
  ■ 4 is a warning, and includes conditions such as a lack of scratch volumes to satisfy the request.
  ■ 8 indicates an error, and includes conditions such as undefined SUBPOOL or MGMTCLAS name.
  ■ If POLicy VALidate is entered without the LIst keyword, then only policies that result in a return code of 4 or 8 are listed. If POLicy VALidate is entered with the LIst keyword, then all policies are listed along with their policy validation results.
   ■ When multiple policies are validated, the final SMC0224 message indicates the highest return code for all policies validated.
   ■ If no TAPEPLEX(es) are active when the VALidate command is issued, then the policy validate return code will be 0, indicating that the policy could not be validated.
   ■ Validated policies are listed in alphabetic order, regardless of the order in which they were defined to the SMC. When specified with other parameters, the VALidate is performed after the other parameters have been processed.
NAME

specifies the name of a policy that matches the name specified in a TAPEREQ or DFSMS ACS routine management class.

name

the policy name.

NONE

optionally, removes all policy parameters associated with the named policy. Specifying NONE for a policy implies that the default behavior is applied, e.g. any media/rectech, subpool 0, etc.

VOLType

optionally, specifies whether the policy applies to scratch or specific allocation.

SCRatch or Nonspec

The policy applies only to scratch (nonspecific) allocations. This is the default.

SPecific

The policy applies only to specific allocations.

---

Note –

When VOLType(Specific) is specified:

- The SUBPool parameter is not permitted.
- The MEDIA parameter is only permitted if the NOTAPEPlex parameter is specified.
- The SPLITvolref parameter is not permitted.

MEDIA

optionally, specifies the desired media type for a data set being created. You can enter a list of media types, separated by commas. A list specifies a generic pool from which a selection is made. There is no implied priority.

media-type

the media type.

See Appendix A, "MEDIA, RECTech, and MODEl Values" for a list of valid media-type values.

---

Note –

- MEDIA and VOLType(Specific) are mutually exclusive unless the NOTAPEPlex parameter is specified.
- If this parameter is not specified, a default is chosen based on the value of the RECTech parameter. See Appendix A, "MEDIA, RECTech, and MODEl Values" for default values used if the MEDIA parameter is omitted.
- If both media type and recording technique are omitted, all available device types are eligible for allocation.
RECtech
optionally, specifies the method used to record data tracks on the tape surface for the desired data set. You can enter a list of recording techniques, but they must be separated by commas. A list specifies a generic pool from which a selection is made. There is no implied priority.

recording-technique
the recording technique.
See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid recording-technique values.

Note –
■ RECtech and MODel are mutually exclusive.
■ If this parameter is not specified, a default is chosen based on the value of the MEDia parameter. See Appendix A, “MEDia, RECtech, and MODel Values” for default values used if the MEDia parameter is omitted.
■ If both media type and recording technique are omitted, all available device types are eligible for allocation.

MODel
optionally, specifies the model number of a transport. You can enter a list of models, separated by commas. A list specifies a generic pool from which a selection is made. There is no implied priority.

MODel provides the same type of information as RECtech, but a user may find it more convenient to specify a transport model rather than a recording technique.

model-type
the model type.
See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid model-type values.

Note – MODel and RECtech are mutually exclusive.

SUBPool
optionally, specifies the subpool used to satisfy a scratch request.

subpool-name
the subpool name.

Note – SUBPool and VOLType(Specific) are mutually exclusive.
**ESOTeric**

optionally, specifies the name of a device esoteric group, or list of device groups defining the list of eligible transports to be used to satisfy a tape request.

*esoteric-group-name*

the esoteric group name.

The name specified can consist of one to eight alphanumeric or national (#, @, $) characters. A slash (/) or hyphen (-) is also valid.

---

**Note** – If the esoteric list contains devices not currently in the Eligible Device List, SMC allocation **cannot** add devices to the list, but can exclude devices not in the specified esoteric. During drive exclusion, devices in any of the listed esoterics are included. During drive prioritization, devices are ordered according to their position in the esoteric list.

---

**PREFer**

optionally, specifies the relative value of the esoteric list and additional preferencing information. PREFer is **only** valid when a list of esoterics is specified.

**Location**

Drives are preferred based on LSM location of a specific volume. This is the default for specific volumes. Location is **only** valid for VOLType (SP).

**Esoteric**

Drives are preferred based on the order specified in the esoteric list. This is the default for scratch allocations.

**Count**

Drives are preferred based on scratch counts in the LSM. Count is **only** valid for VOLType (N).

**MGMTclas**

optionally, specifies a Management Class defined on the VTCS MGMTclas control statement. See “MGMTclas Control Statement” on page 423 for more information.

*mgmt-class-name*

the Management Class name.

**TAPEPlex**

optionally, specifies the name of a TapePlex defined to SMC. SMC uses the specified TapePlex name to determine the “owner” of an allocation request. Only the specified TapePlex name is queried to determine specific volume information or scratch availability.

*tapeplex-name*

the TapePlex name. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.
**Note –**
- The named TapePlex must be defined using a TAPEPlex command before the POLicy command is processed.
- TAPEPlex and NOTAPEPlex are mutually exclusive.

**NOTAPEPlex**

optionally, specifies that SMC will not perform a TapePlex lookup to obtain volume information.

**Note –** NOTAPEPlex and TAPEPlex are mutually exclusive.

**IDAXESOTeric**

optionally, specifies the esoteric name to be substituted during IDAX (MVS Interpreter/Dynamic Allocation Exit) processing.

Specification of IDAXESOTeric is similar to changing the JCL unit name, and completely replaces the original esoteric.

Unlike the ESOTeric parameter, the IDAXESOTeric esoteric-name does not need to include any devices in the original JCL esoteric.

`esoteric-name`

a valid esoteric name to be used for the allocation.

**IDAXEXPDT**

optionally, specifies the expiration date to be applied to the allocation during IDAX.

**Note –** IDAXEXPDT and IDAXRETPD are mutually exclusive.

`yyyyddd`

the desired expiration date (4-digit year and Julian day).

**IDAXRETPD**

optionally, specifies the retention period to be applied to the allocation during IDAX.

**Note –** IDAXRETPD and IDAXEXPDT are mutually exclusive.

`nnnn`

the retention period in number of days.

**IDAXVOlcnt**

optionally, specifies the maximum number of volumes to be applied to the allocation during IDAX. This value overrides the volume count parameter specified in the JCL.

`volume-count`

the maximum volume count. Valid values are 1-255.
IDAXSUBsys

optionally, specifies that SMC direct an allocation job to another subsystem or program.

For example, SMC can direct any FDR/DFDSS job to Oracle’s StorageTek ExHPDM backup and restore software. The IDAXSUBsys policy directs the output tape data set allocation to ExHPDM, effectively placing the DD SUBSYS JCL specification in the job.

**subsystem-name**

the subsystem name.

IDAXPROGram

optionally, alters the program name in the allocation job.

For example, this parameter can alter the program name for DFDSS (ADDRSSU) to the ExHPDM User Interface Module (SOVDSSU), and in conjunction with the IDAXSUBsys parameter, direct the backup DFDSS job to ExHPDM.

**program-name**

the program name.

---

**Note** – Refer to the *ExHPDM Operator and System Programmer’s Guide* for more information about the ExHPDM backup and restore software.

EXTVOLEsot

optionally, specifies the name of a device esoteric group, or list of device groups defining the list of eligible transports to be used to satisfy a tape request when the specific volume is found to be outside of the library.

**esoteric-list**

the esoteric list.

Each esoteric group name in the list can consist of one to eight alphanumeric or national (#, @, $) characters. A slash (/) or hyphen (-) is also valid.

---

**Note** – EXTVOLEsot can only be specified if VOLTYPE=SPECIFIC is also specified.

SPLITvolref

optionally, specifies whether VOL=REF chains are to be broken. This parameter is only valid when VOLType(SCratch) or VOLType(Nonspec) is also specified.

**OFF**

VOL=REF chains are not broken. This is the default.

**ON**

VOL=REF chains are broken and the LABEL data set sequence number is set to 1.
READ

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC READ command is used to enter a series of commands using an input data set instead of console commands.

Syntax

![READ Syntax Diagram](image)

Parameters

**SMCCMDs**
optionally, re-processes commands contained in the data set specified in the SMCCMDS DD statement of the SMC START procedure.

**DSN**
optionally, processes commands contained in the specified data set.

- **dsn**
  
  the data set name.

*Note* – If the DSN parameter specifies a member name, the full data set must be enclosed in single quotes.
VOLume

optionally, specifies the volume serial number of the DASD volume on which the data set resides. Specify this parameter if the data set is not catalogued.

volser

the volume serial number on which the data set resides.

UNIT

optionally, specifies the unit name of the specified VOLume for uncataloged data sets. Requires that VOLume also be specified.

unitname

the unit name.

If not specified, then a unit name of SYSALLDA is the default.

HOST

optionally, specifies a host name for which this READ command is valid. If this parameter is specified, the READ command is only processed when the specified hostname matches the MVS host. If this parameter is not specified, the READ command is processed regardless of the MVS host.

hostname

the hostname.

Note –

- HOST is not valid when the READ command is entered from an MVS console.
- In a JES3 environment, the host name is the SMF host, not the JES3 MAIN name.
- Specification of the HOST parameter allows you to share a single SMC parameter file set across multiple MVS hosts as shown in the following example:

your.parmlib(COMMCMDS)

MSGDEF CASE(MIXED)

...other common SMC parameter settings...

READ DSN('your.parmlib(MVS1CMDS)') HOST(MVS1)
READ DSN('your.parmlib(MVS2CMDS)') HOST(MVS2)

your.parmlib(MVS1CMDS)

DRIVEMAP CL(AB0-AB7) SE(BB0-BB7)

your.parmlib(MVS2CMDS)

DRIVEMAP CL(CB0-CB7) SE(BB0-BB7)

The file COMMCMDS contains SMC parameter settings applicable to all hosts, and the READ commands with HOST specifications for your MVS hosts. The file MVS1CMDS contains SMC specifications applicable only to MVS host MVS1, while the file MVS2CMDS contains SMC specifications applicable only to MVS host MVS2.
RESYNChronize

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description

The SMC RESYNChronize command is used to re-establish connections to all defined TapePlexes for the purpose of acquiring drive configuration information from all TapePlexes.

This action is automatically performed when the SMC first activates a new path to a TapePlex, when an HSC subsystem (local or remote) reports a configuration change, or when an active local path to a TapePlex is accessed during an MVS allocation or mount event. However, the operator must issue the RESYNChronize command in the following instances:

- When the MVS/CSC RESYNC command is issued and the MVS/CSC is active
- When the user wants to automate pending mounts for a newly activated TapePlex, and does not want to wait for an MVS allocation or mount event to trigger the reconnection.
- To attempt to redrive outstanding mounts that may have been lost due to hardware or communication errors.

Note – It is recommended that you include a RESYNChronize command at the end of your SMCCMDS file (after all TAPEPlex and SERVer commands) to initialize communication with TapePlexes prior to the first intercepted allocation or mount.

Syntax

![RESYNChronize syntax](FIGURE 2-20 RESYNChronize syntax)

Parameters

None.
Route

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required

Description
The SMC Route command is used to request routing of transactions from SMC to a defined TapePlex or VLE. Only the following are supported:
- VTCS commands
- HSC commands with UUI support, with the exception of VOLRPT.

Note – The HSC MOUNT, DISMOUNT, ENTER and MOVE commands can now be issued from SMC via the ROUTE command.

Syntax

```
Route tapeplex-name command-string stormngr-name
```

FIGURE 2-21 Route syntax
Parameters

_tapeplex-name_

specifies a TapePlex name as defined on an SMC TAPEPlex command. SMC routes the request to the specified TapePlex using the currently active TapePlex path. Commands may be sent to either a local or remote HSC TapePlex. This command is not supported for MVS/CSC TapePlexes.

_stormngr-name_

specifies a VLE name as defined on an SMC STORMNGR command. SMC routes the request to the specified VLE using the currently active VLE path. Commands may be sent to either a local or remote HSC TapePlex or VLE. This command is not supported for MVS/CSC TapePlexes.

_command-string_

specifies the command string to be routed to the requested TapePlex. Note that VTCS commands should not be prefixed with VT; the HSC UUI interface routes VTCS commands to the correct functional processor without the VT prefix. The command string must be a command supported by the HSC UUI or any VTCS command (except DISPLAY MSG and DISPLAY CMD).
SERVer

Interfaces:
Console, utility, or SMCCMD/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC SERVer command defines a named path to a remote library server; an HSC subsystem executing on another host. The SERVer command describes the communication path to the HTTP server.

Note –
■ Before a SERVer is defined, the TapePlex that it references must be defined using a TAPEPlex command. The TapePlex name associated with a SERVer cannot be changed. See “TAPEPlex” on page 139 for more information.
■ Similarly, before a SERVer is defined, the VLE that it references must be defined using a STORMNGR command. The VLE name associated with a SERVer cannot be changed. See for more information.
■ You cannot define a server if the corresponding TAPEPlex defines a LOCSUBsys for an MVS/CSC subsystem. For example, the following is not valid (assuming the subsystem CSC1 is an MVS/CSC system).
TAPEPLEX NAME(LIB1) LOCSUBSYS(CSC1)
SERVER NAME(REM1) TAPEPLEX(LIB1)
Syntax

**FIGURE 2-22** SERVer syntax

**Parameters**

**List**

- optionally, displays status information for TapePlex server paths
  - List is the default when no parameters are specified on the SERVer command. In this case, all library server paths are listed.
  - List may be specified with other parameters. When specified with parameters other than NAme, the List is generated after the other parameters are processed.

**NAme**

- optionally, specifies a server path for which status is displayed.
  - name
    - the server path name.
NAme

optionally, specifies the server name to be defined or modified.

name

the server path name. This name is reported in any communications error message when the error did not occur while communicating with an HSC on the same host. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.

Note – If you are using the SMC HTTP server component, there can be multiple NAMEd server paths for a single TapePlex configuration. Refer to the publication Configuring and Managing SMC for more information.

ENAble

optionally, enables the specified server path to be selected for allocation or mount requests.

DISable

optionally, disables the specified server path. If this is the only path to the TapePlex, the TapePlex is unavailable for allocation or mount requests.

TAPEPlex

optionally, specifies the TapePlex name associated with an actual ACS hardware configuration as defined on an SMC TAPEPlex command. The TAPEPlex parameter must be specified when a new server is first defined.

name

the TapePlex name. This name is reported in any TapePlex error message. The following rules apply:

- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit, or hyphen.

STORMNGR

optionally, specifies a VLE name as defined on an SMC STORMNGR command. The STORMNGR parameter must be specified when a new server is first defined.

name

a VLE name as defined on an SMC STORMNGR command. This name is reported in any VLE error message.

Note – TAPEPlex and STORMNGR are mutually exclusive.
HSCSUB

optionally, specifies the name of the HSC subsystem that represents the Tapeplex associated with the server. This parameter is required only when there is more than one HSC subsystem executing on the server host (HSC running in MULT mode).

ssss

the HSC subsystem name.

HOST

optionally, specifies the IP resolver host name on which the remote HSC subsystem resides.

hostname

the name of the remote host. The following rules apply:

■ The value must be between 1 and 8 characters in length.
■ The first character must be either an alpha character or digit.
■ The last character must be either an alpha character or digit.
■ Any character between the first and last must be either an alpha character, digit, hyphen, or dot.

Note – HHost and IPaddress are mutually exclusive.

IPaddress

optionally, specifies the subsystem IP address for the remote HSC subsystem.

ipaddress

the IP address.

Note – IPaddress and HHost are mutually exclusive.

PORT

optionally, specifies the server port.

nnnn

the server port. The default is 80.

WAIt

optionally, specifies the maximum wait time for any single request made over the network before the SMC assumes that a communication or server problem exists.

nnnn

the wait time in seconds. The default is 60.

Note –

■ The default for a mount or dismount request is 10 minutes (600 seconds) or more if the specified WAIT time is greater than 600 seconds.
■ If your HSC CDS backup job runs longer than the specified wait time, set your wait time to match the normal execution time of your CDS backup job.
R|etry

  optionally, specifies the number of retry attempts for any single request before the
  task is allowed to resume, and a failure recorded.

  \( nnnn \)

  the number of retries. The default is 3.
SIMulate

Interfaces:
Console, utility, or SMCCMD5/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC SIMulate command simulates how SMC would process a single DD job step with a given set of jobstep characteristics. The SIMulate command simulates the IDAX and allocation influence (SS124) portion of SMC processing, but not mount processing.

You provide the keyword jobstep parameters to simulate, and the command invokes SMC allocation, policy lookup, and volume lookup. The SIMulate output displays the simulation results.

While SIMulate does not simulate certain jobstep characteristics (such as multiple units, affinity separation, or volref attributes), it does provide a powerful tool to test how changes in SMC policies, including TAPEREQ and POLICY commands, user exits, and TAPEREQ and SERVER changes will affect your production jobs.

You can issue SIMulate command to an active SMC subsystem or via the SMCUSIM utility. The SMCUSIM utility, working with the SIMulate command, produces XML output that can be manipulated as CSV to produce before and after reports to compare how jobs would be processed. See “SMC UUI Simulation Utility (SMCUSIM)” on page 656 for more information about the SMCUSIM utility.
### Syntax

![SIMulate syntax diagram](image)

#### Parameters

**JOBname**
- optionally, specifies the job name of the simulated job step to test. The format must conform to MVS standards. If not specified, "(any)" is used, which prevents a match to non-generic job names specified in SMS ACS routines or TAPEREQ control statements.

**STEPname**
- optionally, specifies the step name of the simulated job step to test. The format must conform to MVS standards. If not specified, "(any)" is used, which prevents a match to non-generic step names specified in SMS ACS routines or TAPEREQ control statements.

**PGMname** or **PROGram**
- optionally, specifies the program name of the simulated job step to test. The format must conform to MVS standards. If not specified, "(any)" is used, which prevents a match to non-generic program names specified in TAPEREQ control statements.

**DDName**
- optionally, specifies the DD name of the simulated data set to test. The format must conform to MVS standards. If not specified, "(any)" is used, which prevents a match to non-generic DD names specified in TAPEREQ control statements.

**DSN** or **DATASET**
- optionally, specifies the data set name of the simulated data set to test. The format must conform to non-PDS member MVS standards. If not specified, "(any)" is used, which prevents a match to non-generic program names specified in TAPEREQ control statements.

**VOLSer**
- optionally, specifies the volume serial of the simulated data set to test.

**ESOTeric**
- optionally, specifies an esoteric name relevant to the simulated job step.

**RETPD**
- optionally, specifies a retention period for the simulated data set.

**LABEL**
- optionally, specifies a label type for the simulated job step.
VOLSer
optionally, specifies the volume serial number of the simulated data set to test. The format must conform to MVS standards. If not specified, "SCRTCH" is used, which simulates a scratch mount.

ESOTeric
optionally, specifies the name of a device esoteric group defining the list of eligible transports used to satisfy the tape request. The specified esoteric must be a defined MVS esoteric. If not specified, the SIMulate command simulates an original esoteric consisting of all known library, non-library, and virtual devices for all TapePlex(es). If the default esoteric is used, it may not correspond to an MVS esoteric.

Note – A specified esoteric of "ALL" does not specify the default simulated esoteric consisting of all known library, non-library, and virtual devices. If "ALL" is specified, it must be an MVS esoteric.

RETPD
optionally, specifies the retention period of the simulated data set to test. The format must conform to MVS standards. If not specified, 0 is used.

EXPDT
optionally, specifies the expiration date of the simulated data set to test. The format must conform to MVS standards. If not specified, the current date is used.

LABEL
optionally, specifies the label type to be used to select the policy. Valid values are SL, NL, AL and NSL.

Output
SMC SIMulate command output displays the simulated job characteristics and policy sections displaying the SMS, TAPEREQ and SMC policy applied.

The following figure shows the "minimum" output, where no SMC tape policies were applied.

```
SMC0222 SIMULATE command results:
   ---- Jobstep characteristics ----
      JOBNAME=(any), STEPNAME=(any), PROGRAM=(any), DDNAME=(any)
      DSN=SMCINT.BT1.TEST, RETPD=0
      VOLSER=SCRTCH, ESOTERIC=(any)
   ---- Volume lookup results ----
      Owning TAPEPLEX=HSCQ
      MEDIA=STANDARD, ECARTE, STK2P
      RECTECH=LONGITUD, STK2P
   ---- List of eligible drives ----
      0AA0 TAPEPLEX=HSCQ, ACS=00, LSM=00, 18TRACK, pref=1
      0AA1 TAPEPLEX=HSCQ, ACS=00, LSM=00, 18TRACK, pref=1
      remainder of drives
```

FIGURE 2-24 SIMulate output - No Tape Policies Applied
The following figure shows output when tape policies are applied at IDAX time from a matched SMC policy.

<table>
<thead>
<tr>
<th>SMC0222 SIMULATE command results:</th>
</tr>
</thead>
<tbody>
<tr>
<td>---- Jobstep characteristics ----</td>
</tr>
<tr>
<td>JOBNAME=(any), STEPNAME=(any), PROGRAM=(any), DDNAME=(any)</td>
</tr>
<tr>
<td>DSN=SMCINT.MGMTCLAS.TEST, RETPD=0</td>
</tr>
<tr>
<td>VOLSER=SCRATCH, ESOTERIC=(any)</td>
</tr>
<tr>
<td>---- SMC SMS policy results ----</td>
</tr>
<tr>
<td>*SMC POLICY applied at IDAX</td>
</tr>
<tr>
<td>ESOTERIC=CART from POLICY IDAXESOTERIC</td>
</tr>
<tr>
<td>*RETPD updated at IDAX</td>
</tr>
<tr>
<td>*VOLCNT updated at IDAX</td>
</tr>
<tr>
<td>MGMTCLAS=TEST matches an SMC POLICY name</td>
</tr>
<tr>
<td>---- POLICY lookup results ----</td>
</tr>
<tr>
<td>POLICY=TEST</td>
</tr>
<tr>
<td>ESOTERIC=(SVTSS1,SVTSS2)</td>
</tr>
<tr>
<td>MEDIA=VIRTUAL</td>
</tr>
<tr>
<td>RECTECH=VIRTUAL</td>
</tr>
<tr>
<td>IDAXESOTERIC=CART</td>
</tr>
<tr>
<td>IDAXRETPD=120</td>
</tr>
<tr>
<td>IDAXVOLCNT=25</td>
</tr>
<tr>
<td>---- Volume lookup results ----</td>
</tr>
<tr>
<td>Owning TAPEPLEX=HSCQ</td>
</tr>
<tr>
<td>*No scratch volume for request</td>
</tr>
<tr>
<td>MEDIA=STANDARD, ECART, STK2P, VIRTUAL</td>
</tr>
<tr>
<td>RECTECH=LONGITUD, STK2P, VIRTUAL</td>
</tr>
<tr>
<td>---- List of eligible drives ----</td>
</tr>
<tr>
<td>9000 TAPEPLEX=HSCQ, VTSS=SVTSS1, VIRTUAL, pref=1</td>
</tr>
<tr>
<td>9001 TAPEPLEX=HSCQ, VTSS=SVTSS1, VIRTUAL, pref=1</td>
</tr>
<tr>
<td>remainder of drives</td>
</tr>
</tbody>
</table>

**FIGURE 2-25** SIMulate output - Tape Policies Applied at IDAX
SMSDef

Interfaces:
Console, utility, or SMCCMD5/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description

The SMC SMSDef command is used to tailor default SMC DFSMS support. This command takes effect when SMC DFSMS support is activated by setting the ALLOCDef SMS parameter value to ON.

During an allocation resulting in a tape mount, the SMC makes up to four calls to the DFSMS ACS routines. The SMSDef command allows you to bypass certain routine calls.

- The MGMTPol parameter specifies whether the management class returned from a DFSMS ACS routine may represent an SMC policy. MGMTPol allows the user’s SMC DFSMS routines to point to an SMC POLICY with a scratch allocation, and apply all policy values, including media, subpool, and VTCS management class esoteric.

  Using MGMTPol(ALL) (or MGMTPol(IDAX)) allows POLICY parameter names that start with IDAX* (including IDAXESOT) to be applied during JCL interpretation, allowing override of JCL values by SMC DFSMS routines.

  Oracle recommends that you specify SMSDef MGMTPol (ALL) to direct SMC to process all DFSMS returned management class names as policy names.

- If MGMTPol is OFF, or if MGMTPol is ON but no matching SMC policy name is found, the MGMTCLAS name returned by the DFSMS routine is passed as the VTCS MGMTCLAS name during volume look up and volume mount processing.

- If VTCS is installed in your environment, Oracle recommends ensuring that all MGMTCLAS names returned by your DFSMS routines match a defined SMC POLICY name. If that is the case, specify VTVmgmt(OFF) to avoid inadvertently passing an invalid MGMTCLAS name to VTCS.

  **Note** – VTVmgmt(ON) lets you use a MGMTCLAS from a DFSMS routine directly as a VTCS MGMTCLAS if MGMTPol is OFF, or if MGMTPol is ON but no matching SMC policy name is found. This setting applies to the old DFSMS interface format.

- If your environment does not support DFSMS functions, set the ALLOCDef SMS parameter to OFF (the default). The SMC bypasses all DFSMS ACS routine calls.
Syntax

![SMSDef syntax diagram]

**Parameters**

**Note** – This command includes additional parameters that apply to the previous DFSMS interface format, which has been superseded by the SMC POLicy command. Refer to the *ELS Legacy Interfaces Reference* for information about these legacy parameters.

**List**
- optionally, lists the current DFSMS settings.
  - **List** is the default when no parameters are specified on the SMSDef command.
  - List may be specified with other parameters. In this case, the List is generated after the other parameters are processed.

**MGMTPol**
- optionally, specifies whether the management class returned from a DFSMS ACS routine may represent an SMC policy.
  - **OFF**
    - A management class name returned from a DFSMS ACS routine is either ignored (if VTVmgmt is OFF), or is interpreted as a VTCS management class name (if VTVmgmt is ON). This is the default value.
ON
A management class name returned from an SMC DFSMS ACS routine is interpreted as an SMC policy name during allocation and mount message processing, but not during IDAX processing. If a matching SMC policy name is found, all policy information applies to the request. If the policy name is not found, other SMC DFSMS processing is applied as specified.

IDAX
A management class name returned from an SMC DFSMS ACS routine is interpreted as an SMC policy name during IDAX processing, but not during allocation or mount processing. If the policy name is not found, other SMC DFSMS processing is applied as specified. For example, if ESOT(ON) is specified, the returned storage group is used as a substitution esoteric.

ALL
A management class name returned from an SMC DFSMS ACS routine is always interpreted as a policy name. This is the recommended setting.

- If a matching SMC policy name is found, all policy information applies to the request.
- If the policy name is not found, other SMC DFSMS processing is applied as specified. For example, if VTVMGMT is ON, the DFSMS management class name is interpreted as a VTV management class.

**Note** – If MGMTPol is on, and the matching policy name contains an esoteric, the esoteric name in the policy is used during common allocation to exclude devices not contained in the specified esoteric. It is not used as a “true” esoteric substitution parameter.

VTVmgmt
optionally, specifies whether the SMC invokes the storage class and management class DFSMS ACS routines during virtual volume allocation and virtual volume mount message processing.

ON
If MGMTPol is OFF, or if MGMTPol is ON but no matching SMC policy name is found, the management class name is provided to VTCS during volume lookup and volume mount processing.

OFF
If MGMTPol is ON, the management class name returned by the DFSMS ACS routine is used to look up policy values from the named SMC policy. If no matching SMC policy name is found, no policy is applied to the request. If MGMTPol is OFF, SMC does not invoke the DFSMS ACS storage class or management class routines during allocation or mount processing.
IGDACSXT

optionally, specifies whether the SMC invokes the Pre-ACS Installation Exit, IGDACSXT, before invoking the DFSMS ACS routines during SMC DFSMS processing. Refer to the IBM publication *DFSMS Installation Exits* for more information about this exit.

**ON**

The IGDACSXT exit is invoked before the SMC calls the DFSMS ACS routines. The exit receives the ACERO control block that contains the read only variable settings. The exit has the opportunity to change these settings before SMC invokes the DFSMS ACS routines.

**OFF**

The IGDACSXT exit is not invoked before the SMC calls the DFSMS ACS routines.

**TEMPdsn**

optionally, specifies whether temporary data sets are presented to the DFSMS ACS routines as permanent data sets so that a MGMTCLAS may be returned.

**ON**

The &DSTYPE read only variable is set to "2" (indicating a permanent data set) if the original data set is a temporary data set.

The &LIBNAME read only variable will contain the character "3" if the &DSTYPE read only variable is changed.

ON is the default setting.

**OFF**

The &DSTYPE read only variable is set to the actual disposition of the data set.
STORMNGR

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC STORMNGR command defines a VLE appliance to SMC.

**Note** – STORMNGR and SERVer commands are required to access a VLE. The STORMNGR command can also list VLEs that the SMC tries to communicate with and report their status.

Syntax

![STORMNGR Syntax Diagram](image)

**FIGURE 2-27** STORMNGR syntax
Parameters

List
optionally, lists all or a specific VLE.

NAME
If specified, lists the VLE with the specified name.

NAME
Specifies VLE to be added, modified or listed. If Name is not specified, then all
VLEs are listed.

name
the VLE name, which is also defined to VTCS, and is initially defined by the VLE
GUI. The following rules apply:
- The value must be between 1 and 8 characters in length.
- The first character must be either an alpha character or digit.
- The last character must be either an alpha character or digit.
- Any character between the first and last must be either an alpha character, digit
  or hyphen.

ENABLE
enables the specified VLE. This is the default when new VLE is added.

DISABLE
disables the specified VLE.

SERVerlist
optionally, lists defined VLEs, their attributes and associated servers. The SERVerlist
parameter can also be specified with the NAME parameter to limit the display to a
single VLE.

NAME
specifies the VLE name for which servers are to be listed.

name
the VLE name.

STATUS
optionally, lists current status of all VLEs or a single named VLE.
TAPEPlex

Interfaces:

Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description

The SMC TAPEPlex command defines a TapePlex; a specific Oracle StorageTek tape hardware configuration normally represented by a single CDS. The TAPEPlex command can also list TapePlexes that the SMC tries to communicate with, and report their status.

Note –

- You **must** include SMC TAPEPlex commands in either the SMCCMDS or SMCPARMS data set to define your TapePlexes. If no TAPEPLEX commands are found at SMC startup, then the SMC subsystem terminates and an error message is produced.

  When SMC first communicates with an HSC host, this host adopts the TapePlex name specified in the SMCCMDS or SMCPARMS data set and stores it in the CDS. The CDS retains this name unless it is later changed by an SMC Set TapePlex utility command.

- TAPEPlex and SERVer commands are required to access remote HSC TapePlexes.

- If a TAPEPlex command is specified, then all TapePlexes must be explicitly defined.
Syntax

FIGURE 2-28 TAPEPlex syntax
Parameters

List
  optionally, lists the specified TapePlex.

NAME
  specifies the TapePlex name to be listed.
  name
    the TapePlex name.

Note –
  ■ List is the default when no parameters are specified on the TAPEPlex command. In this case, all TapePlexes are listed.
  ■ List may be specified with other parameters. In this case, the named TapePlex is listed after the other parameters are processed.

NAME
  specifies the TapePlex name to be added, modified, or listed.
  name
    the TapePlex name. This name is reported in any TapePlex error message. The following rules apply:
    ■ The value must be between 1 and 8 characters in length.
    ■ The first character must be either an alpha character or digit.
    ■ The last character must be either an alpha character or digit.
    ■ Any character between the first and last must be either an alpha character, digit or hyphen.

ENAble
  enables the specified TapePlex to be selected for allocation or mount requests.

DISable
  disables the specified TapePlex. The TapePlex is not used for any allocation or mount requests.

LOCSUBsys
  specifies a local HSC and/or MVS/CSC subsystem.
  subsysname
    the subsystem name.

LOCENAble
  enables the specified HSC or MVS/CSC subsystem to be used as a local path to the TapePlex.

LOCDISable
  disables the specified HSC or MVS/CSC subsystem. LOCDISable can be used to force the SMC to ignore the local subsystem and access the TapePlex via a remote server.
**WTORdest**

optionally, specifies the console to which HSC WTOR messages are directed. Refer to the publication *Configuring and Managing SMC* for messages that apply.

**Client**

The remote HSC returns selected WTORs to the SMC client without issuing the WTOR message. The SMC client then issues the WTOR to the operator of the system that the SMC executes on. The SMC redrives the mount or dismount request to the server supplying the WTOR response.

**Server**

WTOR messages are issued on the HSC server console. This is the default.

**ALIAShost**

optionally, specifies a host alias to be used in communications with the HSC TapePlex.

`hostname`

a 1-8 character host name.

**OFF**

The native SMF host name is used in communications with the HSC LIBRARY. This is the default.

**SERVerlist**

optionally, lists defined TapePlexes, their attributes and associated servers. The SERVerlist parameter may also be specified with the NAME parameter to limit the display to a single TapePlex.

**NAME**

specifies the TapePlex name for which servers are to be listed.

`name`

the TapePlex name.

**STATus**

optionally, lists current status of all TapePlexes, or a single named TapePlex. The TapePlex status indicates whether a TapePlex is active, inactive, or disabled. For an active TapePlex, the status lists the name of the current server or local subsystem. STATus does not perform a RESYNChronize.

**NAME**

specifies the TapePlex name for which status information is to be listed.

`name`

the TapePlex name.
TCPip

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC TCPip command alters and/or lists current TCPCNAME and ADSNAME defaults for your TCP/IP communications environment. It allows you to direct TCP/IP requests to a specific TCP/IP stack on an MVS host.

Syntax

FIGURE 2-29 TCPip syntax
Parameters

**List**

optionally, lists current TCPNAME and ADSNAME settings. If a PORTrange is specified, List also displays currently bound port numbers and the high-water bound port number indicating the largest number of concurrent communication subtasks executing at one time.

- List is the default when no parameters are specified on the TCPip command.
- List may be specified with other parameters. In this case, the List is generated after the other parameters are processed.

**OFF**

optionally, specifies that system defaults are used for client TCP/IP communication.

**TCPname**

optionally, specifies the TCPNAME value for a specific TCP/IP stack on an MVS host. TCPNAME is the name of the MVS TCP/IP stack. Refer to the IBM publication *TCP/IP for MVS Application Programming Interface Reference* for more information about TCPNAME. The default is none.

- name
  - the TCPNAME value
  - If a subsystem name is specified, it must consist of one to four alphanumeric or national (#,@,$) characters, the first character being alphabetic or national.
  - If an address name is specified, it must consist of one to eight alphanumeric or national characters.

**ADSname**

optionally, specifies the ADSNAME value for a specific TCP/IP stack on an MVS host. ADSNAME is the jobname of the TCP/IP startup job. Refer to the IBM publication *TCP/IP for MVS Application Programming Interface Reference* for more information about ADSNAME.

- name
  - the ADSNAME value.
PORTrange

optionally, specifies a range of ports to be used by the SMC to bind() sockets on the client when communicating on remote server paths.

When PORTrange is defined, the SMC binds() client sockets to one of the ports within the specified PORTrange and will not use client ports outside the PORTrange. This allows the SMC to operate behind a firewall that restricts communication to known ports. A unique port is required for each concurrent subtask requiring communication services for a volume lookup, mount, etc. If a PORTrange is not defined, then any ephemeral port is used by the SMC.

Only one PORTrange can be active at a time, but you can dynamically re-define the PORTrange even if the new PORTrange overlaps with the old PORTrange.

nnnnn-nnnnn

the port number range.

Each port number can have a value of 1-65535. However:

- The minimum port number range that can be specified is 10 (e.g., 6400-6410).
- The maximum port number range that can be specified is 1000 (e.g., 6400-6500).

OFF

PORTrange logic is disabled. As a result, any ephemeral port is used.

Note –

- It is recommended that you specify a PORTrange that does not conflict with TCP/IP well-known ports.
- It is recommended that you specify a PORTrange greater than the anticipated number of concurrent subtasks requesting remote communication services. For most installations, a PORTrange of 40 ports is sufficient. However, if SMC0128 messages are produced with a return code indicating “no free port” then a larger PORTrange is required.
- When an SMC mount request to the HSC server results in an outstanding WTOR on the HSC, the used port number is unavailable until a reply is supplied for the outstanding WTOR. WTOR messages for mount requests are produced on the HSC when TAPEPlex WTORdest(SERVER) is specified, or when TAPEPlex WTORdest(CLIENT) is specified and the HSC mount message is not one returned to the SMC for processing. Refer to the publication Configuring and Managing SMC for messages that apply.
- The TCPip LIST command may be used to display the high-water port number, indicating the largest number of concurrent communication subtasks executing at one time.
TRace

**Interfaces:**
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

**Subsystem Requirements:**
Active SMC required, or may be input to the SMCUSIM utility

**Description**
The SMC TRace command enables SMC tracing using the GTF trace facility and optionally provides a snap dump of the address space before and after control block modification.

**Note –**
- SMC TRace processing may impact system performance and should be used **only** as directed by Oracle StorageTek Software Support.
- TRace JOBname(*jobname*) causes SMC traces to be produced for UUI commands issued by the HSC or VTCS subsystem address space when *jobname* matches the HSC subsystem name. UUI tracing is extremely CPU intensive and should only be used as directed by Oracle StoragTek Software Support.
Syntax

FIGURE 2-30 TRace syntax
Parameters

LIst
optionally, lists current SMC trace settings for both the SMC subsystems and SMC components by job name, step name, and PROC step.

- LIst is the default when no parameters are specified on the TRace command.
- LIst may be specified with other parameters. In this case, the LIst is generated after the other parameters are processed.
- If no JOBname is specified, all jobs with SMC components being traced are listed.
- If JOBname is specified, only those jobs with SMC components being traced whose job name matches the specified job JOBname are listed.

OFF
optionally, disables SMC tracing.

- If no other parameters are specified, tracing is disabled for all jobs.
- If only JOBname is specified, tracing is disabled for all entries for that job name.
- If JOBname, STEPname and PROCstep are specified, tracing is disabled only for the specified entry.

Jobname/Component Parameters

SUbsys
optionally, enables or disables SMC tracing for one or more SMC subsystem components or subtasks.

ALLProc
optionally, enables tracing for all SMC subsystem components and tasks. This is the default if no parameters are specified.

AScomm
optionally, enables tracing for all SMC subsystem ASCOMM Component tasks.

CGi
optionally, enables tracing for all SMC subsystem CGI module processing for all connected client requests. To trace CGI module execution for individual client requests, issue a TRace JOBname REMOTE command on the appropriate SMC client.

CMd
optionally, enables tracing for all SMC subsystem Operator Command Component tasks.

HTtp
Optionally, enables tracing for all SMC subsystem HTTP Server Component tasks.

INit
Optionally, enables tracing for all SMC subsystem Initiation/Termination Component tasks.
JOBname

optionally, enables or disables SMC tracing for one or more initiator components in initiators that match the specified jobname, stepname, and procstep name specified. If not specified, tracing information for all jobs is displayed.

jobname

a specific job name

The value entered must be one to eight characters in length. An asterisk (*) can be used as a wildcard when included as the last character. In this case, all jobs whose job names match the characters preceding the asterisk are traced or listed. To trace all jobs, specify TRACE JOB(*).

ALLProc

optionally, enables tracing for all SMC initiator components executing in initiators that match the specified jobname, stepname, and procstep name specified. This is the default if no parameters are specified.

ALLOc

optionally, enables tracing for all SMC Allocation and JES3 Component tasks executing in initiators that match the specified jobname, stepname, and procstep name specified.

MSghandler

optionally, enables tracing for all SMC Message Handler Component tasks executing in initiators that match the specified jobname, stepname, and procstep name specified.

POLicy

optionally, enables tracing for SMC POLicy name and selection criteria to the job log of the jobname specified in the TRace command for allocation and mount policies.

Note – NOTE: POLicy tracing does not rely on the GTF trace being active.

REmote

optionally, enables tracing in the remote SMC HTTP Server for requests originating from the jobname, stepname, and procstep name specified.

Note – NOTE: REmote tracing does not rely on the GTF trace being active on the SMC client, but GTF tracing must be active on the corresponding SMC HTTP Server.

UTILITY

optionally, enables tracing for all SMC Utility Component tasks executing in initiators that match the specified jobname, stepname, and procstep name specified.
Optional Parameters

**STEPname**

optionally, specifies a step name.

`stepname`

the step name.

The value entered must be one to eight characters in length. This parameter is **only** valid if JOBname is also specified. It is **not** valid in JES3 environments with TAPE SETUP processing.

**PROCstep**

optionally, specifies a PROC step.

`procstep`

the PROC step.

The value entered must be one to eight characters in length. This parameter is **only** valid if JOBname and STEPname are also specified. It is **not** valid in JES3 environments with TAPE SETUP processing.

**SNAPdump**

optionally, requests a snap dump. This parameter is **not** valid in JES3 environments with TAPE SETUP processing.

---

**Note** — A snap dump may impact system performance, and should be used **only** as directed by Oracle StorageTek Software Support.

**BEFORE**

requests a snap dump before allocation influencing.

**AFTER**

requests a snap dump after allocation influencing.

**BOTH**

requests a snap dump both before and after allocation influencing.
TREQDef

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC TREQDef command specifies and loads the definition data set containing your tape request (TAPEREQ) parameter statements.

Note – Existing HSC TREQDEF control statements are not disabled, but are only processed for remote SMC 6.0 client systems.

Syntax

FIGURE 2-31 TREQDef syntax
Parameters

**LIst**
lists information about the definition data set containing TAPEREQ control statements that are currently loaded. Information includes:
- Data set name
- Member name
- Identifying string (if the data set contains an OPTION TITLE statement)
- Date and time parameters were loaded

**DATASET** or **DSN**
optionally, specifies the name of the data set containing the TAPEREQ control statements to be processed and, optionally, an OPTION TITLE control statement.

---

**Note** – See “OPTION TITLE Control Statement” on page 501 for more information about the OPTION TITLE control statement.

---

**dsn**
the data set name.

This data set can be a fixed length 80-byte sequential data set, or a fixed length 80-byte member of a PDS. If the data set name includes a member name, you must enclose the **dsn** in quotes. For example:

```bash
DATASET('YOUR.PDS.DSN(MEMBER)')
```

**VOLume**
optionally, specifies the volume serial number of the DASD volume on which the data set resides. Specify this parameter if the data set is not catalogued.

**volser**
the volume serial number.

**UNIT**
optionally, specifies the unit name of the specified VOLume for uncataloged data sets. Requires that VOLume also be specified.

**unitname**
the unit name.

If not specified, then a unit name of SYSALLDA is the default.

**HOSTID**
optionally, specifies the hostid from which to execute this control statement. This parameter is valid only for use in PARMLIB, to allow multiple systems to share a parmlib member containing multiple TAPEREQ control statement members.

**hostid**
the host name(s) from which to execute this control statement. Multiple host names must be separated by commas.
RELOAD

optionally, reloads the currently loaded TAPEREQ control statements from the same data set. This parameter can be used after a TREQDEF DSN(*dsn) command is issued, and changes may then be made to the contents of that data set.
TAPEREQ Control Statement

The SMC TAPEREQ control statement specifies a named POLicy to be applied to a particular jobname, stepname, program name, data set or group of data sets.

TAPEREQ statements are placed in the definition data set (DDname) specified by the SMC TREQDEF command. SMC allocation calls on these TAPEREQ statements to help ensure that the correct media type is used to satisfy a request, and that the cartridge is mounted on the appropriate device. TAPEREQ statements must be placed in the definition data set; they cannot be issued as operator commands.

The SMC POLicy command allows you to specify all tape policy specifications in a single named object. It is used with TAPEREQ statements or SMS to associate a named policy with an allocation or mount event.

The TAPEREQ POLicy parameter directs the SMC to reference an associated SMC policy defined by an SMC POLicy command. Refer to the publication Configuring and Managing SMC for more information.

Note –
- In previous software releases, TAPEREQ parameters were used to define tape attributes. Refer to the ELS Legacy Interfaces Reference for information about these legacy parameters.
- See “TREQDef” on page 151 for information about the TREQDEF Command.
Syntax

Illustration: TAPEREQ control statement syntax

FIGURE 2-32 TAPEREQ control statement syntax
Control Statement Name

TAPEREQ

initiates the TAPEREQ control statement.
If any of the following conditions exist:

■ There is no TAPEREQ control statement specified in the definition data set to match a request.
■ There is no matching Policy command specifying the MEDia, RECtech, or MODel parameters.
■ There is no definition data loaded.

then the MEDia and RECtech or MODel parameters are set to undefined, which matches all requests. Any available device is eligible for allocation.

Parameters

**Note** – The JOBname, STEPname, PROGname, and DATASET parameter values can include the following wild card characters:

<table>
<thead>
<tr>
<th>% or ?</th>
<th>any single nonblank character</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>any character string (length zero to 8) not to exceed one qualification level. For example, A.B.* matches A.B and A.B.C, but does not match A.B.C.D.</td>
</tr>
<tr>
<td>**</td>
<td>used only in DATASET. Indicates any number of qualifiers (zero or more). Cannot be used with any other characters within a qualifier. For example, A.B.** matches A.B, A.B.C, A.B.C.D, A.B.C.D.E, and so forth.</td>
</tr>
</tbody>
</table>

**JOBname**

optionally, identifies the job name. If JOBname is not specified, the default value is *.

**Note** – If you are coding a TAPEREQ statement for DFHSIM, you must specify JOBname as a selection criteria. Using DATASET (DSN) can cause unpredictable results.

**jobname**

the name of the job for which the TAPEREQ control statement is processed.

The TAPEREQ control statement is used only when the specified jobname matches the job name in the request.

**STEPname**

optionally, specifies the step name. If the STEPname parameter is not specified, the default value is *.

**stepname**

the name of the step for which the TAPEREQ control statement is processed. The TAPEREQ control statement is used only when the specified stepname matches the step name in the request.
**PROGram or PGMname**

optionally, specifies the program name.
The program name used is the job step program name. The default value is *.

*program-name*

the program name for which the TAPEREQ control statement is processed.
The TAPEREQ control statement is used only when the specified *program-name*
matches the program name in the request.

**Note** – This parameter is not supported in JES3 environments.

**DATASET or DSN**

optionally, specifies the data set name. The default value is **.

*dataset.name*

the data set name for which the TAPEREQ control statement is processed.
The TAPEREQ control statement is used only when the specified *dataset.name*
matches the data set name in the request. Rules for RACF and SMS enhanced
generic naming apply.

**Note** –
- If you are coding a TAPEREQ statement for DFHSM, you must specify JOBname as a
  selection criterion. Using DATASET (DSN) can cause unpredictable results.
- The name you specify on this parameter might be different from the value coded in
  the DSN parameter on a DD statement. For example,
  
  `DSN=&&ABC`
  
  may be coded on a DD statement if a data set is temporary. However, the actual data
  set name is not &&ABC. Similarly, if the DSN parameter refers back to a previous
  DD statement, the data set name is resolved to the referred-to data set. Thus, the
  data set name referred to must be coded on the DATASET parameter in order for the
  TAPEREQ control statement to be processed.

**DDname**

optionally, specifies the DD name of the data set.

*DD-name*

the DD name.
RETPD

optionally, specifies the retention period and the relationship that must exist. If you do not specify either RETPD or EXPDT, the default value is RETPD(GE,0) (any expiration date will match this criterion).

| EQ  | equal to |
| NE  | not equal to |
| GT  | greater than |
| GE  | greater than or equal to |
| LT  | less than |
| LE  | less than or equal to |

*retention-period*

the retention period in days for the data set.
Specify the number of days as a 1- to 4-digit decimal number.

---

**Note** – This parameter is **not** supported in JES3 environments.

EXPDT

optionally, specifies the expiration date and the relationship that must exist.

| EQ  | equal to |
| NE  | not equal to |
| GT  | greater than |
| GE  | greater than or equal to |
| LT  | less than |
| LE  | less than or equal to |

*expiration-date*

the expiration date of the data set in **YYDDD** or **YYYY/DDD** format.

---

**Note** – This parameter is **not** supported in JES3 environments.

VOLSer

optionally, identifies a specific volume id. If VOLSer is omitted, the default value is * (any volume). A range of volsers can also be specified.

Using a combination of TAPEREQ statements and POLicy commands, SMC allows you to specify allocation policy based on specific volume serial numbers. Refer to the publication *Configuring and Managing SMC* for more information.

*volser*

the volume id.

---

**Note** – VOLSer requires that the POLicy parameter is also specified.
LABEL
optionally, specifies the label type to be used to select the policy.
Valid values are SL, NL, AL and NSL.

Note – LABEL is valid only if POLicy is also specified.

JCLESOT
optionally, specifies the name of a device esoteric group to be matched with the
esoteric supplied in the JCL (or via IDAXESOT).

esoteric-name
the esoteric group name.
This can consist of one to eight alphanumeric or national (#, @, $) characters. A
slash (/) or hyphen (-) is also valid.

Note –
■ JCLESOT is valid only if POLicy is also specified.
■ JCLESOT only matches at SSI55 (IDAX) or SSI24 (allocation) time, such that a
POLICY containing SUBPOOL and MGMTCLAS will not be selected by this
parameter.

The following example illustrates the use of the JCLESOT and ACTRECT
parameters:

TAPEREQ DSN(V047970.JCLESOT.*) JCLESOT(HVTSS11) POLICY(POL1)
TAPEREQ DSN(V047970.JCLESOT.*) ACTRECT(V) POLICY(POL1)
TAPEREQ DSN(**) POLICY(POL2)

POLICY NAME(POL1) MED(V) REC(V) MGMT(HSCX400) SUBP(SUBP1)
POLICY NAME(POL2) MED(ECART)

In this example, jobs that specify UNIT=HVTSS11 (with the matching DSN) will be
assigned a VIRTUAL media and rectech at SSI55/SSI24 time. All other data sets will
be assigned a media of ECART. At mount message time, if the rectech of the
allocated drive is virtual for the matching DSN, then the mgmtclas and subpool from
POL1 are assigned. Otherwise, no subpool or mgmtclas is assigned.

ACTRECT
optionally, specifies the recording technique to be used to determine the policy at
mount time if the drive where the mount is requested conflicts with the previously
selected policy.

For example, if the JCL esoteric prevents selection of a policy recording technique or
esoteric substitution, the selected policy might have a scratch subpool inconsistent
with the drive where the mount is requested. Specifying ACTRECT allows a default
override.

rectech-list
the recording technique list.
POLiCy

optionally, specifies the name of a policy (defined by an SMC POLicy command) to be associated with the allocation or mount request.

\textit{policy-name}

the policy name.

The SMC uses this policy name to determine all policy information associated with an allocation or mount request.

\underline{Note} –

- The named policy must be defined using a POLicy command before the TREQDEF command is processed.
- See “POLicy” on page 109 for more information about the SMC POLicy command.
- Refer to the publication \textit{Configuring and Managing SMC} for information about creating new POLicy definitions based on existing TAPEREQ statements.

Disabling a TAPEREQ Definition

Use the following procedure to disable a TAPEREQ definition.

1. Edit the definition data set containing the current TAPEREQ control statements.
2. Delete the parameters of the TAPEREQ control statement you want to disable, or delete the TAPEREQ control statement.
3. Issue the TREQDEF operator command to reload the definition data set.

To disable all TAPEREQ definitions, load a definition data set that contains only one TAPEREQ control statement with no parameters.

\underline{Note} – If any individual TAPEREQ control statement is in error, the entire set is discarded.
UEXit

Interfaces:
Console, utility, or SMCCMDS/SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
User exits 1, 2, 4, 8, 9, 10, 11, 12, and 13 are invoked and managed by the SMC. The UEXit command defines which load module is invoked for a specific user exit, and whether the user exit is enabled or disabled. Both HSC and MVS/CSC user exit formats are supported. The UEXit command specifies the user exit format.

---

Note –
- Use this command to load each user exit you wish to use. If a user exit is not loaded, it will not be called.
- All user exits are executed on the host where the SMC resides, regardless of where the library server resides.
- Only one format of a given user exit can be invoked, regardless of the number of TapePlexes the SMC interacts with. The desired format (HSC or MVS/CSC) is specified using the FORMat parameter.
- HSC User exit 7 (SLSUX07) is no longer supported.
- These user exits must reside in a library accessible to the subsystem.
- User exit information is not honored when an SMC POLicy applies to an allocation, or a mount.
- Refer to the ELS Legacy Interfaces Reference for information about each user exit.
Syntax

![Figure 2-33 UEXit syntax](image)

Parameters

**LIst**
- optionally, displays status information for all user exits.
  - LIst is the default when no parameters are specified on the UEXit command.
  - LIst may be specified with other parameters. In this case, the LIst is generated after the other parameters are processed.

**number**
- optionally, specifies the user exit number. Valid values are 1, 2, 4, 8, 9, 10, 11, 12, and 13.

**NAME**
- optionally, specifies the user exit’s load module name.
  - name: the load module name (e.g., SLSUX01).

**FORMat**
- optionally, specifies the format of user exit to be enabled or disabled.
  - **HSC**
    - the HSC user exit format.
  - **CSC**
    - the MVS/CSC user exit format.
LOAD
optionally, loads the specified user exit, making it available for use.

**Note** –
- If a user exit is not loaded, it will **not** be called.
- A subsequent load of a module for the same user exit causes the currently active copy of the load module to be deleted when its use count reaches zero.

**ENable**
optionally, enables a user exit that was previously disabled due to a problem.

**DISable**
optionally, disables a user exit to allow for problem resolution.
UNITAttr

Interfaces:
Console or SMCCMDS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC acquires drive type information from both the z/OS operating system and the ELS library control systems (TapePlexes). For the ELS library control systems, HSC and MVS/CSC, data returned from configuration queries is used to augment information returned from the operating system for library-controlled devices.

The SMC UNITAttr command allows you to specify device addresses and attributes to augment operating system information for nonlibrary controlled devices, and effectively ignore configuration information from TapePlexes for specified devices when multiple TapePlexes define the same device address. The SMC UNITAttr command allows you to do the following:
- Set MODEL=IGNORE for device addresses not available for this host.
- Specify model types for nonlibrary devices on this host.
- Specify NOTAPEPlex for a nonlibrary device address or range that is defined to multiple TapePlexes, but for this host the attached devices belong to the specified TapePlex.
- Specify TapePlex ownership and model for devices that may be referenced by a mount after the SMC is started but before the TapePlex is initialized.

Refer to the publication Configuring and Managing SMC for information about configurations that may require or benefit from the use of UNITAttr commands.

Note –
- Existing HSC UNITATTR control statements are not disabled. However, UNITATTR statements for nonlibrary and MODEL(IGNORE) devices are only processed for remote SMC 6.0 client systems. HSC UNITATTR statements for library and virtual drives are not used in any HSC processing after release 6.0.
- SMC does not support a UNITDEF command. Each UNITATTR command is parsed and processed independently.
- HSC nonlibrary and MODEL=IGNORE UNITATTR statements are no longer returned to SMC on a configuration query. Therefore, if you use UNITAttrs to bypass devices for allocation or to define the device type of nonlibrary drives, you must define these UNITATTR commands to the SMC subsystem.
Syntax

**FIGURE 2-34** UNITAttr syntax

**Parameters**

**ADDRess**

optionally, specifies device numbers for which UNITAttr device attributes are assigned.

*devnum, devnum-range, devnum-list*

the device number, device number range, or device number list.

**ESOTeric**

optionally, specifies an esoteric for which UNITAttr device attributes are assigned. When device characteristics are modified, all of the devices in the specified esoteric are modified.

*esoteric-name*

the MVS esoteric name. This name must be defined to MVS, and must contain only tape devices known to SMC.

**OFF**

optionally, specifies that the model type for the device numbers specified by the ADDRess parameter or ESOTeric parameter should be determined from the device UCB, or, for a device which was previously set to MODEL=IGNORE, that the MODEL information from the library server should be restored.

**Note:** TAPEPlex is required when MOdel(VIRTUAL) is specified.
UNITAttr

List
lists the UNITAttr model information for the device numbers specified by the ADDRess or ESOTeric parameter.

device attributes:

MOdel
optionally, specifies the model type of the transport to be assigned the device numbers specified by the ADDRess parameter.

model-type
the model type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid model-type values.

TAPEPlex
optionally, specifies the name of a TapePlex to be associated with the drive before communication is established.

Note – TAPEPlex is required when MOdel(VIRTUAL) is specified. MOdel(VIRTUAL) drives cannot exist as “non-library” devices.

TapePlex-name
the TapePlex name.

If specified, this name must match a TapePlex name defined in a TAPEPlex command.

NONE
optionally, removes the TapePlex association from the specified device addresses.

NOTAPEPlex
optionally, specifies that the specified address or address range are nonlibrary devices, even when configuration queries from ELS library control systems indicate that the device is library controlled. Use this parameter when a local nonlibrary device address overlaps a TapePlex owned device that is not accessible from his host.

Note –
- When a MOdel is specified with TAPEPlex, the configuration query model information returned from the TapePlex is assumed to be the “real” or “correct” model, and it overrides any MOdel specified in the UNITAttr command.
- If TAPEPlex is specified for an address, but that address is not returned from the configuration query for that TapePlex, an error message is issued, but the erroneous TapePlex ownership remains with the specified device address. As a result, any mounts destined for the specified device address are not automated and are rejected by the specified TapePlex.
USERMsg

Interfaces:
Console or SMCPARMS data set
UUI: Yes (No XML/CSV output)

Subsystem Requirements:
Active SMC required, or may be input to the SMCUSIM utility

Description
The SMC USERMsg command allows you to specify additional message identifiers for messages to be intercepted and passed to the library subsystem’s user exit 01. This command can also be used to list the message identifiers of those messages that have been defined using the USERMsg command.

Syntax

```
USERMsg
  List
  ID(msgid)
```

**FIGURE 2-35** USERMsg syntax

Parameters

**List**
optionally, lists the message identifiers in the customer-defined message table. This is the default if no parameters are specified.

**ID**
optionally, specifies a message to be added to the customer-defined message table. This message is passed to user exit 01.

**msgid**
the message identifier for the message to be added.

**Note** – This parameter may only be specified in the SMCPARMS data set.
This chapter contains reference information about HSC and VTCS commands and control statements.

**Note** –

- Control statements that are loaded by an operator command are described along with that command. Other control statements, including those specified in the PARMLIB data set, are described independently.
- Certain HSC and VTCS commands are described in the *ELS Legacy Interfaces Reference*. These commands were introduced in a pre-ELS software release and their functionality has been replaced in ELS. These commands are supported by ELS, however, this support will end in a future release.
ACTIvities

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description

The ACTIvities command generates a statistical report of library resource loading by volume groups (for example, scratch compared to nonscratch, pass-thru activity, mounts, dismounts, entered, and ejected). This report provides information to help you monitor library resources and usage.

The utility also requires the SMF data for the time period requested (see “SET SMF” on page 559). It is assumed that you elect to have cartridge movement SMF records recorded in the time period specified. It is also assumed that the SMF records are in sequence by:
- SMF ID
- date
- time, from earliest to latest.

Duplicate or out of sequence records cause the utility to terminate and to display a message indicating that the SMF records are not sorted. See “Additional Sort Control Cards” on page 172 for sort statements you can specify to avoid this situation.

Note – Periodic performance statistics are not available for the SL8500 library. Volume movement statistics, including enter, eject, mount, dismount, and move, are produced for all library types.

Syntax

FIGURE 3-1 ACTIvities syntax
Parameters

BEGIN

optionally, specifies the beginning of the period for the activities analysis.

begin-date

the starting date of the analysis, expressed in \textit{mm/dd/yy} or \textit{yyyyMMdd} format.

\textbf{Note} – When using the \textit{mm/dd/yy} format, specify a \textit{yy} value of 71 or greater to indicate a 20th century (19xx) date. Specify a \textit{yy} value of 70 or less to indicate a 21st century (20xx) date. To avoid confusion, you are encouraged to use the \textit{yyyyMMdd} date format.

\textit{TODAY}

the default date.

begin-time

the beginning time-of-day (24-hour value), expressed in \textit{hh:mm:ss} format.

The allowable range for the begin-time and end-time parameters is 00:00:00 to 24:00:00. The default value is 00:00:00.

Examples:

In each of the following examples, activity reporting begins on October 27, 2008 at midnight.

\begin{verbatim}
BEGIN(10/27/08,00:00:00)
BEGIN(20081027,00:00:00)
BEGIN(TODAY,00:00:00)
BEGIN(,00:00:00)
\end{verbatim}

END

optionally, specifies the end of the period for the activities analysis.

end-date

the ending date of the analysis, expressed in \textit{mm/dd/yy} or \textit{yyyyMMdd} format. If \textit{begin-date} is specified, \textit{end-date} must be in the same format.

\textbf{Note} – When using the \textit{mm/dd/yy} format, specify a \textit{yy} value of 71 or greater to indicate a 20th century (19xx) date. Specify a \textit{yy} value of 70 or less to indicate a 21st century (20xx) date. To avoid confusion, you are encouraged to use the \textit{yyyyMMdd} date format.

\textit{TODAY}

is the default date.
end-time

the ending time-of-day (24-hour value), expressed in \textit{hh:mm:ss} format.

The allowable range for the begin-time and end-time parameters is 00:00:00 to 24:00:00. The default value is 23:59:59.

Examples:

END(10/27/08,18:00:00)
END(2008501,11:30:00)
END(TODAY,23:29:00)
END(,23:59:59)

Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the ACTivities JCL:

\textbf{SLSSMF}

SMF data which the utility reports against. This may be a number of data sets concatenated from oldest to newest. This is an off-loaded copy of the active SMF data sets, created by the SMF dump utility IFASMFDP.

Additional Sort Control Cards

You must specify several additional control cards in the SYSIN portion of the SYELSORT JCL to make sure SMF records are sorted.

```bash
//SYSIN DD*
  INCLUDE COND=(6,1,BI,EQ,X'xx')
  SORT FIELDS=(15,4,CH,A,11,4,PD,A,7,4,BI,A)
  SUM FIELDS=NONE
```

\textbf{Note} – In the “INCLUDE COND” statement, the SMF type setting, shown as “X’xx’” above, is supplied by the user. The default setting is “FF” (SMF type 255).
ACTMVCgn

Interfaces:
SLUADMIN utility only
UUI: Yes

Subsystem Requirements:
Active HSC required only when specifying the MVCPOOL parameter

Description
The ACTMVCgn command is an optional command used in a VSM environment with the CDRT facility. ACTMVCgn produces two sets of MVCMAINT statements which are output to two files specified by the SLUSMVON and SLUSMVOF DD statements.

After ACTMVCgN executes:
- SLUSMVON contains a set of MVCMAINT statements with the READONLY(ON) keyword.
- SLUSMVOF contains a set of MVCMAINT statements with the READONLY(OFF) keyword.

Successful execution of ACTMVCgn results in an equal number of MVCMAINT statements in both SLUSMVON and SLUSMVOF data sets.

Note – Refer to the ELS Disaster Recovery and Offsite Data Management Guide for examples of use of this utility function.

Syntax

FIGURE 3-2 ACTMVCgn syntax
Parameters

ACS
optionally, specifies an ACS that the CSV-based output is filtered against.
acs-id
the two-character ACS id. Blanks are not valid. To specify multiple ACSs, separate each ACS id with a comma. If ACS is not specified, the default is all ACSs.

STORMNGR
optionally, specifies a STORMNGR that the CSV-based output is filtered against.
stormngr
the STORMNGR name. This name can include a maximum of 8 characters. Blanks are not valid. To specify multiple STORMNGR names, separate each name with a comma.

MVCPOOL
optionally, specifies an MVCPOOL that the CSV-based output is filtered against.
mvcpool-name
the MVCPOOL name. This name can include a maximum of 13 characters. Blanks are not valid. To specify multiple MVCPOOLs, separate each MVCPOOL name with a comma.

Note – If you specify the MVCPOOL parameter and the HSC subsystem is not active, the utility cannot complete and a return code of 8 is issued

ALL
optionally, requests that READONLY(ON) and READONLY(OFF) control statements be generated for all non-empty MVCs. If ALL is not specified, READONLY control statements are not generated for full MVCs.

Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the ACTMVCGN JCL:

SLUSMAUD
Output in the form of SLUADMIN utility control statements to audit selected MVCs. This statement is optional; if it is present, then AUDIT utility control statements are generated for all non-empty MVCs, except for those in EXPORT status.

SLUSMVON
ACTMVCGN output in the form of MVCMAINT utility control statements with the READONLY(ON) keyword.

SLUSMVOF
ACTMVCGN output in the form of MVCMAINT utility control statements with the READONLY(OFF) keyword.
ARCHive

**Interfaces:**
Utility only
UUI: Yes

**Subsystem Requirements:**
Active HSC not required

**Description**
The ARCHive command archives VTVs, moving them to MVCs in a different Storage Class.

**Syntax**

```
ARCHive
  MGMTclass(mgmt-class-name1...mgmt-class-namen)
  VTV(vtv-list | vtv-range)
  MAXMVC(nn)
  CONMVC(nn)
  ELAPSE(nnnn)
  POLICYdd(ddname)
  MOVEVTV
```

**FIGURE 3-3** ARCHive syntax
Parameters

**MGMTclas**

optionally, specifies one or more Management Classes that define Archive Management Policies.

`mgmt-class-name1...mgmt-class-namen`

one or more Management Classes.

**VTV**

optionally, specifies a list or range of VTVs.

`vtv-list | vtv-range`

A list or range of VTVs.

---

**Note** – If you do not specify a value for MGMTclas or VTV, VTCS scans (or processes) all VTVs.

**MAXMVC**(nn)

optionally, specifies the maximum number of MVCs that will be processed by a single archive task.

Valid values are 1 to 98. If not specified the CONFIG RECLAIM value (or default) is used. This parameter is ignored if MOVEVTV is not specified.

**CONMVC**(nn)

optionally, specifies the maximum number of MVCs that VTCS concurrently processes during subsequent recall and migrate operations.

Valid values are 1 to 99. If not specified the CONFIG RECLAIM value (or default) is used. This parameter is ignored if MOVEVTV is not specified.

**ELAPSE**(nnnn)

optionally, specifies the maximum time for the archive in minutes. If the maximum time expires, VTCS issues message SLS6682I. If there are no MVCs currently mounted, archive stops when the ELAPSE value is reached. If any MVCs are currently mounted when the ELAPSE value is reached, archive processes the mounted MVCs and then stops.

Valid values are 1 to 1440. If not specified, there is no time limit on the archive process. This parameter is ignored if MOVEVTV is not specified.

**POLICYdd**(ddname)

optionally, specifies the `ddname` of a file containing an alternate MGMTclas statement.

---

**Note** – POLICYdd and MOVEVTV are mutually exclusive.

**MOVEVTV**

optionally, archive VTVs per the currently active Management Policies as specified by the MGMTclas statements that apply to the VTVs specified by MGMTclas or VTV. If you do not specify MOVEVTV, only a report is generated.
ARCHive Reports

**FIGURE 3-4** shows an example of an ARCHive report (MOVEVTV not specified).

![ARCHive Report](image)

**FIGURE 3-4** Example output from ARCHive
ARCHIVE Report Fields

The following list describes the ARCHive VTV report fields. This section of the report is followed by a total line showing the number of candidate VTVs and the size in MB to be recalled and re-migrated.

VTV Volser

the VTV volser.

Size (MB)

the uncompressed size of the VTV (MB). <MOUNT> indicates that the VTV was mounted when the report ran. <FENCED> indicates that the VTV’s state is unknown. If <FENCED> appears, contact Oracle StorageTek Software Support.

Comp %

the VTV compression percentage achieved. This is the difference between the uncompressed and compressed VTV size expressed as a percentage of the uncompressed VTV size. For example if a 100MB VTV compresses to 40MB then the compression% will be given as 60%. A compression of 0% indicates that no compression was possible on the VTV.

Creation Date and Time

the date and time that the VTV was created.

MGMT Class

the name of the Management Class for the VTV specified.

MVC1, MVC2, MVC3, MVC4

the MVC(s) that contain the VTV. If all of these fields are empty, the VTV has not been migrated or consolidated. If 1 or more of these fields list an MVC volser, the VTV was migrated to each of these MVCs.
MVC Report Fields

The following list describes the ARCHive MVC report fields. The data for each MVC is followed by one or more VTV volser with copies on the MVC. This section of the report is followed by a total line showing the number of candidate MVCs and the size in MB to be recalled and re-migrated.

**MVC Volser**
the MVC volser.

**MVC Media Type**
the MVC type.

**Media Size (MB)**
the size of the MVC (MB). This will only be determined after VTCS has used an MVC. “UNKNOWN” appears in this field until VTCS migrates a VTV to the MVC.

**Storage Class**
the MVC’s Storage Class.

**Candidate VTVs**
the number of candidate VTVs on the MVC.

**Total VTV Size (MB)**
the size of all candidate VTVs on the MVC in MBs.

**Location (ACS ID)**
the ACS where the MVC resides. If blank, the MVC is not currently in an ACS.
MOVEVTV Report

FIGURE 3-5 shows an example of an ARCHive MOVEVTV report.

<table>
<thead>
<tr>
<th>SLUADMIN (7.1.0)</th>
<th>StorageTek Enterprise Library Software Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME 10:07:10</td>
<td>ARCHIVE MOVEVTV REPORT</td>
</tr>
<tr>
<td>PAGE 0001</td>
<td>DATE 2010-03-31</td>
</tr>
</tbody>
</table>

Move VTV - MVC 022705 ignored, MAXMVC reached
Move VTV - VTV X04898 ignored, all MVC copies rejected
Move VTV - 4 MVCs selected for processing
Move VTV - 5 VTVs selected for processing
Move VTV - 5 VTV copies to be processed
Move VTV - 0 VTV copies not matched to request
Move VTV - 1 VTV copies rejected by MAXMVC limit
Move VTVs - MVC 023484 selected and contains 1 VTVs
Move VTVs - MVC 022628 selected and contains 1 VTVs
Move VTVs - MVC 022631 selected and contains 2 VTVs
Move VTVs - MVC 022608 selected and contains 1 VTVs

Recall from MVC 022628 to VTSS HBVTSS17
SLS6683I Bulk recall of 1 VTVs issued to MVC 022628
SLS6644I VTV X99909 recalled from MVC:022628 Block:25401431
SLS6637I Recall from MVC 022628 completed

Recall from MVC 023484 to VTSS HBVTSS17
SLS6683I Bulk recall of 1 VTVs issued to MVC 023484
SLS6644I VTV X04897 recalled from MVC:023484 Block:02402581
SLS6637I Recall from MVC 023484 completed

Recall from MVC 022608 to VTSS HBVTSS16
SLS6683I Bulk recall of 1 VTVs issued to MVC 022608
SLS6637I Recall from MVC 022608 completed

Migrate to storage class HBVTSS16 from VTSS HBVTSS17
SLS6681I VTV X99909 migrated to MVC:022589 Block:01400025 StorCl:HBVTSS17
MgmtCl:SIMPLEX
SLS6636I Demand migration to MVC 022589 completed

Recall from MVC 022631 to VTSS HBVTSS16
SLS6683I Bulk recall of 2 VTVs issued to MVC 022631
SLS6644I VTV X99910 recalled from MVC:022631 Block:03400141
SLS6644I VTV X99908 recalled from MVC:022631 Block:05400281

FIGURE 3-5  Example output from ARCHive MOVETV
AUDit

Interfaces:

Utility only
UUI: Yes, when MVC or VTSS is specified

Subsystem Requirements:

- Active HSC/VTCS (AUDit MVC, VTSS, or INVLDMIR)
- Active HSC at FULL service level (all others)

Description

The AUDit command performs a volume inventory audit for the following:

- ACS or LSM
- One or more specified LSMs within an ACS
- One or more panels within an LSM
- One or more rows within a panel
- One or more columns (cells) within a row
- One or more VTSSs
- One or more MVCs

Optional parameters allow you to do the following:

- Update the library control data set to reflect cartridges observed.
- Produce a discrepancy list and do not update the control data set.
Syntax

FIGURE 3-6  AUDit syntax
Parameters (Real Volume Audit)

**ALL**
optionally, specifies that the total library is to be audited.

**ACS**
optionally, specifies that only a particular ACS in the library is to be audited.

\[acs-id\]

a two digit decimal ACS identifier from 00-99.

---

**Note** – If the ACS parameter is specified with no LSM parameters, the audit is performed on all LSMs in the ACS at the same time (multitasking). To audit only certain LSMs within an ACS, you must code the LSM parameter with the LSM or list of LSMs.

**APPLY**
optionally, specifies whether the control data set is updated.

**YES**
specifies that the Audit operation ejects cartridges with duplicate VOLSERS, unreadable or illegal external media labels, and/or new cartridges unreadable external labels, and performs corrective actions to the control data set to reflect the physical contents of storage cells. **YES is the default.**

**NO**
specifies that a discrepancy listing is produced, and the control data set is not updated.

**ACS Optional Parameters**
The following parameters may **only** be specified with ACS:

**LSM**
optionally, specifies that only certain LSMs within the specified ACS are to be audited.

\[lsm-list\]
a single LSM number or a list of LSM numbers. An LSM number is a hexadecimal value (00-17).

An LSM range is not allowed. If a list is specified, the elements must be separated by blanks or commas, and the entire list enclosed in parentheses.

**PANEL**
optionally, specifies that only certain panels within an LSM are to be audited.

\[panel-list\]
\[panel-list\] may be a single panel or a list of panels. Panel ranges are not allowed. If a list is specified, the elements must be separated by blanks or commas, and the entire list enclosed in parentheses.
Note – If this parameter is specified, the LSM parameter may contain only one LSM number.

A panel-list element is a one or two digit decimal number, specific to the LSM type. See “Panels” on page 711 for a list of valid values.

Note –

- The SL3000 library has static panels numbers starting with the left-most back panel (panel 0) and ending with the right-most front panel (panel 23) on a fully-configured library. The panel numbering starts with the BDM, the only required module (panels 12 and 13), and works outward to the left and to the right.
- Panels 0 (CAP panel) and 1 (drive panel) are allowable entries for an SL8500 audit, however, in this case the HSC displays a condition code 0 because it does not find any storage cells on these panels.

ROW

optionally, specifies that only certain rows within the specified LSM panel are to be audited.

row-list

row-list may be a single row or a list of rows. Ranges are not allowed. If a list is specified, the elements must be separated by blanks or commas, and the entire list enclosed in parentheses.

If this parameter is specified, the LSM and PANel parameters may contain only one element.

A row-list element is a one or two digit decimal number, and is specific to the LSM type. See “Rows” on page 712 for a list of valid values.

COLUMN

optionally, specifies that only certain columns (cells) within an LSM panel row are to be audited.

column-list

column-list may be a single column, or a list of columns. Ranges are not allowed. If a list is specified, the elements must be separated by blanks or commas, and the entire list enclosed in parentheses.

If this parameter is specified, the LSM, PANel, and ROW parameters may contain only one element.

A column-list element is a one or two digit decimal number and is specific to the LSM type. See “Columns” on page 713 for a list of valid values.

Note –

- A list of rows cannot be specified if a list of columns is specified.
- A list of columns cannot be specified if a list of rows is specified.
- All SL3000 columns are numbered 0-5 (left to right).
CAP

optionally, specifies a particular Cartridge Access Port to be used for any required cartridge ejections during the Audit operation.

\[ \text{cap-id} \]

identifies one or more CAPs. The format of a cap-id is \( AA:LL:CC \), where \( AA:LL \) is the LSMid, and \( CC \) is the CAP. See “CAPid” on page 710 for a list of valid values.

Note –

- If a CAP is not specified, a CAP in the identified ACS is selected based on the CAPPref operator command. See “CAPPref” on page 194 for more information.
- Multi-ACS audits cannot specify the CAP parameter. A CAP is chosen for each ACS based upon CAP preference values.

EMPTYCell

optionally, specifies that only empty cells are to be audited. This parameter can be used in combination with all other AUDit parameters except DIAGScan(ONLY).

The main benefit provided by auditing only empty cells is reducing the time required to run an audit.

Note – Oracle does not recommend running an empty cell audit on an SL8500 library because the time to run the audit will not be substantially reduced.

Typically, users will want to specify this parameter when:

- they have entered an LSM and placed new cartridges in empty cells, or
- they need to correct cartridge location information for library volumes that have been manually moved to empty cells.

In either case, if APPLy(YES) is specified, the CDS is updated to reflect that these cells are no longer empty.

Caution – In some cases, running an empty cell only audit may compromise the accuracy of the audit.

DIAGScan

optionally, specifies that diagnostic cells are to be scanned. The HSC scans these cells one at a time and displays the contents of each cell in the AUDIt utility report.

\[ \text{ONLY} \]

specifies that only diagnostic cells should be scanned. This parameter cannot be specified in combination with the EMPTYCell parameter.

\[ \text{ALSO} \]

specifies that diagnostic cells should also be scanned along with the normal AUDIt utility operations.
**Note** –
- DIAGScan is mutually exclusive with ROW and COLUMN. It can be used in combination with all other AUDIT parameters.
- Cartridge movement between diagnostic cells and regular storage or CAP cells is not supported by the LMU, so diagnostic cell contents can only be reported.

**INTRANs**

optionally, specifies that in-transit cartridges in an LSM are to be processed. All in-transit cartridges, except those identified in the note below, are read and ejected as part of an AUDIT utility operation.

**Note** –
- INTRANs is mutually exclusive with APPLY(NO). It can be used in combination with all other AUDIT parameters.
- Only the first two cells (columns 0 and 1) in a 9310 playground are accessible to an in-transit audit. Cartridges in other cell positions in a 9310 playground (columns 2 through 5) cannot be ejected by an in-transit operation.
- 9740 diagnostic cells cannot be scanned by an audit.

**Parameters (Virtual Volume Audit)**

**VTSS**

optionally, specifies an audit of one or more VTSSs.

vtss-name or vtss-list

the names of one or more VTSSs.

**INVLDMIR**

optionally, specifies an audit of MVCs with invalid MIRs.

**MVC**

optionally, specifies an audit of one or more MVCs.

volser, vol-range or vol-list

the volser, volser range, or volser list of MVC(s) to be processed.
Audit Report

An audit report lists the VTVs and MVCs that are different from those listed in the CDS as shown in FIGURE 3-7. In this figure, the report shows all MVCs or VTVs as new entries in the CDS, which is typical of the output of a VTCS audit run after you lost all copies of the CDS, then ran recovery procedures.

FIGURE 3-7  Example AUDIT utility report
Note – An audit also generates:

- MVC summary and detail reports.
- Display VTSS summary and detail output.
- For every VTV resident on the VTSS, the VTV volser, size in MB, and Management Class.

Audit Report Messages
For every VTV found on an MVC or VTSS, the audit report lists one of following:

\--- VTV possibly corrupt (Block: bbbbb)

Explanation: During the audit, an I/O error occurred for VTV vvvvvv at block bbbbb on the MVC being audited.

vvvvvv VTV not found [ , no MVC copies left ]

Explanation: The audit did not find VTV vvvvvv on the MVC or VTSS being audited. If no MVC copies left appears, no MVCs contain copies of the VTV.

vvvvvv VTV not found on CDS (Block: bbbbb)

Explanation: The audit expected but did not find VTV vvvvvv at block bbbbb on the MVC being audited.

vvvvvv VTV not current (Block: bbbbb)

Explanation: The audit found a non-current copy of VTV vvvvvv at block bbbbb on the MVC being audited.

vvvvvv VTV copy valid (Block: bbbbb)

Explanation: The audit found a valid copy VTV vvvvvv at block bbbbb of the MVC being audited; its location matches the CDS entry for the VTV.

vvvvvv VTV Added as primary copy (Block: bbbbb)

Explanation: The audit found the most current copy of VTV vvvvvv at block bbbbb of the MVC being audited; the audit added this location to the CDS as the primary MVC copy of the VTV.

vvvvvv VTV Added as secondary copy (Block: bbbbb)

Explanation: The audit found the second most current copy of VTV vvvvvv at block bbbbb of the MVC being audited; the audit added this location to the CDS as the secondary MVC copy of the VTV.

vvvvvv Duplicate copy ignored (Block: bbbbb)

Explanation: The audit found a duplicate copy of VTV vvvvvv at block bbbbb and ignored this copy.
Explanation: The audit found a newer version of the VTV and removed the link to the old version from the CDS.

**Old VTV version deleted from VTSS**

Explanation: The audit found an old version of the VTV and deleted it from the VTSS.

**Old version of VTV retained [ VTSS sssssss ]**

Explanation: The audit found an old version of the VTV, which is the only copy, and retained this version. If VTSS sssssss appears, the audit found the VTV on a different VTSS than the one that was audited.

**Version older than MVC copies [ VTSS sssssss ]**

Explanation: The audit found a version of the VTV that is older than copies on the MVC. If VTSS sssssss appears, the audit found the VTV on a different VTSS than the one that was audited.

**Newer version of VTV found [ on VTSS sssssss ]**

Explanation: The audit found a newer version of the VTV and updated the CDS with this location. If on VTSS sssssss appears, the audit found the VTV on a different VTSS than the one that was audited.

**VTV discovered [ VTSS sssssss ]**

Explanation: The audit found a current version of the VTV on a VTSS whose location was unexpected and updated the CDS with this location. If VTSS sssssss appears, the audit found the VTV on a different VTSS than the one that was audited.

**VTV valid [ VTSS sssssss ]**

Explanation: The audit found a valid version of the VTV and updated the CDS with this location. If VTSS sssssss appears, the audit found the VTV on a different VTSS than the one that was audited.

**no access to VTSS sssssss**

Explanation: The audit found a valid version of the VTV which is on a VTSS that the host cannot access.

**MVC mmmmmmm STATUS CHANGED FROM EXPORT TO CONSOLIDATE VOLUME**

Explanation: The audit discovered current VTVs on an export MVC that was created by export by VTV or Management Class. The audit changed the MVC status from export to consolidate and updated the CDS to add the MVC and its VTVs.
EXPORT MVC mmmmmmm IS NOW MADE EMPTY IN THE CDS

Explanation: The audit discovered no current VTVs on an export MVC that was created by export by VTV or Management Class. The audit marked the MVC as empty.

WARNING MVC mmmmmmm IS AN OUTPUT MVC FROM AN EXPORT OPERATION - FORCING READONLY

Explanation: The audit forced read-only status on export MVC mmmmmmm.

Audit terminated. Unable to determine the position of the end of VTV vvvvvv on MVC mmmmmmm

Explanation: VTCS issued an Inventory MVC ECAM request to determine the position and volser of a VTV on the MVC being audited. VTSS indicated, in the ECAM response, that it was unable to determine the position of the end of the VTV. Because VTCS needs that information to determine the position of the next VTV on the MVC (assuming end of tape has not been reached), VTCS had to terminate the audit with RC=8. The MVC is left in Audit status. To resolve the condition, drain the MVC. If you cannot drain the MVC, contact Oracle StorageTek Software Support.
**BACKup**

*Interfaces:*
SLUADMIN utility only
UUI: No

*Subsystem Requirements:*
Active HSC not required

**Description**

The BACKup command produces a backup of the library control data set (CDS).

The utility automatically selects the primary CDS copy based on the specified CDS DD statements or the CDS order used by the active HSC on the system.

If you want to back up a single, specific copy of the CDS, you can specify a single DD statement, SLSCNTL, to point to the file you want to back up. In general, however, you should only back up the primary CDS; the HSC RESTORE utility automatically creates the correct number of CDS copies when it executes.

---

**Note –**

- Refer to the *ELS Legacy Interfaces Reference* for information about using BACKup when journaling is enabled, or when copies of the CDS are in different locations.
- See “Point in Time Copy (SLUPCOPY)” on page 688 for information about the Point-in-Time Copy utility as an alternative to backup.

---

**Syntax**

```
BACKup
```

*FIGURE 3-8*  BACKup syntax

**Parameters**

None required. Refer to the *ELS Legacy Interfaces Reference* for information about using BACKup when journaling is enabled, or when copies of the CDS are in different locations.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the BACKup JCL:

**SLSBKUP**

specifies the created backup data set. The LRECL and BLKSIZE of this data set default to 4096.
CANcel

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The CANcel command stops active and queued processes that use an RTD.

Syntax

```
CANcel
\[ ID(process-id) \]
\[ Type(ALL\[MIGrate\]\[RECALL\]\[RECLAIM\]) \]
```

FIGURE 3-9  CANcel syntax

Parameters

ID
specifies a process to cancel.

```
process-id
the process ID.
```

Type
optionally, specifies the type of process to cancel.

```
ALL
Cancel all processes.
MIGrate
Cancel all migration processes.
RECALL
Cancel all recall processes.
RECLAIM
Cancel all reclaim processes.
```
CAPPref

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The CAPPref command assigns a preference value to one or more designated CAPs, and places a CAP into automatic or manual mode.

Several HSC commands and utilities require the use of a CAP and give you the option to either specify the CAP to use, or allow the HSC to automatically select a CAP. When you allow the HSC to make the selection, the CAP is chosen based on availability and the CAP preference value.

Assigning CAP preference values establishes an ordered list of CAPs from which the HSC selects an available CAP with the highest nonzero preference value. A CAP’s preference value is zero until it is changed by a CAPPref command. Zero preference CAPs are never automatically selected by the HSC; however, they can be explicitly requested by the user.

Note –
■ A CAP preference value is only in effect on the host that executes the command.
■ CAP mode (automatic or manual) is in effect on all hosts system-wide for each CAP; it cannot be set discretely for each host.

Syntax

```
CAPPref prefvalue lsm-id cap-id cap-range (cap-list) host-id host-id AUTO MANUAL
```

**FIGURE 3-10** CAPPref syntax
Parameters

prefvalue
specifies a preference value which is assigned to all listed CAPs. Preference values are decimal in the range from 0-9.
A CAP with a preference value of 9 has the highest priority and is always selected first when it is available. If two or more available CAPs in an ACS have the highest preference value, the one with the lowest CAPid is selected.

Note –
- The preference value for a PCAP must be zero. A PCAP is only used when explicitly requested by the user; the HSC does not automatically select a PCAP.
- To use the CAPPref command to place a PCAP into AUTO or MANual mode, specify a prefvalue of 0.

Ism-id
identifies an LSM. The format of an LSMid is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).

Note – If you enter this parameter when there is more than one CAP in the specified LSM, an error message is generated.

cap-id or cap-range or cap-list
identifies one or more CAPs. The format of a cap-id is AA:LL:CC, where AA:LL is the LSMid, and CC is the CAP. See “CAPid” on page 710 for a list of valid values.

Note –
- If SL3000 library CAPs are not present, the HSC reports them as “not installed.” This keeps CAP addresses from changing as new CAPs are added.
- SL3000 and SL8500 libraries do not contain a PCAP.

A cap-range identifies an inclusive range of multi-cell CAPs; PCAPs are excluded from the range. The beginning and ending values in a range must be valid CAPids and neither CAPid can specify a PCAP. The rules for specifying ranges apply. PCAPs must be explicitly specified in the CAPPref command.

Example 1:
00:00:00-00:03:00
In this example, all CAPs in LSMs 00:00, 00:01, 00:02, and 00:03, except PCAPs, are included in this range.

Example 2:
00:00:00-00:03:01
In this example, CAPid 00:00:00 is either a standard CAP or a magazine-style CAP. CAPid 00:03:01 is a magazine-style CAP. All CAPs in LSMs 00:01 and 00:02, except PCAPs, are included in this range.
Each `cap-list` element can be either a single CAPid or a CAPid range. The elements in a list must be separated by a comma or a blank, and the entire list must be enclosed in parentheses.

**host-id**

optionally, specifies that the CAPPref command is to be performed only if the host-id parameter matches the identifier of the issuing host (the SMF system identifier for both JES2 and JES3).

- If CAPPref is issued from PARMLIB and a host-id is specified, the command is executed only by the host with the matching ID.
- If CAPPref is issued from PARMLIB and a host ID is not specified, the command is executed by each host that accesses PARMLIB.

Refer to the publication *Managing HSC and VTCS* for more information about PARMLIB.

**AUTO**

optionally, indicates that the specified CAPs are to be placed in automatic mode (referred to as *auto-mode*). Auto-mode CAPs remain unlocked when not in use. AUTO is the initial setting for a PCAP.

When a CAP is in auto-mode, you can initiate an enter operation without issuing an ENter command. You do this by opening the CAP door, placing one or more cartridges inside, and closing the CAP. The CAP is locked while the enter is being processed; then it is unlocked again.

Auto-mode CAPs can be used for eject processing by either:

- specifying the CAPid on an Eject command or EJECT utility, or
- assigning a preference value and allowing the HSC to automatically select the CAP.

A CAP in auto-mode is locked whenever it is selected for an eject operation, to prevent an enter operation on this CAP until the eject completes.

---

**Note** – HSC termination will be slower with CAPs in auto-mode; especially in a multiple-host environment.

**MANual**

optionally, indicates that the specified CAP is to be locked when not in use. MANual is the initial setting for all multi-cartridge CAPs.

---

**Note** –

- AUTO/MANual settings are sent host-to-host using LMU broadcast and the status is preserved in the control data set. For this reason, it is recommended that you **not** make frequent changes to the CAP mode.
- A prefvlue of 0 must be specified when using the CAPPref command to set a PCAP to AUTO or MANual mode.
CDs

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The CDs command enables, disables, relocates, or expands a control data set on an active HSC (or, in a multiple-host environment, on all active hosts) without requiring you to stop or substantially disrupt normal tape processes.

Syntax

![CDs Syntax Diagram](image)

**FIGURE 3-11** CDs syntax
Parameters

Enable

allocates and activates any preexisting, renamed, or new CDS specified by the **DSN** parameter. The CDS Enable command can allocate and activate a CDS residing in a new location, either with a preexisting or a new data set name, when the **NEWLoc** parameter is specified. MVS catalog services are used to resolve the volume and unit definitions, if the **NEWVol** or **NEWUnit** parameters are not specified.

The specified control data set must be named in the CDSDEF control statement in PARMLIB.

**DSN**

specifies the control data set name to allocate for all hosts.

\[ dsn \]

the data set name.

**NEWLoc**

optionally, indicates that a relocation activity has occurred for the CDS named by the **DSN** parameter. MVS uses the catalog facility to determine the volume location of the relocated CDS.

**NEWVol**

optionally, specifies the volume for a relocated CDS copy. In MVS, if the new CDS copy is not cataloged, this parameter is required. If **NEWVol** is specified, but **NEWUnit** is not, **NEWUnit** defaults to SYSALLDA.

**NEWVol** is required if the user is executing the command in the HSC VM environment.

\[ volser \]

the volume.

**NEWUnit**

optionally, specifies the unit name for a relocated CDS copy. This parameter defaults to SYSALLDA if it is omitted and **NEWVol** is specified.

**NEWUnit** is required if the user is executing the command in the HSC VM environment.

\[ unitname \]

the unit name.

**EXPand**

expands all enabled CDSs to the maximum number of 4096 blocks that can fit in the physical space allocated for the CDS. The maximum number of 4096 blocks is determined by the smallest CDS copy.
Disable

unallocates (makes inactive) the specified CDS. The CDs Disable command does not disable the last active copy of the control data set.

DSn

specifies the control data set name to unallocate for all hosts.

dsn

the data set name.

Primary

indicates that the current primary control data set is to be disabled.

SEcndry

indicates that the current secondary control data set is to be disabled.

STandby

indicates that the current standby control data set is to be disabled.
CDSDAta

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The CDSDAta command produces XML (and/or CSV) output data for library configuration and volume and pool definitions from VOLPARM control statements.

**Note** – No text output is produced by this command, so either the SLSXML or SLSCSV DD statement must be included in the SLUADMIN execution to create output from this command. See “UUI Output Definition Statements” on page 668 for more information.

Syntax

```
CDSDAta TYPE(
  VOLPOOL,
  MVCPOOL,
  SCRPOOL,
  CDS,
  CAP,
  LSM,
  DRV
)
```

**FIGURE 3-12** CDSDAta syntax
Parameters

TYPE
specifies the type of CDS data for which output is produced. The TYPE Keyword is positional and therefore optional. One of the listed types must be specified.

VOLPOOL
produces XML data for VOLPARM VOLUME pool definitions.

MVCPOOL
produces XML data for VOLPARM MVC pool definitions.

SCRPOOL
produces XML data for VOLPARM SCRATCH pool definitions.

CDS
produces XML CDS data.

CAP
produces XML CAP data.

LSM
produces XML LSM data.

DRV
produces XML drive data.
CDSDEF

Interfaces:
PARMLIB only
UUI: No

Subsystem Requirements:
None

Description
The CDSDEF command specifies control data set names, locations, and number of control data sets that you want running. This information is used by HSC during initialization.
CDSDEF is a required command.

Syntax

```
CDSDEF DSN1(dataset-name),VOL1(volser),UNIT1(unitname)
CDSDEF DSN2(dataset-name),VOL2(volser),UNIT2(unitname)
CDSDEF DSN3(dataset-name),VOL3(volser),UNIT3(unitname),DISABLE
```

FIGURE 3-13 CDSDEF syntax
Parameters

**DSNx**

*dataset.name* is the name of an HSC control data set. At least one DSN parameter must be specified, as many as three can be specified. If two data sets are specified, then the volume inventory information on both copies is kept current, and these two data sets are referred to as the primary and the secondary CDS.

If all three are specified, then two copies are kept current and the third data set is a standby CDS which is enabled as the default condition. This standby CDS can be disabled with the **DISABLE** parameter. In the case where a standby copy of the CDS is being used, you do not need to specify which two of the three CDSs are the primary and secondary copies. The HSC determines, based on last use, which two are the correct copies to use during the initialization of the Control Data Set Services.

**VOLx**

Optionally, *volser* is the volume serial number of the DASD volume where the specified CDS resides. If the data set is not cataloged, this must be specified.

If omitted, volume and unit information is determined from the MVS catalog, and the **UNITx** parameter is ignored.

**UNITx**

Optionally, *unitname* is used to specify the unit parameter in the SVC99 dynamic allocation parameter list. If omitted, SYSALLDA is used.

*unitname* can be an IBM-defined generic (e.g., 3390), a system-built esoteric (e.g., SYSALLDA), a user-defined esoteric, or a specific device number. It is recommended that a general value of SYSALLDA be specified (or defaulted) to allow maximum flexibility and to reduce the need for CDSDEF updates to keep them consistent with the active CDS.

**DISABLE**

Optionally, disables the standby CDS. If this parameter is not specified, the default is to enable the standby CDS at HSC initialization.

If **DISABLE** is specified, initialization verifies the standby CDS by allocating, opening, and reading the data set. The standby CDS is then closed and deallocated. This process allows manual control over the use of the standby CDS during a control data set switch situation.

If the standby CDS is enabled, the HSC automatically uses it for switching. If it is disabled, it is not used. There is no enable parameter for CDSDEF, as the enable condition is the default.
CLean

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The CLean command schedules a cleaning cartridge to be mounted on a library-controlled transport. The specified transport is flagged by the control data set and a cleaning cartridge is mounted prior to the next volume mount.

Syntax

```
CLean dev-id
  dev-range
  (dev-list)
  host-id
```

**FIGURE 3-14** CLean syntax

Parameters

*dev-id or dev-range or dev-list*

specifies a list of one or more device addresses for which cleaning is to be scheduled. Each *dev-list* element can be either a single device address or a range. The elements in a list must be separated by a comma or a blank, and the entire list must be enclosed in parentheses.

*host-id*

optionally, indicates that cleaning is to be performed for the device address of the specified host (the SMF system identifier for *both* JES2 and JES3).
COMMPath

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The COMMPath command is used in a multiple-host environment to do the following:
■ Set up a tiered communication service between HSC hosts which can be modified at any time without bringing down the HSC
■ Define the hierarchy of methods available to each host for communication with other hosts
■ Establish the current method of communication for a host (or switch from one method to another).

It is recommended that host-to-host communication be defined in PARMLIB at startup. Issue the COMMPath command from the console to switch or delete communication paths.
Syntax

![Diagram of COMMPPath syntax]

**Parameters**

**HOSTid**

specifies the host for which the command sets or modifies the parameters.

*host-id*

the host identifier (the SMF system identifier for both JES2 and JES3).

**METHOD**

specifies the current method of communications to be used for the specified host. This parameter allows switching to a higher, lower, or equivalent (for LMUpath only) level method of communications.

**CDS**

indicates that communication is to be through the control data set.

**Note** – CDS is the initial setting for HSC host-to-host communications.
LMU
indicates that communication is to be through an LMU.

*acs-id*
the LMUpath definition that is to be the active (or current) LMUpath. If you do not supply an *acs-id*, the first LMUpath specified in the list of LMUpath definitions is made active.

**Note** –
- If LMU is specified, the LMUpath parameter must have been specified in a previous command, or it must be included in the same command.
- If the LMU method is specified in PARMLIB, the switch from CDS to LMU is delayed until the HSC initializes to the full service level.
- If the HSC service level drops to base, LMU communications are switched to CDS. When the full service level is restored, an upward switch to the LMU method can only be accomplished by issuing the COMMPath command.

VTAM
specifies that communication is to be through a VTAM network.

**Note** –
- If VTAM is specified, the VTAMpath parameter must have been specified in a previous command, or it must be included in the same command.
- A downward switch from the VTAM method is performed when the VTAM APPLID of the HSC is varied inactive, or VTAM is shut down.

LMUpath
specifies one or more LMUpaths that can be used for host-to-host communications. An LMU is eligible to be used for host-to-host communications if it is connected to other HSCs sharing a library.

If more than one eligible LMU is specified, the HSC begins searching for an available communications path beginning with the first *acs-id* in the list. The search continues until a path can be established or the end of the list is reached.

The LMUpath definitions are cumulative; that is, the definitions specified in a command are appended to the current list of definitions. You can insert an LMUpath into the current list by specifying the LMUpath that you wish to insert, followed by the LMUpaths that are to come after it. If a COMMPath command specifies an LMUpath that is already defined in the list, the path is removed from its current position and appended to the end of the list as specified in the command.

For example, the current definition is (02,03,04). You can insert LMUpath 01 after 02 by specifying LMU(01,03,04). Now the current list appears as (02,01,03,04). Also, if the current definition is (02,01,03,04) and the command specifies LMU(01,02), the list becomes (03,04,01,02).

**Note** – For a temporary outage of an LMU, it is not necessary but may be desirable to delete the LMUpath definition for that LMU. When the LMU is available again, define it to the communications service again by adding it to the current definitions.
**acs-id or acs-range or acs-list**

One or more specific LMUs. Each `acs-list` element can be either a single ACSid or an ACSid range. The elements in a list must be separated by a comma or a blank, and the entire list must be enclosed in parentheses.

**VTAMpath**

Defines the VTAM name to be associated with an HSC host. The VTAM name is used in the process of establishing a VTAM connection with other HSCs. It is the VTAM APPLID defined by the VTAM APPL statement.

This parameter can also be used to change or delete a previously defined name, but only when the current method for this host is not VTAM.

**name**

The VTAM name.

**DELETE**

Specifies to delete the definitions specified by the LMUpath parameter and/or the VTAMpath parameter.

If LMU is not the current method, all LMUpath definitions can be deleted by specifying DELETE LMUpath (without supplying an `acs-id`). If the current method is LMU, the active LMUpath cannot be deleted.

If the current method is VTAM, the VTAMpath definition cannot be deleted.
CONFIg

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required, and must be down on all hosts when running CONFIg RESET.

Description
The CONFIg command defines or modifies the VSM configuration stored in the HSC CDS. You create a single file that contains the CONFIg command and its input statements.

Note – Dynamic reclaim requires an H level CDS.

Syntax

![CONFIg Syntax Diagram]

FIGURE 3-16 CONFIg syntax
Parameters

**RESET**

resets the VSM configuration in the CDS. It is required as described in the following table:

<table>
<thead>
<tr>
<th>CDS is at “F” Level or Above</th>
<th>CDS is below “F”</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Required only</strong> when changing the CDS to a lower level.</td>
<td></td>
</tr>
<tr>
<td>■ RESET is not required when going from F to G, or G to H level.</td>
<td></td>
</tr>
<tr>
<td>■ All hosts accessing the CDS must be running VTCS/ELS 7.0 when you convert from F to G level.</td>
<td></td>
</tr>
<tr>
<td>■ All hosts accessing the CDS must be running VTCS/ELS 7.1 when you convert from G to H level.</td>
<td></td>
</tr>
<tr>
<td><strong>You must</strong> specify RESET when you make hardware changes such as:</td>
<td></td>
</tr>
<tr>
<td>■ Adding a VTSS to your configuration.</td>
<td></td>
</tr>
<tr>
<td>■ Adding RTDs, removing RTDs, or reordering their sequence in your configuration.</td>
<td></td>
</tr>
<tr>
<td>■ Physically removing a VTSS from your configuration.</td>
<td></td>
</tr>
<tr>
<td>■ Changing the CDS level.</td>
<td></td>
</tr>
</tbody>
</table>

You **do not** need to specify RESET if you:

■ Change VSM volumes (such as adding VTVs and MVCs). Note that VTV and MVC volumes cannot be removed by RESET or any other VTCS utility. Removal of VTV and MVC volumes requires the definition of a new CDS and the use of MERGEcds.

<table>
<thead>
<tr>
<th>Note –</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ HSC must be down on all hosts when you run CONFIG RESET. The changes you made to RTD definitions will take effect when you restart HSC.</td>
</tr>
<tr>
<td>■ Although some changes can be done dynamically by running CONFIG and not restarting HSC/VTCS, there may be some additional parameter changes required to use any additional resources.</td>
</tr>
<tr>
<td>■ If you run a CONFIG with RESET, then the status flags are reset (and message SLS6746E disappears). If a VTSS was offline when you ran the config (with RESET), please remember to audit the VTSS.</td>
</tr>
</tbody>
</table>
CDSLEVEL

One of the following CDS levels:

V6ABOVE

creates an “E” level CDS, which provides the following enhancements:

- Full VSM4 Support
- 4 MVC copies
- 800Mb VTVs

V61ABOVE

creates an “F” level CDS, which provides the following enhancements:

- Near Continuous Operations (NCO)
- Bi-directional clustering
- Improved CDS I/O performance - reduces I/O required to manage virtual scratch subpools

V62ABOVE

creates a “G” level CDS, which provides the following enhancements:

- 400Mb/800Mb/2Gb/4gb VTVs
- Standard/Large VTV Pages
- 65000 VTVs per MVC

V71ABOVE

creates an “H” level CDS, which provides the following enhancements:

- Dynamic reclaim
- Autonomous device support

NOUPDATE

specifies that the configuration is checked and any appropriate messages output, but no updates are made to the CDS.
CONFIg GLOBAL Statement

The CONFIg GLOBAL statement specifies VTCS global values. This statement is required.

Syntax

![Diagram of CONFIg GLOBAL statement syntax]

FIGURE 3-17 CONFIg GLOBAL statement syntax
Parameters

MAXVTV=nnn
optionally, specifies the maximum number of VTVs that can be migrated to a single MVC. The default is 32000 for a D, E, or F level CDS and 65000 for a G level CDS. Valid values are:
- 4 to 32000 for a D, E or F level CDS.
- 4 to 65000 for a G level CDS.
For more information about CDS levels, see “CONFlg” on page 209.

MVCFREE=nnn
optionally, specifies the minimum number of free MVCs in the MVC pool. A free MVC has 100% usable space and does not contain any migrated VTVs. Valid values are 0 to 255. The default is 40.
If free MVCs is equal or less than this value, VTCS issues message SLS6616I and starts an automatic space reclamation.

Note – If you set MVCFREE=0, VTCS actually uses the default value (40).

VTVattr=SCRATCH | ALLmount
optionally, specifies when VTCS assigns a Management Class to a VTV.

SCRATCH
Assign a Management Class only when VTCS does a scratch mount of the VTV (the default).

ALLmount
Assign a Management Class whenever VTCS mounts the VTV.

Caution – If you specify that VTCS assigns a Management Class whenever VTCS mounts a VTV, these attributes can change, which can cause undesirable or unpredictable results.

For example, if an application writes data set PROD.DATA to VTV100 with a Management Class of PROD, then writes data set TEST.DATA to VTV100 with a Management Class of TEST, then the VTV (and both data sets) has a Management Class of TEST. Similarly, it is possible to write TAPEREQ statements or SMS routines that assign different Management Classes to the same data set (for example, based on jobname), which can also cause a VTV’s Management Class to change.

RECALWER
optionally, specifies whether VTCS recalls VTVs with read data checks (applies to recall and drain operations).

YES
recall VTVs with read data checks (the default).

NO
Do not recall VTVs with read data checks.
**CONFf**

**LOCKSTR=structure-name**

optionally, specifies the Coupling Facility Structure that holds VTCS Lock Data. The Structure Name must be 16 characters or less and conform to IBM’s standard for naming Coupling Facility Structures. Refer to the publication *Installing ELS* for more information.

---

**Caution** – CONFIG RESET is required to add LOCKSTR=structure-name to a CDS that did not previously use LOCKSTR=structure-name and to remove LOCKSTR=structure-name from a CDS. CONFIG RESET is not required to change lock structure names (for example, going from LOCKSTR=VTCSL1 to LOCKSTR=VTCSL2).

---

**REPl**

optionally, specifies when VSM replicates the VTV.

**ALWAYS**

The replicate request is added to the VTCS replication queue every time the VTV is dismounted, regardless of whether the VTV was changed while it was mounted (the default).

**CHANGED**

The replicate request is added to the VTCS replication queue if:

- The VTV was changed while it was mounted.
- The VTV was only read while mounted but less than the expected number of MVC copies of the VTV exist.

---

**Caution** –

Regardless of the CONFIG GLOBAL REPl setting, replication also requires that:

- The VTV must be dismounted in a VTSS that supports replication and there cannot be an identical copy of the VTV in the other VTSS in the Cluster.
- In addition to the CONFIG GLOBAL REPl value, you must specify REPl(YES) on a VTV’s Management Class for replication to occur.
VTVPAGE

optionally, specifies the page size used to store VTV data in the VTSS and on the MVCs. This setting only applies to 400 and 800 MB VTVs. If VTVPAGE is not specified on either the MGMTclas statement or the CONFIG GLOBAL statement, the default is STANDARD.

STANDard

standard page size, which is compatible with all VSM3/VSM4 models and microcode levels.

LARGE

large page size, which can provide improved performance within the VTSS and for migrates and recalls. Large page size requires a G level CDS. For more information on CDS levels, see “CONFlg” on page 209. For 2 and 4 GB VTVs (MAXVtvsz 2000 or 4000) a VTVPAGE setting of LARGE is always used.

Note –

■ VTVPAGE does not apply to VSM2s. VTVPAGE(LARGE) requires VSM4/VSM5 microcode D02.02.00.00 or VSM3 microcode N01.00.77.00. No installed option is required.

■ MGMTCLAS VTVPAGE, if specified, overrides the CONFIG GLOBAL VTVPAGE value. If VTVPAGE is not specified on either the MGMTclas statement or the CONFIG GLOBAL statement, the default is STANDard.

Caution –

■ The page size of a VTV can only be changed by a VTV scratch mount. Additional restrictions may also apply for scratch VTVs that were previously resident in a VTSS.

■ If you specify LARGE and the CDS level and/or VTSS microcode do not support LARGE, VTCS issues warning messages and VTVPAGE defaults to STANDard.

■ If you specify STANDard for 2 or 4 GB VTVs VTCS issues warning messages and defaults to LARGE.

■ Creating VTVs with large pages makes these VTVs unreadable in configurations that do not support large VTV pages.

NLIBDRNR

optionally, specifies whether non-library resident MVCs are selected for Drain/Reclaim processing.

YES

Allow non-library resident MVCs to be selected (default).

NO

Do not allow non-library resident MVCs to be selected.
NLIBMIGR
optionally, specifies whether non-library resident MVCs will be selected for Migration processing.

YES
Allow non-library resident MVCs to be selected (default).

NO
Do not allow non-library resident MVCs to be selected.

NLIBRECL
optionally, specifies whether non-library resident MVCs will be selected for Recall processing.

YES
Allow non-library resident MVCs to be selected (default).

NO
Do not allow non-library resident MVCs to be selected.

MVCMNTTO=nn
optionally, specifies the value in minutes when a mount of an MVC will timeout. Valid values are 5 to 30 minutes. The default is 15.

INITMVC
optionally, specifies whether un-initialized MVCs are to be initialized when they are first mounted.

NO
Un-initialized MVCs should not be initialized. This is the default.

YES
Un-initialized MVCs should be initialized.

SYNCHREP
optionally, specifies whether VTV synchronous replication feature is enabled.

NO
Synchronous replication is not enabled (the default).

YES
Synchronous replication is enabled.

\[\text{Note} – \text{SYNCHREP=YES merely enables synchronous replication. To actually implement synchronous replication, you must create a Management Class that specifies REPLiCat=YES_SYNC For more information, see \textit{“MGMTclas Control Statement” on page 423.}\]

MAXRTDS
optionally, specifies the maximum number of RTDs supported.

16
up to 16 RTDs supported.

32
up to 32 RTDs supported.
FASTMIGR

optionally, specifies whether the stacked migrates feature is enabled for all VTSSs that support this feature.

**YES**

Enable stacked migrates.

**No**

Disable stacked migrates (the default).

**Note** – FASTMIGR=YES has the following prerequisites:

- VSM4/VSM5 microcode D02.05.00.00 or higher. If this level of microcode is not installed on all VTSSs in the configuration, Stacked Migration will be limited to the VTSSs that have it installed.
- VTCS/NCS 6.2 PTFs L1H13ZF (SOS6200) and L1H13ZG (SWS6200), ELS 7.0 or higher.
- CDS level “F” or higher
- FICON ports for FICON RTDs and CLINKs

For the Stacked Migration feature to be enabled, all hosts must be running the prerequisites, otherwise:

- If a host is active that does not support or tolerate stacked migrates, this will cause the CONFIG utility to return an error.
- If a host is started and does not tolerate or support this feature, the host will shut down.

LOGPOL

optionally, specifies whether VTCS CDS logging is optional or required.

**Optional**

Logging is optional. This is the default.

This mode is required for configurations that include both 7.0/7.1 and lower level hosts.

**Required**

Logging is enabled for all events on all hosts that share the CDS. This requires all hosts to be at the 7.1 level.

The following events are logged:

- new version of VTV
- imported VTV
- first use or re-use of an MVC
- imported MVC
- add VTV to MVC
- VTV on an imported MVC
- unlink VTV from MVC
- reclaim VTV from MVC
- reset MVC EOT backwards
- electronic export of VTV
MAXVTVSZ

optionally, specifies a default maximum VTV size that may be used during the creation of VTVs. Valid values for this parameter depend on both the CDS level and the microcode levels of the applicable VTSSs.

- **400**
  - 400MB. This is the default.

- **800**
  - 800MB. The CDS must be at E level or above.

- **2000**
  - 2GB. The CDS must be at G level or above.

- **4000**
  - 4GB. The CDS must be at G level or above.

**Note** –
- The size of a VTV changes only after it goes through a scratch cycle. Therefore, if you change the Management Class and DISP=MOD, then it will still retain the original size.
- If you specify a VTV size that is not supported by the configuration, VTCS issues warning messages and MAXVtvsz defaults to the largest VTV size supported by the configuration.
- MAXVtvsz **does not** apply to VSM2s.
- MAXVTVSZ(2000 | 4000) requires VSM4/VSM5 microcode D02.02.00.00 or VSM3 microcode N01.00.77.00. No installed option is required.
- The CONFIG GLOBAL and MGMTCLAS MAXVTVSZ parameters interact as follows:
  - If MAXVTVSZ is specified on MGMTCLAS, this value overrides the CONFIG GLOBAL MAXVTVSZ value.
  - If MAXVTVSZ is **not** specified on MGMTCLAS, the CONFIG GLOBAL MAXVTVSZ value, if specified, is used. Otherwise, MAXVTVSZ defaults to 400MB.
  - If MAXVTVSZ is **not** specified on MGMTCLAS or on CONFIG GLOBAL, MAXVTVSZ defaults to 400MB.

LOCKTOUT=nnn

optionally, specifies the minimum number of minutes that a resource is locked before message SLS6946E is issued.

Valid values are 0, or any value between 5 and 240. If 0 is specified, message SLS6946E will not be issued when a required resource is locked.

If this parameter is not specified, the current default of 10 minutes is retained.

**Note** – LOCKTOUT is **only** supported at ‘F’ level CDS (V61ABOVE) and above.
**CONFig RECLAIM Statement**

The CONFig RECLAIM statement controls demand and automatic MVC and VMVC space reclamation.

**Syntax**

![Figure 3-18 CONFig RECLAIM statement syntax](image)

**Parameters**

- **THRESHLD=nn**
  - optionally, specifies the percentage of fragmented space that makes an MVC eligible for demand or automatic reclamation. Valid values are 4 to 98. The default is 75.

- **VLTHRES=nn**
  - optionally, specifies the percentage of fragmented space that makes a Virtual MVC (VMVC) eligible for demand or automatic reclamation. Valid values are 4 to 98. The default is 30.

  **Note** – Reclaim on a VMVC consists of simply deleting the expired VTV images from the VMVC. That is, no recall and re-migrate of the VTV is required. VMVC reclaim is therefore much faster than MVC reclaim, and you can set VLTHRES lower (more aggressive) than THRESHLD.

- **MAXMVC=nn**
  - optionally, specifies the maximum number of MVCs that will be processed by a single space reclamation task. Valid values are 1 to 98. The default is 40.
  - For automatic space reclamation to start, the number of eligible MVCs (determined by the THRESHLD parameter) must also exceed the MAXMVC value.

- **START=nn**
  - optionally, specifies the level at which automatic space reclamation starts for each ACS (not globally for all ACSs). Specify a percentage value, which is equal to:

  
  \[
  (\text{Reclaim Candidates} / \text{Reclaim Candidates} + \text{Free MVCs}) \times 100
  \]

  
  Where:

  - **Reclaim Candidates**
    - is the number of Reclaim Candidates determined by the CONFig RECLAIM THRESHLD parameter.
Reclaim Candidates + Free MVCs

equals the number of Reclaim Candidates plus the number of free MVCs. Valid values are 1 to 98. The default is 35.

CONMVC=nn

optionally, specifies the maximum number of MVCs that VTCS concurrently processes for both drain and reclaim.

Valid values are 1 to 99. The default is 1.

INPLACE

optionally, enables or disables dynamic reclaim support within VTCS. There is no default, though the absence of INPLACE indicates that dynamic reclaim support is not enabled.

YES

Enable dynamic reclaim by formatting and processing all eligible MVCs as partitioned on a global (all storage class) basis.

NO

Disable dynamic reclaim. This option will likely be accompanied by STORCLAS level overrides.

---

Note –

- The CDS must be at H level before INPLACE is accepted, enabling dynamic reclaim support. If INPLACE is specified and the CDS is not at H level, the configuration fails and error messages are displayed.
- Only T10000B media is supported for dynamic reclaim. Sport volumes are not supported in partitioned format.

---

INPTHRSH

optionally, specifies the percentage of fragmented space that makes an MVC in partitioned format eligible for space reclamation processing.

nn

a percentage between 3 and 97. This value must be less than the THRESHLD value. The default is half the THRESHLD value (rounded up).

---

Note –

- INPTHRSH cannot be specified without INPLACE.
- If INPTHRSH is specified, THRESHLD must also be specified. Both INPTHRSH and THRESHLD play roles when space reclamation processes MVCs in partitioned format. Refer to the publication Configuring HSC and VTCS for more information.
CONFIg VTVVOL Statement

The CONFIg VTVVOL statement defines a range of VTVs.

**Note** – Oracle recommends using SET VOLPARM to define VTV and MVC ranges in the VTCS CONFIG.

- See “SET VOLPARM” on page 566 for more information about the SET VOLPARM statement.
- Refer to the ELS Legacy Interfaces Reference for information about the use of the VTVVOL and MVCVOL statements in CONFIG to define volumes.
CONFlg MVCVOL Statement

The CONFlg MVCVOL statement defines a range of MVCs available to VTCS.

Note – Oracle recommends using SET VOLPARM to define VTV and MVC ranges in the VTCS CONFIG.

■ See “SET VOLPARM” on page 566 for more information about the SET VOLPARM statement.

■ Refer to the ELS Legacy Interfaces Reference for information about the use of the VTVVOL and MVCVOL statements in CONFIG to define volumes.
CONFlg VTSS Statement

The CONFlg VTSS statement defines a VTSS and sets its operating values. This statement is required.

When you define a new VTSS, place its definition after any existing VTSS definitions, which must remain in their original order.

Syntax

![FIGURE 3-19 CONFlg VTSS statement syntax](image)

Parameters

**Note** – If you physically remove a VTSS from your configuration, reconfigure the VTSS with a VTSS statement only (no parameters).

**NAME=xxxxxxxx**

specifies the VTSS name. This parameter is required; there is no default value.

The VTSS name can consist of the characters "A-Z", "0-9", "@", "$", and "#".

You specify the VTSS name only via the NAME parameter, which sets the VTSS name in both the VTSS microcode (as displayed in the Subsystem Name field in the LOP or VOP) and in the configuration area of the HSC CDS. After VSM is put into operation, the VTSS name is also stored in each VTV record in the CDS. Each VTV record contains the VTSS name on which that VTV is resident. If the VTV is migrated, the VTV record contains the VTSS name from which the VTV was migrated.

Once you set the VTSS name via the NAME parameter, you **cannot** change this identifier in the HSC CDS. That is, the CONFlg utility does not allow you to change the NAME parameter after an initial setting and changing the VTSS name using the Subsystem Name field of the LOP or VOP cannot change the VTSS name in the HSC CDS.

**Warning** – Do not attempt to rename a VTSS that contains data on VTVs, which includes VTSS-resident VTVs and migrated VTVs.
For an initial setting only (not a change), you can set the VTSS name in the NAME parameter only if the VTSS name value in the VTSS microcode is one of the following:

- The factory setting (all blanks).
- A value of 99999999 (eight 9s).

Therefore, for an initial setting only, if the name in the VTSS microcode is not all blanks or 99999999, your Oracle StorageTek hardware representative must use the VTSS LOP or VOP to set the VTSS name to 99999999. This allows you to set the VTSS name to the value you want via the NAME parameter.

**DEFLTACS=acs-id**

Optionally, VTCS supports multi-VTSS confirmations, and supports connecting multiple ACSs to each VTSS. In configurations where a VTSS is connected to multiple ACSs, use the DEFLTACS parameter to specify the default ACS from which MVCs will be selected for migration, consolidation, and reclaim processing.

You can migrate up to 4 VTV copies to separate ACSs (per MGMTclas statement) via the MGMTclas MIGpol parameter (and ignores the DEFLTACS parameter, as described below).

If you do not specify DEFLTACS, the default value is x'FF', which allows VTCS to select MVCs from any ACS.

---

**Note** –

VTCS ignores the DEFLTACS value if you specify the DEFLTACS parameter and do either of the following:

- Specify the ACSlist parameter of the MGMTclas statement.
- Use a Storage Class.

**LOW=nn**

Optionally, specifies the low automatic migration threshold (LAMT) for this VTSS. Valid values are 5 to 95 and must be less than the HIGH default threshold. The default is 70.

**HIGH=nn**

Optionally, specifies the high automatic migration threshold (HAMT) for this VTSS. Valid values are 6 to 95 and must be greater than the LOW default threshold. The default is 80.

**MAXMIG=n**

Optionally, specifies the maximum number of concurrent automatic migration, immediate migration, and migrate-to-threshold tasks for this VTSS. Valid values are 1 to the number of RTDs attached to the VTSS. The default is half the number of RTDs attached to the VTSS.

**MINMIG=n**

Optionally, specifies the minimum number of concurrent automatic migration, immediate migration, and migrate-to-threshold tasks for this VTSS. Valid values are 1 to the MAXMIG setting. The default is 1 task.
RETAIN\(=nn\)

optionally, specifies the number of minutes that VTCS will retain an MVC on an RTD in idle mode after a migration or recall. Retaining the MVC can reduce MVC mounts. Valid values are 1 to 60. The default is 10.
CONFIg RTD Statement

The VTCS CONFIg RTD statement defines the RTDs or VLE appliances connected to the VTSS. This statement is required and must follow the VTSS statement that defines the VTSS to which the devices are connected.

The maximum number of each device type you can connect are as follows:
- For a VSM2 or VSM3, 8 RTDs.
- For a VSM4, 16 RTDs.
- For a VSM5, 32 RTDs.
- For a VSM5, 4 VLE appliances.

Note – You must specify the RESET parameter to change RTD definitions if VTCS is running with a CDS level lower than V61ABOVE. See “RESET” on page 210 for more information. For an initial RTD definition, if the RTD name displayed at the VTSS LOP is anything other than all blanks, you must also specify RESET.

Syntax

![Diagram](image)

FIGURE 3-20 CONFIg RTD statement syntax

Parameters

NAME=xxxxxxxx

specifies the 1 to 8 character identifier of the RTD or VLE appliance.
- For RTDs, you set or change the RTD identifier only via the RTD NAME parameter; to do so, the RTD identifier must be all blanks as displayed at the VTSS LOP or DOP.
- For VLE appliances, use any meaningful 1 to 8 character identifier. This parameter is required; there is no default value.

STORMNGR

specifies the Subsystem Name of a VLE appliance.

stormngr

a VLE subsystem name. For more information, refer to the publication Configuring the Host Software for VLE.

This parameter does not apply to connections to RTDs (that is, when the DEVNO and CHANIF parameters are specified). This parameter only applies to connections to a VLE appliance (that is, when the IPIF parameter is specified).
### IPIF=n.nn

specifies the IP interface on the VTSS IFF3 card that communicates with the VLE appliance. This value must match the value shown on the VTSS DOP IFF IP Configuration Status screen. For example, Target 0 on card IFF 0 has an interface value of 0A:0.

**Note** – The IPIF parameter is only valid for specifying a connection to a VLE appliance, it is not valid for RTD connections.

### DEVNO=n.mmm

specifies the unit address of the RTD.

This parameter is required with CHANIF; there is no default value.

### CHANIF=c.i or c.i:p

specifies the channel interface on the VTSS that communicates with the RTD where:

- c is the VTSS Storage Cluster number (0 or 1).
- i is the interface number (A, C, E, G, I, K, M, or O)
- p is the device number on the interface (0, 1, 2, or 3).

This value must match the Nearlink channel interface defined at the VTSS by your Oracle StorageTek hardware representative at VTSS installation and configuration. This parameter is required with DEVNO; there is no default value.

- Regardless of whether the Maximum 32 RTDs feature is enabled, if you do not have greater than 16 RTDs attached to a VTSS, you can use the “old” addressing scheme(CHANIF=c.i).

- If, however, the Maximum 32 RTDs feature is enabled and you have greater than 16 RTDs attached to a VTSS, you must use the “new” addressing scheme (CHANIF=c.i:p).

Refer to the publication Configuring HSC and VTCS for more information.

**Note** – The DEVNO and CHANIF parameters are only valid for specifying RTD connections, they are **not** valid for a connection to a VLE appliance.

**Caution** – For RTDs, driving mount and dismount commands to the device is version dependant. If the remote HSC server is running V6.2, then it is dependant upon the local SMC trapping the MVS message and forwarding the mount/dismount across to the HSC server as if it was a job. If the remote HSC server is running V7 or above, then this is automatically detected and VTCS directs a mount/dismount request directly to the remote HSC server. It is important that the SMC parameters only direct commands to servers of one of these types.
CONFIg VTD Statement

The CONFIg VTD statement defines the MVS unit address range of the VTDs in a VTSS. This statement is required and must follow the VTSS statement where the VTDs reside.

Note – VSM2s and VSM3s provide 64 VTDs per VTSS. VSM4s provide 256 VTDs per VTSS.

You can specify the VTD unit addresses to either apply to all hosts or to define which VTDs are available to specific hosts. See “Specifying VTD Unit Addresses” on page 229 for more information.

Syntax

![CONFIg VTD statement syntax](image)

**Parameters**

**LOW=xxxx**

specifies a four character valid MVS unit address as the start of a range of VTDs.

**HIGH=xxxx**

specifies a four character valid MVS unit address as the end of a range of VTDs.

**CUADDR=xx**

optionally, specifies a control unit identifier that matches its value in the IOCP. Valid values are 0 through 15 for VSM4 and 0 through 3 for VSM2/3. This statement is required only if a partial VTD range is specified for a host and the host does not have a path to the VTDs.

**NOVERIFY**

optionally, suppresses VTD verification.

Normally, VTCS attempts verification of all predicted VTD identifiers associated with Virtual Tape Drives. In order to do this, each MVS I/O address must be available to allow the associated Host to issue the ECAM-T request Virtual_Device_Identify. ECAM is the method VTCS uses to communicate with a VTSS when bringing a VTSS online and scheduling replication and migrations.

In specific cases where, for example, VTCS is providing support for a remote client host, the local host, acting as a server for the remote client, may not have paths to the MVS I/O address. In these cases, any attempt at verification of the predicted VTD identifier fails and results in error messages posted to the operator. NOVERIFY suppresses verification and prevents these failures.
When NOVERIFY is specified for a device or range of devices, the following occurs:

- The device is reported to SMC so that VTVs can be mounted from MVS.
- VTCS does not use that device for ECAM I/O. At least one device must be left without NOVERIFY so that it can be used for ECAM I/O.

**Specifying VTD Unit Addresses**

You can specify VTD addresses by doing one of the following:

- Specify the VTD unit addresses on a VTD statement following a VTSS statement and **do not** specify any HOST statements following the VTSS statement. All hosts physically connected to the VTSS have access to its VTDs by the default addresses specified on the VTD statement.
- **Do not** specify the VTD unit addresses on the VTD statement following a VTSS statement. Instead, place a VTD statement after a HOST statement for only those hosts for which you want to define connections to the previously defined VTSS. You must specify a placeholder (HOST NAME with no VTD parameter) for any hosts that you do not want connected to this VTSS.

**Note** – The VTVs created and MVCs initially written to from a VTSS are considered to be resources of that VTSS. Therefore, only hosts with access to a VTSS have access to its VTVs and MVCs. In this type of “restricted” access configuration, each host should have a separate VTV scratch pool to ensure that each host has accurate scratch counts. Similarly, free MVCs and MVC reclaim counts are reported on each host for the MVCs associated with the VTSS to which the host is connected.

You can specify different address ranges for each host, although Oracle recommends that you specify the same address ranges for all hosts for consistency of operations. If you specify different address ranges for different hosts, use the HSC SET DRVHOST and SMC DRIVEMAP statements if you have a client/server configuration. You must include UNITATTR MODEL(IGNORE) commands for all overgenerated devices (including VTDs) on all MVS hosts.

**Caution** – In a multi-host, multi-VTSS configuration, you can use this VTD addressing method to deny access to VTSSs to which hosts are physically connected. You **must**, however, use this method to deny access from hosts that are **not** physically connected to a VTSS. If you do not deny access, VTCS on a host that does not have physical connections to a VTSS may wait, trying to communicate with the VTSS while VSM operations may be stalled on all other hosts.
CONFIg CLUSTER Statement

The CONFIg CLUSTER statement defines two VTSSs in a Cluster.

Syntax

```
CONFIg CLUSTER NAME=nnnnnnnn VTSSs(vtss-list)
```

FIGURE 3-22 CONFIg CLUSTER statement syntax

Parameters

**NAME=nnnnnnnn**

specifies the 1 to 8 character identifier of the Cluster.

This parameter is required; there is no default value.

**VTSSs(vtss-list)**

Specifies the names of the VTSSs in a cluster. At least two VTSSs must be specified. If more than two VTSSs are specified, then down level hosts will not function.

The relationship between each of the VTSSs is defined by the CONFIG CLINK statement. See “CONFIg CLINK Statement” on page 231 for more information.

This parameter is required. There is no default value.

**Note –**

- VTSS names that you specify on a CLUSTER statement must be known to VTCS. That is, the VTSS names must be already defined in the CDS or must be specified in VTSS statements that already exist in the current set of CONFIG statements. For example, the following is valid:

  VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  VTSSNAME=VTSS2 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  CLUSTER NAME=CLUSTER1 VTSSs=(VTSS1,VTSS2)

  The following is **not** valid unless VTSS1 and VTSS2 are already defined in the CDS:

  CLUSTER NAME=CLUSTER1 VTSSs=(VTSS1,VTSS2)
  VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  VTSSNAME=VTSS2 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5

- The DECOM utility outputs CLUSTER statements with blanks instead of commas as separators, which is also valid input to CONFIG. For example, DECOM outputs the following, which is valid input to CONFIG:

  CLUSTER NAME=CLUSTER1 VTSSs=(VTSS1 VTSS2)
CONFlg CLINK Statement

The CONFlg CLINK statement defines the channel interface between two VTSSs in a Cluster and allows for the definition of CLINKs on IP interfaces to support replication of VTVs over IP CLINKs.

The VTSSs can be in one of three modes:
- Primary-Secondary, in which there are two VTSSs and you write CLINK statements for only the Primary.
- Peer-to-Peer, in which case there are two VTSSs and you write CLINK statements for both VTSSs to enable bi-directional VTV replication.
- Any-to-Any, in which there are more than two VTSSs in the cluster and the individual relationships are defined through CLINK statements.

In addition, CLINKs can be defined from the VTSS to perform electronic export to another TapePlex. These links need not be to the same VTSS within the remote TapePlex.

Each VTSS can either be connected to a maximum of two different TapePlexes, or one TapePlex and a partner VTSS in a cluster.

An electronic export connection can always be to multiple VTSSs. A cluster connection can be to multiple VTSSs only if the CONFlg CLUSTER statement specifies more than two VTSS members.

Refer to the publication ELS Disaster Recovery and Offsite Data Management Guide for examples.

Syntax

FIGURE 3-23 CONFlg CLINK statement syntax
Parameters

VTSS=\textit{name} 
optionally, specifies the name of the VTCS that owns the CLINK. This is the VTSS from which the VTVs are replicated or exported.

If this parameter is omitted, by default, the CLINK is attached to the current VTSS being defined.

\textbf{Note} – The VTSS name that you specify on a CLINK statement must be known to VTCS. That is, the VTSS name must be already defined in the CDS or it must be specified in a VTSS statement that already exists in the current set of CONFIG statements. For example, the following is valid:

\begin{verbatim}
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
CLINK VTSS=VTSS1 CHANIF=0A
\end{verbatim}

The following is not valid unless VTSS1 is already defined in the CDS:

\begin{verbatim}
CLINK VTSS=VTSS1 CHANIF=0A
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
\end{verbatim}

\textbf{CHANIF=ci or ci:p}

specifies the channel interface on the VTSS that communicates with the RTD where:

- \textit{c} is the VTSS Storage Cluster number (0 or 1).
- \textit{i} is the interface number (A, C, E, G, I, K, M, or O)
- \textit{p} is the device number on the interface (0, 1, 2, or 3).

This value must match the Nearlink channel interface defined at the VTSS by your Oracle StorageTek hardware representative at VTSS installation and configuration.

\textbf{Note} –

- Regardless of whether the Maximum 32 RTDs feature is enabled, if you do not have greater than 16 RTDs attached to a VTSS, you can use the “old” addressing scheme (CHANIF=\textit{ci}).
- If, however, the Maximum 32 RTDs feature is enabled and you have greater than 16 RTDs attached to a VTSS, you must use the “new” addressing scheme (CHANIF=ci:p).

Refer to the publication \textit{Configuring HSC and VTCS} for more information.

\textbf{IPIF=nn:n}

optionally, allows Ethernet connection of two Native IP (IFF3 card) ports, where the \textit{nn:n} values are shown in parentheses before each Target IP Address on the IFF IP Configuration Status screen for each IFF ethernet port.

Refer to the publication \textit{Configuring HSC and VTCS} for more information.

\textbf{Note} – The CLINK statement must contain \textbf{either} the CHANIF or the IPIF parameter, but \textbf{not both}. 
REMPIx=\textit{name} 
optionally, specifies the name of the TapePlex at the receiving end of the CLINK that receives the copies of the VTVs. During validation of the link, this name is compared with the THISPLEX definition in the remote system configuration.

The REMPlex parameter indicates that the CLINK is to be used for electronic export. Absence of this parameter indicates that the CLINK is to be used for a cluster connection.

\textsc{PARTner}=\textit{name} 
optionally, specifies the name of the VTSS at the receiving end of the CLINK that receives copies of the VTVs.

This parameter is required for CLINKs used for electronic export, or where the cluster consists of more than two VTSSs.

During validation of the link, this name is compared with the VTSS name at the other end of the CLINK.

\textit{VTD}=\textit{n} 
optionally, specifies as a single hexadecimal digit, the ordinal number of the VTD in the partner VTSS that forms the inbound part of the connection.

\underline{Note} – When the VTD parameter is specified, the PARTner parameter must also be specified.

Within a combination of REMPlex, PARTner, and VTD, every CLINK to be used for electronic export must be unique. For a cluster connection, the combination of PARTner and VTD within the configuration deck must be unique.

\underline{Caution} – Although the uniqueness of the PARTner/VTD parameter values can be validated within a single configuration, it cannot be validated across different TapePlex configurations. If multiple TapePlexes (configurations) are exporting to a single TapePlex, it is essential that each VTD is only defined to one unique CLINK. This also means that each VTSS can only be referenced by a maximum of 14 CLINKs (8 for VSM3).
CONFIg HOST Statement

The CONFIg HOST statement is an optional statement that defines an MVS host and, optionally, the NOMIGRAT and/or NORECLAM parameters.

**Note —**

- If specified, the HOST statement must follow the VTSS statement for the VTSS attached to that host.
- You must either specify all host definitions or none; if you specify only some of the hosts attached to a VTSS, VTCS will issue an error.

**Syntax**

![CONFIg HOST statement syntax](image)

**Parameters**

- **NAME=xxxx**
  specifies the LIBGENed hostname.

- **NOMIGRAT**
  optionally, specifies that this host cannot do migrations, consolidations, or export by VTV or Management Class from the VTSS(s) that the host accesses. NOMIGRAT controls both automatic and demand migrations and consolidations. This parameter is optional.

  **Note —**
  
  - Specifying NOMIGRAT also causes NORECLAM to be set.
  - IMMEDmig KEEP and IMMEDmig DELETE are mutually exclusive with CONFIg HOST NOMIGRAT. If you specify both, the IMMEDmig value overrides NOMIGRAT, and VTCS does not issue a message about this override.

- **NORECLAM**
  optionally, specifies that this host cannot initiate automatic or demand reclaim processing using the VTSS(s) that the host accesses (the host can still do demand MVC drains via MVCDRain). This parameter is optional.
CONFlg TAPEPLEX Statement

The CONFlg TAPEPLEX statement defines values to VTCS for Cross-TapePlex Replication (CTR) or for replication to a VLE.

**Note** –
- Do not specify this statement when down-level hosts are active. Once CONFlg TAPEPLEX is specified, down-level hosts no longer function.
- This statement requires CDS level V61ABOVE or higher.
- Refer to the publications *Managing HSC and VTCS* and *ELS Disaster Recovery and Offsite Data Management Guide* for more information about Cross-Tape Replication.

**Syntax**

```
TAPEPLEX(THISPLEX=name)
RECVPLEX(tapeplex-list)
STORMNGR(stormngr-list)
```

**Parameters**

**THISPLEX**

specifies the TapePlex name for this configuration. This name is associated with any VTV copies that are exported to other TapePlexes via Cross-TapePlex Replication.

`name`

the TapePlex name. This name must match the name specified on an SMC LIBrary or TAPEPLEX command defined in the local SMC.

**RECVPLEX**

optionally, specifies the list of TapePlexes from which VTV copies can be received (via Cross-TapePlex Replication). Attempts by hosts to send or scratch VTV copies from TapePlexes that are not included on the list are rejected.

`tapeplex-list`

the list of TapePlex names.

**Note** – Specify RECVPLEX on the receiving TapePlex. You can also specify RECVPLEX on the sending TapePlex to allow this TapePlex to recall a VTV from the receiving TapePlex.
STORMNGR

optionally, specifies Subsystem Names of the VLE appliances attached to this TapePlex.

stormngr-list

the list of VLE subsystem names. For more information, refer to the publication Configuring the Host Software for VLE.
CONSolid

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The CONSolid command consolidates VTVs on MVCs.

Syntax

```
CONSolid

VTV(vol-range, 'vol-list', mgmt-class-name, mgmt-class-list)

RECALWER(NO, YES)
```

**FIGURE 3-26** CONSolid syntax
Parameters

**VT**

optionally, specifies one or more VTVs to consolidate.

*volser, vol-range or vol-list*

the volser, volser range, or volser list of VTVs. You can specify a maximum of 2,000 VTVs.

**MGMTclas**

optionally, specifies the names of one or more Management Classes that determine the VTVs to consolidate.

*mgmt-class-name | mgmt-class-list*

the names of one or more Management Classes that you defined on the MGMTclas control statement; for more information, see “MGMTclas Control Statement” on page 423. You can consolidate a maximum of 2,000 VTVs by specifying a Management Class.

**RECALWER**

optionally, specifies whether VTCS recalls VTVs with read data checks.

**YES**

recall VTVs with read data checks (the default).

**NO**

Do not recall VTVs with read data checks.
Consolidation Report

The consolidation report displays the following messages:

**MIGRATE ONLY FROM VTSS vtssname**

**Explanation:** The VTV is resident on VTSS vtssname.

**REMIGRATE FROM MVC mvcname VIA VTSS vtssname**

**Explanation:** VTCS is recalling a VTV from MVC mvcname to consolidate the VTV.

**VTV vtvname NOT SELECTED; VTV IS SCRATCH**

**Explanation:** VTCS will not consolidate the specified VTV, which is either scratch or not initialized.

**VTV vtvname NOT SELECTED; VTV ALREADY CONSOLIDATED**

**Explanation:** The specified VTV is already consolidated.

**VTV vtvname NOT SELECTED; VTV RECORD NOT FOUND**

**Explanation:** VTCS will not consolidate the specified VTV, which has no record in the CDS.

**VTV vtvname NOT SELECTED; VTV STILL MOUNTED ON DRIVE**

**Explanation:** VTCS cannot consolidate the specified VTV, which is mounted or in recovery.

**REDRIVING REQUEST BECAUSE OF ERROR**

**Explanation:** VTCS is retrying an unsuccessful consolidation request.

**CONSOLID CMD PROBLEM DECODING VCI REQUEST FROM HSC**

**Explanation:** The consolidation failed.

**VTV vtvnumber NOT SELECTED: LIMITED ACCESS TO VTSS**

**Explanation:** The consolidation request failed because a host not enabled for consolidation (via the NOMIGRAT parameter) issued the request.

**MIGRATE NO MVCS AVAILABLE**

**Explanation:** Sufficient free MVCs are not available to complete the request.
DEComp

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The DEComp command lists the VSM configuration information in the HSC CDS.

Syntax

```
DEComp
  FLATdd(ddname)
  LISTDELR
```

FIGURE 3-27 DEComp syntax

Parameters

**FLATdd**
optionally, specifies the output destination ddname if a flat file is required.

`ddname`
the ddname of the flat file included in the JCL.

**LISTDELR**
optionally, list volser ranges of “logically deleted” MVCs and VTVs.

**Note** – LISTDELR is only valid for a CDS at level G or above.
Output

FLATDD Parameter Output

FIGURE 3-28 shows an example of DEComp output with the FLATDD parameter.

```
CONFIG CDSLEVEL(V62ABOVE)
GLOBALMAXVTV=32000 VTVattr=ALL CCH=32000 MVCFREE=40 RECALWER=YES
REPLICat=ALWAYS LOCKSTR=STK_VTCS_LOCKS
RECLAIMTHRESHLD=70 MAXMVC=40 START=35 CONMVC=1 VLTHRES=1 +
INPLACE=Yes INPTHRESH=15
VTVVOL LOW=905000 HIGH=999999 SCRATCH
VTVVOL LOW=C00000 HIGH=C25000 SCRATCH
VTVVOL LOW=RMM000 HIGH=RMM020 SCRATCH
MVCVOL LOW=N25980 HIGH=N25989
MVCVOL LOW=N35000 HIGH=N35999
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  RTDNAMES=VTS18804 DEVNO=8804 CHANIF=0A
  RTDNAMES=VTS18805 DEVNO=8805 CHANIF=0I
  RTDNAMES=VTS18806 DEVNO=8806 CHANIF=1A
  RTDNAMES=VTS18807 DEVNO=8807 CHANIF=1I
VTDLow=8900 HIGH=893F
VTSSNAME=VTSS2 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  RTDNAMES=VTS28804 DEVNO=8804 CHANIF=0A
  RTDNAMES=VTS28805 DEVNO=8805 CHANIF=0I
  RTDNAMES=VTS28806 DEVNO=8806 CHANIF=1A
  RTDNAMES=VTS28807 DEVNO=8807 CHANIF=1I
VTDLow=9900 HIGH=993F
```

FIGURE 3-28 Example DEComp FLATDD output
DEComp

SLSPRINT Output

FIGURE 3-29 shows an example of DEComp output to SLSPRINT.

```
SLUADMIN (7.1.0)      StorageTek Enterprise Library Software Utility     PAGE 0001
TIME 09:07:06                  Control Card Image Listing          DATE 2010-03-31

DECOM
SLS1315I SSRDMP.P775644.TESTCDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET
TIME 09:07:06 VTCS DECOMPILE
CONFIG CDSLEVEL(V62ABOVE)
GLOBALMAXVT=32000 MVCFREE=40 VTVattr=ALLmount RECALTWER=YES
REPlicat=ALWAYS LOCKSTR=STK_VTCS_LOCKS
RECLAIMTHRESHLD=70 MAXMVC=40 START=35 COMMVC=1 VLTHRES=1 +
INPLACE=Yes INPTHRSH=15
VTVVOL LOW=905000 HIGH=999999 SCRATCH
VTVVOL LOW=C00000 HIGH=C25000 SCRATCH
VTVVOL LOW=RMM000 HIGH=RMM020 SCRATCH
MVCVOL LOW=N25980 HIGH=N25989
MVCVOL LOW=N35000 HIGH=N35999
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  RTDNAME=VTS18800 DEVNO=8800 CHANIF=0A
  RTDNAME=VTS18801 DEVNO=8801 CHANIF=0I
  RTDNAME=VTS18802 DEVNO=8802 CHANIF=1A
  RTDNAME=VTS18803 DEVNO=8803 CHANIF=1I
  VTDLOW=8900 HIGH=893F
VTSSNAME=VTSS2 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
  RTDNAME=VTS28804 DEVNO=8804 CHANIF=0A
  RTDNAME=VTS28805 DEVNO=8805 CHANIF=0I
  RTDNAME=VTS28806 DEVNO=8806 CHANIF=1A
  RTDNAME=VTS28807 DEVNO=8807 CHANIF=1I
  VTDLOW=9900 HIGH=993F
```

FIGURE 3-29 Example DEComp SLSPRINT output
DELETSCR

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The DELETSCR command deletes scratch VTVs from VTSSs and unlinks any migrated VTVs from MVCs.

Syntax

![Diagram of DELETSCR syntax](image)

**FIGURE 3-30** DELETSCR syntax
Parameters

VTvid
  optionally, specifies one or more VTVs to be deleted.

volser, vol-range or vol-list
  the volser of one or more VTVs.

MGMTclas
  optionally, specifies the Management Class(es) of the VTVs.

mgmt-class-name
  the Management Class name that you specified on the MGMTclas control statement.

SCRPool
  optionally, specifies the scratch pool(s) to be deleted. If the pool contains VTVs and real volumes, DELETSCR deletes only VTVs.

scrpool
  an existing HSC scratch pool.

VTSS
  optionally, causes scratch VTVs within the specified VTSS to be deleted.

vtss-name
  the VTSS name.

---

Note – VTvid, MGMTclas, SCRPool, and VTSS are mutually exclusive. If you do not specify one of these parameters, VTCS processes all scratch VTVs.

NOTREF
  specifies the number of days since a VTV was last referenced for it to be deleted by DELETSCR.

days
  the number of days (1-999).

MAXVTV
  optionally, specifies the maximum number of VTVs that DELETSCR deletes. Note that this is a maximum, not a target.

nnn
  the maximum number of VTVs (0-999). If not specified, DELETSCR deletes all scratch VTVs. If you specify 0, DELETSCR does not delete any VTVs, but the summary report shows how many VTVs would have been deleted...at the point at which you ran DELETSCR (that is, the report is just a snapshot).

DETail
  optionally, produce a detailed report that also shows detail and summary of VTVs that fall within the NOTREF period.
DELETSCR Report

FIGURE 3-31 shows an example of a DELETSCR report for the following batch invocation:

DELETSCR MGMTCLAS(MC1) NOTREF(60) MAXVTV(10) DET

SLUADMIN (7.1.0) StorageTek Enterprise Library Software Utility PAGE 0001
TIME 06:32:03 SCRATCH VTV DELETE DATE 2010-03-31

SLS6833I VTV VTV100 deleted from MVC M00001
SLS6835I VTV VTV101 excluded - referenced within 60 days
SLS6833I VTV VTV102 deleted from MVC M00003
SLS6835I VTV VTV103 excluded - referenced within 60 days
SLS6835I VTV VTV104 excluded - referenced within 60 days
SLS6833I VTV VTV105 deleted from MVC M00007
SLS6833I VTV VTV106 deleted from MVC M00157
SLS6841I VTV VTV107 deleted
SLS6833I VTV VTV108 deleted from MVC M00072
SLS6833I VTV VTV110 deleted from MVC M00757
SLS6833I VTV VTV111 deleted from MVC M00757
SLS6833I VTV VTV112 deleted from MVC M01057
SLS6834I VTV VTV113 deleted

SUMMARY:
10 scratch VTVs deleted
1 VTV EXCLUDED - NOT SCRATCH VOLUME
0 VTVS EXCLUDED - NOT INITIALIZED
3 SCRATCH VTVS EXCLUDED - REFERENCED WITHIN 60 DAYS
6 scratch VTV delete candidates bypassed after MAXVTV limit 10 reached

FIGURE 3-31 DELETSCR report

DELETSCR Report Contents

A DELETSCR report shows:

- A line for each deleted VTV.
- If DETail is specified, a line for each VTV excluded (did not fall within the NOTREF period).
- A summary showing:
  - Total VTVs deleted.
  - Total VTVs excluded - not scratch.
  - Total VTVs excluded - not initialized.
  - Total VTVs excluded - not resident or migrated.
  - Total VTVs excluded - referenced within the NOTREF period.
  - Total VTVs excluded - MAXVTV limit has been reached.
  - Total VTVs excluded - not in the specified Management Class.
Dirbld

interfaces:
utility only
uui: no

Subsytem requirements:
active hsc not required

Description
The DIRBLD command rebuilds the database directory for all defined CDS copies.

The control data set contains a directory of pointers to various important locations and if damaged, can cause operational problems. Normally, HSC corrects such errors automatically. The DIRBLD utility repairs a corrupted CDS database directory. This utility can be run while the HSC is stopped or running to repair damage to the directory and maintain continuous operation. It must be run using all CDS copies as input.

Caution – Contact Oracle StorageTek Support before running the DIRBLD utility to insure that the CDS is not further damaged by inappropriate use or inappropriate operational conditions.

Syntax

FIGURE 3-32 DIRBLD syntax

Parameters
None.
DISMount

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description

The DISMount command dismounts a cartridge or VTV.

Although the volume may be rewound and unloaded by the operating system, it may not be dismounted from the real drive or VTD. This command is provided for instances where hosts are not communicating with a specific ACS (disconnected mode).

Hosts that are still communicating (connected mode) may be able to semi-automate tape handling for hosts that cannot communicate with a specific ACS. When HSC or VTCS does not dismount a volume, you must ensure that the volume is unloaded before you issue the DISMount command.

Syntax

```
DISMount volser devaddr host-id FORCE
```

**FIGURE 3-33** DISMount syntax
Parameters

*volser*

optionally, specifies which volume to dismount. The *volser* operand is optional. If it is not specified, the robot dismounts whatever volume is mounted on the device.

If *volser* is not specified, a comma must be entered immediately before the device address to indicate the missing operand. For example:

```
DISMOUNT, B00
```

*devaddr*

specifies the device address of the transport from which the volume is to be dismounted.

*host-id*

optionally, indicates that the DISMount command is to be performed for the device address of the specified host (the SMF system identifier for both JES2 and JES3).

**FORCE**

optionally, specifies that the drive will be unloaded before the volume is dismounted. This parameter is not valid for virtual drives.
Display

The Display command displays status and current settings for various ELS components.

Issue this command with any of the options listed in the following table. Each option is described individually, and in more detail, on the pages to follow.

Note – When issuing a Display command, the Query keyword may be substituted for the Display keyword. Command processing is unchanged.

<table>
<thead>
<tr>
<th>This option:</th>
<th>Displays the following output:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acns</td>
<td>status for one or more ACSs.</td>
</tr>
<tr>
<td>ACTive</td>
<td>active VTCS processes</td>
</tr>
<tr>
<td>ALl</td>
<td>CDS and ACS status</td>
</tr>
<tr>
<td>ALLOC</td>
<td>HSC allocation settings</td>
</tr>
<tr>
<td>Cap</td>
<td>CAP settings and status</td>
</tr>
<tr>
<td>CDS</td>
<td>status of all copies of the CDS, journals (if active), some operational settings (e.g., the cleaning cartridge prefix, SMF record type, etc.), and the status of all HSC-defined hosts</td>
</tr>
<tr>
<td>CLink</td>
<td>cluster link status</td>
</tr>
<tr>
<td>CLuster</td>
<td>cluster status</td>
</tr>
<tr>
<td>CMD</td>
<td>detailed information for an ELS command</td>
</tr>
<tr>
<td>COMMPath</td>
<td>current settings for HSC host-to-host communications</td>
</tr>
<tr>
<td>CONFIG</td>
<td>CONFIG parameter settings</td>
</tr>
<tr>
<td>DRives</td>
<td>current and queued mount activity for each transport address</td>
</tr>
<tr>
<td>DRIVE_INFO</td>
<td>status information for real and/or virtual drives</td>
</tr>
<tr>
<td>EXceptns</td>
<td>hardware status</td>
</tr>
<tr>
<td>LMUPDEF</td>
<td>information about the definition data set, containing LMUPATH statements, that is currently loaded</td>
</tr>
<tr>
<td>LOCKs</td>
<td>VTCS lock status</td>
</tr>
<tr>
<td>Lsm</td>
<td>LSM status</td>
</tr>
<tr>
<td>Message</td>
<td>detailed information for an ELS message</td>
</tr>
<tr>
<td>MGMTDEF</td>
<td>information about active MGMTclass statements</td>
</tr>
<tr>
<td>MIGr rate</td>
<td>migration status</td>
</tr>
<tr>
<td>MNTD</td>
<td>current settings for HSC mount options set by the MNTD command</td>
</tr>
<tr>
<td>MONitor</td>
<td>list of monitoring consoles.</td>
</tr>
<tr>
<td>MVC</td>
<td>information about a specific MVC</td>
</tr>
</tbody>
</table>

Note: Refer to the ELS Legacy Interfaces Reference for more information about this option.
### TABLE 3-1  Display options (Continued)

<table>
<thead>
<tr>
<th>This option:</th>
<th>Displays the following output:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVCDEF</td>
<td>information about active MVCPool statements</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Refer to the <em>ELS Legacy Interfaces Reference</em> for more information about this option.</td>
</tr>
<tr>
<td>MVCPool</td>
<td>information about a specific MVC pool</td>
</tr>
<tr>
<td>OPTion</td>
<td>current settings for general HSC options set by the OPTion command</td>
</tr>
<tr>
<td>PATH</td>
<td>status of paths from VTSSs to either RTDs or Virtual Libraries.</td>
</tr>
<tr>
<td>Queue</td>
<td>status of queued VTCS processes</td>
</tr>
<tr>
<td>REPlCat</td>
<td>VTV replication status</td>
</tr>
<tr>
<td>Requests</td>
<td>all pending LMU requests</td>
</tr>
<tr>
<td>RTD</td>
<td>usage information for the one or more RTDs</td>
</tr>
<tr>
<td>SCRatch</td>
<td>scratch counts by subpool name, ACS id, LSM id, media type, recording technique, or owning host name</td>
</tr>
<tr>
<td>SCRPODEF</td>
<td>information about the definition data set, containing SCRPOOL statements, that is currently loaded</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Refer to the <em>ELS Legacy Interfaces Reference</em> for more information about this option.</td>
</tr>
<tr>
<td>SEN</td>
<td>SEN LISTEN requests and their status.</td>
</tr>
<tr>
<td>SERVER</td>
<td>Server (HSC) status, including service level and features</td>
</tr>
<tr>
<td>SRVlev</td>
<td>current service level of the HSC on the system from which you issue the command</td>
</tr>
<tr>
<td>Status</td>
<td>status of pending requests currently active on the host issuing the command</td>
</tr>
<tr>
<td>STORCLas</td>
<td>information about a Storage Class</td>
</tr>
<tr>
<td>STORMNgr</td>
<td>status of an external storage manager and the paths defined to it from the VTSSs.</td>
</tr>
<tr>
<td>TASKs</td>
<td>task status</td>
</tr>
<tr>
<td>THReshld</td>
<td>scratch count and scratch threshold information by subpool name, ACS id, LSM id, media name, and recording technique name</td>
</tr>
<tr>
<td>VOLDEF</td>
<td>information about the definition data set, containing VOLATTR statements, that is currently loaded</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Refer to the <em>ELS Legacy Interfaces Reference</em> for more information about this option.</td>
</tr>
<tr>
<td>Volser</td>
<td>volume information</td>
</tr>
<tr>
<td>VOLume_Info</td>
<td>status information for real and/or virtual volumes</td>
</tr>
<tr>
<td>VSCRatch</td>
<td>diagnostic information for virtual scratch counts</td>
</tr>
<tr>
<td>VTD</td>
<td>VTD status</td>
</tr>
<tr>
<td>VTSS</td>
<td>VTSS status</td>
</tr>
<tr>
<td>VTV</td>
<td>VTV status</td>
</tr>
</tbody>
</table>
Display Acs

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display Acs displays the status of one or more ACSs. Information may include the following:
- partition ID
- LMU and HSC compatibility levels
- redundant electronics connections (summary of all Library Controllers)
- available scratch volumes and free cells

Syntax

```
Display Acs
acs-id or acs-range or acs-list
```

FIGURE 3-34 Display Acs syntax

Parameters

- `acs-id` or `acs-range` or `acs-list`
  one or more ACSs for which the system is to display status. Each `acs-list` element can be either a single ACSid or an ACSid range. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.
  If you do not supply an `acs-id`, the status of all defined ACSs in the library is displayed.
Output

```
SLS1000I ACS 00 status: Connected   658
Partition ID=000
Compatibility levels: HSC=23, LMU=23
Redundant Electronics Configured
Scratch Volumes available.......           0
Free Cells available...........        2583
RE Library Summary:
LIB LC Mode    Status           IP Addr/Host Name
 1   A  standby                  10.80.46.170
 1   B  active  Online           10.80.46.171
 2   A  active                   not assigned
 2   B  standby                  not assigned
 3   A  active                   not assigned
 3   B  standby                  not assigned
 4   A  active                   not assigned
 4   B  standby                  not assigned
```
Display ACTive

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display ACTive displays active VTCS processes.

Syntax

![Display ACTive syntax diagram]

FIGURE 3-35 Display ACTive syntax

Parameters

Active
DETail
optionally, display detailed status.
VTSS
optionally, display processes for the specified VTSS.
vtss-name
the VTSS name.

Output

FIGURE 3-36 shows an example of Display Active output.

MIGRATES=3 RECALLS=2 RECLAIMS=0

FIGURE 3-36 Example Display Active and Display Queue output (no detail)
Figure 3-37 shows example of Display Active DETail output.

*Note – *ABORT appears in the display of reclaim requests if the request has cancelled or abended.
Output Fields

The Function column shows the hierarchy of requests by indenting. The VTSS column shows either a VTSS name or a VTSS list. The Task column shows which task is currently servicing the request (same information as reported in Display Tasks).

Depending upon the parameters supplied, the output may contain only requests for a specific VTSS, be just the requests in a queued state, be just requests in an active state or be all requests. As can be seen above, the VTV and MVC columns are also used to expose additional information about the nature and status of the request.

Function

The type of request. The hierarchy of the requests and their relationship is implied by the indentation of the values in this column. It can take on one of the following values:

- **AllocSCR**
  - Job allocation request for a scratch VTV.

- **AllocVTV**
  - Job allocation request for a specific VTV.

- **Audit#**
  - Audit utility request.

- **Cancel@**
  - Cancel command.

- **Consold#**
  - Consolidate or export utility task.

- **Consolid**
  - Recall VTVs for remigration to a consolidation MVC. This will appear as a child request to an Int_cons or Consold# request.

- **Dismount**
  - Dismount a VTV from a VTD.

- **Display@**
  - Display or query command.

- **Drain**
  - Recall VTVs from MVC for remigration during drain or reclaim processing. This is a child of a VtvMover request.

- **Drain@**
  - Drain command or utility.

- **DrainMVC**
  - There is one DrainMVC request per MVC being drained. DrainMVC, which is a child request of a Drain@ request, is responsible for managing the entire drain process for a single MVC. The VTV column is used to indicate the status of the processing against the MVC.

- **DELETSCR**
  - Delete scratch utility.

- **Getmgpol**
  - Obtain current management and storage class definitions.
Getconfig
    Get configuration information.

HSCChnge
    Notification of parameter files being changed.

Import#
    Importing of VTV or MVC by a utility.

Int_cons
    PGMI initiated consolidate request

Migrate
    General request to perform the migrations of VTVs to a MVC. This may appear as
    a child to a number of other request types.

Migrate@
    Migrate command or utility. This includes migrates to threshold and auto
    migrates. The latter two are signified further details in the VTV and MVC
    columns as to the source of the command and the target threshold.

Mount
    Mount a VTV upon a VTD. Depending upon circumstances, this may be
    subsequently seen as a VTV transfer or recall request.

Move MVC
    There is one Move MVC request per MVC being processed by reconcile or
    archive. Move MVC, which is a child request of a MoveVTV# request, is
    responsible for managing the entire VTV movement process for a single MVC.
    The VTV column is used to indicate the status of the processing against the MVC.

MoveVTV#
    This is a request from the ARCHIVE or RECONCILE utility commands to move
    copies of VTVs between MVCs. The value -TIME- in the VTV column indicates
    that the ELAPSED parameter was specified.

MvcMaint
    MVCMAINT utility request.

MVC_chek
    Check status of MVC.

MVC_eot
    Reset the end of tape position of a MVC after completing a drain or reclaim. This
    is a child of either a DrainMVC, ReclmMVC or Move MVC request.

MVC_upd
    Reset or update MVC status.

MVC_inv
    Audit of an MVC. This will appear as a child request to an Audit# request.

MVCpool#
    Obtain details and status of MVC pools for a utility.

PGMI_req
    A request received through the PGMI interface that has yet to be decoded.
**Query@l**
Query or Display command.

**Recall**
General request to perform the recall of VTVs from a MVC. This may appear as a child to a number of other request types.

**Recall@**
Recall command or utility.

**Reclaim@**
Auto reclaim request or a Reclaim command or utility. The value -TIME- in the VTV column indicates that the ELAPSED parameter was specified.

**ReclmMVC**
There is one ReclmMVC request per MVC being reclaimed. ReclmMVC, which is a child request of a Reclaim@ request, is responsible for managing the entire reclaim process for a single MVC. The VTV column is used to indicate the status of the processing against the MVC.

**Reconcil**
Perform a crosscheck between the contents of the two VTSSs in a cluster.

**Replicat**
Perform the replication of VTVs between VTSSs in a cluster.

**Scratch**
Scratch a VTV request from HSC.

**Sel_scr**
PGMI select scratch.

**Set@**
Set command.

**Transfer**
Mount a VTV upon a VTD by transferring the VTV between two VTSSs.

**Unload**
Unload MVC from RTD.

**Uscratch**
Unscratch a VTV request from HSC.

**Vary_dev**
Perform very processing against an individual RTD or CLINK. This will appear as a child request to an VARY@ request.

**Vary@**
Vary command.

**VtvMaint**
VTVMAINT utility request.

**VTVMover**
There is one VTVMover request per MVC being drained or reclaimed. This is a child of either a DrainMVC, ReclmMVC or Move MVC request. This request is responsible for the movement of VTVs from one MVC to another.
VTSS_inv
Audit of a VTSS. This will appear as a child request to an Audit# request.

VTSS_list
Obtain a list of VTV resident within a VTSS. This will appear as a child request to a Reconcil or auto migration request.

VTV_upd
Resynchronize VTV status in the VTSS with the CDS.

ID
The process ID, which is a unique number in the range 0 - 65536. When the process ID reaches 65536 it wraps back to zero.

VTV
the volser of the VTV currently being used in the process. For some types of request, this will contain additional information as to the nature and status of the request.

MVC
the volser of the MVC currently used in the process. For some types of request, this will contain additional information as to the nature and status of the request.

VTSS
the VTSS or the VTSS list name associated with the request. The special value !ALLVTSS indicates that any VTSS with suitable requirements will be used.

RTD
the unit address of the RTD currently being used in the process.

TASK
the task that is processing the queue or the task to which the requests is queued (same information as reported in Display Tasks).

REASON
why the request is queued (queued processes only):

ACTIVE
The request is currently being processed.

CANCELLED
The request is terminating after being cancelled

CHILD FINISH
The request has child requests and is waiting for them to finish.

DEVICE LOCK
The RTD or CLINK device that the request requires is currently locked. This generally indicates contention with another host.

TASK LOCK
The request is waiting for a general task lock to free. This generally indicates contention with another host.

MVC LOCK
The request is waiting for a lock on an MVC to free.
VTV LOCK
The request is waiting for a lock on a VTV to free.

VTD LOCK
The request is waiting for a lock on a VTD to free.

RTD LOCK
The request is waiting for a lock on an RTD to free.

QUEUED
The request is sitting in the input queue of the task and is waiting for another request to complete or be rescheduled.

WAIT RESOURCE
The request is held awaiting a (non-specific) resource becoming available.

RTD ONLINE
The request requires an RTD to be brought online to continue.

RTD ALLOCATION
The request is queued awaiting an RTD to become idle or free.

MVC SELECTION
The request is queued awaiting a MVC or migration slot becoming available.

STEAL A RTD
The request is waiting to steal an RTD allocation from another request.

DBU DROP
The request is currently held because the DBU is high.

MVC MOUNT
The request is waiting for a MVC to be mounted.
Display ALL

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
Display ALL displays CDS and ACS status.

Syntax

PARAMETERS

Parameters
None.

FIGURE 3-38 Display ALL syntax
Display Cap

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display CAP displays CAP settings and status.

Syntax

![Diagram of Display Cap syntax]

FIGURE 3-39 Display Cap syntax

Parameters

**Note** – If the CAP status indicates RECOVERY, refer to the publication *Managing HSC and VTCS* for information about how to clear this condition.

**all CAPs**
displays all CAP activity for all ACSs online to this host.

**acs-id**
optionally, displays all CAP activity for a specified ACS.

**lsm-id**
optionally, displays all CAP activity for a specified LSM.

**cap-id**
optionally, displays all CAP activity for a specified CAP.
Note –

- The acsid, lsid, and capid parameters are positional operands. If no positional operand is specified, the default operation is to display the status of all CAP activity for all ACSs.
- The acsid, lsid, and capid may be expressed as a list.

Output

The output display contains the following information:

- CAPid
- CAP size: PCAP (priority CAP); 21-cell or 14-cell 9740 (standard CAP); 40-cell (enhanced CAP); 20-cell (9360 CAP); 30-cell (9360 optional CAP); 26-cell (SL3000 CAP); 234-cell (SL3000 AEM CAP); or 39-cell (SL8500 CAP)
- Partition ID
- Host ID of the host owning the CAP
- Priority: CAP preference value
- CAP mode: cleaning, draining, ejecting, entering, or idle
- CAP status: active, automatic mode, manual mode, offline, online, and/or recovery needed.
Display CDS

**Interfaces:**
Console or utility
UUI: Yes

**Subsystem Requirements:**
Active HSC at BASE or FULL service level

**Description**
Display CDS displays the status of all copies of the CDS, the journals (if active), primary and secondary log files, operational settings (e.g., the cleaning cartridge prefix, SMF record type, etc.), and the status of all HSC-defined hosts.

**Syntax**

![Display CDS Syntax](image)

**Parameters**
None.
Display CLInk

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display CLInk displays Cluster link status.

Syntax

```
Display CLInk Query
```

**FIGURE 3-41** Display CLInk syntax

Parameters
None.

Output
**FIGURE 3-42** shows an example of Display CLInk output.

<table>
<thead>
<tr>
<th>VTSS</th>
<th>Clink</th>
<th>Name</th>
<th>Status</th>
<th>Usage</th>
<th>Host</th>
<th>Partner</th>
<th>VTD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSS16</td>
<td>07</td>
<td>1A:0</td>
<td>PLEXNAME</td>
<td>Online</td>
<td>Free</td>
<td>REMOTEA 7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>06</td>
<td>1E:0</td>
<td>PLEXNAME</td>
<td>Online</td>
<td>Free</td>
<td>REMOTEB 6</td>
<td></td>
</tr>
<tr>
<td>HBVTSS18</td>
<td>07</td>
<td>1A:0</td>
<td>-Cluster</td>
<td>Online</td>
<td>Free</td>
<td>HBVTSS19 AB07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>06</td>
<td>1E:0</td>
<td>-Cluster</td>
<td>Online</td>
<td>Free</td>
<td>HBVTSS19 AB06</td>
<td></td>
</tr>
</tbody>
</table>

*SLS5013I Command completed (0)*

**FIGURE 3-42** Example Display CLInk output

**VTSS**
the Primary or Sending VTSS name.

**CLINK**
a composite of the device Id that has been assigned to the CLINK within the VTSS and the back end channel interface to which it is connected.
NAME

one of the following values:

name

the name of the TapePlex to which the CLINK is connected. This also indicates that the CLINK will be used for electronic exporting of VTVs. The VTSS name in the partner column indicates the VTSS that will receive VTV copies over this CLINK.

-Cluster

indicates that the CLINK is used for replication of VTVs within the TapePlex and is part of a cluster. The VTSS name in the partner column indicates the other VTSS that operates in the cluster.

STATUS

one of the following link statuses:

Maint

The link has failed or it has been varied into maintenance mode.

Offline

The link is offline and unavailable to all hosts and VTSSs.

Online

The link is available for replication.

P_offline

The link is pending offline.

P_online

The link is pending online.

On-Sync

Available for synchronous replication.

On-Async

Available for asynchronous replication.

Recovery

The link is being reset following an error or a vary online operation.

Unusable

Not available for replication due to hardware errors or assigned-elsewhere conditions.

UII err

This is a CLINK defined for electronic export and it has been unable to contact the remote VTCS. There should be messages in the HSC JOBLOG that indicate the reason for the problem. This could include problems with the definitions, the local SMC, or the remote HTTP server on the remote VTCS.
USAGE
one of the following link usages:

Assigned
Link is assigned to the host in the HOST field but is not currently replicating. This usage occurs when VTCS is starting or terminating link use or is attempting error recovery on the link after a replication failure.

Free
Link is idle (not doing replications).

Replicating
Link is actively doing replications.

HOST
the host that the link is assigned to.

PARTNER
the secondary or receiving VTSS.

VTD
the address of the VTD on the partner VTSS that forms the other end point to the connection. For a cluster link, the MVS address of the VTD is reported. For an electronic export link, this is not possible as there is no access to the other TapePlex configuration. In this case, only the ordinal number of the VTV is reported.
Display CLUster

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display CLUster displays Cluster status.

Syntax

PARAMETERS

None.

Output
FIGURE 3-44 shows an example of Display CLUster output.

<table>
<thead>
<tr>
<th>NAME</th>
<th>VTSS</th>
<th>STATE</th>
<th>DIRECTION</th>
<th>VTSS</th>
<th>STATE</th>
<th>MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLUSTER1</td>
<td>HBVTSS16</td>
<td>ONLINE</td>
<td>------&gt;</td>
<td>HBVTSS17</td>
<td>ONLINE</td>
<td>Sync-replicate</td>
</tr>
<tr>
<td>CLUSTER2</td>
<td>HBVTSS18</td>
<td>ONLINE</td>
<td>&lt;---------</td>
<td>HBVTSS19</td>
<td>QUIESCED</td>
<td>DEGRADED</td>
</tr>
<tr>
<td>CLUSTER3</td>
<td>HBVTSS20</td>
<td>ONLINE</td>
<td>&lt;---------</td>
<td>HBVTSS21</td>
<td>ONLINE</td>
<td>Async-replicate</td>
</tr>
<tr>
<td>CLUSTER4</td>
<td>HBVTSS22</td>
<td>QUIESCED</td>
<td>&lt;---------</td>
<td>HBVTSS23</td>
<td>ONLINE DEGRADED</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 3-44 Example Display CLUster output

NAME
the Cluster name.

VTSS
one of the VTSS in a Cluster.
DIRECTION
One of the following:
----->
OR
<-----
Indicates the direction of VTV replication in Uni-Directional Cluster. VTVs can only be replicated from the Sending to the Receiving VTSS.
<----->
Indicates that the VTSSs are configured as a Bi-Directional (Peer-to-Peer) Cluster. VTVs can be replicated from either VTSS to the other.

STATE
one of the following VTSS states:
QUIESCING
Quiescing state.
QUIESCED
Quiesced state.
OFFLINE
Offline state.
OFFLINE-P
Offline pending state.
ONLINE
Online state.
ONLINE-P
Online pending state.
STARTED
The VTSS is initialized and in process of going to the requested state (online, offline, or quiesced).

MODE
one of the following Cluster operating modes:
Async-replicate
Both VTSSs in the Cluster are online to VTCS. Production workload can go to either VTSS, but in the case of a Uni-Directional (Primary/Secondary) Cluster, VTVs can only be replicated from the Sending VTSS. Synchronous replication is not enabled across the cluster.
Sync-replicate
Both VTSSs in the Cluster are online to VTCS. Production workload can go to either VTSS, but in the case of a Uni-Directional (Primary/Secondary) Cluster, VTVs can only be replicated from the Sending VTSS. Synchronous replication is enabled across the cluster.
Degraded
One of the two VTSSs in a Bi-Directional (Peer-to-Peer) Cluster is either offline or quiesced. Production workload can go the remaining online VTSS. VTVs requiring replication, however, are allocated to the remaining VTSS only if no other Full-Function clusters are available and suitable. In this case, replicate VTVs are migrated immediately with keep and queued for replication when the other VTSS comes online.

When the other VTSS comes online, VTCS reconciles the contents of both VTSSs.

Degraded-secondary
The Primary is online to VTCS and the Secondary is either offline or quiesced. Workload can run on the Primary. VTVs requiring replication, however, are allocated to the Primary only if no other Full Function Clusters are available. In this case, Replicate VTVs are migrated immediately with keep and are queued for replication, which occurs when the Secondary comes online.

Degraded primary
The Secondary is online to VTCS and the Primary is either offline or quiesced. Workload can run on the Secondary. VTVs requiring replication, however, are allocated to the Secondary only if no other Full Function Clusters are available. When the Primary comes back online, VTCS reconciles the contents of the Primary and Secondary.

Non-operational
No workload is possible on this Cluster.

CLINKs offline
All defined CLINKs are offline. No workload is possible on this Cluster.

Only secondary
The Secondary is online to VTCS and the Primary has no CLINKs online. Workload can run on the Secondary. VTVs requiring replication, however, are allocated to the Secondary only if no other Full Function Clusters are available.

Only primary
The Primary is online to VTCS and the Secondary has no CLINKs online. Workload can run on the Primary. VTVs requiring replication, however, are allocated to the Primary only if no other Full Function Clusters are available. In this case, Replicate VTVs are migrated immediately with keep and are queued for replication.
Display CMD

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display CMD displays syntax and usage information for a VTCS or HSC command.

Syntax

![Display CMD Syntax Diagram](image)

**FIGURE 3-45** Display CMD syntax

Parameters
CMD or Command

*cmd-name*

the command name. If a command-name is not specified, a list of all HSC/VTCS commands is produced.

For certain commands that accept multiple options, including Display, a two-part command may be entered. For example:

```
D CMD D VTV
```

This command displays help information only for the Display VTV command.
Display COMMPath

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display COMMPath displays current settings for HSC host-to-host communications.

Syntax

```
DISPLAY COMMPath [HOSTid] [ALL] [host-id] [host-list]
```

**Parameters**

**HOSTid**
optionally, indicates that you want to obtain information about specific hosts.

**ALL**
displays the settings for all defined hosts. Depending on the number of hosts in your environment, the display can be extremely long.

**host-id** or **host-list**
the host or hosts about which you want information. The HSC issues console messages that display the current settings for each specified host.

The elements in a **host-list** must be separated by commas or blanks, and the entire list must be enclosed in parentheses. Ranges are not valid.

*****
displays the settings for the host on which you enter the command. This is the default if HOSTid is specified without a value.
Display CONFIG

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display CONFIG displays CONFIG parameter settings.

Syntax

![Display CONFIG syntax](image)

FIGURE 3-47 Display CONFIG syntax

Parameters
None.
Output

The following figure shows an example of Display CONFIG output:

```
FIGURE 3-48 Example Display CONFIG output
```

<table>
<thead>
<tr>
<th>Configuration information</th>
</tr>
</thead>
<tbody>
<tr>
<td>MaxVTV MVCFree VTVAtr RECALWER REPlicat VTVPAGE SYNCHREP</td>
</tr>
<tr>
<td>4000 2 Scratch Yes Always Standard No</td>
</tr>
</tbody>
</table>

| MAXRTDS FASTMIGR INITMVC MAXVTVSZ LOCKTOUT |
| 32 No No 400 123 |

| NLIBDRNR NLIBMIGR NLIBRECL MVCNPTTO LOGPOL |
| Yes Yes Yes 15 Optional |

| CDS level support: V5/5.1 V6 V6.1 V6.2 V7 V7.1 |
| * * * |

| Reclaim: Threshold Max MVC Start Connvcr |
| 30 4 10 1 |

| Reclaim: MaxMVC Start Connvcr Inplace Threshold: Tape VL Inpthrsh |
| 4 10 1 No 45 30 15 |

| Auto Migr Thr Migr Tasks Default VSM 2GB/ Page RTDs |
| VTSSNAME Low High Min Max ACS Model 4GB Size Yes |

| DVTSS16 65 70 2 3 FF 5 Yes Large |

| Devno RTD Type Inplace ACS Retain VTSSNAME RTD NAME CHANIF |
| 2A00 36CTRACK No 00 10 DVTSS16 SS162A00 00 0A:1 |
| 2A01 36CTRACK No 00 10 DVTSS16 SS162A01 01 0A:0 |
| 2A02 36CTRACK No 00 10 DVTSS16 SS162A02 02 0E:0 |

### Fields

**Note** – See “CONFg GLOBAL Statement” on page 212 for more information about CONFg GLOBAL statement parameters.

**MaxVTV**
- the CONFg GLOBAL MAXVTV setting.

**MVCFree**
- the CONFg GLOBAL MVCFREE setting.

**VTVAtr**
- the CONFg GLOBAL VTVAtr setting (SCRATCH or ALLmount).

**RECALWER**
- the CONFg GLOBAL RECALWER setting (YES or NO).
REPlicat
the CONFIg GLOBAL REPlicat setting (ALWAYS or CHANGED).

VTVPAGE
the CONFIg GLOBAL VTVPAGE setting The VTV page size (STANDARD or LARGE).

SYNCHREP
the CONFIg GLOBAL SYNCHREP setting (YES or NO).

MAXRTDS
the CONFIg GLOBAL MAXRTDS setting (16 or 32).

FASTMIGR
the CONFIg GLOBAL FASTMIGR setting (YES or NO).

INITMVC
the CONFIg GLOBAL INITMVC setting (YES or NO).

MAXVTVSZ
the CONFIg GLOBAL MAXVTVSZ setting (400, 800, 2000 or 4000).

LOCKTOUT
the CONFIg GLOBAL LOCKTOUT setting (0 or 5-240).

NLIBDRNR
the CONFIg GLOBAL NLIBDRNR setting (YES or NO).

NLIBMIGR
the CONFIg GLOBAL NLIBMIGR setting (YES or NO).

NLIBRECL
the CONFIg GLOBAL NLIBRECL setting (YES or NO).

MVCMTTTO
the CONFIg GLOBAL MVCMTTTO setting (5-30 minutes).

LOGPOL
the CONFIg GLOBAL LOGPOL setting (OPTional or REQuired).

CDSLEVEL SUPPORT
the VTCS level(s) that can access the active CDS.

THRESHOLD
the RECLAIM THRESHLD setting.

MAX MVC
the RECLAIM MAXMVC setting.

START
the RECLAIM START setting.

CONMVC
the RECLAIM CONMVC setting.
VTSSNAME
the VTSS identifiers (VTSS NAME settings).

AUTO MIGR THR, LOW
The low automatic migration threshold setting (LAMT) for the VTSS.

AUTO MIGR THR, HIGH
The high automatic migration threshold setting (HAMT) for the VTSS.

MIGR TASKS, MIN
The minimum number of concurrent automatic migration tasks setting (MINMIG) for the VTSS.

MIGR TASKS, MAX
The maximum number of concurrent automatic migration tasks setting (MAXMIG) for the VTSS.

DEFAULT ACS
The default ACS setting (DEFLTACS) for the VTSS.

VSM MODEL
2, 3, or 4.

2GB / 4GB
VTSS configured for 2 GB / 4GB VTV sizes (Y or N).

PAGE SIZE
VTV page size (STANDARD or LARGE).

RTDs
indicates whether the VTSS has RTDs.

DEVNO
the RTD MVS device numbers for the VTSS (RTD DEVNO settings).

RTD TYPE
the RTD type.

ACS
the ACS that contains the RTD.

RETAIN
the VTSS RETAIN setting.

VTSSNAME
the VTSS identifiers (VTSS NAME settings) of the VTSSs connected to the RTD.

RTD NAME
the RTD names for the VTSS (RTD NAME settings).

CHANIF
the RTD channel interface (RTD CHANIF settings).
Display DRives

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display DRives displays current and queued mount activity for each transport address.

Syntax

![Diagram showing the syntax of Display DRives]
Parameters

Library
only library-controlled drives are processed. This is the default.

ACS
only drives in a specified ACS are processed.
acs-id
the ACS for which the system is to display drive information.

LSM
only drives in a specified LSM are processed.
lsm-id
the LSM for which the system is to display drive information.

ACtive
only active drives are processed. This is the default.

Idle
only idle drives are processed (includes drives that may be offline).

All
all drives are processed regardless of status.

BYDrive
displays the drives by host device address. This is the default.

BYLoc
displays the drives by library location.

DETAIL
optionally, displays the drive media types and recording techniques.

IDEntity
optionally, displays the serial number and world wide name of a transport associated with a drive.

The tape library must be at a sufficient compatibility level to provide this information.

- The serial number requires LMU level 13.
- The WWN requires LMU level 21.
- DISPLAY ACS shows the LMU compatibility level. In addition, the transport must supply the LMU with the serial number.

Note – IDEntity and DETail are mutually exclusive.
MEDia
optionally, limits the display of drives only to those that support the specified type of media. The default is for all types of media.

*media-type*
the media type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.

**Note** – If MEDia is not specified, the drive is selected without regard to media type.

RECtech
optionally, limits the display of drives only to those that support the specified recording technique. The default is for all recording techniques. RECtech refers to the method used to record data tracks on the tape surface.

If RECtech is not specified, the drive is selected without regard to recording technique.

*recording-technique*
the recording technique.

See Appendix A, “MEDia, RECtech, and MODel Values” for valid recording-technique values.

**Note** – RECtech and MODel are mutually exclusive.

MODel
optionally, limits the display of drives by the model type of a transport. You can enter a list of models, separated by commas. A list specifies a generic pool.

*model-type*
the model type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid model-type values.

**Note** – MODel and RECtech are mutually exclusive.

UNIT
optionally, limits the display of drives to a unit address or a range of unit addresses.

*unit-address* or *unit-address-range*
a single unit address or a range of addresses.
Display DRIVE_INFO

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display DRIVE_INFO displays information for real and/or virtual drives.

Syntax

![Diagram of the Display DRIVE_INFO syntax]

FIGURE 3-50 Display DRIVE_INFO syntax
Parameters

ACtive
optionally, specifies that only drives with a volume mounted, or in the process of mounting or dismounting, are displayed.

DEVADDR
optionally, specifies that only the device with the specified drive ID is displayed.

device-address
a three or four digit device address

DRVLOC
optionally, specifies that only the single drive with a matching drive location ID is displayed.

drive-location
the drive location id:
For a real drive, use format R:AA:LL:PP:DD where:
■ AA is the acs ID.
■ LL is the LSM number.
■ PP is the panel.
■ DD is the drive number.
For a virtual drive, use format V:vtssname:nnnn where nnnn is the VTSS drive identifier

LIBLOC
optionally, specifies that only the real drive with the specified drive ID is displayed.

drive-id
the drive ID, in the format AA:LL:PP:DD where:
■ AA is the acs ID.
■ LL is the LSM number.
■ PP is the panel.
■ DD is the drive number.

LIBRARY
optionally, specifies that only library (non-virtual) drives are displayed.

LSMloc
optionally, specifies that only drives in the specified LSM is displayed.

lsm-id
the lsm-id, in the format AA:LL where:
■ AA is the acs ID.
■ LL is the LSM number.
MODel
optionally, specifies that only drives with the specified model type are displayed.

*model-type*
the model type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid *model-type* values.

RECTech
optionally, specifies that only drives with the specified recording technique are displayed.

*recording-technique*
the recording technique.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid *recording-technique* values.

VIRTual
optionally, specifies that only virtual drives (not library drives) are displayed.
Display EXceptns

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
Display EXceptns displays hardware status.

Syntax

![Diagram of Display EXceptns syntax]

FIGURE 3-51  Display EXceptns syntax

Parameters

EXceptns or X

displays hardware status.
Output

Output includes status of the following:
- all LMUs
- all LSMs
- all CAPs
- all robotic hands
- all pass-thru ports (PTPs)
- all stations.

Errors are reported in \textit{AA:LL:CC} format, where \textit{AA} is the decimal value for the ACS (00-99), \textit{LL} is decimal value for the LSM (00-99), and \textit{CC} decimal value for the CAP identifier (00 through 11). The following error messages are possible:

<table>
<thead>
<tr>
<th>Message:</th>
<th>Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAP Not Operational</td>
<td></td>
</tr>
<tr>
<td>CAP Door is Open</td>
<td></td>
</tr>
<tr>
<td>CAP Door is Unlocked</td>
<td></td>
</tr>
<tr>
<td>CAP is Reserved</td>
<td></td>
</tr>
<tr>
<td>Pass Thru Port is Inoperative</td>
<td></td>
</tr>
<tr>
<td>Robot Hand is Inoperative</td>
<td></td>
</tr>
<tr>
<td>Robot Hand needs Maintenance</td>
<td></td>
</tr>
<tr>
<td>LSM is Not Ready</td>
<td></td>
</tr>
<tr>
<td>LSM is Offline</td>
<td></td>
</tr>
<tr>
<td>LSM is Offline Pending</td>
<td></td>
</tr>
<tr>
<td>LSM is in Maint Mode</td>
<td></td>
</tr>
<tr>
<td>LSM Door is Open</td>
<td></td>
</tr>
<tr>
<td>LMU Compat 10 or less; not all functions supported:</td>
<td>The LMU will not be able to respond correctly to some of the status queries until its microcode is updated. This condition will also cause SLS0662I LMU Response Error to be issued just before SLS4610I.</td>
</tr>
<tr>
<td>Station nn has Inactive Connection:</td>
<td>A hardware connection to the LMU is not usable. This may be normal for your configuration if the connection has never been made and is not necessary. The station number is in hex, so Station 0A is the tenth station, and Station 10 is really the sixteenth.</td>
</tr>
<tr>
<td>Station nn Inoperative; Host not responding:</td>
<td>The station number is in hex, so Station 0A is the tenth station, and Station 10 is really the sixteenth.</td>
</tr>
</tbody>
</table>
The following messages are summaries:
- No CAP problems were detected
- No Pass Thru Port problems were detected
- No Robot Hand problems were detected
- No LSM problems were detected
- No Station problems were detected

Message summaries only reflect that the LMU did not detect hardware errors. Something could be wrong with the software configuration, or with something that the LMU could not detect.

HSC processing continues and no user response is required.
Display LMUPDEF

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display LMUPDEF displays information about the definition data set containing LMUPATH statements, that is currently loaded.

Syntax

![Diagram of Display LMUPDEF syntax]

Parameters
None.
Display LOCKs

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display LOCKs displays VTCS lock status.

Syntax

```
[81x448]FIGURE 3-53 Display LOCKs syntax
```

Parameters
None.

Output

```
[81x337]FIGURE 3-54 shows an example of Display LOCKs output.
```

```
SLOT    OWNING    TASK    TASK    VTD     MVC     VTV      WAITING     WAITING
ID      HOST     NBR      TYPE                             HOST        TASK
002     EC21     006      RTD             EVS101           EC10        007
003     EC20     010      RTD             EVS145  X15328
004     EC20     010              A91E            X153234
        CFLOCK           CFLOCK                           OWNING
        NUMBER           TYPE                             HOST
3        HOST TO HOST (TO ECCL)                        EC21
```

```
[81x337]FIGURE 3-54 Example Display LOCKs output
```
**Fields**

**SLOT ID**
Slot ID of the lock within the lock buffer.

**OWNING HOST**
the host that owns the lock.

**TASK NBR**
the task number associated with the lock.

**TASK TYPE**
the task type.

**VTD**
the associated VTD address on the issuing host.

**MVC**
the locked MVC.

**VTV**
the locked VTV.

**WAITING HOST**
the host waiting for the lock or **ALL** if multiple hosts are waiting.

**WAITING TASK**
the task waiting for the lock or **ALL** if multiple tasks are waiting.

**CF LOCK NUMBER**
the Coupling Facility lock number.

**CF LOCK TYPE**
one of the following VTCS Coupling Facility lock types:
- **Host Footprint**
  used to serialize access to the host footprint list.
- **Host to Host**
  used to serialize access to a given host to host list.
- **Lock data**
  used to serialize access to the VTCS lock data.
- **Formatting**
  used to serialize the initial formatting of the structure; also used when rebuilding data.
- **System**
  lock is held, but is not a lock used by VTCS; assume it is used by MVS.

**OWNING HOST**
the host that owns the lock.
Display Lsm

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display Lsm displays LSM status.

Syntax

![Display Lsm Syntax Diagram](image)

**FIGURE 3-55** Display Lsm syntax

Parameters

*lsm-id* or *lsm-range* or *lsm-list*

optionally, one or more LSMS for which the system is to display information. If you do not supply an *lsm-id*, a status summary is displayed for every LSM in the library.

Each *lsm-list* element can be either a single LSMid or an LSMid range. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

An *lsm-id* format is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).
Output

LSM status includes:

- LSM type
- Online/offline status
- Ready/not ready
- Automatic/manual mode status
- If one or more LSMids are specified, the display includes the following:
  - Audits in progress (if any)
  - CAP status, priority, and owning host if CAP is not drained
  - Number of free storage cells and scratch volumes

**Note —**

- The number of free cells in the LSM **does not** include free cells on frozen panels.
- The number of free cells is not accurate until the LSM(s) is varied online. See “Vary” on page 591 for syntax information.
- Each frozen panel, showing the total number of cells and free cells on the panel.
Display Message

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display Message displays detailed HSC or VTCS message information.

Syntax

PARAMETERS

Msg or Message
display detailed HSC or VTCS message information.

msgnum
the four-digit numerical portion of the message identifier. Leading zeros are not required.

msg-range or msg-list
a range or list of messages for which the system is to display status. Each msg-list element can be either a single msgnum or a msg-range. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

Note – msg-range and msg-list are only valid when the Display Message command is issued from a utility or programmatic interface.
Display MGMTDEF

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display MGMTDEF displays information about active MGMTclas control statements.

Syntax

\[\text{Display MGMTDEF}\]

Parameters
None.
Display MIGrate

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display MIGrate displays migration status.

Syntax

![Diagram of Display MIGrate syntax]

FIGURE 3-58 Display MIGrate syntax

Parameters

VTSS
Optionally, display migration status for a specified VTSS.

vtssname
the VTSS name.

DETail
Optionally, display detailed migration status by Storage Class.

AUTO
Optionally, display the number of VTVs for the specified storage class, and their time remaining on the AUTO queue. The time remaining is referred to as the age.

stor-clas-name
the Storage Class name.

VTSS
Display migration status for a specified VTSS (vtssname).

LISTVTVS
List the specific VTVs on the AUTO queue. VTSS must also be specified.
DELAY
Optionally, display the number of VTVs for the specified storage class, and their time remaining on the DELAY queue. The time remaining is referred to as the age.

stor-clas-name
the Storage Class name.

VTSS
Display migration status for a specified VTSS (vtssname).

LISTVTVS
List the specific VTVs on the DELAY queue. VTSS must also be specified.
Display MIGrate Output

FIGURE 3-59 shows an example of Display MIGrate output.

<table>
<thead>
<tr>
<th>/SLS0000I D MIG VTSS(HBVTSS16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTSSNAME: HBVTSS16</td>
</tr>
<tr>
<td>Active migration tasks: 4</td>
</tr>
<tr>
<td>Immediate migrate:</td>
</tr>
<tr>
<td>Max wait: 5 MINUTES</td>
</tr>
<tr>
<td>Immediate delay queue:</td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Auto migrate:</td>
</tr>
<tr>
<td>Host: EC20 MIGRATION TARGET: 70%</td>
</tr>
</tbody>
</table>

FIGURE 3-59 Example Display MIGrate output

**Fields**

**VTSSNAME**

the VTSS migrating the VTVs.

**ACTIVE MIGRATION TASKS**

the total number of migration tasks (automatic, immediate, and migrate-to-threshold).

**IMMEDIATE MIGRATE**

either **Not active** if there are no current or pending immediate migrations or the maximum time that any VTV has been waiting for immediate migration.

**Note** – This field only shows status for the LPAR on which the query was issued.

**IMMEDIATE DELAY QUEUE**

indicates whether there are VTVs on the Immediate Migrate Queue.

**AUTO MIGRATE**

either **Not active** or the name of the host and migration target (LAMT or specified threshold for a migration-to-threshold) if auto migration is active on any host.
Display Migrate DETail Output

FIGURE 3-60 shows an example of the additional fields from Display MIGrate DETail output.

```plaintext
/SLS0000I D MIG DET
VTSSNAME: DVTSS16
Active migration tasks: 2
Immediate migrate: Max wait: 1 minutes
Immediate delay queue: Not active
Auto migrate: Not active
```

<table>
<thead>
<tr>
<th>Storage Class</th>
<th>ACS</th>
<th>Max/Onl RTDs</th>
<th>Lim Pref</th>
<th>Req</th>
<th>--Auto--</th>
<th>---Immed---</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>00</td>
<td>16 16</td>
<td>1 0</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>S2</td>
<td>00</td>
<td>16 16</td>
<td>1 0</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

**FIGURE 3-60** Example Display MIGrate DETail additional output

**Fields**

**STORAGE CLASS**

the Storage Class associated with the migration.

**Note** – If you do not explicitly assign a Storage Class, an MVC’s default Storage Class is the name of the last VTSS that wrote to the MVC for reclamation or migration and this class has the VTCS default media selections. To change these defaults, create a Storage Class with the VTSS name and specify the desired media selection order.

**ACS**

the ACS defined for the Storage Class.

**MAX/ONL RTDs**

- the maximum number of RTD tasks based on the Storage Class and RTD configuration definitions.
- the maximum number of tasks for those RTDs that are actually online (**MAX TASKS** minus the number of offline RTDs).

**SCH**

SCHLIMIT and SCHPREF values from MIGRSEL statements that apply to the active migration for the storage class.

**Req Act**

the number of active migration tasks.
ACTIVE TASKS
the number of migration tasks currently active for the Storage Class.

AUTO
indicates whether the Storage Class contains automatic migration VTVs.

IMMED
indicates whether the Storage Class contains immediate migration VTVs.

WEIGHT (percent)
the priority of the Storage Class compared to other Storage Classes for the VTSS. Storage Classes with higher priorities are assigned a greater proportion of migration tasks.

Display Migrate AUTO Output
FIGURE 3-60 shows an example of Display MIGrate AUTO output.

```
/SLS0000I D MIG AUTO(S1) VTSS(DVTSS16) LISTVTVS
/SLS6603I VTVs awaiting migration:
DX0601  DX0920
2 volumes with an age range of 3-5 in the queue
```

FIGURE 3-61 Example Display MIGrate AUTO output

Display Migrate DELAY Output
FIGURE 3-60 shows an example of Display MIGrate DELAY output.

```
/SLS0000I D MIG DELAY(S2) VTSS(DVTSS16) LISTVTVS
/SLS6603I VTVs awaiting migration:
DX0800  DX0900
2 volumes with an age range of 3-5 in the queue
```

FIGURE 3-62 Example Display MIGrate DELAY output
Display MNTD

Interfaces:
Console or PARMLIB  
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display MNTD displays current settings for all HSC mount options set by the MNTD command.

Syntax

![FIGURE 3-63 Display MNTD syntax]

Parameters
None.
Display MONitor

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display MONitor displays a list of the monitoring consoles.

Syntax

```
Display MONitor [PGMI] [L(cc name)]
```

**FIGURE 3-64** Display MONitor syntax

Parameters

**PGMI**
optionally, displays the status of the monitoring of move requests received by the programmatic interface.

**L**
optionally, displays the type of requests being monitored by the specified console. Console IDs and console names must be two to eight characters long.

**cc**
the console ID.

**name**
the console name.

If both **PGMI** and **L** are omitted, the status of all monitoring is displayed.
Display MVC

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display MVC displays information about a specific MVC.

Syntax

```
Display MVC(volser)
```

Parameters

- **volser**
  - the volser of the MVC.
Output

FIGURE 3-66 shows an example of Display MVC output.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volser:</td>
<td>702532</td>
</tr>
<tr>
<td>Media:</td>
<td>T1B000T1</td>
</tr>
<tr>
<td>ACSid:</td>
<td>00</td>
</tr>
<tr>
<td>Size(Mb):</td>
<td>1000000</td>
</tr>
<tr>
<td>Migrated Count:</td>
<td>19</td>
</tr>
<tr>
<td>Vtv Count:</td>
<td>19</td>
</tr>
<tr>
<td>%Used:</td>
<td>7.41</td>
</tr>
<tr>
<td>%Fragmented:</td>
<td>0.00</td>
</tr>
<tr>
<td>%Available:</td>
<td>92.59</td>
</tr>
<tr>
<td>%Usable:</td>
<td>0.00</td>
</tr>
<tr>
<td>Times Mounted:</td>
<td>77</td>
</tr>
<tr>
<td>Last Mounted:</td>
<td>2010Mar15 10:40:54</td>
</tr>
<tr>
<td>Last Migration:</td>
<td>2010Jan14 14:41:04</td>
</tr>
<tr>
<td>Owner:</td>
<td>ALP</td>
</tr>
<tr>
<td>VTSS:</td>
<td>HBVTSSY</td>
</tr>
<tr>
<td>MVCPOOL:</td>
<td>ALPMVC</td>
</tr>
<tr>
<td>Security access:</td>
<td>No profile</td>
</tr>
<tr>
<td>Status:</td>
<td>Initialized</td>
</tr>
<tr>
<td>Format:</td>
<td>Partitioned</td>
</tr>
</tbody>
</table>

FIGURE 3-66 Example Display MVC output

**Fields**

**VOLSER**
- the volser of the MVC.

**MEDIA**
- the volume media type or recording technique. Should the value ‘Need PTF’ appear, then this host lacks support for this media type. Another host does have support for this media type.

**ACSID**
- the ACS that contains the MVC. This will not appear if the MVC has been ejected from the library.

**SIZE (MB)**
- the size of the MVC in megabytes.

**MIGRATED COUNT**
- the number of VTVs migrated.

**VTV COUNT**
- the number of active VTVs on the MVC.

**%USED**
- the percentage of the MVC used by valid VTVs.
%FRAGMENTED
the percentage of the MVC that has invalid VTV space that is not available for use until it is reclaimed or the MVC is drained.

%AVAILABLE
the percentage of the MVC that is physically available for use.

%USABLE
the percentage of space on the MVC that can be used by VTCS. This may be zero even if there is still space physically available. For instance, if the VTV per MVC limit is reached then the %Usable will be reported as 0%. Similarly, if an error has been reported against an MVC then VTCS will not use this MVC for output and the %Usable will be reported as 0%.

TIMES MOUNTED
the number of times the MVC has been mounted for writing or reading since it was added to the MVC inventory.

LAST MOUNTED
the date and time at which the MVC was mounted or attempted to be mounted upon a RTD.

LAST MIGRATED
the date and time at which the last VTV migration was performed to the MVC.

LAST DRAIN/RECLAIM
the date and time at which the MVC was last processed by Drain or reclaim processing and had it’s end-of-tape pointer reset.

OWNER
the Storage Class that owns the MVC. A MVC only becomes a member of a storage class when it contains migrated VTVs.

VTSS
the last VTSS that performed a migration to the MVC. CONSOLIDATE appears in this field for consolidated VTVs.

MVCPOOL
either an MVC Pool Name (including DEFAULTPOOL) or NO if the MVC is not defined on an MVCPool statement.

SECURITY ACCESS
VTCS permissions for the MVCs defined in an MVCPool statement (UPDATE, NO UPDATE, or NO PROFILE).
**STATUS**

one of the following statuses:

**INITIALIZED**

The MVC has been initialized.

**BEING AUDITED**

The MVC is either currently being audited or has been the subject of a failed audit. While in this state the MVC will not be used for migration and can be used for recalls. Due to the inherent state, recalls may fail because the CDS not yet up-to-date with the MVC contents. To clear this condition, rerun the AUDIT utility against this MVC.

**LOGICALLY EJECTED**

The MVC has either been the subject of an MVCDRain Eject or the MVC was rejected for update by a RACROUTE call. The MVC will not be used again for migration. To clear this condition, use MVCDRain against the MVC without the Eject option.

**NOT-INITIALIZED**

The MVC has been defined via the CONFIG utility, but has not ever been the subject of a successful VTV migration.

**MOUNTED**

The MVC is mounted on an RTD.

**IN ERROR**

This is a generic error that indicates the MVC, drive, or combination of the two has specifically reported a problem whilst accessing the MVC. VTCS attempts to de-preference the usage of MVCs with this state. VTCS considers this to be the most serious affliction on a MVC when considering copies to be used for recalls.

In general, to clear this state:

- If the MVC caused the problem, use a DRAIN(EJECT) command to remove the MVC from service.
- If the RTD caused the problem, use the MVCMAINT utility to reset the MVC state.

**MARKED FULL**

The MVC is considered as being full and is not a candidate for further migrations. Due to the general behavior of tape media this can occur before the MVC has reached its nominal capacity.

**DRAINING**

The MVC is either currently the subject of drain or reclaim processing. Should the processing fail, the MVC maybe left in this state as a safeguard. To clear this condition, perform a MVCDRain against the MVC.

Note – One or more of the following messages is issued for IN ERROR status: SLS6686, SLS6687, SLS6688, SLS6690. Refer to the publication *ELS Messages and Codes* for recovery procedures for these messages.
LOST - FAILED TO MOUNT

VTCS attempted to mount an MVC and the mount did not complete within a 15-minute time-out period. VTCS has had no specific error report although there could be combination of hardware problems, HSC problems, or by the MVC being removed from the ACS. VTCS attempts to de-preference the usage of MVCs with this state.

Determine the cause of the error and fix it. You can also use the VTCS MVCMaint utility to set LOST(Off) for the following events:

- LOST(ON) was set due to LSM failures or drive errors that have been resolved
- LOST(ON) was set because the MVC was outside the ACS and has been reentered.

This condition is automatically cleared by VTCS if it subsequently requests a mount of the MVC and this is successful.

DATA CHECK

A data check condition has been reported against this MVC. VTCS attempts to de-preference the usage of MVCs with this state. To get into this state, a data transfer must have failed upon two different RTDs.

To clear this state:

- If all VTVs on the MVC are duplexed, use MVCDrain on the MVC without the Eject option. This recovers all VTVs and removes the MVC from service.
- If all VTVs on the MVC are not duplexed, VTCS AUDIT the MVC. The audit will probably fail. After the audit, do an MVCDRAIN (no eject). This recalls the VTVs before the data-check area in ascending block-id order and the VTVs after the data-check area in a descending block-id order. Processing the VTVs in this sequence ensures that VTCS recovers as many VTVs as possible from the media. You then need to recreate the data for any VTVs still on the MVC.

Note that although this indicates that a specific failure has occurred when performing data transfers, this may not be a fault in the media. It could be that a RTD is writing data to the media out of specification. Patterns of failures are therefore important. As an example, lots of DATA CHECK conditions suddenly occurring lots of drives and volumes.

READ ONLY

The MVC has been marked read-only because of one of the following conditions:

- The MVC being the target of an export or consolidation process. The read-only state protects the MVC from further updates.
- The MVC media is set to file protect. Correct the error and use the MVCMaint utility to set READONLY(Off).
- The MVC does not have the appropriate SAF rules set to enable VTCS to update the MVC. Correct the error and use the MVCMaint utility to set READONLY(Off). Refer to the publication Installing ELS for information about defining a security subsystem user ID for HSC, SMC, and VTCS.

RETIRED

The MVC is retired and is considered by VTCS as having reached the end of its useful life. VTCS will recall from, but not migrate to, the MVC. Replace the MVC as soon as possible. Once this has been done, use the MVCMaint utility to set RETIRED(Off).
WARRANTY HAS EXPIRED
The MVC’s warranty has expired. VTCS continues to use the MVC. You should start making plans to replace the MVC when it reaches Retired state.

INVALID MIR
VTCS has received status from an RTD to indicate the MIR (media information record) for a 9x40 media is invalid. An invalid MIR does not prevent access to data but may cause significant performance problems while accessing records on the tape. The MVC is not capable of high-speed searches on areas of the tape that do not have a valid MIR entry.

VTCS attempts to de-preference MVCs with this condition. For recalls, if the VTV resides on multiple MVCs, VTCS selects MVCs with valid MIRs ahead of MVCs with invalid MIRs. VTCS avoids using MVCs with invalid MIRs for migration, unless the migration is at the beginning of the tape. Migrating from the beginning of tape will correct the MIR. VTCS detects the invalid MIR condition at either mount time or dismount time. If detected at mount time and the operation can be completed with another MVC, VTCS dismounts the first MVC and selects the alternate MVC.

VTCS has only a limited ability to switch to an alternate MVC. That is, it is mainly used for migrate and virtual mount. For MVCs with invalid MIRs, determine the cause of the error, which may be caused by media or drive problems, and fix the error. To recover an MVC with an invalid MIR, read the MVC to the end of the tape, via a VTCS audit. If the media is the problem, run an MVCDRAIN EJECT to recall the VTVs and cause the MVC to be removed from the MVC pool.

MIGRATES NOT SUPPORTED
This host lacks support for performing migrations to this MVC. This is set by another host that does support migration.

RECALLS NOT SUPPORTED
This host lacks support for performing recalls from this MVC. This is set by another host that does support recalls.

RECLAIM NOT SUPPORTED
This host lacks support for considering this MVC for reclaim processing. This is set by another host that does support reclaim processing. This does not inhibit the MVC being processed through the MVCDRAIN command.

FORMAT
the VTV format, standard or partitioned.
Display MVCPool

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display MVCPool displays information about a specific MVC pool.

Note – When this command is issued, MVC location information is refreshed to ensure an accurate, up to date result.

Syntax

```
Display MVCPool
NAME(poolname)
STORCLAS(stor-clas-name)
```

FIGURE 3-67 Display MVCPool syntax

Parameters

NAME

display information for the specified named MVC pool.

*poolname*
the MVC pool name as defined using the MVCPool control statement. Refer to the ELS Legacy Interfaces Reference for more information.
Alternatively, you can specify ALL to display information for all named MVC pools (including the default pool DEFAULTPOOL).

STORCLAS

display information about MVCs by Storage Class.

*stor-clas-name*
the name of a specific Storage Class for which you want MVC usage displayed.
This may be for current valid Storage Classes that you defined on the STORclas control statement, or for Storage Classes which used to exist to which media is still assigned. See “STORclas Control Statement” on page 441 for more information.
To display all Storage Classes, specify ALL or omit the STORCLAS parameter.
Output

**FIGURE 3-68** shows an example of Display MVCPool output with pool name POOL1 specified.

<table>
<thead>
<tr>
<th>MVCPOOL (POOL1) INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITMVC</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>ACS</td>
</tr>
<tr>
<td>VOLS</td>
</tr>
<tr>
<td>00</td>
</tr>
<tr>
<td>00</td>
</tr>
<tr>
<td>00</td>
</tr>
</tbody>
</table>

**FIGURE 3-68** Example Display MVCPool output (NAME POOL1)

**FIGURE 3-66** shows an example of Display MVCPool output with no pool name specified.

<table>
<thead>
<tr>
<th>MVCPOOL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITMVC</td>
</tr>
<tr>
<td>NO</td>
</tr>
<tr>
<td>ACS</td>
</tr>
<tr>
<td>VOLS</td>
</tr>
<tr>
<td>00</td>
</tr>
<tr>
<td>00</td>
</tr>
<tr>
<td>00</td>
</tr>
<tr>
<td>01</td>
</tr>
<tr>
<td>01</td>
</tr>
<tr>
<td>01</td>
</tr>
<tr>
<td>NON-LIB</td>
</tr>
<tr>
<td>NON-LIB</td>
</tr>
</tbody>
</table>

**FIGURE 3-69** Example Display MVCPool output (no NAME specified)
**Fields**

**INITMVC**
- specifies whether un-initialized MVCs are to be initialized when they are first mounted.

**MVCFREE**
- the minimum number of free MVCs.

**THRESHOLD**
- the fragmented space threshold (as a percentage) that determines when an MVC is eligible for demand or automatic reclamation.

**MAXMVC**
- MVC limit for a single reclaim.

**START**
- specifies a percentage value that represents the ratio of reclaim candidates to total MVCs, which triggers automatic space reclamation.

**ACS**
- the ACS containing the MVC pool. NONLIB counts are for initialized MVCs that are now outside the library.

**MEDIA**
- the MVC media type.

**FREE-MVCS**
- MVCs that have 100% usable space and do not contain any migrated VTVs.
  - The storage shown is the total free space based on media type capacity.

**RECLAIM-MVCS**
- MVCs eligible for space reclamation by this host. The storage shown is the total wasted space, including those MVCs not yet eligible for space reclaim.

**USED-MVCS**
- initialized MVCs that are partially or completely full.
Display OPTion

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display OPTion displays current settings for general HSC options set by the OPTion command.

Syntax

```
Display OPTion
```

FIGURE 3-70  Display OPTion syntax

Parameters
None.
Display PATH

**Interfaces:**
- Console or PARMLIB
- UUI: No

**Subsystem Requirements:**
- Active HSC/VTCS

**Description**
Display PATH displays the status of paths from VTSSs to either RTDs or virtual libraries.

**Syntax**

```plaintext
FIGURE 3-71  Display PATH syntax
```

**Parameters**

**PATH**
- optionally, restricts the display to the specified paths
  - `rtd-name`, `rtdname-list`
    - the names assigned to the paths for accessing RTDs for Virtual Libraries from a VTSS

**VTSS**
- optionally, restricts the display to the paths from an individual VTSS
  - `vtssname`
    - the name of the VTSS to which the paths are configured

**CLINK**
- optionally, include paths allocated for CLINKs in the display output. Paths for both cluster replication and electronic export are displayed.
Output

FIGURE 3-68 shows an example of Display PATH output.

<table>
<thead>
<tr>
<th>VTSSNAME</th>
<th>Type</th>
<th>RTD NAME</th>
<th>CHANIF</th>
<th>Device</th>
<th>Target</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSS18</td>
<td>RTD</td>
<td>SS182A01</td>
<td>01 C0E</td>
<td>2A01</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTD</td>
<td>SS182A06</td>
<td>00 C0I</td>
<td>2A06</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CLINK</td>
<td>HBVTSS19</td>
<td>06 C1A</td>
<td>CLUSTER1</td>
<td>On-Async</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VLIB</td>
<td>SS181P0</td>
<td>04 I0A:0</td>
<td>V000</td>
<td>WILDCAT1</td>
<td>Online</td>
</tr>
<tr>
<td></td>
<td>VLIB</td>
<td>SS181P2</td>
<td>04 I1A:0</td>
<td>WILDCAT2</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EEXP</td>
<td>HBVTSS16</td>
<td>05 I0I:0</td>
<td>PRIMARY</td>
<td>On-Sync</td>
<td></td>
</tr>
<tr>
<td>HBVTSS19</td>
<td>RTD</td>
<td>SS192A02</td>
<td>01 C0E</td>
<td>2A02</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTD</td>
<td>SS192A07</td>
<td>00 C0I</td>
<td>2A07</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VLIB</td>
<td>SS191P0</td>
<td>04 I0A:0</td>
<td>V010</td>
<td>WILDCAT1</td>
<td>Online</td>
</tr>
<tr>
<td></td>
<td>VLIB</td>
<td>SS191P2</td>
<td>04 I1A:0</td>
<td>WILDCAT2</td>
<td>Online</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EEXP</td>
<td>HBVTSS16</td>
<td>05 I0I:0</td>
<td>PRIMARY</td>
<td>On-Sync</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 3-72 Example Display PATH output

Fields

VTSSNAME

the name of the VTSS to which the path is attached.

Type

The type of the path. This can be one of the following:-
- RTD – A direct connection to a RTD
- VLIB – A data path connection to a Virtual Library
- CLINK - A CLINK used for cluster replications within the tapeplex
- EEXP – A CLINK used for electronic export to another tapeplex

RTDNAME

The name allocated to the path. For paths defined via the RTDPATH statement in the configuration, this is the name assigned through the RTDNAME parameter. For a CLINK or EEXP type paths, this column will contain the target VTSS name.

CHANIF

the logical device Id assigned to the path and the CHANIF or IPIF value that was specified for the path.

Target

the destination subsystem for the path. For a VLIB type path, this contains the STORMNGR name assigned to the Virtual Library. For a CLINK type path, this contains the name of the cluster. For the EEXP type paths, this contains the tapeplex name to which the path is connected.

Device

the destination device for the path. For a RTD type path, this contains the MVS address of the tape device. If this is a VLIB path that is working in compatibility mode, this will contain the logical device address assigned to the path.
State
   The current state of this path. This can be one of the following:

Online
   the path is online and available for use

On-Async
   the path is online and available for use for asynchronous replication of VTVs.

On-Sync
   the path is online and available for use for synchronous replication of VTVs.

Offline
   the path or the device to which it connects has been varied offline.

Maint
   the path or the device to which it connects has been varied into an offline maintenance mode. This could be as a result of repeated failures.
Display Queue

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display Queue displays status of queued VTCS processes.

Syntax

![Display Queue syntax diagram]

FIGURE 3-73 Display Queue syntax

Parameters

DETail
optionally, display detailed status.

VTSS
optionally, display processes for the specified VTSS.

vtss-name
the VTSS name.

Output
See “Output” on page 253.
Display REPlicat

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display REPlicat displays VTV replication status.

Syntax

```
Display REPlicat
```

FIGURE 3-74 Display REPlicat syntax

Parameters
None.
Output

FIGURE 3-75 shows an example of Display REPlicat output.

<table>
<thead>
<tr>
<th>VTSS</th>
<th>Name</th>
<th>Host</th>
<th>Qdepth</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSSY</td>
<td>PLEX1819</td>
<td>EC20</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC21</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECCL</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECCY</td>
<td>0</td>
</tr>
<tr>
<td>HBVTSS18-Cluster</td>
<td>EC20</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EC21</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECCL</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ECCY</td>
<td>0</td>
</tr>
</tbody>
</table>

*SL5013I Command completed (0)

FIGURE 3-75  Example Display REPlicat output

Fields

VTSS
the Primary or sending VTSS name.

NAME
one of the following values:

name
the name of the TapePlex to which CLINKs are connected from the VTSS.

-Cluster
indicates that the VTSS is a member of a cluster and has CLINKs defined for replication to other VTSSs in the cluster.

HOST
the host attached to the Primary VTSS.

Qdepth
the total number of VTVs waiting to be replicated.
Display Requests

Interfaces:
Console or PARMLIB
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display Requests displays all pending LMU requests.

Syntax

![FIGURE 3-76 Display Requests syntax]

Parameters
None.
Display RTD

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display RTD displays usage information for the specified RTDs.

Syntax

FIGURE 3-77 Display RTD syntax

Parameters

\textit{rtd-id, rtd-range, or rtd-list}

optionally, the unit addresses of one or more RTDs.

\textbf{QUeued}

optionally, display information about requests queued for the RTD.
Display RTD Output

**FIGURE 3-78** shows an example of Display RTD output.

<table>
<thead>
<tr>
<th>RTD</th>
<th>MOUNT</th>
<th>ALLOC</th>
<th>HOST</th>
<th>VTSS</th>
<th>Status</th>
<th>Top ID</th>
<th>Top Host</th>
</tr>
</thead>
<tbody>
<tr>
<td>B200</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DHSS16</td>
<td>Offline</td>
<td>01265</td>
<td>ECC20</td>
</tr>
<tr>
<td>B201</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DHSS16</td>
<td>Offline</td>
<td>02368</td>
<td>ECC20</td>
</tr>
<tr>
<td>B202</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DHSS16</td>
<td>Online/free</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B201</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DHSS16</td>
<td>Online/free</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0B79</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DHSS16</td>
<td>Online/free</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0B7A</td>
<td>DMV051*</td>
<td>DMV051</td>
<td>EC20</td>
<td>DHSS18</td>
<td>Recall VTV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MVS1 :Migrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1601</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MVS1 :Migrate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fields**

RTD

the unit address of the RTD.

MOUNT

the volser of the MVC currently mounted (an * indicates an in-process mount.

ALLOC

the volser of the MVC allocated for mounting on the RTD.

HOST

the host that currently owns the RTD.

VTSS

the VTSS that is currently connected to the RTD.

**Status**

One of the following RTD statuses:

AUDIT MVC

An MVC is being audited.

BUSY

The RTD is busy (non-specific task).

FAIL/OFFLINE

The RTD has been placed offline due to a failure.

IDLE

An MVC is allocated to the RTD but the MVC is not being used.

INITIALIZE

The host is verifying RTD status and availability.

MAINTENANCE

The RTD is in maintenance mode.
MIGRATE VTV
The RTD is migrating a VTV.

OFFLINE
The RTD is offline and unavailable to all hosts and VTSSs.

ONLINE/FREE
The RTD is online and available.

PATH OFFLINE
The RTD status is unknown because the VTSS cannot contact the RTD or if the paths were not correctly configured.

PATH SUSPEND
An RTD is globally online but the path from the VTSS is suspended due to the RTD being paired with a CLINK.

RECALL VTV
The RTD is recalling a VTV.

RECOVER RTD
The RTD is being reset after a problem, a vary, or an initialization.

RECOVERY
The RTD is being reset following an error or a vary online mode.

SUSPEND
The RTD operations are suspended. This occurs under the following conditions:

- when two RTDs are connected to two separate ports on the same VSM4 ICE3 CIP or VSM5, FICON and FIP.
- when one or more RTDs and a CLINK are configured on the same port. The RTDs remain in SUSPEND mode while the CLINK is online.

Note – An RTD can only be online if the CLINK is offline.

UNLOAD MVC
A forced unload of the RTD is occurring.

VTV TRANSFER
The RTD is migrating a VTV before recalling it on another VTSS.

TOP ID
the process Id of the request that is top of the queue for next using this RTD from this host. The TOP ID column only applies for requests from the host upon which the command has been executed. This host may not have the top claim upon the RTD.

TOP HOST
the host which has the request that is top of the queue for next using this RTD. The TOP HOST indicates which host has the top claim upon the RTD.
Display RTD Queued Output

**FIGURE 3-79** shows an example of Display RTD Queued output.

<table>
<thead>
<tr>
<th>ID</th>
<th>Function</th>
<th>Weight</th>
<th>VTSS</th>
<th>MVC list / Storage Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>01360</td>
<td>&lt;X00029&gt;</td>
<td>432*</td>
<td>HBVTSS18</td>
<td>021748 022524</td>
</tr>
<tr>
<td>01425</td>
<td>Recall</td>
<td>2</td>
<td>!ALLVTSS</td>
<td>021754</td>
</tr>
<tr>
<td>01423</td>
<td>Recall</td>
<td>2</td>
<td>!ALLVTSS</td>
<td>021675</td>
</tr>
<tr>
<td>01368</td>
<td>Recall</td>
<td>2</td>
<td>!ALLVTSS</td>
<td>022551</td>
</tr>
<tr>
<td>01381</td>
<td>Migrate</td>
<td>2</td>
<td>HBVTSS19 - *HBVTSS19</td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE 3-79** Example Display RTD Queued output

**Fields**

**ID**

The process ID, which is a unique number in the range 0 - 65536. When the process ID reaches 65536 it wraps back to zero.

**FUNCTION**

The type of request that is queuing for an RTD. If it is a VTV volser inside angle brackets (<>), then this is an auto recall request for a virtual mount.

**WEIGHT**

The weighting factor that VTCS has currently assigned to the request. The requests will be considered and queued (reported) according to this factor. An asterisks (*) next to the value indicates that the request has been waiting sufficient long to warrant the stealing of another MVC’s allocation.

**VTSS**

The VTSS or the VTSS list name to be used for selecting RTDs. The special value !ALLVTSS indicates that any VTSS with access to a suitable drive is eligible.

**MVC LIST**

The list of MVC for which we are attempting to select a RTD. For an auto recall request, this list may run to four MVCs. Conversely, for a migration request that is yet to select a MVC, this will be empty.

**STORAGE CLASS**

The storage class for which the migration is destined. An asterisks (*) next to the value indicates that is storage class is in an error state.
Display SCRatch

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display SCRatch displays scratch counts by subpool name, ACS id, LSM id, media type, recording technique, or owning host name.

Syntax

\[
\text{Display SCRatch} \quad \text{acs-id} \quad \text{lsm-id} \quad \text{VSM} \\
\text{SUBpool(subpool-name)} \quad \text{HOSTid(name)} \\
\text{MEDia(media-type)} \quad \text{RECtech(recording-technique)} \quad \text{ALL} \\
\text{DETail} \quad \text{Query}
\]

FIGURE 3-80 Display SCRatch syntax

Parameters

**SCRatch**

- **acs-id**
  optionally, the ACS for which the system is to display scratch count information. If you specify `acs-id` without an LSM number, selected scratch counts for the entire ACS are displayed.

- **lsm-id**
  optionally, the LSM for which the system is to display scratch count information.

- **VSM**
  optionally, restricts the Display SCRatch display to subpools with virtual volumes. VSM is not allowed if `acs-id` or `lsm-id` are also specified.

**Note** – If `acs-id` or `lsm-id` is specified, it must be the first parameter after the SCRatch keyword. The VSM keyword is not positional.
**SUBpool**

optionally, restricts the scratch count display to the named subpool only. If SUBpool is specified, then LSM and ACS totals will reflect only the named subpool. SUBpool is not allowed if HOSTid is also specified.

*subpool-name*

the name of the subpool. Specify up to 13 characters.

**HOSTid**

optionally, restricts the scratch count display to subpools that are accessible from the named HOSTid. If HOSTid is specified, then LSM and ACS totals will reflect only subpools that can be accessed from the named HOSTid. HOSTid is not allowed if SUBpool is also specified.

*name*

the SMFID or the SMC SERVER ALIASHOST ID of the host. Specify up to 8 characters.

**MEDia**

optionally, restricts the scratch count display to the volumes compatible with the specified media name. If MEDia is specified, then LSM and ACS totals will reflect only the compatible media types.

*media-type*

the media type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.

**RECtech**

optionally, restricts the scratch count display to volumes compatible with the specified recording technique. If RECtech is specified, then LSM and ACS totals will reflect only the compatible recording techniques

*recording-technique*

the recording technique.

See Appendix A, “MEDia, RECtech, and MODel Values” for valid recording-technique values.

**Note** – RECtech is not valid with the VSM parameter.

**DETail**

optionally, lists scratch counts by all media and recording techniques. If specified, then an additional level of media and recording technique detail is displayed for every subpool. DETail is not allowed if either MEDia or RECtech are also specified.

**ALL**

optionally, lists scratch counts for subpools that have both a 0 scratch count and 0 threshold value. Normally, the Display SCRatch command will only list subpools that have either a non-zero scratch count or non-zero threshold value. Specification of ALL overrides this filter and results in the display of all defined scratch pools.
Output

Display scratch counts for all LSMs in all ACSs:

```
DISPLAY SCRATCH

SLS2638I Scratch Summary

<table>
<thead>
<tr>
<th>ACS/LSM</th>
<th>Subpool Name Label</th>
<th>Media</th>
<th>Rectech</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSM</td>
<td>SPV001</td>
<td>SL</td>
<td>VIRTUAL</td>
<td>VIRTUAL</td>
</tr>
<tr>
<td>VSM</td>
<td>SPV002</td>
<td>SL</td>
<td>VIRTUAL</td>
<td>VIRTUAL</td>
</tr>
<tr>
<td>VSM</td>
<td>SPM001</td>
<td>SL</td>
<td>VIRTUAL</td>
<td>VIRTUAL</td>
</tr>
<tr>
<td>VSM</td>
<td>Total</td>
<td>VIRTUAL</td>
<td>VIRTUAL</td>
<td></td>
</tr>
</tbody>
</table>

| LSM 00:00 | SP001 | SL | All | 13 |
| LSM 00:00 | SP002 | SL | All | 31 |
| LSM 00:00 | SPM001 | SL | All | 235 |
| LSM 00:00 | Non-Subpool | All | 11 |
| LSM 00:00 | Total | All | 290 |
| LSM 00:01 | SP001 | SL | All | 9 |
| LSM 00:01 | Non-Subpool | All | 6 |
| LSM 00:01 | Total | All | 15 |
| ACS 00  | SP001 | SL | All | 22 |
| ACS 00  | SP002 | SL | All | 31 |
| ACS 00  | SPM001 | SL | All | 235 |
| ACS 00  | Non-Subpool | All | 17 |
| ACS 00  | Total | All | 305 |
```

Display scratch counts for a single subpool:

```
DISPLAY SCRATCH SUBPOOL(SPM001)

SLS2638I Scratch Summary

<table>
<thead>
<tr>
<th>ACS/LSM</th>
<th>Subpool Name Label</th>
<th>Media</th>
<th>Rectech</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSM</td>
<td>SPM001</td>
<td>SL</td>
<td>VIRTUAL</td>
<td>VIRTUAL</td>
</tr>
</tbody>
</table>

| LSM 00:00 | SPM001 | SL | All | 235 |
| ACS 00  | SPM001 | SL | All | 235 |
```
Display scratch counts for a single ACS:

```
DISPLAY SCRATCH ACS 00
```

```
SLS2638I Scratch Summary

<table>
<thead>
<tr>
<th>ACS/LSM</th>
<th>Subpool Name</th>
<th>Label</th>
<th>Media</th>
<th>Rectech</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSM 00:00</td>
<td>SP001</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>LSM 00:00</td>
<td>SP002</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>LSM 00:00</td>
<td>SPM001</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>235</td>
</tr>
<tr>
<td>LSM 00:00</td>
<td>Non-Subpool</td>
<td>All</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>LSM 00:00</td>
<td>Total</td>
<td>All</td>
<td></td>
<td></td>
<td>290</td>
</tr>
<tr>
<td>LSM 00:01</td>
<td>SP001</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>LSM 00:01</td>
<td>Non-Subpool</td>
<td>All</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>LSM 00:01</td>
<td>Total</td>
<td>All</td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>ACS 00</td>
<td>SP001</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>ACS 00</td>
<td>SP002</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>31</td>
</tr>
<tr>
<td>ACS 00</td>
<td>SPM001</td>
<td>SL</td>
<td>All</td>
<td></td>
<td>235</td>
</tr>
<tr>
<td>ACS 00</td>
<td>Non-Subpool</td>
<td>All</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>ACS 00 Total</td>
<td></td>
<td>All</td>
<td></td>
<td></td>
<td>305</td>
</tr>
</tbody>
</table>
```

Display scratch count detail for a single LSM:

```
DISPLAY SCRATCH LSM 01:00 DETAIL
```

```
SLS2638I Scratch Summary

<table>
<thead>
<tr>
<th>ACS/LSM</th>
<th>Subpool Name</th>
<th>Label</th>
<th>Media</th>
<th>Rectech</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSM 01:00</td>
<td>SP002</td>
<td>SL</td>
<td>ECART</td>
<td>36TRACK</td>
<td>1</td>
</tr>
<tr>
<td>LSM 01:00</td>
<td>SP002</td>
<td>SL</td>
<td>STANDARD</td>
<td>18TRACK</td>
<td>5</td>
</tr>
<tr>
<td>LSM 01:00</td>
<td>SP002</td>
<td>SL</td>
<td>STANDARD</td>
<td>36TRACK</td>
<td>5</td>
</tr>
<tr>
<td>LSM 01:00</td>
<td>Non-Subpool</td>
<td>All</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>LSM 01:00</td>
<td>Total</td>
<td>All</td>
<td></td>
<td></td>
<td>19</td>
</tr>
</tbody>
</table>
```
Display SEN

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display SEN displays SEN LISTEN requests and their status. This display can display a specific request, using the requestor and listener names, a list of related requests using only the requestor name, or all SEN requests.

Displayed information includes:
- Requestor name and listener name if any.
- EOT/EOM settings.
- Disable/enable status.
- The token associated with the request.
- The event list of the request.

Syntax

![Diagram of Display SEN syntax](image)

FIGURE 3-81 Display SEN

Parameters

REQNAME=
optionally, specifies the name of the requestor identified on the SEN request (see “Execute Form - Syntax and Parameters” on page 614).

LNRNAME=
specifies the name of the listener routine identified on the SEN request (see “Execute Form - Syntax and Parameters” on page 614).
Supported HSC and VTCS SEN Events

**HSC SEN Events**

**TABLE 3-2  HSC SEN Events**

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Numeric Equate</th>
</tr>
</thead>
<tbody>
<tr>
<td>libvol_insert_event</td>
<td>18</td>
</tr>
<tr>
<td>libvol_delete_event</td>
<td>19</td>
</tr>
<tr>
<td>hsc_termination_event</td>
<td>20</td>
</tr>
<tr>
<td>lsmrail_added_event</td>
<td>25</td>
</tr>
<tr>
<td>lsmrail_removed_event</td>
<td>26</td>
</tr>
<tr>
<td>libdrive_added_event</td>
<td>27</td>
</tr>
<tr>
<td>libdrive_removed_event</td>
<td>28</td>
</tr>
</tbody>
</table>

**VTCS SEN Events**

**TABLE 3-3  VTCS SEN Events**

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Numeric Equate</th>
</tr>
</thead>
<tbody>
<tr>
<td>vtss_performance_event</td>
<td>01</td>
</tr>
<tr>
<td>vtss_chanif_performance_event</td>
<td>02</td>
</tr>
<tr>
<td>vtv_mount_event</td>
<td>03</td>
</tr>
<tr>
<td>vtv_dismount_event</td>
<td>04</td>
</tr>
<tr>
<td>vtv_delete_event</td>
<td>05</td>
</tr>
<tr>
<td>mvc_mount_event</td>
<td>06</td>
</tr>
<tr>
<td>mvc_dismount_event</td>
<td>07</td>
</tr>
<tr>
<td>vtv_migrate_event</td>
<td>08</td>
</tr>
<tr>
<td>vtv_recall_event</td>
<td>09</td>
</tr>
<tr>
<td>rtd_performance_event</td>
<td>10</td>
</tr>
<tr>
<td>rtd_vary_event</td>
<td>11</td>
</tr>
<tr>
<td>mvc_usage_event</td>
<td>12</td>
</tr>
<tr>
<td>vtv_movement_event</td>
<td>13</td>
</tr>
<tr>
<td>vtv_scratch_event</td>
<td>14</td>
</tr>
<tr>
<td>vtv_replicate_event</td>
<td>15</td>
</tr>
<tr>
<td>tv_unlink_from_mvc_event</td>
<td>16</td>
</tr>
<tr>
<td>clink_vary_event</td>
<td>17</td>
</tr>
</tbody>
</table>
Display SERVER

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display SERVER displays service level and database status.

Syntax

 PARAMETERS

Output
shows an example of the Display SERVER command:

 SLS1030I HSC service level FULL active
 SLS0007I Data Base Status:  125
 CDS       DSN       Active
 Primary   ELS.DBASEPRM  Yes
 Secondary ELS.DBASESEC  Yes
 Standby   (not configured)  No

 FIGURE 3-83  Example Display SERVER command output
Display SRVlev

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
Display SRVlev displays the current HSC service level for the host issuing the command.

Syntax

![Display SRVlev syntax](image)

Parameters
None.
Display Status

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display Status displays the status of pending requests currently active on the host issuing the command.

Syntax

![FIGURE 3-85 Display Status syntax](image)

Parameters
None.

Output
The output display provides the following information to help you resolve problems during regular execution and termination of the HSC:
- requests: Dismount, Eject, Enter, Modify, Mount, Move, Vary, View
- information about the request, including:
  - the requester (such as Operator, PGMI, Clean, job name of utility)
  - physical element (such as CAPid, Drive, LSM, Station)
  - associated element for the request (such as CAPid belonging to an audit)
  - ready status of each queue, and whether a given queue is being purged or terminated.

Note –
- Use the Display DRives command for information on current and pending mount activity, and Display Requests for information on queued LSM requests.
- When an audit is running that is a full panel or more in scope, the current cell location points to the first cell in the panel being audited.
Display STORCLas

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display STORCLas displays information about a Storage Class.

Syntax

```
Display STORCLas(name) DETail MAXvtv(nnnn)
```

FIGURE 3-86  Display STORCLas syntax

Parameters

**name**
the Storage Class name, which can be any Storage Class, not just those defined via the MGMTDEF command. Thus, *stor-clas-name* can take the value of a *vtssname* or !ERROR, in order to allow details of migrations to these Storage Classes to be displayed.

**DETail**
optionally, the output lists VTVs currently queued for automatic migration or immediate migration with this Storage Class.

**MAXvtv(nnnn)**
optionally, indicates the maximum number (0-9999) of VTVs to be listed in a single automatic migration or immediate migration list (for a VTSS). MAXvtv(nnnn) implies DETail. If not specified, a default value of 100 is used.

**Caution** – Use caution when specifying MAXvtv(nnnn). High values can cause temporary system degradation due to the number of WTO (write to operator) messages issued.
Output

FIGURE 3-87 shows an example of Display STORCLas output.

<table>
<thead>
<tr>
<th>Summary of storage class XCA8:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVCs must be in ACS 00 and MVCPool DEFAULTPOOL</td>
</tr>
<tr>
<td>RTDs can be any device type</td>
</tr>
<tr>
<td>MVCPool DEFAULTPOOL contains no free MVCs</td>
</tr>
<tr>
<td>There is 1 VTV awaiting auto-migration from VTSS CLIVSS16 V00002 with MGMTCLAS XCA8</td>
</tr>
<tr>
<td>VTSS CLIVSS16 has no suitable RTDs online in ACS 00</td>
</tr>
<tr>
<td>VTSS CLIVSS17 has no suitable RTDs online in ACS 00</td>
</tr>
</tbody>
</table>

FIGURE 3-87 Example Display STORCLas output

As shown in FIGURE 3-87, the output from Display STORCLas shows:

- The characteristics of the Storage Class (ACS, MVC Pool, and Media).
- VTVs waiting migration to the Storage Class from any VTSS.
- Requirements of the MVCs to be used for migration.
- The device type(s) of the RTDs needed to write to the migration MVCs.
- Any errors with regard to satisfying the migration requirements.
Display STORMNgr

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC/VTCS

Description
Display STORMNgr displays the status of an external storage manager and the paths defined to it from the VTSSs.

Syntax

![Display STORMNgr syntax](FIGURE 3-88)

Parameters

**STORMNGR**
- specifies the external storage manager to be displayed

*name*
- the storage manager name
Output

**FIGURE 3-87** shows an example of Display STORMNgr output.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Version</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLELIB0</td>
<td>VLIB</td>
<td>VLE 1.0</td>
<td>Online</td>
</tr>
</tbody>
</table>

**Features:** Unknown

<table>
<thead>
<tr>
<th>Device Name</th>
<th>VTSS</th>
<th>CHANIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>V000 SS16IP0</td>
<td>DVTSS16</td>
<td>08 I0A:0</td>
</tr>
<tr>
<td>V002 SS16IP1</td>
<td>DVTSS16</td>
<td>09 I0I:0</td>
</tr>
<tr>
<td>V001 SS16IP2</td>
<td>DVTSS16</td>
<td>0A I1A:0</td>
</tr>
<tr>
<td>V003 SS16IP3</td>
<td>DVTSS16</td>
<td>0B I1I:0</td>
</tr>
<tr>
<td>V010 SS17IP0</td>
<td>DVTSS17</td>
<td>08 I0A:0</td>
</tr>
<tr>
<td>V012 SS17IP1</td>
<td>DVTSS17</td>
<td>09 I0I:0</td>
</tr>
<tr>
<td>V011 SS17IP2</td>
<td>DVTSS17</td>
<td>0A I1A:0</td>
</tr>
<tr>
<td>V013 SS17IP3</td>
<td>DVTSS17</td>
<td>0B I1I:0</td>
</tr>
</tbody>
</table>

**FIGURE 3-89**  Example Display STORMNgr output

*Fields*

**Name**
the name of the external storage manager

**Type**
the type of storage manager

- HSC – An HSC in another TapePlex
- VLIB – A Virtual Library

**Version**
the software version currently executing on the storage manager

**Status**
the current status of the storage manager

**Features**
a list of significant features installed or supported by the storage manager

**Device**
the destination device for the path. This column is blank in the connection to the storage manager is for autonomous device data transfers.

**Name**
the name allocated to the path within the storage manager. This column is blank if the storage manager is just for servicing mounts and dismounts to the device. If this is for a CLINK, then this column displays the target VTSS name.
VTSS
the name of a VTSS which has this connection to this storage manager. This column is blank if the device is driven directly by the storage manager.

CHANIF
the logical device Id assigned to the path and the CHANIF or IPIF value that was specified for the path. This column is blank if the path to the storage manager is not directly from a VTSS.
Display TASKs

**Interfaces:**
Console or utility
UUI: Yes

**Subsystem Requirements:**
Active HSC at BASE or FULL service level

**Description**
Display TASKs displays task status.

**Syntax**

```
Display TASKs
```

**Parameters**
None.

**Output**
The following figure shows an example of Display TASKs output:

```
<table>
<thead>
<tr>
<th>TASK NBR</th>
<th>TASK TYPE</th>
<th>SLOT ID</th>
<th>VTSS</th>
<th>RTD</th>
<th>CURRENT</th>
<th>LOCKS</th>
<th>WAITQ</th>
<th>PENDQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>DSP</td>
<td>019</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>001</td>
<td>SS</td>
<td>034</td>
<td>HB VTSS16</td>
<td>SS16B200</td>
<td>T</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>002</td>
<td>RTD</td>
<td>035</td>
<td>HB VTSS16</td>
<td>SS16B201</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>003</td>
<td>RTD</td>
<td>036</td>
<td>HB VTSS16</td>
<td>SS16B79</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>004</td>
<td>RTD</td>
<td>044</td>
<td>HB VTSS16</td>
<td>SS16B7A</td>
<td>R</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>005</td>
<td>RTD</td>
<td>045</td>
<td>HB VTSS16</td>
<td>SS16B7C</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

**Fields**

**TASK NBR**
the task number for each task on the current host.

**SLOT ID**
the LOCK identifier within the lock buffer.
TASK TYPE
the task type:

INV    Inventory Manager
CMD    Command Task
DSP    Dispatcher Task
SS     VTSS Task
RTD    RTD Task
DRV    RTD Scheduler
SCR    Scratch Manager
RCM    Reclaim Manager
MSC    Migration Scheduler
CSH    Clink Scheduler
CLK    CLINK Task
UNK    Unknown

VTSS
the VTSS name.

RTD
the RTD name for RTD tasks.

CURRENT PROCESS
the current process ID.

LOCKS HELD
type of lock held:

T    Task Lock
M    MVC Lock
V    VTV Lock
D    VTD Lock
R    RTD Lock

WAITQ COUNT
the count of requests waiting for locks.

PENDQ COUNT
the count of pending requests.
Display THReshld

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
Display THReshld displays scratch count and scratch threshold information by subpool name, ACS id, LSM id, media, and recording technique.

Syntax

![Diagram of Display THReshld syntax]

Parameters

THReshld
display scratch count and threshold information which can include scratch counts and scratch thresholds by subpool name, ACS id, LSM id, media, and recording technique.

acs-id
optionally, the ACS for which the system is to display scratch count and scratch threshold information. If you specify acs-id without an LSM number, selected scratch counts for the entire ACS are displayed.

lsm-id
optionally, the LSM for which the system is to display scratch count and scratch threshold information.
VSM
optionally, restricts the Display THReshld display to subpools with virtual volumes. VSM is not allowed if acs-id or lsm-id are also specified.

**Note** – If acs-id or lsm-id are specified, it must be the first parameter after the THReshld keyword. The VSM keyword is not positional.

SUBpool
optionally, restricts the scratch count and scratch threshold display to the named subpool only. If SUBpool is specified, then LSM and ACS totals will reflect only the named subpool. SUBpool is not allowed if HOSTid is also specified.

*name*

the subpool name. Specify up to 13 characters.

HOSTid
optionally, restricts the scratch count and scratch threshold display to subpools that are accessible from the named HOSTid. If HOSTid is specified, then LSM and ACS totals will reflect only subpools that can be accessed from the named HOSTid. HOSTid is not allowed if SUBpool is also specified.

*name*

the SMFID or the SMC SERVER ALIAS HOST ID of the host. Specify up to 8 characters.

MEDiad
optionally, restricts the scratch count and scratch threshold display to the volumes compatible with the specified media name. If MEDia is specified, then LSM and ACS totals will reflect only the compatible media types.

*media*

the name of the desired media to display. See Appendix A, “MEDia, RECtech, and MODEl Values” for valid media name values.

**Note** – MEDia is not valid with the VSM parameter.

RECTech
optionally, restricts the scratch count and scratch threshold display to volumes compatible with the specified recording technique. If RECtech is specified, then LSM and ACS totals reflect only the compatible recording techniques.

*recording technique*

the name of the desired recording technique to display. See Appendix A, “MEDia, RECtech, and MODEl Values” for valid media name values.

**Note** – RECtech is not valid with the VSM parameter.
**DETail**

optionally, lists scratch counts and scratch threshold information by all media and recording techniques. If specified, then an additional level of media and recording technique detail is displayed for every subpool. DETail is not allowed if VSM, MEdia or RECtech are also specified.

**ALL**

optionally, lists scratch counts for subpools that have both a 0 scratch count and 0 threshold value. Normally, the Display THReshold command will only list subpools that have either a non-zero scratch count or non-zero threshold value. Specification of ALL overrides this filter and results in the display of all defined scratch pools.

**Output**

The following figure shows an example of Display THReshld output:

![Display THReshld output](image)

---

**FIGURE 3-93** Example Display THReshld output
Display Volser

**Interfaces:**
Console or utility
UUI: Yes

**Subsystem Requirements:**
Active HSC at BASE or FULL service level

**Description**
Display Volser displays volume information.

**Syntax**

```
DISPLAY Volser volser vol-range DETail
```

**Parameters**

**Volser or Volume**
displays volume locations for the specified volumes. The information displayed includes:
- status of volume (selected or unselected) and its location
- the source, destination, and home location (in the case of an errant volume)

**volser or vol-range or vol-list**
one or more VOLSERs for which the system is to display status. Each *vol-list* element can be either a single VOLSER or a VOLSER range.

**Note** – You can display a range of up to 100 volumes.
List elements must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

**DETail**
optionally, displays all available information about the specified volume(s).
Output

The information displayed includes:

- the home cell location
- whether or not the volume is a scratch cartridge
- whether or not the volume is selected
- the owning host (displayed if the volume is selected)
- the drive address or drive ID (displayed if the volume is mounted)
- whether or not an external label is present
- whether or not the media label is readable by the robotic vision system (displayed if the external label exists)
- when the volume was last inserted into the library
- when the volume was last selected
- the select count
- the media type for the volume
- the recording technique for the volume
- whether or not the media label was readable (N/A appears if the value was not read from the LMU)
- how the media type has been determined for the volume. The values that appear in this field are:

<table>
<thead>
<tr>
<th></th>
<th>The media label and the VOLPARM defined for the volume agree.</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>The media label and the VOLPARM defined for the volume do not agree.</td>
</tr>
<tr>
<td>NO</td>
<td>A VOLPARM has been defined, but the LMU has not determined the media type.</td>
</tr>
<tr>
<td>VOLATTR Only</td>
<td>The LMU has determined the media type, but a VOLPARM has not been defined.</td>
</tr>
<tr>
<td>Label Only</td>
<td>A VOLPARM has not been defined, and the LMU has not determined the media type.</td>
</tr>
</tbody>
</table>

- whether or not the volumes are unusable (i.e., spent cleaning cartridges)
- the volume density for STK1 and STK2 media volumes.
- the Media Warranty Life (MWL) percentage, stored on the cartridge MIR and collected during dismount processing. MWL percentage indicates how much of the media life has been used.

**Note** – To collect and report media warranty life, tape libraries and transports must meet the following requirements:

- SL8500 or SL3000 libraries
- LMU compatibility level 21 or higher
- T9x40: all media and models at firmware level 1.42 or higher (except 9840B)
- T10000: all models and media at firmware level 1.38 or higher

Refer to the publication *Managing HSC and VTCS* for more information about media warranty life.
Display VOLUME_INFO

Interfaces:
Console or utility
UI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display VOLUME_INFO displays information for real and/or virtual volumes.

Syntax

PARAMETERS

VOLser

VOLser displays volume information for the specified volumes. The information displayed includes:
- status of volume (selected or unselected) and its location
- the source, destination, and home location (in the case of an errant volume)

volser | vol-range | vol-list

one or more VOLSERS for which the system is to display status. Each vol-list element can be either a single VOLSER or a VOLSER range.

Note – You can display a range of up to 100 volumes.

List elements must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

ALL

Only real (non-virtual) volumes are listed. Volumes are listed in random order.
Display VSCRatch

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display VSCRatch displays diagnostic information for virtual scratch counts.

Syntax

```
Display VSCRatch
Query (subpool-name)
```

**FIGURE 3-96** Display VSCRatch syntax

Parameters

`subpool-name`
optionally, a subpool name. Specify up to 13 characters.
If a subpool name is specified, the virtual scratch count display is restricted to the named subpool only.
Output

The following figure shows an example of DISPLAY VSCRatch output:

<table>
<thead>
<tr>
<th>SUBPOOL NAME</th>
<th>SCRATCH COUNT</th>
<th>SCRATCH TYPE</th>
<th>0.4GB</th>
<th>0.8GB</th>
<th>2GB</th>
<th>4GB</th>
<th>RNG</th>
<th>TOT</th>
<th>TOT BLKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0</td>
<td>2</td>
<td>SL</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>3</td>
<td>SL</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>23</td>
<td></td>
</tr>
</tbody>
</table>

**Fields**

**SUBPOOL-NAME**

the name of the scratch subpool. Note that VTCS does not display scratch counts for non-subpool VTVs. If there are no VTV subpools defined, VTCS defines the Virtual Tapes pool for all VTVs.

**SCRATCH BLOCKS**

the number of CDS blocks containing scratches for valid VTV sizes (.4GB, .8GB, 2GB, 4GB), plus the number of CDS ranges and the total number of CDS blocks for this scratch pool.
Display VTD

**Interfaces:**
Console or utility
UUI: Yes

**Subsystem Requirements:**
Active HSC/VTCS

**Description**
Display VTD displays VTD status.

**Syntax**

![Display VTD syntax diagram](image)

**Parameters**

**VTSS**
Optionally, display status for the VTDs connected to the specified VTSS.

*vtss-name*
the VTSS name.

**Active | All**
Display status for VTDs that have VTVs mounted (Active) or all VTDs (All).
Output

FIGURE 3-98 shows an example of Display VTD output.

<table>
<thead>
<tr>
<th>DRIVE</th>
<th>LOCATION</th>
<th>VTV</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A800</td>
<td>HBVTSS16</td>
<td>X00778</td>
<td>ECAM only</td>
</tr>
<tr>
<td>A801</td>
<td>HBVTSS16</td>
<td></td>
<td>ECAM only</td>
</tr>
<tr>
<td>A802</td>
<td>HBVTSS16</td>
<td></td>
<td>ECAM only</td>
</tr>
<tr>
<td>A803</td>
<td>HBVTSS16</td>
<td></td>
<td>ECAM only</td>
</tr>
</tbody>
</table>

FIGURE 3-98  Example Display VTD output

**Fields**

**DRIVE**

the MVS device address of the VTD. If the device has not been defined to this host in the CONFIG, then this will contain physical address within the VTSS prefixed by ‘##’.

**LOCATION**

the VTSS that contains the VTD.

**VTV**

the VTV volser if applicable.

**STATUS**

one of the following VTD statuses:

**Available**

the VTD is available for work.

**Mounted**

the VTV volser shown in the VTV column is mounted on the VTD.

**Mount(other)**

the VTV volser shown in the VTV column is mounted on the VTD. The mount was not performed by the host on which the command was executed.

**Mounting**

the VTV volser shown in the VTV column is in the process of being mounted on the VTD. Typically, this indicates that an auto recall is in progress.

**Dismounting**

the VTV volser shown in the VTV column is was mounted on the VTD and the VTD has been unloaded. VTCS either has not received the dismount request or is currently in the progress of synchronizing the VTV and CDS information.

**Redrive Later**

a previous attempt to mount the VTV volser shown in the VTV column upon the VTD failed. It will be interpreted again within the next few minutes.
Importing
the VTV volser shown in the VTV column is being electronically imported via the VTD.

Imported
the VTV volser shown in the VTV column has been electronically imported via the VTD. It is awaiting the confirmation request from the host that performed the export.
Display VTSS

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display VTSS displays VTSS status.

Syntax

```
Display VTSS
```

<table>
<thead>
<tr>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTSS vtss-name</td>
</tr>
<tr>
<td>DETai1</td>
</tr>
</tbody>
</table>

**FIGURE 3-99** Display VTSS syntax
Output

FIGURE 3-100 shows an example of Display VTSS output.

<table>
<thead>
<tr>
<th>VTSSNAME</th>
<th>CAPACITY (GB)</th>
<th>DBU</th>
<th>HI</th>
<th>LOW</th>
<th>VTV</th>
<th>MX</th>
<th>MN</th>
<th>Def</th>
<th>AUTOMIG</th>
<th>STATE</th>
<th>RTDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSS16</td>
<td>56.209</td>
<td>9</td>
<td>35</td>
<td>30</td>
<td>204</td>
<td>6</td>
<td>1</td>
<td>--</td>
<td></td>
<td>On-P</td>
<td>Yes</td>
</tr>
<tr>
<td>HBVTSS17</td>
<td>56.209</td>
<td>7</td>
<td>35</td>
<td>30</td>
<td>218</td>
<td>4</td>
<td>3</td>
<td>02</td>
<td></td>
<td>On-P</td>
<td>Yes</td>
</tr>
<tr>
<td>HBVTSS18</td>
<td>N/A</td>
<td>N/A</td>
<td>35</td>
<td>30</td>
<td>N/A</td>
<td>3</td>
<td>1</td>
<td>01</td>
<td></td>
<td>Off</td>
<td>Yes</td>
</tr>
<tr>
<td>HBVTSS19</td>
<td>93.184</td>
<td>5</td>
<td>35</td>
<td>30</td>
<td>110</td>
<td>3</td>
<td>1</td>
<td>01</td>
<td></td>
<td>On</td>
<td>Yes</td>
</tr>
</tbody>
</table>

FIGURE 3-100 Example Display VTSS output

**Fields**

**VTSSNAME**
the name of the VTSS.

**CPCTY(GB)**
the total physical capacity in gigabytes of the specified VTSS.

**DBU**
the percentage of disk buffer used of the total buffer capacity.

**HI AMT**
the high AMT.

**LOW AMT**
the low AMT.

**VTV COUNT**
the number of VTVs resident on the VTSS.

**MX MT**
the current MAXMIG value.

**MN MT**
the current MINMIG value.

**DEF ACS**
the default ACS.

**AUTOMIG**
indicates which host is performing the auto migration and the threshold to which the VTSS is migrating.
STATE
one of the following global VTSS states for all hosts:

QUIESCING
Quiescing state.

QUIESCED
Quiesced state.

OFFLINE
Offline state.

OFFLINE-P
Offline pending state.

ONLINE
Online state.

ONLINE-P
Online pending state.

STARTED
The VTSS is initialized and in process of going to the requested state (online, offline, or quiesced).

RTDs
indicates whether the VTSS has RTDs.
Display VTSS DETail Output

FIGURE 3-101 shows an example of the additional fields for Display VTSS DETail output.

<table>
<thead>
<tr>
<th>VTSSNAME</th>
<th>HOST</th>
<th>NOMIGRAT</th>
<th>NORECLAM</th>
<th>STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSS16</td>
<td>EC104</td>
<td>Y</td>
<td>Y</td>
<td>ONLINE</td>
</tr>
<tr>
<td>HBVTSS16</td>
<td>EC21</td>
<td>N</td>
<td>Y</td>
<td>ONLINE</td>
</tr>
<tr>
<td>HBVTSS17</td>
<td>EC21</td>
<td>N</td>
<td>Y</td>
<td>QUIESCED</td>
</tr>
<tr>
<td>HBVTSS17</td>
<td>EC10</td>
<td>Y</td>
<td>Y</td>
<td>OFFLINE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VTSS</th>
<th>TYPE</th>
<th>SUPPORTED FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBVTSS16</td>
<td>VSM5</td>
<td>2/4GB VTVS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LARGE PAGE VTVS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOWAIT ON RTD MOUNT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BUDDY QUEUING</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SYNC REPLICATE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LAST USE HINT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MGMT CLASS ON MVCS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CONNECT to 32 RTDS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STACKED MIGRATES</td>
</tr>
</tbody>
</table>

FIGURE 3-101 Example Display VTSS Detail additional output

**Fields**

**VTSSNAME**
- the VTSSs that the hosts in the **HOST** field can access.

**HOST**
- the hosts that have access to the VTSSs in the **VTSSNAME** field.

**NOMIGRAT**
- whether NOMIGRAT is set on for this host.

**NORECLAM**
- whether NORECLAM is set on for this host.
STATE
one of the following VTSS states for this host:

QUIESCING
Quiescing state.

QUIESCED
Quiesced state.

OFFLINE
Offline state.

OFFLINE-P
Offline pending state.

ONLINE
Online state.

ONLINE-P
Online pending state.

STARTED
The VTSS is initialized and in process of going to the requested state (online, offline, or quiesced).

TYPE
VTSS model (VSM2, VSM3, VSM4, VSM5, or unknown).

SUPPORTED FEATURES
One or more of the following:

400MB | 800MB | 2/4GB VTVS
Default VTV size.

LARGE PAGE | STANDARD PAGE VTVS
Default VTV page size.

NOWAIT ON RTD MOUNT
VTSS supports polling for RTD mount completion. It does not lock the Nearlink interface while waiting for the mount.

BUDDY QUEUING
VTSS supports queueing of requests to more than one RTD on a Nearlink interface.

REPLICATION
Asynchronous replication enabled.

SYNC REPLICATE
Synchronous replication enabled.

LAST USE HINT
VTSS supports cache management hints indicating when a VTV will be accessed in the near future.

MGMT CLASS ON MVC
Audit MVC is able to return management class for VTVs.
CONNECT TO 16 | 32 RTDS
   Maximum number of RTDs per VTSS enabled.

STACKED MIGRATES
   Stacked migrates enabled.

UNKNOWN VTSS FEATURE
   VTSS feature found not supported by VTCS software level.

NONE
   No VTSS features defined.

PARTITIONED RTDs
   Partitioned RTDS enabled.
Display VTV

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
Display VTV displays information about a specific VTV.

Syntax

```
Display
VTV(vtv-id)
Query
```

**FIGURE 3-102** Display VTV syntax

Parameters

*vtv-id*
the ID of the VTV.
**Output**

*FIGURE 3-103* shows an example of Display VTV output.

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volser</td>
<td>X00000</td>
</tr>
<tr>
<td>VTSS</td>
<td>HBVTSS19</td>
</tr>
<tr>
<td>Mounted</td>
<td>A800</td>
</tr>
<tr>
<td>Uncompressed Size (Mb)</td>
<td>99.01</td>
</tr>
<tr>
<td>Compressed Size (Mb)</td>
<td>97.88</td>
</tr>
<tr>
<td>Maximum VTV size (Mb)</td>
<td>800</td>
</tr>
<tr>
<td>Page Size</td>
<td>Standard</td>
</tr>
<tr>
<td>Creation Date</td>
<td>2008Feb21 09:32:22</td>
</tr>
<tr>
<td>Last Mounted</td>
<td>2008Feb21 09:32:23</td>
</tr>
<tr>
<td>Last Recalled</td>
<td>2008Apr05 08:15:47</td>
</tr>
<tr>
<td>First Migrated</td>
<td>2008Apr25 08:58:28</td>
</tr>
<tr>
<td>Last Used Date</td>
<td>2008Apr25 08:58:28</td>
</tr>
<tr>
<td>MVC(s)</td>
<td>021681 021645</td>
</tr>
<tr>
<td>Block-id(s)</td>
<td>1A400D24 25401185</td>
</tr>
<tr>
<td>Management Class</td>
<td>M13 SB</td>
</tr>
<tr>
<td>Migrate Pending</td>
<td>SA</td>
</tr>
<tr>
<td>Status</td>
<td>Initialized</td>
</tr>
</tbody>
</table>

*FIGURE 3-103* Example Display VTV output

**Fields**

**VOLSER**

the volser of the VTV specified in the query.

**VTSS**

the VTSS where the VTV last or currently resides.

**MOUNTED**

if the VTV is mounted on a VTD, the VTD unit address is displayed.

**UNCOMPRESSED SIZE(MB)**

the uncompressed size of the VTV (MB). This is the size of the VTV as perceived by the application programs.

**COMPRESSED SIZE (MB)**

the compressed size of the VTV (MB). This is the raw space that will be occupied upon the MVCs or within the VTSSs.

**MAXIMUM VTV SIZE (MB)**

the maximum (compressed) size of the VTV (400, 800, 2000 or 4000).

**CREATION DATE**

the date and time when the VTV contents was last changed by an application.

**LAST MOUNTED**

the date and time when the VTV contents was last mount for access by an application.
LAST RECALLED
the date and time when the VTV was last recalled back from a MVC into a VTSS.

FIRST MIGRATED
the date and time when the first MVC copy of this version of VTV was created.

LAST USED DATE
the date and time when the VTV was last touched by VTCS. This includes most functions that update the status of the VTV in some way.

MVC(S)
the MVC(s) where the VTV resides. This entry only appears when the VTV is migrated.

BLOCK-ID
the logical block ID of the beginning of the VTV upon corresponding MVC. This entry only appears when the VTV is migrated.

MANAGEMENT CLASS
the VTV’s Management Class.

MIGRATE PENDING
the Storage classes to which migrations are outstanding.

ARCHIVE PENDING
the Storage classes to which migrations are outstanding in order to satisfy archiving requirements.

REPLICATION STARTED
If the VTV is being replicated between VTSSs in a cluster, the name of the target VTSS is displayed.

REPLICATED
If the VTV has been replicated to another VTSS in the TapePlex, the VTSS name displayed indicates where the replica can be found.

IMPORTING
If the VTV is being mounted via a VTD, the VTD unit address is displayed.

ELECTRONIC IMPORTED
If the VTV has been imported from another TapePlex. This will report the TapePlex name that owns the VTV.

EXPORTED
If the VTV has been exported to another TapePlex. The line will also list the TapePlexes to which the VTV copies has been successfully exported. An asterisks (*) next to the name indicates an export that has been rejected by the target TapePlex.
STATUS

one or more of the following statuses:

CONSOLIDATED
    VSM has consolidated the VTV.

DUPLEXED
    The DUPLEX attribute has been assigned to this VTV. When VSM migrates the VTV, a copy will be written to two MVCs.

EXPORT-FAILED
    Export of this VTV to a remote TapePlex was attempted and the request was rejected. Typically, this is due to a different copy of the VTV residing in the remote TapePlex.

EXPORT-REJECTED
    Electronic export to one or more TapePlexes was actively rejected. This could be due to the target TapePlex not allowing import of the VTV, or a clash with copy status.

EXPORT-REQUIRED
    This VTV should be electronically exported and is currently queued for processing.

EXPORT-STARTED
    Electronic export is active for this VTV, but not yet complete.

INITIALIZED
    VTCS has used the VTV at least once.

MIGRATED
    VSM has migrated the VTV.

MIGRATE PENDING
    VTV migration is pending. This status is displayed when a VTV is initially created, or when the VTV requires reconciling or archiving. In these latter cases, individual MVC copies may indicate ‘Reconcil’ or ‘Deletion’.

REPLICATION COMPLETE
    A fully replicated copy of this VTV is now resident in the Secondary VTSS.

REPLICATION REQUIRED
    This VTV should be replicated and is currently queued for processing.

REPLICATION STARTED
    Replication is active for this VTV but not yet complete.

RESIDENT
    The VTV is resident on the VTSS.

SCRATCH
    The VTV is in scratch status.

UNINITIALIZED
    The VTV has been defined via the CONFIG utility, but has not ever been used.
DRAin

Interfaces:

Console or PARMLIB only
UUI: No

Subsystem Requirements:

Active HSC at FULL service level

Description

The DRAin command terminates an eject or enter operation on one or more CAPs, which frees the CAP resources for use by other processes.

Syntax

![DRAin Syntax Diagram]

FIGURE 3-104 DRAin syntax

Parameters

*cap-id or cap-list*

one or more CAPs to be drained. The CAPids specified on a DRAin command must match the CAPids specified on the associated EJect or ENter command.

The format of a cap-id is *AA:LL:CC*, where *AA:LL* is the LSMid, and *CC* is the CAP. See “CAPid” on page 710 for a list of valid values.

Each *cap-list* element can be either an *lsm-id* or a *cap-id* that describes a specific CAP. The elements in a list must be separated by a comma or a blank, and the entire list must be enclosed in parentheses.

*ENter*

specifies that an enter operation is to be terminated on the specified CAPs. ENter is the default.

*EJect*

specifies that an eject operation is to be terminated on the specified CAPs.
**DRTEST**

The DRTEST command sets up the environment for DR testing and optionally, starts and stops the test.

Issue this command from the SLUADMIN utility to set up the DR testing environment. Once the environment is set, you can issue DRTEST from a utility or the console to START or STOP testing.

Issue this command with any of the options listed in the following table. Each option is described individually, and in more detail, on the pages to follow.

<table>
<thead>
<tr>
<th>TABLE 3-5</th>
<th>DRTEST options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>This option:</strong></td>
<td><strong>can be issued from:</strong></td>
</tr>
<tr>
<td>CREATE</td>
<td>SLUADMIN utility only</td>
</tr>
<tr>
<td>PRIMEprd</td>
<td>SLUADMIN utility only</td>
</tr>
<tr>
<td>RESET</td>
<td>SLUADMIN utility only</td>
</tr>
<tr>
<td>START</td>
<td>SLUADMIN utility or console</td>
</tr>
<tr>
<td>STOP</td>
<td>SLUADMIN utility or console</td>
</tr>
</tbody>
</table>

**Note** –

- You can use a combination of these options provided you have correct environment and JCL requirements. For example, DRTEST STOP and DRTEST RESET can be run in the same job, however, DRTEST STOP must be run before DRTEST RESET.
- Refer to the **ELS Disaster Recovery and Offsite Data Management Guide** for information about how to use the DRTEST utility.
DRTEST CREATE

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
DRTEST CREATE creates a DR test CDS, normally run at the DR test site.

Note – The NOUPDprd parameter is only valid if the DRTEST PRIMEprd command is executed prior to the DRTEST CREATE command. See “DRTEST PRIMEprd” on page 364 for more information.

Considerations:
■ DR test cannot be active. This refers to the production CDS status.
■ Active HSC/VTCS is not required.
  ■ If HSC/VTCS is active, SLSCNTL DD statement(s) identifying the production CDS are optional, and if included, must match the active HSC/VTCS.
  ■ If HSC/VTCS is not active, SLSCNTL DD statement(s) identifying the production CDS are required.
■ SLSNEW DD statement(s) identifying the DRTEST CDS(s) are required.

Sample Control Cards:
```
DRTEST CREATE HOSTID(ZIPF,ZIPG) -
   DRVTSS(VTSSW) -
   DRACS(00)
```
Syntax

```plaintext
DRTEST—CREATE—[Options]—NOUNPDprd
Options:
   HOSTID(hostid1,hostid2,...,hostidn)
   DRVTSS(vtss1,vtss2,...,vtssn)
   SPARE(vtss1,vtss2,...,vtssn)
   STORMNGR(stormngr-list)
   DRACS(acsid1,acsid2,...,acsid16)
```

Note: CREATE is not valid when DRTEST is issued from the console.

**FIGURE 3-105** DRTEST CREATE syntax

**Parameters**

**CREATE**

Creates a DRTEST CDS.

**HOSTID(hostid1,hostid2,...,hostidn)**

Specifies the HOSTIDs replicated in the test CDS in available host-id positions. The combination of existing production HOSTIDs and those identified in this parameter for replication cannot exceed the 16 host limit. If an additional host-id (not used in production) needs to be added for DR test purposes alone, this additional host-id will use 2 of the 16 host-ids in the limit.

**DRVTSS(vtss1,vtss2,...,vtssn)**

Optionally, specifies the VTSS names available to the DR test site. Unless you specify these VTSSs as spares, the VTSSs are offline to the production site and online to the DR test site when the DR test starts.

**SPARE(vtss1,vtss2,...,vtssn)**

Optionally, specifies that the DR test VTSS(s) are spares and that identically named VTSS(s) exist and are online at the production site when the DRTEST utility is run and during the DR test.

**STORMNGR(stormngr-list)**

Optionally, specifies the Subsystem Names of the VLE appliances attached to the DR test site TapePlex.

**stormngr-list**

the list of Subsystem names. For more information, refer to the publication **Configuring the Host Software for VLE.**
**DRACS(acsid1...acsid16)**

Specifies one or more ACSs available to the DR test site. Multiple ACS IDs must be specified as a list, and not as a range of ACS IDs. The ACSs are online to the DR test site but can remain connected (and usually are) to the production site when the DR test starts. CDRT Version 6.2 and above supports a maximum of 16 DR ACSs.

A minimum of one ACS is required. In a VSM environment running without RTDs attached to the VTSS, the ACS specified for DRACS may be a dummy ACS.

**NOUPDprd**

Optionally, does not update the input production CDS(s).

If this parameter is specified, you can use a single CDS production copy as input and that copy can be either the actual primary production CDS, a backup copy, or a mirrored copy.

This parameter is only valid if the PRIMEprd function has already been run on the production CDS. See “DRTEST PRIMEprd” on page 364 for more information.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the DRTEST CREATE JCL:

**SLSNEW1**

specifies the new primary copy of the test HSC CDS.

**SLSNEW2**

specifies the new secondary copy of the test HSC CDS.

**SLSNEW3**

specifies the new standby copy of the test HSC CDS.

**SLSJRN00 – SLSJRNnn**

DDNAMEs for the DR test journal files, which are only valid if the current CDS defines journaling. There are two files per HOSTID: SLSJRN00 and SLSJRN01 for hostid1, SLSJRN02 and SLSJRN03 for hostid2, and so forth.

**SLSSTATN**

DDNAME for LMU station address changes for HOSTIDs. This file is optional, and if not supplied the same station addresses are used in the DR test CDS for the HOSTIDs as in the existing CDS.

Each entry follows the HSC SET SLISTATN utility format. See “SET SLISTATN” on page 557 for more information. The following figure shows an example of the SLSSTATN file:

```
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRIT)
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRIT1)
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRIT2)
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRITY)
```

**FIGURE 3-106 SLSSTATN File Example**
**SLSVTSS**

DDNAME for VSM changes on the DR test CDS. This file is optional and is only used if the DR test configuration includes VSM elements. Typically, this file is used to change RTD hardware connection definitions in the DR test CDS but may be used to modify any VSM definitions on the DR test CDS because the file invokes the VTCS CONFIG RESET utility. Note that improper use of CONFIG RESET against the DR test CDS may render the DR test environment inoperable!

Each entry follows the format of the VTSS, VTD, RTD, and HOST statements of the VTCS CONFIG utility. See “CONFIG” on page 209 for more information. The following figure shows an example of the SLSVTSS file.

```
CONFIG RESET
VTSS NAME=VTSS01 LOW=70 HIGH=80 MAXMIG=1 MINMIG=1 RETAIN=10
   RTD NAME=VTS18800 DEVNO=8800 CHANIF=0A
   RTD NAME=VTS18801 DEVNO=8801 CHANIF=0I
   RTD NAME=VTS18802 DEVNO=8802 CHANIF=1A
   RTD NAME=VTS18803 DEVNO=8803 CHANIF=1I
HOST NAME=MVS1
   VTD LOW=8900 HIGH=893F
VTSS NAME=VTSS02 LOW=70 HIGH=80 MAXMIG=8 MINMIG=8 RETAIN=10
   RTD NAME=VTS28805 DEVNO=8805 CHANIF=0A
   RTD NAME=VTS28806 DEVNO=8806 CHANIF=0E
   RTD NAME=VTS28807 DEVNO=8807 CHANIF=0I
   RTD NAME=VTS28808 DEVNO=8808 CHANIF=0M
   RTD NAME=VTS28809 DEVNO=8809 CHANIF=1A
   RTD NAME=VTS2880A DEVNO=880A CHANIF=1E
   RTD NAME=VTS2880B DEVNO=880B CHANIF=1I
   RTD NAME=VTS2880C DEVNO=880C CHANIF=1M
HOST NAME=MVS2
   VTD LOW=9900 HIGH=993F
```

**FIGURE 3-107** SLSVTSS File Example
DRTEST PRIMEprd

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
DRTEST PRIMEprd updates the production CDS without creating a DRTEST CDS.

Considerations:
■ DR test cannot be active.
■ Active HSC/VTCS is not required.
  ■ If HSC/VTCS is active, SLSCNTL DD statement(s) identifying the production CDS are optional, and if included, must match the active HSC/VTCS.
  ■ If HSC/VTCS is not active, SLSCNTL DD statement(s) identifying the production CDS are required.
■ SLSNEW DD statement(s) identifying the DRTEST CDS(s) are not required, and if included, are ignored.

Sample Control Cards:
DRTEST PRIME HOSTID(ZIPF,ZIPG) -
  DRVTSS(VTSSW) -
  DRACS(00)
Syntax

```
DRTEST—PRIMEprd—|Options|
   Options:
      —HOSTID(hostid1,hostid2,...hostidn)
      DRVTSS(vtss1,vtss2,...vtssn) — SPARE(vtss1,vtss2,...vtssn)
      —STORMNGR(stormngr-list)
      —DRACS(acsid1,acsid2,...acsid16)

Note: PRIMEprd is not valid when DRTEST is issued from the console.
```

FIGURE 3-108 DRTEST PRIMEprd syntax

Parameters

**PRIMEprd**

Updates the production CDS.

**HOSTID(hostid1,hostid2,...hostidn)**

Specifies the HOSTIDs replicated in the test CDS in available host-id positions. The combination of existing production HOSTIDs and those identified in this parameter for replication cannot exceed the 16 host limit. If an additional host-id (not used in production) needs to be added for DR test purposes alone, this additional host-id will use 2 of the 16 host-ids in the limit.

**DRVTSS(vtss1,vtss2,...vtssn)**

Optionally, specifies the VTSS names available to the DR test site. Unless you specify these VTSSs as spares, the VTSSs are offline to the production site and online to the DR test site when the DR test starts.

**SPARE(vtss1,vtss2,...vtssn)**

Optionally, specifies that the DR test VTSS(s) are spares and that identically named VTSS(s) exist and are online at the production site when the DRTEST utility is run and during the DR test.

**STORMNGR(stormngr-list)**

Optionally, specifies the Subsystem Names of the VLE appliances attached to the DR test site TapePlex.

**stormngr-list**

the list of Subsystem names. For more information, refer to the publication *Configuring the Host Software for VLE*. 
DRACS(acsid1...acsid16)

Specifies one or more ACSs available to the DR test site. Multiple ACS IDs must be specified as a list, and not as a range of ACS IDs. The ACSs are online to the DR test site but can remain connected (and usually are) to the production site when the DR test starts. CDRT Version 6.2 and above supports a maximum of 16 DR ACSs.

A minimum of one ACS is required. In a VSM environment running without RTDs attached to the VTSS, the ACS specified for DRACS may be a dummy ACS.
DRTEST RESET

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
DRTEST RESET removes all DR test settings in the production CDS.

Considerations:
- DR test cannot be active. This refers to the production CDS status.
- Active HSC/VTCS is not required.
  - If HSC/VTCS is active, SLSCNTL DD statement(s) identifying the production CDS are optional, and if included, must match the active HSC/VTCS if used.
  - If HSC/VTCS is not active, SLSCNTL DD statement(s) identifying the production CDS are required.
- SLSNEW DD statement(s) identifying the DRTEST CDS(s) are not required, and if included, are ignored.

Sample Control Cards:

DRTEST RESET

Note – DRTEST STOP and DRTEST RESET can be run in the same job, however, DRTEST STOP must be run before DRTEST RESET.

Syntax

```
DRTEST RESET
```

Note: RESET is not valid when DRTEST is issued from the console.

Parameters
None.
DRTEST START

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
DRTEST START starts the DR test on the production site.

Note – DRTEST START cannot run successfully until the production CDS is primed using DRTEST PRIMEprd or DRTEST CREATE.

Considerations:
- DR test cannot be active. This refers to the production CDS status.
- Active HSC/VTCS is required.
- SLSCNTL DD statement(s) identifying the production CDS are optional, and if included, must match the active HSC/VTCS.
- SLSNEW DD statement(s) identifying the DRTEST CDS(s) are not required, and if included, are ignored.

Sample control cards:
DRTEST START

Syntax

![DRTEST--START](image-url)

FIGURE 3-110 DRTEST START syntax

Parameters
None.
DRTEST STOP

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
DRTEST STOP stops the DR test on the production site.

Considerations:
- DR test must be active. This refers to the production CDS status.
- Active HSC/VTCS is required.
- SLSCNTL DD statement(s) identifying the production CDS are not required, and if included, must match the active HSC/VTCS.
- SLSNEW DD statement(s) identifying the DRTEST CDS(s) are not required, and if included, are ignored.

Sample control cards:
DRTEST STOP

Note – DRTEST STOP and DRTEST RESET can be run in the same job, however, DRTEST STOP must be run before DRTEST RESET.

Syntax

\[ \text{DRTEST} \text{ STOP} \]

FIGURE 3-111 DRTEST STOP syntax

Parameters
None.
EEXPORT

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The EEXPORT command is used to perform electronic export functions. Use this command to manually export VTVs or re-drive rejected exports.

Syntax

FIGURE 3-112 EEXPORT command syntax
Parameters

VTV
specifies one or more VTVs to electronically export.

\texttt{volser, vol-range, or vol-list}
the volsers of one or more VTVs. You can specify a maximum of 2,000 volsers.

MGMTcls
specifies one or more names of Management Classes that determine the VTVs to electronically export.

\texttt{mgmt-class-name or mgmt-class-list}
the Management Class name. This name must be 1 to 8 alphanumeric characters beginning with an alpha character and must follow SMS naming conventions.

TOPlex
specifies the name of the TapePlex to which copies of the VTV are sent via electronic export. There must be at least one CLINK within the configuration that provides a route to the TapePlex.

\texttt{name}
the target TapePlex name.

ULINKMVC
specifies whether MVC copies on the target TapePlex are to be deleted as part of the export process.

\texttt{volser}
a volser from the MVC copy to be deleted from the target VTVs. If not specified, then all MVC copies of the VTV are deleted.

\textbf{Note –}

- This parameter only applies when the VTV version sent matches the version in the target TapePlex. If the versions sent is more recent, then the behavior is implicit.
- This parameter can be used if the only MVC copies of a VTV in the target TapePlex become damaged. A replacement copy of the VTV can be supplied to the TapePlex via the EEXPORT command. The damaged MVC copies are replaced by additional migrations from the VTV copy sent.

FORCE
specifies whether VTCS exports the VTV to locations with disregard for other criteria.

\texttt{YES}
Export VTVs to the TapePlex specified in the TOPlex parameter, regardless of whether the VTVs have been previously exported to the TapePlex, or the management class points to a storage class that specifies the target TapePlex.

\texttt{NO}
Export VTVs to the TapePlex specified in the TOPlex parameter, but ignore any VTVs already marked as exported, and exclude any VTVs for which the management class does not point to a storage class that specifies the TapePlex in the TOPlex parameter. This is the default.
REJECTED
specifies whether VTCS only selects VTVs recorded in the CDS as being rejected by the target TapePlex.

Note – REJECTED and FORCE are mutually exclusive.

NO
Ignore any VTVs already marked as exported, and exclude any VTVs for which the management class does not point to a storage class that specifies the TapePlex in the TOPlex parameter. This is the default.

YES
Only select VTVs previously rejected by the target TapePlex.

RECALWER
specifies whether VTCS recalls VTVs with read data checks. The default value for this parameter is taken from the RECALWER parameter on the GLOBAL statement in the VTCS configuration.

YES
Recall VTVs with read data checks. This is the default.

NO
Do not recall VTVs with read data checks.
EJect

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description

The EJect command moves volumes to a Cartridge Access Port (CAP) for removal.

You can designate a single CAP, a specific CAP, or a list of specific CAPs. Specifying one or more CAPs limits cartridge ejection to those CAPs.

Ejections in a multiple ACS configuration may specify CAPs in each ACS if volumes reside in each ACS. If a CAP list is not provided, HSC selects the highest priority CAP available for each ACS (see “CAPPref” on page 194).

You may elect to submit multiple Eject requests, each of which may specify a particular CAP. If you elect to specify a CAP in a multi-ACS configuration, then the list of volumes must reside within the CAP ACS.

Multiple CAPs within one ACS can be allocated to the EJECt utility. Specifying multiple CAPs in a single Eject Cartridge utility typically improves performance by reducing pass-thrus.

If two CAPs are specified in the same LSM, cartridges in that LSM are ejected in sequential order. This is helpful for vaulting.
Syntax

Option 1:

```
Eject Option1 Option2 text
```

Option 1:

```
volserv
vol-range
(vol-list)
acs-id
lsm-id
cap-id
(cap-list)
WAITcap(NO)
SEQ(NO)
```

Option 2:

```
SCRTCH
acs-id
lsm-id
cap-id
(cap-list)
SUBpool(subpool-name)
VOLCNT(count)
MEDia(media-type)
RECtech(recording-technique)
WAITcap(NO)
```

FIGURE 3-113 Eject syntax
Parameters

text

optionally, specifies the address of a 44-byte string issued whenever the operator is requested to open the CAP for an EJECT request. This text is displayed via message SLS1251E.

VOLser

specifies that a VOLSER(s) is to be ejected.

vol-list

the list of volumes to be ejected. A vol-list can be a single VOLSER, a range of VOLSERs or a list of VOLSERs and/or VOLSER ranges in any combination.

If a list is specified, the elements must be delimited by commas or blanks, and the entire list enclosed in parentheses. A range of VOLSERs consists of a starting VOLSER and an ending VOLSER separated by a dash.

SEQ

optionally, specifies whether or not CAP eject processing fills the CAP cells in the same order specified by the VOLser parameter.

Note –

■ If SEQ is not specified, but two CAPs are requested in the same LSM, and the LSM is not an SL8500, cartridges in the ACS are ejected in sequential order.

■ For best performance, SEQ(NO) is recommended.

NO

specifies to eject the requested volumes in the order of home cell location. Eject processing fills the CAP or magazine (for the SL8500) according to the distance of the home cell to the CAP or magazine; that is, volumes closest to the CAP or magazine are ejected first.

YES

specifies to eject cartridges to the CAP in the order the volumes are listed in the associated VOLser parameter. The first cartridge requested appears in the topmost CAP cell, the second cartridge requested appears in the next CAP cell, and so on until the CAP is full or all cartridges have been moved to the CAP.

WAITcap

optionally, specifies whether or not a list of ejecting volumes waits for an available CAP if one is not available.

YES

specifies that the eject process waits indefinitely for a CAP to become available. YES is the default.

NO

specifies that the eject process does not wait for a CAP if it is not available.
SCRTCH  
indicates that scratch volumes are to be ejected.

**Note** – If no CAPs are specified, only scratch tapes in ACS 00 are ejected.

SUBpool  
on optionally, specifies the subpool from which scratch volumes are to be ejected. If MEDia or RECtech are specified, cartridges are ejected for that media type or recording technique within the same subpool.  
*subpool-name*  
the name for the subpool.

VOLCNT  
on optionally, specifies that a designated number of scratch volumes are to be ejected.  
*count*  
the number of scratch volumes to be ejected.

MEDia  
on optionally, specifies that scratch cartridges of the desired media are to be ejected.  
*media-type*  
the media type.  
See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.

**Note** –  
- If MEDia is not specified, the next scratch cartridge is selected without regard to media type if RECtech does not exist. If both MEDia and RECtech are supplied, they must be compatible.  
- If SUBpool is not specified, then the next scratch cartridge is selected without regard to whether it belongs to a subpool, is defined to the default subpool using VOLPARMS, or belongs to no scratch subpool whatsoever.

RECtech  
on optionally, specifies scratch cartridges of the desired recording technique are to be ejected. RECtech indicates the method used to record data tracks on the tape surface.  
*recording-technique*  
the recording technique.  
See Appendix A, “MEDia, RECtech, and MODel Values” for valid recording-technique values.

**Note** – If RECtech is not specified, the next scratch cartridge is selected depending on the media type (if supplied). If neither is supplied, the next scratch cartridge is selected without taking media type and recording technique into consideration. If both RECtech and MEDia are supplied, they must be compatible.
WAITcap
optionally, specifies whether or not a list of ejecting volumes waits for an available CAP if one is not available.

YES
specifies that the eject process waits indefinitely for a CAP to become available.
YES is the default.

NO
specifies that the eject process does not wait for a CAP if it is not available or has been released.

CAP
optionally, specifies which Cartridge Access Port(s) is being used for the operation.
This utility ejects scratch volumes to the specified CAP(s) only. EJECT searches for scratch volumes only in the LSMs that contain the specified CAP(s).

Note – If a CAP has not been specified, EJECT determines the CAP to use based upon the CAPPref command setting. See “CAPPref” on page 194 for more information.

If a CAP preference has not been specified, the HSC displays a message and waits until the user enters a CAPPref value. Pass-thrus can be made to CAPs specified by CAPPref.

cap-list
the Cartridge Access Port(s). The cap-list requires explicitly specified CAPids separated by commas. A CAPid range is not allowed.
If more than one CAPid is specified, the elements must be separated by blanks or commas, and the entire list must be enclosed in parentheses. If no CAP is specified, one is chosen in each ACS.
The format of a cap-id is AA:LL:CC, where AA:LL is the LSMid, and CC is the CAP. See “CAPid” on page 710 for a list of valid values.
ENter

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
The ENter command makes a CAP in Automatic mode available for entering cartridges into an LSM.

Syntax

\[
\text{ENter} \quad \text{acs-id} \quad \text{Lsm-id} \quad \text{cap-id}
\]

Parameters

\textit{acs-id}

specifies the ACS where cartridges are to be entered. The HSC selects a nonzero preference manual mode CAP within the ACS to use.

\textit{Lsm-id}

identifies one of the following:

- an LSM with a single CAP
- an LSM that contains multiple CAPs. The HSC selects an available manual mode CAP with the highest nonzero preference. CAPid 00 is selected if it is available, in manual mode, and has a preference value equal to or higher than other available manual mode CAPs in the LSM.

\textit{cap-id}

specifies a specific manual mode CAP to use regardless of availability or CAP preference. The format of a \textit{cap-id} is \textit{AA:LL:CC}, where \textit{AA:LL} is the LSMid, and \textit{CC} is the CAP. See “CAPid” on page 710 for a list of valid values.
**TLSTM**

specifies the LSM to receive the entered cartridges.

**Lsm-id**

identifies one of the following:

- an LSM with a single CAP
- an LSM that contains multiple CAPs. The HSC selects an available manual mode CAP with the highest nonzero preference. CAPid 00 is selected if it is available, in manual mode, and has a preference value equal to or higher than other available manual mode CAPs in the LSM.

The format of an LSMid is **AA:LL**, where **AA** is the ACSid (decimal 00-99) and **LL** is the LSM number (decimal 00-99).

**SCRatch**

optionally enables you to put the volumes you enter into scratch status. If you do not specify that the volumes are to be given scratch status, the system enters them as nonscratch volumes.
EXECParm

Interfaces:
PARMLIB only
UII: No

Subsystem Requirements:
None

Description
The EXECParm command provides an alternative method for specifying GTF event and format IDs normally specified in the subsystem startup procedure. It also provides you with the option of displaying the command prefix preceding WTO or WTOR messages.

Syntax

```
EXECParm
   MSGPFX(Yes | No)
   ,Eid(gtfeid)
   ,Fid(gtffid)
   ,HOSTID(host-id)
```

**FIGURE 3-115** EXECParm syntax

Parameters

**MSGPFX**
optionally, specifies control of whether the command prefix is to precede WTO or WTOR messages to the operator.

**Yes**
indicates that the command prefix is to display preceding WTO or WTOR messages to the operator.

**No**
indicates that the command prefix is not to display preceding WTO or WTOR messages to the operator.
**Eid**

optionally, `gtfeid` specifies a GTF event ID.

`PARM='Eid(user-specified-event-id)'` parameter is valid for use in the HSC initialization procedure as an alternative method of specifying the GTF event ID.

**Fid**

optionally, `gtffid` specifies a GTF format ID.

`PARM='Fid(user-specified-format-id)'` parameter is valid for use in the HSC initialization procedure as an alternative method of specifying the GTF format ID.

**HOSTID**

optionally, `host-id` specifies the system ID associated with the request to process the EXECParm control statement.

---

**Note** – If the `hostid` specified does not match the host executing the command, the command is ignored and no message is issued.
EXPORT

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:
- Active HSC/VTCS at FULL service level required when specifying the VTV, MGMTCLAS, or STORclas parameter.
- Active HSC/VTCS not required when specifying the MVC parameter.

Description

The EXPORT command consolidates VTVs (if required) and creates a manifest file that lists VTVs and MVCs available for export from a VSM system.

Syntax

```plaintext
EXPORT
  VTV(volser, vol-range, vol-list)
  MGMTclas(mgmt-class-name, mgmt-class-list)
  MVC(volser, vol-range, vol-list)
  STORclas(storclas-name, storclas-list)
  MANIFEST(ddname)
  RECALWER(YES, NO)
```

FIGURE 3-116 EXPORT syntax
Parameters

**VTV**

specifies one or more VTVs to consolidate for export.

*volser*, *vol-range* or *vol-list*

the volser of one or more VTVs. You can specify an unlimited number of VTVs.

**MGMTclas**

specifies one or more Management Classes that determine one or more VTVs to consolidate for export.

*mgmt-class-name* | *mgmt-class-list*

the names of one or more Management Classes you defined on the MGMTclas control statement. See “MGMTclas Control Statement” on page 423 for more information.

**MVC**

specifies one or more MVCs for export.

*volser*, *vol-range* or *vol-list*

the volser of one or more MVCs.

**STORclas**

specifies one or more Storage Classes that determine one or more MVCs for export.

*stor-clas-name* | *stor-clas-list*

the names of one or more Storage Classes that you defined on the STORclas control statement. See “STORclas Control Statement” on page 441 for more information.

**MANIFEST**

optionally, specifies the output destination ddname of the manifest file.

*ddname*

ddname of the manifest file. The default is MANIFEST.

**RECALWER**

optionally, specifies whether VTCS recalls VTVs with read data checks.

*YES*

recall VTVs with read data checks (the default).

*NO*

Do not recall VTVs with read data checks.

Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the EXPORT JCL:

**manifest file DD**

DD statement for the manifest file (optional).
FMTLOG

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The FMTLOG command is part of the HSC/VTCS transaction logging service.

This command pre-formats a log file to be used by the logging service. It pre-formats data blocks and writes certain control information in the first record of the file. You can format a maximum of two log files with a single FMTLOG utility command.

Note – You must pre-format a log file before activating it with the OFFLOAD LOGFILE utility command. See “OFFload” on page 498 for more information.

Syntax

```
FMTLOG
```

FIGURE 3-117 FMTLOG syntax

Parameters
None.

Additional JCL Requirements
In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the FORMAT LOGFILE JCL:

**SLSLOG1**
- specifies the log file to be formatted.

**SLSLOG2**
- specifies the second log file to be formatted.
IMPORT

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS not required

Description
The IMPORT command imports VTVs and MVCs listed on a manifest file into a VSM system.

Note – Ensure that the “to” CDS has the same features (enabled by CDS level) as the “from” CDS. For example, if the “from” CDS has large VTV page sizes enabled and 2/4 Gb VTVs have been created, then the “to CDS” must have the same capabilities, otherwise the import fails.
Syntax

PARAMETERS

IMPORT

VTV
specifies one or more VTVs to import.

.volser, .vol-range or .vol-list
the volsers of one or more VTVs.

MVC
specifies one or more MVCs to import.

.volser, .vol-range or .vol-list
the volsers of one or more MVCs.

REPLACE
specifies whether VSM replaces the VTV record in the target CDS. There is no default; you must specify a value.

NONE
Do not replace the VTV record. VTCS only creates new records for VTVs that are not duplicates and replaces records for VTVs not initialized in the target CDS.

ALL
Replace any duplicate VTV records in the target CDS.
**Caution** –

- Ensure that you actually want to replace duplicate VTV records in the target CDS before you specify the ALL parameter. You may want to do a “validate” run with NOUPDATE to see which VTV records will be replaced.
- If a VTV record is replaced, all existing VTSS and MVC copies of the VTV are invalidated.
- You cannot import an MVC if the target CDS records show that the MVC contains VTVs, even if you specify REPLACE(ALL). In this situation, you must first drain (with eject) the MVC on the target system and eject it from the ACS. You can then import the MVC that you exported from the source system.

**IMMDRAIN**

optionally, specifies whether VSM will immediately drain imported MVCs.

- **NO**
  - Do not drain MVCs (the default).
- **YES**
  - Drain MVCs.

**MANIFEST**

optionally, specifies the input ddname of the manifest file.

- **ddname**
  - ddname of the manifest file. The default is MANIFEST.

**NOUPDATE**

optionally, specifies that VSM does not update the CDS, validates the import operation, and writes information messages to the job log.

**INACTCDS**

optionally, specifies that the import uses a different CDS from the CDS currently active on the HSC system where you are running the import job. Use the SLSCNTL definition statement in the SLUADMIN JCL to specify the alternate CDS.

**Note** –

- If HSC is down on the system where you are running the import job, the CDS on that system is assumed to be inactive, so you do not need to specify INACTCDS.
- If you specify the INACTCDS parameter, the CDS specified in the SLSCNTL definition statement in the SLUADMIN JCL must be **different** from the CDS being used by HSC/VTCS (if active).

**OWNRPLEX**

specifies ownership of a VTV being imported.

- **name**
  - the name of the TapePlex that owns the original copy of the VTV. This name must match one of the known TapePlex names in the configuration.
  - If this name matches that indicated for the THISPLEX parameter on the CONFlg TAPEPLEX statement, the electronic imported status is removed.
SETOWNER

specifies that ownership information is to be imported.

By default, any ownership information within the manifest is ignored. The SETOWNER parameter specifies that the TapePlex ownership and export fields are imported. VTVs appear as if electronically imported on Display commands and reports.

Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the IMPORT JCL:

manifest file DD

DD statement for the manifest file.
## INITialize

### Interfaces:
- SLUADMIN utility only
- UUI: No

### Subsystem Requirements:
- Active HSC at FULL service level

### Description

The INITialize command allows you to batch enter cartridges into the library through the CAP, and invokes a user-specified program to write a magnetic label on each tape.

The robot accepts cartridges placed into the CAP and reads the Tri-Optic labels, and the HSC passes the VOLSERs to the user-specified program. The magnetically labeled cartridges can be ejected from the library or placed into cell locations. If the cartridges are stored in the library, the control data set is updated with the VOLSER and location information. The control data set can mark each cartridge as either scratch or nonscratch.

INITialize reads the external Tri-Optic labels and records them in a data set defined through the CNTLDD parameter. CNTLDD is a control statement parameter that describes the DDname to be used for TMSTPNIT control statements.

The INITialize utility does not initialize cartridges on its own; it invokes TMS, TLMS, or any other initialization utility, which performs the initialization. CNTLDD specifies, through the HSC to the TMS utility, the DD to be used for the input parameters the TMS utility requires.

---

**Warning** – This utility must be executed on an MVS system running SMC and using a local HSC server.
Syntax

**FIGURE 3-119** INITialize syntax

### Parameters

**CAP**

optionally, specifies a particular CAP to be used for the operation.

If CAP is not specified, the utility chooses a CAP in the ACS implied by the device allocated to satisfy the SLSTAPE DD statement.

*cap-id*

the CAP. The format of a cap-id is *AA:LL:CC*, where *AA:LL* is the LSMid, and *CC* is the CAP. See “CAPid” on page 710 for a list of valid values.

**PROGram**

optionally, specifies a program to be invoked to actually write the label (if not specified, IEHINITT is assumed).

*prog-name*

the name of the program that is to perform the initialization.

**IEHINITT**

IEHINITT is the default value.
VERIFY

optionally, specifies a parameter to be passed to the tape initialization program identified by the PROGram parameter. **VERIFY is valid only when the PROGram parameter specifies TMSTPNIT.**

**parameter-name**

the parameter passed to the TMSTPNIT program. For example, if the following parameter is entered:

```
VERIFY(ROBOT)
```

TMSTPNIT suppresses the TMS CAL0TN01 message for NL (nonlabeled) tapes. Refer to the appropriate CA-1 publication for valid parameter values.

CNTLDD

optionally, specifies the DD statement to which initialization control statements are written, and from which the label program reads its control statements.

**Note –** This is not your control data set.

**dd-name**

the name of the DD statement.

**Note –** The **dd-name** option may only be specified when using CA-1 (TMS) prior to version 5.1. The default value (SYSIN) MUST be used with CA-1 (TMS) version 5.1 or later.

**SYSIN**

SYSIN is the default value.

OPTion

optionally, specifies optional handling to be performed following the completion of label processing. If not specified, the default is retention of the new cartridges in the library with a non-scratch status.

**EJECT**

specifies that the labeled volumes are to be ejected from the library after the labeling process is complete.

**SCRATCH**

specifies that the labeled volumes entering the library are to be added to the scratch list. If the volume is to be treated as scratch, the installation must inform the tape management system of the volume’s scratch status.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the INITialize JCL:

**SLSINIT**
substitution control card format for the invoked initialization program.

**SLSTAPE**
library transport on which the cartridge is mounted for labeling. To prevent a nonlibrary transport from being allocated, specify one of the following:
- an esoteric containing only library transports
- a specific library transport address
- a TAPEREQ statement to direct the allocation to a library transport
- a user exit (refer to the *ELS Legacy Interfaces Reference*)

**CNTLDD** or **SYSIN**
contains volume serial labeling information and is passed as input to the initialization program (IEHINITT or the program specified by the PROG keyword parameter).
If CNTLDD is specified in the utility control statement, then the DDname identifies the data set containing the labeling information.

**SYSPRINT**
output messages from IEHINITT.
contains volume serial labeling information and is passed as input to the initialization program (IEHINITT or the program specified by the PROG keyword parameter).
If CNTLDD is specified in the utility control statement, then the DDname identifies the data set containing the labeling information.
INVENTORY

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The INVENTORY command lists all VTVs on specified MVCs.
Additionally, you can use this command to do the following:
- Request that the contents of the specified MVCs are cross-checked with the information recorded in the CDS.
- Terminate processing based on the end-of-tape position recorded in the CDS for the MVC, rather than at the MVC’s physical end-of-tape.
- Terminate processing for an MVC the first time a VTV is discovered that is incompatible with the information in the CDS.

Syntax

\[
\text{INVENTORY} \quad \text{MVCid} ( \text{volser} \quad \text{vol-range} \quad \text{vol-list} \quad \text{CDScheck} (\text{None} \quad \text{Mvc} \quad \text{Full}) \quad \text{STOPloet} (\text{NO} \quad \text{YES}) \quad \text{TERMerr} (\text{NO} \quad \text{YES}))
\]

FIGURE 3-120 INVENTORY syntax
Parameters

MVCid
specifies the MVC(s) to be inventoried.

volser, vol-range, or vol-list
the volser of one or more MVCs. You can also specify one or more ranges.

CDScheck
optionally, specifies whether the contents of each inventoried MVC is checked against the information recorded in the CDS.

None
Each VTV found on an inventoried MVC is listed via message SLS6933I. The CDS is not checked. None is the default.

MVC
Each VTV found on an inventoried MVC is listed via message SLS6933I. The details of the VTV are obtained from the CDS. The MVC and CDS copies of the VTV are compared and listed as a comment on SLS6933I. If the CDS shows a resident or MVC copy of the VTV that differs from the copy listed in SLS6933I, its details are listed via message SLS6934I.

Full
Each VTV found on an inventoried MVC is listed via message SLS6933I. The details of the VTV are obtained from the CDS. The MVC and CDS copies of the VTV are compared and listed as a comment on SLS6933I. If the CDS shows a resident or MVC copy of the VTV that differs from the copy listed in SLS6933I, its details are listed via message SLS6934I. For each inventoried MVC, the CDS is checked to determine which CTCs are shown to have a copy on the MVC. Any MVCs that were not found on the MVC are listed via message SLS6935E.

STOPleot
optionally, specifies whether processing is to terminate when the logical end-of-tape position is reached. The logical end-of-tape position is the end-of-tape position recorded in the CDS for this MVC.

NO
All VTVs are to be processed on each inventoried MVC. This is the default.

YES
VTVs are processed on each inventoried MVC until one of the following occurs:
- The MVC’s physical end-of-tape is reached.
- The first VTV is found on the MVC that is beyond the logical end-of-tape position, if this is earlier than the physical end-of-tape position. This setting is invalid with CDScheck(None).
**TERMerr**

optionally, specifies whether the inventory of an MVC is to terminate when it encounters the first inconsistency between the contents of the MVC and the VTVs that the CDS indicates are on the MVC. Such inconsistencies are listed via message SLS6935E, SLS6936E, or SLS6938E.

**NO**

The inventory of an MVC is not to terminate when it encounters the first inconsistency between the contents of the MVC and the VTVs that the CDS indicates are on the MVC. This is the default.

**YES**

The inventory of an MVC is to terminate when it encounters the first inconsistency between the contents of the MVC and the VTVs that the CDS indicates are on the MVC. This setting is invalid with CDScheck(None).

### Return Codes

**TABLE 3-6**  INVENTORY Return Codes

<table>
<thead>
<tr>
<th>Return Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All requested updates completed successfully.</td>
</tr>
<tr>
<td>4</td>
<td>One or more errors found. Errors are listed via message SLS6935E, SLS6936E, SLS6938E, SLS6939E, SLS6940E or SLS6941E.</td>
</tr>
<tr>
<td>8</td>
<td>One or more errors found that are not specific to INVENTORY processing (e.g. ECAM errors)</td>
</tr>
</tbody>
</table>
Inventory Report

**FIGURE 3-121** shows an example of an INVENTORY report for the following command:

```
INVENTORY MVC(021549)
```

In this example, the customer wishes to list all VTVs on MVC 021549 without cross-checking the VTVs found with the information recorded in the CDS.

In the sample output, each VTV found on the inventoried MVC is listed via message SLS6933I.

```
SLS6933I MVC 021549 block 05402F10: VTV Y00487  Created 2007Jul17 06:34:09  Migrated 2007Jul17
SLS6933I MVC 021549 block 0A405E1F: VTV Y00489  Created 2007Jul17 06:34:56  Migrated 2007Jul17
SLS6933I MVC 021549 block 0F408D2E: VTV Y00493  Created 2007Jul17 06:36:34  Migrated 2007Jul17
SLS6933I MVC 021549 block 10409E3C: VTV Y00492  Created 2007Jul17 06:35:46  Migrated 2007Jul17
```
LIBGen

**Interfaces:**
SLUADMIN utility only
UUI: No

**Subsystem Requirements:**
Active HSC not required

**Description**
The LIBGen command decompiles the hardware configuration, VOLPARM, VAULT and LOGFILE information from the Control Data Set and creates a set of LIBGEN macros that reflects that information. The LIBGen decompile utility can be used to generate an initial set of LIBGEN macros that can be modified when you are adding new hardware to your installation that requires the creation of a new CDS.

Refer to the publication *Configuring HSC and VTCS* for detailed information about when to use this utility and how it functions.

**Syntax**

```
LIBGen
```

**Parameters**
None.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the LIBGen JCL:

**SLSLIBGN**
output data set to accommodate the LIBGEN created by the utility.

The data set has these characteristics: LRECL=80, fixed-blocked format (multiple of 80). The data set can be assigned to print or to output to a DASD. It may be assigned to DUMMY if only the SLSPRINT output is desired.

**SLSSET**
output SET VOLPARM, SET VAULT/VAULTVOL, and/or SET LOGFILE control statements from the CDS.

SLSSET is **required** when VOLPARM, VAULT/VAULTVOL, or LOGFILE records exist in the CDS. If the SLSSET DD is not coded in the JCL, message SLS0212I is issued and the utility ends with a return code 4.

**SLSPARM**
output VOLPARM card images from CDS.

SLSPARM is **required** when VOLPARM records exist in the CDS. If the SLSPARM DD is not coded in the JCL, message SLS0212I is issued and the utility ends with a return code 4.
Output

Outputs resulting from the execution of the Database Decompile utility include:

- a valid LIBGEN file matching the existing control data set. The output file has the following characteristics:
  - All station and drive addresses are 4-character addresses.
  - In cases where multiple parameters point to the same label statement, the utility duplicates the statement with a unique label and points each parameter to a different, although identical statement.
  - Labels generated in the output LIBGEN are listed in Table 3-7.
  - If an EJect password exists, it is **NOT** displayed. Instead, the following line is displayed: EJCTPAS=????????
  - messages associated with error conditions resulting from an unsuccessful execution of the utility.

### TABLE 3-7 Label Descriptions for Devices in Output LIBGen

<table>
<thead>
<tr>
<th>Device</th>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS</td>
<td>ACSaa</td>
<td><em>aa</em> is the sequential decimal ACSid value (00 through 99), beginning with zero.</td>
</tr>
<tr>
<td>LSM</td>
<td>LSMaall</td>
<td><em>aa</em> is the ACSid, and <em>ll</em> is the sequential decimal LSMid value (00 through 99), beginning with zero.</td>
</tr>
<tr>
<td>STATION</td>
<td>STAaah</td>
<td><em>aa</em> is the ACSid, and <em>h</em> is the sequential hexadecimal host index value (0 through F), beginning with zero.</td>
</tr>
<tr>
<td>PANEL</td>
<td>PAaillpp</td>
<td><em>aa</em> is the ACSid, <em>ll</em> is the LSMid, and <em>pp</em> is the sequential decimal panel number (0 through 10).</td>
</tr>
<tr>
<td>DRIVE</td>
<td>Daallpph</td>
<td><em>aa</em> is the ACSid, <em>ll</em> is the LSMid, <em>pp</em> is the decimal panel number, and <em>h</em> is the hexadecimal host index value, beginning with zero.</td>
</tr>
</tbody>
</table>
**LMUPDEF**

**Interfaces:**
Console or PARMLIB  
UUI: No

**Subsystem Requirements:**
Active HSC at BASE or FULL service level

**Description**

The LMUPDEF command specifies the definition data set that contains network LMU attachment (LMUPATH) statements.

If a definition file is changed by a LMUPDEF operator command, and if the change is to be permanent, you must update PARMLIB before restarting the HSC.

If the definition file is to be modified for a given shift or application, remember that the new definition remains in effect until another definition is loaded or the HSC is recycled. The definition file then reverts to the PARMLIB specification. Thus, LMUPDEF can be used to temporarily change a definition file.

**Note –**
- Definition commands issued on one host are in effect only on that host. If different hosts use the same definition data set, the LMUPATH parameter statements are shared by those hosts.
- If you issue multiple LMUPDEF commands or statements, the last one processed is currently active. You can determine which LMUPDEF statement is active by entering the Display LMUPDEF command.

**Syntax**

```plaintext
LMUPDEF DATASET(dataset-name) 
   DSN(dataset-name) 
   VOLUME(volser) 
   UNIT(unit-name) 
   HOSTID(host-id)
```

**FIGURE 3-123** LMUPDEF syntax
Parameters

**DATASET or DSN**

specifies the name of the data set containing the LMUPATH statements to be processed and, optionally, an OPTION TITLE statement.

---

**Note** –

- The definition data set may contain VOLATTR, UNITATTR, TAPEREQ, LMUPATH, and OPTION TITLE statements, but only LMUPATH and OPTION TITLE statements are processed.
- If any other statement is encountered, an error message is issued and the statement is ignored.
- See “OPTION TITLE Control Statement” on page 501 for more information about the OPTION TITLE control statement.

`dataset.name`

the name of the data set containing the LMUPATH address parameters. If the data set name includes a member name, `dataset.name` must be enclosed in quotes. For example,

```plaintext
DATASET ('YOUR.DSN(MEMBER)')
```

**VOLUME**

optionally, specifies the serial number of the DASD volume on which the data set resides. This parameter is optional. Specify the VOLUME parameter if the data set is not cataloged, or if a data set on a volume other than the volume indicated by the catalog is to be used.

`volser`

the volume serial number for the definition data set.

**UNIT**

optionally, specifies the unit where the definition data set is located.

`unitname`

the unit name. If the definition data set is not cataloged and this parameter is omitted, a unit name of SYSALLDA is the default.

**HOSTID**

optionally, limits the execution of this control statement to the specified hosts. If one of the specified hostids matches the host executing this control statement, the control statement is executed for that host. Otherwise, it is ignored. If this parameter is omitted, the control statement is executed on all hosts.

This parameter is valid only for use in PARMLIB, so that multiple systems can share a PARMLIB member containing TAPEREQ, VOLATTR, UNITATTR, or LMUPATH statements for different releases of HSC. If entered from the console, message SLS0018I is issued.)

`host-id`

the name of one or more hosts from which to execute this control statement. Multiple hosts must be separated by commas.
LMUPATH Control Statement

The LMUPATH control statement defines network LMU/Library Controller (LC) attachments. It is loaded by the LMUPDEF command.

**Note** – If you are using the SL3000 or SL8500 partitioning feature, the PARTID parameter connects to a specific partition defined by the SL3000 or SL8500 library for the HSC host group. Refer to the publication *Configuring HSC and VTCS* for information about how to use the partitioning feature.

### Syntax

![Figure 3-124: LMUPATH control statement syntax](image)

**Parameters**

**ACS**

  specifies the ACS name.

  **aa**

  the decimal ACSid value (00 through 99) to identify the LMU(s) used to communicate with a HSC.

**LMUADDR**

  identifies an LMU/Library Controller (LC) by host name or IP address, for each ACS. To designate a single LMU/LC environment, specify one IP address or host name. To specify a dual LMU/LC environment or a dual IP connection to an SL8500, enter an additional IP address and/or host name.

**Note** – The HSC automatically detects the type of connection, dual LMU for a 9330 or dual IP for an SL8500 library.

Users can intermix host name and IP addresses in one LMUPATH control statement. Each parameter entered must represent a different IP address.

**lmu_hostname**

  a host name for the TCP/IP connection. The host name can be up to 24 characters long. The first character must be alphabetic.

**nnn.nnn.nnn.nnn**

  an IP address for the LMU/LC. A maximum of 32 IP addresses can be specified.
PARTID

defines a partition ID for each ACS.

**Note** – A partitioned SL3000 or SL8500 cannot use the multiple TCP/IP connection feature since partitioning applies only to a single SL3000 or SL8500 box.

00n

a partition ID from 001 to 999.

**Note** –
- All three characters must be entered for the partition ID.
- For this release, only IDs 001 through 008 are supported.

PING

specifies the number of minutes in between requests sent from the HSC to the LMU. These requests are to keep the connection active, which prevents a firewall from closing the connection due to inactivity.

**tt**

the time in minutes from 00-99. The default is 5 minutes if this parameter is not defined, and entering 00 turns off this feature.
LOGUTIL

Interfaces:
SLUADMIN utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The LOGUTIL command initiates the CDS recovery process for VTCS. It is used in the following scenarios:

■ The CDS has become unusable or corrupt and MVCs used since the date of the CDS backup need to be identified for MVCAUDIT purposes.
■ A VTSS has suffered a catastrophic data loss.
LOGUTIL calls the module that analyzes the input log files, and calls a recovery module to perform the appropriate recovery actions.

Additionally:

■ The LOGUTIL FOR_LOSTMVC statement recovers VTVs that resided on a lost or damaged MVC.
■ The LOGUTIL GENAUDIT statement initiates a re-synchronization of the CDS to VSM via MVCAUDIT statements.
■ The LOGUTIL_LOCATE_VTV statement recovers older versions of VTVs.
■ The LOGUTIL UNDELETE statement recovers deleted VTVs.
Syntax

![LOGUTIL syntax diagram](image)

**Parameters**

**LOGDD**
- specifies the DD name of the input log data sets.
  - **ddname**
    - the DD name.

**FROMDATE**
- optionally, specifies a starting date for logged events.
  - **yyyy-mm-dd**
    - the starting date.

**FROMTIME**
- optionally, specifies a starting time for logged events.
  - **hh:mm:ss**
    - the starting time. The default is 00:00:0.

**Note** — For FROMDATE and FROMTIME, specify local dates/times as seen from the MVS system on which LOGUTIL runs.
TODATE
optionally, specifies an ending date and time for logged events.

\texttt{yyyy-mm-dd}
the ending date.

TOTIME
optionally, specifies an ending time for logged events.

\texttt{hh:mm:ss}
the ending time. The default is 00:00:01.

\textbf{Note} – For TODATE and TOTIME, specify local dates/times as seen from the MVS system on which LOGUTIL runs.

COMMANDS
optionally, specifies the DD name of a data set that contains recovery commands.

\texttt{ddname}
the DD name.
LOGUTIL FOR_LOSTMVC Statement

The LOGUTIL FOR_LOSTMVC statement recovers VTVs that resided on lost or damaged MVCs.

Syntax

```
FOR_LOSTMVC MVC(volser, volser-range, volser-list)
VTV(volser, volser-range, volser-list)
SCRATCH
COMMANDS(ddname)
```

Parameters

**MVC**

specifies the MVC(s) to be recovered. You can specify a maximum of 1000 MVCs.

*volser, volser-range, volser-list*

the volser, volser range, or volser list to be processed.

**VTV**

optionally, specifies specific VTV(s) to be recovered. You can specify a maximum of 300,000 MVCs.

Specified VTVs must reside on one or more of the recovery MVCs to be processed.

When this parameter is coded, only VTVs specified are recovered (if they exist on the recovery MVCs).

*volser, volser-range, volser-list*

the volser, volser range, or volser list to be processed.

This parameter behaves as a filter. If VTVs are specified that are **not** on the specified MVCs, they will **not** be recovered and will not be listed in the report output.

**SCRATCH**

optionally, specifies to specify scratch VTVs. By default, scratch VTVs are not processed as part of the recovery.
COMMANDS

optionally, specifies the DD name of a data set that includes the recovery commands created when the COMMANDS parameter is specified on the LOGUTIL command.

`:ddname`

the DD name.

---

**Note** – The FOR_LOSTMVC COMMANDS parameter works with the LOGUTIL COMMANDS parameter as follows:

- If you specify LOGUTIL COMMANDS, the FOR_LOSTMVC statement outputs recovery commands to the specified data set even if you did not specify GENAUDIT COMMANDS.
- If you specify COMMANDS on both LOGUTIL and FOR_LOSTMVC, recovery commands are only output to the FOR_LOSTMVC COMMANDS data set.
LOGUTIL GENAUDIT Statement

The LOGUTIL GENAUDIT statement initiates a re-synchronization of the CDS to VSM via MVCAUDIT statements that are generated when the COMMANDS parameter is specified with the LOGUTIL command. The LOGUTIL GENAUDIT statement identifies MVCs for input to MVCAUDIT.

Syntax

FIGURE 3-127 LOGUTILITY GENAUDIT statement syntax

Parameters

COMMANDS

optionally, specifies the DD name of a data set that includes the recovery commands created when the COMMANDS parameter is specified on the LOGUTIL command.

\texttt{ddname}

the DD name.

\textbf{Note} – The GENAUDIT COMMANDS parameter works with the LOGUTIL COMMANDS parameter as follows:

- If you specify LOGUTIL COMMANDS, the GENAUDIT statement outputs recovery commands to the specified data set even if you did not specify GENAUDIT COMMANDS.
- If you specify COMMANDS on both LOGUTIL and GENAUDIT, recovery commands are only output to the GENAUDIT COMMANDS data set.
LOGUTIL LOCATE_VTV Statement

The LOGUTIL LOCATE_VTV statement recovers a non-current version of a VTV.

Syntax

```
LOCATE_VTV
  VTV(volser, volser-range, volser-list)
  COMMANDS(ddname)
    VERSION(version)
    DATE(yyy-mm-dd) TIME(hh:mm:ss)
```

Parameters

**VTV**

optionally, specifies specific VTV(s) to be recovered. You can specify a maximum of 1000 VTVs.

*volser, volser-range, volser-list*

the volser, volser range, or volser list to be processed.

**COMMANDS**

optionally, specifies the DD name of a data set that includes the recovery commands created when the COMMANDS parameter is specified on the LOGUTIL command.

*ddname*

the DD name.

---

**Note** – The LOCATE_VTV COMMANDS parameter works with the LOGUTIL COMMANDS parameter as follows:

- **If you specify LOGUTIL COMMANDS, the LOCATE_VTV statement outputs recovery commands to the specified data set even if you did not specify LOCATE_VTV COMMANDS.**
- **If you specify COMMANDS on both LOGUTIL and LOCATE_VTV, recovery commands are only output to the LOCATE_VTV COMMANDS data set.**
VERSION
optionally, specifies the version of the VTV to recover.
Valid values are -1 to -99. The default is VERSION(-1), which is one version older than the current version.

**Note** — VERSION is mutually exclusive the DATE and TIME parameters.

DATE
optionally, specifies the date of the VTV version to recover. If you specify DATE, you must also specify TIME.

`yyyy-mm-dd`
the date, by year, month and day.

TIME
optionally, specifies the time of the VTV version to recover. If you specify TIME you must also specify DATE.

`hh:mm:ss`
the time, in hours minutes and seconds.
LOGUTIL UNDELETE Statement

The LOGUTIL UNDELETE statement recovers deleted VTVs.

Syntax

![Syntax Diagram]

**Parameters**

**VTV**

specifies the VTV(s) to be recovered. You can specify a maximum of 1000 VTVs.

*volser, volser-range, volser-list*

the volser, volser range, or volser list to be processed.

**COMMANDS**

optionally, specifies the DD name of a data set that includes the recovery commands created when the COMMANDS parameter is specified on the LOGUTIL command.

*ddname*

the DD name.

---

**Note** – The UNDELETE COMMANDS parameter works with the LOGUTIL COMMANDS parameter as follows:

- If you specify LOGUTIL COMMANDS, the UNDELETE statement outputs recovery commands to the specified data set even if you did not specify UNDELETE COMMANDS.
- If you specify COMMANDS on both LOGUTIL and UNDELETE, recovery commands are only output to the UNDELETE COMMANDS data set.
MERGEcds

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC at BASE service level only

Description
Use the MERGEcds command to do the following:
- Add or Change a configuration to reflect new ACSs or LSMs.
- Consolidate multiple CDSs into one CDS.
- Divide one CDS into multiple CDSs. MERGEcds copies volume information from each old CDS into the new CDS.
- Merge multiple ACSs into one ACS.
- Divide one ACS into multiple ACSs.
- Modify an ACSid and/or LSMid in order to renumber ACSs and LSMs.
- Modify VTSS names.
- Remove virtual or vault data from the CDS.
- Change the number of slots reserved for vaulted volumes.

Note – Before using MERGEcds, refer to the publication Configuring HSC and VTCS for detailed procedures used to run the utility.

Syntax

![MERGEcds syntax diagram]

Note: If ALL is not specified, MERGEcds reads the parameters specified in the SLSMERGE DD statement.
Parameters

VALIDate

optionally, specifies to only validate that the configurations to be reconfigured or merged are compatible, but not perform the operation. MERGEcds VALIDate reports any duplicate, in-transit, and errant volumes.

ALL

optionally, specifies to copy volume information for all ACSs and VTSSs from the "from" CDS to the "to" CDS. For a CDS merge, the ACS ID and LSM IDs, and VTSS names must match. You can also specify the ALL parameter to convert a CDS to extended format.

Note – ALL and SLSMERGE DD are mutually exclusive.

If you do not specify ALL, MERGEcds reads the parameters specified on the SLSMERGE control statement. These parameters specify the ACSs, LSMs, VTSSs, and Vaults whose volume information you want to merge or reconfigure.

See “SLSMERGE Control Statement” on page 416 for more information.

DELVirt

optionally, specifies that VTV and MVC volume information is not copied to the “to” CDS if both of the following are true:

- The VTVs and MVCs defined in the “from” CDS are either uninitialized or empty.
  
  An empty VTV is not VTSS resident and has no current MVC copies.
  
  An empty MVC contains no current VTVs and does not have an assigned STORCLAS. An MVC is empty when %USED is 0% and %AVAIL is 100% on an MVC Report or Q MVC display.
  
  Follow the procedure in the publication Managing HSC and VTCS for removing MVCs from the pool.

- The uninitialized or empty VTVs and MVCs in the "from" CDS are not defined in the "to" CDS. That is, no duplicate volser exist.

DELVirt has no effect unless ALLVIRT is specified on the SLSMERGE control statement.

NOMSG

optionally, suppresses message SLS4245I, which displays the volser of an MVC or VTV that was not copied to the “to” CDS.

NOMSG has no effect unless DELVirt is specified on the MERGECDS control statement and ALLVIRT is specified on the SLSMERGE control statement.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the MERGEcds JCL:

**SLSFCNTL**

specifies the current primary copy of the “from” HSC CDS.

**SLSFCTL2**

specifies the secondary copy of the CDS, if one is defined.

**SLSFSTBY**

optionally, specifies the standby copy of the CDS, if one is defined.

---

**Note** – If more than one of these statements are present, HSC determines the primary CDS from the Database Heartbeat (DHB) record of the “from” CDS. The “from” CDS is not modified. If a single CDS (SLSFCNTL) is specified, ensure that it is the primary CDS. No DHB validation occurs.
SLSMERGE Control Statement

The SLSMERGE control statement specifies the “from” and “to” ACSs, LSMs, or Vaults to use for a merge, and allows you to rename a VTSS in the Resident VTSS field.

Note –

- The SLSMERGE control statement is optional and is mutually exclusive with the MERGEcds ALL parameter.
- If you use SLSMERGE control statements, you must include MERGE statements that account for all data in the “from” CDS.

For example, if your “from” CDS contains real, virtual, and vault data, you must supply a control card for each of these types to specify whether they are to be copied to the “to” CDS. If you do not want a particular type of data to be copied to the “to” CDS, issue the appropriate “NO” parameter (NOREAL, NOVIRT, or NOVALT) to exclude it.

Syntax

For REAL volumes:

MERGE FACS(acs-id) — TACS(acs-id)  
     FLSM(lsm-id) — TLSM(lsm-id)  
     ALLREAL  
     NOREAL

If the CDS contains VIRTUAL data:

MERGE FVTSS(vtss-name) — TVTSS(vtss-name)  
     ALLVIRT  
     NOVIRT

If the CDS contains VAULT data:

MERGE FVAULT(vault-name) — TVAULT(vault-name)  
     ALLVALT  
     NOVAULT
Parameters

Caution – The “real” parameters (FACS, TACS, FLSM, TLSM) and “vault” parameters (FVAULT, TVAULT) act as selection criteria, while the “virtual” parameters (FVTSS, TVTSS) act only as rename criteria.

For REAL volumes:

FACS(acs-id)
    specifies the “from” ACS.
TACS(acs-id)
    specifies the “to” ACS.
FLSM(lsm-id)
    specifies the “from” LSM.
TLSM(lsm-id)
    specifies the “to” LSM.

ALLREAL
    Merge all real data only.

NOREAL
    Do not merge real data.

If the CDS contains VIRTUAL data:

FVTSS(vtss-name)
    specifies the “from” VTSS name.
TVTSS(vtss-name)
    specifies the “to” VTSS name.

Caution – You cannot use MERGEcds to remove data for certain VTSSs from the CDS. FVTSS and TVTSS act only as rename criteria. When these parameters are specified, ALLVIRT is implied.

For example:
MERGE FVTSS(VTSS18) TVTSS(VTSS17)

In this example, all VTV records are copied to the new CDS, but the Resident VTSS field is changed from VTSS18 to VTSS17. All VTSSs not specified in these statements are automatically merged to the same-named VTSS in the new CDS.

ALLVIRT
    Merge all virtual data only.

NOVIRT
    Do not merge virtual data.
If the CDS contains VAULT data:

FVAULT(vault-name)
    specifies the “from” vault.
TVAULT(vault-name)
    specifies the “to” vault.

ALLVAULT
    Merge all vault data only.

NOVAULT
    Do not merge vault data.
MERGMFST

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The MERGMFST command merges multiple manifest files produced by EXPORT into a single file.

Syntax

```
MERGMFST MERGEIN(manifin) MERGEOUT(manifout)
```

FIGURE 3-132 MERGMFST syntax

Parameters

MERGEIN
specifies the DD statement for one or more input manifest files.

```
manifin
```
the DD name.

MERGEOUT
specifies the DD statement for the merged manifest file.

```
manifout
```
the DD name.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the MERGMFST JCL:

`manifin DD`

DD statement for the input manifest file(s).

`manifout DD`

DD statement for the merged manifest file.
MGMTDEF

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The MGMTDEF command loads the following control statements from a specified definition data set:
- MGMTclas
- MIGRSEL
- MIGRVTV
- MVCATTR
- STORclas
- STORLST
- STORSEL
- VTSSLST
- VTSSSEL

Note – When HSC/VTCS is active and the MGMTDEF command is issued to re-load MGMTclas control statements, the ‘changed’ control statements only affect newly created VTVs. Additional action is required to apply the changes to existing VTVs.

Syntax

FIGURE 3-133 MGMTDEF syntax
Parameters

**DATASET** or **DSN**

specifies the definition data set that contains the MGMTclas and STORclas statements to load.

*dataset.name*

the data set name.

**VOLume**

optionally, specifies the DASD volume where the definition data set resides. This parameter is optional, unless the data set is not cataloged, or the data set resides on a volume other than the volume indicated by the catalog.

*volser*

the DASD volser.

**UNIT**

optionally, specifies the DASD device where the definition data set resides.

*unitname*

the DASD unit name. If the definition data set is not cataloged and this parameter is omitted, the unit name defaults to SYSALLDA.

**HOSTID**

optionally, specifies the host for execution of the MGMTDEF command. This parameter is only valid when MGMTDEF is specified as a PARMLIB control statement.

*host-id*

the name of one or more hosts from which to execute the MGMTDEF command. Multiple hosts must be separated by commas.
MGMTclas Control Statement

The MGMTclas control statement defines a VSM Management Class. It is loaded by the MGMTDEF command.

**Note –**

- By default, advanced VSM management features are automatically enabled. The FEATures command, included in previous ELS releases to enable these features, is no longer valid.
- ELS includes parameters designed to improve migration control. If you choose not to use these features, refer to the *ELS Legacy Interfaces Reference* for information about existing legacy MGMTclas parameters.
- When HSC/VTCS is active and the MGMTDEF command is issued to re-load MGMTclas control statements, the ‘changed’ control statements only affect newly created VTVs. Additional action is required to apply the changes to existing VTVs. For example:
  - If you change the IMMDELAY value, you must recycle the HSC to apply the change to existing VTVs.
  - If you change the MIGpol value from 1 storage class to two, you must recall the VTV to allow for creation of the second migrated copy.
Syntax

FIGURE 3-134 MGMTclas control statement syntax
Parameters

NAME

specifies the name of the Management Class.

*mgmt-class-name*

the Management Class name. This name must be 1 to 8 alphanumeric characters beginning with an alpha character and must follow SMS naming conventions.

ACSlst

optionally, specifies the ACSs from which RTDs and MVCs are selected.

If not specified, the default is the ACS specified on the CONFIG DEFLECTACS parameter.

See DUPlex, below, for information about using the DUPlex and ACSlist parameters.

*acs-id | acs-id,acs-id*

either one or two ACS IDs. An ACSid is a two digit decimal ACS identifier from 00-99.

ARCHAge

optionally, specifies the age (in days) of a VTV before it is archived as specified by ARCHPol. If you specify ARCHAge, you must specify ARCHPol.

This parameter is optional; there is no default value. Valid values are 1 to 999.

*nnn*

the VTV age in days.

ARCHPol

optionally, specifies up to four Storage Classes that specify the ACS and media type of the archive MVCs. If you specify:

- One Storage Class, VTCS archives one copy of a VTV.
- Multiple Storage Classes (with different ACS values, different MEDIA values, or both), VTCS archives multiple copies of the VTV to different MVCs in different ACSs.
- Multiple Storage Classes with identical ACS and MEDIA values, VTCS archives multiple copies of the VTV to the same ACS and media type but to different MVCs.

**Note** – Multiple Storage Classes on ARCHPol also affects how VTV recall, MVC space reclamation, and VTV consolidation function:

This parameter is optional; there is no default value. If you specify ARCHPol, you must specify ARCHAge.

*stor-clas-name1...stor-clas-namen*

the names of one or more Storage Classes that you defined on the STORclas control statement. Greater than two copies requires you to specify CDSLEVEL(V6ABOVE) or CDSLEVEL(V6ABOVE) on the CONFIG statement.
CONSRC

optionally, specifies the Storage Class that species a preference for the source MVC ACS and media for consolidation of VTVs that are migrated and copied to multiple MVC locations or media types. If the MVC in the specified Storage Class is unavailable, and the specified Storage Class is not the last (in order specified in the migration policy), VTCS uses the MVC associated with the last Storage Class. If the MVC in the specified Storage Class is unavailable and the specified Storage Class is the last (in order specified in the MIGpol parameter), VTCS uses the MVC associated with the previous Storage Class (in order specified in the MIGpol parameter).

stor-class-name

the name of a Storage Class that you defined on the STORclas control statement.

CONTGT

optionally, specifies the Storage Class that determines the output MVC ACS and media for VTV consolidation. Note that the media preferencing is in the opposite order of the list of media types specified on the Storage Class.

This parameter is optional; there is no default value. If you do not specify a value for CONTGT, VTCS selects the output MVC as follows:

■ For single-ACS and dual-ACS configurations, the media selection order for VTV consolidation.
■ For multiple ACS systems, VTCS selects MVCs from the default ACS specified by the CONFIG DEFLTACS parameter.

stor-class-name

the name of a Storage Class that you defined on the STORclas control statement.
DELSCR
optionally, specifies whether VSM deletes scratched VTVs.

NO
Do not delete scratched VTVs (the default).

YES
Delete scratch VTVs unless this would cause a processing delay due to unavailable resources.

FORCE
Delete scratch VTVs and wait for access to any resources that are required. This may cause a processing delay.

Caution – When you scratch a VTV with DELSCR YES attribute, **VSM erases the VTV data at scratch synchronization time**, which eliminates the ability “unscratch” a VTV to recover data!

Also note that when using HSC to perform scratch synchronization, **it is possible that a volume that is scratch** in the TMC at the beginning of scratch synchronization run and also scratch in the CDS from the previous scratch update run (and thus is in the list for HSC to scratch in the CDS) is accessed by a job during the scratch update run and written to and **made non-scratch** by the TMS in the TMC. **In this case, it is still possible for HSC to scratch the volume** because it was in the originally extracted list of volumes to be scratched. Therefore, Oracle **strongly recommends** that you **do not** run any jobs that use scratches during HSC scratch synchronization. See “**Scratch Conversion Utility (SLUCONDB)**” on page 680 for more information about HSC scratch synchronization with the Scratch Conversion Utility (SLUCONDB).

Refer to the **LCM User’s Guide** for more information about LCM scratch synchronization with the SYNCVTV function.

DISCARD
optionally, specifies the discard time in hours. This value represents the time after a VTV is dismounted that the VTV is kept in the buffer. After this time value expires, the VTV is preferred for deletion from the VTSS buffer if all required copies of the VTV exist on MVCs.

\[ nnnn \]
time in hours. Valid values are 0 to 9999. The default is 9999.

Note –
- When IMMEDmig is specified, DISCARD is not used for immediate migration processing. It is only applicable for AUTO migration requests.
- If RESTIME is also specified for a VTV, it overrides the DISCARD value.
**DUPlex**

optionally, specifies whether VSM will migrate two copies of the VTV to two MVCs.

---

**Note** – DUPlex and MIGpol are mutually exclusive.

---

**NO**

Do not duplex the VTV (the default).

**YES**

Duplex the VTV.

The following table describes possible scenarios using the DUPlex and ACSlist parameters:

<table>
<thead>
<tr>
<th>DUPlex Setting</th>
<th>ACSlist Setting</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>two ACSs</td>
<td>VSM migrates the VTVs to two MVCs, one in each ACS. (This scenario is the normal one for duplexing to two ACSs.)</td>
</tr>
<tr>
<td>YES</td>
<td>one ACS</td>
<td>VSM migrates the VTVs to two MVCs in the ACS specified</td>
</tr>
<tr>
<td>NO</td>
<td>two ACSs</td>
<td>VSM ignores the DUPlex policy and migrates the VTVs to two MVCs, one in each ACS.</td>
</tr>
<tr>
<td>NO</td>
<td>one ACS</td>
<td>VSM migrates the VTVs to one MVC in the ACS specified</td>
</tr>
</tbody>
</table>
MIGpol

optionally, specifies up to four Storage Classes that specify the ACS and media type of migration MVCs.

**Note** – DUPlex and MIGpol are mutually exclusive.

If you specify:

- One Storage Class, VTCS migrates one copy of a VTV.
- Multiple Storage Classes (with different ACS values, different MEDIA values, or both), VTCS makes multiple copies the VTV to different MVCs in different ACSs.
- Multiple Storage Classes with identical ACS and MEDIA values, VTCS makes multiple copies of the VTV to the same ACS and media type but to different MVCs.

**Note** – Multiple Storage Classes on MIGpol also affects how VTV recall, MVC space reclamation, and VTV consolidation function.

This parameter is optional; there is no default value.

```
s1 | s1,s2 | s1,s2,s3 | s1,s2,s3,s4
```

the names of up to 4 Storage Classes that you defined on the STORclas control statement. Greater than two copies requires you to specify CDSLEVEL(V6ABOVE) or greater on the CONFIG statement.

**Note** – The CONFIG GLOBAL REPLicat parameter specifies when to replicate a VTV (always, or only when changed while mounted).

EEXpol

optionally, specifies the storage classes for electronic export.

```
s1 | s1,s2
```

a maximum of two Storage Classes that specify the TAPEPLEX parameter. If these storage classes do not specify the TAPEPLEX parameter, an error condition results.

**Note** –

- If there are two TAPELEX storage classes, then they must specify different destination TapePlex names.
- A warning will be generated if the two TapePlex storage classes are specified with the SYNC=YES parameter. It is only possible to synchronously export to one other TapePlex.
- If there is a conflict, electronic export functionality takes precedence over replication with a cluster.
- If either one of the storage classes referenced contains the THISPLEX name, then the storage class is silently ignored. This allows common storage class definitions to be applied across TapePlexes.
IMMDELAY

optionally, specifies the immediate migration delay time; the amount of time after VTV dismount that the migration should be queued for action.

This allows VTVs used in multi-step jobs to remain resident for a specified time before being processed for migration.

\[ \text{nnnn} \]

the immediate migration delay time in minutes. Valid values are 0 to 9999 (the default).

If IMMDELAY=9999 then immediate migration does not occur. Migration and deletion is handled via auto/command migration.

When this value is specified, MIGRSEL and MIGRVTV have no influence on migration control.

RESTIME and DISCARD parameter values represent buffer management priorities:

- If the IMMDELAY value is less than the RESTIME value, keep the VTD in the VTSS as a priority.
- If the IMMDELAY value is greater than the RESTIME value but less than the DISCARD value, manage the buffer according to LRU (default state).
- If the IMMDELAY value is greater than the DISCARD value, remove the VTD from the VTSS as a priority.

The IMMDELAY parameter is designed to replace the IMMEDmig parameter, described in the *ELS Legacy Interfaces Reference*. These parameters are mutually exclusive. The following table describes equivalent values:

<table>
<thead>
<tr>
<th>IMMDELAY/DISCARD values</th>
<th>Equivalent IMMEDmig value</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMMDELAY(1-9998)</td>
<td>None</td>
<td>Delay migration for the specified number of minutes.</td>
</tr>
<tr>
<td>IMMDELAY(9999)</td>
<td>IMMED(NO)</td>
<td>VSM does not immediately migrate the VTV, but migrates it according to standard VSM migration criteria. MIGRSEL and MIGRVTV have no influence on migration control.</td>
</tr>
<tr>
<td>IMMDELAY(0) DISCARD(9999)</td>
<td>IMMED(KEEP)</td>
<td>VSM immediately migrates a VTV and keeps a copy resident on the VTSS until the VTV become eligible for deletion.</td>
</tr>
<tr>
<td>IMMDELAY(0) DISCARD(0)</td>
<td>IMMED(DELETE)</td>
<td>VSM immediately migrates the VTV and then deletes it from the VTSS.</td>
</tr>
</tbody>
</table>
MAXVtvsz

optionally, specifies the maximum size for VTVs in this Management Class. Valid values for this parameter depend on both the CDS level and the microcode levels of the applicable VTSSs.

400

400MB. This is the default.

800

800MB. The CDS must be at a E level or above.

2000

2GB. The CDS must be at a G level or above.

4000

4GB. The CDS must be at a G level or above.

---

**Note –**

- The size of a VTV changes only after it goes through a scratch cycle. Therefore, if you change the Management Class and DISP=MOD, then it will still retain the original size.

- If you specify a VTV size that is not supported by the configuration, VTCS issues warning messages and MAXVtvsz defaults to the largest VTV size supported by the configuration.

- MAXVtvsz does not apply to VSM2s.

- MAXVTVSZ(2000 | 4000) requires VSM4/VSM5 microcode D02.02.00.00 or VSM3 microcode N01.00.77.00. No installed option is required.

---

NOMIGRAT

optionally, specifies that VTVs in the Management Class are not candidates for migration, consolidation or export, but are candidates to reside on a tapeless VTSS. VTSS selection is changed to prefer tapeless VTSSs for VTVs in Management Classes with NOMIGRAT, and to disallow VTVs without NOMIGRAT from VTSSs with no RTDs.

NOMIGRAT is mutually exclusive with ACSLIST, IMMDELAY, DUPLEX, MIGPOL, ARCHAGE, ARCHPOL, RESTIME, CONSRC and CONTGT.
REPlicat

optionally, specifies whether VSM replicates the VTV.

NO

Do not replicate the VTV (the default).

YES

Asynchronously replicate the VTV.

YES_SYNC

Synchronously replicate the VTV.

Note – Synchronous replication must be enabled via the CONFIG GLOBAL SYNCHREP parameter. For more information, see “CONFIg GLOBAL Statement” on page 212.

RESTIME

optionally, specifies how long VTCS attempts to keep a VTV as VTSS-resident before becoming a preferred automatic migration candidate.

This parameter is optional; there is no default value. Valid values are 1 to 9999. Value 9999 specifies that the VTVs in this Management Class are resident permanently unless VTSS space management requires VTCS to automigrate the VTV and then delete it from the VTSS.

\[ nnnn \]

the residency time in hours.

Note –

- RESTIME and IMMEDmig(DELETE) are mutually exclusive.
- RESTIME takes effect when a VTV is created, and does not apply to a recalled VTV.
VTVPAGE

optionally, specifies that the page size used to store VTV data in the VTSS and on the MVCs. This setting only applies to 400 and 800 MB VTVs. If VTVPAGE is not specified on either the MGMTclas statement or the CONFIG GLOBAL statement, the default is STANDARD.

STANDARD

standard page size, which is compatible with all VSM3/VSM4 models and microcode levels.

LARGE

large page size, which can provide improved performance within the VTSS and for migrates and recalls. Large page size requires a G level CDS. For more information on CDS levels, see "CONFIG" on page 209. For 2 and 4 GB VTVs (MAXVtvsz 2000 or 4000) a VTVPAGE setting of LARGE is always used.

Note –

■ VTVPAGE does not apply to VSM2s. VTVPAGE(LARGE) requires VSM4/VSM5 microcode D02.02.00.00 or VSM3 microcode N01.00.77.00. No installed option is required.

■ MGMTCLAS VTVPAGE, if specified, overrides the CONFIG GLOBAL VTVPAGE value. If VTVPAGE is not specified on either the MGMTclas statement or the CONFIG GLOBAL statement, the default is STANDARD.

Caution –

■ The page size of a VTV can only be changed by a VTV scratch mount. Additional restrictions may also apply for scratch VTVs that were previously resident in a VTSS.

■ If you specify LARGE and the CDS level and/or VTSS microcode do not support LARGE, VTCS issues warning messages and VTVPAGE defaults to STANDARD.

■ If you specify STANDARD for 2 or 4 GB VTVs VTCS issues warning messages and defaults to LARGE.

■ Creating VTVs with large pages makes these VTVs unreadable in configurations that do not support large VTV pages.

■ The VTVPAGE valued specified for this Management Class overrides the global value specified on the CONFIG utility.
MIGRSEL Control Statement

The MIGRSEL control statement controls migration request settings for a Storage Class, VTSS, and/or host. It is loaded by the MGMTDEF command.

Syntax

```
MIGRSEL
  STORclas(stor-clas-name)
  VTSS(vtssname)
  HOST(host-id)
  FUNCTION(IMMED|AUTO|RECLAIM|DEMAND)
  IMMWAIT(nn)
  SCHPREF(n)
  SCHLIMIT(nn)
```

FIGURE 3-135 MIGRSEL control statement syntax

Parameters

**STORclas**

optionally, specifies a Storage Class to which the migration settings apply. If you do not specify a Storage Class, the statement applies to all Storage Classes.

`stor-clas-name`

the Storage Class name you defined on a STORclas control statement.

**VTSS**

optionally, specifies a VTSS to which the migration settings apply. If you do not specify a VTSS, the statement applies to all VTSSs.

`vtssname`

the VTSS name.

**HOST**

optionally, specifies one or more hosts to which the migration settings apply. Any hosts not specified on this parameter ignore the settings. If you do not specify one or more hosts, the settings apply to all hosts.

`host-id`

a host identifier (maximum 8 characters).
FUNCtion

optionally, specifies the type of migration to which the settings apply:

IMMED

migrations resulting from either of the following:
- MGMTclas IMMEDmig(KEEP)
- MGMTclas IMMEDmig(DELETE)

AUTO

automatic migrate to threshold migration processing.

RECLAIM

migrations resulting from MVC DRAIN or RECLAIM requests.

DEMAND

migrations resulting from a MIGRATE command or utility (demand migrations).

IMMWAIT

optionally, makes the MIGRSEL rule sensitive to the state of the current immediate migration work load. The specified value provides an immediate migration wait time or age, in minutes, that this MIGRSEL migration rule will apply to. This value is compared against the amount of time VTVs have been waiting for immediate migration to a particular storage class. If the amount of time (minutes) that VTVs have been waiting is less than or equal to the IMMWAIT value the MIGRSEL rule will apply.

\( nnn \)

the immediate migration wait time or age, in minutes. Valid values are 0 to 999. The default is 999.
- The default value of 999 makes the rule apply to all VTV wait times.
- A value of zero is used for applying MIGRSEL rules if immediate migration is not active.

SCHPREF

optionally, preferences automatic and immediate migration per storage class.

MIGRSEL VTSS and HOST allow you to specify the VTSS and host to which the preferencing applies.

\( n \)

the preferencing value. Valid values are 0 to 9. The default is 0.
- Higher values can produce quicker migration times, but may not optimize MVC usage.
- Lower values may produce slower migration times, but may optimize MVC usage.

The MIGRSEL SCHPREF setting may be affected by the number of RTDs available, the SCHLIMIT setting, and the GLOBAL MAXMIG parameter for the VTSS.
SCHLIMIT

optionally, de-preferences migration per Storage Class.

`nn`

the preferencing value. Valid values are 0 to 99. The default is 99, which indicates no limit, up to the VTSS MAXMIG value.

Lower values de-preference migration, and you can specify automatic, immediate, demand, and reclaim migrates. Lower values can do the following:

- Optimize MVC usage.
- Preference migration to other Storage Classes.
- Limit migration to keep RTDs available for auto recalls.
- Reduce MVC swapping when workloads change.

For auto and immediate migration processing, MIGRSEL SCHLIMIT de-preferences migration for the VTSS to storage class relationship. This comparison is not global and only effects requests driven by the individual VTCS host.

For demand migration requests, MIGRSEL SCHLIMIT will cause the request to be held if the scheduling of it would cause the number of globally active migration requests on the VTSS that satisfy the same FUNCTION and STORCLAS selection criteria to be exceeded. The migration requests will be released and an MVC picked once the constraint subsides.
MIGRVTV Control Statement

The MIGRVTV control statement controls individual VTV copies processed by immediate migration. It is loaded by the MGMTDEF command.

Syntax

![Diagram of MIGRVTV control statement syntax]

**Parameters**

MGMTclas

optionally, specifies a Management Class to which the migration settings apply. If you do not specify a Management Class, the statement applies to all Management Classes.

*mgmt-clas-name*

the name of a Management Class you defined on the MGMTclas control statement.

VTSS

optionally, specifies a VTSS to which the migration settings apply. If you do not specify a VTSS, the statement applies to all VTSSs.

*vtssname*

the VTSS name.

STORclas

optionally, specifies a Storage Class to which the migration settings apply. If you do not specify a Storage Class, the statement applies to all Storage Classes.

*stor-clas-name*

the name of a Storage Class you defined on the STORclas control statement.

IMMDELAY

**nnnn**

the number of seconds to delay the immediate migration.
IMMDELAY

optionally, specifies the immediate migration delay time; the amount of time after VTV dismount that the migration should be queued for action.

This allows VTVs used in multi-step jobs to remain resident for a specified time before being processed for migration.

nnnn

the immediate migration delay time in minutes. Valid values are 0 to 9999 (the default).

- If IMMDELAY=9999 then immediate migration does not occur. Migration and deletion is handled via auto/command migration.
  When this value is specified, MIGRSEL and MIGRVTV have no influence on migration control.
- If IMMDELAY=0 then immediate migration is scheduled immediately.
- If IMMDELAY is less than 9999 and DISCARD is greater than IMMDELAY then immediate migration occurs and deletion is deferred to auto/command migration.
- If IMMDELAY is less than 9999 and DISCARD is less than or equal to IMMDELAY then immediate migration and immediate deletion occur together.
- If auto migration encounters a VTV that has passed its DISCARD time, the VTV is moved to the front of the migration queue, and it will be processed first.

Note – See “MGMTclas Control Statement” on page 423 for information about the DISCARD parameter.
MVCATTR Control Statement

The MVCATTR control statement assigns a swap-to RTD device type to an MVC media name. When an error occurs while reading an MVC on an RTD, VTCS may swap the MVC to another RTD to retry the operation.

Syntax

```
MVCATTR MEDIA(media-name) SWAPTO(device-type)
```

FIGURE 3-137 MVCATTR control statement syntax

Parameters

MEDIA

specifies the MVC media name to which the attribute is assigned.

media-name

the MVC media name; see TABLE 3-9.

Note – Only one MVCATTR should be coded for each media-name.

SWAPTO

defines the RTD device type the MVC is swapped to (if possible).

device-type

the RTD device type; see TABLE 3-9.

TABLE 3-9 Valid MVC Media Names and Compatible SWAPTO RTD Device Types

<table>
<thead>
<tr>
<th>Valid MEDIA Names</th>
<th>Compatible SWAPTO Device Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>STK1R</td>
<td>STK1RA34, STK1RB34, STK1RD34, STK1RDE4</td>
</tr>
<tr>
<td></td>
<td>Note: STK1RA34 and STK1RB34 devices are equivalent to VTCS, so you cannot ensure a swap to these specific device types.</td>
</tr>
<tr>
<td>STK1RC</td>
<td>STK1RC34, STK1RD34, STK1RDE4</td>
</tr>
<tr>
<td>STK1RD</td>
<td>STK1RD34, STK1RDE4</td>
</tr>
<tr>
<td>STK1RDE</td>
<td>STK1RDE4</td>
</tr>
<tr>
<td>STK2P</td>
<td>STK2PA34, STK2PB34</td>
</tr>
<tr>
<td>STK2PB</td>
<td>STK2PB34</td>
</tr>
<tr>
<td>T10000T1</td>
<td>T1A34, T1AE34, T1B34, T1BE34</td>
</tr>
<tr>
<td>T10000TS</td>
<td>T1A34, T1AE34, T1B34, T1BE34</td>
</tr>
<tr>
<td>T10000E1</td>
<td>T1AE34, T1BE34</td>
</tr>
</tbody>
</table>
## TABLE 3-9  Valid MVC Media Names and Compatible SWAPTO RTD Device Types

<table>
<thead>
<tr>
<th>Valid MEDIA Names</th>
<th>Compatible SWAPTO Device Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>T10000ES</td>
<td>T1AE34, T1BE34</td>
</tr>
<tr>
<td>T1B000T1</td>
<td>T1B34, T1BE34</td>
</tr>
<tr>
<td>T1B000TS</td>
<td>T1B34, T1BE34</td>
</tr>
<tr>
<td>T1B000E1</td>
<td>T1BE34</td>
</tr>
<tr>
<td>T1B000ES</td>
<td>T1BE34</td>
</tr>
</tbody>
</table>
STORclas Control Statement

The STORclas control statement defines a VSM Storage Class. It is loaded by the MGMTDEF command.

This statement can specify whether a VTV copy is to be written to:
- An MVC (with required attributes)
- The name of a remote TapePlex to which a copy of the VTV is to be exported. It also specifies whether a storage class uses partitioned media.
- The subsystem name of a VLE appliance.

Syntax

```
STORclas
  NAME(stor-clas-name)
```

Parameters

NAME

specifies the name of the Storage Class.

*stor-clas-name*

the Storage Class name. This name must be 1 to 8 alphanumeric characters beginning with an alpha character and must follow SMS naming conventions.

ACS

optionally, specifies the ACSs from which RTDs and MVCs are selected.

*acs-id*

a two digit decimal ACS identifier from 00-99.
STORMNGR

optionally, specifies the Subsystem Name of a VLE appliance. If the specified Subsystem does not exist, then any migrations fail and the VTVs are “stuck” in their source VTSS.

stormngr

a Subsystem name. For more information, refer to the publication Configuring the Host Software for VLE.

MEDIA

optionally, specifies a preference list of MVC media types. This list supersedes the default media selection list. Refer to the publication Configuring HSC and VTCS for more information.

list

preference list of media types.

MVCPOOL

optionally, specifies the Named MVC Pool from which volumes are selected. If you do not specify an MVC Pool name, the volumes are selected from the default pool (DEFAULTPOOL).

poolname

the name of an MVC Pool that you defined on the MVCPool control statement.

MIGRATE

optionally, for Management Classes with REPLICA(YES) that reference this Storage Class, specifies the source VTSS (in a Cluster) for VTV migration. This parameter cannot be specified if FROMLST is specified.

RECEIVER

VTSS that receives the replicated VTV (the default), which is the Secondary VTSS in a Primary-Secondary Cluster.

SENDER

VTSS that sends the replicated VTV, which is the Primary VTSS in a Primary-Secondary Cluster.

EITHER

Either VTSS in a Peer-to-Peer Cluster. The source VTSS is randomly selected.

TAPEPLEX

optionally, specifies the name of the TapePlex to which a copy of the VTV is exported. At least one VTSS in the configuration must also specify this name in a CLINK definition.
SYNC

optionally, specifies whether the exporting of a VTV to TapePlex is performed synchronously.

NO

export of VTV to TapePlex is performed asynchronously. This is the default.

YES

export of VTV to TapePlex is performed synchronously.

If a VTV is specified with two storage classes that specify synchronous exporting, only the first one is honored while the second is exported asynchronously. Likewise, if synchronous replication is specified in the management class, then synchronous exporting is ignored.

FROMLST

optionally:

- for Management Classes with REPLICAT(YES) that reference this Storage Class, specifies the source VTSS (in a Cluster) for VTV migration.
- for export of a VTV to another TapePlex, specifies the source VTSS for the export. Specification of this parameter for a TapePlex storage class also implies that any replication processing within the TapePlex is completed before the export is performed.

vtss-list-name

the name of the VTSSLST statement that contains a list of VTSS names. Either the migrate or export from this storage class will be directed from one of the VTSSs in this list.

- If only one of the VTSSs exists in the list, it is used as the source.
- If both VTSSs are in the list, the VTSS with the highest priority is used as the source.
- If both VTSSs have equal priority, the source VTSS is randomly selected.

INPLACE

optionally, locally specifies whether the storage class can migrate to and process MVCs in partitioned format.

If this parameter is not specified, the storage class inherits the INPLACE value specified on the CONFIG RECLAIM statement. See “CONFIG RECLAIM Statement” on page 219 for more information.

YES

The storage class formats and processes all eligible MVCs as partitioned.

NO

The storage class does not format MVCs as partitioned.

Note –

- The CDS must be at H level and dynamic reclaim support must be enabled on the CONFIG RECLAIM configuration statement before any STORCLASS INPLACE parameter is accepted or displayed.
- Only T10000B media is supported for dynamic reclaim. INPLACE is only valid if the storage class has access to this media. Sport cartridges are not supported in partitioned format.
STORLST Control Statement

The STORLST control statement specifies a list of Storage Classes and their corresponding preferencing. It is loaded by the MGMTDEF command.

Syntax

```
STORLST NAME(stor-list-name) STORclas(stor-clas-name)
PRIority(order)
```

**Parameters**

**NAME**

specifies the name of the Storage Class list.

*stor-list-name*

the list name (a maximum of 8 alphanumeric characters).

**STORclas**

specifies one to four Storage Classes on the Storage Class list.

*stor-clas-name*

the name of a Storage Class that you defined on the STORclas control statement.

**PRIority**

a list of priorities corresponding to the Storage Classes specified on the STORclas parameter.

*order*

the specified priority. Valid values are 0 to 9 (highest priority), and the default is 5. You can assign the same priority to multiple Storage Classes. For example, if two Storage Classes both have a priority of 9, VTCS selects randomly from the two. A 0 (zero) priority specifies that VTCS selects the Storage Class only if all other Storage Classes are unavailable (for example, no free MVCs available for write).

The Storage Class list is further qualified by the criteria specified by the MGMTclas and VTSS parameters of the STORSEL statement.
STORSEL Control Statement

The STORSEL control statement defines a Storage Class usage rule that applies to the Storage Class list and its preferencing specified on a referenced STORLST control statement. It is loaded by the MGMTDEF command.

Syntax

![Syntax Diagram]

Parameters

**FUNCTION**

optionally, specifies the VSM function to which the rule applies. Only one function can be specified per statement. If this parm is omitted, it applies to all functions. If all functions do apply, then it makes economical sense to omit the FUNCTION parm, thus reducing the number of statements to 25% of what would otherwise need to be coded.

**function**

the function name, as described in **TABLE 3-10**.

**TABLE 3-10** STORSEL Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIFIC</td>
<td>Applies to automatic recall of a specific VTV for mounting. The list of Storage Classes is determined by the specified STORLST statement. This list influences the list of RTDs eligible to mount the MVC in the Storage Class to recall the VTV.</td>
</tr>
<tr>
<td>RECALL</td>
<td>Applies to demand recall of a specific VTV for mounting. The list of Storage Classes is determined by the specified STORLST statement. This list influences the list of MVC copies of a VTV to select the optimal MVC for recall of the VTV.</td>
</tr>
<tr>
<td>EXPORT</td>
<td>Applies to export. The list of Storage Classes is determined by the specified STORLST statement. This list influences the list of MVC copies of a VTV to select the optimal MVC for export of the VTV.</td>
</tr>
<tr>
<td>CONSOLID</td>
<td>Applies to consolidate. The list of Storage Classes is determined by the specified STORLST statement. This list influences the list of MVC copies of a VTV to select the optimal MVC for consolidation of the VTV.</td>
</tr>
</tbody>
</table>
HOST
optionally, specifies one or more hosts to which the rule applies. If this parameter is used, any hosts not specified on this parameter ignore the rule. If the parameters is not used the statement applies to all hosts.

host-id
a host identifier (maximum 8 characters).

MGMTclas
optionally, specifies a Management Class.

mgmt-class-name
the name of a Management Class that you defined on the MGMTclas control statement.

VTSS
optionally, specifies a VTSS.

vtss-name
the VTSS name, as follows:
- For automatic recalls, the VTSS where the recall is performed.
- For all other functions, the VTSS where the VTV previously resided. This may be determined from the VTSS value shown in the Display VTV output.

STORLST
specifies a list of Storage Classes and their corresponding preferencing.

stor-list-name
the name of a Storage Class list that you defined on the STORLST control statement.

Note – The Storage Class list specified on the STORLST parameter is further qualified by the criteria specified by the MGMTclas and VTSS parameters.
VTSSLST Control Statement

The VTSSLST control statement specifies a list of VTSSs and their corresponding preferencing. It is loaded by the MGMTDEF command.

VTCS first determines a system priority for each VTSS, based on various factors. For example, whether the VTSS can service the request, whether the required resources are online/available or whether the VTSS is in a compromised state (high DBU).

When more than one VTSS has the highest system priority, VTSSLST priorities can be used to influence which VTSS is used. However, VTSSLST is only considered when there is an obvious choice of VTSSs with equal abilities to service a request.

Syntax

![Syntax Diagram]

**Parameters**

**NAME**

specifies the name of the VTSS list.  
vtss-list-name  
the list name (a maximum of 8 alphanumeric characters).

**VTSS**

specifies one to eight VTSSs on the VTSS list.  
vtss-name  
a VTSS name.
PR1ority

optionally, lists priorities corresponding to the VTSS names specified on the VTSS parameter.

order

the specified priority. Valid values are 0 to 9 (highest priority), and the default is 5. You can assign the same priority to multiple VTSSs.

Within a set of VTSSs with the highest system priority:

- If two or more VTSSs have the same highest VTSSLST priority, VTCS selects randomly from the two (according to factors such as DBU and VSM model).
- A 0 (zero) priority specifies that VTCS selects the VTSS only if all other VTSSs are unavailable (for example, unavailable due to DBU > 95%, VTSS offline, or RTDs offline).

Note – The VTSS list specified on the VTSSLST parameter is further qualified by:

- The function specified on VTSSSEL statement.
- The criteria specified by the MGMTclas, VTSS, STORclas, and MVCpool parameters of the VTSSSEL statement.
- Other factors such as RTD connectivity.

For example, in scratch allocation, the list of VTSSs is reduced to the VTSSs that can meet Management Class policies (such as REPLICAT=YES). If the list of VTSSs is reduced to zero, the request fails.
VTSSSEL Control Statement

The VTSSSEL control statement defines a VTSS usage rule that applies to the VTSS list and its preferencing specified on a referenced VTSSLST control statement. It is loaded by the MGMTDEF command.

**Note** – VTSSSEL statements are honored only if the VTVs on the MVCs being processed are not resident in a VTSS. If the VTVs are resident, then VTCS ignores the VTSSSEL statement and migrates the VTV from the VTSS where it is resident.

Syntax

```
FIGURE 3-142 VTSSSEL control statement syntax
```
Parameters

**FUNCTION**

optionally, specifies the VSM function to which the rule applies. Only one function can be specified per statement. If this parm is omitted, it applies to all functions. If all functions do apply, then it makes economical sense to omit the FUNCTION parm, thus reducing the number of statements to 25% of what would otherwise need to be coded.

**function**

the function name, as described in TABLE 3-11.

<table>
<thead>
<tr>
<th>Function</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCRATCH</td>
<td>Applies to non-specific (scratch) VTV allocation. The list of eligible VTDs is determined by the specified VTSSLST statement. The PREVVTS, STORclas and MVCpool parameters do not apply.</td>
</tr>
<tr>
<td>SPECIFIC</td>
<td>Applies to specific VTV allocation. The list of eligible VTDs is determined by the specified VTSSLST statement. The STORclas and MVCpool parameters do not apply.</td>
</tr>
<tr>
<td>RECALL</td>
<td>Applies to demand recall. The list of eligible VTSSs for recall is determined by the specified VTSSLST statement. The VTSS list also determines the search order for an RTD to service the MVCs selected for recall (derived from the VTVs selected). The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>RECLAIM</td>
<td>Applies to reclaim. The list of eligible VTSSs for reclaim is determined by the specified VTSSLST statement. The VTSS list also determines the search order for an RTD to service the MVCs selected for reclaim. The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>DRAIN</td>
<td>Applies to drain. The list of eligible VTSSs for drain is determined by the specified VTSSLST statement. The VTSS list also determines the search order for an RTD to service the MVCs selected for drain. The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>MOVEVTVS</td>
<td>Applies when an ARCHIVE or RECONCIL command has the MOVEVTV parameter specified. The list of eligible VTSSs for moving the VTVs via is determined by the specified VTSSLST statement. The VTSS list also determines the search order for an RTD to service the MVCs selected for processing. The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>AUDIT</td>
<td>Applies to MVC audit. The list of eligible VTSSs for audit is determined by the specified VTSSLST statement. The VTSS list also determines the search order for an RTD to service the MVCs selected for audit. The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>EXPORT</td>
<td>Applies to export. The list of eligible VTSSs for export is determined by the specified VTSSLST statement. VTSS list also determines the search order for an RTD to service the MVCs selected for export. The MGMTclas parameter does not apply.</td>
</tr>
<tr>
<td>CONSOLID</td>
<td>Applies to consolidate. The list of eligible VTSSs for consolidation is determined by the specified VTSSLST statement. VTSS list also determines the search order for an RTD to service the MVCs selected for consolidation. The MGMTclas parameter does not apply.</td>
</tr>
</tbody>
</table>
HOST

optionally, specifies one or more hosts to which the rule applies. If this parameter is used, any hosts not specified on this parameter ignore the rule. If the parameters is not used the statement applies to all hosts.

host-id

a host identifier (maximum 8 characters).

Note – The VTSS list specified on the VTSSLST parameter is further qualified by the criteria specified by the MGMTclas, VTSS, STORclas, and MVCpool parameters.

MGMTclas

optionally, specifies a Management Class.

mgmt-class-name

the name of a Management Class that you defined on the MGMTclas control statement.

PREVvtss

optionally, specifies a VTSS where a VTV:

■ Is or resident
■ Was migrated from

STORclas

optionally, specifies a Storage Class and applies only when MVCs are used to select VTSSs.

stor-clas-name

the name of a Storage Class that you defined on the STORclas control statement.

MVCpool

optionally, specifies a Named MVC Pool and applies only when MVCs are used to select VTSSs.

poolname

the name of an MVC Pool that you defined on the MVCPool control statement.

VTSSLST

optionally, specifies a list of VTSSs and their corresponding preferencing.

vtss-list-name

the name of a VTSS list that you defined on the VTSSLST control statement.
MIGrate

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The MIGrate command migrates VTVs to MVCs.

Syntax (Format 1)

![Diagram of MIGrate syntax (Format 1)]

FIGURE 3-143 MIGrate syntax (Format 1)
Parameters (Format 1)

VTVid
specifies the VTVs to migrate.

volser, vol-range, or vol-list
the volsers of one or more VTVs. You can also specify one or more ranges.

DSN
specifies data sets used to select VTVs to migrate.

name
the data set name. TABLE 3-12 describes the valid wild cards for data set names. You cannot address a member of a GDG using a wildcard.

TABLE 3-12  Valid Wildcards

<table>
<thead>
<tr>
<th>Wildcard</th>
<th>Stands for...</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>A qualifier or one or more characters within a qualifier. An asterisk can precede or follow a set of characters.</td>
</tr>
<tr>
<td>**</td>
<td>zero or more qualifiers. A double asterisk cannot precede or follow any characters; it must be preceded or followed by either a period or a blank.</td>
</tr>
<tr>
<td>% or ?</td>
<td>Exactly one alphanumeric or national character.</td>
</tr>
<tr>
<td>%% or ??</td>
<td>One to eight percent signs or question marks can be specified in each qualifier.</td>
</tr>
</tbody>
</table>

Note – Wildcard are only supported on MVS systems running DFSMS/MVS 1.4 or greater. At systems below this level the catalog search does not support wildcard.

MGMTclas
specifies one or more Management Classes that determine one or more VTVs to migrate.

mgmt-class-name 1 mgmt-class-list
the names of one or more Management Classes that you defined on the MGMTclas control statement; for more information, see “MGMTclas Control Statement” on page 423.

Note – MGMTclas, VTVid, and DSN are mutually exclusive.

DELETE
optionally, specifies whether VSM deletes VTVs from the VTSS after migrating the VTVs.

NO
do not delete VTVs from the VTSS after migrating the VTVs.

YES
delete VTVs from the VTSS after migrating the VTVs (the default).
**NOWAIT**

specifies that the utility does not wait for the operation to complete and returns after the request is submitted.

**Syntax (Format 2)**

![FIGURE 3-144 MIGrate syntax (Format 2)](image)

**Parameters (Format 2)**

**VTSS**

specifies one or more VTSSs to migrate to the specified threshold.

*name*

the names of one or more VTSSs.

**THRESHLD**

specifies that VTCS runs the VTSS space management/VTV migration cycle until VTSS space reaches the specified threshold. Valid values are 0 to 95%.

*value*

the threshold to migrate to (percent of VTSS space).
MNTD

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The MNTD command specifies how HSC processes mounts and dismounts of library volumes.

Syntax

![MNTD Syntax Diagram]

**FIGURE 3-145** MNTD syntax
Parameters

**AUtocln**
controls automated transport cleaning.

**Off**
disables the automated cleaning function. Off is the initial value for the HSC.

**ON**
enables the following HSC cleaning functions:
- the automated cleaning function, which detects when a transport requires cleaning and schedules the mount of a cleaning cartridge prior to the next volume mount
- the CLean command which is used to schedule the mount of a cleaning cartridge for a specified transport. See “CLEan” on page 204 for more information.

**Dismount**
specifies whether volumes are to be deleted automatically from the control data set when a dismount is requested in a manual mode LSM for a volume that was mounted by the robot before the LSM was modified offline.

**Auto**
indicates that volumes are to be automatically deleted from the control data set when a manual dismount is requested for a volume that was mounted by the robot. Auto is the initial value for the HSC.

**Manual**
directs the HSC to issue a message prompting the operator to decide whether the volume is to be deleted from the control data set when a manual dismount is requested for a volume that was mounted by the robot.

Setting Dismount to Manual is useful when an LSM is modified offline for only a short time. In this case, the operator can choose to not respond to the dismount message and leave the volume mounted on the transport. When the LSM is modified online the HSC re-drives the outstanding dismount request, causing the robot to dismount the volume and place it in a storage cell.
**EJctauto**

controls automatic ejection of cleaning cartridges that have exceeded their maximum use.

In a multi-host environment, the EJctauto setting for a given ACS should be the same on all hosts. EJctauto status is not shared among the HSCs on different hosts.

**ON**

directs the HSC to automatically eject cleaning cartridges that have exceeded the number of times they can be used (as specified by the MNTD MAXclean or VOLATTR MAXclean parameters). ON is the initial value for the HSC.

**MSg**
directs the HSC to prompt the operator to either eject an over use-limit cartridge from the ACS or to keep a cleaning cartridge in the ACS.

**Off**
directs the HSC to keep an over use-limit cleaning cartridge in the ACS. A message is issued displaying the cleaning cartridge’s volser and describing this action.

**ACS**

optionally, specifies that the EJctauto settings apply only to the specified ACS. If this parameter is omitted, EJctauto settings affect all ACSs.

**acsid**

indicates a decimal value from 00 to 99 that identifies the ACS. A single digit `acsid` can be entered.

**Float**
specifies whether the HSC is to select a new home cell location when it dismounts a volume that required a pass-thru when it was mounted.

In multi-host environments, the Float setting for a specific ACS should be the same on all hosts. Float status is not shared among the HSCs on different hosts.

**ON**
directs the HSC to select a new home cell location for the volume in the LSM where the dismount occurs (provided a cell is available). If no cells are available in the new LSM, the volume is returned to its original cell location regardless of the Float setting. Setting Float to ON reduces the number of pass-thru operations. ON is the initial value for the HSC.

**Off**
directs the HSC to return the volume to its original home cell location when it is dismounted.

---

**Note** – The MNTD Float Off command is useful for remote ACS/CDS link down situations to avoid control data set integrity issues by making sure cartridges are returned to their original home cell locations. Refer to the *ELS Legacy Interfaces Reference* for information about remote libraries.
ACS

optionally, specifies that the Float setting applies only to this ACS. If the ACS parameter is omitted, the Float setting affects all ACSs.

`acsid`

a decimal value from 00 to 99 that identifies the ACS. A single digit `acsid` can be entered.

**MAXclean**

specifies the maximum number of times a cleaning cartridge is to be used.

---

**Note** –

- The `EJctauto` setting in effect for the ACS controls how cleaning cartridges are handled when they exceed their maximum use.
- In a multi-host environment, the `MAXclean` setting should be the same on all hosts. The `MAXclean` value is not shared among the HSCs on different hosts.
- Follow the cartridge vendor’s recommendations for the number of times a cleaning cartridge should be used.

`count`

a decimal value, in the range from 1 through 32767. The initial value for the HSC is 100.

---

**Note** –

- The `count` value applies to each cleaning cartridge in the library.
- When a cleaning cartridge is used `count` number of times, it is not selected if there are cleaning cartridges compatible with the transports in the ACS that have been used less than `count` number of times. Over use-limit cleaning cartridges may be automatically ejected, depending on the MNTD EJctauto setting.

**MMount**

specifies whether or not a mount message is issued during manual mode that allows the operator to retain a manually mounted volume in the control data set.

**Delete**

generates a manual mode mount message which prompts the operator to respond “D” to delete the volume from the control data set, or “I” to ignore the mount request. Delete is the initial value of the HSC.

**Reply**

generates a manual mode mount message which prompts the operator to reply “M” to DOM the message and retain the volume in the control data set, or “I” to ignore the mount request.

---

**Note** – When MNTD MMount(Reply) is specified, the HSC action for a manual mode dismount is determined by the MNTD Dismount setting.
PASSTHRU
specifies the maximum number of pass-thrus that can occur to allow cartridge archival if SCRDISM(ARCHIVE) is specified.

count
the maximum number of pass-thrus allowed for archival of cartridges. Allowable values are decimal in the range from 1 through 99. The initial value of the HSC is 1.

Scratch
determines how a scratch volume is selected to satisfy a scratch mount request for a manual mode LSM.

Manual
specifies that the operator must select a scratch volume when a scratch mount is requested for a manual mode LSM. Manual is the initial value for the HSC.

Auto
directs the HSC to select a scratch volume when a scratch mount is requested for a manual mode LSM. If Scratch is set to Auto, the HSC manual mount message indicates the cartridge VOLSER and cell location as if it were a request for a specific volume.

SCRDISM
specifies whether or not scratch volumes mounted in a 9310 or 9360 LSM are to be automatically archived to a larger or slower LSM upon dismount.

Note – 9740 LSMs cannot attach to any other type of LSM. Thus, SCRDISM does not affect mounts in ACSs containing 9740s.

CURRENT
indicates that scratch volumes mounted in a 9310 or 9360 LSM are to be dismounted according to the MNTD Float parameter setting. CURRENT is the initial value for the HSC.

ARCHIVE
indicates that scratch volumes mounted in a 9310 or 9360 LSM are to be archived into a larger or slower storage device. Archival occurs only if the number of pass-thrus does not exceed PASSTHRU. Archival of a cartridge can occur

■ from a 9360 to either a 9310 or a 4410
■ from a 9310 to a 4410.

Note –
■ SCRDISM(ARCHIVE) overrides the MNTD Float parameter setting.
■ The ARCHIVE parameter does not affect dismounts in ACSs containing 9740 LSMs.
HOSTID

optionally, identifies the host associated with the MNTD command. This allows you to restrict certain startup options to a specific host.

If this parameter is not specified, the command is executed by each host that accesses PARMLIB.

host-id

the host ID (the SMF system identifier for both JES2 and JES3).

Note – If the host-id does not match the host executing the command, a message is issued and the command is not processed.
MODify

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description

The MODify command performs the following functions:
- modifies a CAP or an LSM online or offline to all hosts, independent of the issuing host
- starts dynamic hardware reconfiguration for a SL3000 or a SL8500 library
- adds, deletes, or updates an SL3000 or SL8500 ACS definition in the CDS that was preallocated using the SLILIBRY FUTRACS parameter

Dynamic hardware reconfiguration for the SL3000 and SL8500 libraries represents the portion of Near Continuous Operation (NCO) that allows you to dynamically add or delete drives and expansion panels.

Enter the MODify CONFIG command to activate dynamic hardware reconfiguration.
Refer to the publication Configuring HSC and VTCS for more information about Near Continuous Operation and dynamic hardware reconfiguration.

Warning – Before you enter MODify CONFIG, perform a backup of the CDS.

Note – It is possible to remove LSMs from the SL8500 configuration without performing a LIBGEN, MERGEcds, and recycle of the HSC. However, this operation requires assistance from Oracle StorageTek Support.

The MODify command differs from the Vary command in the following ways:
- The MODify command places a specified CAP or LSM online/offline globally to all hosts.
  - A CAP that is modified offline cannot be used for eject/enter processing.
  - An LSM that is modified offline must be operated in manual mode.
  - A manual mode LSM is still available for diagnostic requests from a host.
- The Vary command places a host station online/offline to an LMU.
  - A host that has all of its LMU stations varied offline is disconnected from all LSMs attached to the LMU.
  - An LSM can still be used to semi-automate cartridge handling for a disconnected host by issuing HSC commands from a connected host.
Syntax

PARAMETERS

CAP
specifies that a CAP is to be modified online/offline to all hosts.

cap-id
a specific CAP to be modified online/offline. The format of a cap-id is AA:LL:CC, where AA:LL is the LSMid, and CC is the CAP. See “CAPid” on page 710 for a list of valid values.

lsmid
a standard CAP to be modified online/offline. The format of an LSMid is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).

ONline
specifies that the CAP is to be modified online to all hosts. When a CAP is modified online, the HSC attempts to restore the CAP mode (automatic or manual) that was in effect when the CAP was modified offline.

OFFline
specifies that the CAP is to be modified offline to all hosts. Modifying a CAP offline places it in an unavailable state, preventing it from being allocated. The CAP mode (automatic or manual) is retained in the control data set.
Caution –

- Be sure to specify the CAP parameter to modify a CAP offline. If the LSM is online, and you specify an lsm-id to modify the CAP offline but do not specify the CAP parameter, the LSM will be modified offline.
- Use this command only in an emergency. Make sure the CAP is not being used by another active process. Issuing the MODify command on an active CAP may cause the process using the CAP to receive errors.

LSM

optionally, indicates that one or more LSMs are to be modified online/offline to all hosts.

\textit{lsm-id} or \textit{lsm-range} or \textit{lsm-list}

one or more LSMs to be modified online/offline to all hosts. Each \textit{lsm-list} element may be either a single LSMid or an LSMid range. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

The format of an LSMid is \textit{AA:LL}, where \textit{AA} is the ACSid (decimal 00-99) and \textit{LL} is the LSM number (decimal 00-99).

ONline

specifies that the LSMs are to be modified online to all hosts. Modifying an LSM online places it in automatic mode. When an LSM is modified online, CAPs that were in auto mode before the LSM was modified offline are again placed in auto mode (unlocked state).

OFFline

specifies that the LSMs are to be modified offline to all hosts. Modifying an LSM offline places it in manual mode. CAPs in a manual mode LSM cannot be used, but the auto/manual state of each CAP is retained.

FORCE

specifies that the LSM(s) is to be modified offline immediately. FORCE is only used with the OFFline parameter to modify an LSM offline.

CONFIG

(no parameters)

optionally, initiates the Near Continuous Operation (NCO) for hardware reconfiguration process for SL3000 and SL8500 libraries. This is a system wide change which propagates to all hosts connected to the CDS.

\textbf{Note} – Refer to the publication \textit{Configuring HSC and VTCS} for more information about Near Continuous Operation and dynamic hardware reconfiguration.

Warning – Before you enter MODify CONFIG, perform a backup of the CDS.
ADD

initiates an NCO configuration change to add one ACS to the HSC configuration. The ACS added takes on the library characteristics of the library type specified by the ACSType parameter. The number of ACSs that can be added is limited by the number specified on the SLILIBRARY FUTRACS parameter.

ACSType

specifies the library type to use for the configuration change. Options are SL3000 or SL8500.

DELETE

initiates an NCO configuration change to delete the disconnected ACS specified in the ACSid parameter.

If the ACSid is the highest numbered ACS, the ACS is entirely deleted and can be re-added as a different ACSType. If the ACSid is not the highest numbered ACS, the ACS becomes a place holder with a status of unallocated and can be re-added only as the same ACSType.

RESET

resets internal flags for any host that may be failing as a hardware configuration is being performed. When the failing host comes back up, the new hardware configuration is automatically recognized and implemented.

A reset is intended only to reset a failing host and does not initiate the actual dynamic hardware reconfiguration operation. The MODify CONFIG command, without the RESET parameter, must be run separately to invoke dynamic hardware reconfiguration.

UPDATE

initiates an NCO configuration change to update the ACS configuration specified in the ACSid parameter. This is not a system wide change and does not propagate to other hosts connected to the CDS. If a system wide update is needed, enter the MODify CONFIG command minus any additional parameters.

The ADD and DELETE parameters are only valid if the FUTRACS parameter was specified in the SLILIBRARY macro during the LIBGEN process.
Mount

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at FULL service level

Description
The Mount command mounts a scratch or specific volume on a transport, or mounts a VTV on a VTD and optionally assigns a Management Class to that VTV.

**Note** – Do not use this command to manage a mount that appears to have been missed by a batch job. Instead, use the SMC RESYNCHronize command to automate pending mounts. See “RESYNCHronize” on page 121 for more information.
Mount

Syntax

To mount a specific Nearline volume on a transport:

\[ \text{Mount} - volser - devaddr \]
\[ \text{host-id} \]
\[ \text{Readonly} \]

To mount a scratch volume on a transport:

\[ \text{Mount} \]
\[ \text{SCRTCH} - devaddr \]
\[ \text{PRIVAT} \]
\[ \text{host-id} \]
\[ \text{SUBpool(subpool-name)} \]
\[ \text{MEDia(media-type)} \]

To mount a VTV on a VTD and optionally, assign a management class to the VTV:

\[ \text{Mount} - volser - devaddr \]
\[ \text{SCRTCH} \]
\[ \text{MGMTclas(mgmt-clas-name)} \]

FIGURE 3-147 Mount syntax
Parameters

To Mount a Specific Volume on a Transport

volser
specifies the volume to be mounted.

devaddr
specifies the device address of the transport on which to mount the volume.

host-id
optionally, indicates that the volume is to be mounted on the device address defined to the specified host (the SMF system identifier for both JES2 and JES3).

Note – The host-id specified is only used for device address resolution. The host-id for subpool validation is obtained from the command origin.

readonly
indicates that the volume is to be mounted for read-only access.

If you do not supply a host-id and do specify Readonly, a comma must be entered immediately before Readonly to indicate the missing operand. For example:

MOUNT 123456 0B0,,READONLY
To Mount a Scratch Volume on a Transport

**SCRTCH**
- specifies a scratch volume is to be mounted.

**PRIVAT**
- specifies a scratch volume is to be mounted.

**devaddr**
- specifies the device address of the transport on which to mount the volume.

**host-id**
- optionally, indicates that the volume is to be mounted on the device address defined to the specified host (the SMF system identifier for both JES2 and JES3).

---
**Note** – The hostid specified is only used for device address resolution, The hostid for subpool validation is obtained from the command origin.

**SUBpool**
- optionally, indicates the scratch volume is to be taken from a scratch subpool. If this parameter is not specified, then the behavior is dependent upon how scratch pools were defined:
  - If VOLPARM specified, then the volume will be selected from the DEFAULTPOOL which contains all scratch tapes in the ACS that were specified in VOLPARM but were not assigned to a named subpool.
  - If VOLPARM not specified (i.e. VOLATTR, or UX03 scratch pool definitions), then the volume will be selected from subpool-0 which contains all scratch tapes in the ACS including both non-subpool and subpool volumes.

**subpool-name**
- is the name of the subpool from which the scratch volume is to be taken.

**MEDia**
- optionally, specifies the type of media for the scratch volume. The specified media must be compatible with the requested *devaddr*.

---
**Note** – If **MEDia** is not specified, the next scratch cartridge is selected without regard to media type.

**media-type**
- the media type
  - See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.
To Mount a VTV on a VTD and Optionally, Assign a Management Class to the VTV

volser 1 SCRTCH

specifies a specific VTV volser or the scratch VTV attribute (SCRTCH).

volser

the volser of a specific VTV.

devaddr

specifies the MVS device address of the VTD to use to mount the VTV.

MGMTclas

optionally, specifies a Management Class you defined on the MGMTclas control statement.

mgmt-class-name

the Management Class name.
MOVe

**Interfaces:**
Console or utility
UUI: Yes

**Subsystem Requirements:**
Active HSC at FULL service level

**Description**
The MOVe command moves volumes to specified locations within the same LSM or to any other LSM within an ACS.

**Note –**
- Movement of volumes to all LSMs is done on a first-come first-served basis. As volumes are moved, should an LSM become fully populated before the move request is satisfied for that LSM, the move request continues with the movement of volumes designated for the next LSM specified in the request. An LSM is fully populated when all available cells contain tape cartridges. This process continues until the entire move request is completed or all destination LSMs are full.
- Moves are performed one at a time to allow for other LSM activity.

**Syntax**

```
MOVE | Parameters |

Parameters:
- T LSM(lsm-list)
- T Panel(panel)
- Row(row-list)
- Column(column-list)
- Volume(vol-list)
- Panel(panel-list)
- Fl sm(lsm-id)
```

**FIGURE 3-148** MOVe syntax
Parameters

**Flsm**

specifies the “From” LSMid in the format AA:LL that the cartridges are to be moved from. If you specify the **Flsm** parameter, you may not specify the **Volume** parameter.

**lsm-id**

LSM identifier name. An LSMid (lsm-id) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:).

**Panel**

specifies a panel number to be moved from. This parameter has a corequisite of the **Flsm** parameter and is required.

An entire panel can be emptied if the **Row** and **Column** parameters are not specified.

**panel-list**

a one or two digit panel number. Ranges are not valid. This parameter cannot contain a list if a list is specified for the **Row** or **Column** parameter.

Panels specified by **panel-list** are excluded as destination panels if cartridges are being moved within the same LSM.

A **panel-list** element is a one or two digit decimal number, specific to the LSM type. See “Panels” on page 711 for a list of valid values.

**Row**

specifies a list of rows to be moved from. This parameter has a corequisite of the **Panel** parameter.

**row-list**

a one or two digit row number or list of row numbers. The maximum list allowed is four rows. However, this parameter cannot contain a list if a list was specified for the **Column** parameter. Ranges are not valid.

A **row-list** element is a one or two digit decimal number, specific to the LSM type. See “Rows” on page 712 for a list of valid values.

**Column**

specifies a list of columns to be moved from. This parameter has a corequisite of the **Row** parameter and is optional. If this parameter is not specified, all columns will be moved for the rows specified.

**column-list**

a one or two digit column number or list of column numbers. This parameter cannot contain a list if a list was specified for the **Row** parameter. Ranges are not valid.

A **column-list** element is a one or two digit decimal number, specific to the LSM type. See “Columns” on page 713 for a list of valid values.

**Volume**

optionally, specifies volumes to be moved.

**vol-list**

a list of volumes (a maximum of 300 can be specified) or a range of volumes. If you specify the **Volume** parameter, you may not specify the **Flsm** parameter.
**TLsm**

specifies the target LSM(s). This is a required parameter. The LSUs are specified as $AA:LL$, where $AA$ is the ACsid and $LL$ is the LSMid. The ACsid:

- must be identical to the Flsm parameter “aa” (ACSid), or
- must be the same ACS in which the volume resides if the Volume parameter is specified.

**lsm-list**

a list of LSUs (a maximum of 24 can be specified). Ranges are invalid. An LSMid ($lsm-id$) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:) in the TLsm.

**TPanel**

optionally, specifies the panel in the TLsm to move the cartridge(s) to. The **panel** parameter:

- a one or two digit panel number. This parameter cannot contain a list or range. See “Panels” on page 711 for a list of valid values.
MVCDRain

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The MVCDRain command recalls all current and scratched VTVs from an MVC and, optionally, “virtually” ejects the MVC, making it unavailable for VSM use without physically ejecting it from the library. You can use this command to override the CONFIG RECLAIM CONMVC setting.

Syntax

![Figure 3-149 MVCDRain syntax](image)

FIGURE 3-149 MVCDRain syntax
Parameters

MVCI\text{d}
\begin{itemize}
\item drain one or more MVCs by volser.
\end{itemize}

\textit{volser, vol-range, or vol-list}
\begin{itemize}
\item the volser\text{s} of one or more MVCs up to a maximum of 50.
\end{itemize}

MVCI\text{POOL}
\begin{itemize}
\item drain the MVCs in the specified Named MVC Pool.
\end{itemize}

\textit{poolname}
\begin{itemize}
\item the name of an MVC Pool that you defined on the MVCI\text{POOL} control statement. Refer to the \textit{ELS Legacy Interfaces Reference} for more information.
\end{itemize}

STORCLAS
\begin{itemize}
\item drain the MVCs in the specified Storage Class.
\end{itemize}

\textit{stor-class-name}
\begin{itemize}
\item the name of a Storage Class that you defined on the STORclas control statement; for more information, see “STORclas Control Statement” on page 441.
\end{itemize}

Eject
\begin{itemize}
\item optionally, specifies that VTCS “virtually” ejects the MVC (the MVC will not be used for output).
\end{itemize}

CONMVC(\textit{nn})
\begin{itemize}
\item optionally, specifies the maximum number of MVCs that VTCS concurrently processes for both drain and reclaim.
\item Valid values are 1 to 99. If not specified, the default is the CONMVC value specified on the CONFIG RECLAIM statement.
\end{itemize}

RECALWER
\begin{itemize}
\item optionally, specifies whether VTCS recalls VTVs with read data checks.
\end{itemize}

\textbf{YES}
\begin{itemize}
\item recall VTVs with read data checks (the default).
\end{itemize}

\textbf{NO}
\begin{itemize}
\item Do not recall VTVs with read data checks.
\end{itemize}

NOWAIT
\begin{itemize}
\item optionally, specifies that the utility does not wait for the operation to complete and returns after the request is submitted.
\end{itemize}

WARRANTY
\begin{itemize}
\item optionally, selects MVCs with expired warranties (denoted by a \textit{W} in the Status T column on an MVC Report).
\end{itemize}

RETIRED
\begin{itemize}
\item optionally, selects MVCs that are retired (denoted by a \textit{T} in the Status T column on an MVC Report).
\end{itemize}
ERROR
selects MVCs that are in error (denoted by a B in the Status B column on an MVC Report).

DATACHK
selects MVCs that have a data check (denoted by a D in the Status D column on an MVC Report).
MVCMAINT

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
- Active HSC/VTCS required if RENVTSS is specified
- Can run in batch-only mode when there are no hosts active (on any LPAR) using the CDS that is to be updated

Description
The MVCMAINT command specifies MVC attributes.

Syntax

![MVCMAINT Syntax Diagram]

FIGURE 3-150 MVCMAINT syntax
Parameters

MANIFEST

specifies the input ddname of the manifest file. **Note that** you can specify a merged manifest file or multiple manifest files.

*ddname*

  ddname of the manifest file. The default is MANIFEST.

When specified, VTCS reads the MANIFEST file to discover which MVCs are to be updated (all MVCs in the manifest file). VTCS then updates the MVCs in the CDS with the actions specified by the remaining parameters (LOST, READONLY, etc.)

MVC

optionally, specifies the MVCs whose read/write attribute is changed.

*volser, vol-range or vol-list*

  the volser of one or more MVCs.

READONLY

optionally, sets the read/write status of the MVC.

**ON**

  MVC is readonly.

**OFF**

  MVCs is writable.

LOST

optionally, sets the “lost” status of the MVC.

**ON**

  MVC is lost.

**OFF**

  MVC is not lost.

ERROR

optionally, sets the error status of the MVC.

**ON**

  MVC is in error.

**OFF**

  MVC is not in error.

EJECT

optionally, sets the “logical eject” status of the MVC.

**ON**

  MVC is “logically ejected”.

**OFF**

  MVC is not “logically ejected”.

**RETIRE**
optionally, sets the “retired” status of the MVC.

**ON**
MVC is retired.

**OFF**
MVC is not retired but is still in “expired warranty” state (still selectable for output).

**WARRANTY**
optionally, sets the “expired warranty” status of the MVC.

**ON**
MVC’s warranty has expired.

**OFF**
MVC’s warranty has not expired.

**Note –** WARRANTY and RETIRE are mutually exclusive.

**INVLD**
optionally, sets the invalid MIR status of the MVC.

**ON**
MIR is invalid.

**OFF**
MIR is not invalid.

**REPLACED**
optionally, updates various MVC fields in the MVC record after an MVC is physically replaced.

**NONE**
The MVC record is not updated.

**MEDIA**
The following MVC fields are updated:
- MVC media type is cleared
- Count of times mounted is set to zero
- Warranty Expired Flag is turned off
- Invalid MIR Flag is turned off
- Retired Flag is turned off
- Broke/Error Flag is turned off
- Lost Flag is turned off
- Data Check Flag is turned off
- VTSS Last Written By is cleared
- Date/Time MVC was last written to is cleared
- Storage Class is cleared
- Date/Time of Last Drain/Reclaim is cleared
- Date/Time of Migrate from Empty State is cleared
- Date/Time the MVC was last mounted is cleared
Note –
- This parameter requires the MVC to be empty (contain zero) and unmounted.
- REPLACED is mutually exclusive with the LOST, ERROR, EJECT, RETIRED, WARRANTY, and INVLDMIR parameters.

RENVTSS
optionally, sets the name of the owning VTSS to vtss-name.

vtss-name
the new VTSS name. This must be the name of an existing VTSS in your configuration.

Note – To use RENVTSS, the host on which MVCMAINT is run must have access to the owning VTSS.

Additional JCL Requirements

In addition to the required JCL definition statements described in “SLUADMIN Definition Statements” on page 667, the following definition statements apply to the MVCMAINT JCL:

manifest file DD
DD statement for the manifest file.

Note –
- MVCMAINT JCL may specify the CDS to be updated if the CDS is in use by HSC/VTCS on the LPAR where MVCMAINT is run. If specified, the CDS data sets specified in MVCMAINT JCL must match the CDS data sets used by HSC/VTCS.
- MVCMAINT JCL must specify the CDS to be updated if MVCMAINT is being executed in batch-only mode, i.e. when there are no hosts active (on any LPAR) using the CDS.
Return Codes

**TABLE 3-13** MVCMAINT Return Codes

<table>
<thead>
<tr>
<th>Return Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All requested updates for the MVC completed successfully.</td>
</tr>
<tr>
<td>4</td>
<td>One requested update for the MVC failed and at least one other requested update completed successfully.</td>
</tr>
<tr>
<td>8</td>
<td>All requested updates for the MVC failed.</td>
</tr>
</tbody>
</table>

**Note** – The final return code for the MVCMAINT job is the largest return code generated by any single MVC updated. For example, if 5 MVCs generate a return code 0 and one MVC generates a return code 8, the final return code is 8.
MVCMAINT Reports

**FIGURE 3-151** shows an example of an MVCMAINT report for the following command:

```
MVCMAINT MVC(022577-022579) READONLY=OFF
```

![MVCMAINT Report Example](image)

---

**FIGURE 3-151** Example MVCMAINT report

As shown in **FIGURE 3-151**, the MVCMAINT report shows:

- Status of MVCs processed - volser and return code (0 - all updates completed, 4 - some updates completed, 8 - no updates completed).
- An exception report of the reason for all uncompleted updates.
- An MVC summary report.
MVCPLRPT

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The MVCPLRPT command reports the status of a named MVC Pool or MVC Storage Class.

Syntax

![MVCPLRPT syntax diagram]

FIGURE 3-152 MVCPLRPT syntax

Parameters

MVCPOOL
optionally, report on MVCs in the specified Named MVC Pool.

poolname
the name of an MVC Pool that you defined on the MVCPool control statement. Refer to the ELS Legacy Interfaces Reference for more information.

To report on all Named MVC Pools (including DEFAULTPOOL), specify ALL or omit the MVCPool parameter.

STORCLAS
optionally, report on MVCs in the specified Storage Class.

stor-class-name
the name of a Storage Class that you defined on the STORclas control statement. See “STORclas Control Statement” on page 441 for more information. You can also specify Storage Classes which used to exist to which media is still assigned.

To report on all Storage Classes, specify ALL or omit the STORCLAS parameter value.
The STORCLAS parameter allows you to filter the MVCs reported from the MVCPOOL, i.e. only those MVCs with a matching Storage Class are reported. If the STORCLAS parameter is specified then the summary counts section will contain Storage Class subtotals, either for every Storage Class encountered if the parameter value ALL or no value is specified, or for those media types where there are MVCs matching the specified value.

**Note** – You can specify MVCPOOL, STORCLAS, or both together to filter the report.

**DETail**
- Report MVC detail lines (the default).

**SUMmary**
- Report summary counts only.
Named MVC Pool Reports

FIGURE 3-153 and FIGURE 3-165 on page 518 show an example of a report for Named MVC Pool CUST1POOL.

<table>
<thead>
<tr>
<th>MVC Volser</th>
<th>Number</th>
<th>Size (GB)</th>
<th>Mount</th>
<th>%Used</th>
<th>%Avail</th>
<th>%Frag</th>
<th>Media Size (MB)</th>
<th>Times Mounted</th>
<th>Status</th>
<th>Location</th>
<th>Owner/Comment/ACS ID Consolidate Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMV600</td>
<td>0</td>
<td>500.0</td>
<td>P</td>
<td>0.00</td>
<td>100.0</td>
<td>0.00</td>
<td>256</td>
<td>2010Mar15 17:59:59</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMV601</td>
<td>0</td>
<td>500.0</td>
<td>P</td>
<td>0.00</td>
<td>100.0</td>
<td>0.00</td>
<td>256</td>
<td>2010Mar15 17:59:59</td>
<td>I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMV602</td>
<td>0</td>
<td>500.0</td>
<td>P</td>
<td>0.00</td>
<td>100.0</td>
<td>0.00</td>
<td>256</td>
<td>2010Mar15 17:59:59</td>
<td>I</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 3-153 Example MVCPLRPT report (Part 1)

Fields

The following list describes the Named MVC Pool report fields. The Summary fields are either for a Storage Class or a Named MVC Pool, depending on which was specified on the report JCL. If a Storage Class specifies a Named MVC Pool, the report gives information for that subpool.

**MVC Volser**

the MVC volser.

**Number of VTVS**

the number of current VTVs on the MVC. If the MVC has been used for VTV export, this field reports EXPVTV.

**%Used**

the percentage of the MVC used by current VTVs.

**%Avail**

the percentage of the MVC that is physically available for use.

**%Frag**

the percentage of the MVC that contains non-current VTVs. This space is not usable until it is reclaimed or the MVC is drained.

**Media Size (MB)**

the size of the MVC (MB). This will only be determined after VTCS has used an MVC. “UNKNOWN” appears in this field until VTCS migrants a VTV to the MVC.

**Times Mounted**

the number of times that the MVC has been mounted for writing or reading since it was added to the MVC inventory.

**STATUS**

one or more of the following statuses:

I  
The MVC has been initialized.
B
The MVC has an error that should be investigated. The error may not make the MVC unusable, but VTCS will not select the MVC for migration for 12 hours after it is marked “B”. After the 12 hour period, the MVC will be least preferred for subsequent migrations, and recalls from the MVC may cause VTCS to drain it. This error condition may be accompanied by messages SLS6686, SLS6687, SLS6688, SLS6690, and/or SLS6693.

Any of the following conditions can cause this MVC error:

■ MVC corrupted by another job (other than VTCS/VTSS)
■ attempt to use a read-only MVC for migration
■ DDR swap failure
■ RTD failure

L
The MVC was not mounted in response to the last mount request. The MVC can still be used for migration, but will not select the MVC for migration for 12 hours after it is marked “L”. After the 12 hour period, the MVC will be least preferred. This condition will clear itself the next time that the MVC is mounted.

D
A data check was reported for this MVC. VSM will not use this MVC again for migration.

R
the MVC has been marked read-only.

U
one of the following usage statuses:

U
the MVC is available for output (migration, reclamation, export, or consolidation).

- the MVC is not available for output (migration, reclamation, export, or consolidation).

A
The MVC is either being audited or the audit failed. If the audit failed, VTCS will not use the MVC for migration. To clear this condition, rerun the AUDIT against this MVC.

C
The MVC is a consolidation MVC.

E
The MVC is an export MVC.

F
There is no space available on the MVC.

J
Either you issued a MVCDRain Eject for the MVC or the MVC was ejected for update by a RACROUTE call. The MVC will not be used again for migration or recall. To clear this condition, use MVCDRain against MVC without the Eject option.
Either:
- The MVC is being drained because of an automatic drain or demand reclaim or an explicit MVCDRain command.

OR
- The previous DRAIN request failed, in which case VTCS will not use the MVC for migration. To clear this condition, enter MVCDRain against MVC without the Eject option.

The MVC has reached the maximum VTVs per MVC.

One of the following statuses:

The MVC is retired.

The MVC’s warranty has expired.

The MVC has an invalid MIR.

Last Mounted
- the date and time that the MVC was last mounted and the VTSS where the MVC was last used.

ACS ID
- the ACS where the MVC resides.

Owner/Consolidate Time
- If the MVC is empty, this field is null. If the MVC is a consolidation MVC, this field displays the time of the consolidation. If the MVC is a migration MVC and contains current VTVs, this field displays the MVC’s Storage Class. If no Storage Class was explicitly assigned via the MGMTclas statement, the default Storage Class is the name of the last VTSS that wrote to the MVC for reclamation or migration.

If VTCS receives a request to migrate a VTV that is assigned to an invalid Management Class, VTCS will dynamically create the !ERROR Storage Class and migrate the VTVs defined by the invalid Management Class to the !ERROR Storage Class. Use this Storage Class to identify and correct invalid Management Classes, drain the affected MVCs, and resubmit the request.
FIGURE 3-154 Example MVCPLRPT report (Part 2)

**Fields**

**Summary for Storage Class or Named MVC Pool**

This section shows the number of MVCs (Vols) and total storage (Gb) by ACS and media type for the following categories:

**Free-MVCs**

MVCs that have 100% usable space and do not contain any migrated VTVs. The storage shown is the total free space based on media type capacity.

**Reclaim-MVCs**

MVCs eligible for space reclamation. The storage shown is the total wasted space including those MVCs not yet eligible for space reclaim.
Used-MVCS
    Initialized MVCs that are partially or completely full.

Total MVCs
    Total MVCs for the Storage Class or Named MVC Pool with subtotals for initialized, uninitialized, and free MVCs.

Summary of MVCs by Usage
    This section shows number of MVCs by the task that last used the MVC.
MVCRPt

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The MVCRPt command reports the status of your VSM system’s MVCs.

Syntax

![MVCRPt Syntax Diagram]

**FIGURE 3-155 MVCRPt syntax**
Parameters

**MVCid**
optionally, specifies the MVCs for the report. If you do not specify the MVCs, the report includes all MVCs in your VSM system.

*volser, vol-range or vol-list*
the volsers of one or more MVCs.

**STORclas**
optionally, specifies a storage class with the MVCs to be reported.

*stor-clas-name*
a 1-8 character storage class name.

---

**Note** – STORclas is mutually exclusive with MVCid, ALL, and MANIFEST.

**ALL**
optionally, generate a report for all MVCs.

**MANIFEST**
optionally, specifies the input ddname of the manifest file used to generate the report.

*ddname*
ddname of the manifest file. **Note that** you can specify a merged manifest file or multiple manifest files.

**DETAIL**
optionally, produce a detailed MVC report; see **FIGURE 3-157 on page 496** for an example. If you do not specify this option, the default is to produce a summary MVC report; see **FIGURE 3-156 on page 491** for an example.

**CHECK**
optionally, MVCRPt does limited MVC integrity checking, during which the CDS is reserved. Use **only** if directed by Oracle StorageTek Software Support.

**WRITABLE**
optionally, MVCRPt ignores readonly MVCs on MVC detailed reports and when you specify the CHECK parameter.
MVC Reports

The following sections describe the MVC summary and detailed reports that the MVC RPPT produces.

MVC Summary Report

The following table shows an example of an MVC summary report.

<table>
<thead>
<tr>
<th>MVC Number</th>
<th>Size (GB)</th>
<th>%Used</th>
<th>%Avail</th>
<th>%Frag</th>
<th>Location</th>
<th>Owner/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMV600</td>
<td>257</td>
<td>11.11</td>
<td>70.60</td>
<td>18.29</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV601</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV602</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV603</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV604</td>
<td>256</td>
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<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV605</td>
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<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV606</td>
<td>256</td>
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<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV607</td>
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<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV608</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV609</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV610</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV611</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV612</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV613</td>
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<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV614</td>
<td>256</td>
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<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
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<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV616</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV617</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV618</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
<tr>
<td>DMV619</td>
<td>256</td>
<td>0.00</td>
<td>100.00</td>
<td>0.00</td>
<td>Oct</td>
<td>U</td>
</tr>
</tbody>
</table>

20 Initialized MVCs processed
19 Initialized MVCs are standard format
1 Initialized MVCs are partitioned
0 Non-Initialized MVCs processed
0 Non-Library MVCs processed
SLS0155I Condition code for utility function is 0

FIGURE 3-156 Example MVC summary report
**Fields**

**MVC Volser**

the MVC volser.

**Number of VTVS**

the number of current VTVs on the MVC. If the MVC has been used for VTV export, this field reports **EXPVTV**.

**%Used**

the percentage of the MVC used by current VTVs.

**%Avail**

the percentage of the MVC that is physically available for use.

**%Frag**

the percentage of the MVC that contains non-current VTVs. This space is not usable until it is reclaimed or the MVC is drained.

**Size (GB)**

the size of the MVC (GB). This will only be determined after VTCS has used an MVC. “UNKNOWN” appears in this field until VTCS migrates a VTV to the MVC.

**Times Mounted**

the number of times that the MVC has been mounted for writing or reading since it was added to the MVC inventory.

**STATUS**

one or more of the following statuses:

**I**

The MVC has been initialized. MVCs written in partitioned format are indicated by the letter 'P' under this column.

**B**

This is a generic error that indicates the MVC, drive, or combination of the two has a problem. VTCS attempts to de-prefere MVCs with this state. To clear this state:

If the MVC caused the problem, use a DRAIN(EJECT) command to remove the MVC from service.

If the RTD caused the problem, use the MVCMAINT utility to reset the MVC state.

**Note also** that one or more of the following messages is issued for BROKEN status: SLS6686, SLS6687, SLS6688, SLS6690. For detailed recovery procedures for these messages, see *VTCS Messages and Codes*. 
L

VTCS attempted to mount an MVC and the mount did not complete within a 15-minute time-out period. VTCS is attempting to recover from a situation that may be caused by hardware problems, HSC problems, or by the MVC being removed from the ACS. VTCS attempts to de-preference MVCs with this state.

If VTCS does perform a subsequent successful mount of an MVC with LOST(ON) state, VTCS sets the state to LOST(OFF).

Determine the cause of the error and fix it. You can also use the VTCS MVCMAINT utility to set LOST(OFF) for the following events:

- LOST(ON) was set due to LSM failures or drive errors that have been resolved
- LOST(ON) was set because the MVC was outside the ACS and has been reentered.

D

A data check condition has been reported against this MVC. VTCS attempts to de-preference MVCs with this state. To clear this state:

- If all VTVs on the MVC are duplexed, use MVCDRain on the MVC without the Eject option. This recovers all VTVs and removes the MVC from service.
- If all VTVs on the MVC are not duplexed, VTCS AUDIT the MVC. The audit will probably fail. After the audit, do an MVCDRAIN (no eject). This recalls the VTVs before the data-check area in ascending block-id order and the VTVs after the data-check area in a descending block-id order. Processing the VTVs in this sequence ensures that VTCS recovers as many VTVs as possible from the media. You then need to recreate the data for any VTVs still on the MVC.

R

The MVC has been marked read-only because of one of the following conditions:

- The MVC being the target of an export or consolidation process. The read-only state protects the MVC from further updates.
- The MVC media is set to file protect. Correct the error and use the MVCMAINT utility to set READONLY(OFF).
- The MVC does not have the appropriate SAF rules set to enable VTCS to update the MVC. Correct the error and use the MVCMAINT utility to set READONLY(OFF). Refer to the publication *Installing ELS* for information about defining a security subsystem user ID for HSC, SMC, and VTCS.
U
one of the following usage statuses:

U
The MVC is available for output (migration, reclamation, export, or consolidation).

- The MVC is not available for output (migration, reclamation, export, or consolidation).

A
The MVC is either being audited or the audit failed. If the audit failed, VTCS will not use the MVC for migration. To clear this condition, rerun the AUDIT against this MVC.

C
The MVC is a consolidation MVC.

E
The MVC is an export MVC.

F
There is no space available on the MVC.

J
Either you issued MVCDRain Eject for the MVC or the MVC was ejected for update by a RACROUTE call. The MVC will not be used again for migration or recall. To clear this condition, use MVCDRain against MVC without the Eject option.

N
Either the MVC is being drained because of:
- an automatic drain or demand reclaim, or an explicit MVCDRain command.
OR
- The previous DRAIN request failed, in which case VTCS will not use the MVC for migration. To clear this condition, enter MVCDRain against MVC without the Eject option.

X
The MVC has reached the maximum VTVs per MVC.

T
One of the following statuses:

T
The MVC is retired. VTCS will recall from, but not migrate to, the MVC. Replace the MVC as soon as possible.

W
The MVC’s warranty has expired. VTCS continues to use the MVC. You should start making plans to replace the MVC when it reaches Retired state.
VTCS has received status from an RTD to indicate the MIR (media information record) for a 9x40 media is invalid. An invalid MIR does not prevent access to data but may cause significant performance problems while accessing records on the tape. The MVC is not capable of high-speed searches on areas of the tape that do not have a valid MIR entry.

VTCS attempts to de-preference MVCs with this condition. For recalls, if the VTV resides on multiple MVCs, VTCS selects MVCs with valid MIRs ahead of MVCs with invalid MIRs. VTCS avoids using MVCs with invalid MIRs for migration, unless the migration is at the beginning of the tape. Migrating from the beginning of tape will correct the MIR.

VTCS detects the invalid MIR condition at either mount time or dismount time. If detected at mount time and the operation can be completed with another MVC, VTCS dismounts the first MVC and selects the alternate MVC. Note that VTCS has only a limited ability to switch to an alternate MVC. That is, it is mainly used for migrate and virtual mount.

For MVCs with invalid MIRs, determine the cause of the error, which may be caused by media or drive problems, and fix the error.

To recover an MVC with an invalid MIR, you simply need to read the MVC to the end of the tape, which can be done via a VTCS audit. If the media is the problem, run an MVCDRAIN EJECT to recall the VTVs and cause the MVC to be removed from the MVC pool.

**Last Mounted**
the date and time that the MVC was last mounted and the VTSS where the MVC was last used.

**ACS ID**
the ACS where the MVC resides.

**Owner/Consolidate Time**
If the MVC is empty, this field is null. If the MVC is a consolidation MVC, this field displays the time of the consolidation. If the MVC is a migration MVC and contains current VTVs, this field displays the MVC’s Storage Class. If no Storage Class was explicitly assigned via the MGMTclas statement, the default Storage Class is the name of the last VTSS that wrote to the MVC for reclamation or migration.

If VTCS receives a request to migrate a VTV that is assigned to an invalid Management Class, VTCS will dynamically create the !ERROR Storage Class and migrate the VTVs defined by the invalid Management Class to the !ERROR Storage Class. Use this Storage Class to identify and correct invalid Management Classes, drain the affected MVCs, and resubmit the request.

**Initialized MVCs processed**
the total number of initialized MVCs. Also includes a breakdown of the number of MVCs that are standard format or partitioned.

**Non-Initialized MVCs processed**
the number of non-initialized MVCs.

**Non-library MVCs processed**
the number of non-library MVCs processed.
The MVC detailed report provides all the fields from the MVC summary report and a separate section that lists additional fields. The following table shows an example of these additional fields from an MVC detailed report.

![Example MVC detailed report](image)

**FIGURE 3-157** Example MVC detailed report (additional fields)
**MVC Detailed Report Additional Fields**

The following list describes the additional fields for the MVC detailed report.

**VTV Volser**
the volser of the VTVs on the MVC.

**Size (MB)**
the uncompressed size of the VTV (MB).

**Block ID**
the partition id and logical block ID of the beginning of the VTV on the MVC. If there are VTVs spanning partitions, the 'spanned to' partition is shown to the right of the blockid location.

**Management Class**
the VTV’s Management Class.

**Migration Date**
for migrate done by a 6.0 system or above only, the approximate date that the VTV copy was migrated. This date is approximate because it is recorded in the CDS as the number of days since VTV creation, and time zone adjustments can cause the value to slip a day.

**Block Count**
the decimal number of blocks of data that the VTV occupies on the MVC.

**Message**
reports the results of MVC integrity checking. Any message not listed below should be reported to Oracle, as it may indicate a serious problem with the CDS except messages that can appear if the MVC is being audited or has failed an audit while the MVC report is being run. An MVC report returns a minimum return code of 4 if any MVCs in audit state are encountered; the audit state also prevents some other errors from being reported.

\textit{nmmm empty space to previous}

**Explanation.** Informational message, indicating that there are \textit{nmmm} (decimal) blocks of free space before this VTV on the MVC.

**Migrated size was not as expected**

**Explanation.** If output for VTV \(v\) on MVC \(m\), it indicates that the (compressed) size of VTV \(v\) migrated to MVC \(m\) was different to the (compressed) size of VTV \(v\) recorded in the CDS.

This is normal if VTV \(v\) had previously been recalled with error. Otherwise this indicates a possible error which should be reported to Oracle StorageTek software support.

**Used/Unused Partitions**
Summary of used and unused partitions for the MVC.
OFFload

The OFFload command can be used to offload one or both journals on a given host, or transaction records from active log files used in the HSC Transaction Logging Service.

This command can be issued with the options listed in the following table. Each option is described individually, and in more detail, on the pages to follow.

**TABLE 3-14  OFFload options**

<table>
<thead>
<tr>
<th>This option:</th>
<th>performs this action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURnal</td>
<td>offloads one or both journals on a given host. Refer to the <em>ELS Legacy Interfaces Reference</em> for information about this option.</td>
</tr>
<tr>
<td>LOGFILE</td>
<td>offloads transaction records from active log file(s) used in the HSC Transaction Logging Service</td>
</tr>
</tbody>
</table>
OFFload LOGFILE

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The OFFload LOGFILE command offloads transaction records from active log file(s) used by the HSC Transaction Logging Service and saves them in a sequential data set so that space in the log files can be reused.

If logging is currently active, you must run the OFFload LOGFILE utility to change log file names.

Note – Refer to the ELS Legacy Interfaces Reference for information about using OFFload for legacy journaling purposes.

Syntax

```
OFFLOAD LOGFILE ...
LOGDSN(primary-log-file-dsn) ...
RESTART ...
```

FIGURE 3-158 OFFload LOGFILE syntax
Parameters

Generally, OFFload LOGFILE is issued without parameters. The utility selects the input log data set from the active log data sets as recorded in the CDS.

LOGDSN

optionally, offloads the log file without using or updating the CDS. Use this parameter in any case where the CDS is restored, or is otherwise considered to be unreliable.

`primary-log-file-dsn`

the data set name for the primary log file.

For example: OFFLOAD LOGFILE LOGDSN(hsc.log1).

---

**Note** – If you attempt to run the OFFLOAD LOGFILE utility after restoring the CDS but without specifying the LOGDSN option, the offload may not succeed, or may create an erroneous log offload file.

---

RESTART

optionally, restarts the offload, selecting the input log file from among the group of log data sets that were active when the failed offload started. It also uses the block number range used by the failed offload.

Use this parameter to recover the records from the log data set(s) that become inactive when a failed offload causes a log data set switch.

---

Additional JCL Requirements

In addition to the required JCL definition statements described in "Invoking SLUADMIN" on page 664, the following definition statements apply to the OFFload LOGFILE JCL:

**SLSOFFLD**

specifies the output data set

It is recommended that no DCB be specified for this data set. If a DCB is specified, the RECFM and LRECL are ignored.
OPTION TITLE Control Statement

The OPTION TITLE control statement specifies an identifying string for a definition data set. This identifying string can be any information that helps the user describe the contents of the definition data set. You can specify this statement in a definition data set along with the following:

- LMUPDEF
- MGMTDEF
- TREQDEF (SMC)

It can also be specified with older HSC commands, described in the *ELS Legacy Interfaces Reference*:

- MVCDEF
- SCRPDEF
- VOLDEF

The OPTION TITLE statement must be placed in a definition data set; it cannot be issued as an operator command. If more than one OPTION statement is specified in the definition data set, only the identifying string of the last OPTION statement encountered is retained.

Syntax

![OPTION TITLE syntax](FIGURE 3-159)

Parameters

**OPTION TITLE**

specifies an identifying string for the definition data set. If this statement is omitted, the definition data set has no identifying string associated with it.

**identifying-string**

the identifying string. The maximum length of the identifying string is fifty characters. If the identifying string includes one or more spaces, or any characters other than alphabetic, numeric, or national (i.e., $, @, #), it must be enclosed in quotes.

**TRACE or TRACEF**

optionally, used to control internal tracing of HSC table lookups. During problem resolution, Software Support may request that you specify one of these parameters.
OPTion

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The OPTion command sets or changes general HSC options.
Syntax

FIGURE 3-160 OPTion syntax
Parameters

Dialog
allows HSC messages to be written to the operator console and/or the system log. These messages indicate that the HSC is waiting for an active task to complete before the HSC terminates. The initial Dialog value is set by the EXEC statement during HSC startup.

Off
    specifies that messages are not to be written. **Off is the default value for the HSC if the Dialog parameter is not specified on the EXEC statement.**

Both
    specifies that messages are written to the system log and the operator console.

Console
    specifies that messages are written to the operator console only.

Log
    specifies that messages are written to the system log only.

DISCmsg
specifies whether or not the “ACS a cs-id is disconnected” message (SLS1664A) is displayed for the specified ACS.

This option is useful when an ACS has been added to the LIBGEN in advance to provide for future expansion. Entering DISCmsg allows the user to turn off the display for those ACSs that will not be connected until later.

SHOW
    Displays the “ACS a cs-id is disconnected” message (SLS1664A) for an ACS. This is the initial value.

SUPPRESS
    Suppresses the “ACS a cs-id is disconnected” message (SLS1664A) for an ACS.

ACS
    optionally, specifies the ACS for which the command applies. If ACS is not specified, the DISCmsg setting entered (Show or Suppress) applies to all ACSs.

    **acs-id**
        the decimal ACSid value (00-99).

    If **ACS** is not specified, all ACSs are affected.

DUPOFL
optionally, allows the duplicate VOLSER process to continue when the VOLSER being entered into the CAP shows in the CDS that it exists in an ACS that is disconnected, or in an LSM that is offline.

OFF
    disables the duplicate VOLSER process. This is the default.

ON
    enables the duplicate VOLSER process.
EJLimit
indicates the maximum number of cartridges that can be specified on one Eject command.

count
the limit. Allowable values are 1 through 9999. The initial value for the HSC is 100.

ENTdup
specifies whether the HSC prompts the operator when an enter operation finds a duplicate VOLSER in the control data set, but cannot locate the cartridge in the ACS. When someone attempts to enter a cartridge with a VOLSER that duplicates an entry in the control data set, the HSC attempts to locate the original cartridge. The ENTdup option determines how the HSC responds when the cartridge

■ is not in its home cell,
■ is not selected, and
■ is not errant.

Auto
instructs the HSC to delete the cartridge in the control data set and allow the enter to continue.

Manual
instructs the HSC to issue a console message when a duplicate VOLSER is entered. The message prompts the operator to decide whether the HSC should delete the cartridge in the control data set and allow the enter to continue, or eject the duplicate cartridge. Manual is the initial value for the HSC.

Output
specifies whether the output messages are displayed on the console in uppercase or mixed case.

Upper
specifies uppercase. Upper is the initial value for the HSC.

Mixed
specifies mixed case.
Repath

determines how the HSC processes volumes associated with a specific CAP for an Eject command, when the CAP is drained or becomes unavailable before the eject operation completes.

**Yes**

automatically causes the unavailable CAP’s volumes to be associated with another CAP running under the same Eject command. **Yes** is the initial value for the HSC.

**No**

causes failure messages to be generated for volumes associated with the unavailable CAP. The Eject command continues processing the next volume.

Reply

generates a message which prompts the operator to determine how the volumes are processed. The operator must respond either “Y” or “N,” where

**Y**

causes the unavailable CAP’s volumes to be associated with another CAP running under the same Eject command.

**N**

causes failure messages to be generated for volumes associated with the unavailable CAP. The Eject command continues processing the next volume.

SEN

enables or disables the Significant Event Notification (SEN) facility. Refer to the *ELS Programming Reference* for more information about the SEN.

**ON**

enables the SEN.

**OFF**

disables the SEN.

Viewtime

specifies the length of time in seconds the system is to hold an LSM camera in one location when the View command is issued. See “View” on page 596 for more information.

**count**

the number of seconds. Allowable values for count are decimal in the range from 5 through 120. The initial value for the HSC is 10 seconds.

---

**Note –**

- The View command allows the user to override the OPTion Viewtime setting for a single viewing operation.
- An SMF record (subtype 8) is written when the View command is issued to document robot activity.
Warnmsg

sets the number of minutes between scratch depletion messages.

*minutes*

the number of minutes. Allowable values for minutes are 1 through 65535. The initial value is 5 minutes.

HOSTID

optionally, identifies the host associated with the OPTion command. This allows you to restrict certain startup options to a specific host.

If this parameter is not specified, the command options are applied to each host that accesses PARMLIB.

*host-id*

the host identifier (the SMF system identifier for both JES2 and JES3).

**Note —** If the *host-id* does not match the host executing the command, a message is issued and the command is not processed.
PITCOPY

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The PITCOPY command uses a utility snapshot feature to produce a point-in-time copy of the CDS. PITCOPY ensures CDS backup integrity by performing a CDS RESERVE to ensure that any ongoing updates are serialized. The PITCOPY function backs up only the primary CDS.

Syntax

![PITCOPY Syntax Diagram]

FIGURE 3-161 PITCOPY syntax

Parameters
METHOD
specifies the snapshot copy utility to use for the PIT copy.

ADRDSU
DFSMSdss SnapShot/DFSMSdss FlashCopy (ADRDSU)

SIBBATCH
StorageTek SVAA SnapShot (SIBBATCH) utility

FDRSNAP
FDR-invoked SnapShot (FDRSNAP) utility
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the PITCOPY JCL:

**SLSPARMP**

specifies a parameter file containing control statements to back up the CDS data set defined as SLSCNTL. Note that this may not be the primary CDS data set at the time the backup is taken.

**SLSPARMS**

specifies a parameter file containing control statements to back up the CDS data set defined as SLSCNTL2.

**SLSPARMB**

specifies a parameter file containing control statements to back up the CDS data set defined as SLSSTBY.

**SYSIN**

specifies a file to be output by the PITCOPY function and used as input to the snapshot copy function. When the PITCOPY function determines the primary CDS, it copies the appropriate SLSPARMx file into SYSIN.

---

**Note –**

- Other definition statements are required by the snapshot utility you are requesting.
- If you use Oracle’s StorageTek SVAA SnapShot function, it is recommended that you use the SOURCE option specifying the data set name, rather than the INDDNAME option specifying the DDNAME; or that you always include the DD statements for the CDS data sets. If the dynamic CDS allocation feature is used, the primary CDS is automatically allocated to SLSCNTL. Therefore, a control statement in SLSPARMS, for example, to back up the SLSCNTL2 DD, would result in backing up a CDS copy that is not the primary.
RECall

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The RECall command performs demand recalls of VTVs to a VTSS.

Syntax

FIGURE 3-162 RECall syntax
Parameters

VTvid

specifies the VTVs to recall.

volser, vol-range, or vol-list

the volsers of one or more VTVs. You can also specify one or more ranges.

DSN

specifies data sets used to select VTVs to recall.

name

the data set name. TABLE 3-12 on page 453 describes the valid wildcards for data set names.

MGMTCLAS

specifies one or more Management Classes that determine one or more VTVs to recall.

mgmt-class-name | mgmt-class-list

the names of one or more Management Classes that you defined on the MGMTclas control statement; for more information, see “MGMTclas Control Statement” on page 423.

Note – MGMTCLAS, VTvid, and DSN are mutually exclusive.

VTSS

specifies where the VTVs are recalled as follows:

- If you do not specify a VTSS (the default), VTCS attempts to recall the VTVs to the VTSS of creation if it is accessible. Otherwise VTCS recalls the VTVs to the VTSS with the lowest DBU.
- If you specify a single VTSS, VTCS attempts to recall the VTVs to the specified VTSS if it is accessible. Otherwise, VTCS recalls the VTVs to the VTSS with the lowest DBU.
- If you specify a list of VTSSs, VTCS attempts to recall the VTVs to the VTSS of creation if it is on the list and accessible, otherwise VTCS recalls the VTVs to the VTSS with the lowest DBU on the list.

vtss-name

the names of one or more VTSSs.

RECALLVER

optionally, specifies whether VTCS recalls VTVs with read data checks.

YES

recall VTVs with read data checks (the default).

NO

Do not recall VTVs with read data checks.

NOWAIT

optionally, specifies that the utility does not wait for the operation to complete and returns after the request is submitted.
RECLAIM

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The RECLAIM command performs demand MVC space reclamation. This command can also override the CONFIG RECLAIM settings for the THRESHLD, INPTHRSH, MAXMVC, and CONMVC parameters.

Syntax

![Diagram of RECLAIM syntax]

FIGURE 3-163 RECLAIM syntax
Parameters

**MVCPOOL**
reclaim the MVCs in the specified Named MVC Pool.

*poolname*
the name of a Named MVC Pool that you defined on the MVCPool control statement. Refer to the ELS Legacy Interfaces Reference for more information.

**STORCLAS**
reclaim the MVCs in the specified Storage Class.

*stor-class-name*
the name of a Storage Class that you defined on the STORclas control statement; for more information, see “STORclas Control Statement” on page 441.

**ACSid**
reclaim the eligible MVCs in the specified ACS.

*acs-id*
a two digit decimal ACS identifier from 00-99.

**MVC**
reclaim the specified MVC(s).

*volser, vol-range or vol-list*
the volser(s) of one or more MVCs. You can also specify individual MVCs and ranges in a list. For example:

(MVC000-MVC005,MVC010,MVC015)

**MAXMVC(nn)**
optionally, specifies the maximum number of MVCs that will be processed by a single space reclamation task. Valid values are 1 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

For automatic space reclamation to start, the number of eligible MVCs (determined by the THRESH parameter) must also exceed the MAXMVC value.

**THRESH(nn)**
optionally, specifies the percentage of fragmented space that makes an MVC eligible for demand or automatic reclamation. Valid values are 4 to 98. If not specified, the CONFIG RECLAIM value (or default) is used.
INPTHRESH

 optionally, specifies the percentage of fragmented space that makes an MVC in partitioned format eligible for dynamic reclaim processing. This value overrides the global INPTHRESH value specified in the CONFIG RECLAIM statement. If this parameter is not specified, the current active global INPTHRESH value is used.

\[ nn \]

a percentage between 3 and 97. This value must be less than the THRESHLD value.

**Note** – If INPTHRESH is specified, THRESHLD must also be specified. Both INPTHRESH and THRESHLD play roles when space reclamation processes MVCs in partitioned format. Refer to the publication *Configuring HSC and VTCS* for more information.

NOWAIT

 optionally, specifies that the utility does not wait for the operation to complete and returns after the request is submitted.

CONMVC(\[ nn \])

 optionally, specifies the maximum number of MVCs that VTCS concurrently processes for both drain and reclaim.

Valid values are 1 to 99. If not specified, the default is the CONMVC value specified on the CONFIG RECLAIM statement.

ELAPSE(\[ mmm \])

 optionally, specifies the maximum time for the reclaim in minutes. If the maximum time expires, VTCS issues message SLS6682I. If there are no MVCs currently mounted, reclaim stops when the ELAPSE value is reached. If any MVCs are currently mounted when the ELAPSE value is reached, reclaim processes the mounted MVCs and then stops.

Valid values are 1 to 1440. If not specified, there is no time limit on the reclaim process.
RECONcil

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
The RECONcil command reconciles VTV media and location (moves VTVs from one Storage Class to another).

RECONcil performs a series of cross-checks between the MVCs, VTVs, STORCLAS and MGMTCLAS definitions.

RECONcil has two phases:
■ In the first phase, VTCS selects MVC and Storage Classes to be checked. MVCs are checked to ensure they meet the Storage Class definitions and ACS definitions. If inconsistencies are found, then the VTVs on those MVCs are added to the list of VTVs to be recalled and re-migrated to give correct MVC, ACS and Storage Class copies for that VTV. The RECONcil parameters STORCLAS and MVC limit the checking in this phase.
■ In the second phase, VTCS selects the VTVs and Management Classes to establish the correct number and location of VTV copies. Any VTVs with inconsistencies are added to the list of VTVs to be recalled and re-migrated. The RECONcil parameters MGMTCLAS and VTV limit the checking in this phase.
Syntax

Parameters

The STORclas and MVC parameters limit the first phase of checking to the specified Storage Classes or MVCs. If STORclas or MVC are not specified, VTCS checks all MVCs by default.

**STORclas**

optionally, specifies one or more Storage Classes.

\[\text{stor-class-name}_1 \ldots \text{stor-class-name}_n\]

one or more Storage Classes.

**MVC**

optionally, specifies a list or range of MVCs.

\[\text{mvc-list} \mid \text{mvc-range}\]

a list or range of MVCs.

The MGMTclas and VTV parameters limit the second phase of checking to the specified Management Classes or VTVs. If MGMTclas or VTV are not specified, VTCS checks all VTVs by default.

**MGMTclas**

optionally, specifies one or more Management Classes.

\[\text{mgmt-class-name}_1 \ldots \text{mgmt-class-name}_n\]

one or more Management Classes.

**VTV**

optionally, specifies a list or range of VTVs.

\[\text{vtv-list} \mid \text{vtv-range}\]

a list or range of VTVs.
**MAXMVC**(nn)

optionally, specifies the maximum number of MVCs that will be processed by a single reconciliation task.

Valid values are 1 to 98. If not specified the CONFIG RECLAIM value (or default) is used. This parameter is ignored if MOVEVTV is not specified.

**CONMVC**(nn)

optionally, specifies the maximum number of MVCs that VTCS concurrently processes during subsequent recall and migrate operations.

Valid values are 1 to 99. If not specified the CONFIG RECLAIM value (or default) is used. This parameter is ignored if MOVEVTV is not specified.

**ELAPSE**(nnnn)

optionally, specifies the maximum time for the reconciliation in minutes. If the maximum time expires, VTCS issues message SLS6682I. If there are no MVCs currently mounted, reconciliation stops when the ELAPSE value is reached. If any MVCs are currently mounted when the ELAPSE value is reached, reconciliation processes the mounted MVCs and then stops.

Valid values are 1 to 1440. If not specified, there is no time limit on the reconciliation process. This parameter is ignored if MOVEVTV is not specified.

**POLICYdd**(ddname)

optionally, specifies the *ddname* of a file containing an alternate MGMTclas statement.

**MOVEVTV**

optionally, move VTVs per the currently active Management Policies as specified by the MGMTclas statements that apply to the VTVs. If you do not specify MOVEVTV, only a report is generated.

---

**Note** – POLICYdd and MOVEVTV are mutually exclusive.
The following figure shows an example of a RECONcil report.

**FIGURE 3-165** Example output from RECONcil REPORT only
RECONcil Report Fields

The following list describes the RECONcil report fields.

**VTV Volser**
the VTV volser.

**Size (MB)**
the uncompressed size of the VTV (MB). `<MOUNT>` indicates that the VTV was mounted when the report ran. `<FENCED>` indicates that the VTV’s state is unknown. If `<FENCED>` appears, contact Oracle StorageTek Software Support.

**Comp %**
the VTV compression percentage achieved. This is the difference between the uncompressed and compressed VTV size expressed as a percentage of the uncompressed VTV size. For example if a 100MB VTV compresses to 40MB then the compression% will be given as 60%. A compression of 0% indicates that no compression was possible on the VTV.

**Creation Date and Time**
the date and time that the VTV was created.

**MGMT Class**
the name of the Management Class for the VTV specified.

**MVC1, MVC2, MVC3, MVC4**
the MVC(s) affected as a result of the Reconcil.

**Tapeplex**
the TapePlex name.

**Reason**
the reason for the VTV selection: media type, media location, migration (space release), immediate migration, or Storage Class.

The RECONcil Tapeplex Report section displays the number of candidate VTVs and Total VTV size (MB) for each TapePlex.
**MVC Report Fields**

The following list describes the RECONcil MVC report fields. The data for each MVC is followed by one or more VTV volser with copies on the MVC. This section of the report is followed by a total line showing the number of candidate MVCs and the size in MB to be recalled and remigrated.

**MVC Volser**
- the MVC volser.

**MVC Media Type**
- the MVC type.

**Media Size (MB)**
- the size of the MVC (MB). This will only be determined after VTCS has used an MVC. “UNKNOWN” appears in this field until VTCS migrates a VTV to the MVC.

**Storage Class/Consolidate time**
- the MVC’s Storage Class or time the VTVs on it were consolidated.

**Candidate VTVs**
- the number of candidate VTVs on the MVC.

**Total VTV Size (MB)**
- the size of all candidate VTVs on the MVC in MBs.

**Location (ACS ID)**
- the ACS where the MVC resides. If blank, the MVC is not currently in an ACS.
MOVEVTV Report

FIGURE 3-166 shows an example of an RECONcil report with the MOVEVTV option.

```
SLUADMIN (7.1.0)     StorageTek Enterprise Library Software Utility      PAGE 0001
TIME 10:07:10                 RECONCILE MOVEVTV REPORT             DATE 2010-03-31

Move VTV - MVC 022705 ignored, MAXMVC reached
Move VTV - VTV X04898 ignored, all MVC copies rejected
Move VTV - 4 MVCs selected for processing
Move VTV - 5 VTVs selected for processing
Move VTV - 5 VTV copies to be processed
Move VTV - 0 VTV copies not matched to request
Move VTV - 1 VTV copies rejected by MAXMVC limit
Move VTVs - MVC 023484 selected and contains 1 VTVs
Move VTVs - MVC 022628 selected and contains 1 VTVs
Move VTVs - MVC 022631 selected and contains 2 VTVs
Move VTVs - MVC 022608 selected and contains 1 VTVs

Recall from MVC 022628 to VTSS HBVTSS17
SLS6683I Bulk recall of 1 VTVs issued to MVC 022628
SLS6644I VTV X04897 recalled from MVC:022628 Block:02402581
SLS6637I Recall from MVC 022628 completed

Recall from MVC 023484 to VTSS HBVTSS17
SLS6683I Bulk recall of 1 VTVs issued to MVC 023484
SLS6644I VTV X04897 recalled from MVC:023484 Block:02402581
SLS6637I Recall from MVC 023484 completed

Recall from MVC 022608 to VTSS HBVTSS16
SLS6683I Bulk recall of 1 VTVs issued to MVC 022608
SLS6637I Recall from MVC 022608 completed

Migrate to storage class HBVTSS16 from VTSS HBVTSS17
SLS6681I VTV X99909 migrated to MVC:022589 Block:01400025 StorCl:HBVTSS17
MgmtCl:SIMPlex
SLS6636I Demand migration to MVC 022589 completed

Recall from MVC 022631 to VTSS HBVTSS16
SLS6683I Bulk recall of 2 VTVs issued to MVC 022631
SLS6644I VTV X99910 recalled from MVC:022631 Block:03400141
SLS6644I VTV X99908 recalled from MVC:022631 Block:05400281
SLS6637I Recall from MVC 022631 completed

FIGURE 3-166 Example output from RECONcil MOVEVTV
```
RECOVer

Interfaces:
Console or PARMLIB
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description

The RECOVer command recovers the resources owned by a host that becomes inoperable. Cross-host recovery frees library resources that are owned by the failing host, and transfers that ownership to the recovering host. These resources include CAPs, which can be activated by only one host at a time, and volumes, which are assigned to a particular host while moving or mounting.

Syntax

```
RECOVer host-id FORCE
```

**Parameters**

*host-id*
identifies the host for which to perform recovery (the SMF system identifier for both JES2 and JES3).

**FORCE**
optionally, indicates that recovery is to be performed for the specified host even if the HSC has not detected that the host is inactive. This allows recovery of a host when the active flag for that host is still on.

**Caution** — Use the FORCE operand with great caution. Make sure the specified host is inactive before specifying this operand.

Forced recovery of an active host requires that the HSC on that host be recycled. All database activity is prohibited on the recovered host, which can cause unexpected abends when tape activity occurs, or when the HSC is recycled on that host.
RELease

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The RELease command frees an allocated CAP, making it available for other processes, without requiring a recycle of all HSCs sharing the control data set.

A CAP can be left allocated to a host if the HSC on that host terminated without performing recovery while the CAP was active.

This command can be issued from any connected host. The operator is required to confirm the release operation by responding to a console message.

Caution – Use this command as a last resort. Make sure the CAP is not being used by another active process. Issuing the RELease command on an active CAP may cause the process using the CAP to receive errors.

Syntax

FIGURE 3-168 RELease syntax

Parameters

cap-id
identifies the CAP to be released. The format of a cap-id is AA:LL:CC, where AA:LL is the LSMid, and CC is the CAP. See “CAPid” on page 710 for a list of valid values.

Note – The format of an LSMid is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).
REPLaceall

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The REPLaceall command deletes the scratch list in the CDS and optionally replaces it with a new list.

Syntax

```
REPLaceall

VOLser(vol-list)
```

FIGURE 3-169 REPLaceall syntax

Parameters

VOLser
optionally, specifies the list of volume serial numbers to be added, deleted, or replaced in the scratch list(s).

vol-list
the volume serial numbers; this can be a single volume, a list of volume serial numbers, ranges of volume serial numbers, or combinations of lists with ranges delimited by commas. The entire list must be enclosed in parentheses.
RESTore

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
HSC must be down (inactive)

Description
The RESTore command restores, or re-creates the library Control Data Set (CDS) from a previous CDS backup copy. If multiple CDS DD statements are specified, then multiple CDS copies are created in the RESTore process.

Note – Refer to the ELS Legacy Interfaces Reference for information about using RESTore when journaling is enabled.

Caution – It is critical that you restore all data sets referenced by the HSC (primary, secondary, standby). Failing to restore all data sets can cause CDS mismatches. Refer to the publication Managing HSC and VTCS for detailed information about when to use this utility and how it functions.

Syntax

![RESTore syntax]

FIGURE 3-170 RESTore syntax

Parameters
None required. Refer to the ELS Legacy Interfaces Reference for information about using RESTore when journaling is enabled.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the RESTore JCL:

**SLSCNTL**
- specifies the primary CDS.

**SLSCNTL2**
- optionally, specifies the secondary CDS.
  
  If a secondary CDS exists, include this statement so that if a switch occurs and the secondary CDS becomes active, the CDSs can be reordered to maintain database integrity.

**SLSSTBY**
- optionally, specifies the standby CDS.
  
  If a standby CDS exists, include this statement so that if a switch occurs and the standby CDS becomes active, the CDSs can be reordered to maintain database integrity.

**SLSBKUP**
- the backup data set.
SCRAtch

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The SCRAtch command scratches one or more volumes.

Syntax

```
SCRAtch VOLser(vol-list)
```

FIGURE 3-171 SCRAtch syntax

Parameters

**VOLser**
specifies the list of volume serial numbers to be added, deleted, or replaced in the scratch list(s).

**vol-list**
the volume serial numbers; this can be a single volume, a list of volume serial numbers, ranges of volume serial numbers, or combinations of lists with ranges delimited by commas. The entire list must be enclosed in parentheses.
SCREdist

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description

The SCREdist command redistributes, or balances, the number of scratch volumes across the library.

SCREdist permits the redistribution of scratch volumes either:
- among LSMs implied by the specification of an ACS, or
- among the LSMs explicitly identified through an optional parameter.

SCREdist allows you to select one media type and recording technique. If specified, scratch volume redistribution will be based on the MEDia and RECtech settings.

If neither MEDia nor RECtech is specified, volumes are redistributed without regard to media type or recording technique.

When only the ACS parameter is specified, the redistribution method transfers cartridges from LSMs with a greater number of scratch volumes to LSMs with a lesser number of scratch volumes. The process is repeated until the number of scratch volumes in each LSM is within the defined scratch tolerance level.

Distribution in an ACS containing a mix of LSMs (4410s, 9310s, 9360s, 9740s) is performed based on a percentage of scratch cartridges in the ACS. That is, the utility causes each LSM to have the same percentage of scratch tapes within the ACS as the LSM has cells within the ACS. For example, in an ACS where a 9310 LSM contains 80 percent of the cells within the ACS, 80 percent of the scratch tapes will reside in the 9310.

Note – The SL3000 and SL8500 are standalone libraries and cannot be combined with any other LSM type.

After Scratch Redistribution is completed, only the specified LSMs contain scratch cartridges, if the LSM parameter was specified.

Concurrent redistributions among different ACSs are accomplished by multiple executions of this utility program.
Redistribution moves non-scratch cartridges to make space for scratch cartridges. The actual number of scratch cartridges moved may vary depending on the number of free cells and the number of scratch cartridges available.

**Note** – Cartridges cannot be transferred to a frozen panel.

### Syntax

![SCREdist Syntax Diagram](image)

**Parameters**

**ACS**

specifies one ACS in the library in which the scratch volumes are to be redistributed.

*acs-id*

the ACS. The one or two digit decimal ACS identifier.

**LSM**

optionally, specifies that only certain LSMs within an ACS are to contain scratch cartridges (if not specified, scratch volumes are redistributed across all LSMs in the ACS).

*lsmlist*

a single LSM or a list of LSMid(s). An LSMid (lsmid) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:). An LSM range is not allowed.

The element(s) contained in an *lsmlist* must be enclosed in parentheses; multiple elements must be separated by blanks or commas.

**SUBpool**

optionally, specifies the subpool name from which scratch volumes are to be redistributed.

*subpool-name*

the subpool.
BALtol

optionally, specifies a balance tolerance value. Scratch volumes are distributed based on this specified value.

tolerance-value

a percent value that identifies when cartridge redistribution ends. Valid values are 1 through 999, where the values indicate a percentage from .1 to 99.9 (i.e., 1 signifies .1 percent; 999 equals 99.9 percent). **The initial value for the HSC is 1. If tolerance-value is not specified in this utility, HSC uses the initial value for scratch redistribution.**

The utility finishes redistributing scratch cartridges when the percentage of scratch tapes in all specified LSMs is within tolerance-value / 2 percentage points of each LSM’s percentage of cells in the ACS.

For example, assume an ACS has one 4410 LSM with 5,000 cells, one 9360 (WolfCreek) LSM with 1,000 cells, and 600 total scratch tapes in the ACS. Scratch Redistribution attempts to put 500 scratches in the 4410 and 100 scratches in the 9360.

Entering BALtol(100) specifies a setting of 10 percent, which means that the utility ends when all LSMs are within ±5 percent of the expected number of scratches for each LSM (500 for the 4410, 100 for the 9360).

The expected number can be determined as follows:

\[
\text{expnumlsm} = \frac{\text{totscrac} \ast \text{totcellslsm}}{\text{totcellsacs}}
\]

where:

expnumlsm
expected number of scratches for each LSM.

totscrac
total number of scratches in the ACS.

totcellslsm
total number of cells in the LSM.

totcellsacs
total number of cells in the ACS.
In the previous example, the 4410 should have a range 470-530 scratches and the
9360 a range of 70-130. To determine the BALtol range BALtol range:

\[
\text{BALtol range} = \text{expnumism} + \frac{\text{baltol}}{1000} \cdot \text{totscracs} - \frac{1}{2}
\]

where:

- **BALtol range**
  - range of balance tolerance value.
- **expnumism**
  - expected number of scratches for each LSM (see above).
- **baltol**
  - user-supplied percent value (tolerance-value) that specifies when scratch
cartridge redistribution ends.
- **totscracs**
  - total number of scratches in the ACS.

**MEDia**

optionally, specifies the type of cartridge to redistribute across the ACS.

- **media-type**
  - the media type
  
  See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.

**RECtech**

optionally, specifies the method used to record data tracks on the tape surface.

---

**Note** – If RECtech is not specified, the next scratch cartridge is selected depending on
the MEDia type that has been specified.

**recording-technique**

- the recording technique.
  
  See Appendix A, “MEDia, RECtech, and MODel Values” for valid recording-technique values.
SENter

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The SENter command schedules an enter on a CAP that is currently allocated to an eject operation. The SENter command must be issued from the host that has the CAP allocated for ejecting cartridges.

Syntax

```
SENter cap-id
```

FIGURE 3-173 SENter syntax

Parameters

`cap-id`

specifies the CAP to use to enter the cartridge. One CAP must be specified and it must be allocated to the host issuing the SENter command.

The format of a `cap-id` is `AA:LL:CC`, where `AA:LL` is the LSMid, and `CC` is the CAP. See “CAPid” on page 710 for a list of valid values.

Note — The format of an LSMid is `AA:LL`, where `AA` is the ACSid (decimal 00-99) and `LL` is the LSM number (decimal 00-99).
SET

The SET command allows you to change selected library configuration settings without performing a library reconfiguration. It performs operations directly on the control data set and does not require the HSC to be active.

This command can be issued with the options listed in the following table. Each option is described individually, and in more detail, on the pages to follow.

**TABLE 3-15  SET options**

<table>
<thead>
<tr>
<th>This option:</th>
<th>Sets:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLNPRFX</td>
<td>cleaning cartridge prefix</td>
</tr>
<tr>
<td>COMPRFX</td>
<td>HSC/VTCS command prefix</td>
</tr>
<tr>
<td>DRVHOST</td>
<td>whether to allow all SMC client systems to use device addresses defined in the SMC DRIVEMAP command to influence allocation and request mounts and dismounts.</td>
</tr>
<tr>
<td>EJCTPAS</td>
<td>eject password</td>
</tr>
<tr>
<td>FREEZE</td>
<td>whether to disallow (freeze) or allow (unfreeze) additional cartridges to be stored on a panel or LSM</td>
</tr>
<tr>
<td>HOSTID</td>
<td>changes an old host id to a new host id</td>
</tr>
<tr>
<td>HSCLEVel</td>
<td>specifies that the HSC active and release level indicators are to be cleared for the designated host</td>
</tr>
<tr>
<td>LOGFILE</td>
<td>defines primary and secondary log files to include logical transactions necessary to recover the CDS.</td>
</tr>
<tr>
<td>MAJNAME</td>
<td>specifies that the ENQ/DEQ/RESERVE QNAME is to be set</td>
</tr>
<tr>
<td>MIGOPT</td>
<td>changes the following VTCS migration parameters:  ■ maximum and minimum concurrent automatic migration, immediate migration, and migrate-to-threshold tasks  ■ high and low AMTs</td>
</tr>
<tr>
<td>NEWHOST</td>
<td>specifies that a new host is to be added</td>
</tr>
<tr>
<td>RMM</td>
<td>enables or disables the VTCS to DFSMSrmm interface</td>
</tr>
<tr>
<td>SCRLABL</td>
<td>specifies the scratch label type is to be set.</td>
</tr>
<tr>
<td>SLISTATN</td>
<td>specifies that the LMU station addresses are to be set.</td>
</tr>
<tr>
<td>SLIDRIVS</td>
<td>specifies that the device numbers for the drives in a particular panel are being changed or added</td>
</tr>
<tr>
<td>SMF</td>
<td>specifies that the SMF record type used by the HSC is to be set</td>
</tr>
<tr>
<td>TAPEPlex</td>
<td>specifies that the TapePlex is to be set</td>
</tr>
<tr>
<td>TCHNIQE</td>
<td>specifies that the control data set recovery technique is to be set</td>
</tr>
<tr>
<td>VAULT</td>
<td>The SET Vault utility is used to define the VAULT information of a server complex.</td>
</tr>
<tr>
<td>VAULTVOL</td>
<td>The SET VAULTVOL utility is used to define the VAULT Volume area.</td>
</tr>
<tr>
<td>VOLPARM</td>
<td>The SET VOLPARM utility defines the volume and pool information of a Server complex.</td>
</tr>
</tbody>
</table>
SET CLNPRFX

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET CLNPRFX sets a cleaning prefix.

**Note** – HSC must be shut down on all systems before changing the cleaning prefix.

Syntax

```
SET CLNPRFX(prefix)
```

**FIGURE 3-174** SET CLNPRFX syntax

Parameters

**CLNPRFX**

`prefix`

a 3-character prefix for the cleaning cartridges.
Valid characters are A-Z, 0-9, $, #, and @.

**Note** – HSC must be shut down on all systems before changing the cleaning prefix.
SET CLNPRFX Procedure

Follow this procedure to change a cleaning cartridge prefix:

1. Eject all cleaning cartridges from all ACSs. The HSC records information about cleaning cartridges in the CDS.
2. Terminate the HSC on all hosts.
3. Change the cleaning prefix using SET CLNPRFX.
4. Initialize the HSC on any desired hosts.
5. Enter new cleaning cartridges identified with the new prefix into all ACSs.

Note – It is preferable to enter new cleaning cartridges because a cartridge’s select count is set to zero when it is ejected and reentered. The select count tracks the number of times a cleaning cartridge has been used.
SET COMPRFX

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET COMPRFX sets a HSC/VTCS command prefix.

Syntax

```
SET COMPRFX(cmdhex)
```

FIGURE 3-175 SET COMPRFX syntax

Parameters
COMPRFX

`cmdhex`

the 2-character hexadecimal code of the command prefix. Do not choose a value that conflicts with values assigned to other subsystems. The characters associated with each code are shown in Table 3-16 on page 537.

Note –

- The command prefix is not valid until the HSC or VTCS system is recycled.
- Make sure that the prefix character used does not conflict with any of the following:
  - another subsystem’s command prefix character (such as “$” for JES2, “*” for JES3, or “;” the delimiter for TSO).
  - the command delimiter for MVS, specified as the value for the CMDDELIM keyword in SYS1.PARMLIB (CONSOLxx) and described in the IBM z/OS Installation and Tuning Guide.
  - a JES line editing character as specified in the JES installation statements or default. For JES2 the initialization statement is CONDEF.
  - For JES3 the installation statement is CONSTD. Descriptions of these statements and default values can be found in the appropriate IBM z/OS JES3 Installation and Tuning Guide.
  - If you are running the HSC on a VM host that shares the CDS with a HSC running on MVS, make sure that your command prefix character does not conflict with any of the VM facilities, such as the CP line editing symbol.
TABLE 3-16  Mapping of Command Prefix Codes to Characters

<table>
<thead>
<tr>
<th>Hex</th>
<th>Character</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>null</td>
<td>blank</td>
</tr>
<tr>
<td>4A</td>
<td>¢</td>
<td>cent</td>
</tr>
<tr>
<td>4B</td>
<td>.</td>
<td>period</td>
</tr>
<tr>
<td>4C</td>
<td>&lt;</td>
<td>less than</td>
</tr>
<tr>
<td>4D</td>
<td>(</td>
<td>left parenthesis</td>
</tr>
<tr>
<td>4E</td>
<td>+</td>
<td>plus</td>
</tr>
<tr>
<td>4F</td>
<td>!</td>
<td>vertical bar</td>
</tr>
<tr>
<td>50</td>
<td>&amp;</td>
<td>ampersand</td>
</tr>
<tr>
<td>5A</td>
<td>!</td>
<td>exclamation point</td>
</tr>
<tr>
<td>5B</td>
<td>$</td>
<td>dollar sign</td>
</tr>
<tr>
<td>5C</td>
<td>*</td>
<td>asterisk</td>
</tr>
<tr>
<td>5D</td>
<td>)</td>
<td>right parenthesis</td>
</tr>
<tr>
<td>5E</td>
<td>;</td>
<td>semicolon</td>
</tr>
<tr>
<td>5F</td>
<td>¬</td>
<td>not symbol</td>
</tr>
<tr>
<td>60</td>
<td>-</td>
<td>minus</td>
</tr>
<tr>
<td>61</td>
<td>/</td>
<td>slash</td>
</tr>
<tr>
<td>6B</td>
<td>,</td>
<td>comma</td>
</tr>
<tr>
<td>6C</td>
<td>%</td>
<td>percent</td>
</tr>
<tr>
<td>6D</td>
<td>_</td>
<td>underscore</td>
</tr>
<tr>
<td>6E</td>
<td>&gt;</td>
<td>greater than</td>
</tr>
<tr>
<td>6F</td>
<td>?</td>
<td>question mark</td>
</tr>
<tr>
<td>7A</td>
<td>:</td>
<td>colon</td>
</tr>
<tr>
<td>7B</td>
<td>#</td>
<td>crosshatch</td>
</tr>
<tr>
<td>7C</td>
<td>@</td>
<td>at sign</td>
</tr>
<tr>
<td>7E</td>
<td>=</td>
<td>equals sign</td>
</tr>
<tr>
<td>7F</td>
<td>&quot;</td>
<td>double quote</td>
</tr>
</tbody>
</table>

Note: If you specify a null command prefix (hex 40), you must use the MVS MODIFY command to perform any HSC operator command.

Example: F SLS0 MOUNT EDU050,B30

where:
F an abbreviation for the MVS MODIFY command
SLS0 a HSC subsystem
MOUNT a HSC operator command
EDU050 a VOLSER ID
B30 a designated tape drive
SET DRVHOST

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET DRVHOST directs SMC client systems to use drive addresses defined in the SMC DRIVemap command to influence allocation and request mounts and dismounts.

Note – See “DRIVemap” on page 79 for more information about the SMC DRIVemap command.

Syntax

\[ \text{FIGURE 3-176 SET DRVHOST syntax} \]

Parameters

DRVHOST

OFF
indicates that each HSC reports device addresses to SMC clients based on drives defined for that host in the HSC SLILIBRY LIBGEN macro.

host-id
a host name defined in the CDS.
SET EJCTPAS

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET EJCTPAS sets a HSC eject password. This password is not valid until the HSC system is recycled.

Syntax

```
SET EJCTPAS(newpswd),OLDPASS(oldpswd)
```

FIGURE 3-177 SET EJCTPAS syntax

Parameters

**EJCTPAS**

*newpswd*

a 1- to 8-character eject password.

The new password must be alphanumeric: A-Z (capital letters only) and 0-9.

If *newpswd* is omitted, eject password checking is disabled.

**Note** – *newpswd* is not be displayed on SLSPRINT.

**OLDPASS**

specifies that the old eject password is being specified. The old password must be specified to change or delete a password. To delete an old password, omit it from the syntax, i.e., OLDPASS(). If there is not currently an eject password, this parameter can be omitted.

*oldpswd*

the 1-to 8-character old eject password.

**Note** – *oldpswd* is not displayed on SLSPRINT.
SET FREEZE

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET FREEZE specifies whether to disallow (freeze) or allow (unfreeze) additional cartridges to be stored on a panel or LSM.

Syntax

```
SET FREEZE(ON|OFF) FORLSMID(lsm-id) FORPANEL(panel)
```

Parameters

FREEZE

ON
specifies to freeze a panel or LSM, which prevents additional cartridges from being moved to it. This restriction includes allocating new cartridge locations on a panel or LSM as a result of:
- a MOVE command, utility, or PGMI request
- cartridge entry into the ACS
- float, scratch dismount, or scratch redistribution processing.

If a cartridge on a frozen panel is selected (e.g., through a mount request), it may be returned to its home cell on the frozen panel after fulfilling the request.

Cartridges already located on a frozen panel or LSM must be deliberately moved off using the MOVE command, utility, or PGMI request, or cartridges can be ejected by running the EJECT command or EJECT utility.

OFF
specifies to unfreeze a panel or LSM, which allows additional cartridges to be moved to it.
FORLSMID

specifies that the operation is being restricted to a specific panel or LSM.

\textit{lsm\_id}

the LSMid (\textit{AA:LL}) of the LSM being frozen or unfrozen. An LSMid (\textit{lsm\_id}) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (\text{:}).

FORPANEL

optionally, specifies that the operation is being restricted to a specific panel.

\textit{panel}

the 2-digit ID of the panel to be frozen or unfrozen. The specified panel must be an existing drive panel in the LSM. See “Panels” on page 711 for a list of valid values.

\underline{Note –}

\begin{itemize}
  \item If frozen panels already exist in an LSM, and then you freeze the entire LSM, all panels will be unfrozen when you unfreeze the LSM.
  \item If you want some panels to remain frozen after unfreezing the entire LSM, you can add \texttt{SET FREEZE ON FORLSMID FORPANEL} statements to the same SLUADMIN JOBSTEP.
  \item When an LSM is frozen, no new cell allocations occur. However, any cartridge from the frozen LSM that is currently mounted on a drive will return to its home cell.
  \item Frozen or unfrozen panels and LSMs are recognized immediately by all active HSCs. It is not necessary to stop and reinitialize active HSCs to detect changes made by \texttt{SET FREEZE}.
  
  On a frozen panel, if a panel type is changed by running the MERGEcds or Reconfiguration utility, the new panel is not frozen. If the panel type \textbf{did not} change, the panel remains frozen after a merge or reconfiguration.
\end{itemize}
SET HOSTID

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET HOSTID renames a hostid.

**Note** – If other hosts are active at the time of the host name change, some messages on those active hosts may display the old host name. After the HSC is restarted on those hosts, the new host name appears in the messages.

Syntax

```
SET HOSTID(newhost),FORHOST(oldhost)
```

FIGURE 3-179 SET HOSTID syntax

Parameters

HOSTID
specifies that the old host ID is being changed to a new name.

`newhost`

a 1-to 8-character host ID, which represents the SMF system ID for both JES2 and JES3. `newhost` cannot already be defined in the CDS.

FORHOST
specifies the old host ID.

`oldhost`

a 1-to 8-character host ID. This host must not be marked active in the CDS. A HSC can be down but still marked active. SET HOSTID would fail to run. To be marked inactive, the HSC, in the host that is down, must be brought up and then shut down. Also, another host could perform cross-host recovery on the HSC that is down, but marked active. Either of these change the status in the CDS of the down HSC from active to inactive. See “SET HSCLEVEL” on page 543 for information about resetting operating flags.

**Note** – You must delimit the HOSTID (`newhost` or `oldhost`) with quotes when this ID is in lower case.
SET HSCLEVEL

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET HSCLEVEL clears HSC active and release level indicators for a designated host.

- **Note** – If used, HSCLEVEL should be performed *only when the host designated in host-id is inactive.*

These indicators remain set after an abrupt termination of the HSC has occurred (e.g., a cancellation of the HSC or a crash of the operating system).

Syntax

```
SET HSCLEVEL(OFF), FORHOST(host-id)
```

**FIGURE 3-180** SET HSCLEVEL syntax

Parameters

HSCLEVEL

OFF
- specifies that the HSC active and HSC release level indicators for the designated host are to be cleared.

FORHOST
- specifies that the active indicators are to be cleared for the designated host.
- **host-id**
  - the 1- to 8-character host ID of the host to which the operation is restricted.

- **Note** – Oracle recommends the following alternatives to executing SET HSCLEVEL because they reset the HSC indicators and recover resources owned by the failing host:
  - Restart the HSC on the host.
  - Enter the RECOVER *host-id* FORCE operator command.
SET LOGFILE

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The SET LOGFILE command is part of the HSC Transaction Logging Service, introduced in HSC 7.0.

This command defines primary and secondary log files used by the HSC transaction logging service to record VTCS logical transactions necessary to recover the CDS.

If it becomes necessary to restore a CDS, the information in these log files can be used to reduce the amount of time required to restore the VTCS data in the CDS back to the proper state.

Note –
■ Log files must be pre-formatted using the FMTLOG utility. See “FMTLOG” on page 384 for more information.
■ If logging is not currently active, log file names specified in the SET LOGFILE command are activated immediately.
■ If logging is currently active, you must run the OFFload LOGFILE utility using the OFFload LOGFILE command to change the log files. See “OFFload” on page 498 for more information.

Syntax

FIGURE 3-181 SET LOGFILE syntax
Parameters

LOGFILE

primary-log-file-dsn

the data set name for the primary log file. This parameter is required.

OFF

Specify OFF in place of the primary-log-file-dsn to indicate that logging should be terminated. Logging will continue on the HSC subsystem until you run OFFload LOG, unless you also specify the IMMED parameter.

IMMED

specifies that logging should be immediately stopped on all active HSC subsystems. When IMMED is specified, any previous log data cannot be offloaded.

secondary-log-file-dsn

optionally, the data set name for the secondary log file. This parameter is required if a secondary log file was previously defined.

When changing only the secondary log file data set name, you must re-specify the existing primary log file data set name in the primary log file data set name position.

OFF

Specify OFF in place of the secondary-log-file-dsn to change from duplex to simplex logging.
SET MAJNAME

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
- Active HSC not required
- HSC must be shut down on all systems before changing the QNAME.

Description
SET MAJNAME sets the ENQ/DEQ/RESERVE QNAME.

Syntax

```
SET MAJNAME(qname)
```

FIGURE 3-182 SET MAJNAME syntax

Parameters

**MAJNAME**

- `qname`

  a 1- to 8-character QNAME. The QNAME is blank padded on the right. The name should conform to the requirements for a QNAME. If any hosts are MVS hosts, to prevent conflicts with the operating system, the QNAME should not start with “SYSA” through “SYSZ.” Since the HSC is authorized, the “SYSA” through “SYSZ” names would be allowed, but deadlock may result.

**Note** – HSC must be shut down on all systems before changing the QNAME.
SET MIGOPT

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
SET MIGOPT changes the following migration parameters:
- Maximum and minimum concurrent automatic migration, immediate migration, and migrate-to-threshold tasks
- High and low AMTs

Syntax

```
SET MIGOPT
  VTSS(vtssname)
  MAXMIG(nn)
  MINMIG(nn)
  HIGHthld(nn)
  LOWthld(nn)
```

![FIGURE 3-183 SET MIGOPT syntax](image)

Parameters

VTSS
optionally, specifies the VTSS whose migration parameters you want to change. If you do not specify a VTSS, the changes affect all VTSSs.

vtssname
the VTSS identifier.

MAXMIG(nn)
optionally, specifies the maximum number of concurrent automatic migration, immediate migration, and migrate-to-threshold tasks.

Valid values are 1 to the number of RTDs attached to the VTSS. There is no default; if you do not specify a value, the current value is unchanged.

MINMIG(nn)
optionally, specifies the minimum number of concurrent automatic migration, immediate migration, and migrate-to-threshold tasks.

Valid values are 1 to the MAXMIG setting. There is no default; if you do not specify a value, the current value is unchanged.
HIGHthld
optional, specifies the new high AMT.

high-thr
the new high AMT as a percent of VTSS space. Valid values are 5 to 95 and must be greater than the LOWthld value.

LOWthld
optional, specifies the new low AMT.

low-thr
the new low AMT as a percent of VTSS space. Valid values are 5 to 95 and must be less than the HIGHthld value.
SET NEWHOST

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET NEWHOST defines a new host.

Syntax

\[\text{SET NEWHOST} (\text{newhost}), \text{LIKEHOST} (\text{model-host})\]

FIGURE 3-184 SET NEWHOST syntax

Parameters

NEWHOST
newhost
a 1- to 8-character host ID, which represents the SMF system ID for both JES2 and JES3.

Note –
- The new host to be added cannot exceed the maximum limitation of 16 hosts.
- newhost cannot already be defined in the CDS.
- You must delimit the HOSTID with quotes when newhost is in lower case.

LIKEHOST
specifies that an existing configuration, as currently defined in the LIBGEN, is to be used for the new host. Settings used include:
- SLILIBRY NNLBDRV (nonlibrary drive esoteric)
- SLIACS ACSDRV (ACS drive esoteric)
- SLISTATN ADDRESS (ACS 3270 station addresses)
- SLIDRIVS ADDRESS (drive addresses)

model-host
a 1- to 8-character host ID.
SET RMM

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC/VTCS

Description
SET RMM enables or disables the VTCS to DFSMSrmm interface.

Syntax

FIGURE 3-185 SET RMM syntax

Parameters

Enable
enables the VTCS to DFSMSrmm interface. With the interface enabled, VTCS communicates with DFSMSrmm on all scratch mounts and scratch requests of VTVs whose Management Class specifies DELSCR(YES).

Disable
disables the VTCS to DFSMSrmm interface. With PTF L1H139T installed, the interface is automatically disabled at VTCS initialization.

If you do not specify a parameter, VTCS displays the current setting of the interface.

Note –
- Enabling the DFSMSrmm interface is required only for sites that do not have IBM APAR OA03368 applied and the following (minimum) VTSS microcode levels installed:
  - VSM3: N01.00.65
  - VSM4: D01.00.03
  - VSM5: all microcode levels have the required change
- If required, Oracle recommends adding the VT SET RMM ENA command to the SLSSYxx PARMLIB member read at HSC initialization.
- Enabling this interface can cause delays in scratch mount processing.
SET SCRLABL

**Interfaces:**
SLUADMIN utility only
UUI: No

**Subsystem Requirements:**
Active HSC not required

**Description**
SET SCRLABL specifies the scratch label type.

To add to the scratch pool, the REPLacell function is run before the Scratch Update utility. Otherwise, the scratch update utility should be run to update the scratch pools after using this function.

**Syntax**

![SET SCRLABL syntax](image)

**Parameters**

**SCRLABL**

**SL**

specifies that nonspecific requests for standard-labeled tapes are to be automated.

**AL**

specifies that nonspecific requests for ANSI-labeled tapes are to be automated.

**NL**

specifies that nonspecific requests for nonlabeled tapes are to be automated.

**NSL**

specifies that nonspecific requests for nonstandard labeled tapes are to be automated.
SET SLIDRIVS

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET SLIDRIVS adds or changes device numbers for drives in a particular panel.

- For 9310 and 9740 libraries, these changes take effect when you recycle the affected HSC system(s). See “Running SET SLIDRIVS With the HSC Active” on page 555 for more information.
- For SL3000 and SL8500 libraries, these changes take effect when you issue a MODIFY CONFIG UPD ACS(XX) for the ACS that the drives were added to. NCO adds the drives to the configuration. There is no need to recycle the HSC.

Caution – For 9310 and 9740 libraries, Oracle recommends you bring the HSC down on all hosts before specifying this parameter, and recycle the HSC after every SET SLIDRIVS operation. Table 3-17 on page 555 describes some instances where the HSC can remain active, however, unpredictable results can occur.

Syntax

![FIGURE 3-187 SET SLIDRIVS syntax](image)
Parameters

**SLIDRIVS**

`addr0,...addr31`

the device numbers for the panel. The numbers are from the top of the panel down. If a device number is omitted, this means that the host cannot access a drive in that particular position in the panel, or the drive does not exist.

---

**Note –**
- Blanks as well as commas may be used to separate the drive specifications.
- The total number of drives specified (including comma placeholders) must be:
  - 4, 10, or 20 for a 9310
  - 16 for an SL8500
  - 8, 16, 24 or 32 for an SL3000
  - You cannot specify 20-drive panels on 9740 (TimberWolf) LSMs or SL8500 libraries.
  - 10-drive and 20-drive panels cannot be specified on 4410 LSMs.
- Before this utility can be executed, all cells in the panel must be empty if the user is moving to or from a 20-drive panel configuration.
- The user can change a drive panel between a 4- or 10-drive panel (normal) and a 20-drive panel (wide) without running a reconfiguration. Affected panels must be empty and no cells in the panels can be allocated to cartridges. To make sure that drive panels being changed from normal to wide configurations (or vice versa) remain empty, freeze them with the SET FREEZE utility. Then, move all cartridges to other panels or LSMs.
- If a panel type is changed by SET SLIDRIVS, the new panel will not be frozen. Frozen panels whose panel type did not change remain frozen after SET SLIDRIVS.
- HSC does not allow duplicate addresses for drives.
- If it becomes necessary to exchange the drive addresses on one panel with the drive addresses on another panel, the addresses on one of the panels must first be changed to temporary addresses that are not currently defined. For example:

  ```
  LSM00, PANEL10, ADDRESSES=400,401,402,403
  LSM01, PANEL11, ADDRESSES=404,405,406,407
  ```

  If the 400-403 addresses are to be moved to LSM01 and 404-407 are to be moved to LSM0, the SET utility must first be run to change the LSM0 addresses (400-403) to 900-903 (or some other addresses that are not currently defined). The SET utility is then run to change the LSM01 addresses to 400-403. The utility is run a third time to change the temporary LSM0 addresses (900-903) to 404-407.
On all 9310 LSMs, drives are defined to the HSC from top to bottom, with \textit{addr0} representing the topmost drive and \textit{addrn} the bottommost drive.

However, on a 9740 10-drive panel LSM, the drives are populated and configured to the 9740 LSM from bottom to top. (9740 4-drive panels are configured to the 9740 LSM from top to bottom, as are all other LSM drive panels.)

An example showing how to define a 9740 10-drive panel containing five 9840 drives is:

\begin{verbatim}
SET SLIDRIVS(,,,,,BD4,BD3,BD2,BD1,BD0),FORLSMID(lsm-id),
FORPANEL(panel)
\end{verbatim}

For the SL3000, drives are defined from top to bottom, right to left, as looking from the front to the back of the library.

For the SL8500, drives are defined from top to bottom, right to left, as viewed from the outside of the library.

\section*{FORLSMID}

specifies that the operation is being restricted to a specific LSM.

\begin{verbatim}
lsm-id
\end{verbatim}

\textit{lsm-id} is the LSMid (\textit{AA:LL}) containing the drive panel whose addresses are being changed. An LSMid (\textit{lsm-id}) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:).

\section*{FORPANEL}

specifies that the operation is being restricted to a specific panel.

\begin{verbatim}
panel
\end{verbatim}

\textit{panel} is the 2-digit ID of the panel containing the drives whose addresses are being changed. See "Panels" on page 711 for a list of valid values.

\section*{Model}

optionally, specifies the transport model number.

\begin{verbatim}
model-type
\end{verbatim}

\textit{model-type} is the model type.

See Appendix A, "MEDia, RECtech, and MODel Values" for a list of valid \textit{model-type} values.

\section*{Note –} The specified panel must be an existing drive panel in the LSM.

\section*{Note –} The MODEL parameter is only used to specify the drive type for manual RTDs, which are defined in a nonexistent ACS. When an LSM is brought online, the (non-manual) drive type is automatically set.
FORHOST

specifies that the operation is being restricted to a specific host. Only the specified
hosts’ drive device numbers are set. If omitted, the device numbers for all hosts are
changed.

**Note** – The number of drive positions for a specific host must equal the number of
drive positions defined globally (issuing SET SLIDRIVS without the FORHOST
parameter).

`host-id`

the 1- to 8-character host ID of the host, to which the operation is restricted.

Running SET SLIDRIVS With the HSC Active

**Note** – The following applies to 9310 and 9740 LSMs only. It does not apply to the
SL8500 or SL3000.

Ideally, the HSC should be shut down on all hosts when you specify the SET SLIDRIVS
parameter. In some cases, however, the HSC can be left active without causing adverse
results. Table 3-17 defines options for running SET SLIDRIVS.

**TABLE 3-17**  HSC State/SET SLIDRIVS Operation

<table>
<thead>
<tr>
<th>HSC State</th>
<th>Effect on SET SLIDRIVS</th>
</tr>
</thead>
</table>
| Down      | If the HSC is down on all hosts, the HSC recognizes all new drive
           | locations when it is initialized. |
| Active    | The HSC can be up on all hosts only if new drives are being added at new
           | drive locations. The HSC recognizes the new drive locations when it is
           | recycled on a host. |
| Active    | If unit addresses are changed or deleted for an existing drive location, 
           | either
           | ■ the affected LSM must be offline until the HSC has been recycled on
           | all hosts, or
           | ■ the affected ACS must be offline to all affected hosts that access an
           | HSC that has not been recycled. |
SET SLIDRIVS Procedure

The following procedures show one method for changing unit addresses with the HSC active.

*For the 9310 and 9740:*

- For one host:
  1. Modify the affected LSM offline (MODify lsm-id OFFline). The LSM will be offline to all hosts.
  2. Use SET SLIDRIVS to update the CDS drive records while the Oracle StorageTek CSE(s) is making the hardware changes.
  3. Recycle the HSC on one host.
  4. Vary the affected ACS offline (Vary ACS(acs-id) OFFline) on all hosts running an HSC that has not been recycled.
  5. Modify the affected LSM online (MODify lsm-id ONLINE). The LSM will be online to all hosts where the ACS is online.

*Note –* Only hosts that are online to the ACS and running a recycled HSC will mount to drives connected to this LSM.

- For the remaining hosts, recycle the HSC, and the affected ACS will come up.

*For the SL3000 and SL8500:*

1. Make necessary hardware changes (add/delete/move drives).
2. Modify the SET SLIDRIVS JCL deck to reflect the changes.
3. Run SET SLIDRIVS.
4. Issue MODIFY CONFIG (or MODIFY CONFIG ACS(xx))

The changes will cascade to all other hosts.
SET SLISTATN

**Interfaces:**
SLUADMIN utility only
UUI: No

**Subsystem Requirements:**
Active HSC not required

**Description**
SET SLISTATN adds or changes LMU station addresses in an ACS. The change does not take effect until the affected HSC(s) is recycled.

An affected HSC is one that resides in the host specified in FORHOST. If FORHOST is omitted, all HSCs are relevant because the operation is not restricted to a specific host.

**Syntax**

```
SET SLISTATN(stat1,...,stat16),FORACS(acs-id),FORHOST(host-id)
```

**Parameters**

**SLISTATN**

*stat1,…,stat16*

the LMU station addresses associated with a particular ACS. No station addresses are required. Up to 16 can be specified, separated by commas.

**Note** —
- When adding one or more station addresses to an existing list of stations, you must specify all old stations as well as new ones. Any stations (for this ACS and Host ID) not specified here will be deleted and no longer available for use.
- To remove station addresses for an ACS or host, do not specify station addresses following the SLISTATN parameter. For example,

```
SET SLISTATN(),FORACS(01),FORHOST(HSCA)
```

**FORACS**

specifies the ACS for which station addresses are being changed.

*acs-id*

the ACSid whose stations are being changed (00 - FF).
FORHOST

specifies that the operation is being restricted to a specific host. Only the specified hosts’ stations are set. If omitted, the stations for all hosts are changed.

*host-id*

the 1- to 8-character host ID for the host to which the operation is restricted.
SET SMF

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET SMF adds a new SMF record type for HSC.
Until the HSC is recycled on all CPUs, the ACTIvities command produces incorrect results because some HSC systems are writing records with the old SMF type, and some with the new record type.

Syntax

```
SET SMF(libtype)
```

**FIGURE 3-189** SET SMF syntax

Parameters

**SMF**

*libtype*

the SMF record type. The range is from 0 to 255, inclusive.
Since 128 through 255 are for user-defined records, it is recommended that a number from 128 through 255 be chosen, and that the number does not conflict with other user-defined record types.
SET TAPEPlex

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET TAPEPlex sets a TapePlex name.

Syntax

```
SET TAPEPlex(tapeplex-name)
```

FIGURE 3-190 SET TAPEPlex syntax

Parameters

TAPEPlex

```
tapeplex-name
```
the 1-8 character TapePlex name.

The TapePlex name must start with an alphabetic or numeric character. Remaining characters may be letters, numbers, or hyphens, however, a hyphen may not be the last character. You can specify a NULL value (TAPEPLEX()) to allow the TapePlex name to be set automatically by the next SMC transaction.

Note – This name must match the TapePlex name specified on the SMC TAPEPlex command on ALL SMC systems that communicate with this HSC system. See “TAPEPlex” on page 139 for more information about the SMC TapePlex command.
SET TCHNIQE

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET TCHNIQE sets the control data set recovery technique. This replaces the recovery technique currently defined in the CDS.

Refer to the publication Configuring HSC and VTCS for information about the LIBGEN SLIRCVRY macro. A recovery technique value must be specified; there is no default value.

Syntax

```
SET TCHNIQE (NONE, JOURNAL, SHADOW, BOTH, STANDBY, ALL)
```

FIGURE 3-191 SET TCHNIQE syntax
Parameters

TCHNIQE

NONE

specifies no form of recovery is used for the control data set. Thus, the primary control data set must be rebuilt, if inaccessible.

JOURNAL

specifies that there is to be only one primary control data set and that journals are kept. These data sets are to be used for recovery purposes.

The journals contain a record of all transactions that update the control data set. There are two journals per host. It is recommended that they are placed on separate HDAs from the primary control data set DASD volume.

SHADOW

specifies that there is to be two distinct copies of the control data set (primary and secondary) for recovery purposes. It is recommended that these data sets reside on separate HDAs and separate strings. A journal is not recorded.

BOTH

specifies that two distinct copies of the control data set (primary and secondary) and journals are specified for recovery purposes. The default is BOTH.

STANDBY

specifies that primary, secondary, and standby control data sets are to be recorded for recovery purposes. No journals are recorded during HSC operation.

ALL

specifies that all control data sets (primary, secondary, and standby) and journals are to be kept and available for recovery purposes.

SET TCHNIQE Procedure

Use the following procedure to invoke the TCHNIQE utility and to set the appropriate recovery technique value:

1. ALLOCATE, based on existing CDS definitions, any new CDS copies that will be needed for the subsequent SET recovery technique.

2. Stop the HSCs on all hosts configured to use the CDS you are intending to update with SET recovery technique.

3. Run the BACKup utility.

4. Run the RESTore utility to restore all CDS copies required to support the current recovery technique. If the recovery technique update in the following step requires new CDS copies, then include them in this restore.

5. Run the SET utility with the appropriate recovery technique value. It is important to note that the SET utility for this recovery technique update must include DD statements for all CDS copies defined in either the old or the new recovery technique.

6. Run the BACKup utility again. This backup provides you with the ability to restore the updated CDS.
SET VAULT

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET VAULT defines VAULT information for a server complex. This information is stored in the CDS and serves as the VAULT information source for all server systems that access the CDS.

Note – Before running this utility for the first time, you must run the SET VAULTVOL utility to create the Vault Volume records in the CDS.

Syntax

FIGURE 3-192 SET VAULT syntax
Parameters

VAULT

ADD, MOD, DEL

specifies to add, modify, or delete a Vault from the CDS. Only one of these parameters may be specified on a SET VAULT statement.

NAME

specifies the name of the Vault. You can specify a maximum of 8 characters. This parameter is required.

DESC

optionally, specifies the description of the Vault. You can specify a maximum of 120 characters. If blank characters are included, the entire value must be enclosed in single quotes. This parameter is only valid with the ADD and MOD parameters.

NEWNAME

optionally, specifies the new name of the Vault. You can specify a maximum of 8 characters. This parameter is only valid with the MOD parameter.

TMSNAME

optionally, specifies the TMS Vault name. You can specify a maximum of 8 characters. This parameter is only valid with the ADD and MOD parameters.

SLOTS

specifies the number of slots in the Vault. The slot number can be 1-999,999,999. When specified with the MOD option, the SLOTS number must be greater than the current number of SLOTS defined to the Vault.

This parameter is required with the ADD option and optional with the MOD option.

Note – The total number of slots for all Vaults cannot exceed the number of Vault Volumes set by the SET VAULTVOL utility.
SET VAULTVOL

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET VAULTVOL defines the VAULT volume area. This information is stored in the CDS and serves the VAULT volume area information source for all server systems that access the CDS.

Note –
■ You must run this utility before running the SET VAULT utility.
■ There is no SET utility command to increase, decrease, or remove all vault volume records once the SET VAULTVOL utility is run. To increase the number of vault volume records, use the Merge CDS utility to migrate vaults and vaulted volumes to a CDS that has been configured with a greater number of vault volumes.

Syntax

```
SET—VAULTVOL—NBRVOLS—(nnnnnn)
```

FIGURE 3-193 SET VAULTVOL syntax

Parameters

VAULTVOL

NBRVOLS
specifies the number of VAULT volumes to be added to the CDS. This number can be 1-9,999,999,999.

Note –
■ Refer to the publication Configuring HSC and VTCS for details on calculating CDS space requirements for Vaulting.
■ The number of Vault volumes must be greater than the total number of slots for all Vaults created with the SET VAULT utility.
SET VOLPARM

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
SET VOLPARM defines the volume and pool information for a server complex. This information is stored in the CDS and is the volume and pool information source for all server systems (ELS 7.0 or higher) that access the CDS.

SET VOLPARM reads POOLPARM and VOLPARM control statements that define VOLUME/POOL information in the form of named pools of specific types, and their associated volser ranges.

Once SET VOLPARM is run, older volume and pool definitions are disabled for all server systems (ELS 7.0 or higher) that access the common CDS.

Note – HSC 6.2 or lower systems are unaware of the presence of the SET VOLPARM data and continue to operate as though the SET VOLPARM utility had not been run.

The following commands are disabled for systems (ELS 7.0 or higher) after SET VOLPARM:

HSC:
■ VOLDEF
■ SCRPDEF

VTCS:
■ MVCDEF
■ CONFIG VTTVOL/MVCVOL

The HSC/VTCS systems do not need to be recycled for the new volume and pool definitions to take effect. The attached HSC/VTCS in the CDS complex are notified of the definition changes and the volume and pool definitions are automatically active.

Syntax

![Syntax Diagram]

FIGURE 3-194 SET VOLPARM syntax
Parameters

VOLPARM

APPLY

specifies whether the POOLPARM/VOLPARM definitions are to be applied to the CDS:

NO

Validate the definitions but do not apply them to the CDS (the default).

YES

Apply the definitions. If you specify YES, the SLSPARM data set containing POOLPARM and VOLPARM control statements is read and applied to the CDS.

POOLPARM and VOLPARM control statements are defined in the SLSPARM data set, and define VOLUME/POOL information in the form of named pools of specific types, and their associated volser ranges.

- When a POOLPARM statement is read, all subsequent VOLPARMs encountered until the next POOLPARM statement are applied to the prior POOLPARM.
- When VOLPARM statements are read without a prior POOLPARM, those VOLSER volumes will be considered non sub-pool (subpool 0) volumes.

See “POOLPARM Control Statement” on page 568 and “VOLPARM Control Statement” on page 574 for more information.

Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the SET VOLPARM JCL:

SLSPARM

specifies the data set that contains the POOLPARM and VOLPARM control statements that define volumes and pools.
POOLPARM Control Statement

POOLPARM control statements define pool information for a server complex in the form of named pools of specific types.

VOLPARM statements define a volser, volser list, or volser range to be associated with the specified POOLPARM statement.

POOLPARM and VOLPARM statements are defined in the SLSPARM data set, and are loaded using the SET VOLPARM utility. See “SET VOLPARM” on page 566 for more information.

- When a POOLPARM statement is read, all subsequent VOLPARM statements encountered before the next POOLPARM statement are applied.
- When VOLPARM statements are read without a prior POOLPARM, those VOLSER volumes are considered non-subpool (subpool 0) volumes.

Syntax

![Diagram of POOLPARM syntax]

FIGURE 3-195 POOLPARM control statement syntax
Parameters

TYPE
 specifies the type of pool definition. Valid types are SCRATCH, CLEAN, MVC, and EXTERNAL.

NAME
 specifies the name of the volume pool.

`nnnn`

the volume pool name. A maximum of 13 characters is allowed; blank spaces are not permitted.

- NAME is required for TYPE(SCRATCH) and TYPE(EXTERNAL) pools.
- NAME is optional for TYPE(MVC) pools.
- NAME is not valid for TYPE(CLEAN) pools.

Additionally:
- NAME(DEFAULTPOOL) is not valid for TYPE(SCRATCH) or TYPE(MVC).
- NAME(ALL) is not valid for TYPE(MVC).

TYPE(SCRATCH) Subparameters

HOSTid
 optionally, defines the hosts that can access the named sub-pool.

`hostid`

the host id. Multiple host-lists may be specified, separating each host-list value with a comma. If a host id is not specified, the default is all hosts.

HOSTid determines which client hosts can mount volumes from the named subpool. If a mount request is received from a client not specified in the HOSTid list, the HSC rejects the mount request and the mount is not satisfied. If you did not specify an ALIASHOST on the SMC SERVER command, then specify the 4 character SMFID of the MVS hosts that will access the subpool. Otherwise, you can specify up to 8 characters for the host name matching the SMC ALIASHOST specification.

LABEL
 optionally, specifies the label type associated with the named sub-pool. Types include:

- SL - standard label (default)
- NL - no label
- AL - ANSI label
- NSL - nonstandard label

---

**Note** – Scratch volume requests without a sub-pool (sub-pool 0) will come from volumes NOT defined in named SUBPOOLS.

DRTEST
 optionally, specifies that the scratch pool is to be used in DRTEST environments.
TYPE(CLEAN) Subparameters

MAXclean

optionally, specifies the maximum cleaning cartridge usage for the named sub-pool. Do not specify values that exceed the manufacturer's recommendation for usage. The volumes defined in the CLEAN sub-pools must begin with the cleaning cartridge prefix defined in the LIBGEN.

Note – If MAXclean is not specified in the VOLPARM statement, the value or default of the MAXclean parameter in the MNTD operator command is used for all cleaning cartridge counts.

TYPE(MVC) Subparameters

DRTEST

optionally, specifies that the MVC pool is to be used only in DRTEST environments.

INITMVC

optionally, enables or disables the MVC initialization feature.
YES
enables the MVC initialization feature.
NO
disables the MVC initialization feature.

MVCFREE(nn)

optionally, specifies the minimum number of free MVCs in the MVC pool. A free MVC has 100% usable space and does not contain any migrated VTVs. Valid values are 0 to 255. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used. If free MVCs is equal or less than this value, VTCS issues message SLS6616I and initiates an automatic space reclamation.

Note – If MVCFREE=0 is set, VTCS actually uses a value of 40.

MAXMVC(nn)

optionally, specifies the maximum number of MVCs to be processed in a single space reclamation run. Valid values are 1 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used. For automatic space reclamation to start, the number of eligible MVCs (determined by the THRESH parameter) must also exceed the MAXMVC value.
START=nn
optionally, specifies the level at which automatic space reclamation starts for each ACS (not globally for all ACSs), or, if specified, for a Named MVC Pool. Specify a percentage value, which is equal to:

\[(\text{Reclaim Candidates} / \text{Reclaim Candidates} + \text{Free MVCs}) \times 100\]

Where:

- Reclaim Candidates
  - is the number of Reclaim Candidates determined by the CONFIG RECLAIM THRESHLD parameter.
- Reclaim Candidates + Free MVCs
  - equals the number of Reclaim Candidates plus the number of free MVCs.

Valid values are 1 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

THRESH(\textit{nn})
optionally, specifies the percentage of fragmented space that makes an MVC eligible for demand or automatic reclamation. Valid values are 4 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

INPTHRRSH
optionally, specifies the percentage of fragmented space that makes an MVC in partitioned format (within the pool) eligible for dynamic reclaim processing. This value overrides the global INPTHRRSH value specified in the CONFIg RECLAIM statement. If this parameter is not specified, the current active global INPTHRRSH value is used.

\textit{nn}
- a percentage between 3 and 97. This value must be less than the THRESHLD value.

\textbf{Note} – If INPTHRRSH is specified, THRESHLD must also be specified. Both INPTHRRSH and THRESHLD play roles when space reclamation processes MVCs in partitioned format. Refer to the publication \textit{Configuring HSC and VTCS} for more information.
NORECLAM
optionally, specifies that the named MVCPOOL will not be eligible for space reclamation.

Note – The use of the MVCFREE, MAXMVC, THRESH, INPTHRSHand START parameters override the values specified on CONFIG for the named sub-pool.

NOMIGRAT
optionally, specifies that the MVCPOOL will not be eligible for selection for migration MVCs This allows MVC information to be retained in the CDS virtual area. The MVCs will not be used for new migrations.
**TYPE(EXTERNAL) Subparameters**

**OWNRPLEX**

optionally, specifies the name of the TapePlex that owns the volumes in the external pool.

For VTVs, this controls volumes imported via Cross-TapePlex Replication. A VTV can only be imported if the sending system’s TapePlex name matches the OWNRPLEX value.

Volumes in an EXTERNAL pool can be scratched only if the scratch request originates from the TapePlex matching the OWNRPLEX name. The TapePlex name is defined via the SMC TAPEPLEX NAME parameter and the CONFIG TAPEPLEX THISPLEX parameter.

Alternatively, volumes in an external pool with an OWNRPLEX name of “LOCALHSC” can be scratched on the local system (but not used as scratch volumes on the local system).

---

**Note** – Refer to the publications *Managing HSC and VTCS* and *ELS Disaster Recovery and Offsite Data Management Guide* for more information about Cross-Tape Replication.
VOLPARM Control Statement

VOLPARM control statements define volume attributes for a server complex. These statements define a volser, volser list, or volser range to be associated with a specified POOLPARM statement.

POOLPARM and VOLPARM statements are defined in the SLSPARM data set, and are loaded using the SET VOLPARM utility. See “SET VOLPARM” on page 566 for more information.

VOLPARM statements follow a POOLPARM statement and apply only to that POOLPARM.

- When a POOLPARM statement is read, all subsequent VOLPARM statements encountered before the next POOLPARM statement are applied.
- When VOLPARM statements are read without a prior POOLPARM, those VOLSER volumes are considered non-subpool volumes.

Syntax

```
VOLPARM VOLPARM(volser)

vol-range, vol-list

MEDia(media-type)

RECtech(recording-technique)

INITSCR, ORTEST
```

FIGURE 3-196 VOLPARM syntax
Parameters

**VOLSER**

specifies one or more volumes to which this definition applies.

*volser or vol-range or vol-list*

a single VOLSER, a VOLSER range, or a list of VOLSERs.

Do not overlap the ranges. Doing so causes an error which invalidates the entire POOLPARM definition.

**MEDia**

optionally, specifies the media type for the volume(s) specified on the VOLSER parameter.

*media-type*

the media type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.

---

**Note** –

- Only specific media types can be entered. Generic media types, that is, LONGitud and HELical cannot be specified.
- If this parameter is not specified, a default is chosen based on the value of the RECtech parameter. TABLE A-2 on page 702 shows default values used if MEDia is omitted.
- If both media type and recording technique are omitted, all media types and recording techniques are assumed to be eligible. It is recommended that MEDia always be specified on all VOLPARM statements.

**RECtech**

optionally, specifies the method used to record data on the media for the volume(s) specified on the VOLSER parameter.

*recording-technique*

the recording technique.

See Appendix A, “MEDia, RECtech, and MODel Values” for valid recording-technique values.

If this parameter is not specified on any matching VOLPARM statement, a default is chosen based on the value of the MEDia parameter. TABLE A-4 on page 705 shows default values used if RECtech is omitted.

**INITSCR**

optionally, specifies that the VIRTUAL volume has an initial status of SCRATCH. The INITSCR parameter is only valid with MEDIA(VIRTUAL) and/or RECTECH(VIRTUAL) volumes. INITSCR only has meaning when the VTV is first defined.

**DRTEST**

optionally, specifies that the volumes in the defined range are to be used only in DRTEST environments. The DRTEST parameter is only valid for VOLPARM statements defined before the first POOLPARM statement.
SRVlev

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The SRVlev command sets the HSC service level. See “HSC Service Levels” on page 55 for information about BASE and FULL service levels.

Syntax

![SRVlev syntax](image)

FIGURE 3-197 SRVlev syntax

Parameters

**BASE**

specifies that the HSC is to operate at the BASE service level.

**FULL**

specifies that the HSC is to operate at the FULL service level.

**Note** – When the HSC service level is brought from BASE up to FULL, outstanding mount requests are resolved.
STOPMN

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The STOPMN command stops monitoring of cartridge move requests from the programmatic interface.

Syntax

\[
\text{FIGURE 3-198 STOPMN syntax}
\]

Parameters

PGMI
specifies that monitoring of cartridge move requests from the programmatic interface is to be terminated.

L
optionally, identifies the console where the monitoring information is being displayed. If this parameter is omitted or if L= is specified without a console ID or console name, the monitoring being displayed on the console that issued the command is terminated.

cc
optionally, the console ID. Allowable values are decimal in the range from 00 through 99.
Specifying 00 stops information from being sent explicitly to the hardcopy log.

name
optionally, the console name.
SWitch

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The SWitch command can be used to manually reverse the roles of the master and standby LMUs or Library Controllers (LCs). The following configurations support switching:
- dual LMU
- SL8500 dual Library Controller (LC)

In a dual LMU environment, this command initiates an IPL in the master LMU, causing the current standby LMU to become the master LMU. If the former master LMU completes the IPL successfully, it then assumes the role of the standby LMU.

In a dual LC configuration for a multiple SL8500 library ACS, the SWitch command issues a request to the LMU to switch the library LCs by library ID.

Caution – Issue the Display Acs command before you enter the SWitch command to ensure the library to switch includes an assigned TCP/IP address or host name for the standby. If it does not, do not switch the library because doing so causes the HSC to lose communication with the library.

Note –
- For this release, only the SL8500 library is supported for dual LC switching.
- For an automatic switch to occur (for example, from LCA to LCB or visa versa), the LC must fail. In this case, if there is a network/communication problem with LCA, the HSC goes into network recovery for the LCA connection(s). If you cannot recover or fix the connection, issue the SWitch command to switch LCA to LCB manually.
- Before you issue the SWitch command, if the library is partitioned, be aware of other host software groups (ACSLs, HSC, ELS) using other partitions in the same library.
Syntax

![Syntax Diagram](image)

**Note:** ACS acs-id is optional in a single ACS environment; it is required in a multi-ACS environment.

**Parameters**

**Acs**

Optionally, indicates that an ACSId is being specified. This parameter is required for a multiple-ACS environment configuration or if an acs-id is specified.

**acs-id**

Identifies the ACS that must switch the current active connection as standby and bring the standby connection online as active.

**Note** –

- In a single ACS configuration, Acs acs-id is optional and defaults to ACS 00.
- If the acs-id defaults to 00 or is specified with no other parameters, then all of the ACS’s active connections are switched to standby, and the standby connections are switched to active.

**Library**

Optionally, specifies the SL8500 library ID for the connection switch. This parameter applies only to the SL8500 library.

**lib-id**

The library id from 1 to 9 or A to G.

For an SL8500 four library ACS cluster, each library is assigned an ID from 1 to 4, as shown below.

![Diagram of SL8500 ACS](image)
An ACS can have up to 16 library connections with A and B Library Controller (LC) connections. For the initial release, only one library (preferred to be ID 1) can have A and B LC connections. The other libraries can have a single LC connection. Each LC can handle dual TCP/IP (2B and 2A). The following table describes the LSM ID correlation to Library ID:

<table>
<thead>
<tr>
<th>Library ID</th>
<th>LSM ID Range</th>
<th>Library ID</th>
<th>LSM ID Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>00-03</td>
<td>9</td>
<td>20-23</td>
</tr>
<tr>
<td>2</td>
<td>04-07</td>
<td>A</td>
<td>24-27</td>
</tr>
<tr>
<td>3</td>
<td>08-0B</td>
<td>B</td>
<td>28-2B</td>
</tr>
<tr>
<td>4</td>
<td>0C-0F</td>
<td>C</td>
<td>2C-2F</td>
</tr>
<tr>
<td>5</td>
<td>10-13</td>
<td>D</td>
<td>30-33</td>
</tr>
<tr>
<td>6</td>
<td>14-17</td>
<td>E</td>
<td>34-37</td>
</tr>
<tr>
<td>7</td>
<td>18-1B</td>
<td>F</td>
<td>38-3B</td>
</tr>
<tr>
<td>8</td>
<td>1C-1F</td>
<td>G</td>
<td>3C-3F</td>
</tr>
</tbody>
</table>

Note –

- Before issuing this command, use the Display ACS `acs-id` command to see if the library to switch has a TCP/IP address or Host Name assigned to the standby. If there is not a TCP/IP address or Host Name assigned to the standby, do not switch the library as this will cause HSC to lose communication to the library.

- For a switch to occur (for example, from LCA to LCB), the LC must fail. For example, if there is a network/communication problem with LCA, HSC enters network recovery for the LCA connection(s). If you cannot recover/fix the connection, then issue the HSC SWitch command to manually switch LCA to LCB.

- If the library is partitioned, please be aware of the other host software groups (ACSLS, HSC, ELS) that are using other partitions in the same library before issuing the switch command.

Examples

The following examples illustrate the use of the SWitch command:

Switch control of ACS 00 to the Standby ACS

```
SWITCH ACS 00
```

Switch control of ACS 00 to the Standby Library

```
SWITCH ACS 00 LIB 1
```
TRace

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The TRace command enables or disables tracing of events for selected HSC and VTCS components.

The MVS GTF GTRACE facility performs the actual tracing. To create GTF output for the event, GTF must be started and the TRace command must be issued before the event.

Syntax

```
TRace comp-name
OFF
comp-list
```

FIGURE 3-200 TRace syntax
Parameters

OFF

turns off tracing for the specified component(s).

comp-name or comp-list

one or more components for which tracing is to be enabled or disabled. If a list of component names is specified, separate the identifiers with blank spaces or commas. Valid component names are listed below; uppercase letters denote the minimum abbreviations allowed.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alloc</td>
<td>allocation volume lookup</td>
</tr>
<tr>
<td>AScomm</td>
<td>address space communications</td>
</tr>
<tr>
<td>CAP</td>
<td>CAP common</td>
</tr>
<tr>
<td>CConfig</td>
<td>configuration control</td>
</tr>
<tr>
<td>Database</td>
<td>database server</td>
</tr>
<tr>
<td>FP</td>
<td>function points</td>
</tr>
<tr>
<td>Note: FP tracing is used only by Oracle developers.</td>
<td></td>
</tr>
<tr>
<td>HComm</td>
<td>host communications</td>
</tr>
<tr>
<td>Initiali</td>
<td>initialization/termination</td>
</tr>
<tr>
<td>Lmu</td>
<td>LMU driver</td>
</tr>
<tr>
<td>LS</td>
<td>LibraryStation</td>
</tr>
<tr>
<td>MOut</td>
<td>mount/dismount</td>
</tr>
<tr>
<td>Operator</td>
<td>operator commands</td>
</tr>
<tr>
<td>Recovery</td>
<td>recovery (Note: must also trace SERvice)</td>
</tr>
<tr>
<td>SERvice</td>
<td>services</td>
</tr>
<tr>
<td>Utilitie</td>
<td>utilities</td>
</tr>
<tr>
<td>UUI</td>
<td>Unified User Interface</td>
</tr>
<tr>
<td>Volume</td>
<td>volume/cell</td>
</tr>
<tr>
<td>VTcs</td>
<td>VTCS</td>
</tr>
<tr>
<td>WTO</td>
<td>WTO server</td>
</tr>
<tr>
<td>XML</td>
<td>XML interface</td>
</tr>
</tbody>
</table>

Note –

- When tracing is enabled or disabled for one or more components, the status of all component tracing is displayed.
- By default, all TRace command output goes to GTF. For example, to trace an LMU and send the output to GTF, issue TR LMU. No other parameters are necessary.
- To trace the Recovery component, you must also trace the SERvice component (a service is used to trace Recovery).
- The LS component displays in message SLS0068I only if LibraryStation has been initialized.
TRACELKP

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The TRACELKP command enables or disables tracing of LOOKUP events associated with HSC definition files. The GTF GTRACE facility is used to perform the tracing.

Syntax

```
TRACELKP
table-list
OFF—table-name
```

FIGURE 3-201 TRACELKP syntax

Parameters

OFF
turns off tracing for the specified component(s).

`table-name` or `table-list`
one or more LOOKUP definition files for which tracing is to be enabled or disabled. If a list of event names is specified, separate the identifiers with blank spaces or commas.

Note –
- When LOOKUP tracing is enabled or disabled for one or more files, the status of all LOOKUP tracing is displayed.
- All LOOKUP tracing output goes to GTF.
Valid LOOKUP table names are listed below; uppercase letters denote the minimum abbreviations allowed.

<table>
<thead>
<tr>
<th>Table Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLATTR</td>
<td>VOLATTR (VOLDEF) table</td>
</tr>
<tr>
<td>LMUPATH</td>
<td>LMUPATH (LMUPDEF) table</td>
</tr>
<tr>
<td>MVCPOOL</td>
<td>MVCPOOL (MVCDEF) table</td>
</tr>
<tr>
<td>MGMTCLAS</td>
<td>MGMTCLAS (MGMTDEF) table</td>
</tr>
<tr>
<td>STORCLAS</td>
<td>STORCLAS (STORDEF) table</td>
</tr>
<tr>
<td>LOOKFAIL</td>
<td>Trace the LOOKUP failures in detail. If LOOKFAIL is specified, the detail failure trace records are output for all events that are ON.</td>
</tr>
<tr>
<td>MIGRSEL</td>
<td>MIGRSEL (MGMTDEF) table</td>
</tr>
<tr>
<td>MIGRVTV</td>
<td>MIGRVTV (MGMTDEF) table</td>
</tr>
</tbody>
</table>
**UEXIT**

**Interfaces:**

Console or PARMLIB only  
UUI: No

**Subsystem Requirements:**

Active HSC at BASE or FULL service level

**Description**

The UEXIT command defines how HSC processes your user exits.

HSC user exits allow you to invoke your own processing routines at particular points during HSC processing. User exits controlled by the HSC are loaded at HSC initialization from the load library identified by DDNAME SLSUEXIT. The following user exits are managed by the HSC using the UEXIT command:

- SLSUX03  
- SLSUX05  
- SLSUX06  
- SLSUX14  
- SLSUX15

Using the UEXIT command, you can start the HSC with a user exit disabled and then enable the exit at any time the HSC is operational. If an exit does not perform as expected, make the necessary changes and load it again.

The UEXIT command optionally allows you to provide unique user exit load module names and to create different versions of an exit that can be run at different times (for example, day shift versus night shift). The load modules are contained in a user-defined load module library described at HSC startup.

---

**Note –**

- User Exit 03 and User Exit 05 are legacy interfaces and have been replaced by alternative facilities that do not require a User Exit.
- User Exit 03 is enabled at HSC initialization. The UEXIT command cannot be used to enable, disable, or reload this exit.
Syntax

```plaintext
UEEXIT nn
Load(name)
Enable
Disable
nn-range
(nn-list)
Query
```

**Parameters**

*nn*

specifies the user exit number. Refer to the *ELS Legacy Interfaces Reference* for user exit numbers.

**Enable**

optionally, specifies that the most current module for the specified user exit (*nn*) is to be enabled. This parameter may also be specified with the Load parameter.

**Disable**

optionally, specifies that the most current module for the specified user exit (*nn*) is to be disabled. This parameter may also be specified with the Load parameter.

**Load**

causes the specified module to be loaded into storage.

**SLSUXnn**

specifies the default name for the user exit. If *name* is not specified, then the default name is used when the HSC loads the module into storage.

**name**

the name of the module to be used for this exit. This is the entry point name which is used to link-edit the load module.

**Enable**

indicates that upon completion of the command the specified exit is considered as being active. Enable is the default.

**Disable**

indicates that upon completion of the command the specified exit is considered as being inactive.
**nn or nn-range or nn-list**

can be used with the Query parameter to specify a single user exit, a range of exits, or a list of exits.

When specifying a range of user exit numbers, the beginning number must be separated from the ending number by a hyphen.

**Example:** (04-09)

In a list of user exits, the user exit numbers must be separated by commas and the list must be enclosed in parentheses.

**Example:** (01,04,10)

**Query**

requests the status of all the currently loaded versions of the specified user exit number(s). A display of user exit status may be specified for a single user exit, a range of exits, or a list of exits.
UNSCratch

Interfaces:
Console or utility
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The UNSCratch command unscratches one or more volumes.

Syntax

```
UNSCratch VOLser(vol-list)
```

FIGURE 3-203 UNSCratch syntax

Parameters

**VOLser**

specifies the list of volume serial numbers to be added, deleted, or replaced in the scratch list(s).

**vol-list**

the volume serial numbers; this can be a single volume, a list of volume serial numbers, ranges of volume serial numbers, or combinations of lists with ranges delimited by commas. The entire list must be enclosed in parentheses.
UNSElect

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The UNSElect command unselects a volume that is erroneously in a selected state.

Note –
- Use this utility only if you are certain that the HSC has incorrectly left the volume selected. Incorrect use of this utility can result in HSC abends and errant volumes.

  Issue a Display Volume DETail command to determine which host has the volume in question. Then, issue Display DRives and Display Requests commands on the host that has the volume in question to see if that volume is being used.

  If the selected volume is mounted on a transport, issue a DISMount command for the transport. If there is a request active to the LMU for the volume, wait for the request to complete. If the overdue response handler indicates the request has timed out, you may want to abort the request.

- The UNSElect function can only be invoked when SLUADMIN is invoked APF authorized, key 0 through 7, or supervisor state. The load module invoked by UNSElect is SLUNSEL. Restricting access to this module restricts access to this utility function.

Syntax

![FIGURE 3-204 UNSElect syntax](image)
Parameters

VOLser
indicates that a VOLSER is being specified for unselection.

volser
the VOLSER to be unselected.

FORCE
optionally, indicates that the volume is to be unselected even if communication with the host that has the volume selected is not possible.
Vary

Interfaces:
- Console or PARMLIB (Vary ACS)
- Console or utility, UUI All (Vary CLINK, RTD, or VTSS)

UUI: Yes

Subsystem Requirements:
- Active HSC at FULL service level (Vary ACS)
- Active HSC/VTCS (Vary CLINK, RTD, or VTSS)

Description

The Vary command changes the online/offline state for the following:
- ACS or station
- CLINK
- PATH
- RTD
- VTSS
Syntax

Parameters

**ACS**

optionally, specifies the ACS to be made online, offline, or standby to this host.

*acs-id or acs-range or acs-list*

one or more ACSs to be varied. Each *acs-list* element can be either a single ACSId or an ACSId range. Ranges are separated by a dash. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

**STation**

optionally, specifies the stations to be made online, offline, or standby to this host.

In an ACS, a connection between the host CPU and an LMU is referred to as a “station.” Each station appears to the host CPU as a 3278-2 device and is physically connected to a port on a supported 3174, 3274 or compatible terminal controller. Each LMU can contain a maximum of 16 stations. Depending on the number of host CPUs connected to the ACS, each host CPU can have either one or several stations to each LMU.
*dev-id* or *dev-range* or *dev-list*

the stations to an LMU to be varied. Each *dev-list* element can be either a single device number or a range of device numbers. Ranges are separated by a dash. The elements in a list must be separated by commas or blanks, and the entire list must be enclosed in parentheses.

Each device number identifies a device attached to the host issuing the command. Allowable values are 000-FFF.

**ONline**
specifies that the stations are to be made online or standby to this host.

**OFFline**
specifies that the stations are to be made offline to this host.

**FORCE**
optionally, indicates that the stations are to be made offline immediately. The FORCE option can be specified when the HSC is at the full service level or is past the base service level going to the full service level.

This parameter applies only to the OFFline operand.

**CLink**
the specified CLINK.

*clink-id*
the link ID.

**VTSS**
the sending VTSS in the Cluster.

*vtssname*
the 1 to 8 character identifier of the sending VTSS.

**ONline**
Vary the specified CLINK online.

**OFFline**
Vary the specified CLINK offline.
PATH

optionally, specifies the path (from a VTSS to RTDs) to be made online, offline, or standby to this host. This permits the individual RTDPATH from a VTSS to a device to be varied to the desired state. This path may represent either a direct connection to a RTD from a VTSS or a connection to a Virtual Library.

rtdname or rtdname-list

the names assigned to the paths for accessing RTDs for Virtual Libraries from a VTSS

ONline

Vary the specified path (from a VTSS to RTDs) to an online state.

OFFline

Vary the specified path (from a VTSS to RTDs) to an offline state.

MAINt

Vary the specified path (from a VTSS to RTDs) to an offline (maintenance mode) state.

RTD

Change the state of the specified RTDs.

rtd–id, rtd-range, or rtd-list

the unit addresses of one or more RTDs. Lists and ranges of RTDs are limited to 64 items for VSM2s and VSM3s and 256 items for VSM4s.

ONline

Vary the specified RTDs online to their connected VTSSs.

OFFline

Vary the specified RTDs offline to their connected VTSSs.

MAINt

Vary the specified RTDs offline (maintenance mode) to their connected VTSSs.
VTSS
Change the state of the specified VTSS.

name
the VTSS identifier.

OFFline
Vary the specified VTSS offline.

ONline
Vary the specified VTSS online.

QUIESCED
Vary the specified VTSS to quiesced state.

---

**Note** – Vary VTSS does not change the state of the VTDs or RTDs associated with the specified VTSS.
VView

Interfaces:
Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at FULL service level

Description
The VView command allows you to see specified internal components of the LSM when video monitors are attached to the LSM.

Syntax

![VView Syntax Diagram](image-url)

**FIGURE 3-206** VView syntax
Parameters

**Cap**
indicates that a camera is to focus on a cell location in a CAP. If you do not specify the CAPID or Lsm parameter, the command defaults to CAPid 00:00:00. If you do not specify the Row and Column parameters, the command defaults to row 0, column 0.

**CAPID**
identifies one CAP in an LSM that contains multiple CAPs.

cap-id
the CAP that you want to view. The format of a cap-id is \texttt{AA:LL:CC}, where \texttt{AA:LL} is the LSMid, and \texttt{CC} is the CAP. See “CAPid” on page 710 for a list of valid values.

**Lsm**
identifies an LSM that contains a single CAP.

lsm-id
the single CAP that you want to view. The format of an LSMid is \texttt{AA:LL}, where \texttt{AA} is the ACSid (decimal 00-99) and \texttt{LL} is the LSM number (decimal 00-99).

**Row**
identifies a row number in a CAP. If you do not specify this parameter the command defaults to row 0.

rr
the row number. Allowable values for \texttt{rr} are decimal and are specific to the LSM type. See “Rows” on page 712 for a list of valid values.

**Column**
identifies the column number within a CAP. If you do not specify this parameter the command defaults to column 0.

c
the column number. Allowable values for \texttt{cc} are decimal and are specific to the LSM type. Columns are numbered starting at the left of the panel. See “Columns” on page 713 for a list of valid values.
**CELL**

indicates that a camera is to focus on a cartridge storage or diagnostic cell in an LSM panel. If you do not specify the Lsm, Panel, Row, and Column parameters, the command defaults to LSM 00:00, panel 0, row 0, column 0.

**Lsm**

identifies an LSM. If you do not specify this parameter, the command defaults to LSMid 00:00.

**lsm-id**

the LSMid. The format of an LSMid is $AA:LL$, where $AA$ is the ACSid (decimal 00-99) and $LL$ is the LSM number (decimal 00-99).

**Panel**

designates the LSM panel number containing the cartridge storage or diagnostic cell that the camera is to view. If you do not specify this parameter the command defaults to panel 0.

**pp**

the panel number. Allowable values for pp are decimal and are specific to the LSM type. See “Panels” on page 711 for a list of valid values.

**Row**

identifies a row number in an LSM panel. If you do not specify this parameter the command defaults to row 0.

**rr**

the row number. Allowable values for $rr$ are decimal and are specific to the LSM type. See “Rows” on page 712 for a list of valid values.

---

**Note**

- Column 3 on panel 2 allows row entries only on rows 28-41.
- The cells on panel 3 are optional.

**Column**

identifies the column number within a panel. If you do not specify this parameter the command defaults to column 0.

**cc**

the column number. Allowable values for $cc$ are decimal and are specific to the LSM type. Columns are numbered starting at the left of the panel. See “Columns” on page 713 for a list of valid values.

**DRive**

indicates that a camera is to focus on a cartridge drive. You must designate the Address parameter to identify the drive. The Host parameter enables you to view a drive defined to another host.

**Address**

specifies the address of a cartridge drive. The Address parameter defines the operating system address of the transport you want to inspect.

**xxx**

the hexadecimal address of the transport. The HSC verifies that the specified address matches the LIBGEN-defined address for the given host.
Host

gives meaning to the Address parameter when the drive being inspected is not defined in the LIBGEN for the host from which the Vlew command is being entered.

If you do not specify the Host parameter, the HSC checks the LIBGEN-defined drive list for the host from which you entered the Vlew command. If the address is found in the drive list, the command is executed.

**host-id**

the host where the transport is defined.

Playgrnd

indicates that a camera is to focus on a playground cell. If the Lsm and Column parameters are not specified, the command defaults to the relative location of the cell in the playground in LSM 00:00.

---

**Note** – The playground is a reserved area of cells where the robot deposits cartridges that it finds in its hands during LSM initialization. Normal LSM initialization recovery processing moves cartridges from the playground cells to either their home cells or their intended destinations, but under abnormal circumstances cartridges may be left in playground cells. Refer to the appropriate Oracle StorageTek hardware publication for the location of the playground in the LSM.

---

Lsm

identifies an LSM. If you do not specify this parameter, the command defaults to LSMid 00:00.

**lsm-id**

the LSMid. The format of an LSMid is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).

Column

identifies the relative location of the cell in the playground for a panel. If you do not specify this parameter, the command defaults to the relative location of the cell in the playground.

**cc**

the relative location of the cell in the playground. Allowable values for cc are decimal and are specific to the LSM type. (Some LSMs have multiple playground cells and some have only one.)
PTp
indicates that a camera is to focus on a pass-thru port (PTP) cell. You can designate a particular PTP using the Lsm and Xlsm parameters, a particular cell using the Column parameter, and specify the viewing time using the Time parameter.

Lsm
identifies an LSM. If you do not specify this parameter, the command defaults to LSMid 00:00.

_lsm-id_
the LSMid. The format of an LSMid is _AA:LL_, where _AA_ is the ACSid (decimal 00-99) and _LL_ is the LSM number (decimal 00-99).

Xlsm
identifies the PTP to be inspected by defining the LSM that shares the PTP. Each PTP is identified by the two LSMs it services. The Lsm parameter identifies which robot is used to view the PTP, and the Xlsm parameter identifies the LSM that shares the PTP. This distinction is necessary whenever an LSM contains more than one PTP.
If Xlsm is not specified for an LSM containing two or more PTPs, the HSC examines the LIBGEN and selects the first PTP defined there for Lsm(_lsm-id_).

_II_
the LSM number of the adjacent LSM. Values for _II_ are decimal in the range from 00-99. (The ACS is identified in the Lsm parameter.)

Column
identifies the column number within a panel. If you do not specify this parameter the command defaults to column 0.

c
the column number. Allowable values for _c_ are decimal and are specific to the LSM type:
- 0-3 for LSM Models 4410, 9310, and 9740
- 0 or 1 for WolfCreek LSMS (all models).

**Note** – When the PTP is being shared by two different LSM types, the upper limit of the column value is determined by the LSM with the smaller PTP capacity.
VOLPCONV

Interfaces:
SLUADMIN utility only
UUI: No

Subsystem Requirements:
Active HSC not required

Description
The VOLPCONV command reads existing VOLDEF, SCRPDEF, MVCDEF, and VTCS CONFIG input statements and converts them to SET VOLPARM statements. The existing VTCS configuration is also input to the utility.

Syntax

![VOLPCONV Control Statement syntax](FIGURE 3-207)

Parameters

**CLNPRFX**

specifies a prefix to apply to all types of cleaning cartridges.

*prefix*

a three-character prefix. CLN is the default.
Additional JCL Requirements

In addition to the required JCL definition statements described in “Invoking SLUADMIN” on page 664, the following definition statements apply to the VOLPCONV JCL:

**SLSVOLA**
- input VOLDEF definitions in the form of VOLATTR statements.

**Note** – VOLATTR statements coded with the masking character (%, ?, or *) within the SERIAL parameter are not supported and will cause message SLS0227I to be issued. Any VOLATTR statement using these masking characters must be converted to a range that spans the intent of the masking characters prior to running VOLPCONV.

**SLSSCRP**
- input SCRPDEF definitions in the form of SCRPOOL statements.

**SLSMVCP**
- input MVCDEF definitions in the form of MVCPOOL statements.

**SLSVTCS**
- input VTCS configuration definitions. The VTCS configuration definitions can be obtained by running the VTCS DECOM utility.

**SLSPARM**
- output VOLUME/POOL definitions in the form of POOLPARM and VOLPARM control statements. The logical record size of the SLSPARM data set is 80.
VOLRpt

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The VOLRpt command produces a volume report.
Syntax

![VOLRpt syntax diagram]

**FIGURE 3-208 VOLRpt syntax**
Parameters

**Note** – VOLRpt supports additional legacy parameters used to specify flat file or volume report generation. Refer to the *ELS Legacy Interfaces Reference* for information about these parameters.

ACS

optionally, specifies that a report is to be produced for only a particular ACS.

`acs-id`

the one or two digit decimal ACS identifier.

LSM

optionally, specifies that a report is to be produced for only certain LSMs within an ACS.

`lsm-list`

the LSMs. An lsm-list can be a single LSM number or a list of LSM numbers. An LSM number is decimal 00-99.

An LSM range is not allowed. If a list is specified, the elements must be separated by blanks or commas, and the entire list enclosed in parentheses.

VOLser or VOLUME

optionally, specifies that the report only contain information on certain VOLSERs.

`volser` or `vol-range` or `vol-list`

the volume serial numbers requested. Any subranges of volumes specified in the `vol-list` that are not in the control data set are listed in the Control Card Image Listing portion of the report using one line per subrange.

A percent sign ("%") may be used as a "wildcard" character in the VOLSER to specify pattern matching. The percent sign designates that any single character can match the corresponding position in the VOLSER.

For example, A9%%%% specifies that all of the six-character volume serial numbers that begin with the characters "A9" are selected for the report.

Q%12% specifies that all five-character VOLSERs that begin with "Q" and have a "12" in the third and fourth positions of the VOLSER are selected for the report. The percent sign cannot be specified in a range specification. Therefore, "A%000-A%9999" is invalid.

In the Volume Report Listing of the utility, the volumes requested which are not in the control data set are not listed.
SORT

optionally specifies a specified sort sequence.

Multiple sort criteria may be specified. The order, from left to right, specifies the order in which the report is to be sorted.

For example, \texttt{SORT(INS,USE)} produces a report sorted by date inserted in the control data set, and then for each date, sorted by select count.

\textbf{Note} – SORT and NOSORT are mutually exclusive.

The following SORT options are available:

\begin{itemize}
  \item \texttt{VOL} indicates that the report is to be sorted by volume serial number (VOL is the default).
  \item \texttt{INS} indicates that the report is to be sorted by date and time the volume was inserted into the control data set.
  \item \texttt{LOC} indicates that the report is to be sorted by location.
  \item \texttt{SEL} indicates that the report is to be sorted by date and time the volume was last selected.
  \item \texttt{USE} indicates that the report is to be sorted by selection count.
  \item \texttt{MWL} indicates that the report is to be sorted by Media Warranty Life (MWL) percentage, which indicates how much of the media life has been used. Media warranty life is considered to be expired at 100%.
\end{itemize}

\textbf{Note} – To collect and report media warranty life, tape libraries and transports must meet the following requirements:

\begin{itemize}
  \item SL8500 or SL3000 libraries
  \item LMU compatibility level 21 or higher
  \item T9x40: all media and models at firmware level 1.42 or higher (except 9840B)
  \item T10000: all models and media at firmware level 1.38 or higher
\end{itemize}

Refer to the publication \textit{Managing HSC and VTCS} for more information about media warranty life.

NOSORT

specifies that an unsorted report is to be produced.

\textbf{Note} – NOSORT is mutually exclusive with SORT, ASCend, and DEScend.
ASCend

optionally, specifies that the report is to be sorted in ascending order. **ASCend is the default.** This parameter is ignored if **NOSORT** is specified.

**Note** – ASCend is mutually exclusive with NOSORT and DESCend.

DESCend

optionally, specifies that the report is to be sorted in descending order. This parameter is ignored if **NOSORT** is specified.

**Note** – DESCend is mutually exclusive with NOSORT and ASCend.

INCLude

optionally, specifies the criteria for including volume information in the report. If this keyword is specified, all volumes that match at least one of the specified criteria are tentatively selected for the report. Information about volumes may be removed from the list of volumes selected for the report if other options, such as EXCLUDE, VOL, ACS, or LSM are specified.

**Note** –
- INCLude parameters are applied before EXCLUDE parameters in volume selection.
- Parameter values are not checked for the existence of their opposite values (for example, “SEL” is still flagged even if “NONSEL” is specified, and vice versa).
- Positive attributes are applied before negative attributes (for example, SCR is applied before NONSCR).

* indicates that all volumes in the library are considered for being included in the report. **The default is *.* If more than one of the following parameters is specified, the parameters must be separated by commas.

**SCR**

specifies that scratch volumes match the specified criteria.

**NONSCR**

specifies that nonscratch volumes match the specified criteria.

**ERR**

specifies that errant volumes match the criteria.

**NONERR**

specifies that non-errant volumes match the criteria.

**SEL**

specifies that selected volumes match the criteria.

**NONSEL**

specifies that nonselected volumes match the criteria.

**READable**

specifies that volumes with a readable external label match the criteria.
UNREADable
specifies that volumes with an unreadable external label match the criteria.

MEDEQUAL
specifies that volumes for which the media types of the VOLATTR and the VAR are equal match the criteria.

NONMEDEQ
specifies that volumes for which the media types of the VOLATTR and the VAR are not equal match the criteria.

NOEXTernal
specifies that volumes without an external label match the criteria.
For example, INCLUDE(SEL,ERR) tentatively chooses only selected and errant volumes for the report. INCLUDE parameters are applied before EXCLUDE parameters in volume selection.

MWLNA
specifies that volumes with an unknown media warranty life match the criteria. Media warranty life is obtained at volume dismount for tape libraries with an LMU compatibility level of 21 or above. Use the Display ACS command to obtain the LMU compatibility level.

MWLGE nnn
specifies that volumes with a media warranty life greater than or equal to nnn percent match the criteria. It also excludes all volumes with an unknown media warranty life.
Specify INCLUDE(MWLNA) to force inclusion of all volumes with an unknown media warranty life. Valid values for nnn are 0-254.

**Note** – To collect and report media warranty life, tape libraries and transports must meet the following requirements:
- SL8500 or SL3000 libraries
- LMU compatibility level 21 or higher
- T9x40: all media and models at firmware level 1.42 or higher (except 9840B)
- T10000: all models and media at firmware level 1.38 or higher

Refer to the publication *Managing HSC and VTCS* for more information about media warranty life.

EXCLUDE
optionally, specifies the criteria for excluding volume information from the report. Any volumes that match one or more of the exclusion criteria are excluded from the report.
EXCLUDE parameter values are the same as INCLUDE values, except for the "*" parameter (see the INCLUDE options list above).
As an example, EXCL(NONSEL) excludes nonselected volumes from the report.
Note –
- INCLude parameters are applied before EXCLude parameters in volume selection.
- If MWLGE is specified in both the INCLUDE and EXCLUDE parameters, the EXCLUDE limit value must be greater than the INCLUDE limit value.
- Parameter values are not checked for the existence of their opposite values (for example, “SEL” is still flagged even if “NONSEL” is specified, and vice versa).
- Positive attributes are applied before negative attributes (for example, SCR is applied before NONSCR).

MAXclean

optionally, specifies the maximum cleaning cartridge usage for the “over max clean” column. The MAXclean specified for each POOLPARM TYPE(CLEAN) overrides this value. Valid values are 0-32767.

VAULT

optionally, specifies that vaulted volumes are to be included in the detail volume report.

Note – VAULT is mutually exclusive with NOVOL, ACS, and LSM.

If the vault CDS subfile does not exist, this parameter is ignored.

Vaulted volumes are not included in the SUMMARY reports. In the detail report, the cell location for a vaulted volume is identified by the word “VAULT” and the insertion date/time is the date/time that the volume was inserted into the vault; i.e., ejected from the tape library. Refer to the LCM User’s Guide for more information about vaulting.

SUMmary

optionally, specifies that the utility provide totals of volume attributes on an LSM and ACS basis, and/or subpool data on an ACS or LSM basis. Totals are affected by the use of limiting parameters such as ACS (and possibly LSM), VOLser/VOLUME, and INCLUDE and/or EXCLUDE.

If both TOTal and SUBpool are specified, both reports are provided. The time and date displayed in the header for the Summary Report(s) are the same as the Volume Report Listing header.

TOTal

specifies that totals of scratch, selected, errant, available cells, and external label status types be provided on an LSM, ACS, and library basis in the report.

The totals are listed on a separate listing, on a new page from the Volume Report Listing and the Control Card Listing.

SUBpool

specifies that subpool totals be provided on an LSM, ACS, and library basis in the report.

Subpool information must be provided in one of the following ways:
- through PARMLIB SCRPOol control statements. These statements are contained in a HSC PARMLIB data set pointed to by the SLSSCRPL DD statement or used by the active HSC on this host.
through an accessible SLSUX03 user exit. This exit must be in a library included somewhere in the MVS load library search order. Refer to the *ELS Legacy Interfaces Reference* for more information.

SCRPOol control statements are the preferred method of subpool definition. If the HSC PARMLIB data set pointed to by the SLSSCRPL DD statement or used by the active HSC on this host is missing or invalid, a search for a valid SLSUX03 is made. If the exit cannot be found or if a code of 64 is returned on its initial call, a message is issued and a utility return code 4 is set.

The totals are listed on a separate listing, on a new page from the Volume Report Listing, the Control Card Listing, and the Volume Report Totals Listing.

If subpools overlap (i.e., a volume belongs to more than one subpool), then each volume is reported only within the first subpool in which it occurs, and totals for the other subpools may be inaccurate.

**NOVOL**

optionally, when used with SUMMary, specifies to display summary and/or subpool totals without producing volume detail.

NOVOL can also be used with the CDSDATA parameter. Refer to the *ELS Legacy Interfaces Reference* for information about this parameter.

NOVOL should not be specified by itself.

**Note** – NOVOL is mutually exclusive with ACS, VOLser, VOLUME, SORT, NOSORT, INCLUDE, EXCLUDE, NOVOL, MAXclean, VAULT, VOLIST, and VOLDATA. Refer to the *ELS Legacy Interfaces Reference* for information about the VOLLIST and VOLDATA parameters.

### Additional JCL Requirements

If you are not using the VOLPARM facility to define your volume characteristics, refer to the *ELS Legacy Interfaces Reference* for a description of additional VOLRPT JCL statements that may be required.
VTVMAINT

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
The VTVMAINT command does the following:
- Unlinks VTVs from MVCs,
- Sets the VTV Management Class
- Logically dismounts specified VTVs in an offline VTSS.
- Specifies ownership of a VTV that has been electronically imported
- Adds or deletes references to electronic exported copies of VTVs.

Syntax

FIGURE 3-209 VTVMAINT syntax
Parameters

**VTVid**

specifies one or more VTVs.

*volser, vol-range or vol-list*

the volsers of one or more VTVs.

**ULINKMVC**

optionally, unlink (logically delete) MVC copies of the specified VTVs.

*volser*

Unlink the specified VTVs from the specified MVC. If no value is specified, then all MVC copies of the VTVs are deleted.

**MGMTclas**

optionally, set the Management Class of the VTVs.

*mgmt-class-name*

the Management Class name that you specified on the MGMTclas control statement. For more information, see “MGMTclas Control Statement” on page 423.

**DISMOUNT VTSSid**

optionally, logically dismount the specified VTVs in the specified VTSS.

*name*

the VTSS name.

If migrated copies of the dismounted VTVs exist that an online VTSS can access, you can now use this VTSS to access the VTVs.

---

**Caution** – If the VTV copy mounted in the offline VTSS was modified and not migrated, the MVC copy that you recall to an alternate VTSS is not current! Therefore, Oracle strongly recommends that you do not recall these non-current MVC copies!

---

**Tip** – When the offline VTSS is ready to be brought back online, it is strongly recommended that you audit the VTSS before running production jobs that use the VTSS. Also ensure that you clear any boxed VTD conditions before issuing the VTSS VARY ONLINE command.

---

**OWNRPLEX**

optionally, specifies ownership of a VTV that has been electronically imported.

*name*

the name of the TapePlex that owns the original copy of the VTV. This name must match one of the known TapePlex names in the configuration.

If this name matches that indicated for the THISPLEX parameter on the CONFIG TAPEPLEX statement, the electronic importing status is removed.
DELEXpot
  optionally, specifies which references to electronic exported copies of the VTVs are removed.

  name
  the name of the TapePlex that is to be removed. If this parameter value is omitted, then all references to electronic export copies are removed.

This parameter merely removes the reference to the external copy of the VTV from the VTV record. It does not cause a contact of the other TapePlex to modify the remote copy in any way. Depending upon the management class definition for the VTV, removing a reference could cause an automatic re-drive of the export at some later time.

ADDEXpot
  optionally, specifies the addition of references to the electronic export copy of the VTV.

  name
  the name of the TapePlex that is to be added. This name must match to one of the names that has been specified in the VTCS configuration.

This parameter merely adds the reference to the external copy to the VTV record. It is assumed that the required copy of the VTV will have been physically placed there by some other process. The VTV record can track a maximum of two TapePlex locations.

Note – The DELEXpot operation executes before the ADDEXpot operation. This makes it possible to replace the exported location information in a single call. For configurations where the electronic export function is not used, it is acceptable to use the ADDEXpot and DELEXpot parameters to add dummy tracking or user information to the VTV. The information in the VTV record is always cleared when the VTV data is updated.

RENVTSS
  optionally, sets the name of the VTSS where the VTV was last mounted to vtss-name.

  vtss-name
  the new VTSS name. This must be the name of an existing VTSS in your configuration.

Note – To use RENVTSS, the host on which VTMAINT is run must have access to the owning VTSS.
Return Codes

TABLE 3-18  VTVMAINT Return Codes

<table>
<thead>
<tr>
<th>Return Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All requested updates for the VTV completed successfully.</td>
</tr>
<tr>
<td>4</td>
<td>One requested update for the VTV failed and at least one other requested update completed successfully.</td>
</tr>
<tr>
<td>8</td>
<td>All requested updates for the VTV failed.</td>
</tr>
</tbody>
</table>

Note – The final return code for the VTVMAINT job is the largest return code generated by any single VTVs being updated. For example, if 5 VTVs generate a return code 0 and one VTV generates a return code 8, the final return code is 8.
VTVMaint Report

**FIGURE 3-210** shows an example of a VTVMaint report for the following command:

`VTVMaint VTV(X00000-X00002) UlinkMVC MGMTCLAS(M1)`

---

As shown in **FIGURE 3-210**, the VTVMaint report shows:

- Status of VTVs processed - volser and return code (0 - all updates completed, 4 - some updates completed, 8 - no updates completed).
- An exception report of the reason for all uncompleted updates.
- A VTV report.

---

**FIGURE 3-210** VTVMaint Report
VTVRPt

Description

The VTVRPt command reports the status of VTVs in your VSM system.

Issue this command with either of the options listed in the following table. Each option is described individually, and in more detail, on the pages to follow.

<table>
<thead>
<tr>
<th>This option:</th>
<th>Performs the following function:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC</td>
<td>generates a basic VTV report</td>
</tr>
<tr>
<td>COPIES</td>
<td>generates a VTV report indicating where all current copies of a VTV reside</td>
</tr>
</tbody>
</table>
VTVRPt BASIC

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
VTVRPt BASIC generates a basic VTV report.

Syntax

![Diagram of VTVRPt BASIC syntax]

FIGURE 3-211 VTVRPt BASIC syntax

Parameters

BASIC
Generate a basic VTVRPT report.

VT Vid
optionally, specifies the VTVs for the report. If you do not specify the VTVs, the report includes all initialized VTVs in your VSM system. A VTV is initialized when VTCS has used it at least once.

volser, vol-range, or vol-list
the volser of one or more VTVs.

MANIFEST
optionally, specifies the input ddname of the manifest file used to generate the report.

ddname
dname of the manifest file. Note that you can specify a merged manifest file or multiple manifest files.

ALL
optionally, specifies to report on all VTVs (including non-initialized volumes). If you do not specify ALL, only initialized VTVs are reported.
OPTION(UNA VAIL)

optionally, specifies to report only on unavailable VTVs (VTVs in an offline VTSS). The report lists only unavailable VTVs in three sections--unavailable mounted on a VTD, unavailable VTSS-resident, and unavailable VTSS-resident and fenced.

SUPEMPTY

optionally, suppress the printing of empty VTVs. The VTV report will not print details of VTVs that contain no data or VTVs that are fenced.

Note – SUPEMPTY is mutually exclusive with ALL and OPTION(UNA VAIL).

VTV Report (Basic)

FIGURE 3-212 shows an example of a basic VTV report.

<table>
<thead>
<tr>
<th>VTV</th>
<th>Volser</th>
<th>Size (MB)</th>
<th>%</th>
<th>Date</th>
<th>Time</th>
<th>Last Used</th>
<th>MGR</th>
<th>SCR</th>
<th>REPL</th>
<th>Class</th>
<th>MVC1</th>
<th>MVC2</th>
<th>MVC3</th>
<th>MVC4</th>
<th>VTSSNAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>A00240</td>
<td>66.4</td>
<td>85</td>
<td>2010MAY22 16:27:44</td>
<td>2010MAY22 16:57</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>VTSS92</td>
<td></td>
</tr>
<tr>
<td>A00241</td>
<td>14.0</td>
<td>0</td>
<td>2010MAY21 13:02:30</td>
<td>2010MAY22 07:48</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>MGMT2CP</td>
<td>702972</td>
<td>0.4</td>
<td>VTSS90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A00406</td>
<td>14.0</td>
<td>0</td>
<td>2010MAY21 13:03:50</td>
<td>2010MAY22 08:45</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>VTSS90</td>
<td></td>
</tr>
<tr>
<td>X50000</td>
<td>2,430.0</td>
<td>0</td>
<td>2009NOV18 09:04:18</td>
<td>2009NOV18 09:07</td>
<td>R</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>PE</td>
<td>EEXPORT</td>
<td>4.0</td>
<td>VTSS91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X50047</td>
<td>280.0</td>
<td>96</td>
<td>2009NOV20 14:29:35</td>
<td>2010APR30 06:48</td>
<td>R</td>
<td>M</td>
<td>-</td>
<td>-</td>
<td>PE</td>
<td>QUADYES</td>
<td>700483</td>
<td>700491</td>
<td>700494</td>
<td>700498</td>
<td>4.0</td>
</tr>
<tr>
<td>X50048</td>
<td>280.0</td>
<td>96</td>
<td>2009NOV20 14:29:41</td>
<td>2010APR30 21:06</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>QUADYES</td>
<td>700483</td>
<td>700491</td>
<td>700494</td>
<td>700498</td>
<td>4.0</td>
</tr>
<tr>
<td>X50060</td>
<td>0.0</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>I</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>VTSS90</td>
</tr>
<tr>
<td>X50066</td>
<td>280.0</td>
<td>96</td>
<td>2009NOV20 14:56:17</td>
<td>2010NOV27 21:06</td>
<td>M</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>DLVTVYES</td>
<td>709297</td>
<td>0.4</td>
<td>VTSS91</td>
<td></td>
</tr>
<tr>
<td>X50067</td>
<td>42.0</td>
<td>0</td>
<td>2010JAN21 14:28:55</td>
<td>2010JAN21 14:28</td>
<td>R</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>EEXPORT</td>
<td>4.0</td>
<td>VTSS91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y50000</td>
<td>4.8</td>
<td>0</td>
<td>2009NOV20 09:59:52</td>
<td>2009NOV20 11:56</td>
<td>R</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>E OTHERDIR</td>
<td>0.4</td>
<td>VTSS91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y50008</td>
<td>1,260.0</td>
<td>75</td>
<td>2009NOV20 09:59:56</td>
<td>2010NOV27 21:09</td>
<td>M</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>E OTHERDIR</td>
<td>0.4</td>
<td>VTSS91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Y50184</td>
<td>578.6</td>
<td>34</td>
<td>2010FEB02 22:25:27</td>
<td>2010NOV27 08:42</td>
<td>M</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>APOOL</td>
<td>702972</td>
<td>0.4</td>
<td>VTSS90</td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 3-212 Example VTVRPt BASIC output

**Fields**

The following list describes the fields for the report generated by a VTVRPt or VTVRPt BASIC command.

**VTV Volser**

the VTV volser.

**Size (MB)**

the uncompressed size of the VTV (MB). `<MOUNT>` indicates that the VTV was mounted when the report ran. `<FENCED>` indicates that the VTV’s state is unknown. If `<FENCED>` appears, contact Oracle StorageTek Software Support.
Comp %
the VTV compression percentage achieved. This is the difference between the
uncompressed and compressed VTV size expressed as a percentage of the
uncompressed VTV size. For example if a 100MB VTV compresses to 40MB then the
compression% will be given as 60%. A compression of 0% indicates that no
compression was possible on the VTV.

Creation Date and Time
the date and time that the VTV was created.

Last Used Date and Time
the date and time that the VTV was last used. This date and time value is updated
by successful completion of a VTV mount, migrate, recall, or scratch.

Mgr/Res
indicates the copy status of the VTV. The absence of a flag in the columns below
indicates that there are no current copies of the VTV within this TapePlex.
- An ‘R’ in the left column indicates that there is a VTSS resident copy of the VTV.
- An ‘M’ in the right column indicates that there is at least one MVC copy of the
  VTV. As an alternative, if this column contains a ‘C’ then the VTV is also
  consolidated.

Scr/Imp
indicates the usability of the VTV.
- An ‘S’ in the left column indicates that the VTV is in a scratched state. If the VTV
  has also been imported from a remote TapePlex, then the VTV cannot be picked
  for a scratch mount.
- An ‘I’ in the right column indicates that the VTV has been imported from another
  TapePlex. Imported VTVs cannot be modified.

Repl/Expt
indicates the replication or electronic export status of the VTV. A VTV that is not
resident does not have any replication requirements.
It can be one of the following statuses in the left column:
- PR
  The VTV is currently queued for replication.
- SR
  Replication of the VTV has started.
- R
  Replication has completed and another copy of the VTV resides in the partner to
  the currently resident VTSS.

It can be one of the following statuses in the right column:
- PE
  The VTV is queued for electronic export.
- SE
  Electronic export of the VTV has started.
FE
Electronic export of the VTV has been rejected by the remote TapePlex.

E
Replication has completed and another copy of the VTV resides in the partner to the currently resident VTSS.

MGMT Class
the name of the Management Class for the VTV specified.

MVC1, MVC2, MVC3, MVC4
the MVC(s) that contain the VTV (for both migration and consolidation). If all of these fields are empty, the VTV has not been migrated or consolidated. If 1 or more of these fields list an MVC volser, the VTV was migrated to each of these MVCs.

Max VTV
the maximum size of the VTV in GB (.4, .8, 2, or 4).

VTSSname
the VTSS where the VTV resides, or, if the VTV is migrated, the VTSS where the VTSS was last resident. If this field is empty, the VTV is non-existent (not created or used, scratched, and deleted) or has been manually imported.
VTVRPt COPIES

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC not required

Description
VTVRPt COPIES generates a VTV report indicating where all current copies of a VTV reside.

Syntax

```
VTVRPt COPIES

Parameters

COPIES
Generate a VTVRPT report indicating where all current copies of a VTV reside.

VTvid
optionally, specifies the VTVs for the report. If you do not specify the VTVs, the report includes all initialized VTVs in your VSM system. A VTV is initialized when VTCS has used it at least once.

volser, vol-range, or vol-list
the volsers of one or more VTVs.

MANIFEST
optionally, specifies the input ddname of the manifest file used to generate the report.

ddname
the ddname of the manifest file. Note that you can specify a merged manifest file or multiple manifest files.

ALL
optionally, specifies to report on all VTVs (including non-initialized volumes). If you do not specify ALL, only initialized VTVs are reported.
```
OPTION(UNAVAIL)

optionally, specifies to report only on unavailable VTVs (VTVs in an offline VTSS). The report lists only unavailable VTVs in three sections—unavailable mounted on a VTD, unavailable VTSS-resident, and unavailable VTSS-resident and fenced.

SUPEMPTY

optionally, suppress the printing of empty VTVs. The VTV report will not print details of VTVs that contain no data or VTVs that are fenced.

Note – SUPEMPTY is mutually exclusive with ALL and OPTION(UNAVAIL).

VTV Report (COPIES)

FIGURE 3-212 shows an example of a VTV report generated by a VTVRPt COPIES command.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTV Volser</td>
<td>the VTV volser.</td>
</tr>
<tr>
<td>Size (MB)</td>
<td>the compressed size of the VTV (MB). &lt;MOUNT&gt; indicates that the VTV was mounted when the report ran. &lt;FENCED&gt; indicates that the VTV’s state is unknown. If &lt;FENCED&gt; appears, contact Oracle StorageTek Software Support.</td>
</tr>
<tr>
<td>MGMT Class</td>
<td>the name of the Management Class for the VTV specified.</td>
</tr>
</tbody>
</table>

FIGURE 3-214 Example VTVRPt COPIES output

Fields

The following list describes the fields for a report generated by the VTVRPt COPIES command.

VTV Volser

the VTV volser.

Size (MB)

the compressed size of the VTV (MB). <MOUNT> indicates that the VTV was mounted when the report ran. <FENCED> indicates that the VTV’s state is unknown. If <FENCED> appears, contact Oracle StorageTek Software Support.

MGMT Class

the name of the Management Class for the VTV specified.
Scr
indicates whether the VTV is in a scratched state.
An ‘S’ in this column indicates that the VTV is in a scratched state.

Primary
the name of the VTSS that contains the primary VTSS resident copy of the VTV. If this field is blank, then there are currently no VTSS resident copies of the VTV.

Replica
the name of the VTSS that contains a replica copy of the VTV. If this field is blank, then there are currently no VTSS resident replica copies of the VTV.

Owning Tapeplex
the name of the TapePlex that has ownership of this VTV. If this field is blank, then the VTV is owned by another TapePlex and can be processed normally. If this field is set, then the VTV has been imported from another TapePlex and its contents cannot be modified.

MVC1, MVC2, MVC3, MVC4
the MVC(s) that contain the VTV (for both migration and consolidation). If all of these fields are empty, the VTV has not been migrated or consolidated. The number next to each MVC volser is the ACS location of the MVC. If this is set to ‘--’, then the MVC is not library resident.

Export Tapeplex
the names of the TapePlexes to which copies of the VTV have been exported. The copies within these TapePlexes will show the VTV as imported and having an owning TapePlex name. This list is not exhaustive as some of these TapePlexes may have forwarded copies onto further locations. An asterisk (*) next to the name indicates an export that has been rejected by the target TapePlex.
VVAUDIT

Interfaces:
Utility only
UUI: Yes

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description
The VVAUDIT command synchronizes the vault allocation map with the vault volume records. If the slot in the map indicates that it is allocated, then the vault volume records are searched. If the slot number is not found in any vault volume record, then the slot is freed.

Syntax

```
VVAUDIT

-VAULT(vault-name)
```

FIGURE 3-215 VVAUDIT syntax

Parameters

**VAULT**

optionally, audits the specified *vault-name*. If VAULT is not specified, then all vaults are be audited.

*vault-name*

the vault name.
Warn

Interfaces:

Console or PARMLIB only
UUI: No

Subsystem Requirements:
Active HSC at BASE or FULL service level

Description

The Warn command sets scratch warning threshold values.

Setting a threshold value causes a warning message to be issued when the number of scratches falls below the specified threshold. The Warn command allows you to specify parameters that can narrow the scope of the threshold values you set:

- If SUBpool, MEDia, and RECtech are not supplied, the threshold value applies to scratch volumes for the specified ACS or LSM.
- If SUBpool is supplied, but MEDia and RECtech are not, the threshold value applies to scratch volumes for the specified subpool and ACS or LSM.
- If MEDia and RECtech are supplied, but SUBpool is not, the threshold value applies to scratch volumes for the specified media type, recording technique, and ACS or LSM.
- If SUBpool, MEDia, and RECtech are supplied, the threshold value applies to scratch volumes for the specified subpool, media type, and recording technique in the ACS or LSM.

Note – Use the Display THReshld command to display the current Warn threshold values. See “Display THReshld” on page 336 for more information.

Syntax

```
Warn SCRatch acs-id lsm-id THReshld(threshold-value)

SUBpool(subpool-name)

MEDia(media-type) RECtech(recording-technique)
```

FIGURE 3-216 Warn syntax
Parameters

SCRatch

indicates that scratch threshold values are to be set.

acs-id

the ACS on which to alter threshold values. The ACSid is a decimal value from 00-99.

lsm-id

the LSM on which to alter threshold values. The LSMid is comprised of the ACSid and the LSM number. The format of an LSMid is AA:LL, where AA is the ACSid (decimal 00-99) and LL is the LSM number (decimal 00-99).

VSM

specifies that threshold values are to be set only for subpools for virtual volumes. VSM is not allowed if acs-id or lsm-id are also specified.

SUBpool

optionally, indicates that you want to designate a subpool. This parameter is optional.

subpool-name

the name of the subpool.

Note – Scratch subpool names are specified with the SCRPOol control statement. Refer to the ELS Legacy Interfaces Reference for information.

THReshld

indicates that you want to alter the threshold value.

threshold-value

the minimum number of scratch volumes that are allowed before the HSC issues a warning message. Allowable threshold values are decimal in the range from 0 through 99,999.

The warning interval values are preset at five minutes.

Note – When the number of scratch volumes in an ACS or LSM drops below the threshold value, the system issues a warning message.

MEDia

optionally, specifies the media type for the threshold. When MEDia is specified, RECtech must also be specified.

media-type

the media type.

See Appendix A, “MEDia, RECtech, and MODel Values” for a list of valid media-type values.
**RECtech**

optionally, specifies the recording technique for the threshold. RECtech indicates the method used to record data tracks on the tape surface. When RECtech is specified, MEDia must also be specified.

You can enter a list of recording techniques, but they must be separated by commas. 

*recording-technique*

the recording technique.

See Appendix A, “MEDia, RECtech, and MODel Values” for valid *recording-technique* values.

---

**Note** – A list specifies a generic pool from which a selection is made. There is no implied priority.
SMC Utilities

This chapter describes the following SMC utilities:

- **Unified User Interface utility (SMCUUUI)**
  This utility allows you to issue HSC Unified User Interface (UUI) commands, VTCS commands, or SMC commands from a batch job.

- **JES3 Configuration Report utility (SMCUPJS)**
  This utility generates JES3 configuration data which can be used to help verify JES3 initialization deck behavior.

- **POLicy and TAPEREQ Batch Test utility (SMCUTRQ)**
  This utility allows you to test POLicy and TAPEREQ lookup behavior.

- **Tape Management Extract utility (SMCUDPX)**
  This utility supports scratch synchronization between the SMC client host and the HSC CDS.

- **UUI Simulation utility (SMCUSIM)**
  This utility allows you to issue SMC UUI commands in a test environment. Changes to SMC command settings, tape policies, and allocation user exits can be tested before they are put into production without affecting existing SMC clients and HSC servers.

Unlike HSC and VTCS utilities, all SMC utilities are packaged as standalone utility programs. SMC utilities are not initiated using SMC operator commands.

SMC Utility Return Codes and Messages

SMC utilities may return the following return codes:

- A return code of 0 is returned when the utility program completes successfully with no errors or warnings.
- A return code of 4 is returned when a warning message is detected.
- A return code of 8 is returned when an error that prevents the utility from completing is detected.

Refer to the publication *ELS Messages and Codes* for a listing of SMC messages that may be returned by SMC utilities. These messages are identified by the SMCU prefix.
Unified User Interface Utility (SMCUUUI)

The SMCUUUI utility is used to issue SMC and HSC Unified User Interface (UUI) commands, or VTCS requests from a batch job. The commands can be routed to a local or remote HSC TapePlex.

Several types of output can be received for a UUI command, including:

- **Plain text output**
  This type of output is written to TEXTOUT, and corresponds to the normal output produced by the HSC or VTCS command or report utility. If plain text output is requested for an HSC or VTCS report, the report headings are not produced by the UUI.

- **Structured XML**
  This type of output is written to XMLOUT. Structured XML is a well formed XML data stream with XML header tags and XML data tag elements, and XML data element content. Refer to the ELS Programming Reference for a complete list of SMC, HSC and VTCS XML tag names and types.

- **Comma Separated Values (CSV)**
  This output type is optional and is generated only if the CSV command is specified. See “CSV Command” on page 670 for more information.

The type of output received is controlled by the data set definition statements (DD) defined in the JCL to execute the SMCUUUI utility.

---

**Note** —

- In general, error messages are not produced for CSV output. To view error messages produced by the UUI process, you must include either a TEXTOUT or XMLOUT DD statement.

- If the SMCUUUI utility is directing utility functions that may include SORT (such as VOLRPT, MVRPPT, etc.) to a remote TapePlex, caution should be exercised to run a limited number of these jobs simultaneously for a single SMC HTTP server. The exact number is dependent on the region size of the SMC running the HTTP server as well as the amount of data being processed.
Sample JCL

The following JCL sample executes the SMCUUUI utility.

```
//yourstd JOB card
//STEP EXEC PGM=SMCUUUI,PARM='pgmparms'
//STEPLIB DD DSN=your.sea.linklib,DISP=SHR
//STDOUT DD DSN=yourstd.printout.dataset,DISP=SHR
//UUIIN DD *

CSV and uui commands
/** Specify at least one of the following output data sets: *
/*********************************************************************************/
//CSVOUT DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT DD DSN=yourtext.output.dataset,DISP=SHR
```

**FIGURE 4-1**  JCL to Execute the SMCUUUI Utility

Parameters

The following SMCUUUI utility parameters may be specified for *pgmparms* in the sample JCL:

**SSYS**(subsystem-name)

Specifies the SMC subsystem name (one to four characters in length)

**TAPEPlex**(name)

Specifies the name of the SMC TapePlex to which the UUI commands will be directed. If omitted, the first active TapePlex found is used.

Use TAPEPlex(SMC) to indicate that the input commands are to be issued directly to the SMC, and not to a TapePlex (such as the SMC Display Volume and Display DRive command).

**XMLCASE**

Specifies the case of the XML and CSV output.

- **M**
  - Mixed (default)
- **U**
  - Uppercase

**XMLDate**(format)

Specifies the format of date fields in XML and CSV output. Valid date formats include the following:

- **YYYYMONDD** (default format)
- **YYYY-MM-DD**
- **YYYY-MON-DD**
- **HEXSTCK** (hex character STCK format)
NOHDR

optionally, specifies that STDOUT and TEXTOUT report headings and pagination carriage control are not produced.

**Note** – NOHDR and LINECNT are mutually exclusive.

LINECNT

optionally, specifies STDOUT and TEXTOUT report pagination line count setting.

**Note** – LINECNT and NOHDR are mutually exclusive.

The number of lines per page. Valid values are 10-99.

**Note** – Settings for STDOUT report headings and pagination can only be specified in the EXEC statement program parameters. Settings for TEXTOUT report headings, while initially specified by the EXEC statement program parameters, can later be modified by specifying TEXTOUT UUI control statements in the UUIIN command stream.

For example:

In the following figure, the EXEC statement program PARM='LINECNT(55)' sets the report pagination to 55 lines per page for both STDOUT and TEXTOUT output.

However, the UUI command TEXTOUT NOHDR in the UUIIN command stream alters the TEXTOUT report parameters to disable report headers and pagination.

```
//yourstd JOB card
//STEP EXEC PGM=SMCUUUI,PARM='LINECNT(55)'
//STEPLIB DD DISP=SHR,DSN=your.sea.linklib
//STDOUT DD DISP=SHR,DSN=your.stdout.dataset
//UUIIN DD *
   TEXTOUT NOHDR
   UUI commands
   //CSVOUT DD DSN=your.csv.output.dataset,DISP=SHR
   //XMLOUT DD DSN=your.xml.output.dataset,DISP=SHR
   //TEXTOUT DD DSN=your.text.output.dataset,DISP=SHR
```
Required Data Set Definition (DD) Statements

You must specify the UUIIN and STDOUT data set definitions.

UUIIN Data Set

The UUIIN data set can contain:
■ SMCUUUI utility control statements
■ SMC UUI commands
■ HSC UUI commands
■ VTCS PGMI requests

Native SMC UUI commands include:
■ Display DRive
■ Display Volume
■ POLicy
■ SIMulate

Refer to the ELS Programming Reference for a list of supported HSC UUI commands and VTCS PGMI requests.

Syntax Rules

■ Input must be 80 byte card images.
■ Only columns 1-72 of the 80 byte card image may contain actual command input. Columns 73-80 may be used for sequence numbers if desired.
■ If the last non-blank character in columns 1-72 is a “+”, the logical command is continued on the next physical card.
■ Comments begin with “/*” (in column 2 or beyond) and end with “*/”.
■ The maximum logical command length is 32000 bytes.
Control Statements

Utility control statements allow the report pagination for TEXTOUT output and the target TapePlex to be altered for subsequent SMC, HSC, and VTCS UUI and PGMI commands.

PLEXDest

optionally, sets the destination TapePlex for subsequent commands to the specified tapeplex-name. Any communication error occurring during a subsequent SMC, HSC, or VTCS command after execution of the PLEXDest control statement results in the bypassing of all subsequent SMC, HSC, or VTCS commands until another PLEXDest control statement is encountered.

tapeplex-name

the TapePlex name of the target system for subsequent commands.

■ If “SMC” is specified, all subsequent commands are assumed to be SMC UUI commands and are directed to the simulated SMC environment.

■ If a valid HSC TapePlex (as defined via a SMC TAPEPlex command) is specified, all subsequent commands are assumed to be HSC or VTCS commands and are directed to the specified tapeplex-name via the simulated SMC environment.

TEXTOUT

optionally, sets the report pagination parameters for TEXTOUT output. If any errors are encountered on the TEXTOUT command, all subsequent UUI commands are bypassed until a correct TEXTOUT command is encountered.

NOHDR

optionally, specifies that TEXTOUT report headings and pagination carriage control are not produced.

Note – NOHDR and LINECNT are mutually exclusive.

LINECNT(nn)

optionally, specifies TEXTOUT report pagination line count setting.

Note – LINECNT and NOHDR are mutually exclusive.

nn

the number of lines per page. Valid values are 10-99.

Note –

■ Settings for STDOUT report headings and pagination can only be specified in the EXEC statement program parameters. Settings for TEXTOUT report headings, while initially specified by the EXEC statement program parameters, can later be modified by specifying TEXTOUT UUI control statements in the UUIIN command stream.

■ If multiple TEXTOUT statements are input before a single UUI command, the last TEXTOUT statement controls the TEXTOUT report pagination.

■ PLEXDest and TEXTOUT commands can be specified along with CSV commands to alter the destination TapePlex, and the CSV and TEXTOUT output characteristics of subsequent UUI commands. See “CSV Command” on page 670.
In the following example:

1. Statement 1 sets the destination for subsequent commands to the local SMC subsystem.

2. The D DRIVE statement 2 is directed to the local SMC subsystem.

3. Statement 3 resets the destination TapePlex for subsequent commands to TapePlex HSCN.

4. The DISPLAY SCRATCH statement 4 is directed to HSCN.

5. Statement 5 resets the destination TapePlex for subsequent commands to HSCQ.

6. Finally, DISPLAY SCRATCH statement 6 is directed to HSCQ.

```//yourstd JOB card
//STEP EXEC PGM=SMCUUUI
//UUIIN DD *
PLEXDEST SMC          /* Statement #1 */
D DRIVE               /* Statement #2 */
PLEXDEST HSCN         /* Statement #3 */
DISPLAY SCRATCH       /* Statement #4 */
PLEXDEST HSCQ         /* Statement #5 */
DISPLAY SCRATCH       /* Statement #6 */
...other JCL statements
```
In the next example:

1. Statement 1 sets the destination TapePlex for subsequent commands to TapePlex HSCN.

   If HSCN is not available, or communication errors occur while processing statements 3-5, then subsequent UUI commands are bypassed until the next PLEXDest command is encountered (statement 6 in this example).

2. Statement 2 sets the CSV output parameters for subsequent UUI commands.

   If an error occurs on the CSV command, then any subsequent UUI commands are bypassed until a subsequent valid CSV command is read. In this case, if the CSV command in statement #2 is invalid, not only are statements 3-5 bypassed, but also statement 7. Statement 6 is still processed to direct subsequent commands to HSCQ.

3. Statement 8 sets new CSV output parameters to be used by statement 9.

```
//yourstd JOB card
//STEP EXEC PGM=SMCUUUI
...other JCL statements
//UUIN DD *
PLEXDEST HSCN           /*Statement #1 */
CSV ...csv parameters   /*Statement #2 */
SCRATCH VOL ACT001-002  /*Statement #3 */
SCRATCH VOL PAY001-PAY002/*Statement #4 */
SCRATCH VOL REC001-REC002/*Statement #5 */
PLEXDEST HSCQ           /*Statement #6 */
SCRATCH VOL Q00001-Q00002/*Statement #7 */
CSV ...csv parameters   /*Statement #8 */
DISPLAY SCRATCH         /*Statement #9 */
...other UUI commands
...other JCL statements
```
STDOUT Data Set

The STDOUT data set is where the SMCUUI utility reports the input and final completion code for each UUI request.

Output Data Set Definition (DD) Statements

You must specify at least one of the following output data set definition statements:

- XMLOUT
- CSVOUT
- TEXTOUT

XMLOUT Data Set

The XMLOUT data set is where the SMCUUI utility outputs the structured XML output corresponding to the UUIIN command, as shown in the following example:

```xml
<scratch_request>
  <header>
    <hsc_version>7.1.0</hsc_version>
    <date>2008Apr19</date>
    <time>13:54:34</time>
    <host_name>MVSB</host_name>
  </header>
  <volume_data>
    <volser>400720</volser>
    <result>success</result>
    <reason>SLS0167I Volume 400720 successfully added to library as scratch</reason>
  </volume_data>
</scratch_request>
```

The XMLOUT DD would contain the following output:
CSVOUT Data Set

The CSVOUT data set is where the SMCUUUI utility writes the CSV output for the requested UUIIN commands that specified corresponding CSV formatting. Refer to the ELS Programming Reference for more information about the Comma Separated Value (CSV) specification.

The maximum logical CSV input length is 4096 bytes.

Note – In general, error messages are not produced for CSV output. To view error messages produced by the UUI process, you must include either a TEXTOUT or XMLOUT data set definition statement.

TEXTOUT Data Set

The TEXTOUT data set is where the SMCUUUI utility outputs plain text UUI responses. This is the same output that would be received from the corresponding SMC, HSC or VTCS command, or written to the SLSPRINT DD by the SLUADMIN or SWSADMIN utility, except that page and column headings are not produced. This data set is optional.
JES3 Configuration Report Utility (SMCUPJS)

The SMCUPJS utility generates JES3 configuration data which can be used to help verify that the JES3 initialization deck defines the intended devices and esoterics. This data is derived from internal SMC JES3 configuration control structures. These control structures are built during SMC/JES3 initialization through analysis of the SETNAME and SETUNIT statements in the user’s JES3 initialization deck. For this reason, the SMC must be active on the system on which the report is run.

The following reports are generated from the SMC JES3 configuration control structures:

- List of XTYPE numbers in hexadecimal order with their corresponding XTYPE names
- List of XTYPEs in hexadecimal order with all esoterics in which the XTYPE appears
- List of esoterics in alphabetical order with all XTYPEs that each contains and the total number of devices in the esoteric. This report also lists any discrepancies between JES3 and HCD esoterics
- List of XTYPEs in hexadecimal order with all devices in that XTYPE, along with the location and recording technique of the devices in the XTYPE
- List of devices in hexadecimal order and the XTYPE to which each belongs, along with the location and recording technique of the device

Sample JCL

The following JCL sample executes the SMCUPJS utility to produce the five individual reports listed above.

```
//yourstd JOB card
//STEP EXEC PGM=SMCUPJS
//STEPLIB DD DSN=your.sea.linklib,DISP=SHR
//STDOUT DD DSN=yourstd.printout.dataset,DISP=SHR
```

FIGURE 4-2 JCL to Produce the JES3 Configuration Report

**Note** – `yourstd.printout.dataset` should be allocated with LRECL=80.
Sample Reports

In the following report fragments, XTYPE 27 is carried through all five reports to illustrate how the reports are related. Lines pertaining to XTYPE 27 are underlined in each report.

XTYPE Number to XTYPE Name (EXTON)

Below are fragments of the XTYPE Number to XTYPE Name report. This mapping is useful when reading other reports that reference the XTYPE number instead of the name. The number in parenthesis is the XTYPE number, followed by the XTYPE name.

```
<table>
<thead>
<tr>
<th>XTYPE</th>
<th>DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>DEV01D5</td>
</tr>
<tr>
<td>02</td>
<td>DEV2504</td>
</tr>
<tr>
<td>03</td>
<td>DEV2507</td>
</tr>
<tr>
<td>04</td>
<td>DEV2506</td>
</tr>
<tr>
<td>05</td>
<td>DEV01D6</td>
</tr>
<tr>
<td>06</td>
<td>DEV01DA</td>
</tr>
<tr>
<td>07</td>
<td>DEV01DD</td>
</tr>
<tr>
<td>08</td>
<td>DEV01DF</td>
</tr>
<tr>
<td>09</td>
<td>DEV01D0</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>27</td>
<td>DEV0AA0</td>
</tr>
<tr>
<td>28</td>
<td>DEV0A20</td>
</tr>
</tbody>
</table>
```

XTYPE Number to Esoteric (EXTOE)

Below are fragments of the XTYPE Number to Esoteric report, which lists each XTYPE in hexadecimal order, along with all esoterics that contain that XTYPE. Both the XTYPE number (in parenthesis) and name are displayed.

```
<table>
<thead>
<tr>
<th>XTYPE</th>
<th>DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>DEV01D5  appears in 11 ESOTERICs</td>
</tr>
<tr>
<td></td>
<td>CART EAGLE 3590-1 HVALL HSCV3590 MCZZZ0 HVZZZ01 MCZZ9840</td>
</tr>
<tr>
<td></td>
<td>HV994035 HRACS111 HV994010</td>
</tr>
<tr>
<td>02</td>
<td>DEV2504  appears in 10 ESOTERICs</td>
</tr>
<tr>
<td></td>
<td>CART</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>27</td>
<td>DEV0AA0  appears in 7 ESOTERICs</td>
</tr>
<tr>
<td></td>
<td>SYS3480R CART 3480 TL3480 SLIB SACS0 S04480</td>
</tr>
</tbody>
</table>
```
Esoteric to XTYPE (EETOX)

Below are fragments of the Esoteric to XTYPE report, which lists each esoteric in alphabetical order, along with all XTYPES in that esoteric in hexadecimal order. The XTYPE number can be mapped to its corresponding XTYPE name using the XTYPE Name to XTYPE Number report described above.

<table>
<thead>
<tr>
<th>SMCUPJS (7.1.0)</th>
<th>SMC JES3 CONFIGURATION SUPPORT</th>
<th>PAGE 0001</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME 15:03:42</td>
<td>ESOTERIC TO XTYPE NUMBER (EETOX)</td>
<td>DATE 2008-01-09</td>
</tr>
</tbody>
</table>

ESOTERIC AUSALL contains 4 XTYPEs and 12 devices
2C 2D 3D 85

ESOTERIC AUSREDW contains 1 XTYPEs and 2 devices
2D

ESOTERIC CART contains 84 XTYPEs and 433 devices
01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 10 11 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F 60 61 62 63 64 65 66

ESOTERIC SACSO contains 9 XTYPEs and 22 devices
10 11 27 42 43 44 45 5E 5F

SMCU0005 *** WARNING: HCD esoteric does not match JES3 esoteric
JES3 esoteric drives not in HCD:
0AA3
HCD esoteric drives not in JES3:
(NONE)

ESOTERIC SLIB contains 13 XTYPEs and 34 devices
10 11 23 24 27 42 43 44 45 46 47 5E 5F

ESOTERIC SYS3480R contains 102 XTYPEs and 1511 devices
21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C 5D 5E 5F 60 61 62 63 64 65 66 67 68 69 6A 6B 6C 6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 7B 7C 7D 7E 7F 80 81 82 83 84 85 86

ESOTERIC S04480 contains 1 XTYPEs and 4 devices
27

ESOTERIC TL3480 contains 5 XTYPEs and 48 devices
25 26 27 28 29

ESOTERIC 3480 contains 14 XTYPEs and 132 devices
21 22 23 24 25 26 27 28 29 83 84 85 86

...
## XTYPE to Device Number (EXTOD)

Below are fragments of the XTYPE to Device Number report, which lists each XTYPE in hexadecimal order along with its devices. For each XTYPE number the following information is displayed:

- XTYPE number
- XTYPE name
- Number of devices in the XTYPE
- Associated TapePlex
- Device location
- Device recording technique

The device location is one of the following:

- In a TapePlex, in which case "tapeplex-name LSM AA:LL" is displayed, where tapeplex-name is the name of the TapePlex containing the HSC where the nonlibrary device is defined via the NONLIB esoteric or UNITATTR
- In a VTSS, in which case "tapeplex-name VTSS (nnnnnnnn)" is displayed
- Defined with an SMC UNITATTR command, in which case "nonlib" is displayed
- Neither in the library nor defined with an SMC UNITATTR command, in which case "not lib or nonlib" is displayed.

<table>
<thead>
<tr>
<th>XTYPE (01) DEV01D5</th>
<th>Contains 1 Device</th>
<th>Not lib or nonlib, rectech STK1RA35 01D5</th>
</tr>
</thead>
<tbody>
<tr>
<td>XTYPE (02) DEV2504</td>
<td>Contains 1 Device</td>
<td>Not lib or nonlib, rectech STK1RA35 2505</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XTYPE (0F) DEV2801</td>
<td>Contains 1 Device</td>
<td>Nonlib, rectech STK1RA35 2801</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XTYPE (27) DEV0AA0</td>
<td>Contains 4 Devices</td>
<td>PLEX1 LSM 00:00, rectech 18TRACK 0AA0 0AA1 0AA2 0AA3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XTYPE (48) DEV9000</td>
<td>Contains 64 Devices</td>
<td>PLEX1 VTSS SVTSS1 9000 9001 9002 9003 9004 9005 9006 9007 9008 9009 900A 900B 900C 900D 900E 900F 9010 9011 9012 9013 9014 9015 9016 9017 9018 9019 901A 901B 901C 901D 901E 901F 9020 9021 9022 9023 9024 9025 9026 9027 9028 9029 902A 902B 902C 902D 902E 902F 9030 9031 9032 9033 9034 9035 9036 9037 9038 9039 903A 903B 903C 903D 903E 903F</td>
</tr>
</tbody>
</table>
Device Number to XTYPE (EDTOX)

Below are fragments of the Device Number to XTYPE report, which lists each device in hexadecimal order and the XTYPE to which it belongs. For each device the following is displayed:

- Associated TapePlex
- Device location
- Device recording technique

The device location and recording technique are displayed as in the XTYPE to Device Number report described above.

```plaintext
SMCUPJS (7.1.0)          SMC JES3 CONFIGURATION REPORT              PAGE 0001
TIME 15:03:42            DEVICE TO XTYPE NUMBER (EDTOX)       DATE 2008-01-09

DEVICE/XTYPE - 0120/3C  not lib or nonlib, rectech 36ATRACK
DEVICE/XTYPE - 0121/3C  not lib or nonlib, rectech 36ATRACK
...  
DEVICE/XTYPE - 0AA0/27  PLEX1 LSM 00:00, rectech 18TRACK  
DEVICE/XTYPE - 0AA1/27  PLEX1 LSM 00:00, rectech 18TRACK  
DEVICE/XTYPE - 0AA2/27  PLEX1 LSM 00:00, rectech 18TRACK  
DEVICE/XTYPE - 0AA3/27  PLEX1 LSM 00:00, rectech 18TRACK  
...  
```
POLicy and TAPEREQ Batch Test Utility (SMCUTRQ)

The SMCUTRQ utility is used to test SMC tape policy lookups. The program accepts control cards containing the same type of information that is extracted by the SMC during tape allocation and mount processing.

After you input the jobname, stepname, program name and other attributes on the control cards, this utility formats those attributes and requests SMC tape policy lookups from the SMC subsystem as if it were a job with those simulated characteristics.

Next, the utility generates a report indicating what policy was matched, or what TREQDef TAPEREQ statements, if any, were matched for the specific criteria. If the currently active TREQDef file is accessible, as indicated by the TREQDef List command, the actual TAPEREQ statements matching each lookup are listed.

The SMCUTRQ utility requires an active SMC subsystem on the same host. If SMC is not active, an error message is produced and the program terminates.

Sample JCL

Execute load module SMCUTRQ in the SMC linklib to produce the report.

The following JCL sample executes the SMCUTRQ utility:

```
//yourstd JOB card
//STEP EXEC PGM=SMCUTRQ
//STEPLIB DD DSN=your.sea.linklib,DISP=SHR
//STDOUT DD DSN=yourstd.printout.dataset,DISP=SHR
//SYSOUT DD SYSOUT=*  
//SMCIN DD *
POL1 jobname stepname pgmname ddname nnnn yyyy/ddd mgmtclas
POL2 C volser dataset.name
```

FIGURE 4-3  JCL to Execute the SMCUTRQ Utility
Control Cards

Each TAPEREQ POLicy lookup requires that you enter at least one control card (POL1), and optionally one or two control cards (POL2, POL3) specifying the job step characteristics to be simulated. The control card format is as follows:

Card 1:

<table>
<thead>
<tr>
<th>Column</th>
<th>Length</th>
<th>Field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>ID</td>
<td>“POL1“ required identifier</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>jobname</td>
<td>1-8 character non-generic jobname</td>
</tr>
<tr>
<td>15</td>
<td>8</td>
<td>stepname</td>
<td>1-8 character non-generic stepname</td>
</tr>
<tr>
<td>24</td>
<td>8</td>
<td>program name</td>
<td>1-8 character non-generic program name</td>
</tr>
<tr>
<td>33</td>
<td>8</td>
<td>ddname</td>
<td>1-8 character non-generic ddname</td>
</tr>
<tr>
<td>42</td>
<td>4</td>
<td>retention period</td>
<td>4 digit retention period</td>
</tr>
<tr>
<td>47</td>
<td>8</td>
<td>expiration date</td>
<td>yyddd, yyyyddd, or yyyy/ddd format</td>
</tr>
<tr>
<td>56</td>
<td>8</td>
<td>management class</td>
<td>1-8 character non-generic SMS management class name</td>
</tr>
</tbody>
</table>

Card 2:

<table>
<thead>
<tr>
<th>Column</th>
<th>Length</th>
<th>Field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>ID</td>
<td>“POL2“ required identifier</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>volume type</td>
<td>“S“ for specific</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“N“ for non-specific (scratch)</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>volume serial</td>
<td>6 character volser</td>
</tr>
<tr>
<td>15</td>
<td>44</td>
<td>dataset name</td>
<td>44 character non-PDS MVS dataset name</td>
</tr>
</tbody>
</table>

Card 3:

<table>
<thead>
<tr>
<th>Column</th>
<th>Length</th>
<th>Field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>ID</td>
<td>“POL3“ required identifier</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>actual RECTECH</td>
<td>Valid recording technique</td>
</tr>
<tr>
<td>15</td>
<td>3</td>
<td>label type</td>
<td>Values SL, NL, AL, NSL</td>
</tr>
<tr>
<td>19</td>
<td>8</td>
<td>JCL esoteric</td>
<td>Esoteric name</td>
</tr>
</tbody>
</table>
Note –

- All variable length fields must be left justified.
- Retention period and expiration date fields are mutually exclusive. When both are specified, retention period is used.
- The management class field is used to simulate a returned SMS ACS MGMTCLAS and assumes that the SMC SMSDEF MGMTPol(ALL) or (IDAX) policy has been specified. If the SMC finds a matching policy name, then the remaining tape policy lookups are bypassed.
- If a policy name matching the specified management class name is not found, or if the management class field was not specified, then a series of TAPEREQ lookups is performed using the remaining input criteria.
- You may ignore the lookup fields that are not important to your lookup. This is determined by looking at what selection criteria you actually use on your TAPEREQ statements. However, it is recommended that you specify all non-mutually exclusive fields.
- "POL1" control card is required, even if no input fields are coded. Both "POL2" and "POL3" control cards are optional.
- You can input multiple sets of control cards.
Sample Input

Example 1

```
POL1 TSTNEWPG STEP1 TESTPGM MYTAPE1
POL2 S 123456 ABC.QUAL1.QUAL2.TEST
```

Simulate the TAPEREQ lookup that would occur when:
- Specific volume 123456 for DSN ABC.QUAL1.QUAL2.TEST
- Allocated to DD MYTAPE1 for job TSTNEWPG, step STEP1, executing program TESTPGM.

Example 2

```
POL1 TSTNEWPG STEP1 TESTPGM MYTAPE1 0099
POL2 N ABC.QUAL1.QUAL2.TEST
```

Simulate the TAPEREQ lookup that would occur when:
- Scratch volume for DSN ABC.QUAL1.QUAL2.TEST
- Allocated to DD MYTAPE1 with a retention period of 99 days
- For job TSTNEWPG, step STEP1, executing program TESTPGM.

Example 3

```
POL1 TSTNEWPG STEP1 TESTPGM MYTAPE1 MCLASS01
POL2 N 123456 ABC.QUAL1.QUAL2.TEST
```

Simulate the TAPEREQ lookup that would occur when:
- Scratch volume for DSN ABC.QUAL1.QUAL2.TEST
- Allocated to DD MYTAPE1
- For job TSTNEWPG, step STEP1, executing program TESTPGM, when the DFSMS ACS routine returns a management class of MCLASS01.
Sample Output

SMCUTRQ 7.1.0             SMC POLICY/TAPEREQ TEST
Time 11:25:49           POLICY/TAPEREQ Lookup Report

SMCU0019 SMC subsystem=SMC0

Card 0001: *OL1|JOBNAME |STEPNAME|PGMNAME |DDNAME  |RETP|EXPDT |SMSMGMT
Card 0002: *OL2|T|VOLSER| DSN
Card 0003: POL1 ANYJOB   STEP1    TESTPGM  DD1
Card 0004: POL2 S 123456 ABC.QUAL1.QUAL2.TEST

TAPEREQ lookup keys:
   JOBname=ANYJOB   STEPname=STEP1    PROGname=TESTPGM  DDname=DD1
   VOLType=S        VOLSer=123456     DSN=ABC.QUAL1.QUAL2.TEST

   Lookup for POLICY         not matched
   Lookup for RECTECH/MEDIA  matched TREQDEF record 5
   Statement: TAPEREQ DSN(ABC.**.TEST)  MEDIA(VIRTUAL)
   Lookup for SUBPOOL        not matched
   Lookup for ESOTERIC       not matched
   Lookup for MGMTCLAS       not matched
   Lookup for DEVTPREF       not matched

Card 0005: POL1 ANYJOB ANYSTEP ANYPGM DD1
Card 0006: POL2 S 123456 ABC.D11.XYZ.ABC

TAPEREQ lookup keys:
   JOBname=ANYJOB   STEPname=ANYSTEP  PROGname=ANYPGM   DDname=DD1
   VOLType=S        VOLSer=123456     DSN=ABC.D11.XYZ.ABC

   Lookup for POLICY         not matched
   Lookup for RECTECH/MEDIA  matched TREQDEF record 10
   Statement: TAPEREQ DSN(**.XYZ.**) MEDIA(VIRTUAL)
   Lookup for SUBPOOL        not matched
   Lookup for ESOTERIC       not matched
   Lookup for MGMTCLAS       not matched
   Lookup for DEVTPREF       not matched

Processing complete; RC=0

FIGURE 4-4  SMCUTRQ Utility Sample Output
Tape Management Extract Utility (SMCUDBX)

The SMCUDBX utility supports scratch synchronization between the SMC client host and the HSC CDS. Using common Tape Management System interface (SLUDR*) routines with HSC and MVS/CSC, SMC accesses the client tape management system to produce an extract file that can be read as input by the HSC Scratch Conversion Utility (SLUCONDB).

**Note** – See Appendix C, “Tape Management System Interface (SLUDR*) Routines” for more information about these routines.

The SMCUDBX process is illustrated in the following figure:

**FIGURE 4-5** Scratch Synchronization Between SMC Client Host and HSC CDS
If the client and server share a tape management system, the HSC utility SLUCONDB may be run directly using the common tape management system database as input.

If, however, the client host has a tape management system that is not accessible to the HSC host, the SMC utility SMCUDBX can be used to extract scratch volumes from the tape management system using label and date parameters. The SMCUDBX output can then be used as input on the HSC host to the SLUCONDB utility. The SMC process supports timing synchronization by comparing the GMT time of the SMCUDBX run with the last select time of the HSC CDS volume record. If the volume was selected after the SMC scratch run, it is not eligible for scratch by SLUCONDB.

Running the SMC Scratch Extract Utility

You can run the SMC scratch extract utility regardless of whether the SMC is executing on the host.

SMCUDBX processes the CA-1 Tape Management Catalog (TMC), the CA-DYNAM/TLMS Volume Master File (VMF), the DFSMSrmm report extract file, or the Zara database, and selects the volume serial numbers for processing based on information specified on the PARM parameter of the JCL EXEC statement.

For CA-1, CA-DYNAM/TLMS, and DFSMSrmm, SMCUDBX calls the appropriate Tape Management System interface routine. For Zara, SMCUDBX invokes the SLUDRZAR routine, which in turn invokes an application programming interface (API) to read Zara’s database. The data returned from these routines is used to format the SMC scratch extract file. See Appendix C, “Tape Management System Interface (SLUDR*) Routines” for more information about these routines.

If your installation uses a different tape management system, you can develop a program modeled on one of the supplied examples SLUDRA1, SLUDRRMM, SLUDRTLM, SLUDRSMC, SLUDRTLM, or SLUDRZAR, or you can write your own program to produce an extract file in the following format:

<table>
<thead>
<tr>
<th>Position</th>
<th>Field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Scratch volume</td>
<td>CL6</td>
</tr>
<tr>
<td>7</td>
<td>GMT of run</td>
<td>XL8</td>
</tr>
<tr>
<td>15</td>
<td>Unused</td>
<td>CL2</td>
</tr>
</tbody>
</table>

The time field in the SMC scratch extract file is a character representation of the first four bytes of the output of the MVS STCK macro. For example, if the STCK macro produces a result of X’B0912345 6789ABCD’, the GMT field of the SMC extract contains the character value ‘C’B0912345’.

SMCUDBX, SLUDRA1, SLUDRTLM, SLUDRRMM, and SLUDRZAR are provided as load modules. You can use the current versions of these load modules with CA-DYNAM/TLMS Release 5.4 and above, CA-1 Release 5.0 and above, DFSMSrmm 1.1, and Zara 1.2. The ELS SAMPLIB file on the ELS installation tape contains the sample source code.
Note –

- If there are local modifications to your tape management system, you must reassemble the associated TMS interface routine.
- If your tape management system is CA-1 Release 4.9 or below, you must modify and reassemble the SLUDRCA1 routine. See “Using SMCUDBX with CA-1 Release 4.9 or Below” on page 651 for information about modifying and reassembling this routine.
- If your tape management system is CA-DYNAM/TLMS Release 5.3 or below, you must reassemble the SLUDRTLM routine. See “Using SMCUDBX with CA-DYNAM/TLMS Release 5.3 or Below” on page 651 for information about reassembling this routine.
- If your tape management system is Zara, the SMCUDBX utility must be able to access the data set that contains the Zara API module (ZARAAPII). You can either store this module in the LINKLIST, or include a JOBLIB or STEPLIB DD statement in the SMCUDBX JCL that points to the library containing the module.
- Any routine that you modify and reassemble must be re-linked as non-reentrant (NORENT parameter) with AMODE=24 and RMODE=24.

Using SMCUDBX with CA-1 Release 4.9 or Below

To use SMCUDBX with CA-1 Release 4.9 or below, you must modify and reassemble the SLUDRCA1 routine. The CA-1 MACLIB containing the TMRECORD MACRO must be accessible during the assembly.

Perform the following steps for CA-1 Release 4.9:

1. Delete the asterisk in column 1 of the following line:
   
   TMRECORD

2. Add an asterisk in column 1 of the following line:
   
   TMMTMREC

3. Reassemble the SLUDRCA1 routine.

Using SMCUDBX with CA-DYNAM/TLMS Release 5.3 or Below

Perform the following steps to use SMCUDBX with CA-DYNAM/TLMS Release 5.3 or below:

1. Verify that the CA-DYNAM/TLMS Release 5.3 MACLIB containing the VMFBASE MACRO is accessible for the re-assembly of the SLUDRTLM routine.

2. Reassemble the SLUDRTLM routine; no modifications to the source code are required.
Syntax

SMCUDBX uses program parameters to determine the Tape Management System interface (SLUDR*) routine to invoke and method of operation. See Appendix C, “Tape Management System Interface (SLUDR*) Routines” for more information about these routines.

You can specify the following values for the PARM parameter on the JCL EXEC statement when running the SMCUDBX utility:

**Note** – You must enter parameters in the specified order and include commas for omitted parameters.

```
PARM='Optional Parameters'
```

**Optional Parameters:**

- `TMS`, `TLMS`, `RMM`, `ZARA`
- `1900001`
- `TODAY yyyyddd1 yyyyddd2`
- `zara-subsys-name`
- `SL`, `NL`, `AL`, `NSL`, `SUL`

**FIGURE 4-6** SMCUDBX PARM parameter syntax
Parameters

**PARM=**
specifies the parameters that follow can be accessed by the program indicated in the
PGM parameter in the JCL.

**TMS**
optionally, specifies the CA-1 tape management system (TMS). This is the default.

**TLMS**
optionally, specifies the TLMS: CA-DYNAM/TLMS tape management system.

**RMM**
optionally, specifies the DFSMSrmm tape management system.

**ZARA**
optionally, specifies the ZARA tape management system.

**SL**
optionally, specifies standard label type for the scratch volume selection. This is the
default.

**NL**
optionally, specifies nonlabeled type for the scratch volume selection.

**AL**
optionally, specifies ANSI label type for the scratch volume selection.

**NSL**
optionally, specifies nonstandard label type for the scratch volume selection.

**SUL**
optionally, specifies standard user label type for the scratch volume selection.

**1900001**
optionally, specifies January 1, 1900 as the date. This is the default.

**TODAY**
optionally, indicates the current system date.

**yyyyddd1**
optionally, the "from" date. The "to" date defaults to the current system date. All
specified dates are in Julian notation.

**yyyyddd1-yyyyddd2**
optionally, the date range in which the volumes became scratch. Neither of these
dates can be greater than the current system date.

**zara-subsys-name**
Specifies the subsystem name for the Zara tape management system, where *zara-
subsys-name* is the four-character name. The default subsystem name is ZARA.
JCL Requirements

The following definitions apply to the SMCUDBX JCL:

**DBTMS**
Input to the Scratch Extract utility in the form of the CA-1 TMS, the CA-DYNAM/TLMS VMS, or DFSMSrmm report extract file. This DD statement is not required for Zara.

**STDOUT**
Output messages from the Scratch Extraction utility. This DD statement is required.

**DBEXTFIL**
Output file from the Scratch Extract Utility. If a DCB LRECL is specified, it must specify a 16-byte value.

If Zara is the tape management system, the Zara API module must either reside in the MVS LINKLIST, or you must include one of the following JCL statements to access the module.

```
//STEPLIB DD DISP=SHR, DSN=your.zaraapi1.library
        DISP=SHR, DSN=your.tmsextract.library

//JOBLIB DD DISP=SHR, DSN=your.zaraapi1.library
```

The following figure shows sample JCL used to invoke the Scratch Extraction utility to process the CA-DYNAM/TLMS VMF for all tapes scratched in 2003.

```
//yourstd JOB card
//STEP0 EXEC PGM=SMCUDBX,PARM='TLMS,,2003001-2003365'
//STEPLIB DD DISP=SHR,DSN=your.sea.linklib
//        DD DISP=SHR,DSN=your.SLUDRxxx.linklib
//DBTMS   DD DISP=SHR,DSN=your.tlms.database
//DBEXTFIL DD DISP=(NEW,KEEP),DSN=scratch.extract.file,
//        SPACE=(TRK,(5,1)),UNIT=SYSDA
//STDOUT  DD SYSOUT=*  
/*
```

**FIGURE 4-7** Sample JCL for Scratch Extraction Utility
Output Description

SMCUDBX output includes the following:
- Messages associated with error conditions resulting from an unsuccessful attempt to execute scratch extraction processing
- Messages indicating errors or actions occurring during processing
- Output data set containing Scratch Update utility control statements

The following figure shows sample output from the SMCUDBX utility.

<table>
<thead>
<tr>
<th>SMCUDBX 7.1.0</th>
<th>SMC TMS DB SCRATCH EXTRACT</th>
<th>Page 0001</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME 15:26:41</td>
<td></td>
<td>Date 2008-08-14</td>
</tr>
<tr>
<td>Total records extracted for scratch volumes = 977</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FIGURE 4-8  Scratch Extraction Utility Sample Output Messages
SMC UUI Simulation Utility (SMCUSIM)

The SMCUSIM utility is used to issue SMC UUI commands, including the SMC SIMulate command, in a test environment. Changes to SMC command settings, tape policies, and allocation user exits can be tested before they are put into production without affecting existing SMC clients and HSC servers.

SMCUSIM code executes similarly to the SMC subsystem, with the following exceptions:

- It does not initialize the MVS SSI allocation interfaces.
- It does not set up any command or message handling intercepts.
- It does not utilize any CSA storage for processing.

The SMCUSIM utility runs as a batch program, and can execute on the same host as the existing SMC subsystem without interfering with SMC client operations. SMCUSIM processing occurs in two phases.

Phase 1 Processing

In this phase, the utility operates similarly to the SMC subsystem startup routine. SMC modules are loaded and the SMCPARMS and SMCCMDS data sets are read.

Similarly to SMC subsystem startup, the SMCPARMS and SMCCMDS data sets are optional. However, as SMCUSIM does not include the SMC subsystem command intercept, you must specify any commands required to set up your test environment during this phase.

Note –

- Follow the guidelines in “Specifying SMC Commands in the SMCCMDS or SMCPARMS Data Sets” on page 48 for commands to include in the SMCPARMS and SMCCMDS data sets.
- See Chapter 2, “SMC Commands and Control Statements” for more information about each individual command.

The SMCUSIM utility processes TAPEPLEX and SERVER commands as if it were an active SMC subsystem, and TCP/IP services may be required. Therefore, the security administration considerations for communication described in the publication Configuring and Managing SMC do apply.

The following SMC commands are disabled by the SMCUSIM because they may interfere with the actual SMC subsystem or HSC server:

- CMDDef
- HTTP
- LOG
- Route

These commands can be included in the SMCPARMS or SMCCMDS data sets, but are ignored by the utility.
Phase 2 Processing

In this phase, the utility reads and processes the UUIN data set similarly to the SMCUUUUI utility, except that only SMC commands are permitted. These commands are targeted to the SMCUSIM simulated environment, and have no effect on the actual SMC subsystem.

You can include SMC SIMulate commands, or any other SMC command in the UUIN data set to test how a job with the specified parameters would be processed using the SMCPARMS and SMCCMDS data sets configured in phase 1. HSC UUI commands are not valid, and are flagged in error. Several types of output can be received, including:

- **Plain text output**
  
  This type of output is written to TEXTOUT, and corresponds to the normal output produced by the SMC command.

- **Structured XML**
  
  This type of output is written to XMLOUT. Structured XML is a well formed XML data stream with XML header tags and XML data tag elements, and XML data element content. Only specific SMC commands produced structured XML. Refer to the *ELS Programming Reference* for a complete list of SMC XML tag names and types.

- **Comma Separated Values (CSV)**
  
  This type of output is written to CSVOUT. An input template of XML data tag names is used to define the format of the CSVOUT corresponding to a particular request. The output data for each request is a CSV header line that contains a comma-separated list of the XML data tags requested, followed by CSV detail lines. Each CSV detail line contains one comma-separated entry for each requested XML data tag. This type of output is readily adaptable as input into spreadsheets or customized report writers. Refer to the *ELS Programming Reference* for more information about the format for specifying CSV.

The type of output received is controlled by the data set definition statements (DD) defined in the JCL to execute the SMCUSIM utility.
Sample JCL

The following JCL sample executes the SMCUSIM utility:

```plaintext
//yourstd JOB card
//STEP EXEC PGM=SMCUSIM,PARM='pgmparms'
//STEPLIB DD DISP=SHR,DSN=your.sea.linklib
// DD DISP=SHR,DSN=your.sea.exitlib
// The following data sets are input to phase 1 and are optional
//SMCPARMS DD DISP=SHR,DSN=parmlib_name(parm_member_name)
//SMCCMDS DD DISP=SHR,DSN=cmdlib_name(cmd_member_name)
// The following data set is required
//STDOUT DD DISP=SHR,DSN=your.stdout.dataset
// The following data set is input to phase 2 and is required
//UUIIN DD *
// CSV and UUI commands
// At least 1 of the following data sets must be specified
//CSVOUT DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT DD DSN=yourtext.output.dataset,DISP=SHR
```

**FIGURE 4-9** JCL to Execute the SMCUSIM Utility

Parameters

The following SMCUSIM utility parameters may be specified for `pgmparms` in the sample JCL:

**XMLCASE**

Specifies the case of the XML and CSV output.

- **M**
  - Mixed (default)

- **U**
  - Uppercase

**XMLDate(format)**

Specifies the format of date fields in XML and CSV output. Valid date formats include the following:

- **YYYYMONDD** (default format)
- **YYYY-MM-DD**
- **YYYY-MON-DD**
- **HEXSTCK** (hex character STCK format)
NOHDR

optionally, specifies that STDOUT and TEXTOUT report headings and pagination carriage control are not produced.

**Note** – NOHDR and LINECNT are mutually exclusive.

LINECNT

optionally, specifies STDOUT and TEXTOUT report pagination line count setting.

**Note** – LINECNT and NOHDR are mutually exclusive.

\[nn\]

the number of lines per page. Valid values are 10-99.

**Note** – Settings for STDOUT report headings and pagination can only be specified in the EXEC statement program parameters. Settings for TEXTOUT report headings, while initially specified by the EXEC statement program parameters, can later be modified by specifying TEXTOUT UUI control statements in the UUIIN command stream.

For example:

In the following figure, the EXEC statement program PARM='LINECNT(55)' sets the report pagination to 55 lines per page for both STDOUT and TEXTOUT output.

However, the UUI command TEXTOUT NOHDR in the UUIIN command stream alters the TEXTOUT report parameters to disable report headers and pagination.

//yourstd JOB card
//STEP EXEC PGM=SMCUSIM, PARM='LINECNT(55)' 
//STEPLIB DD DISP=SHR, DSN=your.sea.linklib
// SMCPARMS DD DISP=SHR, DSN=parmlib_name(parm_member_name)
// SMCCMDS DD DISP=SHR, DSN=cmdlib_name(cmd_member_name)
//STDOUT DD DISP=SHR, DSN=your.stdout.dataset
//UUIIN DD *
//TEXTOUT NOHDR
UI commands
//CSVOUT DD DSN=yourcsv.output.dataset, DISP=SHR
//XMLOUT DD DSN=yourxml.output.dataset, DISP=SHR
//TEXTOUT DD DSN=yourtext.output.dataset, DISP=SHR
MAXRC

specifies whether SMCUSIM initialization is to be terminated when the specified command return code is exceeded. If MAXRC is not specified, then the SMCUSIM always attempts to complete its initialization regardless of any SMCPARMS or SMCCMDS command failure(s). This is the default behavior.

**Note** –

- Certain SMC commands, such as CMDDef, HTTP, LOG, and Route, that are allowed in the SMC subsystem environment, but are not allowed in the SMCUSIM environment are merely ignored under SMCUSIM and do not affect MAXRC processing, if specified.
- Only commands executed as part of the simulated SMC subsystem startup (i.e. those read from the SMCPARMS and SMCCMDS data sets) are evaluated as part of MAXRC processing. Commands read from the UUIIN DD which result in a return code greater than the specified MAXRC value do not automatically terminate the SMCUSIM utility.
Required Data Set Definition (DD) Statements

You **must** specify the UUIIN and STDOUT data set definitions.

**UUIIN Data Set**

The UUIIN data set can include:

- SMC UUI commands
- HSC UUI commands
- VTCS PGMI requests

Native SMC UUI commands include:

- Display Drive
- Display Volume
- POLicy
- SIMulate

Refer to the *ELS Programming Reference* for a list of supported HSC UUI commands and VTCS PGMI requests.

**Syntax Rules**

- Input must be 80 byte card images.
- Only columns 1-72 of the 80 byte card image may contain actual command input. Columns 73-80 may be used for sequence numbers if desired.
- If the last non-blank character in columns 1-72 is a “+”, the logical command is continued on the next physical card.
- Comments begin with “/*” (in column 2 and beyond) and end with “*/”.
- The maximum logical command length is 32000 bytes.

**Control Statements**

Utility control statements allow the report pagination for TEXTOUT output and the target TapePlex to be altered for subsequent SMC, HSC, and VTCS UUI and PGMI commands.

**TEXTOUT**

optionally, sets the report pagination parameters for TEXTOUT output. If any errors are encountered on the TEXTOUT command, all subsequent UUI commands are bypassed until a correct TEXTOUT command is encountered.

**NOHDR**

optionally, specifies that TEXTOUT report headings and pagination carriage control are not produced.

---

**Note** – NOHDR and LINECNT are mutually exclusive.
LINECNT\textit{(nn)}

optionally, specifies TEXTOUT report pagination line count setting.

\textit{nn} is the number of lines per page. Valid values are 10-99.

\textbf{Note} – LINECNT and NOHDR are mutually exclusive.

\textbf{Note} –

- Settings for STDOUT report headings and pagination can only be specified in the EXEC statement program parameters. Settings for TEXTOUT report headings, while initially specified by the EXEC statement program parameters, can later be modified by specifying TEXTOUT UUI control statements in the UUIIN command stream.
- If multiple TEXTOUT statements are input before a single UUI command, the last TEXTOUT statement controls the TEXTOUT report pagination.
- PLEXDext and TEXTOUT commands can be specified along with CSV commands to alter the destination TapePlex, and the CSV and TEXTOUT output characteristics of subsequent UUI commands.

**STDOUT Data Set**

The STDOUT data set is where the SMCUSIM utility reports the input and final completion code for each UUIIN request.

**SMCUSIM Utility Sample CSV**

The following CSV sample displays Y/N values for major sources of tape policy for the specified simulated job step. Refer to the \textit{ELS Programming Reference} for a complete list of XML tags and their structure.

```plaintext
csv field=(jobname,dsname,idax_matched_policy_flag, +
    idax_matched_tapereq_flag,idax_policy_esoteric_flag, +
    idax_storgrp_esoteric_flag,sms_info_flag, +
    policy_info_flag,tapereq_info_flag, +
    userexit_info_flag,owning_tapeplex), +
break(simulate_request) notitle fixed
```
HSC Stand-Alone Utilities

This chapter describes HSC stand-alone utilities. These utilities run as independent programs.

The following utilities are included:

- Utility Administrator (SLUADMIN)
- SLICREAT
- Scratch Conversion Utility (SLUCONDB)
- Point in Time Copy (SLUCOPY)
Utility Administrator (SLUADMIN)

The SLUADMIN program operates as a batch job and controls initialization processing for most utility functions. The utility administrator (SLUADMIN) can accept multiple commands which are handled as serial requests for multiple utilities. If all requirements needed to execute the utility function are met, control is passed to the appropriate program which handles the actual processing.

Utility functions represented by additional control statements are not started until the prior utility function stops and control is returned to the SLUADMIN program.

Caution – The maximum length of a control statement is 32,767 characters. Exceeding this limit causes message SLS0241I to be displayed, which indicates an invalid utility control statement.

Invoking SLUADMIN

For convenience, most utility programs are packaged to appear as a single, user-invoked program. An exception is Scratch Conversion.

All other utility functions are invoked as a normal batch job using the SLUADMIN program and user-specified commands needed to invoke the required utility function.

Utility functions represented by additional commands are not started until the prior utility function stops and control is returned to the SLUADMIN program.

The following is a generic example of JCL that can be modified to execute SLUADMIN. Where “utility and CSV commands” appears in this sample JCL, enter the utility or CSV commands you wish to execute.
For example:

```
SET HOSTID(HSC2) FORHOST(HSCB)
OFFLoad LOGF
SCREdist ACS(01)
```

Use the following JCL to invoke SLUADMIN:

```
//jobname    job (account),programmer,REGION=0M
//S1 EXEC    PGM=SLUADMIN,PARM=MIXED
//STEPLIB    DD DSN=your.sea.linklib,DISP=SHR
//SLSPRINT   DD SYSOUT=A
//SLSIN DD   *
  utility and CSV commands
  ...
  ...
  //*******************************************************************************
  //* Optional UUI Output Definition Statements                                     *
  //*******************************************************************************
  //SLSCSV  DD DSN=yourcsv.output.dataset,DISP=SHR
  //SLSCSVX DD SYSOUT=*          
  //SLSXML  DD DSN=yourxml.output.dataset,DISP=SHR
  /*
  //
```

**Note** – Specify a region size of 0M on the JOB statement for all utility functions.

**SLUADMIN Execution Parameters**

The following optional parameters may be specified for PARM= on the SLUADMIN EXEC statement:

**NOHDR**

Suppresses printing of report headings (error messages still can be written to the report file). This parameter is useful when you issue the VOLRpt command with the VOLDATA parameter to create a raw volume (flat) data file.

This parameter can be used only with the ACTIvities, MOVe, and VOLRpt utility commands.

**Note** – NOHDR and LINECNT are mutually exclusive.

If NOHDR is not specified, the default is to print headings that include the following information:

- date/time of the report
- page number(s)
- host software version number
- name of the utility function executed
NOHDR
Suppresses printing of page headings, but produces control headers in the output, such as:
SLS0030I Message ID NNNN Help Info:
or:
SLS0041I Command CCCCCCCC Help Info:

**Note** – NOHDR is mutually exclusive with LINECNT and NOHDR.

This parameter is useful when you issue the Display CMd or Display Message command to create a file that includes help text for commands or messages.

MIXED
Prints all report headings and messages in mixed case. The default is uppercase.

LINECNT=nn
Specifies the number of lines per page for the SLUADMIN report. Allowable values are 10 through 99; the default is 60 lines per page.

**Note** – LINECNT and NOHDR are mutually exclusive.

SSYS(ssss)
Optionally, specifies the name of the HSC subsystem for which the SLUADMIN utility is being run. This parameter is required when the HSC subsystem(s) running on the LPAR have specified the MULT parameter.

XMLDate(date)
Defines the format of date fields in XML and CSV output. Valid date formats include the following:
- yyyy mon dd
- yyyy-mm-dd
- yyyy-mon-dd
- HEXSTCK (hex character STCK format)
The default format is yyyy mon dd. For example, 2005Oct14.

XMLCase(case)
Defines the case of alphabetic data fields in XML and CSV output. Valid case formats include the following:
- M (mixed uppercase and lowercase)
- U (all uppercase)
The default is M.
SLUADMIN Definition Statements

**Note** – Additional statements may be required for certain HSC and VTCS commands. In this publication, these statements are described with the applicable command.

**General Definition Statements**

The following definition statements are **always** required:

- **STEPLIB**
  specifies the link library that contains the ELS modules.

- **SLSPRINT**
  specifies the destination for the utility output (plain text).

- **SLSIN**
  specifies the input to the SLUADMIN (utility command names and parameters).

- **SLSOUT**
  specifies the destination for SLUADMIN processing messages.

**CDS Definition Statements**

One or more of the following CDS definition statements are **required** for utility commands executed on a host where the HSC is inactive. These statements specify a primary CDS, and optionally, a secondary and standby CDS.

**Note** – These statements can be omitted for commands that execute on a host with HSC active. If these statements are omitted, the data sets used by the active HSC on the host are accessed.

- **SLSCNTL**
  specifies the primary CDS. This statement is **required** for utility commands executed on a host where the HSC is inactive.

- **SLSCNTL2**
  optionally, specifies the secondary CDS.
  If a secondary CDS exists, include this statement so that if a switch occurs and the secondary CDS becomes active, the CDSs can be reordered to maintain database integrity.

- **SLSSTBY**
  optionally, specifies the standby CDS.
  If a standby CDS exists, include this statement so that if a switch occurs and the standby CDS becomes active, the CDSs can be reordered to maintain database integrity.
When you specify CDS definition statements, the following conditions apply:

- The number of DD statements specified must equal the number defined by the SET TCHNIQE command. When you run the SET TCHNIQE command, the number of DD statements defined must equal the number implied by the new technique.
- Rules for selecting primary, secondary, and standby CDS versions are the same as those used by the HSC subsystem. Refer to the publication *Managing HSC and VTCS* for more information about CDS configuration.
- For utilities that are “read only” (e.g. VOLRpt), you can specify a single DD (SLSCNTL) and no internal or external name validation is performed.

**UUI Output Definition Statements**

One or more of the following definition statements are required when you wish to generate output types added through Unified User Interface (UUI) requests. See “Requesting SLUADMIN Output” on page 669 for more information about requesting these output types.

**SLSCSV**
- specifies the destination for the utility output in Comma Separated Value (CSV) format.

**SLSCSVX**
- specifies the destination for CSV exceptions.

**SLSXML**
- specifies the destination for the utility output in structured XML format.
Requesting SLUADMIN Output

In addition to plain text, SLUADMIN supports output types added through Unified User Interface (UUI) requests. Refer to the ELS Programming Reference for a list of commands and utilities supported by the UUI.

The output type is controlled by DD statements defined in the SLUADMIN JCL. Output types include the following:

- **Plain text**
  
  Plain text output is always produced and is unchanged from previous releases. Output is written to the data set specified by the SLSPRINT definition statement.

- **Structured XML**
  
  This output type is optional and is generated only if the SLSXML definition statement is specified. Output is written to the data set specified by this statement.

  Structured XML is a well-formed XML data stream containing XML header tags, data tags, and data element content. Refer to the ELS Programming Reference for XML tag names and structure for all UUI requests.

- **Comma Separated Values (CSV)**
  
  This output type is optional and is generated only if the CSV command and SLSCSV definition statement are specified.

  CSV output can be customized. A template of XML data tag names can be input by the user to specify which data values will be output. The output data is a single CSV header line followed by CSV detail lines.

  A CSV header line is a list of the XML data tag names requested; each name is separated by a comma. Each CSV detail line is a specified fixed number of data values, separated by a comma. This kind of output is readily adaptable as input into spreadsheets or customizable report writers.

  **Note** – The VOLRpt VOLDATA parameter produces a volume flat file. This option is still supported, but may be discontinued in future releases. Refer to the ELS Legacy Interfaces Reference for more information.

Requesting XML Output

If the SLSXML DD statement is present, it indicates that structured XML output should be provided for all SLUADMIN commands that support the UUI interface.

When XML is generated, exceptions are generated under their own header tag, `<exceptions>`, at the end of each request. Each exception is reported using the `<reason>` tag. Refer to the ELS Programming Reference for more information.
Requesting CSV Output

If the SLSCSV DD statement is present, comma separated value (CSV) output is provided for all SLUADMIN commands that support the UUI interface.

If the SLSCSVX DD statement is present, CSV exceptions are reported. The SLSCSVX DD statement is valid only if the SLSCSV DD statement is provided. CSV exceptions are generated only if the CSV command is in effect for a request.

The default DCB information for this DD is the same as SLSPRINT, LRECL=121, RECFM=FB).

CSV Command

The CSV command controls CSV output processing.

Each CSV command contains a list of CSV element definitions separated by commas. Each CSV element definition specifies an XML data tag name with optional XML structure tag and subscript values. Refer to the ELS Programming Reference for more information about ELS XML tags.

Syntax

![CSV Command Diagram]

**FIGURE 5-1** CSV Command
Parameters

OFF
Disables CSV processing for subsequent requests.

Note – OFF is mutually exclusive with all other CSV parameters.

Field
Required if OFF is not specified.

structuretag
an optional XML structure tag and data tag pair. An XML structure tag is an element that contains other elements but does not have content value. Refer to the ELS Programming Reference for more information about ELS XML tags.

Specify an XML structure tag/data tag pair only when the data tag occurs within multiple structure tags. For example, the DISPLAY LSM request data tag free_count is used under the structure lsm_data to contain the total LSM free cell count and under the structure panel_data to contain the panel free cell count. Specifying lsm_data.free_count requests the free cell count from the lsm_data structure; specifying panel_data.free_count requests the free cell count from the panel_data structure.

nnn
an optional subscript that determines how many of the multiple XML data values are displayed in the CSV output.

Specify a subscript only when the structured XML data for a single request contains multiple XML structure elements with the same name. This is indicated in the requestXML description whenever the column labelled “Maximum Occurrences” is greater than 1. If a subscript value is specified in the XML structure tag name, no subscript value can be specified in the XML data tag name for the same CSV element definition.

data tag
an optional XML data tag.

Specify an XML structure tag/data tag pair only when the data tag occurs within multiple structure tags. For example, the DISPLAY LSM request data tag free_count is used under the structure lsm_data to contain the total LSM free cell count and under the structure panel_data to contain the panel free cell count. Specifying lsm_data.free_count requests the free cell count from the lsm_data structure; specifying panel_data.free_count requests the free cell count from the panel_data structure.

Note – The XML tag names are case-sensitive and must exactly match the tag names as specified in the request description. For example, the tag name volser is valid, but the tag names Volser and VOLSER are invalid.
an optional subscript that determines how many of the multiple XML data values will be displayed in the CSV output.

Specify a subscript only when the structured XML data for a request contains multiple XML data elements with the same name. This is indicated in the request XML description whenever the column labelled “Maximum Occurrences” is greater than 1. If a subscript value is specified in the XML data tag name, no subscript value can specified in the XML structure tag name for the same CSV element definition.

**BR**eak

Required if OFF is not specified. The break tag must be a valid structure tag defined for the input request. Whenever a trailer tag matching the break tag is found in the output process, a new CSV record is created. Examples of valid break tags are:

- For DISPLAY CDS, cds_data or host_data
- For VOLRPT or Display Volume, volume_data

**FIXed**

Generates fixed format CSV output. Each field in the CSV output is blank-padded so that it occupies a fixed number of characters. This option can be used to create a customer-specified format flat file for reporting.

**NOTITLe**

Specifies that no CSV title line is produced. If this keyword is omitted, the first line of each CSV request is a title line containing comma separated tag names.

**TITLe**

If TITLe is specified, the title names specified are used in the title output line in place of the XML tag names. For any omitted title name, the specified XML tag name from the FIELD parameter is used in the title.
**JCL Example: CSV Output**

The following SLUADMIN JCL executes the MVCRPT command to produce a report of the percentage of space available for all MVCs in CSV format. After the job executes, you can FTP the CSV output file to your spreadsheet application.

Refer to the *ELS Programming Reference* for information about the structure and data tags used in this example.

![JCL Example: CSV Output for the MVCRPT command.](image)

```plaintext
//MVCREPT JOB x,CHRIS,CLASS=A,MSGCLASS=E
  /**
   **
   **
   **MVCREPT EXEC PGM=SLUADMIN,
   ** PARM='MIXED,XMLDATE=YYYY-MM-DD'
   ** STEPLIB DD DSN=your.sea.LINKLIB,DISP=SHR
   ** SLSCNTL DD DSN=your.sea.CLUSTER.CDS,DISP=SHR
   ** SLSPRINT DD SYSOUT=* 
   ** SYSOUT DD SYSOUT=* 
   ** SLSCSV DD DISP=(,CATLG),DSN=hlq.MVCREPT.CSV, 
   ** DCB=(RECFM=VB,LRECL=4096,BLKSIZE=32000), 
   ** UNIT=SYSDA,SPACE=(CYL,(x,y))
   ** SLSIN DD *
   
   CSV FIELD=(mvc_data.volser,mvc_data.percent_available)+
   BREAK=(mvc_data)+
   NOTITLE
   MVCRPT
   ** /**
   **
```
SLUADMIN Program Return Codes

The SLUADMIN program sets a return code for the execution of the job step as defined in TABLE 5-1.

The return code for each utility function is listed in a message. For return codes other than 0, additional messages are listed providing more information and description of the error condition. Refer to the publication ELS Messages and Codes for any messages encountered.

**TABLE 5-1** SLUADMIN Return Codes

<table>
<thead>
<tr>
<th>Return Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All utility functions requested via control statements completed normally.</td>
</tr>
<tr>
<td>4</td>
<td>At least one utility function encountered an abnormal situation, but it did not cause termination of that utility function or any subsequent utility functions.</td>
</tr>
<tr>
<td>8</td>
<td>At least one utility function encountered an error condition that prevented continuation of that utility function, but any subsequent utility functions represented by control statements were attempted.</td>
</tr>
<tr>
<td>12</td>
<td>An error condition was detected that either prevented the start of any utility functions, or terminated the active utility function and prevented processing of subsequent utility functions.</td>
</tr>
</tbody>
</table>

*Note* – If the return code occurred because of a problem with the HSC CDS or journal files, the problem must be resolved before the HSC can be initialized safely.

Reports Created By Utility Commands

Several utility commands produce reports when executed. These reports are in addition to the utility function. The following utility commands produce reports:

- LIBGen
- ACTIvities
- AUDit
- BACKup
- MOVe
- VOLRpt

Report Headings

Report headings include the following information:

- date/time of the report
- page number(s)
- host software version number
- name of the utility function executed
SLICREAT

The SLICREAT program creates library control data sets and displays library volume capacity in a confirmation message.

These library control data sets are created based on the data set definitions you specify in the SLICREAT data set initialization JCL.

Using SLICREAT involves the following steps:

1. Create data set definitions in the data set initialization JCL using the SLICREAT program.

2. Execute the SLICREAT program to create the library control data sets.

3. Verify successful completion of the SLICREAT program and note the library volume capacity displayed in the confirming message.

These steps are described in the following sections. They must be performed before the library is operational.

---

**Note** —

- Before using SLICREAT, you must first create, assemble and link the LIBGen macros. Refer to the publication *Configuring HSC and VTCS* for more information.

- You can use SLICREAT to reformat your HSC SLSJRNnn journal file(s). Refer to the *ELS Legacy Interfaces Reference* for more information.
Creating Control Data Set Initialization JCL

Creating the definitions for the library control data set is done by coding JCL in a job file named SLICREAT.

The following is an example of JCL for the SLICREAT program. This sample is also included in the HSC SAMPLIB as member JCLCRT.

```
//SLICREAT JOB (account),'programmer',CLASS=A
//CREATE   EXEC PGM=SLICREAT, CDS CREATE MODULE
//          PARM='libgen-load-module-name',
//          REGION=0M
//*
//STEPLIB DD DSN=your.sea.linklib,DISP=SHR
//SYSPRINT DD SYSOUT=* MESSAGES
//*
//* **************************************************************************
//* LIBRARY PRIMARY CONTROL DATASET (CDS)
//* **************************************************************************
//SLSCNTL DD DSN=SLS.SLSCNTL, PRIMARY CDS
//         SPACE=(4096,s,,CONTIG,ROUND), REPLACE 's' WITH YOUR
//         DISP=(NEW,CATLG,DELETE), SPACE CALCULATIONS
//         UNIT=SYSDA
//* **************************************************************************
//* LIBRARY SECONDARY CONTROL DATASET (CDS)
//* **************************************************************************
//SLSCNTL2 DD DSN=SLS.SLSCNTL2, SECONDARY CDS
//          SPACE=(4096,s,,CONTIG,ROUND), REPLACE 's' WITH YOUR
//          DISP=(NEW,CATLG,DELETE), SPACE CALCULATIONS
//          UNIT=SYSDA
//* **************************************************************************
//* LIBRARY STANDBY CONTROL DATASET (CDS)
//* **************************************************************************
//SLSSTBY DD DSN=SLS.SLSSTBY, STANDBY CDS
//         SPACE=(4096,s,,CONTIG,ROUND), REPLACE 's' WITH YOUR
//         DISP=(NEW,CATLG,DELETE), SPACE CALCULATIONS
//         UNIT=SYSDA
//* **************************************************************************
//* LIBRARY JOURNAL DATASET (INITIAL)
//* **************************************************************************
//SLSJRN01 DD DSN=SLS.SLSJRN01, INITIAL JOURNAL
//          SPACE=(4096,u,,CONTIG,ROUND), REPLACE 'u' WITH YOUR
//          DISP=(NEW,CATLG,DELETE), SPACE CALCULATIONS
//          UNIT=SYSDA
//* **************************************************************************
//* LIBRARY JOURNAL DATASET (ALTERNATE)
//* **************************************************************************
//SLSJRN02 DD DSN=SLS.SLSJRN02, ALTERNATE JOURNAL
//          SPACE=(4096,u,,CONTIG,ROUND), REPLACE 'u' WITH YOUR
//          DISP=(NEW,CATLG,DELETE), SPACE CALCULATIONS
//          UNIT=SYSDA
//* **************************************************************************
//* ONE PAIR OF JOURNALS ARE REQUIRED FOR EACH GENED HOST
//* **************************************************************************
//*
```
DD Statements

The following JCL DD statements must be used to define the library control data sets:

**SYSPRINT**
output messages.

Refer to the following criteria when allocating the control and journal data sets:

- Do not specify the DCB statement. The HSC defines the required blocksize (4K).
- The data set(s) must be allocated in a single contiguous extent.
- The CDS(s) must not include existing data sets containing records prior to running the SLICREAT process.
- Oracle StorageTek recommends that the CDSs do not reside on the same volume(s) as other CDSs or other data sets that generate high I/O activity.

**SLSCNTL**
primary library control data set.

This is the initial data set that is used to control and synchronize all activities within the HSC. It is used by the HSC until the controlling data set is switched to the secondary, either automatically or manually.

SLSCNTL also controls the SLICREAT process. If you do not include an SLSCNTL DD statement when you run SLICREAT,
- the CDSs will not be formatted, and
- the size requirement (in blocks) of the LIBGEN load module included in the PARM statement will be calculated and reported and journal formatting will be attempted.

**SLSCNTL2**
secondary copy of the primary control data set.

This is required only if the SLIRCVRY macro TCHNIQE parameter is SHADOW, STANDBY, BOTH, or ALL.

**SLSSTBY**
standby control data set.

This data set is required only if the SLIRCVRY macro TCHNIQE parameter is STANDBY or ALL. A secondary data set is required if a standby control data set is specified. This data set is also required for STBYONLY processing (see “Using SLICREAT to Create Only the Standby CDS” on page 679).
Executing the SLICREAT Program

Execute the SLICREAT program to create the library control data sets.

SLICREAT EXEC Statement

Use the following EXEC statement to execute the SLICREAT program:

```
EXEC PGM=SLICREAT,PARM='libgen-load-module-name'
```

The `PARM=` value indicates the LIBGEN load module name. The steplib statement must point to the appropriate library in which the LIBGEN load module currently resides.

Note –

- SLICREAT requires a LIBGEN load module assembled with the same level macros as the release LINKLIB. A LIBGEN load module created with earlier HSC releases cannot be used as input to a later release of SLICREAT.
- The CDS files that are created by SLICREAT (SLSCNTL, SLSCNTL2, and SLSSTBY) are verified to be empty data sets prior to being formatted. If SLICREAT identifies any of these files as containing records, an error message is displayed and the creation process terminates. If this occurs, specify a different data set(s) or delete and redefine the data set(s) and re-execute SLICREAT.

Verifying Successful Completion of the SLICREAT Program

After the SLICREAT program is successfully processed, a message is generated indicating the status and the capacity of the library. An example is:

```
SLS0557I DATABASE SUCCESSFULLY INITIALIZED; TOTAL CARTRIDGE CAPACITY: DDDDDDDDDDDDD VOLUMES
```

Calculating Cartridge Capacity - SL8500 and SL3000

Message SLS0557I displays the total cartridge capacity for the library. For the **SL8500 and SL3000 libraries**, you must first vary the library online (Vary ACS command) to see the actual capacity of the library rather than the maximum capacity of the library. Before you vary the library, the maximum capacity is based on the highest possible number of panels that the HSC allows to be defined, not the number you defined in LIBGEN.

After you vary the library online, issue the Display Acn or Display Lsm command to show the actual library capacity.
Other Uses for SLICREAT

Using SLICREAT to Create Only the Standby CDS

SLICREAT can be used to create an additional CDS. If the HSC was previously installed without a standby CDS, you can run the SLICREAT program to create one.

This method does not make a backup of the primary CDS. It formats the additional CDS and allows you to activate it with the CDS Enable command.

SLICREAT EXEC Statement to Create Standby CDS

Specify PARM='STBYONLY' on the SLICREAT EXEC statement to create a standby CDS:

```plaintext
EXEC PGM=SLICREAT,PARM='STBYONLY'
```

Note –

- You must have a primary CDS before you can run the STBYONLY option of SLICREAT.
- For a standby data set to be recognized by the system, it must be defined by a CDSDEF statement in the PARMLIB.

Using SLICREAT to Calculate DASD Space

You can determine the minimum DASD space required for the CDSs by executing SLICREAT without specifying the SLSCNTL and SLSJRNnn DD statements. The HSC generates a message that indicates the minimum space requirements in 4096-byte blocks. When you execute SLICREAT, you must specify the number of blocks for each of these data sets that is at least as large as this minimum.

Note – If you are specifying multiple CDSs (SLSCNTL2, SLSSTBY), Oracle StorageTek recommends that you allocate the same amount of space (in blocks) for all your data sets when you define them.

If the data sets are defined with different space allocations, the HSC uses the size of the smallest data set to determine the number of 4K blocks that it will use for the CDS. The additional space in the other CDS data sets, if any, will not be used by the HSC.

The difference in space between the minimum space required (returned by SLICREAT) and the size of the smallest CDS copy is formatted as CDS free blocks.
Scratch Conversion Utility (SLUCONDB)

The SLUCONDB program generates scratch transactions from CA-1, CA-DYNAM/TLMS, DFSMSrmm and Zara tape management systems, or from a file extracted from a client system by the SMC SMCUDBX utility.

**Note** – See “Tape Management Extract Utility (SMCUDBX)” on page 649 for more information about the SMCUDBX utility.

SLUCONDB can execute as a standalone utility, generating scratch transactions for input to SLUADMIN. Alternatively, it can execute on a host with an active HSC system, and, using the SLUCONDB LIBONLY parameter, generate UUI scratch transactions sent directly to the active HSC system. In a client/server system, using the TAPEPLEX parameter, SLUCONDB can access an HSC system on another host to acquire CDS data and to send UUI scratch transactions.

**Warning** –

- SLUCONDB should not be executed with any other SCRAtch, UNSCratch, or REPLaceall activity.
- Although SLUCONDB is distributed as source, do not modify the SLUCONDB code. If you wish to synchronize scratch processing with a tape management system not supported by SLUCONDB, alter one of the distributed SLUCONDB tape management interface modules to use the SLUDRINF interface format.
Syntax

SLUCONDB uses program parameters to determine the Tape Management System interface (SLUDR*) routine to invoke and method of operation. See Appendix C, “Tape Management System Interface (SLUDR*) Routines” for more information about these routines.

You can specify the following values for the PARM parameter on the JCL EXEC statement when running the SLUCONDB utility:

Note – You must enter parameters in the specified order and include commas for omitted parameters.

---

FIGURE 5-4 SLUCONDB PARM parameter syntax
Parameters

**PARM=**
specifies the parameters that follow can be accessed by the program indicated in the PGM parameter in the JCL.
The defaults for the PARM are:

- **TMS**
- All label types
- All scratches from January 1, 1900 to the current system date
- Uppercase only
- Generate scratch transactions (no direct update).

The keywords for the PARM are positional. If you accept the system defaults, either do not specify PARM, or code PARM="."

**TMS**
optionally, specifies the CA-1 tape management system (TMS). This is the default.

**TLMS**
optionally, specifies the TLMS: CA-DYNAM/TLMS tape management system.

**RMM**
optionally, specifies the DFSMSrmm tape management system.

**ZARA**
optionally, specifies the ZARA tape management system.

**SMC**
optionally, specifies the extract file from the SMC utility SMCUDBX.

If SMC is specified, label and date parameters are not permitted. (Label and date selection are performed by the SMC utility when it creates the extract file.)

**SCRPOOL**
optionally, specifies the scratch pool label type used by the library. Valid label type values are:

- **(SL)**
  standard label (the default).

- **(NL)**
  nonlabeled.

- **(NSL)**
  nonstandard label.

- **(AL)**
  ANSI label.

- **(SUL)**
  standard user label.

**1900001**
optionally, specifies January 1, 1900 as the date. This is the default.
TODAY
   optionally, indicates the current system date.

   *yyyyddd1*
   optionally, the "from" date. The "to" date defaults to the current system date. All
   specified dates are in Julian notation.

   *yyyyddd1-yyyyddd2*
   optionally, the date range in which the volumes became scratch. Neither of these
   dates can be greater than the current system date.

MIXED
   optionally, specifies to print all the headings and messages in mixed case characters
   (uppercase and lowercase characters).

   **Note –** If a comma is specified, or if this keyword is not specified, the system defaults
   to uppercase letters.

LIBONLY
   optionally, specifies that volumes are to be placed in scratch status through the UUI
   interface. Specifying LIBONLY requires an active HSC, and requires that
   SLUCONDB be executed from an APF-authorized library.

TAPEPLEX
   optionally, specifies the name of an SMC tapeplex to be used to extract CDS volumes
   and run UUI scratch commands.

   *tttttttt*
   the TapePlex name.

The specified tapeplex may be a local HSC executing on the same host as
SLUCONDB, or may be an HSC subsystem on another host accessed via the SMC
client server feature. Specifying the TAPEPLEX parameter requires an active SMC
system on the SLUCONDB host, an active HSC system for the TapePlex, and requires
that SLUCONDB be executed from an APF-authorized library.
**JCL Requirements**

The following definitions apply to the SLUCONDB JCL:

**SLSTMS**
- input to the utility in the form of either the CA-1 TMC, CA-DYNAM/TLMS Volume Master File (VMF), or DFSMSrmm report extract file. This statement is required.

**SLSSOUT**
- output from the utility specifying the Scratch Update utility control statement. This statement is required if LIBONLY or TAPEPLEX is not specified.
  - If specifying a temporary or permanent data set for 'DSN=' in the JCL, you must include the appropriate DCB information (i.e., LRECL=72).

**SLSPRINT**
- output messages from the utility program. This statement is required.

---

**Note** – The Scratch Conversion utility uses the UUI to extract volume and VTV records from the CDS. The UUI requires read access to the CDS, either from statements in the JCL or by getting the data set information from an active HSC. The SLSCNTL, SLSCNTL2, and SLSSTBY DD statements are optional if an active HSC is running on the same system. The SLSCNTL, SLSCNTL2, and SLSSTBY DD statements are not allowed if either LIBONLY or TAPEPLEX parameters are specified.

**SLSCNTL**
- the primary control data set. This statement is optional.

**SLSCNTL2**
- the secondary control data set. This statement is optional.

**SLSSTBY**
- the standby control data set. This statement is optional.
JCL Examples

The following examples illustrate both generating scratch transactions and directly updating the HSC CDS.

The library referred to as "your.sea.smp/e.loadlib" in the following examples refers to the SEALINK library generated during the ELS installation. This library contains the TMS interface (SLUDR*) modules. If you reassemble these modules, this library is the output of your link edit.

**Note** – The UNIT, SPACE, and DCB parameter settings are determined by the user.

JCL to Process Tape Management Databases, with Active HSC, Generating Scratch Update Transactions

```clike
//JOBSCUP JOB (account),programmer
//STEP1 EXEC PGM=SLUCONDB,
   //   PARM=('TLMS,,,MIXED')
//STPLIB DD DISP=SHR,DSN=your.sea.smp/e.loadlib
//STMSDD DD DSN=TMS.MASTER.FILE,DISP=SHR
//SSOUTDD DD DSN=&&SCUPINPT,DISP=(NEW,PASS),
   // UNIT=,SPACE=,DCB=
//SPRINT DD SYSOUT=* 
//**
//STEP2 EXEC PGM=SLUADMIN,COND=(4,LT,STEP1),PARM=MIXED
//SIN DD DSN=&&SCUPINPT,DISP=(OLD,DELETE)
//SPRINT DD SYSOUT=* 
//```

JCL to Process TMS Database, with HSC CDS DDnames, Generating Scratch Update Transactions

```clike
//JOBSCUP JOB (account),programmer
//STEP1 EXEC PGM=SLUCONDB,
   //   PARM=(',,200910-2009110,MIXED')
//STPLIB DD DISP=SHR,DSN=your.sea.smp/e.loadlib
//STMSDD DD DSN=TMS.MASTER.FILE,DISP=SHR
//SSOUTDD DD DSN=&&SCUPINPT,DISP=(NEW,PASS),
   // UNIT=,SPACE=,DCB=
//SPRINT DD SYSOUT=* 
//**
//STEP2 EXEC PGM=SLUADMIN,COND=(4,LT,STEP1),PARM=MIXED
//SIN DD DSN=&&SCUPINPT,DISP=(OLD,DELETE)
//SPRINT DD SYSOUT=A 
//```
JCL to Process DFSMSrmm Database, with Direct Scratch Updates (HSC Active on Host)

```
//JOBSCUP JOB (account),programmer
//STEP1 EXEC PGM=EDGHSKP,PARM='RPTEXT,DATEFORM(J)'
//MESSAGE DD DSN=rmm.message.dataset,DISP=SHR
//REPTEXT DD DSN=rmm.report.extract,DISP=SHR
/*
//STEP2 EXEC PGM=SLUCONDB,
//      PARM=('RMM,,,MIXED,LIBONLY')
//STEPLIB DD DISP=SHR,DSN=your.ssa.smp/e.loadlib
//SLSTMS DD DSN=rmm.report.extract,DISP=SHR
//SLSPRINT DD SYSOUT=*  
//
```

JCL to Process SMC Extract File:

```
//JOBSCUP JOB (account),programmer
//STEP1 EXEC PGM=SLUCONDB,PARM='SMC,,,MIXED,LIBONLY'
//STEPLIB DD DISP=SHR,DSN=your.ssa.smp/e.loadlib
//SLSTMS DD DISP=SHR,DSN=your.smc.extract.file
//SLSPRINT DD SYSOUT=* 
//
```

JCL to Process from SMC to a Remote TapePlex:

```
//JOBSCUP JOB (account),programmer
//STEP1 EXEC PGM=SLUCONDB,
//      PARM=',,,MIXED,TAPEPLEX(PRODPLX)'
//STEPLIB DD DISP=SHR,DSN=your.ssa.smp/e.loadlib
//SLSTMS DD DSN=TMS.MASTER.FILE,DISP=SHR
//SLSPRINT DD SYSOUT=*  
//
```
Output Description

SLUCONDB output includes:
- a listing of input commands with appropriate messages if syntax errors occur
- messages associated with errors in the SLUCONDB process
- messages associated with error conditions resulting from an unsuccessful attempt to scratch a volume (using LIBONLY or TAPEPLEX parameters)
- scratch input transactions (if LIBONLY or TAPEPLEX is not specified).

FIGURE 5-5 Scratch Conversion Utility Sample Output - Without LIBONLY or TAPEPLEX

FIGURE 5-6 Scratch Conversion Utility Output - With LIBONLY or TAPEPLEX
Point in Time Copy (SLUPCOPY)

Because of the key data that the CDS contains, backing up the CDS is critical. SLUPCOPY is Oracle’s recommended utility for this task.

SLUPCOPY requires other system facilities, such as DFSMSdss SnapShot to create the backup snapshot. If you have the prerequisites for SLUPCOPY, use SLUPCOPY, which, versus BACKUP, significantly reduces the time required to make a CDS backup copy and better ensures the integrity of the copy.

If you do not have the SLUPCOPY requirements, back up the CDS by issuing the HSC BACKup command from the HSC SLUADMIN utility.

Do to the variety of scenarios and conditions associated with this utility, detailed information about when and how to run SLUPCOPY can be found in the publication Managing HSC and VTCS.

Caution – Do not back up the CDS using non-ELS facilities such as disk mirroring, third party backup software, or third party Point-In-Time Copy software. Using these facilities may impact ELS performance and data integrity.
This chapter describes VTCS stand-alone utilities. These utilities are not issued using the common utility administrator program (SLUADMIN).

**RTV Utility**

The RTV utility converts VTVs contained on MVCs to data sets on volumes (real tape volumes). This utility is a standalone utility executed using the SWSRTV program.

Refer to the publication *Managing HSC and VTCS* for detailed information about when to use this utility.

**Syntax**

```
RTV MVCid(volser) INUNIT(name)
  VTVid(vol-range)
  ALLVTVS
  CPYVOLID
  LISTONLY
  BLOCKid(block-id)
  PRTID(partition-id)
  BLOCKid(block-id)
  DUMP OUTUNIT(name)
  VALIDATE
```

*FIGURE 6-1  RTV utility syntax*
Parameters

**MVCid**

specifies the MVC that contains the VTVs that RTV converts to volume(s) which become real tape versions of the VTVs.

**volser**

the MVC volser.

**INUNIT**

the name to use to allocate the input tape unit. You can specify an MVS unit address, an esoteric name, or a generic name. The valid values are the same as for the UNIT= JCL parameter.

**name**

the unit name.

**VTVid**

optionally, specifies one or more VTVs to convert.

**volser, vol-range, or vol-list**

the volser of one or more VTVs.

**ALLVTVS**

optionally, convert the most current copy of all VTVs on the specified MVC. That is, if there are multiple copies of a VTV on the specified MVC, RTV only converts the most current copy of the VTV.

---

**Note** – VTVid and ALLVTVS are mutually exclusive.

**CPYVOLID**

optionally, copy the VTV internal volser from the VTV to the output volume VOL1 record. The default is to not copy the VTV VOLID.

---

**Caution** – Use the CPYVOLID parameter carefully! The volser of the output tape will be changed to the volser of the VTV. If the output tape has an external label or if the output is directed to another VTV, this will cause label mismatches and can cause unpredictable and undesirable results.

---

**Note** –

- If the output tape is non-labelled or has a non-standard tape label, CPYVOLID will be automatically specified for this VTV decompression, and a standard label tape will be created on the output device.
- RTV supports VTVs created with standard or ANSI labels. If you do not specify CPYVOLID, RTV processes these label types as described in **TABLE 6-1**. Note that this only applies to the VOL1 record. The HDR1/HDR2 labels are always copied from the VTV by RTV for every VTV processed.
In **TABLE 6-1**, the WTOR is as follows:

SWSRTV - Label mismatch - Reply RELABEL, RETRY, or CANCEL

The operator responses produce the following results:

**RELABEL**
Decompress the RTV and overwrite the volser on the output volume.

**RETRY**
Mount another output volume and retry the operation.

**CANCEL**
Do not decompress the RTV.

**LISTONLY**
optionally, lists (but does not convert) the VTVs on the specified MVC. For more information, see “RTV LISTONLY Listing” on page 697.

**BLOCKID**
optionally, specifies the logical block ID where the VTV begins on the MVC.

*block-id*
the logical block ID (8 hexadecimal characters).

---

**Note** –
- BLOCKID and LISTONLY are mutually exclusive. In addition, if you specify the ALLVTVs parameter, or if a list or range of VTVs is specified, the BLOCKid parameter is ignored.
- Not specifying a BLOCKid value can cause very long execution times with high capacity media. The BLOCKid is used for high speed positioning to a VTV on the MVC.

---

**Tip** – The LISTONLY parameter listing on “RTV LISTONLY Listing” on page 697 supplies a Block ID value that you can use as input to the RTV utility to convert a VTV to a volume.

<table>
<thead>
<tr>
<th>VTV Label Type</th>
<th>Output Standard Label</th>
<th>Output ANSI Label</th>
<th>Output Non-Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard label</td>
<td>VOL1 label not copied</td>
<td>WTOR issued</td>
<td>VOL1 label is copied</td>
</tr>
<tr>
<td>ANSI label</td>
<td>WTOR issued</td>
<td>VOL1 label not copied</td>
<td>VOL1 label is copied</td>
</tr>
</tbody>
</table>
PARTID
optionally, specifies the partition id of the VTV being recovered from a partitioned MVC.

\textit{partition-id}
the hexadecimal partition ID

\textbf{Note –}
- If PRTID is specified, BLOCKid must also be specified.
- PARTID and LISTONLY are mutually exclusive. In addition, if you specify the ALLVTVs parameter, or if a list or range of VTVs is specified, the BLOCKid parameter is ignored.

DUMP
produce a S0C3 abend dump if RTV cannot decompress a VTV. If you specify DUMP, create a SYSMDUMP DD JCL statement to capture the dump.

OUTUNIT
the name to use to allocate the output tape unit. You can specify an MVS unit address, an esoteric name, or a generic name. The valid values are the same as for the UNIT= JCL parameter. This parameter is required if you do not specify LISTONLY.

\textit{name}
the unit name.

VALIDATE
Validates that the RTV utility can successfully process the specified VTV(s) without creating an output tape.

JCL Requirements
The following are required or optional statements for the RTV utility JCL:

\textbf{STEPLIB}
specifies the link library (SEALINK) that contains the RTV modules.

\textbf{SLSPRINT}
specifies the destination of the RTV utility report.

\textbf{SLSIN}
specifies the input to the SWSRTV program (RTV utility name and parameters).

\textbf{SYSMDUMP}
optional DD to capture dump.

\textbf{Note –} Because the RTV utility must be capable of rewriting the tape standard labels on the output unit and positioning over label information on the input unit, Dynamic Allocation is used to invoke bypass label processing (BLP) on the tape volumes. This requires that the library that contains the SWSRTV executable code be APF authorized.
RTV Utility Report Messages

The RTV report displays the following messages:

Block number too large in compressed data

**Explanation:** An error was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Chunked record logic error

**Explanation:** An error was found while processing a chunked data record for a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Decompress invalid length parameter

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Decompress invalid parameter list

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Decompress logic error

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Decompress pointer to work area is zero

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Dynamic allocation error. Reason Code = xxxx-xxxx

**Explanation:** An error was encountered while attempting to dynamically allocate the INUNIT or OUTUNIT device. Refer to the IBM MVS Authorized Assembler Services Guide for a description of the dynamic allocation reason codes.

I/O error on input MVC

**Explanation:** An I/O error was encountered while reading a MVC. Further processing is stopped. The utility terminates with return code 12.
I/O error on output volume

Explanation: An I/O error was encountered while writing the output VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Invalid compressed data block read

Explanation: This indicates that an invalid data record was found while processing this VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Invalid VTV page number encountered

Explanation: A record sequence error was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Invalid VTV record encountered

Explanation: An error was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

MVC volser # does not match requested volser #

Explanation: The volume mounted as the input MVC did not match that requested by the MVCid() parameter. The utility terminates with return code 12.

MVC record length error

Explanation: A length error was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Incorrect algo byte

Explanation: An error was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.
No HDR1 record found for requested VTV

**Explanation:** Following positioning by a BLOCKid() statement, there was no HDR1 record located at the desired position. Remove the BLOCKid statement and rerun the utility. The utility terminates with return code 12.

No HDR1 record found on input MVC

**Explanation:** The volume mounted as a MVC contained no HDR1 record. The utility terminates with return code 12.

No UHL1 record found on input MVC

**Explanation:** The volume mounted as a MVC contained no UHL1 record. The utility terminates with return code 12.

No VOL1 record found on input MVC

**Explanation:** The volume mounted as a MVC contained no VOL1 record. The utility terminates with return code 12.

NULL input buffer pointer

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

NULL output buffer pointer

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Requested VTV not found on MVC

**Explanation:** The volser requested by the VTVid() parameter was not found on the MVC. The utility terminates with return code 12.

Spanned length final error

**Explanation:** An error was found while processing a spanned data record for a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Spanned length intermediate error

**Explanation:** An error was found while processing a spanned data record for a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.
Unexpected request on input I/O

**Explanation:** This indicates a program logic error. Further processing is stopped. The utility terminates with return code 12.

Unexpected end of tape on output volume

**Explanation:** While writing the output VTV, an end of tape indication was encountered. The VTV must be completely contained on a single output volume. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Unexpected request on output I/O

**Explanation:** This indicates a program logic error. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

Unexpected tape mark on input MVC

**Explanation:** An unexpected tape mark was found on a MVC. Further processing is stopped. The utility terminates with return code 12.

VTVid range parameter is invalid

**Explanation:** An invalid range value was found in the VTVid() specification. The utility terminates with return code 12.

VTV logical data check encountered

**Explanation:** A data check indicator was found in a compressed data record while processing a VTV. Further processing of this VTV is stopped. The VTV will be marked in the RTV Decompress Report output. The utility will continue to process other VTVs as necessary.

VTV volser # does not match requested volser #

**Explanation:** Following positioning by a BLOCKid statement, the VTV volser did not match that requested by the VTVid() parameter. The utility terminates with return code 12. Remove the BLOCKid statement and rerun the utility.
RTV LISTONLY Listing

The following figure shows an example of the listing that RTV produces when you specify the LISTONLY parameter.

<table>
<thead>
<tr>
<th>VTV</th>
<th>File</th>
<th>Block</th>
<th>&lt;---Created---&gt;</th>
<th>&lt;---Migrated---&gt;</th>
<th>VTVPAGE</th>
<th>VTV</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV6825</td>
<td>1</td>
<td>00000000</td>
<td>20060Nov30 12:07:56</td>
<td>20060Nov30 12:15:56</td>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>VV6863</td>
<td>2</td>
<td>92005F0F</td>
<td>20060Sep27 12:57:54</td>
<td>20060Sep27 12:59:54</td>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>VV6893</td>
<td>3</td>
<td>92005F18</td>
<td>20060Aug18 08:57:26</td>
<td>20060Aug18 08:59:26</td>
<td>Large</td>
<td></td>
</tr>
<tr>
<td>VV0403</td>
<td>4</td>
<td>92005F21</td>
<td>20060Aug18 08:57:26</td>
<td>20060Aug18 08:59:26</td>
<td>Large</td>
<td></td>
</tr>
</tbody>
</table>

**FIGURE 6-2** Example RTV LISTONLY listing

This report lists the VTV’s:

- Volser
- Logical file number on the MVC
- Block ID on the MVC
- Time created and migrated
- VTVPAGE size - STANDARD or LARGE
- Status - Not Current, or if blank, the VTV is current
RTV Decompress Listing

The following figure shows an example of the listing that RTV produces when you do not specify the LISTONLY parameter (that is, you run RTV to convert VTVs to volumes).

<table>
<thead>
<tr>
<th>SWSRTV</th>
<th>(1.0.0) StorageTek VTCS RTV Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 0001</td>
<td></td>
</tr>
<tr>
<td>TIME 14:28:33</td>
<td>Control Card Image Listing</td>
</tr>
<tr>
<td>RTV MVC(C8228)</td>
<td>VTV(VV6800-VV6900) CPYVOLID</td>
</tr>
<tr>
<td>SWSRTV</td>
<td>(1.0.0) StorageTek VTCS RTV Utility</td>
</tr>
<tr>
<td>PAGE 0002</td>
<td></td>
</tr>
<tr>
<td>TIME 14:28:33</td>
<td>MVC C83223 Contents Report</td>
</tr>
<tr>
<td>VTV File Block</td>
<td>VTVPAGE VTV</td>
</tr>
<tr>
<td>Volser # ID</td>
<td>Date Time Date Time Size Status</td>
</tr>
<tr>
<td>VV6070 1 00000000 20060Nov30 12:07:56 20060Nov30 12:15:56 Large</td>
<td></td>
</tr>
<tr>
<td>VV0874 2 2B001384 20060Sep27 12:57:54 20060Sep27 12:59:54 Large</td>
<td></td>
</tr>
<tr>
<td>VV0772 3 A3002707 20060Aug18 08:57:26 20060Aug18 08:59:26 Large</td>
<td></td>
</tr>
<tr>
<td>VV6828 4 9B002AB9 20060Aug18 08:57:26 20060Aug18 08:59:26 Large Not current</td>
<td></td>
</tr>
<tr>
<td>VV6828 5 9B002AC2 20060Aug18 08:57:26 20060Aug18 08:59:26 Large</td>
<td></td>
</tr>
<tr>
<td>VV6826 6 9B002ACB 20060Aug18 08:57:26 20060Aug18 08:59:26 Large</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SWSRTV</th>
<th>(1.0.0) StorageTek VTCS RTV Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAGE 0003</td>
<td></td>
</tr>
<tr>
<td>TIME 14:28:33</td>
<td>MVC C83223 Decompress Report</td>
</tr>
<tr>
<td>VTV Mounted</td>
<td>Final Decompress</td>
</tr>
<tr>
<td>Volser</td>
<td>Volser Status</td>
</tr>
<tr>
<td>VV6826 XX0772</td>
<td>VV6826 Successful</td>
</tr>
<tr>
<td>VV6828 XX0773</td>
<td>VV6828 Successful</td>
</tr>
</tbody>
</table>

**FIGURE 6-3 Example RTV Decompress Listing**

In addition to the contents fields shown in Figure 67 on page 136, the decompress listing shown in Figure 68 on page 137 lists the VTV's:

- Volser of the output volume as initially mounted
- Final volser of the output volume; if CPYVOLID is specified, the final volser will be identical to the VTV volser, otherwise is final volser is identical to the volser of the output volume as initially mounted
- Decompress status
MEDia, RECtech, and MODel Values

This appendix provides values for MEDia, RECtech, and MODel parameters. These parameters are used to specify drive and media characteristics. They are specified in various ELS commands and control statements.

Note –
- The SL8500 library supports only the T9840A/B/C/D, T9940B, LTO, SDLT, and T10000A/B/C media types and recording techniques.
- The SL3000 library supports only the T9840C/D, LTO, SDLT, and T10000A/B/C media types and recording techniques.
- LTO and SDLT drives are not supported in an MVS environment. These drives are recognized by the HSC but are accessible only to open systems clients using LibraryStation.

Media Type (MEDia)

The Media type is used to specify the desired type of media to be used for a data set. It is specified in the following ELS commands and control statements:

SMC:
- POLicy operator command
- TAPEREQ control statement

HSC/VTCS:
- Display Drives command
- Display SCRatch command
- Display THreshld command
- Eject command
- SCREdist command
- Warn command
- VOLPARM control statement
The following table describes valid MEDia types:

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGI</td>
<td>Indicates any Standard or enhanced (ECART) cartridge.</td>
</tr>
<tr>
<td>ZLONGI</td>
<td>Indicates standard, enhanced (ECART), or extended-enhanced (ZCART) capacity cartridges.</td>
</tr>
<tr>
<td>Standard</td>
<td>Indicates a standard length, 3480 cartridge. It can be read on any longitudinal drive (4480, 4490, 9490, or 9490EE). Data can be written in 36-track mode on a 4490, 9490, or 9490EE drive but cannot be read on an 18-track (4480) drive. Synonyms include CST, MEDIA1, STD, 1, and 3480.</td>
</tr>
<tr>
<td>ECART</td>
<td>Indicates a 3490E, extended capacity cartridge. It can be used only on a 36-track drive (4490, 9490, or 9490EE). Synonyms include E, ECCST, ETAPE, Long, MEDIA2, and 3490E.</td>
</tr>
<tr>
<td>ZCART</td>
<td>Indicates a 3490E, extended-enhanced capacity cartridge. It can be used only on a 9490EE drive. ZCART can be abbreviated as Z.</td>
</tr>
<tr>
<td>Virtual</td>
<td>Indicates a VTV (Virtual Tape Volume) mounted on a VTD (Virtual Tape Drive).</td>
</tr>
<tr>
<td>HELical</td>
<td>Indicates a helical cartridge. A helical cartridge can be used only on RedWood drives. The following subtypes and abbreviations specify a helical cartridge:</td>
</tr>
<tr>
<td></td>
<td>DD3 indicates any DD3A, DD3B, or DD3C helical cartridge.</td>
</tr>
<tr>
<td></td>
<td>DD3A or A indicates a helical cartridge with a 10GB media capacity.</td>
</tr>
<tr>
<td></td>
<td>DD3B or B indicates a helical cartridge with a 25GB media capacity.</td>
</tr>
<tr>
<td></td>
<td>DD3C or C indicates a helical cartridge with a 50GB media capacity.</td>
</tr>
<tr>
<td></td>
<td>The seventh position in the external label is encoded with the cartridge type (i.e., A, B, or C).</td>
</tr>
<tr>
<td>STK1</td>
<td>Indicates any T9840 cartridge.</td>
</tr>
<tr>
<td>STK1R</td>
<td>Indicates a T9840 data cartridge. The media indicator in the external label is encoded with the cartridge type (R). STK1R can be abbreviated as R. T9840 cartridge media capacities are 20GB (T9840A and T9840B), 40GB (T9840C), or 75GB (T9840D).</td>
</tr>
<tr>
<td>STK1U</td>
<td>Indicates a T9840A, T9840B, or T9840C cleaning cartridge. STK1U can be abbreviated as U.</td>
</tr>
<tr>
<td>STK1Y</td>
<td>Indicates a T9840D cleaning cartridge. STK1Y can be abbreviated to Y.</td>
</tr>
<tr>
<td>STK2</td>
<td>Indicates any T9940 cartridge.</td>
</tr>
<tr>
<td>STK2P</td>
<td>Indicates a T9940 data cartridge. STK2P can be abbreviated as P. T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).</td>
</tr>
<tr>
<td>STK2W</td>
<td>Indicates a T9940 cleaning cartridge. STK2W can be abbreviated as W.</td>
</tr>
<tr>
<td>LTO-10G</td>
<td>Indicates an LTO 10GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-35G</td>
<td>Indicates an LTO 35GB capacity cartridge.</td>
</tr>
<tr>
<td>Media Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>LTO-50G</td>
<td>Indicates an LTO 50GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-100G</td>
<td>Indicates an LTO 100GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-200G</td>
<td>Indicates an LTO 200GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-400G</td>
<td>Indicates an LTO 400GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-400W</td>
<td>Indicates an LTO Generation 3 WORM cartridge.</td>
</tr>
<tr>
<td>LTO-800G</td>
<td>Indicates an LTO 800GB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-800W</td>
<td>Indicates an LTO Generation 4 WORM cartridge.</td>
</tr>
<tr>
<td>LTO-1.5T</td>
<td>Indicates an LTO 1.5TB capacity cartridge.</td>
</tr>
<tr>
<td>LTO-1.5W</td>
<td>Indicates an LTO Generation 5 WORM cartridge.</td>
</tr>
<tr>
<td>LTO-CLN1</td>
<td>Indicates an LTO type 1 cleaning cartridge.</td>
</tr>
<tr>
<td>LTO-CLN2</td>
<td>Indicates an LTO type 2 cleaning cartridge.</td>
</tr>
<tr>
<td>LTO-CLNU</td>
<td>Indicates an LTO universal cleaning cartridge.</td>
</tr>
<tr>
<td>SDLT</td>
<td>Indicates an SDLT 160GB cartridge.</td>
</tr>
<tr>
<td>SDLT-2</td>
<td>Indicates an SDLT 125GB cartridge.</td>
</tr>
<tr>
<td>SDLT-S1</td>
<td>Indicates an SDLT Generation S1 cartridge.</td>
</tr>
<tr>
<td>SDLT-S2</td>
<td>Indicates an SDLT Generation S2 cartridge.</td>
</tr>
<tr>
<td>SDLT-S3</td>
<td>Indicates an SDLT Generation S3 cartridge.</td>
</tr>
<tr>
<td>SDLT-S4</td>
<td>Indicates an SDLT Generation S4 cartridge.</td>
</tr>
<tr>
<td>SDLT-4</td>
<td>Indicates an SDLT Generation 4 cartridge.</td>
</tr>
<tr>
<td>T10000T1</td>
<td>Indicates a full-capacity 500GB T10000A or 1TB T10000B cartridge. T10000T1 can be abbreviated as T1.</td>
</tr>
<tr>
<td>T10000TS</td>
<td>Indicates a smaller-capacity 120GB T10000A or 240GB T10000B cartridge. T10000TS can be abbreviated as TS.</td>
</tr>
<tr>
<td>T10000CT</td>
<td>Indicates a T10000A or T10000B cleaning cartridge. T10000CT can be abbreviated as CT.</td>
</tr>
<tr>
<td>T10000T2</td>
<td>Indicates a full-capacity 5TB T10000C cartridge. T10000T2 can be abbreviated as T2.</td>
</tr>
<tr>
<td>T10000TT</td>
<td>Indicates a smaller-capacity 1TB T10000C cartridge. T10000TT can be abbreviated as TT.</td>
</tr>
<tr>
<td>T10000CL</td>
<td>Indicates a T10000A, T10000B, or T10000C cleaning cartridge. T10000CL can be abbreviated as CL.</td>
</tr>
</tbody>
</table>

**Note** – T10000C drives can read T10000T1 or T10000TS media but cannot write to that media. T10000C drives can only write to T10000T2 or T10000TT media.
When the MEDia parameter is not specified, a default is chosen based on the value of the RECtech parameter. The following table shows default values used if MEDia is omitted:

<table>
<thead>
<tr>
<th>RECtech Entered</th>
<th>MEDia Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>18track</td>
<td>Standard</td>
</tr>
<tr>
<td>36track, 36Atrack, 36Btrack</td>
<td>LONGitud</td>
</tr>
<tr>
<td>36Ctrack</td>
<td>ZLONGI</td>
</tr>
<tr>
<td>LONGitud</td>
<td>LONGitud</td>
</tr>
<tr>
<td>DD3, Helical</td>
<td>DD3A</td>
</tr>
<tr>
<td>STK1R, STK1R34, STK1R35</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK1RA, STK1RA34, STK1RA35</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK1RB, STK1RB34, STK1RB35</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK1RAB, STK1RAB34, STK1RAB35</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK1RC, STK1RC34, STK1RC35</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK1RD, STK1RDDE, STK1RDN, STK1RD34, STK1RD35, STK1RDDE4, STK1RDDE5</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK2P, STK2P34, STK2P35</td>
<td>STK2P</td>
</tr>
<tr>
<td>STK2PA, STK2PA34, STK2PA35</td>
<td>STK2P</td>
</tr>
<tr>
<td>STK2PB, STK2PB34, STK2PB35</td>
<td>STK2P</td>
</tr>
<tr>
<td>T10K, T10KN, T10KE</td>
<td>T10000T1*</td>
</tr>
<tr>
<td>T10KA, T10KAN, T1A34, T1A35, T10KAE, T1AE34, T1AE35</td>
<td>T10000T1*</td>
</tr>
<tr>
<td>T10KC, T10KCN, T1C34, T1C35, T10KCE, T1CE34, T1CE35</td>
<td>T10000T1*</td>
</tr>
</tbody>
</table>

* T10000C drives can read T10000T1 or T10000TS media but cannot write to that media. T10000C drives can only write to T10000T2 or T10000TT media.
Recording Technique (RECtech)

The recording technique, or RECtech, is used to specify the method used to record data tracks on the tape surface for the desired data set. It is specified in the following ELS commands and control statements:

SMC:
- POLicy command
- UNITAttr command
- TAPEREQ control statement

HSC/VTCS:
- Display Drives command
- Display SCRatch command
- Display THReshld
- Eject command
- SCREdist command
- Warn command
- VOLPARM control statement

The following table describes valid recording techniques:

<table>
<thead>
<tr>
<th>Recording Technique</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGItud</td>
<td>Indicates any device that uses longitudinal recording. Devices include 4480, 4490, 9490, and 9490EE drives.</td>
</tr>
<tr>
<td>18track</td>
<td>Indicates a 4480 drive.</td>
</tr>
<tr>
<td>36track</td>
<td>Indicates a 4490, 9490, or 9490EE drive (any device that records in 36-track mode).</td>
</tr>
<tr>
<td>36Atrack</td>
<td>Indicates a 4490 (Silverton) drive.</td>
</tr>
<tr>
<td>36Btrack</td>
<td>Indicates a 9490 (Timberline) drive.</td>
</tr>
<tr>
<td>36Ctrack</td>
<td>Indicates a 9490EE drive.</td>
</tr>
<tr>
<td>HELICAL</td>
<td>Indicates a device using helical recording.</td>
</tr>
<tr>
<td>DD3</td>
<td>Indicates a device using helical recording.</td>
</tr>
<tr>
<td>STK1R</td>
<td>Indicates any T9840 drive.</td>
</tr>
<tr>
<td>STK1R34</td>
<td>Indicates a 3490E-image T9840 drive.</td>
</tr>
<tr>
<td>STK1R35</td>
<td>Indicates a 3590-image T9840 drive.</td>
</tr>
<tr>
<td>STK1RA</td>
<td>Indicates any T9840A drive.</td>
</tr>
<tr>
<td>STK1RA34</td>
<td>Indicates a 3490E-image T9840A drive.</td>
</tr>
<tr>
<td>STK1RA35</td>
<td>Indicates a 3590-image T9840A drive.</td>
</tr>
<tr>
<td>STK1RB</td>
<td>Indicates any T9840B drive.</td>
</tr>
<tr>
<td>STK1RB34</td>
<td>Indicates a 3490E-image T9840B drive.</td>
</tr>
<tr>
<td>Recording Technique</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>STK1RB35</td>
<td>Indicates a 3590-image T9840B drive.</td>
</tr>
<tr>
<td>STK1RAB</td>
<td>Indicates any T9840A or T9840B drive.</td>
</tr>
<tr>
<td>STK1RAB4</td>
<td>Indicates a 3490E-image T9840A or T9840B drive.</td>
</tr>
<tr>
<td>STK1RAB5</td>
<td>Indicates a 3590-image T9840A or T9840B drive.</td>
</tr>
<tr>
<td>STK1RC</td>
<td>Indicates any T9840C drive.</td>
</tr>
<tr>
<td>STK1RC34</td>
<td>Indicates a 3490E-image T9840C drive.</td>
</tr>
<tr>
<td>STK1RC35</td>
<td>Indicates a 3590-image T9840C drive.</td>
</tr>
<tr>
<td>STK1RD</td>
<td>Indicates any T9840D drive.</td>
</tr>
<tr>
<td>STK1RDE</td>
<td>Indicates an encryption-enabled T9840D drive.</td>
</tr>
<tr>
<td>STK1RDN</td>
<td>Indicates a non-encryption-enabled T9840D drive.</td>
</tr>
<tr>
<td>STK1RD34</td>
<td>Indicates a non-encryption-enabled 3490E-image T9840D drive.</td>
</tr>
<tr>
<td>STK1RD35</td>
<td>Indicates a non-encryption-enabled 3590-image T9840D drive.</td>
</tr>
<tr>
<td>STK1RDE4</td>
<td>Indicates an encryption-enabled 3490E-image T9840D drive.</td>
</tr>
<tr>
<td>STK1RDE5</td>
<td>Indicates an encryption-enabled 3590-image T9840D drive.</td>
</tr>
<tr>
<td>STK2P</td>
<td>Indicates any T9940 drive.</td>
</tr>
<tr>
<td>STK2P34</td>
<td>Indicates a 3490E-image T9940 drive.</td>
</tr>
<tr>
<td>STK2P35</td>
<td>Indicates a 3590-image T9940 drive.</td>
</tr>
<tr>
<td>STK2PA</td>
<td>Indicates any T9940A drive.</td>
</tr>
<tr>
<td>STK2PA34</td>
<td>Indicates a 3490E-image T9940A drive.</td>
</tr>
<tr>
<td>STK2PA35</td>
<td>Indicates a 3590-image T9940A drive.</td>
</tr>
<tr>
<td>STK2PB</td>
<td>Indicates any T9940B drive.</td>
</tr>
<tr>
<td>STK2PB34</td>
<td>Indicates a 3490E-image T9940B drive.</td>
</tr>
<tr>
<td>STK2PB35</td>
<td>Indicates a 3590-image T9940B drive.</td>
</tr>
<tr>
<td>T10K</td>
<td>Indicates any T10000 drives.</td>
</tr>
<tr>
<td>T10KN</td>
<td>Indicates all non-encrypted T10000 drives.</td>
</tr>
<tr>
<td>T10KE</td>
<td>Indicates all encrypted T10000 drives.</td>
</tr>
<tr>
<td>T10KA</td>
<td>Indicates any T10000A drive.</td>
</tr>
<tr>
<td>T10KAN</td>
<td>Indicates a non-encryption enabled 3490E- or 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T1A34</td>
<td>Indicates a non-encryption enabled 3490E-image T10000A drive.</td>
</tr>
<tr>
<td>T1A35</td>
<td>Indicates a non-encryption enabled 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T10KAe</td>
<td>Indicates an encryption-enabled 3490E- or 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T1AE34</td>
<td>Indicates an encryption-enabled 3490E-image T10000A drive.</td>
</tr>
<tr>
<td>T1AE35</td>
<td>Indicates an encryption-enabled 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T10KB</td>
<td>Indicates any T10000B drive.</td>
</tr>
</tbody>
</table>
When the RECtech parameter is not specified, a default is chosen based on the value of the MEDia parameter. The following table shows default values used if RECtech is omitted.

<table>
<thead>
<tr>
<th>MEDia Entered</th>
<th>RECtech Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGItud</td>
<td>LONGItud</td>
</tr>
<tr>
<td>ZLONGI</td>
<td>LONGitude</td>
</tr>
<tr>
<td>Standard</td>
<td>LONGItud</td>
</tr>
<tr>
<td>ECART</td>
<td>36track</td>
</tr>
<tr>
<td>ZCART</td>
<td>36Ctrack</td>
</tr>
<tr>
<td>DD3A, DD3B, DD3C, DD3D</td>
<td>DD3</td>
</tr>
<tr>
<td>STKR, STK1U, STKY</td>
<td>STK1R</td>
</tr>
<tr>
<td>STK2P, STK2W</td>
<td>STK2P</td>
</tr>
<tr>
<td>T10000T1, T10000TS, T10000CL</td>
<td>T10K</td>
</tr>
<tr>
<td>T10000CT</td>
<td>T10KA + T10KB</td>
</tr>
<tr>
<td>T10000T2, T10000TT</td>
<td>T10KC</td>
</tr>
<tr>
<td>Virtual</td>
<td>Virtual</td>
</tr>
</tbody>
</table>
MODel Type (MODel)

The model type is used to specify the model number of a transport (drive), or drive. MODel provides the same type of information as RECtech, but a user may find it more convenient to specify a transport model rather than a recording technique.

**Note** – MODel and RECtech are mutually exclusive.

MODel is specified in the following ELS commands and control statements:

**SMC:**
- POLicy command
- UNITAttr command
- TAPEREQ control statement

**HSC/VTCS:**
- Display Drives command

The following table describes valid MODel types:

**Note** –
- The SL8500 library supports only model types associated with T9840, T9940, and T10000 series drives.
- You can specify multiple values for this parameter; separate each value with a comma.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4480</td>
<td>Indicates a 4480 (18-track) drive.</td>
</tr>
<tr>
<td>4490</td>
<td>Indicates a 4490 (36-track Silverton) drive.</td>
</tr>
<tr>
<td>9490</td>
<td>Indicates a 9490 (36-track Timberline) drive.</td>
</tr>
<tr>
<td>9490EE</td>
<td>Indicates a 9490EE (36-track Timberline EE) drive.</td>
</tr>
<tr>
<td>SD3</td>
<td>Indicates an SD-3 (RedWood) drive.</td>
</tr>
<tr>
<td>9840</td>
<td>Indicates a 3490E-image T9840A drive.</td>
</tr>
<tr>
<td>984035</td>
<td>Indicates a 3590-image T9840A drive.</td>
</tr>
<tr>
<td>T9840B</td>
<td>Indicates a 3490E-image T9840B drive.</td>
</tr>
<tr>
<td>T9840B35</td>
<td>Indicates a 3590-image T9840B drive.</td>
</tr>
<tr>
<td>T9840C</td>
<td>Indicates a 3490E-image T9840C drive.</td>
</tr>
<tr>
<td>T9840C35</td>
<td>Indicates a 3590-image T9840C drive.</td>
</tr>
<tr>
<td>T9840D</td>
<td>Indicates a non encryption-enabled 3490E-image T9840D drive.</td>
</tr>
<tr>
<td>T9840D35</td>
<td>Indicates a non encryption-enabled 3590E-image T9840D drive.</td>
</tr>
<tr>
<td>Model Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>T9840DE</td>
<td>Indicates an encryption-enabled 3490E-image T9840D drive.</td>
</tr>
<tr>
<td>T9840DE5</td>
<td>Indicates an encryption-enabled 3590E-image T9840D drive.</td>
</tr>
<tr>
<td>T9940A</td>
<td>Indicates a 3490E-image T9940A drive.</td>
</tr>
<tr>
<td>T9940A35</td>
<td>Indicates a 3590-image T9940A drive.</td>
</tr>
<tr>
<td>T9940B</td>
<td>Indicates a 3490E-image T9940B drive.</td>
</tr>
<tr>
<td>T9940B35</td>
<td>Indicates a 3590-image T9940B drive.</td>
</tr>
<tr>
<td>HP-LTO2</td>
<td>Indicates an HP LTO Generation 2 drive.</td>
</tr>
<tr>
<td>HP-LTO3</td>
<td>Indicates an HP LTO Generation 3 drive.</td>
</tr>
<tr>
<td>HP-LTO4</td>
<td>Indicates an HP LTO Generation 4 drive.</td>
</tr>
<tr>
<td>HP-LTO5</td>
<td>Indicates an HP LTO Generation 5 drive.</td>
</tr>
<tr>
<td>IBM-LTO2</td>
<td>Indicates an IBM LTO Generation 2 drive.</td>
</tr>
<tr>
<td>IBM-LTO3</td>
<td>Indicates an IBM LTO Generation 3 drive.</td>
</tr>
<tr>
<td>IBM-LTO4</td>
<td>Indicates an IBM LTO Generation 4 drive.</td>
</tr>
<tr>
<td>IBM-LTO5</td>
<td>Indicates an IBM LTO Generation 5 drive.</td>
</tr>
<tr>
<td>SDLT-600</td>
<td>Indicates a SuperDLT model 600 drive.</td>
</tr>
<tr>
<td>DLT-S4</td>
<td>Indicates a Quantum DLT-S4 drive.</td>
</tr>
<tr>
<td>T1A34</td>
<td>Indicates a non-encryption enabled 3490E-image T10000A drive.</td>
</tr>
<tr>
<td>T1A35</td>
<td>Indicates a non-encryption enabled 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T1AE34</td>
<td>Indicates an encryption-enabled 3490E-image T10000A drive.</td>
</tr>
<tr>
<td>T1AE35</td>
<td>Indicates an encryption-enabled 3590-image T10000A drive.</td>
</tr>
<tr>
<td>T1B34</td>
<td>Indicates a non-encryption enabled 3490E-image T10000B drive.</td>
</tr>
<tr>
<td>T1B35</td>
<td>Indicates a non-encryption enabled 3590E-image T10000B drive.</td>
</tr>
<tr>
<td>T1BE34</td>
<td>Indicates an encryption-enabled 3490E-image T10000B drive.</td>
</tr>
<tr>
<td>T1BE35</td>
<td>Indicates an encryption-enabled 3590-image T10000B drive.</td>
</tr>
<tr>
<td>T1C34</td>
<td>Indicates a non-encryption enabled 3490E-image T10000C drive.</td>
</tr>
<tr>
<td>T1C35</td>
<td>Indicates a non-encryption enabled 3590-image T10000C drive.</td>
</tr>
<tr>
<td>T1CE34</td>
<td>Indicates an encryption-enabled 3490E-image T10000C drive.</td>
</tr>
<tr>
<td>T1CE35</td>
<td>Indicates an encryption-enabled 3590-image T10000C drive.</td>
</tr>
<tr>
<td>Virtual</td>
<td>Indicates a VTV (Virtual Tape Volume) mounted on a VTD (Virtual Tape Drive).</td>
</tr>
</tbody>
</table>
Library Identification

Each ACS, LSM, and CAP is assigned a unique identification number during LIBGEN. Use this number in ELS commands and utilities to identify a specific ACSid, LSMid, or CAPid.

ACSid

Each ACS is identified by an ACSid (acs-id), a two digit decimal identifier from 00-99. The first ACS acquires an identifier of 00, the second ACS acquires and identifier of 01, and so forth until all ACSs are identified.

LSMid

Each LSM is identified by an LSMid (lsm-id), consisting of an ACSid and LSM number separated by a colon. The LSMid differentiates each LSM from every other LSM in a library.

The format is AA:LL, where:
- AA is the ACSid, a two digit decimal identifier from 00-99.
- LL is the LSM number, a two digit decimal identifier from 00-99.
CAPid

Each library CAP is identified by a CAPid (cap-id), consisting of an LSMid and CAP number separated by a colon. The format is AA:LL:CC, where:

- AA:LL is the LSMid.
- CC is the CAP number, a two digit decimal identifier from 00-11.

CAP Numbers

00
- For 4410 and 9310 LSMs, standard 21-cell CAP or the right-hand 40-cell enhanced CAP
- For 9740 LSMs, fixed rack 14-cell or 10-cell removable magazine CAP
- For SL3000 LSMs, this is a 234-cell AEM CAP
- For SL8500 LSMs, the CAP consists of 3, 13-cell removable magazines.

01
- For 4410 and 9310 LSMs, left-hand 40-cell enhanced CAP
- For SL3000 LSMs, this is an optional CEM CAP consisting of 2, 13-cell removable magazines.
- For SL8500 LSMs, this is an optional CAP consisting of 3, 13-cell removable magazines.

02
- priority CAP (PCAP) for a 4410 or 9310 LSM enhanced CAP
- For SL3000 LSMs, this is an optional CEM CAP consisting of 2, 13-cell removable magazines.
- For SL8500 LSMs, this is an optional CAP consisting of 3, 13-cell removable magazines.

03, 04, 05
- For SL3000 LSMs, these are optional CEM/DEM CAPs consisting of 2, 13-cell removable magazines.

06
- For SL3000 LSMs, this is the only required BDM CAP consisting of 2, 13-cell removable magazines.

07, 08, 09, 10
- For SL3000 LSMs, these are an optional CEM CAPs consisting of 2, 13-cell removable magazines.

11
- For SL3000 LSMs, this is a right-side AEM CAP, consisting of 18, 13-cell removable magazines.
- For SL3000 LSMs, this is a 234-cell AEM CAP.
Panels, Rows and Columns

Certain ELS commands and utilities allow you to specify panels, rows, and columns within a library.

Panels

`panel-list`

Each `panel-list` element is a one or two digit decimal number, specific to the LSM type:

- **LSM Models 4410 and 9310 PowderHorn**
  - 0-11 for outer wall panels
  - 12-19 for inner wall panels
- **LSM Model 9360 WolfCreek**
  - 0-2 for Model 9360-050
  - 0-3 for Model 9360-075
  - 0-4 for Model 9360-100
- **LSM Model 9740 TimberWolf**
  - 0-2 (panel 3 is included if the optional cells are present).
- **LSM Model SL3000 Library**
  - Access Expansion Module (AEM optional) - panels 0-1 and 22-23 are located on both ends of the library and in this release serve only as library end caps.
  - Base Drive Module (BDM required) - panels 12-13
  - Drive Expansion Module (DEM optional) - panels 10-11 are located left of the BDM.
  - Cartridge Expansion Module (CEM optional) - panels 2-9 are located left of the BDM or optional DEM.
  - Cartridge Expansion Module (CEM optional) - panels 14-21 are located right of the BDM.
  - Parking Expansion Module (PEM) - Dual Robots only - panel numbers equate to the same panel numbers of the CEM it replaces, depending on its location right or left of the BDM.

**Note** – The SL3000 library has static panels numbers starting with the left-most back panel (panel 0) and ending with the right-most front panel (panel 23) on a fully-configured library. The panel numbering starts with the BDM, the only required module (panels 12 and 13), and works outward to the left and to the right.

- **LSM Model SL8500 Library**
  - base library
    - 2-10
  - With one expansion panel
    - 2-18 (expansion panel is 8-15)
  - With two expansion panels
Panels, Rows and Columns

- 2-26 (expansion panels are 8-23)
- With three expansion panels
  - 2-34 (expansion panels are 8-31)

Rows

row-list

Each row-list element is a one or two digit decimal number, specific to the LSM type:

- **LSM Models 4410 and 9310 PowderHorn**
  - 0-14 for outer wall panels
  - 0-5 and 8-14 for inner wall panels.
  - The maximum list is 4 rows (approximately 100 cells).
- **LSM Model 9360 WolfCreek**
  - 0-41 (all models). The maximum list is 20 rows (approximately 100 cells).
- **LSM Model 9740 TimberWolf**
  - 0-41 on panels 0, 2, and 3
  - 36-41 on panel 1

**Note** –

- Column 3 on panel 2 allows row entries only on rows 28-41.
- The cells on panel 3 are optional.

- **LSM Model SL3000 Library**
  - Access Expansion Modules - panels 0-1 and 22-23 (no cells in this initial release)
  - Base Drive Module (BDM) - panel 12 (back)
    - 12-47 with 8 drives installed
    - 23-47 with 16 drives installed
    - 35-47 with 24 drives installed
  - Base Drive Module (BDM) - panel 13 (front)
    - 0-51 on the front panel
  - Drive Expansion Module (DEM) - panel 10 (back)
    - 12-47 available with 8 drives installed
    - 23-47 available with 16 drives installed
    - 35-47 available with 24 drives installed
    - No rows available with 32 drives installed
  - Drive Expansion Module (DEM) - panel 11 (front)
    - 0-51 available on the front panel
  - Cartridge Expansion Modules (CEM) - all panels
    - 0-51 available on both front and back panels
  - Parking Expansion Module (PEM) - all panels
    - 0-51 available on the back and front panels
- **LSM Model SL8500 Library**
  - 0-26 on a standard panel
    - 0-12 on a short panel (panels 4, 6-7)
    - 6-12 on a PTP panel (panel 5)
Columns

column-list

Each column-list element is a one or two digit decimal number, specific to the LSM type:

- **LSM Models 4410 and 9310 PowderHorn**
  - 0-23 for outer wall panels
  - 0-19 for inner wall panels

- **LSM Model 9360 WolfCreek**
  - 0-5 (all models).

- **LSM Model 9740 TimberWolf**
  - 0-3 for panels 0, 2, and 3 (if the optional cells are present)
  - 0-2 for panel 1

- **LSM Model SL3000 Library**
  - Access Expansion Module (AEM) panels 0-1 and 22-23
    - No columns available in the initial release
  - Base Drive Module (BDM) - panel 12 (back)
    - 0 available, if a CEM or DEM is added to the left of the BDM
    - 1-5 available for rows 12-47 with 8 drives installed
    - 1-5 available for rows 23-47 with 16 drives installed
    - 1-5 available for rows 35-47 with 24 drives installed
  - Base Drive Module (BDM) - panel 13 (front)
    - 0 available with expansion to the left of the BDM
    - 5 available for rows 39-51 with expansion to the right of the BDM
    - 1-3 available for rows 0-38 with a CAP installed
    - 1-4 available for rows 39-51 with a CAP installed
    - 1-3 not available for rows 9-16 with optional window/Operator panel installed
  - Drive Expansion Module (DEM) - panel 10 (back)
    - 0 is available with expansion to the left of the DEM
    - 1-5 available for rows 12-47 with 8 drives installed
    - 1-5 available for rows 23-47 with 16 drives installed
    - 1-5 available for rows 35-47 with 24 drives installed
    - No columns available with 32 drives installed.
  - Drive Expansion Module (DEM) - panel 11 (front)
    - 0 available with expansion to the left DEM
    - 1-3 available for rows 0-38 with a CAP installed
    - 1-5 available for rows 39-51, with a CAP installed
    - 1-3 not available for rows 9-16 with a window installed
    - 1-5 available for rows 0-51 on a standard DEM panel
  - Cartridge Expansion Module (CEM) - panels 2, 4, 6, 8 (back)
    - 0 available with expansion to the left
    - 1-5 available on the standard CEM back panel
  - Cartridge Expansion Module (CEM) - panels 3, 5, 7, 9 (front)
    - 0 available with expansion to the left
    - 1-3 available for rows 0-38 with a CAP installed
    - 1-4 available for rows 39-51, with a CAP installed
    - 1-4 available on the standard CEM front panel
  - Cartridge Expansion Module (CEM) - panels 14, 16, 18, 20 (back)
- 0-5 available on the standard CEM back panel
- Cartridge Expansion Module (CEM) - panels 15, 17, 19, 21 (front)
  - 0-3 available for rows 0-38 with a CAP installed
  - 0-5 available for rows 39-51 with a CAP installed
  - 0-5 available on the standard CEM front panel
- Parking Expansion Module (PEM) - left side PEM
  - 3-5 available on the back and front panels with a second robot installed
- Parking Expansion Module (PEM) - right side PEM
  - 0-2 available on the back and front panels with a second robot installed
- **LSM Model SL8500 Library**
  - 0-1 for all panel types

**Note** – All SL3000 columns are numbered 0-5 (left to right).
Tape Management System Interface (SLUDR*) Routines

This appendix describes TMS (Tape Management System) interface routines called by the HSC SLUCONDB utility and SMC SMCUDBX utility. These utilities call the appropriate routine based on the tape management system being used.

Routines include the following:
- SLUDRCA1
- SLUDRRMM
- SLUDRTLM
- SLUDRSMC
- SLUDRZAR

These routines are included in the SEALINK library generated during ELS installation. The data returned from these routines is used to format the SMC scratch extract file.

SLUDRCA1

The SLUDRCA1 routine is called to read the CA-1 Tape Management Catalog (TMC) when CA-1 is defined as the tape management system. SLUDRCA1 utilizes CA-1 macros to map the layout of the CA-1 TMC.

The macro names which map the CA-1 TMC have changed from Release 4.9 to Release 5.0. Both macros are located at the end of the SLUDRCA1 routine with the CA-1 Release 4.9 macro as a comment. The version of SLUDRCA1 supplied in SAMPLIB utilizes CA-1 Release 5.0 macro and was assembled using this macro.

- If you are using CA-1 Release 4.9 or earlier, you must comment out the Release 5.0 macro, remove the asterisk in column 1 of the Release 4.9 macro, and reassemble this module. Make sure the appropriate CA-1 macro library is used in the assemble SYSLIB concatenation.
- If you are running CA-1 Release 5.0 without any local modifications, this module does not need to be reassembled and nothing further must be done to this module. If you have local modifications, you must reassemble this module.
SLUDDRMM

The SLUDDRMM routine is called to read the DFSMSrmm report extract file when DFSMSrmm is defined as the tape management system. SLUDDRMM uses the DFSMSrmm EDGRVEXT macro to map the layout of the report extract file.

Fields read in the extract file include:
- RVTYPE (record type)
- RVVOLSER (volser number)
- RVLCDATE (last change date)
- RVNAME (unit type)
- RVSTATUS (volume status)
- RVEXPDT (volume expiration date)
- RVEXPDTO (volume original expiration date)
- RVLABEL (volume label type).

SLUDDRMM processes the extract and passes the volume record information to SLUCONDB, which builds scratch card images to be input to SLUADMIN. Volume scratch status (scratch/nonscratch) is then updated in the CDS for each volume record in the extract file.

Dates on the RMM report must be in Julian date format (EDGHSKP run with PARM 'DATEFORM(J)'). Tapes listed on the RMM report without expiration dates are skipped by SLUDDRMM.

SLUDRSMC

The SLUDRSMC routine is called to read the extract file created by the SMCUDBX utility from a client tape management system. This file includes one record for every scratch volume extracted that contains the volume serial number and the time of the extract run.

During execution, correct scratch synchronization is provided by matching the time (in GMT format) of the scratch extract run with the volume’s “last select time.” Any volume selected after the scratch selection run is skipped in SLUCONDB processing.

SLUDRTLM

The SLUDRTLM routine is called to read the CA-DYNAM/TLMS Volume Master File (VMF) when CA-DYNAM/TLMS is defined as the tape management system. SLUDRTLM utilizes a CA-DYNAM/TLMS COPY member to map the layout of the VMF.

SLUDRTLM must be re-assembled if you are running TLMS Release 5.4 or if you have local modifications. If you re-assemble this module, make sure the appropriate CA-DYNAM/TLMS source library is used in the assemble SYSLIB concatenation.
The SLUDRZAR routine is called to invoke an application programming interface (API) to read Zara’s database when Zara is defined as the tape management system.
This glossary defines terms and abbreviations used in this publication.

**A**

**abnormal end of task (abend)** A software or hardware problem that terminates a computer processing task.

**access method** A technique for moving data between processor storage and input/output devices.

**ACSId** A method used in the LIBGEN process to identify ACSs by using decimal digits, 00 to 99.

**ACS** See Automated Cartridge System.

**ACS library** A library is composed of one or more Automated Cartridge Systems (ACSs), attached cartridge drives, and cartridges residing in the ACSs.

**ACS routine** An SMS term, referring to automatic class selection routine. Not to be confused with the HSC term, ACS, referring to automatic cartridge system.

**address** Coded representation of hardware id, or the destination or origination of data.

**allocation** The assignment of resources to a specific task.

**AMT** Automatic Migration Threshold.

**APF** Authorized Program Facility.

**APPL** VTAM APPLID definition for the HSC.

**archiving** The storage of backup files and associated journals, usually for a given period of time.

**asynchronous transmission** Character-oriented data transmission (as distinct from IBM’s block-mode transmission).

**audit** A VSM audit (which is not the same as an HSC audit) reconstructs VTV and MVC information.
Automated Cartridge System (ACS) A fully-automated, cartridge storage and retrieval library subsystem consisting of one or more Library Storage Modules (LSMs) connected by pass-thru ports.

Automated Cartridge System Library Software (ACSL) The library control software, which runs in the UNIX®-based Library Control System.

automatic mode A relationship between an LSM and all attached hosts. LSMs operating in automatic mode handle cartridges without operator intervention. This is the normal operating mode of an LSM that has been modified online. The opposite situation is “manual mode.” See manual mode.

automatic migration Migrating VTVs to MVCs that is automatically initiated and controlled by VSM.

automatic migration threshold (AMT) AMT values are percentage values that determine when virtual tape volume migration begins and ends. VTV migration begins when the VTSS buffer reaches the high AMT and ends when the buffer reaches or falls below the low AMT. These thresholds apply to all VTSSs.

automatic recall Recalling VTVs to the VTSS that is automatically initiated and controlled by VSM.

automatic reclaim Reclaiming MVC space that is automatically initiated and controlled by VSM.

back-end capacity The capacity of the VTSS disk buffer, in bytes, as defined in disk arrays excluding space for system overhead.

bar code A code consisting of a series of bars of varying widths. This code appears on the external label attached to the spine of a cartridge and is equivalent to the volume serial number (volser). This code is read by the robot’s machine vision system.

BISYNC Binary Synchronous Communications. An early low-level protocol developed by IBM and used to transmit data on a synchronous communications link. It is a form of data transmission in which synchronization of characters is controlled by timing signals generated at the sending and receiving stations.

block A collection of contiguous records recorded as a unit. Blocks are separated by interblock gaps, and each block may contain one or more records.

buffer A routine or storage used to compensate for a difference in rate of data flow, or time of occurrence of events, when transferring data from one device to another.
CAP See Cartridge Access Port.

capacity See media capacity.

CAPid A CAPid uniquely defines the location of a CAP by the LSM on which it resides. A CAPid is of the form “AA:LL:CC” where “AA:LL” is the LSMid and “CC” is the two digit CAP number.

cartridge The plastic housing around the tape. It is approximately 4 inches (100 mm) by 5 inches (125 mm) by 1 inch (25 mm). The tape is threaded automatically when loaded in a transport. A plastic leader block is attached to the tape for automatic threading. The spine of the cartridge contains an OCR/Bar Code label listing the VOLSER (tape volume identifier).

Cartridge Access Port (CAP) An assembly that allows several cartridges to be inserted into or ejected from an LSM without human entry into the LSM.

cartridge drive (CD) A hardware device containing two or four cartridge transports and associated power and pneumatic supplies.

cartridge tape I/O driver Operating system software that issues commands (for example, read, write, and rewind) to cartridge subsystems. It is the software focal point for attaching a particular type of control unit. (An example is Oracle’s StorageTek CARTLIB product.)

cartridge transport See transport.

CAW See Channel Address Word.

CDRM Cross Domain Resource Manager definition (if not using existing CDRMs).

CDRSC Cross Domain Resource definition.

CDS See control data set.

CE Channel End.

cell A receptacle in the LSM in which a single cartridge is stored.

CFT Customer field test.

CGI Common Gateway Interface

channel A device that connects the host and main storage with the input and output devices’ control units. A full-duplex channel has two paths (that is, 2 wires, or one wire with signals at two frequencies). A half-duplex channel requires that one port receives while the other transmits.

Channel Address Word (CAW) An area in storage that specifies the location in main storage at which a channel program begins.

channel-to-channel (CTC) Refers to the communication (transfer of data) between programs on opposite sides of a channel-to-channel adapter.

check Detection of an error condition.

CI Converter/Interpreter (JES3).
client The ultimate user of the ACS services as provided by the Library Control System.

client link The communications link between the LCS and a client.

client-server A model of interaction in a distributed system in which a program at one site serves a request to a program at another site and awaits a response. The requesting program is called a client; the program satisfying the request is called a server.

client system The system to which the LCS provides an interface to an Oracle StorageTek Automated Cartridge System.

Client System Component (CSC) Software that provides an interface between the Client Computing System’s operating system and the Oracle StorageTek Library Control System (LCS).

Clink (cluster link) The path between a primary VTSS and secondary VTSS in a cluster. The Clink path is used to copy replicate VTVs from the primary to the secondary.

Cluster Two VTSSs which are physically cabled together by Clink paths and are defined in CONFIG as a cluster. A cluster consists of a primary and a secondary VTSS. VTVs with the replicate attribute attached will be copied from the primary to the secondary as soon as possible after dismount time.

coaxial cable A transmission medium used in data transmissions for networks using synchronous communications, as opposed to twisted-pair, the primary medium for asynchronous RS-232 communications.

complex A system composed of other systems, specifically the ACS server system and the client system.

connected mode A relationship between a host and an ACS. In this mode, the host and an ACS are capable of communicating (in the sense that at least one station to this ACS is online).

connection number The unique identifier on the server for a communications path. The number is assigned by TCP/IP to identify the unique connection between the server node and a specific port on the server, and the client node and a specific port on the client. The connection number exists only as long as the connection exists.

console The primary I/O device to control a session on a system.

control data set (CDS) The data set used by the host software to control the functions of the automated library. Also called a library database.

control data set allocation map A CDS subfile that marks individual blocks as used or free.

control data set data blocks CDS blocks that contain information about the library and its configuration or environment.

control data set directory A part of the CDS that maps its subdivision into subfiles.

control data set pointer blocks CDS blocks that contain pointers to map data blocks belonging to a subfile.

control data set recovery area A portion of the CDS reserved for maintaining integrity for updates that affect multiple CDS blocks.
control data set subfile A portion of the CDS consisting of Data Blocks and Pointer Blocks containing related information.

Control Path Adaptor (CPA) A Bus-Tech, Inc. hardware device that allows communications between a host processor’s block multiplexer channel and a local area network.

Control Unit (CU) A microprocessor-based unit situated locally between a channel and an I/O device. It translates channel commands into device commands and sends device status to the channel.

conventional transport An HSC–controlled transport that is not defined to VSM as an RTD.

coupling facility A special logical partition that provides high-speed caching, list processing, and locking functions in a sysplex.(I)

coupling facility channel A high bandwidth fiber optic channel that provides the high-speed connectivity required for data sharing between a coupling facility and the central processor complexes directly attached to it.(I)

coupling services In a sysplex, the functions of XCF that transfer data and status between members of a group residing on one or more MVS systems in the sysplex.(I)

cross–host recovery The ability for one host to perform recovery for another host that has failed.

cross-system coupling facility (XCF) XCF is a component of MVS that provides functions to support cooperation between authorized programs running within a sysplex.(I)

CSE Customer Service Engineer.

CSI Consolidated System Inventory.

CSL Cartridge Scratch Loader.

CSRC Central Support Remote Center (See Remote Diagnostics Center)

CSW Channel Status Word.

CTC Channel-to-channel.

CU See Control Unit.
DAE Dump Analysis Elimination.

DASD Direct access storage device.

data Any representations such as characters or analog quantities to which meaning is, or might be, assigned.

data class A collection of allocation and space attributes, defined by the storage administrator, that are used to create a data set.

data compaction An algorithmic data-reduction technique that encodes data from the host and stores it in less space than unencoded data. The original data is recovered by an inverse process called decompaction.

data–compaction ratio The number of host data bytes divided by the number of encoded bytes. It is variable depending on the characteristics of the data being processed. The more random the data stream, the lower the opportunity to achieve compaction.

Data Control Block (DCB) A control block used by access routines in storing and retrieving data.

Data Path Adapter A hardware device which translates from a client computing system’s data protocol to the data protocol of the Oracle StorageTek Control Unit or IMU. An example is DEC’s TC44-AA/BA STI-to-4400 ACS Interconnect.

data set A set of records treated as a unit.

data sharing The ability of concurrent subsystems or application programs to directly access and change the same data while maintaining data integrity.

data streaming A continuous stream of data being transmitted in character or binary-digit form, using a specified format.

DBU disk buffer utilization.

DCB Data Control Block.

demand allocation An MVS term meaning that a user has requested a specific unit.

demand migration Migrating VTVs to MVCs that an administrator does with the MIGRATE command or utility.

demand recall Recalling VTVs to the VTSS that an administrator does with the RECALL command or utility.

demand reclaim Reclaiming MVC space that an administrator does with the RECLAIM command or utility.

device number A four-digit hexadecimal number that uniquely identifies a device attached to a processor.

device preferencing The process of preferring one 36-track transport type over another 36-track transport type.

device separation See drive exclusion.

DFSMS Data Facility Storage Management Subsystem.
direct access storage device (DASD) IBM’s term for a disk drive storage device.

directed allocation See drive prioritization.

disconnected mode A relationship between a host and an ACS. In this mode, the host and the ACS are not capable of communicating (there are no online stations to this ACS).

disk buffer utilization (DBU) The ratio of used to total VTSS buffer capacity.

DOMed Pertaining to a console message that was previously highlighted during execution, but is now at normal intensity.

dotted-decimal notation The syntactic representation of a 32-bit integer that consists of four 8-bit numbers written in base ten with periods (dots) separating them. In TCP/IP descriptions, dotted-decimal notation is used for Internet addresses.

drain The deletion of data from an MVC. May be accompanied by a “virtual” eject to prevent the MVC from being reused.

drive exclusion (previously referred to as device separation) refers to the SMC function of excluding drives for an allocation request based on SMC exclusion criteria.

drive loaded A condition of a tape drive in which a tape cartridge has been inserted in the drive, and the tape has been threaded to the beginning–of–tape position.

drive panel An LSM wall containing tape transports. The drive panel for a T9840 transport can contain either 10 or 20 transports. The drive panel for a non-T9840 transport can contain a maximum of 4 transports.

drive prioritization (previously referred to as directed allocation) refers to the SMC function of influencing selection of a particular drive based on allocation criteria, including volume location.

Dual LMU A hardware/microcode feature that provides a redundant LMU capability.

dump A printed representation of the contents of main storage at time t. This representation is used for debugging purposes.

Dynamic Device Reconfiguration (DDR) A facility that allows a demountable volume to be moved, and repositioned if necessary, without abnormally terminating the job or repeating the initial program load procedure.

dynamic server switching The capability of switching server processors when a system failure occurs on the active server.
ECART Enhanced Capacity Cartridge.

EDL See eligible device list.

eligible device list A group of tape drives that are available to satisfy an allocation request.

enhanced CAP An enhanced CAP contains two forty–cell magazine–style CAPs and a one–cell priority CAP (PCAP). Each forty–cell CAP holds four removable magazines of ten cells each. An LSM access door with an enhanced CAP contains no cell locations for storing cartridges. An enhanced CAP is ordered as Feature Number CC80. (see also, Cartridge Access Port (CAP), standard CAP, WolfCreek CAP, WolfCreek optional CAP)

Effective Recording Density The number of user bytes per unit of length of the recording medium.

eject The LSM robot places a cartridge in a Cartridge Access Port (CAP) so the operator can remove it from the LSM.

Enhanced Capacity Cartridge A cartridge that has a length of 1100 feet and can be used only on 36-track transports (i.e., 4490, 9490, and 9490EE).

Enterprise Systems Connection (ESCON) A set of products and services that provides a dynamically connected environment using optical cables as a transmission medium.(I)

EOT End–of–Tape marker.

EPO Emergency Power Off.

ERDS Error Recording Data Set.

EREP Environmental Recording, Editing, Printing.

ERP Error recovery procedures.

error codes (EC) Numeric codes displayed by messages indicating the type of problem that caused an error.

error recovery procedures (ERP) Procedures designed to help isolate and, where possible, to recover from errors in equipment.

ESCON Enterprise Systems Connection.

esoteric name The name assigned to transports that have the same device type.

Ethernet One LAN architecture using a bus topology that allows a variety of computers to be connected to a common shielded coaxial spine. The Ethernet architecture is similar to the IEEE 802.3 standard.

event control block (ECB) Provides an area for a completion code to be stored when an operation has completed.

ExPR Expert Performance Reporter.

Expert Performance Reporter Expert Performance Reporter collects performance data and generates reports about Oracle StorageTek Nearline ACSs and VTSS status and performance. It has an MVS component and a PC component.
file A set of related records treated as a unit.

file protected Pertaining to a tape volume from which data can be read only. Data cannot be written on or erased from the tape.

File Transfer Protocol (FTP) A TCP/IP command that provides a way to transfer files between machines connected through TCP/IP.

foreign socket One of two end-points in a TCP/IP connection-oriented protocol. Specifies the address of a foreign host that can connect to the server.

format The arrangement or layout of data on a data medium.

GB 1,073,741,834 bytes of storage

GDG (Generation Data Group) An MVS data set naming convention. Sequence numbers are appended to the basic data set name to track the generations created for that data set.

GTF (Generalized Trace Facility) An MVS facility used to trace software functions and events.

handshake A flow-of-control signal sent by one process to another.

HDA Head/disk assembly.

helical cartridge A high capacity, helical scan cartridge that can hold up to 50GB of uncompressed data. This cartridge can be used only on RedWood (SD-3) transports.

host computer A computer that controls a network of computers.

Host Software Component (HSC) Software running on the Library Control System processor that controls the functions of the ACS.

HSM Hierarchical Storage Manager.

HTTP Hypertext Transfer Protocol.

HWS High Watermark Setup. Relates to chains set up for tape transport allocation in JES3.
IEEE 802.3 A standard produced by the IEEE and accepted worldwide for local area networks using CSMA/CD (Carrier Sense Multiple Access with Collision Detection).

ICRC See Improved Cartridge Recording Capability.

Improved Cartridge Recording Capability (ICRC) A compression and compaction feature that increases the amount of data that can be stored on a 1/2-inch cartridge.

ID Identifier or identification.

IDAX (Interpreter Dynamic Allocation Exit) This is a subfunction of the DFSMS/MVS subsystem request (SSREQ 55) that the MVS JCL Interpreter and dynamic allocation functions issue for calling DFSMS ACS routines for management of the data set requested.

IML See Initial Microprogram Load.

index a function performed by the cartridge loader that moves cartridges down the input or output stack one cartridge position. A loader can perform multiple consecutive indexes.

Initial Microprogram Load (IML) A process that activates a machine reset.

Initial program load (IPL) A process that activates a machine reset.

Interactive Storage Management Facility A series of applications for defining DFSMS/MVS storage groups and classes.

Internet A collection of networks using TCP/IP that functions as a virtual network.

Internet address The numbering system used to specify a network or host on that network for TCP/IP communications. Standard Internet address notation is dotted-decimal format.

Internet Protocol (IP) Formal description of messages and rules two networks use to exchange messages.

ISMF Interactive Storage Management Facility.

IVP Installation Verification Programs A package of programs that is run by a user after the library is installed in order to verify that the library is functioning properly.
JCL See Job Control Language.

JES Job entry subsystem.

**JES2** An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for execution, processes their output, and purges them from the system. In an installation with more than one processor, each JES2 processor independently controls its job input, scheduling, and output processing. See also JES3.

**JES3** An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for execution, processes their output, and purges them from the system. In complexes that have several loosely coupled processing units, the JES3 program manages processors so that the global processor exercises centralized control over the local processors and distributes jobs to them via a common job queue. See also JES2.

**job control language** A problem oriented language designed to describe a job's processing requirements to an operating system.

**journal** The log associated with journaling. The log (stored in a data set) contains a record of completed work and changes to the control data set since the last backup was created.

**journaling** A technique for recovery that involves creating a backup control data set and maintaining a log of all changes (transactions) to that data set.

LAN See local area network.

**LCS** See Library Control System.

**LCS processor console** The Library Control System processor console is used to control the VM operating system (for the VM-based LCS).

**LCU** See Library Control Unit.

**LIBGEN** The process of defining the configuration of a library to the HSC.

**library** See TapePlex.

**library cartridge transport** See transport.

**library complex** A library complex consists of one HSC Control Data Set (CDS) and may contain up to 256 Automatic Cartridge Systems (ACSs), each of which may contain up to 24 Library Storage Modules (LSMs).

**library control component** Software that controls the mounting and dismounting of cartridges in an ACS.

**library control platform** The hardware and software that provides the proper environment for the Library Control System.
library control processor  Properly configured computer hardware that supports the operation of the Library Control System.

Library Control Software  A library control component, the client system interface, and library utilities.

Library Control System (LCS)  The library control platform and the Library Control Software.

Library Control Unit (LCU)  The portion of an LSM that controls the movements of the robot.

library database  A file or data set containing information about the location and status of the removable media volumes, such as cell location, scratch status. Also called a control data set (CDS).

library drive  A cartridge drive in the ACS, as distinct from a stand-alone cartridge drive.

Library Management Unit (LMU)  A hardware and software product that coordinates the activities of one or more LSMs/LCU.

library mode  The operation of a 4480 Cartridge Subsystem as part of a 4400 Automated Cartridge System, as opposed to manual mode, in which the operator inserts cartridges into the transports. See manual mode.

LibraryStation  Software that allows MVS hosts to share ACS facilities with client systems.

Library Storage Module (LSM)  The standard LSM (4410) a twelve-sided structure with storage space for up to around 6000 cartridges. It also contains a free-standing, vision-assisted robot that moves the cartridges between their storage cells and attached transports. See also PowderHorn, SL8500, and WolfCreek.

LMU  See Library Management Unit.

local area network (LAN)  A network in a small (local) geographic area.

local port  The designation of a given application or process among many that are available for a TCP/IP-capable host processor.

local socket  The address combination of a TCP/IP-capable host’s network address and a specific port for an application process.

logical ejection  The process of removing a volume from the control data set without physically ejecting it from its LSM location.

logical port (LP)  CLS software that interfaces with the client system. The CLSLP is one of the software components used to pass data between the client system and the VM/HSC.

LP  See logical port.

LSM  See Library Storage Module.

LSMId  An LSMId is composed of the ACSid joined to (concatenated with) the LSM number.

LSM number  A method used to identify an LSM. An LSM number is the result of defining the SLIACS macro LSM parameter during a LIBGEN. The first LSM listed in this parameter acquires the LSM number of 00 (decimal) the second LSM listed acquires a number of 01, and so forth, until all LSMs are identified (up to a maximum of 99).
M

**management class** A collection of management attributes, assigned by the storage administrator, that are used to control the allocation and use of space by a data set. Note that SMS Management Classes are different from VSM Management Classes.

**manual mode** Operation of a cartridge drive apart from an ACS. See library mode.

**master LMU** The LMU currently controlling the functional work of the ACS in a dual LMU configuration.

**media capacity** The amount of data that can be contained on storage media and expressed in bytes of data.

**migration** The movement of VTVs from the VTSS to the RTD where the VTVs are stacked onto MVCs. See automatic migration and demand migration.

**mixed configuration** A configuration that contains different types of cartridge drives in both manual and library modes.

**modem** A device that enables digital data to be transmitted over an analog transmission facility.

**multi-client** The environment where more than one (homogenous or heterogeneous) client system is connected to one LCS.

**Multi-Volume Cartridge (MVC)** A physical tape cartridge residing in an LSM that either contains migrated virtual tape volumes (VTVs) or is identified as a volume that can be selected for VTV stacking.

**MVS system console** The MVS/CSC provides an operator interface through the MVS system console.

O

**OCR label** Optical character recognition label. An external label attached to the spine of a cartridge that is both human and machine readable.

**operator console** In this document, the operator console refers to the MVS client system console.

**operating system (OS)** Software that controls the execution of programs that facilitate overall system operation.
PARMLIB control statements  Parameter library (PARMLIB) control statements allow you statically specify various operation parameters which take effect at HSC initialization. Identifying your system requirements and then specifying the appropriate control statements permits you to customize the HSC to your data center.

Pass-thru Port (PTP)  A mechanism that allows a cartridge to be passed from one LSM to another in a multiple LSM ACS.

physical port  The communications hardware required to support a server/client link.

physical volume  A physically bound unit of data file media. See cartridge.

PowderHorn (9310)  The high-performance version of the standard LSM.

pre-configured package  A storage server package including all hardware, software, and configuration parameter settings delivered by the vendor.

primary  One of two VTSSs in a cluster which is designated in CONFIG as the primary. During normal operations the primary services the host workload and copies replicate VTVs to the secondary.

product change request (PCR)  A request for enhancement to a product. Normally, this request comes from a client, but may come from Oracle.

program temporary fix (PTF)  A software release designed to remedy one or a series of defects.

program update tape (PUT)  One or more tapes containing updates to, or new versions of, the MVS/CSC system software.

protocol  A formal description of message formats and the rules two or more machines must follow to exchange these messages.

HSC  See Host Software Component.

PTF  See Program Temporary Fix.

PTP  See pass–thru port.

PUT  See Program Update Tape.
R

RACF See Resource Access Control Facility.

Real Tape Drive (RTD) The physical transport attached to the LSM. The transport has a data path to a VTSS and may optionally have a data path to MVS or to another VTSS.

recall The movement of VTVs from the MVC back to the VTSS. May be automatic or on demand.

reclaim Refers to MVC space reclamation. For automatic and demand reclamation, VTCS uses the amount of fragmented free space on the MVC and the amount of VTV data that would have to be moved to determine if space reclamation is justified.

reconciliation An automatic process initiated when a cluster is reestablished after the primary or secondary has been offline. Reconciliation ensures that the contents of the primary and secondary are identical with respect to replicate VTVs.

recovery Automatic or manual procedures to resolve problems in the server system.

reel-id Identifier of a specific tape volume. Equivalent to volume serial number (VOLSER).

replication Copying a replicate VTV from the primary VTSS to the secondary VTSS in a cluster. When replication completes, there are two copies of the VTV, one in the primary and one in the secondary.

replicate VTV A VTV which has had the replicate attribute attached to it by a management class statement.

request Term used to refer to commands issued to the 4400 ACS to perform a tape-related function.

Resource Access Control Facility (RACF) Security software controlling access to data sets.

RTD See real tape drive.
**scratch tape** A tape that is available to any user because it is not owned.

**scratch tape subpool** A defined subset of all scratch tapes. Subpools are composed of one or more ranges of volumes with similar physical characteristics (type of volume—reel or cartridge, reel size, length, physical location, and so on). Some installations may also subdivide their scratch pools by other characteristics such as label type.

**SD-3** The Oracle StorageTek helical cartridge transport. Also known as RedWood.

**secondary** One of two VTSSs in a cluster which is designated in CONFIG as the secondary. During normal operations the secondary receives copies of replicate VTVs, stores them, and makes a migration copy on an MVC as soon as possible.

**secondary recording** A technique for recovery involving maintaining both a control data set and a copy (secondary) of the control data set.

**SER** Software Enhancement Request.

**server** An NCS library control system such as HSC. In SMC a server is represented by a named SERVER path to a named TAPEPLEX. While the HTTP server software component is required as the middleware on the remote host, the server, as far as SMC is concerned is the NCS library control system operating on the remote host.

**Small Programming Enhancement (SPE)** A supplement to a released program that can affect several products or components.

**SMP** System Modification Program.

**SMP/E** System Modification Program Extended.

**SMS** System Managed Storage.

**socket** A unique address on a network plus a node address plus the id of one specific application on a specific network. An abstraction used by TCP/IP.

**SPE** Small Programming Enhancement.

**standard capacity cartridge** A cartridge that can be used on any longitudinal transport (i.e., 4480, 4490, 9490, or 9490EE).

**standby** The status of a station that has been varied online but is connected to the standby LMU of a dual LMU ACS.

**standby LMU** The redundant LMU in a dual LMU configuration that is ready to take over in case of a Master LMU failure or when the operator issues a SWITCH command.

**station** A hardware path between the host computer and an LMU over which the VM/HSC and LMU send control information.

**storage class** A named list of storage attributes that identify performance goals and availability requirements for a data set. Note that SMS Storage Classes are different from VSM Storage Classes.

**storage group** A collection of storage volumes and attributes defined by the storage administrator. Note that this is an SMS concept, not a VSM concept.
storage server A set of hardware and software products designed to enable heterogeneous computer systems to use automated tape cartridge library services.

Storage Management Component (SMC) Software interface between IBM’s z/OS operating system and Oracle StorageTek real and virtual tape hardware. SMC performs the allocation processing, message handling, and SMS processing for the ELS solution.

switchover The assumption of master LMU function by the standby LMU.

synchronous See BISYNC.

synchronous LAN Local area network built on synchronous communications.

sysplex A set of MVS systems communicating and cooperating with each other through certain multisystem hardware components and software services to process customer workloads.(I)

Systems Network Architecture (SNA) A description of the logical structure, formats, protocols, and operational sequences for transmitting information units through and controlling the configuration and operation of networks.

tape drive A tape processing device consisting of up to four transports in a cabinet. A drive can refer to an individual transport.

tape library management system (TLMS) TLMS, as used in this document, refers to any tape library management system, not to CA-1.

TapePlex (formerly “library”), a single Oracle StorageTek hardware configuration, normally represented by a single HSC Control Data Set (CDS). A TapePlex may contain multiple Automated Cartridge Systems (ACSs) and Virtual Tape Storage Subsystems (VTSSs).


trace event type Types of event traced through the system when tracing is enabled.

trace file A file that contains information useful for debugging the system.

transaction A specific set of input that triggers the execution of a specific process.

Transmission Control Protocol (TCP) An inter-network standard protocol that provides a full-duplex stream service.

transport An electro-mechanical device used to thread, position, and read or write from a tape.
UCB Unit Control Block.

userid Sometimes referred to as the VM userid, the userid is the name that identifies a specific “virtual machine” user or client.

utility Program that performs a function ancillary to the chief function(s) of a computer system.

virtual machine (VM) A functional simulation of a computer and its associated devices. Each virtual machine is controlled by a suitable operating system.

virtual storage A feature of the OS where main storage requirements are allocated by segments (or pages) as needed by programs, thus creating the apparent existence of unlimited or virtual storage.

Virtual Storage Manager (VSM) A storage solution that virtualizes volumes and transports in a VTSS buffer in order to improve media and transport use. The hardware includes VTSS, which is the DASD buffer, and RTDs. The software includes VTCS, an HSC-based host software, and VTSS microcode.

Virtual Tape Control System (VTCS) The primary host code that controls activity and information about VTSSs, VTVs, RTDs, and MVCs.

Virtual Tape Drive (VTD) An emulation of a physical transport in the VTSS that looks like a physical tape transport to MVS. The data written to a VTD is really being written to DASD. The VTSS has 64 VTDs that do virtual mounts of VTVs.

Virtual Tape Storage Subsystem (VTSS) The DASD buffer containing virtual volumes (VTVs) and virtual drives (VTDs). The VTSS is a STK RAID 6 hardware device with microcode that enables transport emulation. The RAID device can read and write “tape” data from/to disk, and can read and write the data from/to an RTD.

Virtual Tape Volume (VTV) A portion of the DASD buffer that appears to the operating system as a real tape volume. Data is written to and read from the VTV, and the VTV can be migrated to and recalled from real tape.

Virtual Telecommunications Access Method (VTAM) IBM host-resident communications software that serves as a common interface for communications.

virtual thumbwheel An HSC feature that allows read-only access to a volume that is not physically write-protected.

volume A tape cartridge (data carrier) that is mounted or dismounted as a unit.

volume serial number (VOLSER) An identifier of a physical volume.

VSM See Virtual Storage Manager.

VTCS See Virtual Tape Control System.

VTD See virtual tape drive.
WolfCreek (9360) The high-performance LSM with a smaller capacity than the standard LSM.

Write Tape Mark (WTM) The operation performed to record a special magnetic mark on tape. The mark identifies a specific location on the tape.

WTM See Write Tape Mark.

WTO Write–to–Operator.

WTOR Write–to–Operator with reply.

XCF Cross-system coupling facility.

ZCART An extended-enhanced cartridge that uses a thinner media to provide twice the capacity of the enhanced capacity (ECART) cartridge. This cartridge has a length of 2200 feet and can be used only on TimberLine 9490EE 36-track transports.
Numerics

802.3 See IEEE 802.3.

3270 IBM synchronous, block-mode, half-duplex terminals preferred for use with IBM 370 and related types of machine.

3270 protocol A telecommunications protocol that supports networks of 327x CRTs on IBM mainframes.

3274 Terminal control unit used on the ACS for processor-to-LMU communications.

3480 IBM’s 18-track half-inch cartridge tape drive model.

3490 IBM’s 36-track half-inch cartridge tape drive model.

3590 IBM’s newest cartridge tape drive model that supports 128-track recording technique.

4400 Automated Cartridge System (ACS) A fully automated, cartridge-based, 18-track storage and retrieval library. A 4400 ACS consists of 1 to 256 LMUs with each LMU connected to from 1 to 24 LSMs.

4410 The standard Library Storage Module (LSM).

4411 Library Control Unit (LCU).

4480 The StorageTek 18-track 1/2-inch cartridge transport.

4480 Cartridge Subsystem The StorageTek 4480 Cartridge Subsystem consists of a control unit (CU) plus cartridge drives (CDs).

4490 The StorageTek 36-track long-tape cartridge transport with ESCON support. Also known as Silverton.

4780 Same as a 4480, but is used for attachment to certain non-IBM computers.

8380 StorageTek DASD system.

9310 The PowderHorn, a high-performance version of the standard LSM (4410)

9360 The WolfCreek, a high-performance LSM with a smaller capacity than the standard LSM (4410).

9490 The StorageTek 36-track cartridge transport. Also known as TimberLine.

9490EE The StorageTek 36-track cartridge transport. Also known as TimberLine EE.

9740 A small, four-sided StorageTek library that supports large-style cartridge transports. This library can be configured to contain either 326 cartridges or 494 cartridges.

SL3000 The StorageTek high performance library scalable from 200 to 3,000 cartridge slots.

SL8500 The StorageTek high performance library scalable from 29 terabytes to 70 petabytes with up to 70,000 tape slots.
**T9840A** The StorageTek access-centric cartridge transport capable of reading and writing 9840A cartridges.

**T9840B** The StorageTek access-centric cartridge transport capable of reading and writing T9840B cartridges.

**T9840C** The StorageTek access-centric cartridge transport capable of reading and writing T9840C cartridges.

**T9840D** The StorageTek access-centric cartridge transport capable of reading and writing T9840D cartridges.

**T9940A** The StorageTek capacity-centric cartridge transport capable of reading and writing 60GB T9940A cartridges.

**T9940B** The StorageTek capacity-centric cartridge transport capable of reading and writing 200GB T9940B cartridges.

**T10000** The StorageTek high-capacity cartridge transport capable of reading and writing 120GB or 500GB T10000A cartridges.

**T10000B** The StorageTek high-capacity cartridge transport capable of reading and writing 240GB or 1TB T10000B cartridges.

**T10000C** The StorageTek high-capacity cartridge transport capable of reading and writing 1TB or 5TB T10000C cartridges.
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