StorageTek
Enterprise Library Software

Command, Control Statement, and Utility Reference

Version 7.3

ORACLE

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Preface

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.

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)

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

■ MSP/EX operating system
■ JES
■ Enterprise Library Software (ELS)

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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*

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.

```
►►─COMMAND/MACRO/UTILITY──┬─Item 1──────────────────────────────►◄
                          ├─Item 2──┤
                          └─Item 3──┘
```
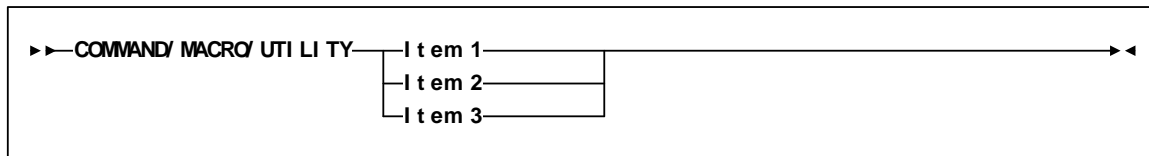
Single Required Choice

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.

```
►►──┬─Item 1──────────────────────────────────────────────────►◄
    ├─Item 2──┤
    └─Item 3──┘
```
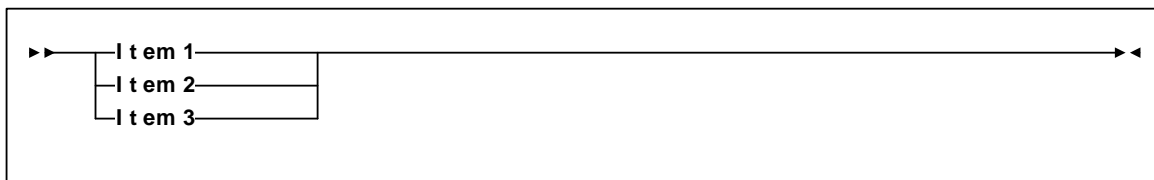
Single Optional Choice

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

```
►►─┬─────────┬──────────────────────────────────────────────────►◄
   ├─Item 1──┤
   ├─Item 2──┤
   └─Item 3──┘
```
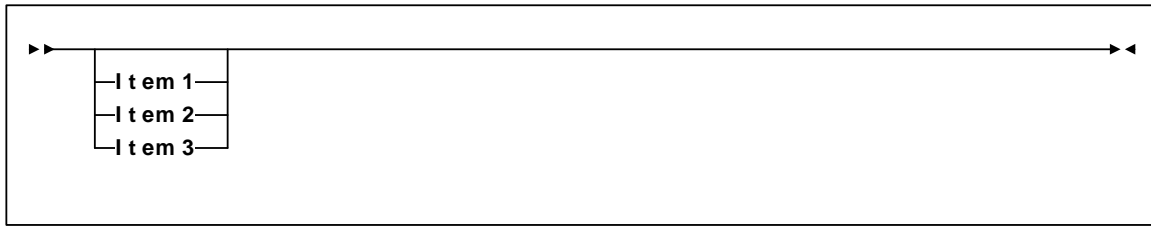
Defaults

Default values and parameters appear above the baseline.

```
       ┌─Default──┐
►►─────┴──────────┴──────────────────────────────────────────────►◄
```
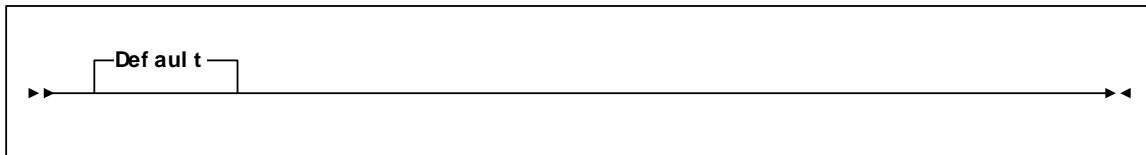
Some keyword parameters provide a choice of values in a stack. When the stack contains a default value, the keyword and the value choices are placed below the base line to indicate that they are optional, and the default value appears above the keyword line.

```
►►─┬────────────────────────────┬────────────────────────────────►◄
   │         ┌─Default Value─┐   │
   └─Keyword─┼─Value2────────┼───┘
             └─Value3────────┘
```
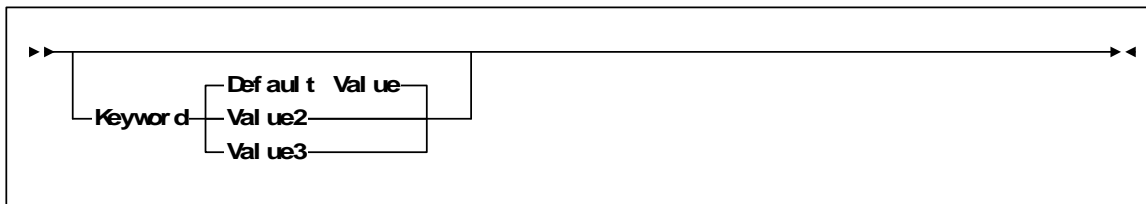
Repeat Symbol

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.

```
      ┌─,─────────┐
►►────▼─variable──┴───────────────────────────────────────────────►◄
```
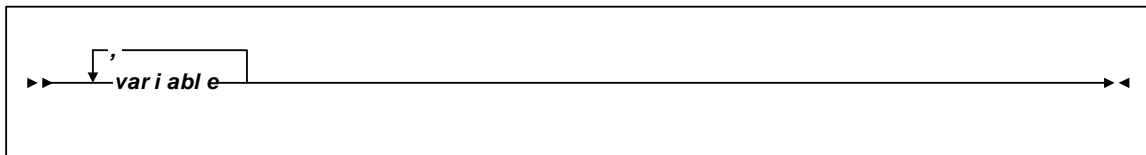
Keywords

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 112AAB for the second element. For example:
  - A00B00-A99B00 is valid.
  - A00B00-A00B99 is valid.

- A00B00-A99B99 is *not valid*.
- VTV and MVC six-digit numeric VOLSER ranges must specify the same numeric value in the first digit of each element.

An alphabetic VOLSER range (*vol-range*) consists of a pair of VOLSER elements containing an incremental portion of 1 to 6 characters (for example, 000A̲A̲A̲-000Z̲Z̲Z̲, or 9A̲A̲A̲55-9Z̲Z̲Z̲55). 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 111A̲A̲A̲ is the first element, you cannot specify 112̲AA̲B̲ 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:

A0̲0̲A0-A9̲9̲A0	increments VOLSERs A00A0 through A09A0, then A10A0 through A99A0.
9A̲A̲9A-9Z̲Z̲9A	increments VOLSERs 9AA9A through 9AZ9A, then 9BA9A through 9ZZ9A.
111A̲A̲A̲-111Z̲Z̲Z̲	increments VOLSERs 111AAA through 111AAZ, then 111ABA through 111ZZZ
999A̲M̲8-999C̲M̲8	increments VOLSERs 999AM8 through 999AZ8, then 999BA8 through 999CM8
A3B̲Z̲Z̲9-A3C̲D̲E̲9	increments VOLSERs A3BZZ9 through A3CAA9, then A3CAB9 through A3CDE9
A̲A̲A̲A̲A̲A̲-A̲A̲A̲C̲C̲C̲	increments VOLSERs AAAAAA through AAAAAZ, then AAAABA through AAACCC
C̲C̲C̲N̲N̲N̲-D̲D̲D̲N̲N̲N̲	increments VOLSERs CCCNNN through CCCNNZ, then CCCNOA through DDDNNN [*]

[*] **Caution:** This is a very large range.

- VTV and MVC alphabetic VOLSER ranges must contain no more than 26**4 volumes.

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	26^1	26
AA-ZZ	26^2	676
AAA-ZZZ	26^3	17,576
AAAA-ZZZZ	26^4	456,976
AAAAA-ZZZZZ	26^5	11,881,376
AAAAAA-ZZZZZZ	26^6	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.

When a list is enclosed in parentheses, blanks are allowed between the last value and the closing parenthesis.

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. HSC PARMLIB members and definition data sets must specify comments in this format.
  - A comment is not required as the first control statement of any PARMLIB member.
  - Comments can be continued over multiple lines, but cannot be nested.
  - The maximum length for any control statement is 1024 characters.

What's New?

This revision includes the following updates:

> **Warning –** SMC 7.3 introduces a new XAPI security feature for client-server communication, enabled as a default in the SMC HTTP server. To use SMC 7.3 as a remote client, you **must** perform the required setup tasks for both SMC clients and server. The SMC 7.3 XAPI security feature may be disabled at the server for all clients or for specific clients. However, SMC TCP/IP client-server communication will not function if you use the SMC startup parameters from a prior SMC release with SMC 7.3. Refer to the ELS publication *Configuring and Managing SMC* for more information about the XAPI security feature.

- The following SMC commands are added or updated for this release:
    - The SMC LIMIT command enables you to limit resource usage in the SMC subsystem. This command can help limit exposure to Sx78 type abends.

      See "LIMIT" on page 48.
    - Updated the SMC MONitor command description to note conditions where SMC is not able to support the detection of pending mounts.

      See "MONitor" on page 58.
    - Updated the SMC Route command description to note support for the XAPI client interface to an ACSLS server.

      See "Route" on page 90.
    - The SMC SERVer command POrt parameter default is changed from 80 to 8080.

      See "SERVer" on page 92.
    - The new SMC XCLIENT command is used to define XAPI clients that use a different protocol version than the default XAPI security protocol.

      See "XCLIENT" on page 133.
    - The new SMC XUDB command is used to define the XAPI Security user list.

      See "XUDB" on page 136.
    - The SMC HTTP command includes the new XSECurity parameter, used to specify whether the XAPI user password security protocol is globally enforced for requests processed by this HTTP server.

      See "HTTP" on page 44.
    - The SMC TCPIP command includes the new XSECUSERname parameter, used to specify XAPI username associated with all transactions originating from this client.

See .

- The following HSC/VTCS commands and control statements are added or updated for this release:
  - Updated CDSCREat command syntax to indicate optional parameter specification.

    See .
  - Updated COMMPath command description to include a VTAM communication recommendation.

    See .
  - The CONFIg command CDSLEVEL parameter includes a new value,V73ABOVE, which creates an "I" level CDS, providing 32GB VTV support.

    See .
  - The CONFIg GLOBAL command MAXVTVSZ parameter includes a new value, 32000, which indicates a 32GB VTV.

    See .
  - Updated the CONFIg GLOBAL REPlicat CHANGED parameter setting to indicate that replication does not occur once the expected number of MVC copies exist.

    See .
  - Updated EXPORT utility command parameter descriptions for VTV, MGMTclas, MVC, and STORclas parameters, to indicate whether MVC information is maintained in the VTV record.

    See .
  - The MGMTclas MAXVTVSZ parameter includes a new value, 32000, which indicates a 32GB VTV.

    See .
  - The SWitch command includes the RESET parameter, enabling you to reset the internal switch setting and internal conflict counts for a specified ACS.

    See .
- Updated commands and control statements in support of SL8500 Bulk Cap.
  - Display Cap output now displays Bulk CAPs with 36 slot capacity.

    See .
  - Display CDS output now indicates whether Bulk CAP Skip setting is ON or OFF.

    See .
  - The EJect command includes the PMSG parameter, enabling you to specify a user defined message to be displayed in the SLConsole CAP status screen for a CAP when the door is unlocked for cartridge removal.

    See .
  - The SET EJCTSKP command enables or disables the SL8500 Bulk CAP skip global setting to skip the last slot of each magazine for rails 1-3 and the first slot of each magazine for rail 4.

    See .
  - Updated CAP number specification for SL8500 Bulk CAP.

    See .

- Updated VTVRPt BASIC output field Scr/Imp to include VOLSAFE protection level.

  See "VTVRPt BASIC" on page 634.

Note – 32GB support requires an "I" level CDS, and the following minimum microcode levels:

- VSM 6 microcode level 6.2
- VLE microcode level 1.5.1 (if VLE is included in the configuration)

- Expanded SMC HTTP command description and removed SQUELEN and WQUELEN tuning parameters.

  See "HTTP" on page 44.

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 649 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 24 for more information about the CMDDef command.

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

```
PREFIXcommand-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 MSP MODIFY command to issue commands. See "Issuing SMC Commands Using the MSP Modify Command" on page 3.

Issuing SMC Commands Using the MSP Modify Command

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

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

- F indicates the MSP Modify command
- *started-task-name* indicates the SMC started task name.
- *command-name* indicates a SMC operator command.
- *parameter* indicates an optional or required command parameter.

Note –

- The started task name and command name **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 SMC1MSP,MSGDEF LVL 4
F SMC1MSP,MSGDEF LVL=4
F SMC1MSP,MSGDEF LVL(4)
```

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,

```
MINLVL(minlevel)
```

- Concatenating the user-supplied value(s) to the keyword with an equal sign. For example,

```
MINLVL=minlevel
```

Note –

- Unless otherwise specified, a list of user-supplied values must be enclosed in parentheses. See 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 xliii 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 649 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 MSP 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 3-14 on page 539 for a list of characters associated with each code.
- See "SET COMPRFX" on page 538 for more information about the SET COMPRFX command and prefix restrictions.

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

```
PREFIXcommand-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 MSP 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 MSP Modify Command

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

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

- F indicates the MSP 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 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 xliii 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 686 for more information about the SLUADMIN utility.
- See "Unified User Interface Utility (SMCUUUI)" on page 649 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

```
//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(member)
//SLSSYS01     DD DISP=SHR,DSN=parmlib1data set(member)
//SLSSYS02     DD DISP=SHR,DSN=parmlib2data set(member)
```

FIGURE 1-2   Example JCL Defining Partitioned 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.

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.
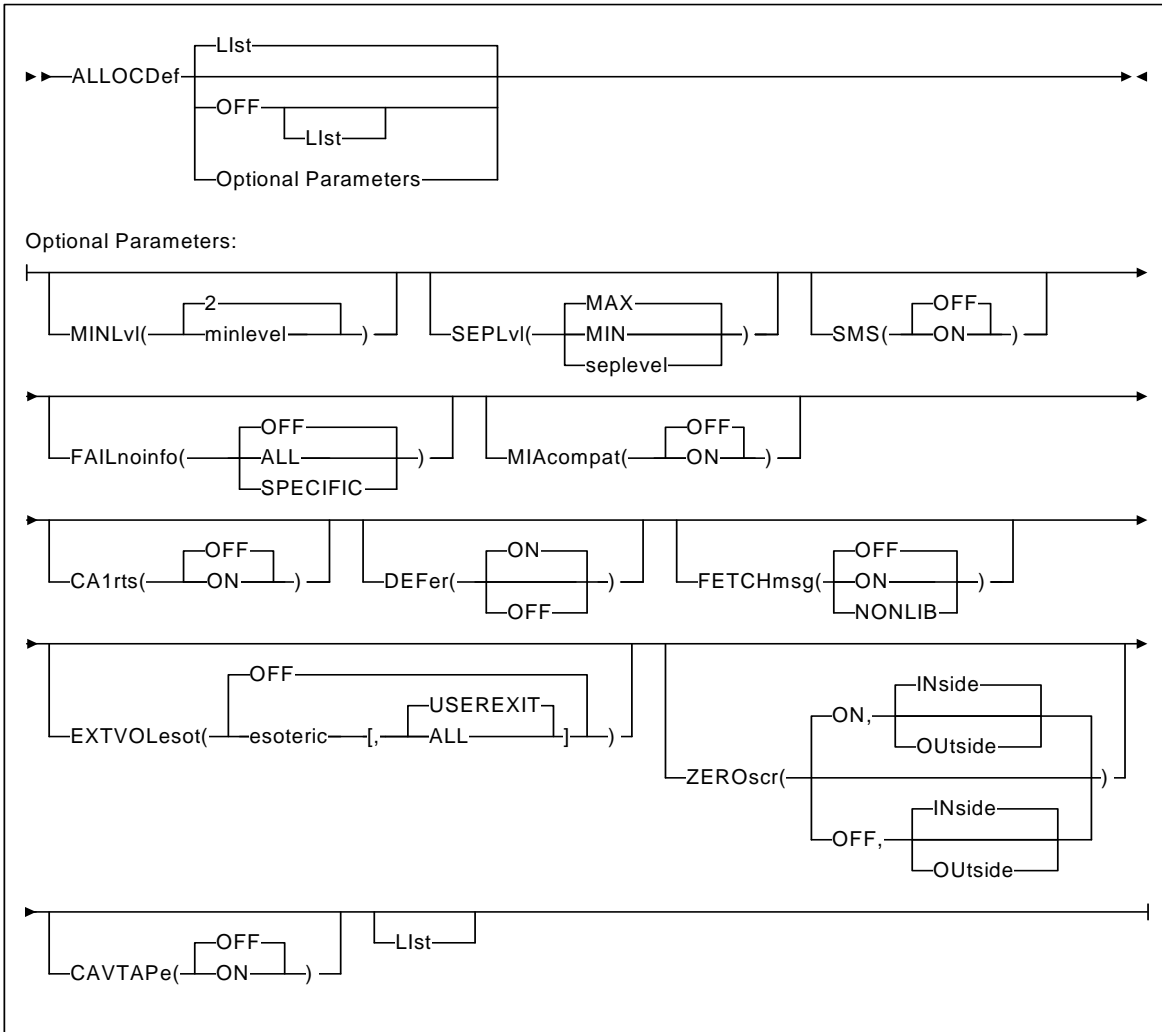
Syntax

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 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.

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. This is the default.

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 MSP/EX and OS/390 product.

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.

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.

OFF

disables deferred mount processing and honors user JCL specifications.

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 though 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.

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
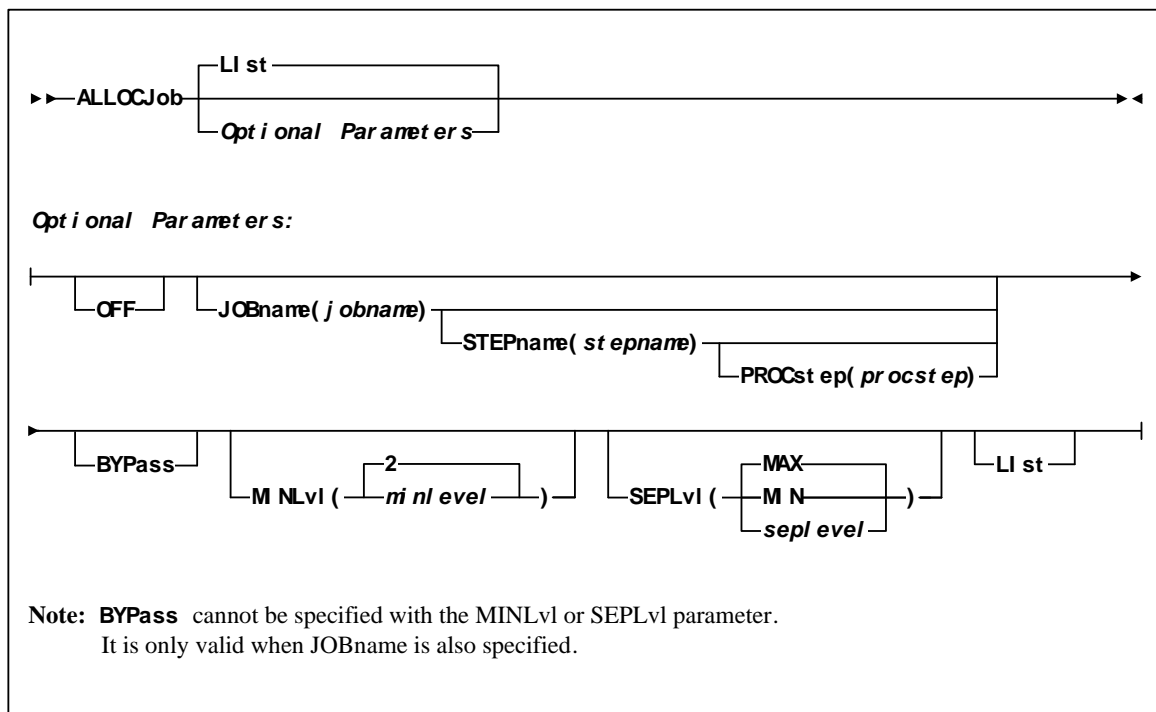
FIGURE 2-2   ALLOCJob syntax

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.

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.

procstep

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 MINLV=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
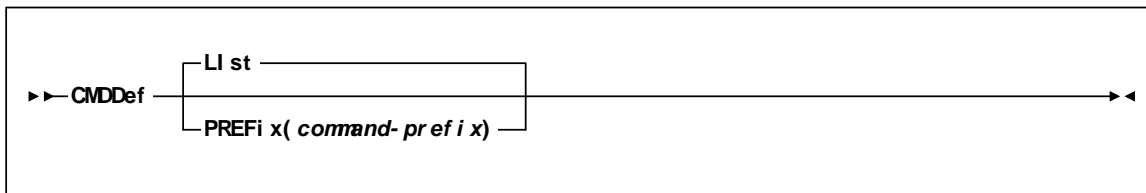
FIGURE 2-3   CMDDef syntax

Parameters

LIst

optionally, lists the current command prefix.

This is the default if no parameters are specified. It **cannot** be specified with any other parameter.

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 MSP 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
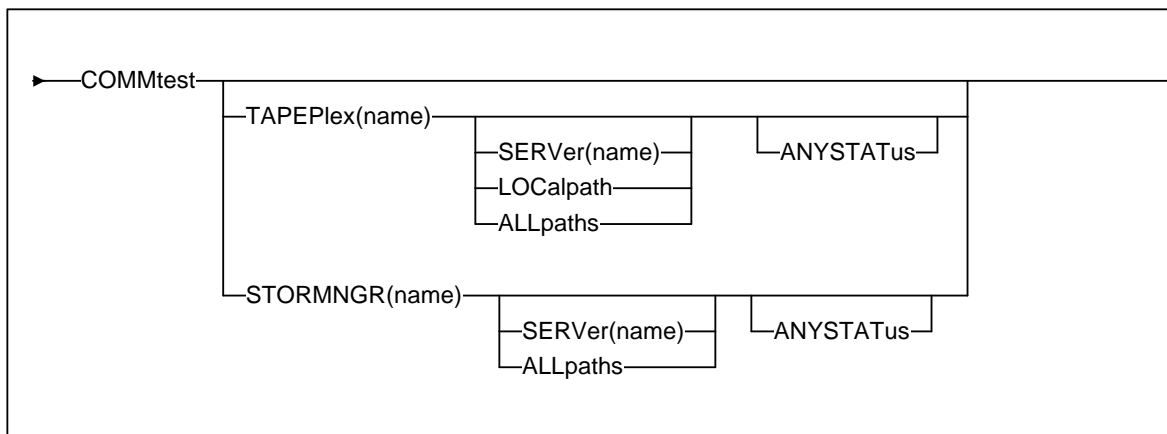
FIGURE 2-4   COMMtest syntax

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.

DISMount

Interfaces:

Console or utility
UUI: Yes (No XML/CSV output)

Subsystem Requirements:

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

Description

The DISMount command allows the user to request the dismount of a volume from a drive.

Syntax
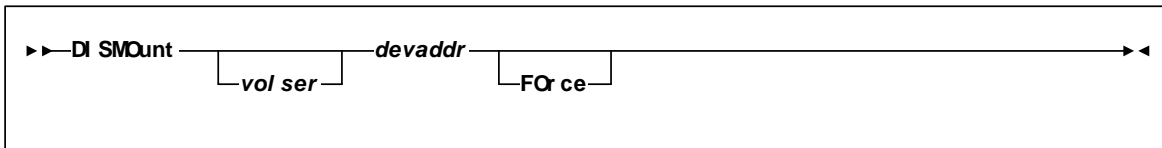
FIGURE 2-5 DISMount syntax

Parameters

volser

This parameter is optional. If omitted, any volume that is on the drive is dismounted. If specified, the volume is dismounted only if the volume on the drive matches the specified volser.

Note – If the volser is omitted, a comma must precede the device address.

devaddr

The MSP device address for which the volume is to be dismounted. The device must be defined by a TapePlex known to SMC.

FOrce

optionally, indicates that if a loaded volume is found on the drive, it should be rewound and unloaded prior to attempting the requested dismount. This parameter is not supported for virtual drives.

Display DRive

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 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
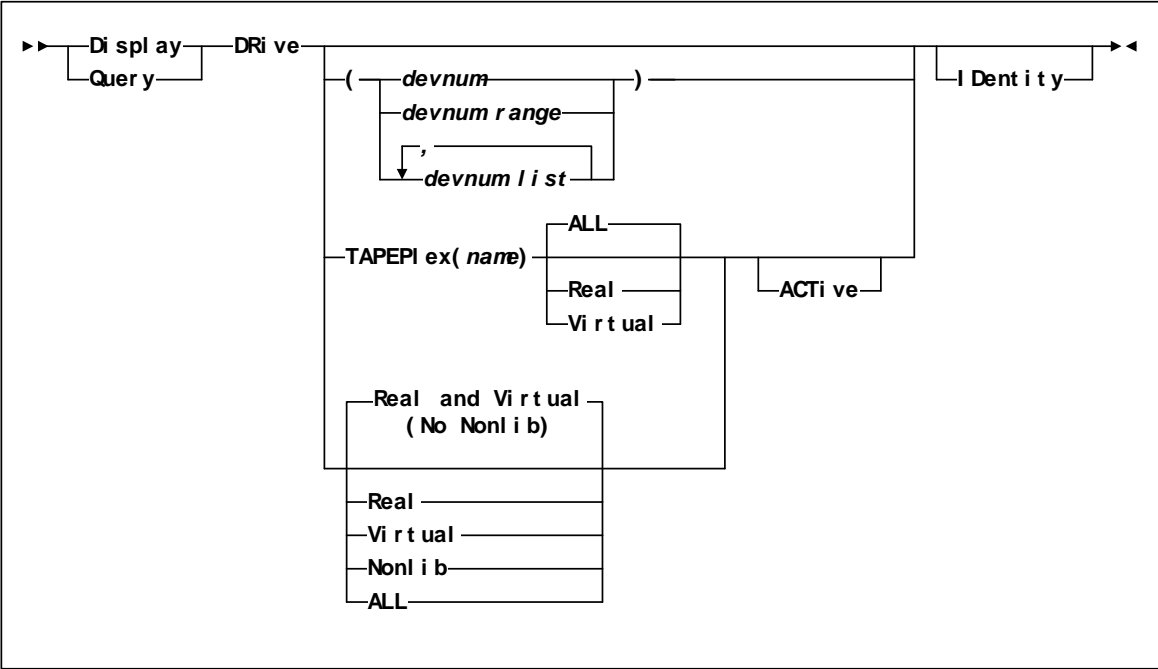
FIGURE 2-6 Display DRive syntax

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.

Note – *devnum*, *devnum-range*, and *devnum-list* are mutually exclusive with all other Display DRive parameters.

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.

IDentity

optionally, displays informational message SMC0178, identifying the drive serial number.

Display POLicy

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 SMC display POLicy command displays information for a named policy. This command provides the same output as the SMC POLicy command with the LIst keyword.

Syntax

```
►►──┬──Display──┬──POLicy──┬──name──────┬──────────────────►◄
    └──Query────┘          └──NAme(name)─┘
```
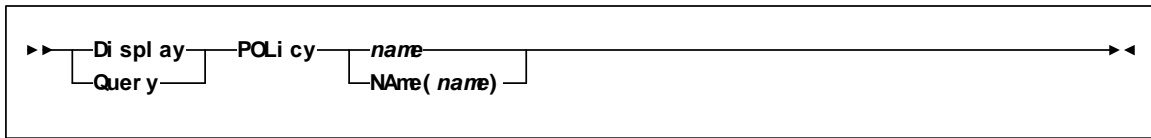
FIGURE 2-7   Display POLicy syntax

Parameters

name or NAme(name)

> optionally, specifies the name of a policy that matches the name specified in a TAPEREQ or DFSMS ACS routine management class.
>
> *name* may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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
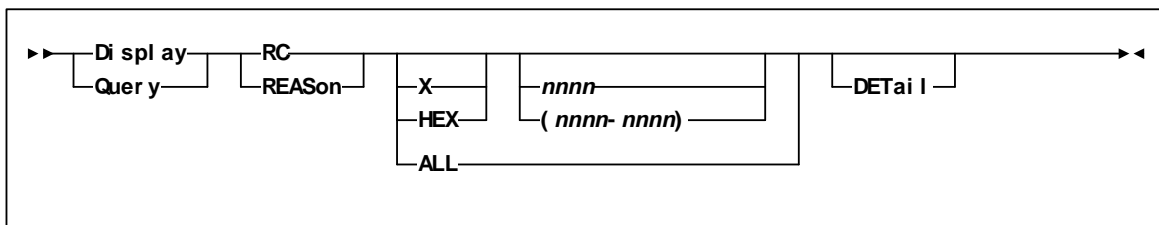
FIGURE 2-8   Display RC syntax

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 SERVer

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 SMC Display SERVer command displays information for a named server. This command provides the same output as the SMC SERVer command with the LIst keyword.

Syntax

```
►►──┬─Display──┬──SERVer──┬─name────────┬──────────────────────►◄
    └─Query────┘          └─NAme( name) ─┘
```
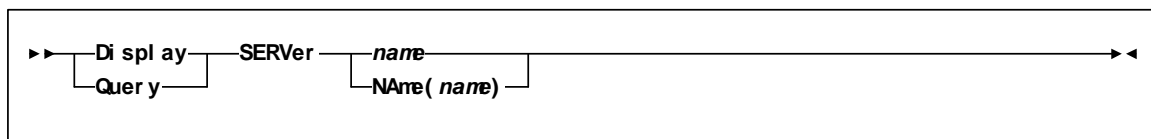
FIGURE 2-9 Display SERVer syntax

Parameters

***name* or NAme(*name*)**

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

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

Display SMC

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 SMC command displays SMC status, including start time, release, and host information.

Syntax

```
►►─┬─Display─┬──SMC──────────────────────────────────────────►◄
   └─Query───┘
```
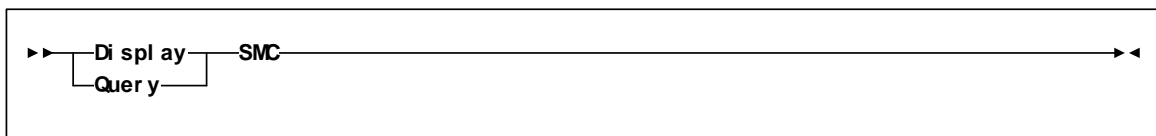
FIGURE 2-10 Display SMC syntax

Parameters

None.

Display STORMNGR

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 SMC Display STORMNGR command displays information for a named VLE. This command provides the same output as the SMC STORMNGR command with the LIst keyword.

Syntax

```
►►─┬─Display─┬──STORMNGR─┬─name────────┬────────────────────►◄
   └─Query───┘           └─NAme(name)──┘
```
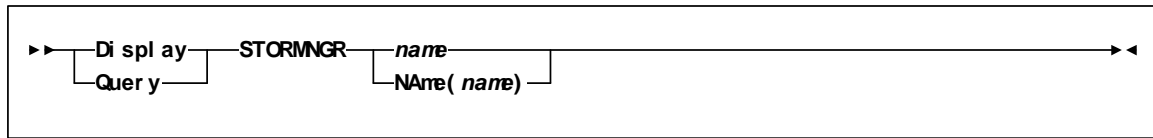
FIGURE 2-11 Display STORMNGR syntax

Parameters

name or NAme(_name_)

Specifies VLE to be defined, modified or listed. This name is also defined to VTCS, and is initially defined by the VLE GUI. If _name_ is not specified, then all VLEs are listed.

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

Display TAPEPlex

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 SMC Display TAPEPlex command displays information for a named TapePlex. This command provides the same output as the SMC TAPEPlex command with the LIst keyword.
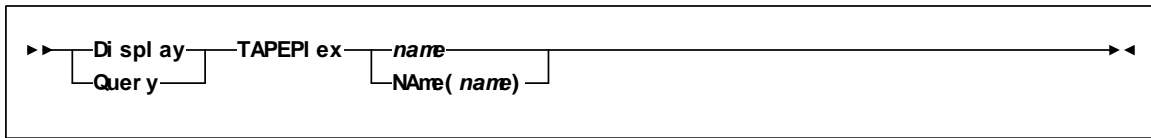
Syntax

FIGURE 2-12 Display TAPEPlex syntax

Parameters

***name* or NAme(*name*)**

specifies the TapePlex name to be added, modified, or listed.

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

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
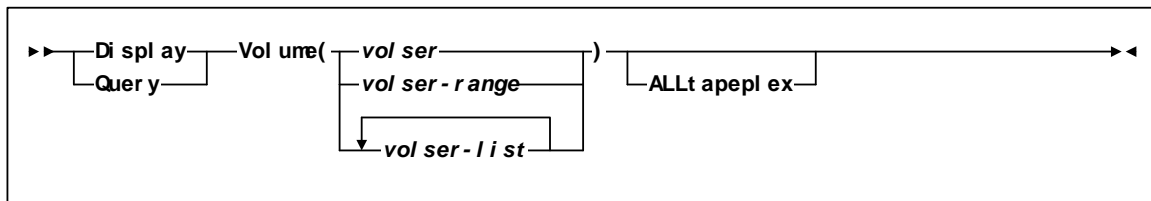
FIGURE 2-13 Display Volume syntax

Parameters

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.

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 MSP 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
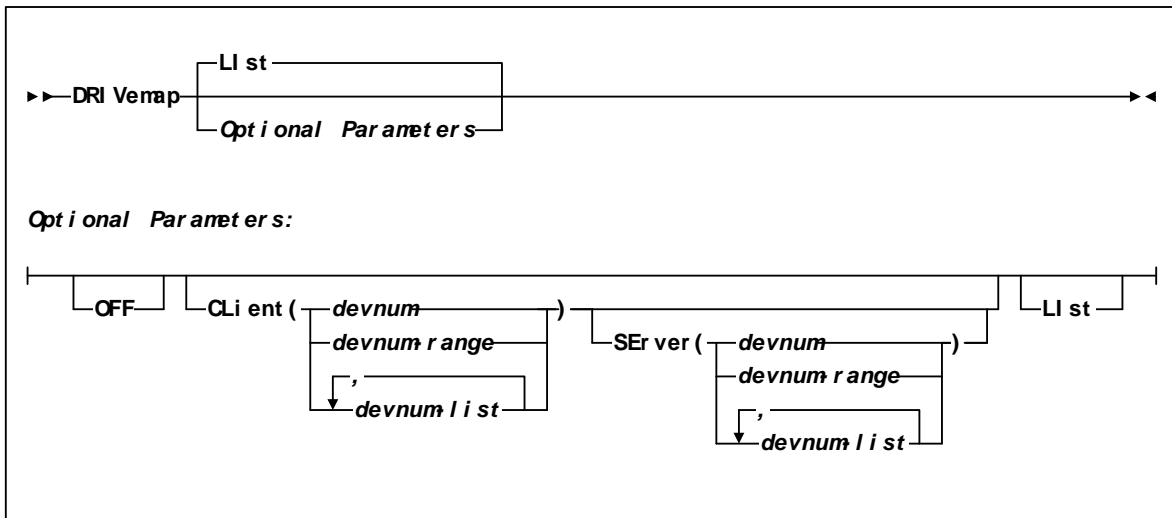
FIGURE 2-14 DRIVemap syntax

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

```
►►──Help────────────────────────────────────────────►◄
         ├──command-name──┤
         ├──nnnn──────────┤
         ├──nnnn-nnnn─────┤
         ├──SMCnnnn───────┤
         └──SMCnnnn-SMCnnnn┘
```
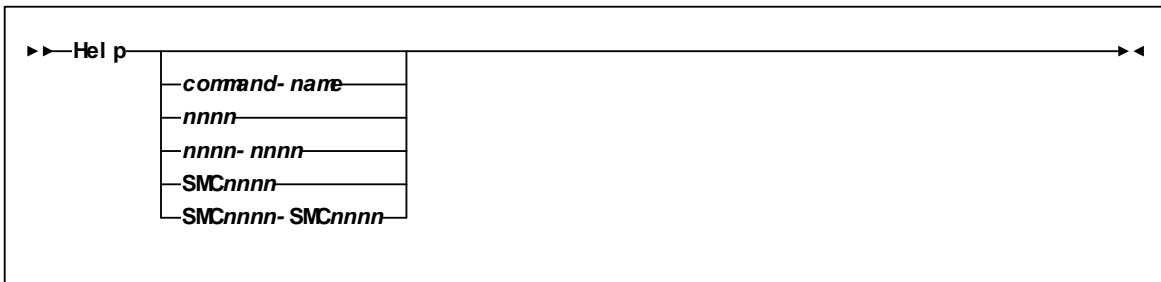
FIGURE 2-15 Help syntax

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.

SMC*nnnn*

 optionally, a full SMC message identifier.

SMC*nnnn*-SMC*nnnn*

 optionally, a range of SMC messages specified using full message identifiers.

HTTP

Interfaces:

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

Subsystem Requirements:

Active SMC required

Description

The SMC HTTP command is used to start an SMC socket listener component that supports a limited subset of HTTP capabilities, and allows the local SMC subsystem to act as an HTTP server for SMC client subsystems on other hosts. Requests that are sent from other SMC client subsystems to this SMC with an active HTTP Server component are processed by the local HSC.

The SMC HTTP command should *only* be executed on hosts where an HSC subsystem is executing; otherwise the HTTP command provides no operational benefit.

SMC subsystems on other hosts that will be clients to this local SMC with active HTTP Server component must use the SMC SERVER command to define the communications path to this host.

Syntax
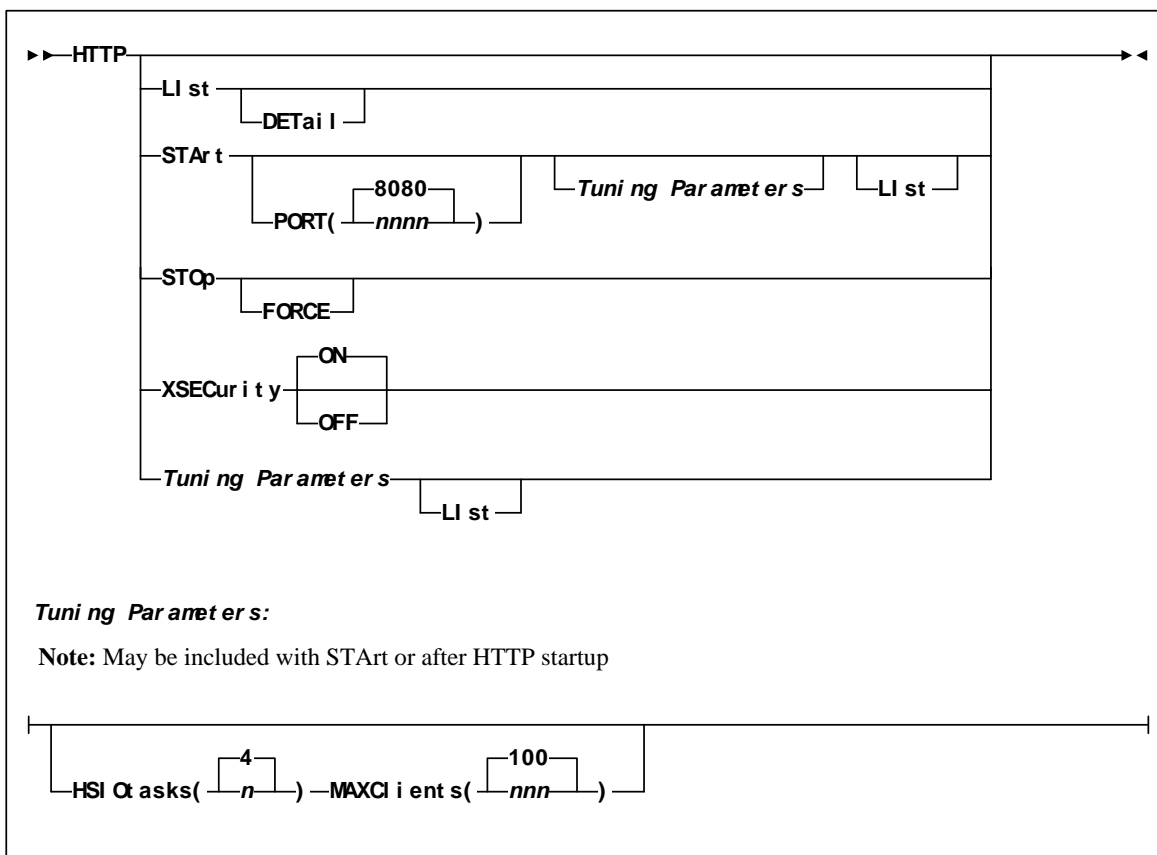
FIGURE 2-16 HTTP syntax

Parameters

LIst

optionally, displays SMC 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 know 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.

XSECurity

optionally, specifies whether the XAPI user password security protocol is globally enforced for requests processed by this HTTP server.

ON

specifies that the XAPI security protocol is enforced for this server. This is the default setting.

OFF

specifies that the XAPI security protocol is not enforced for this server. If specified then the server will accept all requests and operate like a pre-ELS 7.3 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 SMC 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 300. The default value is 100.

LIMIT

Interfaces:

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

Subsystem Requirements:

Active SMC required

Description

The LIMIT command is used to limit resource usage in the SMC subsystem. The command may be used to limit exposure to Sx78 type abends.

By default, the SMC subsystem automatically calculates the maximum number of SMC subsystem subtasks it can support. This calculation is performed whenever the SMC subsystem starts a new subsystem subtask that results in a new hi-water SMC subsystem subtask count.

The calculation for maximum number of SMC subsystem subtasks is based on storage usage in various subpools. However, the actual maximum number of subtasks the SMC subsystem can support in practice is based on the type and timing of requests, and general system workload. The calculation produces a rough estimate which can change as new subtasks are started.

When the SMC subsystem reaches the calculated SMC subsystem subtask limit and the default behavior has not been overridden, then new requests are queued for processing and wait until an existing request completes.

However, if a MAXTasks limit is manually set to override the default behavior, then the manual setting is used to limit the maximum number of SMC subsystem subtasks. A MAXTasks limit that is too high can result in Sx78 type abends.

Syntax
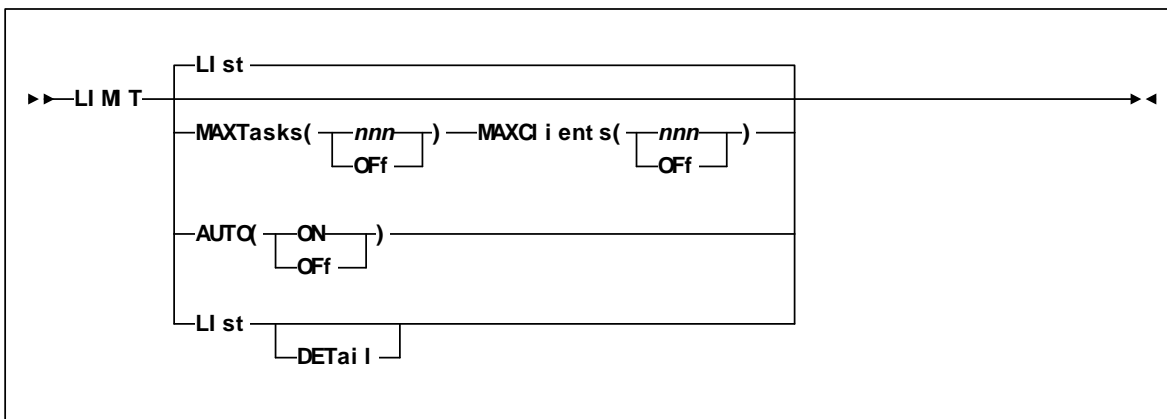
Parameters

MAXTasks

optionally, specifies the maximum number of work subtasks that the SMC subsystem will start.

nnn

the maximum number SMC subsystem subtasks, between 1 and 500.

OFf

specifies no MAXTasks limit. The default value is OFf which implies the maximum MAXTasks limit of 500 SMC subsystem subtasks.

MAXClients

optionally, specifies the maximum number of work subtasks that are concurrently allowed in the SMC client TCP/IP component.

nnn

the maximum number of SMC client TCP/IP work subtasks between 1 and 500.

OFf

specifies no MAXClients limit. The default value is OFf which implies the maximum MAXCLIENTS limit of 500 TCP/IP work subtasks.

Note – The LIMIT MAXClients command is different from the HTTP MAXCLIENTS command:

- The LIMIT MAXClients limits the number of client connections on the client side of client/server.
- The HTTP MAXClients limits the number of client connections on the server side of client/server.

AUTO

optionally, specifies whether the SMC subsystem automatically sets a MAXTasks limit based on the amount of resources available.

ON

specifies that the SMC subsystem will automatically set a MAXTasks limit if not overridden by the MAXTasks parameter.

OFf

Specifies that the SMC subsystem will not automatically set a MAXTasks limit.

OFf

optionally, resets all LIMIT settings to their default values.

LIst

optionally, lists the current LIMIT parameter settings. If LIMITS is entered without any command parameters, a LIst is performed.

DETail

optionally, lists SMC resource usage and calculated maximum number of work subtasks supported.

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.

This command is intended to be used primarily as directed by Oracle StorageTek Software Support. Output is intended for debugging and support purposes.

Syntax
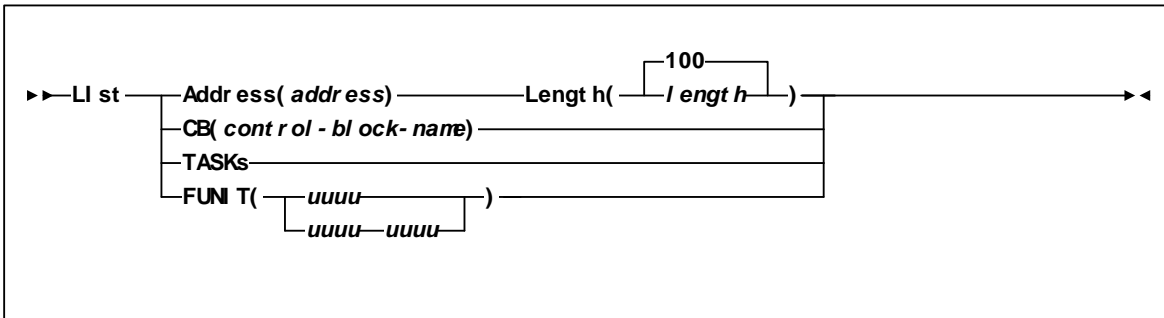
FIGURE 2-17 LIst syntax

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 SMCCMDS/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.
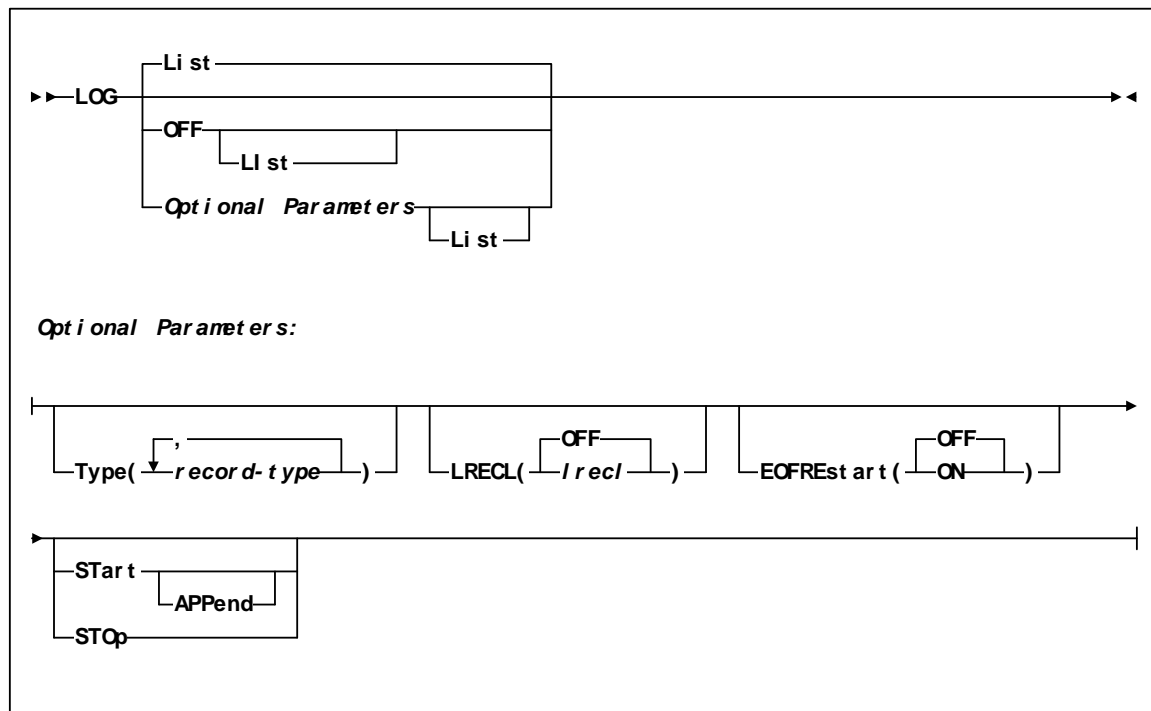
Syntax

FIGURE 2-18 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:

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

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). Top 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.

METAdata

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active SMC required

Description

The METAdata command displays XML tags associated with a function that produces XML output.

Note – No text output is produced by the METAdata command. If neither XML nor CSV output is requested, the command will not produce any output.

Syntax

```
►►──METAdat a──────────────────────────────────────────►◄
            └─command- name─┘
```
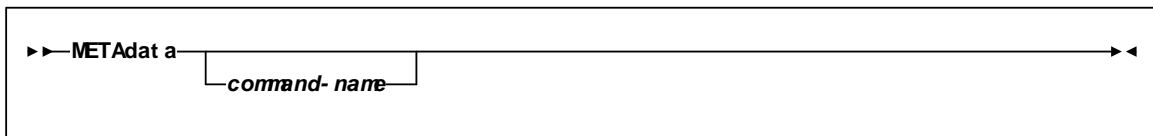
FIGURE 2-19 METAdata (SMC) syntax

Parameters

command_name

The command for which metadata is to be produced.

When the command contains "two parts" such as Display Volume, both portions should be entered. The METAdata command uses the same abbreviations for the command_name as the command itself, for example:

```
METAdata D V
```

The METAdata command itself does not support metadata.

The following tags are produced by the METAdata command:

<command_name>

The full name of the command.

<security_level>

Required security level if command authorization is in effect. Values are QUERY, SET, and ADMIN.

<command_tags>

Header tag for all XML tags.

The following tags are produced for each XML tag in the requested command:

<tag_data>

Header tag for each XML tag.

<tag_name>

The XML tag name, for example, volser.

<tag_type>

Values are header (header XML tag), data (XML data tag, normally associated with a value), and trailer (indicates the position of the trailer tag associated with a header tag).

<occurrences>

The maximum number of expected occurrences, for tags that may occur multiple times. This may be either a numeric value or "unlimited."

The following tags are produced only for data-type tags.

<data_type>

Indicates the type of data expected in the tag value. Produced only for data tags. Values include: char, numeric, flag, hex, date, time.

<maximum_size>

Indicates the maximum output data size.

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.

Note – SMC does not support detection of pending mounts when the following conditions are present:

■ ALLOCDef DEFer(OFF) has been specified,

■ the job entry subsystem is JES, and

■ the mount is outstanding on a JES LOCAL processor

■ The mount was requested before SMC had initialized and the mount request did not request the DEFER option.

Syntax
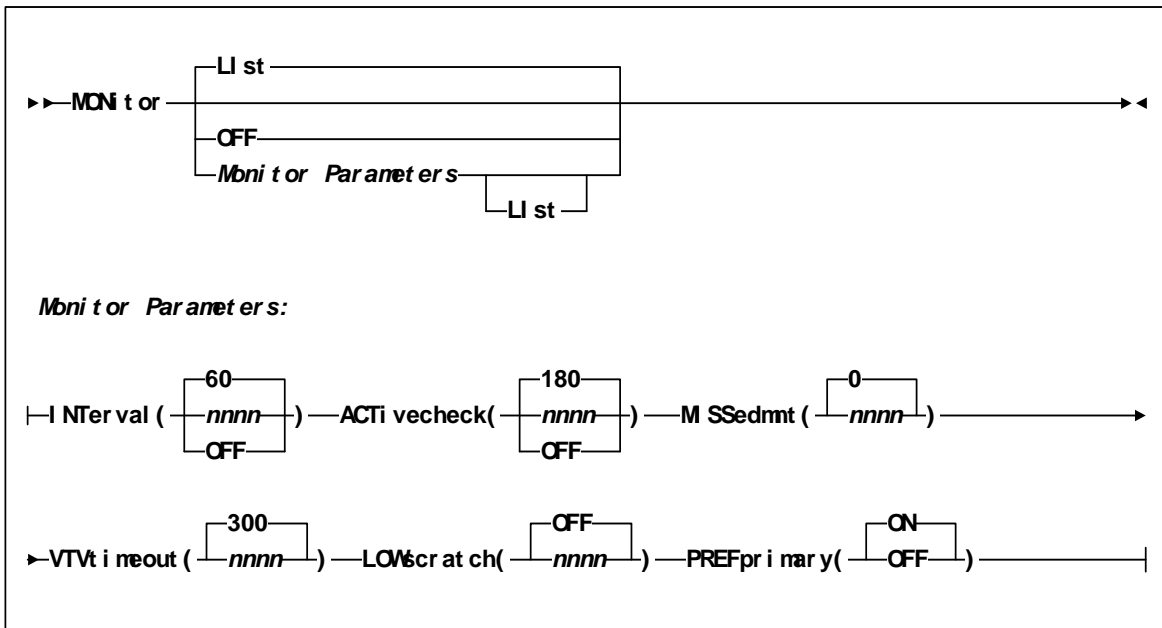
FIGURE 2-20 MONitor syntax

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 redrive 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.

MISSedmnt

Optionally, specifies the interval in seconds after which SMC should issue a message indicating that an outstanding mount is pending. The message is repeated after each interval as long as the mount remains unsatisfied. The default value is 0, meaning that the message does not appear.

If the MISSedmnt 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. It is recommended that you set this interval to at least 600 (10 minutes) to allow the SMC mount monitor processing to attempt to redrive missing mounts before producing the periodic missed mount message.

VTVtimeout

Optionally, specifies the time in seconds after which SMC will issue the SMC0231 message and attempt to re-drive a mount request for a VTV. The default value is 300 seconds (5 minutes).

If the VTVtimeout is not a multiple of the base INTerval, it is rounded up a number of seconds that is a multiple of the interval value.

The minimum value of VTVtimeout is 300 seconds; the maximum is 1800 seconds.

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 OFF.

LOWSCRatch does not report on scratch shortages that are not associated with a subpool name, except for scratch subpool zero.

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.

MOunt

Interfaces:

Console or utility
UUI: Yes (No XML/CSV output)

Subsystem Requirements:

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

Description

The MOunt command allows the user to request a mount of a specific or scratch volume on a tape device.

Syntax
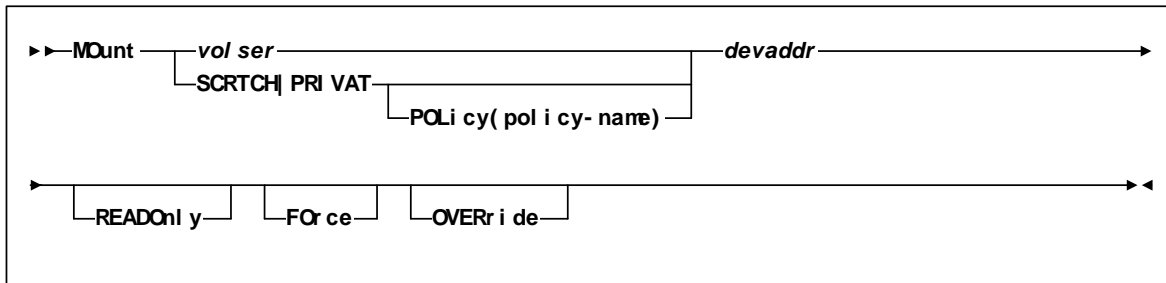
FIGURE 2-21 MOunt syntax

Parameters

volser

an actual volume serial number to be mounted.

SCRTCH or PRIVAT

indicates a scratch mount.

POLicy

optionally, when the volume is specified as SCRTCH (or PRIVAT), specifies the name of an SMC policy that defines the subpool name and management class name (if applicable) to be applied for the scratch mount.

> ***policy-name***
>
> the policy name.

devaddr

the MSP device address for which the volume is to be mounted. The device must be defined by a TapePlex known to SMC.

READOnly

optionally, indicates that the volume is to be mounted with write protect enabled.

FOrce

optionally, indicates that if a loaded volume is found on the drive, it should be rewound and unloaded prior to attempting the requested mount. FORCE is not supported for virtual drives.

OVERride

optionally, indicates that if SMC detects a pending mount for the drive, indicates that the volume specified in the MOunt command should override the volume indicated in the pending mount.

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. 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
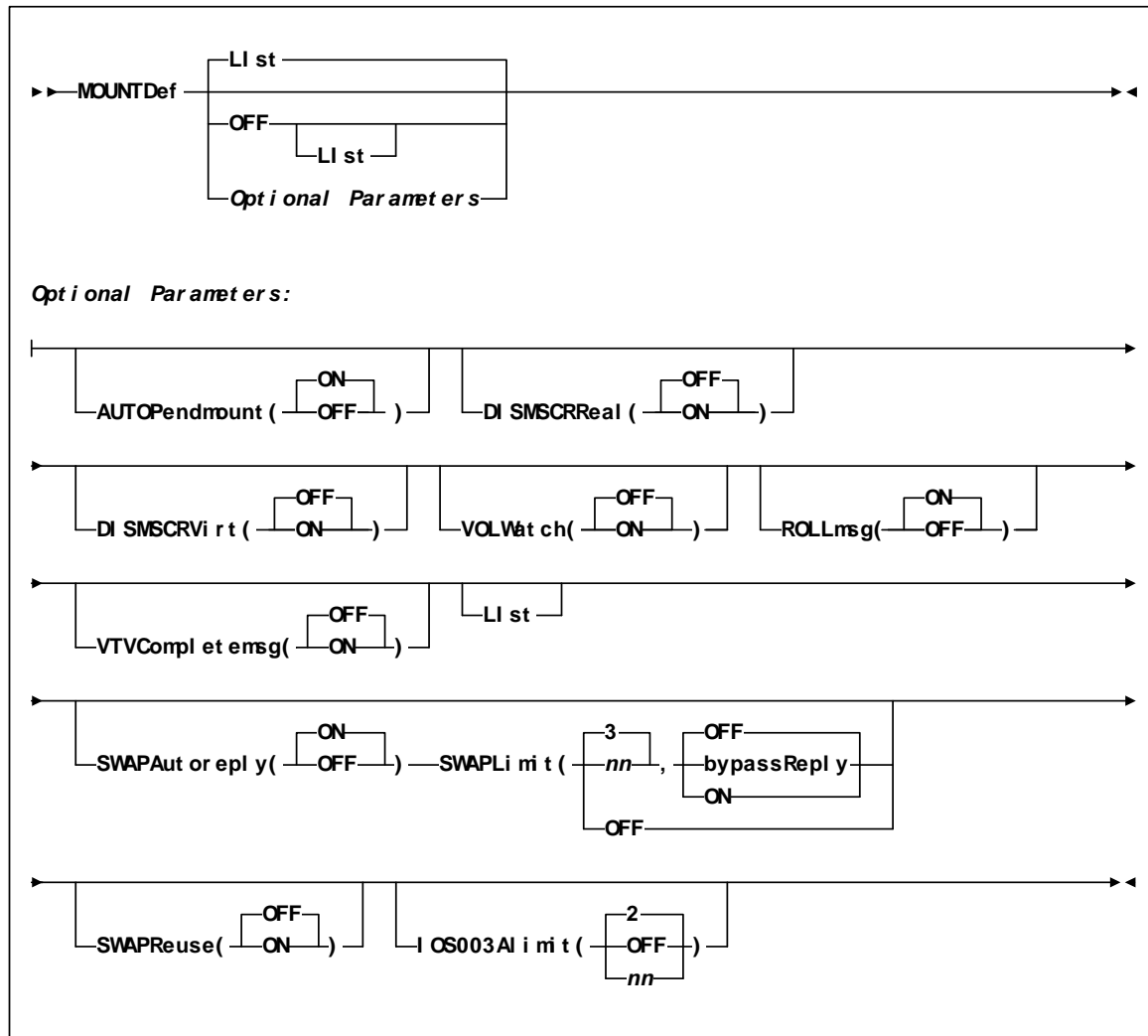
FIGURE 2-22 MOUNTDef syntax

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 MSP 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 MSP 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 DISMSCRReal and DISMSCRVirt parameters replace the DELDISP= parameter of the HSC LIBGEN SLILIBRY macro.

OFF

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

ON

The VTV is scratched when MSP 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 Fujitsu "IGF500D - REPLY 'YES' DEVICE OR 'NO' message when no compatible swap-to device is found.

ON

SMC automatically replies "NO" to the Fujitsu "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 Fujitsu "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 that SMC influences for the same job step and volume serial.

nn

a swap value of 0-99, or OFF.

- If the value specified is 0 or OFF, then the SMC continues to attempt to influence the swap indefinitely.
- If the value is not specified, the default value is 3.
- For any SWAPLimit value other than 0 or OFF, SMC stops attempting to influence the swap after *nn* attempts for the same job step and volume serial.

Note – Any operator-initiated SWAP commands are not applied to the SWAPLimit value.

---

bypassReply

Subsitute one of the following values for "bypassReply":

ON

optionally, indicates that SMC should not reply to the system message IGF509D if another swap attempt is detected after the SWAPLIMIT count is exhausted.

OFF

optionally, SMC generates a response of "NO" to an IGF509D message after *nn* swap attempts. This is the default.

SWAPReuse

optionally, specifies whether previously used swap-to devices are to be excluded as possible swap-to devices for the current job step and volume serial.

OFF

Previously used swap-to devices are excluded as possible swap-to devices for the current job step and volume serial. If no eligible device is found then SMC issues message SMC0108 and if the MOUNTDef SWAPAutoreply is set to ON then the IGF500D or IGF509D message is replied to with NO. This is the default.

ON

Previously used swap-to devices are eligible to be used for the current job step and volume serial.

IOS003Alimit

optionally, specifies the maximum number of attempts to re-drive a mount request that has failed with an IOS003A message.

OFF

perform an unlimited number of attempts to re-drive the mount request for a given drive following an IOS003A message for a given drive.

nn

the maximum number of attempts to re-drive the mount request. Valid values are 0-99. The default is 2. A value of 0 is equivalent to IOS003Alimit(OFF).

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
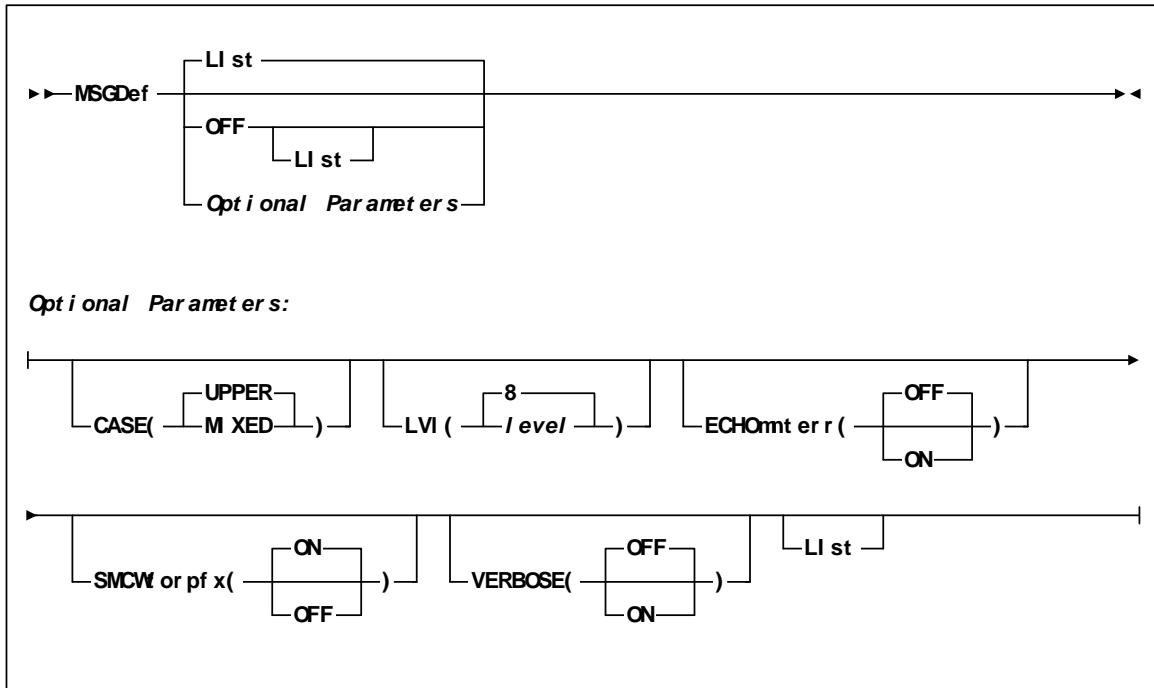
FIGURE 2-23 MSGDef syntax

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.

LVl

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

level

the default level. Valid values include the following:

0	Display error messages **only**.
4	Display error and warning messages from the SMC subsystem.
8	Display all SMC subsystem messages and allocation job log warning messages. This is the default if the MSGDef parameter is not specified.

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.

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

OFF

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

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
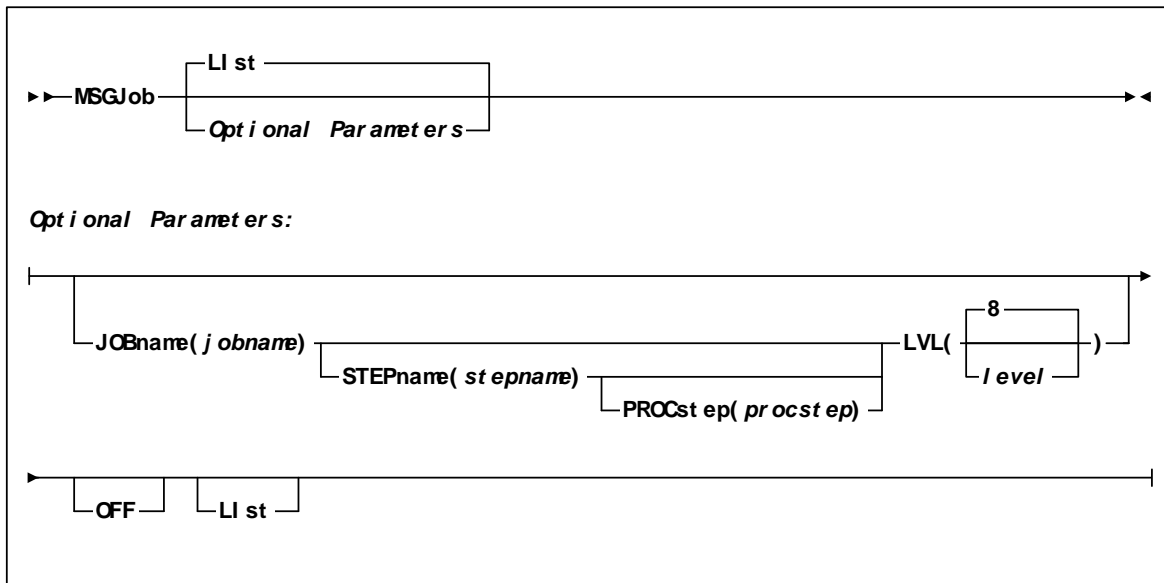
FIGURE 2-24 MSGJob syntax

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.

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.

LVL

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

level

the default level. Valid values include the following:

0	Display error messages **only**.
4	Display error and warning messages from the SMC subsystem.
8	Display all SMC subsystem messages and allocation job log warning messages.

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 (supports XML and CSV)

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. 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.
- By default, and SMC POLICY command applies ONLY to SCRATCH volumes. If you want to set a policy for specify volumes, you must specify VOLTYPE(SPECIFIC). If you want to specify a policy to apply to both SCRATCH and SPECIFIC volumes, you must specify two separate POLICY commands with the same POLICY name.
- 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 to find it. When a policy is marked as in error, the policy is empty, indicating that the default tape policy attributes will be applied to an event that specifies this policy name.
- 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. Note that when using the SMC READ command to reload the SMC POLICY file, it is recommended that you specify the option REPlacepolicy to receive notifications about POLICY commands present in the original definitions but missing in the new definitions.

- 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
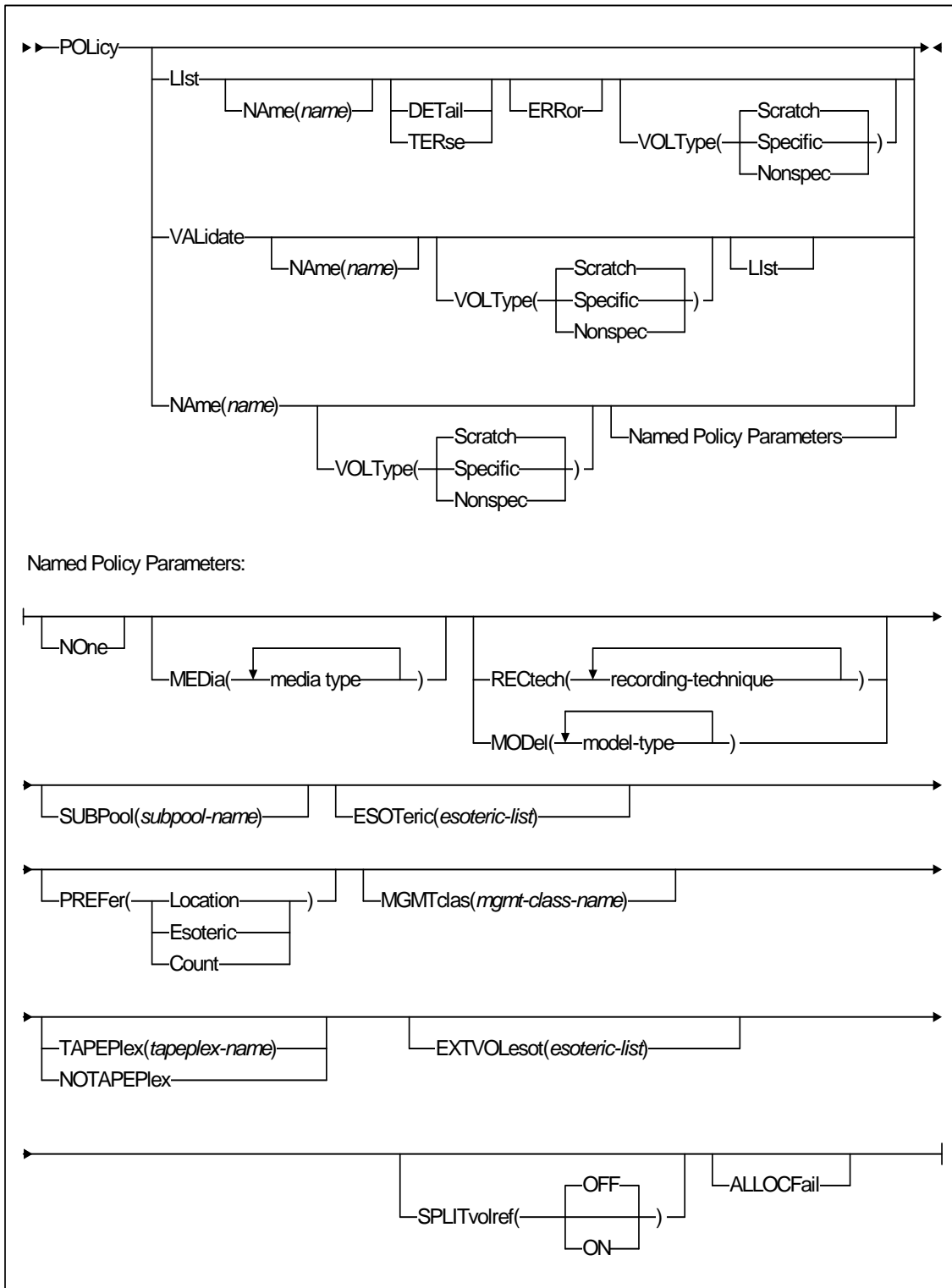
FIGURE 2-25 POLicy syntax

Parameters

LISt

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

If name is also specified, only policies that match the specified name or generic name are listed. If name is not specified, then all policies are listed.

Note – Matching policies are listed in alphabetic order, regardless of the order in which the they were defined to the SMC. When specified with other parameters, the LISt is performed after the other parameters have been processed.

NAme

optionally, specifies the name of a policy that matches the name specified in a TAPEREQ or DFSMS ACS routine management class. If the keyword NAme is omitted, the policy name is assumed to be the first parameter following the POLicy command (if that parameter is not a valid keyword).

name

the policy name.

DETail

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

Note – DETail and TERse are mutually exclusive.

TERse

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

Note – TERse and DETail are mutually exclusive.

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. This is the default.

SPecific

List only specific policies.

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.

Note –

- VALidate produces a return code for each tested POLICY and its specified VOLTYPE(s).
  - 0 indicates the POLICY is correct, or could not be validated due to lack of access to one or more TapePlexes and was assumed to be correct.
  - 4 is a warning, indicating a lack of scratch volumes matching the POLICY criteria.
  - 8 is an error, indicating a SUBPOOL or MGMTCLAS name unrecognized by a TapePlex.
- If POLicy VALidate is entered without the LIst keyword, then only policies with warnings or errors 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(*name*)

optionally, specifies the name of a 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* validates all policies that begin with "V". If the NAme parameter is omitted, a non-keyword parameter following the POLicy command is interpreted as the NAME.

name

the policy name.

VOLType

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

SCratch or Nonspec

List only scratch (nonspecific) policies. This is the default.

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.

NAme(*name*)

optionally, specifies the the name of a POLICY. *name* may be specified with or without the keyword NAME. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

The policy name must match the name specified in a TAPEREQ or DFSMS ACS routine management class name.

name

the policy name.

When a policy is not being added or updated, the policy name can be a generic name, for example POLICY V* lists information for all policies that begin with V.

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.

See individual parameters for restrictions on the VOLType that is permitted or not allowed.

Note – If you want to specify a POLICY that applies to both scratch and specific volumes, you must use two separate POLICY commands with the same POLicy NAME, one with VOLType(SCratch)(or not specified) and one with VOLType(SPecific).

Named Policy Parameters

When a new policy is added, the default VOLType is SCratch (or Nonspec). You can add the same policy name for both SCratch and SPecific VOLTypes.

The following parameters require a *name* or NAme(*name*) parameter:

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.

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 (SPecific).

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 mutually exclusive with VOLTYPE(SPecific).

MGMTclas

optionally, specifies a Management Class defined on the VTCS MGMTclas control statement. See "MGMTclas Control Statement" on page 421 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. This must be a TapePlex name specified on a 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.

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.

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.

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.

Note – SPLITvolref and VOLType(SPecific) are mutually exclusive.

ALLOCFail

> optionally, specifies that a job step matching the policy should be failed during SMC allocation. When this parameter is specified, any job step that matches the policy has all its devices marked ineligible by the SMC allocation process, which causes the job to fail.

Note – ALLOCFail is mutually exclusive with all other parameters except for NAme, LIst, VALidate, and VOLType.

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
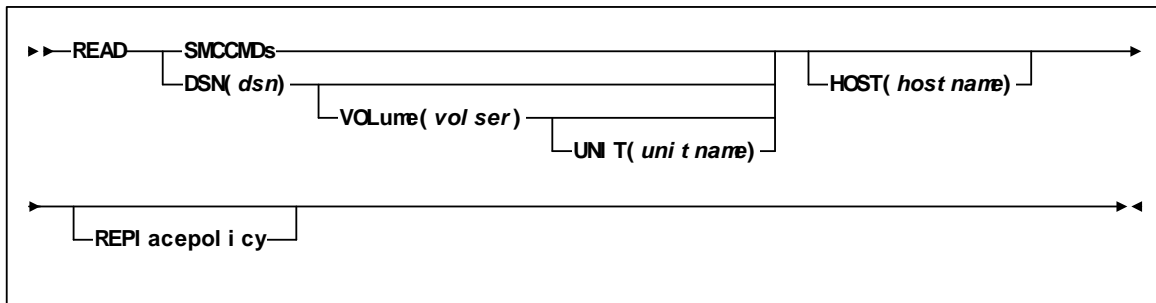
FIGURE 2-26 READ syntax

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 MSP host. If this parameter is not specified, the READ command is processed regardless of the MSP host.

hostname

the hostname.

Note –

- HOST is **not** valid when the READ command is entered from an MSP console.
- Specification of the HOST parameter allows you to share a single SMC parameter file set across multiple MSP hosts as shown in the following example:

your.parmlib(COMMCMDS)

```
MSGDEF CASE(MIXED)
...other common SMC parameter settings...
READ DSN('your.parmlib(MSP1CMDS)') HOST(MSP1)
READ DSN('your.parmlib(MSP2CMDS)') HOST(MSP2)
```

your.parmlib(MSP1CMDS)

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

your.parmlib(MSP2CMDS)

```
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 MSP hosts. The file MSP1CMDS contains SMC specifications applicable only to MSP host MSP1, while the file MSP2CMDS contains SMC specifications applicable only to MSP host MSP2.

REPlacepolicy

optionally, specifies that all SMC POLICY objects are to be replaced by any POLICY statements found in the specified data set (or in any data set subsequently read by the specified READ data set).

If REPlacepolicy is not specified, individual POLICY statements within a READ command update or add only the referenced POLICY statements and do not affect unreferenced POLICY statements.

Note –

■ After the READ REPlacepolicy command is executed, any TAPEREQ POLICY references are re-validated. If any TAPEREQ POLICY references are subsequently found to be in error, the invalid TAPEREQ statements are left active, but reference a "null" POLICY (i.e. the equivalent of specifying POLICY NAME(*name*) NONE).

■ It is recommended that any TAPEREQ statement(s) be reloaded by inclusion of the TREQDEF command whenever a READ REPlacepolicy command is executed, in order to re-validate all SMC tape policies at the same time.

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 MSP allocation or mount event. However, the operator **must** issue the RESYNChronize command in the following instances:

■ When the user wants to automate pending mounts for a newly activated TapePlex, and does not want to wait for an MSP 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
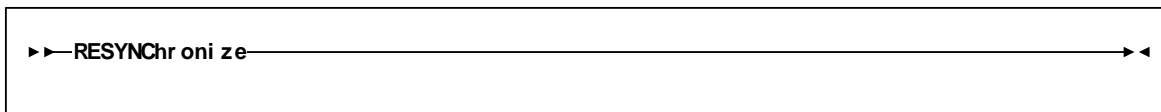
►►—**RESYNChr oni ze**————————————————————————►◄

FIGURE 2-27 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.
- Currently, the only command that will be accepted and processed by a VLE is the QUERY SERVER command.
- You can also use the Route command to issue various commands from a VM Client to an ACSLS XAPI server.

  Refer to the ELS publication *XAPI Client Interface to ACSLS Server Reference* for more information.
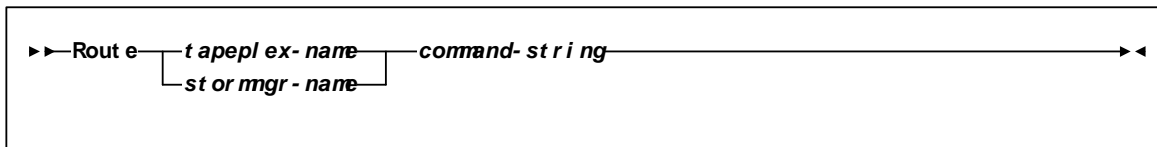
Syntax

FIGURE 2-28 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.

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.

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 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 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 102 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 "STORMNGR" on page 100 for more information.

Syntax

Named Server Parameters:

Note: TAPEPlex(*name*) or STORMNGR(*name*) is required when the SERVer NAME is first defined.
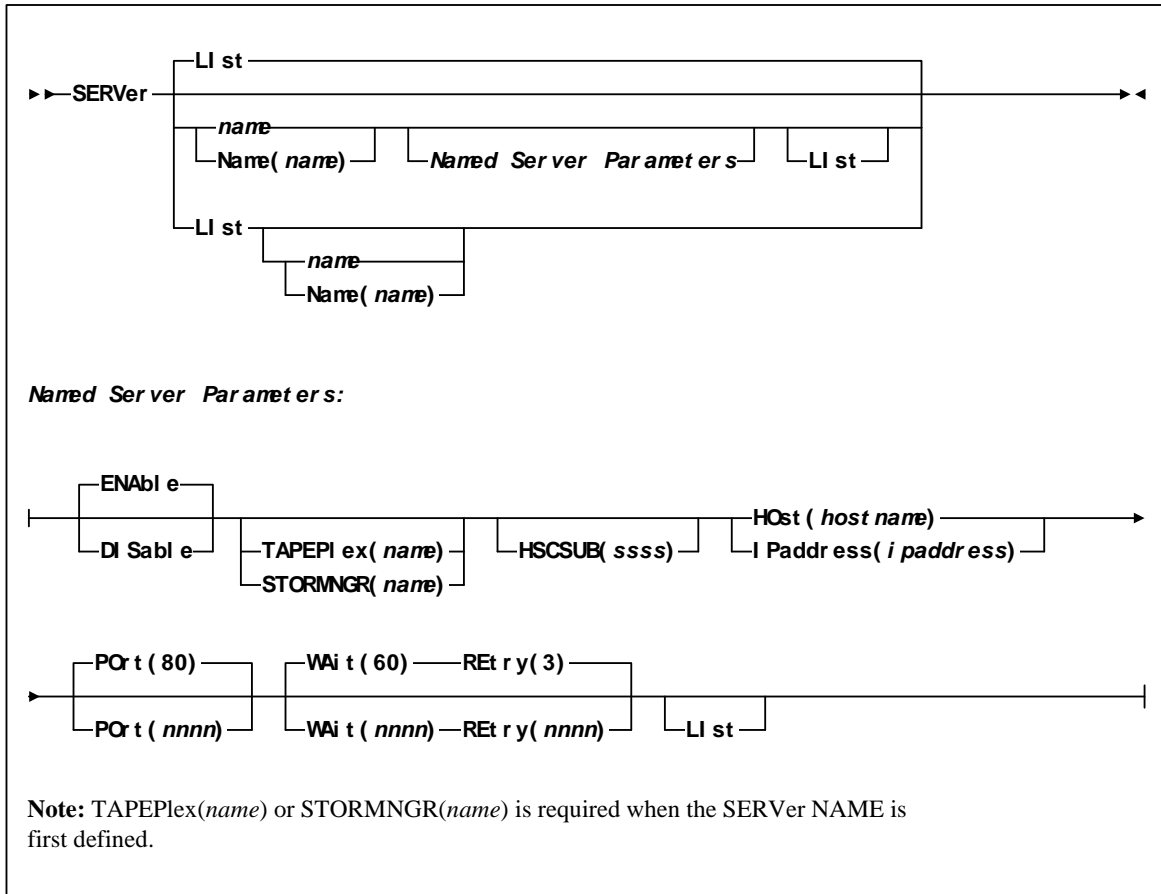
FIGURE 2-29 SERVer syntax

Parameters

name or NAme(*name*)

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

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

LIst

optionally, displays status information for TapePlex server paths.

If *name* is also specified, only the named TapePlex server path is listed. If *name* is not specified, then all TapePlex server paths are listed.

Note –

- 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.

Named SERVer Parameters

The following parameters require a *name* or NAme(*name*) parameter:

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 – HOst and IPaddress are mutually exclusive.

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IPaddress

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

ipaddress

the IP address.

Note – IPaddress and HOst are mutually exclusive.

POrt

optionally, specifies the server port.

nnnn

the server port. The default is 8080.

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.

REtry

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 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 SIMulate command simulates how SMC would process a single DD job step with a given set of jobstep characteristics. The SIMulate command simulates the allocation influence (SSI24) 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 for more information about the SMCUSIM utility.

Syntax
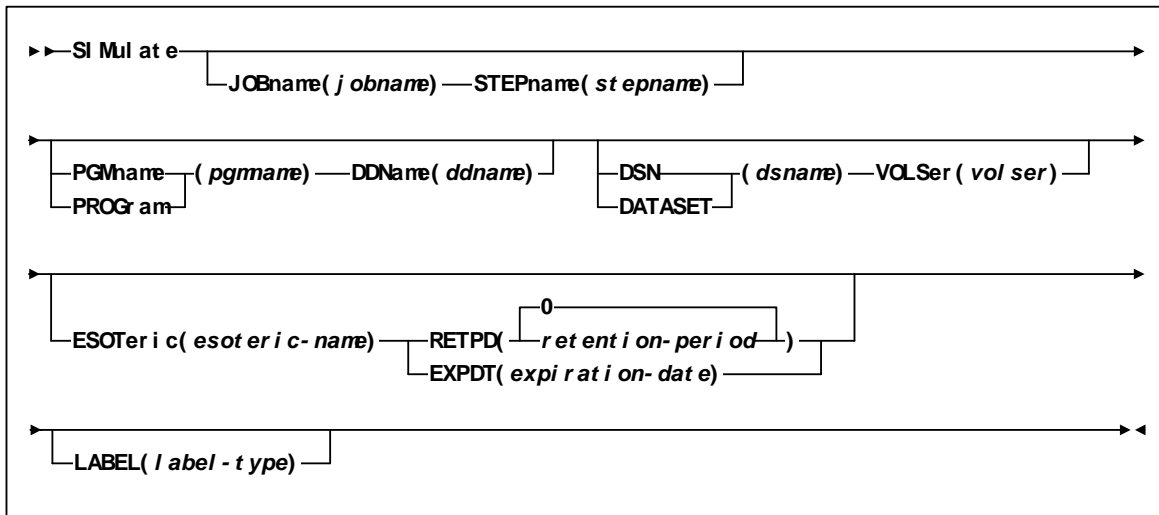
FIGURE 2-30 SIMulate syntax

Parameters

JOBname

optionally, specifies the job name of the simulated job step to test. The format must conform to MSP 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 MSP 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 MSP 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 MSP 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 MSP 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 number of the simulated data set to test. The format must conform to MSP 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 MSP 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 a defined MSP 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 a defined MSP esoteric.

RETPD

optionally, specifies the retention period of the simulated data set to test. The format must conform to MSP 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 MSP 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,ECART,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 2-31 SIMulate output - No Tape Policies Applied

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 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
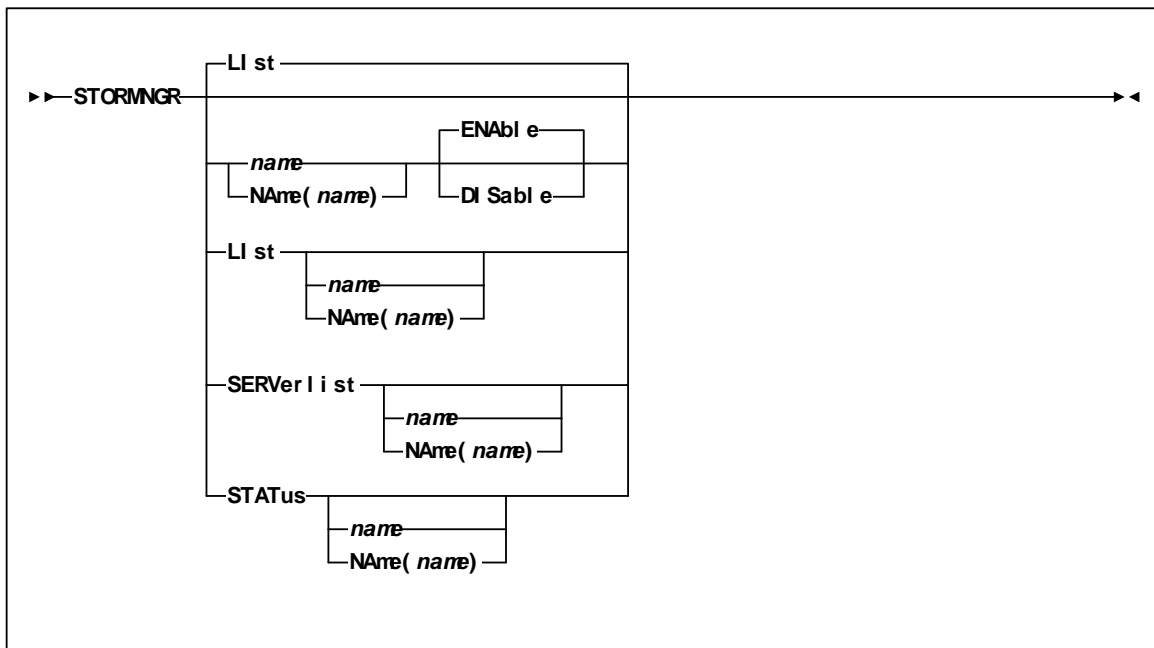
FIGURE 2-32 STORMNGR syntax

Parameters

name or NAme(name)

Specifies VLE to be defined, modified or listed. This name is also defined to VTCS, and is initially defined by the VLE GUI. If *name* is not specified, then all VLEs are listed.

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

LIst

optionally, lists VLE information.

If *name* is also specified, only the named VLE is listed. If *name* is not specified, then all VLEs are listed.

SERVerlist

optionally, lists defined VLEs, their attributes and associated servers.

If *name* is also specified, only the named VLE is listed. If *name* is not specified, then all VLEs are listed.

STATus

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

If *name* is also specified, only the named VLE is listed. If *name* is not specified, then all VLEs are listed.

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 –

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

■ At least one TAPEPlex must be defined to allow SMC to initialize.

Syntax
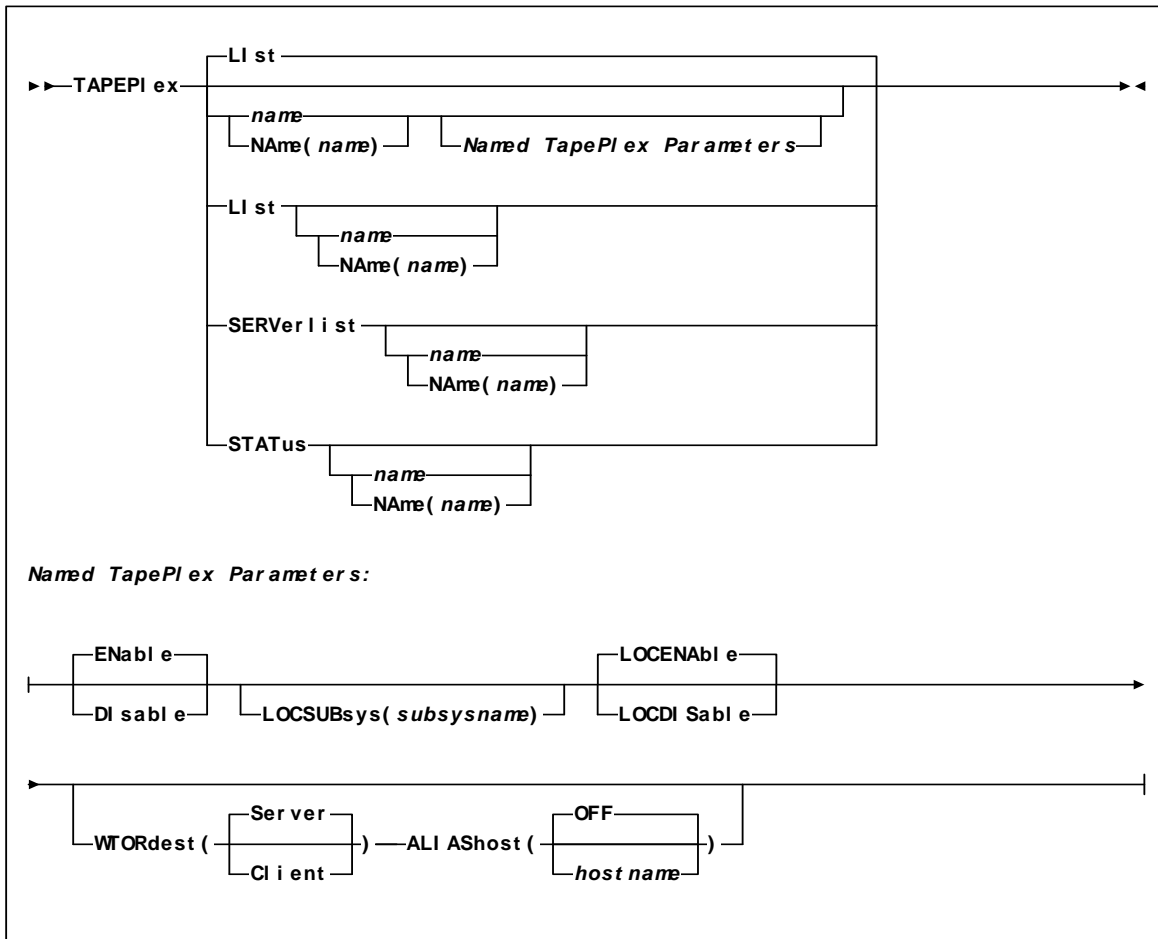
FIGURE 2-33 TAPEPlex syntax

Parameters

name or NAme(*name*)

specifies the TapePlex name to be added, modified, or listed.

name may be specified with or without the keyword NAme. If the keyword NAme is not specified, the name, if specified, must be the first parameter.

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.

LIst

optionally, lists TapePlex information.

If *name* is also specified, only the named TapePlex is listed. If *name* is not specified, then all TapePlexes are listed.

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.

SERVerlist

optionally, lists defined TapePlexes, their attributes and associated servers.

If *name* is also specified, then only the named TapePlex servers are listed. If *name* is not specified, then all servers are listed.

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.

If *name* is also specified, then only the named TapePlex status is listed. If *name* is not specified, then the status of all TapePlexes is listed.

Named TapePlex Parameters

The following parameters require a *name* or NAme(*name*) parameter:

ENAble

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

DISable

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

LOCSUBsys

optionally, specifies a local HSC subsystem.

subsysname

the subsystem name.

LOCENAble

optionally, enables the specified HSC subsystem to be used as a local path to the TapePlex.

LOCDISable

optionally, disables the specified HSC 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.

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 TCPNAME 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 MSP host.

Syntax

```
►►──TCPip──┬─────List─────────────────────┬────────────────────────►◄
           │                              │
           ├─OFF──────────────────────────┤
           │                              │
           │         ┌─OFF─┐              │
           ├─RERESolve(──┴─ON──┴─)────────┤
           │                              │
           ├─XSECUSERname(username)───────┤
           │                              │
           └─TCPIP Parameters─────────────┘
                              ┌─────┐
                              └─LIst─┘

TCPIP Parameters:

        ┌─none─┐              ┌─none─┐
├──TCPname(─┴─name─┴─) ─ADSname(─┴─name─┴─)──────────────────────────┤
```
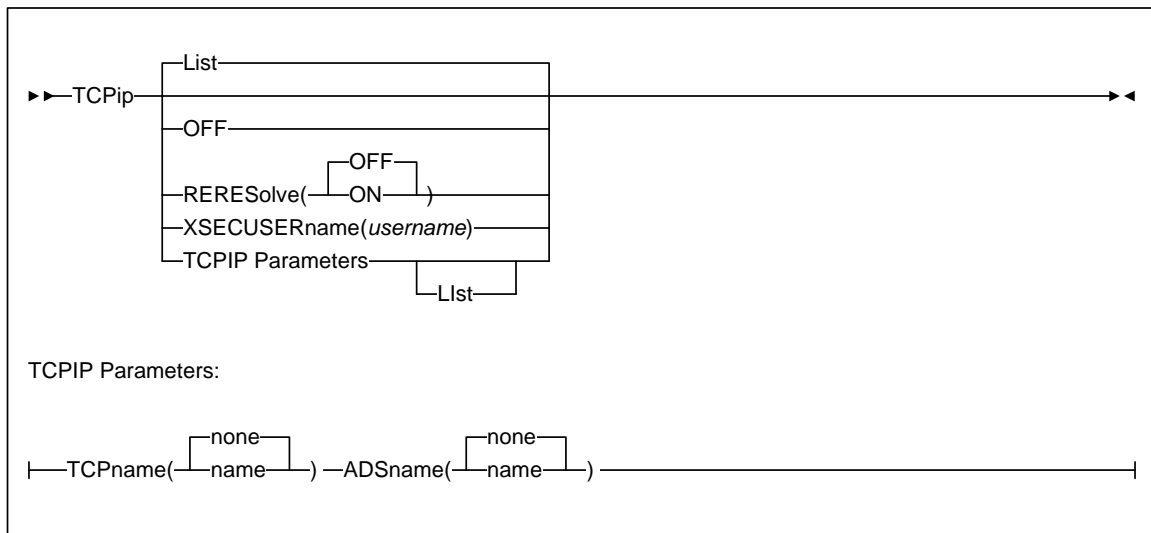
FIGURE 2-34 TCPip syntax

Parameters

LIst

optionally, lists current TCPNAME and ADSNAME settings.

- 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 MSP host. TCPNAME is the name of the MSP TCP/IP stack. Refer to the Fujitsu publication *TCP/IP for MSP 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 MSP host. ADSNAME is the jobname of the TCP/IP startup job. Refer to the Fujitsu publication *TCP/IP for MSP Application Programming Interface Reference* for more information about ADSNAME.

name

the ADSNAME value.

RERESolve

optionally, specifies whether SMC attempts to re-resolve the SERVER HOST name after a communication failure.

OFF

SMC does not attempt to re-resolve the server host name. This is the default.

ON

SMC attempts to re-resolve the server host name.

SMC first attempts a retry as specified by the SERVER RETRY parameter. If the error indicates that the IP address may be unavailable, and the RERESolve parameter is ON, SMC then attempts to resolve the HOST name again, and if a new IP address is generated, retries the transaction.

XSECUSERname

optionally, specifies XAPI username associated with all transactions originating from this client. The username will only be used when a login challenge is issued by the targeted server.

Note – The same USER must be defined on both the client and server using the XUDB command. See for more information.

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 StorageTek Software Support.

Syntax


```
                ┌─LIst─────────────────────────────────────────┐
  ►►──TRace──┬──┴──────────────────────────────────────────────┴──►◄
             ├─OFF──┬──────┬───────────────────────────────────┤
             │      └─LIst─┘                                    │
             ├─Jobname/Component Parameters──┬──────┬───────────┤
             │                               └─LIst─┘           │
             │        ┌─ON──┐                                   │
             └─COMPact─┴─────┴───────────────────────────────────┘
                      └─OFF─┘
```

Jobname/Component Parameters:

```
               ┌─ALLProc────────────────┐
  ├──┬─SUbsys──┴────────────────────────┴─────────────────────────┤
     │          ┌─,──────┐                                         │
     │        ┌─◄─┬─AScomm─┬─┐                                     │
     │        └───┼─CGi────┼─┘                                     │
     │            ├─CMd────┤                                       │
     │            ├─HTtp───┤                                       │
     │            └─INitterm┘                                      │
     │                                                             │
     └─JOBname──┬────────────────────────────────────────────────┤
                │                        ┌─ALLProc────────┐       │
                └─(jobname)─┬─────────┬──┴────────────────┴───────┘
                            ┤Optional ├      ┌─,──────┐
                            └─Parms───┘    ┌─◄─┬─ALLOc────┬─┐
                                           └───┼─MSghandler┼─┘
                                               ├─REmote────┤
                                               └─UTility───┘
```

Optional Parameters:

```
  ├──┬──────────────────────────────────────────────────────┬──┤
     └─STEPname(stepname)──┬──────────────────────────┬──────┘
                           └─PROCstep(procstep)──────┘
```
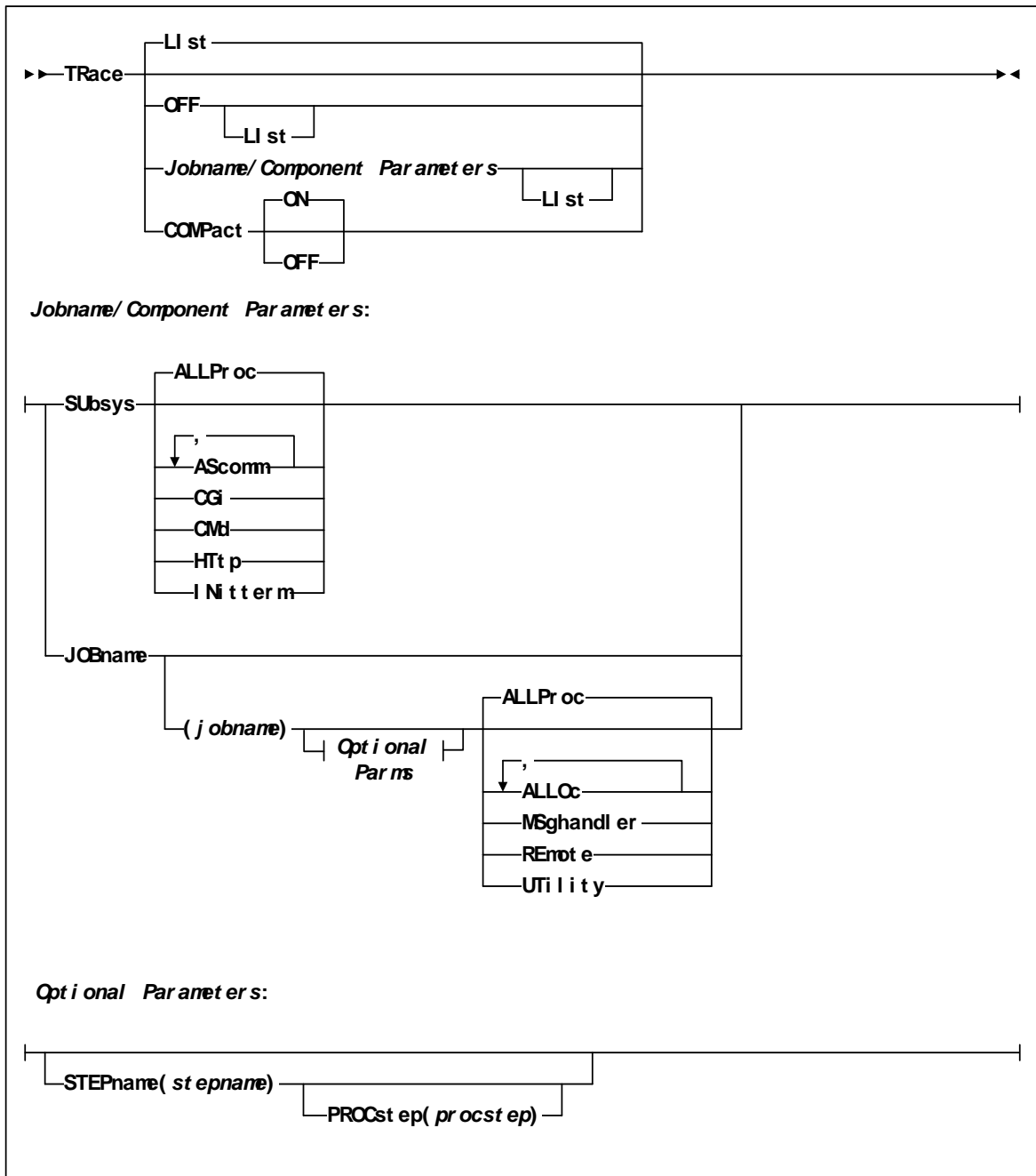
Parameters

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.

COMPact

Optionally, indicates whether SMC trace output should be produced in "compact" format.

Note – When GTF trace output is produced in this format, you can use the SMC utility program SMCUGTF to reformat the trace to the original SMC trace format. See "Trace Format Utility (SMCUGTF)" on page 684.

ON

SMC trace output is produced in a format that conserves GTF data set space. This is the default.

OFF

SMC trace output is produced in human readable format.

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 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.

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.

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.

TREQDef

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 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
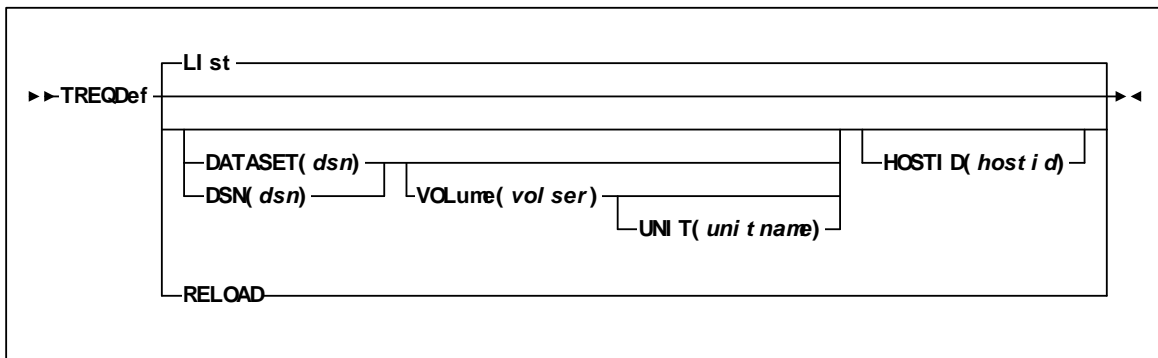
FIGURE 2-36 TREQDef syntax

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

LIst is the default when no parameters are specified on the TREQDef command.

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 502 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:

```
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.

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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 114 for information about the TREQDEF Command.

Syntax
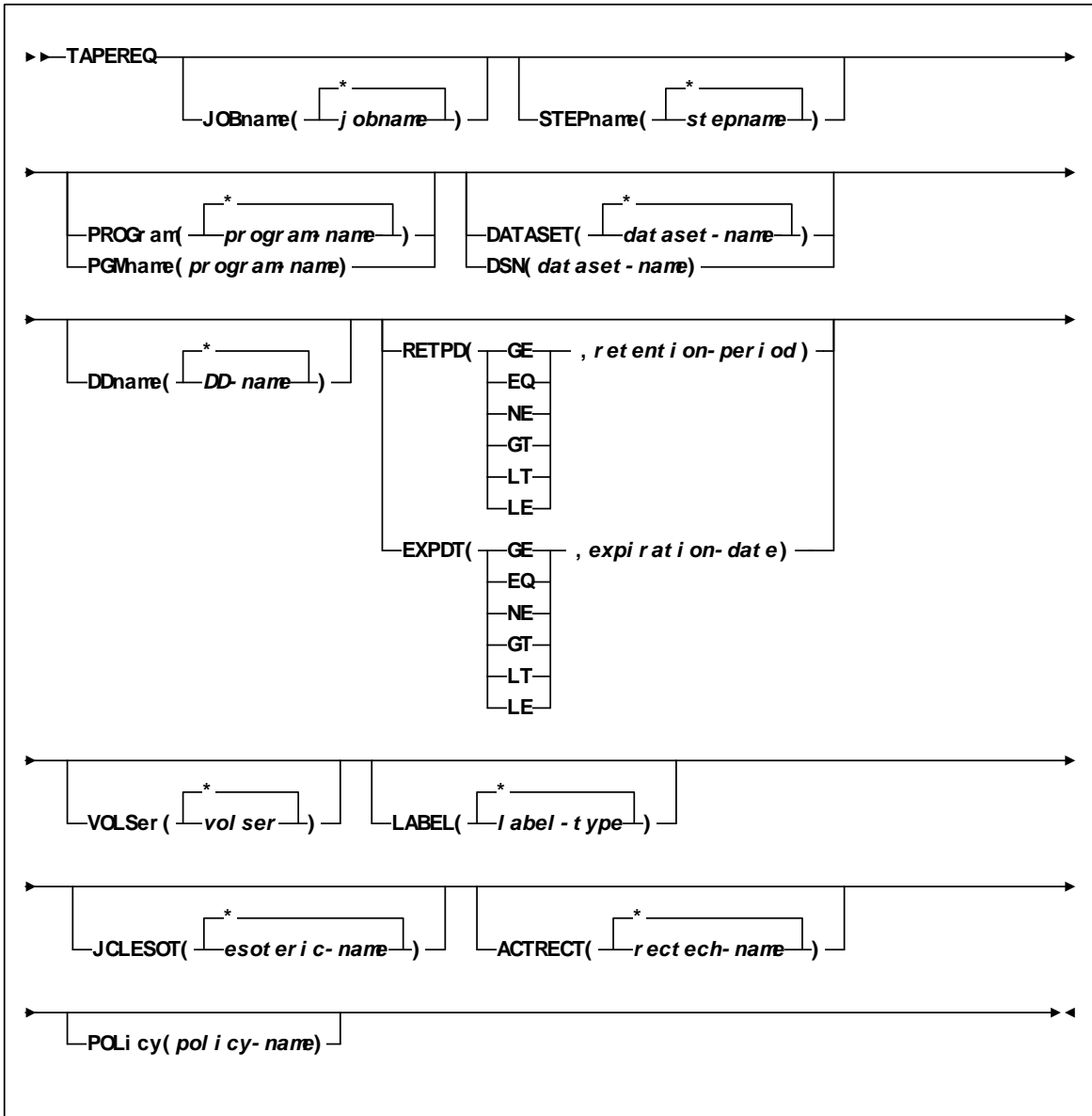
FIGURE 2-37 TAPEREQ control statement syntax

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, PROGram, and DATASET parameter values can include the following wild card characters:

% or ?	any single nonblank character
*	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.
**	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.

JOBname

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

Note – If you are coding a TAPEREQ statement for DFHSM, 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.

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.

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.

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.

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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.

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 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, or if there is no 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.

> Also, if criteria that are not available at mount time, such as JCLESOT, are used for policy selection, SMC mount processing may not have a policy available to assign mount parameters such as SUBPOOL and MGMTCLAS. Specifying ACTRECT allows a default override.

> > *rectech-name*

> > > the recording technique name.

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

POLicy

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

> *policy-name*

> > the policy name.

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

Note –

- The named policy must be defined using a POLicy command before the TREQDEF command is processed.
- See "POLicy" on page 76 for more information about the SMC POLicy command.
- Refer to the publication *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.

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. HSC 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) 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
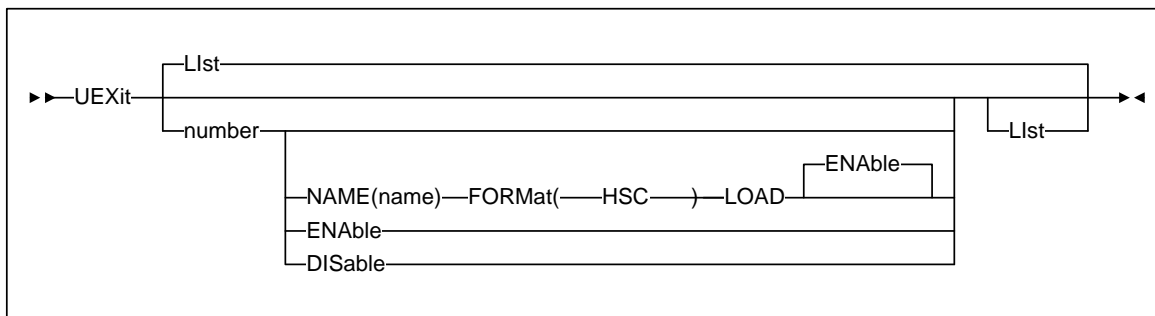
FIGURE 2-38 UEXit syntax

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.

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 MSP/EX operating system and the ELS library control systems (TapePlexes). For the ELS library control systems, HSC 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.
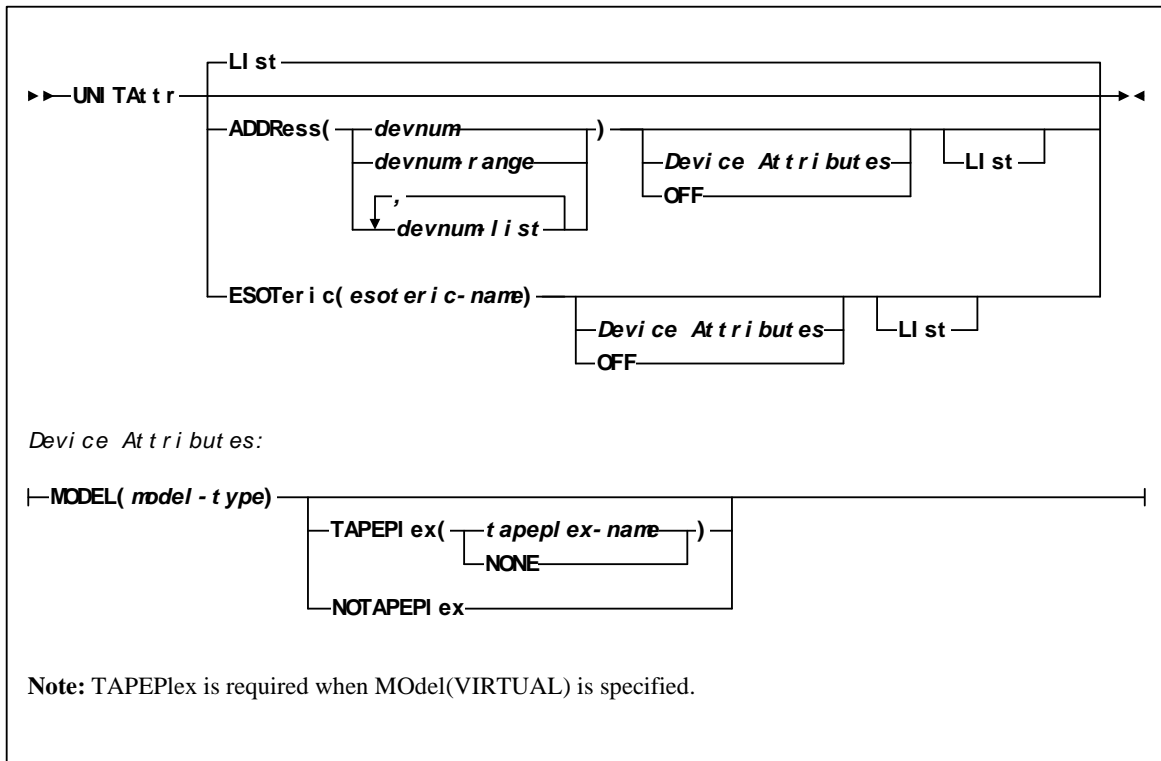
Syntax

FIGURE 2-39 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 MSP esoteric name. This name must be defined to MSP, 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.

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
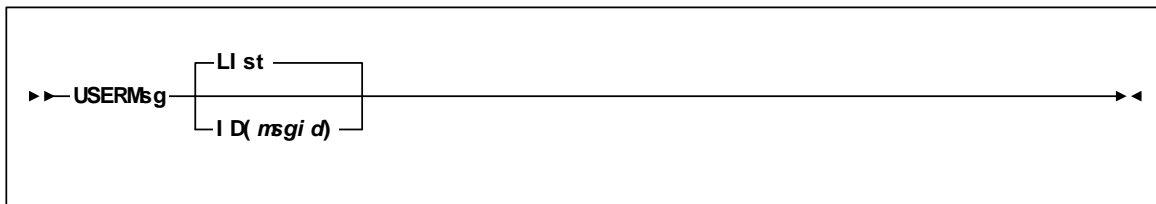
FIGURE 2-40 USERMsg syntax

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.

VMSG

Interfaces:

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

Subsystem Requirements:

Active SMC required

Description

The VMSG command is used to start and stop the Virtual Storage Manager console (VSMc) message processor.

For more information, see the LOGGER database mode description in the *VSM console Installation, Configuration, and Service Guide* to learn how to enable or disable VSM console processes running on the VTCS LDOM.

Syntax
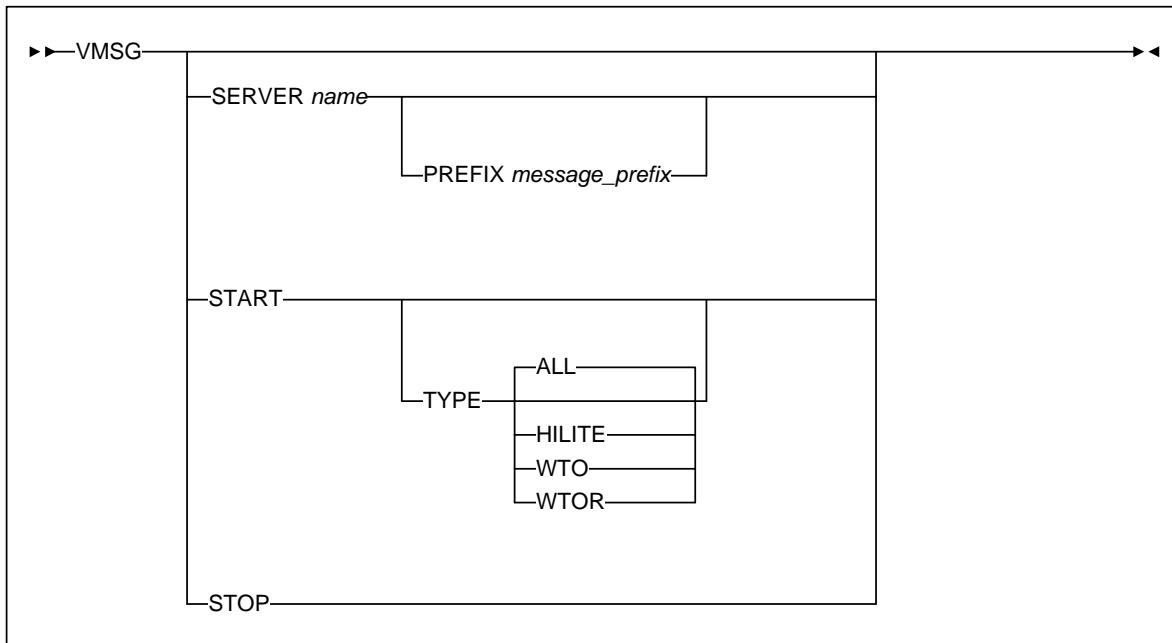
Parameters

SERVER

specifies the name of the server for this VSMc message processor.

name

the name of the server.

PREFIX

specifies the prefix for the messages received from this VSMc message processor. If this parameter is not specified, the server name is used as the prefix.

message_prefix

the message prefix. This can be a maximum of eight characters in length and can be any combination of the following:

A-Z
0-9
@#$,./'()*&+-=<|!;%_>?:

START

specifies to start the named VSMc message processor.

TYPE

specifies the type of messages to collect for the VSM console log file.

ALL

processes the HILITE, WTO, and WTOR message types. This is the default.

HILITE

processes highlighted WTO messages

WTO

processes write to operator (WTO) messages

WTOR

processes write to operator with reply (WTOR) messages

STOP

specifies to stop the named VSM console message processor

XCLIENT

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 SMC XCLIENT command is used to define XAPI clients that use a different
protocol version than the default server XAPI security protocol.

Note –

■ The XCLIENT command is only necessary to define clients that use the older
"unsecure" protocol. If an XAPI request originates from a client that is not defined
with a XCLIENT command, it will be challenged to produce XAPI login credentials.

■ If you have back-level ELS or non ELS clients communicating with your ELS 7.3
SMC HTTP server, then they must be defined as protocol version 0 clients with the
XCLIENT command.

■ The entire XCLIENT command is not echoed in the SMC0000 message.

`XCLIENT (suppressed)` is echoed for all XCLIENT commands.

■ The entire XCLIENT command is not logged when the SMC LOG command is
active.

`XCLIENT (suppressed)` is logged for all XCLIENT commands.

■ XCLIENT commands must be specified before any HTTP or SERVer commands.

Syntax
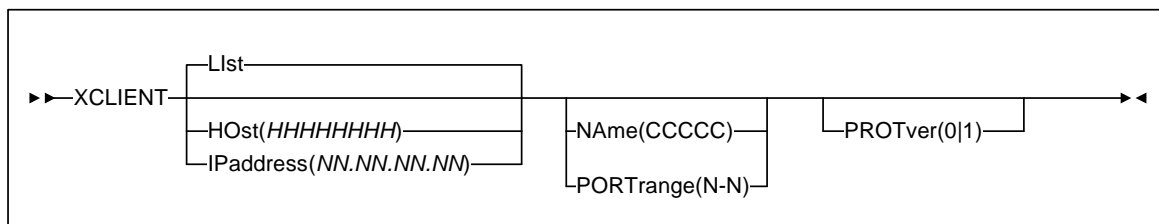
FIGURE 2-41 XCLIENT syntax

Parameters

LIst

optionally, displays all XCLIENT settings. LIst is the default when no parameters are specified on the XCLIENT command.

HOst

optionally, specifies the IP resolver host name on which the client resides.

HHHHHHHH

the name of the client. The HOst name must be a resolvable name in the TCP_IP name table. The following rules apply:

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

IPaddress

optionally, specifies the IP address for the client.

NN.NN.NN.NN

The TCP/IP address.

Note – IPaddress and HOst are mutually exclusive.

NAme

optionally, specifies the name of the client. If the client is SMC/MSP, the NAme specified should be the name returned as *client_subsystem_name*. Otherwise, the NAme specified should be the name returned in the *client_name*. If NAme is specified as "*", then any request from the specified HOst or IPaddress will be defined as using the specified protocol version.

CCCCC

the name of the client.

PORTrange

optionally, specifies the range of client ports from which the XAPI request originates on the specified HOst or IP address that are allowed to use the specified protocol version.

N-N

the port range. Valid ports are 1 to 65535. The range may contain 10 to 1000 ports.

Note –

- Use PORTrange if the SMC/MVS TCPIP PORTRANGE command has been specified to restrict SMC/MVS client ports to the specified range.
- NAme and PORTrange are mutually exclusive.

PROTver

optionally, specifies the protocol version. The default is 0.

0

indicates the older "unsecure" protocol version.

1

indicates the XAPI security protocol version.

XUDB

Interfaces:

Console, utility, or SMCCMDS/SMCPARMS dataset
UUI: Yes, supports XML and CSV

Subsystem Requirements:

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

Description

The SMC XUDB command is used to add, update, delete, and list XAPI Security users.

The XAPI security user list is maintained by both the client and server. In cases where the client and server reside on the same host (that is, SMC/MSP), the XUDB user list is shared.

Note –

- The same USER must be defined on both the client and server.
- A USER is unique by SERVER. If the same SMC HTTP server is servicing multiple TAPEPLEXes, any defined users will have access to all TAPEPLEXes.
- The entire XUDB command is not echoed in the SMC0000 message.

  `XUDB (suppressed)` is echoed for all XUDB commands.
- The entire XUDB command is not logged when the SMC LOG command is active.

  `XUDB (suppressed)` is logged for all XUDB commands.
- The XUDB commands must be specified before any HTTP, SERVer or TCPip commands.

Syntax
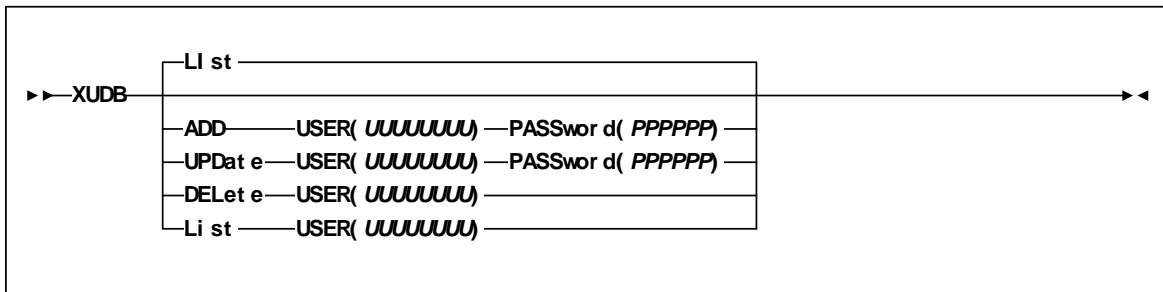
FIGURE 2-42 XUDB syntax

Parameters

LISt

displays the specified user on the XAPI security list. LISt is the default when no parameters are specified on the XUDB command. In this case, all users are listed.

USER (*UUUUUUUU*)

specifies the user name to be listed.

ADD

specifies that the specified user name or password is to be added to the XAPI Security list.

USER (*UUUUUUUU*)

specifies the user name to be added.

PASSword (*PPPPPP*)

specifies the user password.

UPDate

specifies that the specified user name or password is to be updated in the XAPI Security list.

USER (*UUUUUUUU*)

specifies the user name to be updated.

PASSword (*PPPPPP*)

specifies the user password.

DELete

specifies that the specified user/password is to be deleted from the XAPI Security list.

USER (*UUUUUUUU*)

specifies the user name to be deleted.

XUDB Security Dataset

Oracle recommends that you maintain the XAPI Security user list in a sequential dataset, to include XUDB ADD entries for the XAPI Security user list.

In your SMC startup parameters, include an SMC READ command for your XAPI security dataset.

The XUDB ADD/UPDATE/DELETE command can be used to modify the XAPI Security user list on the operational SMC/MSP. Any changes must also be reflected in the XAPI SECURITY data set.

The XAPI Security data set will be secured by SAF(RACF) permissions.

XUDB

HSC and VTCS Commands and Control Statements

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 562). 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 142 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
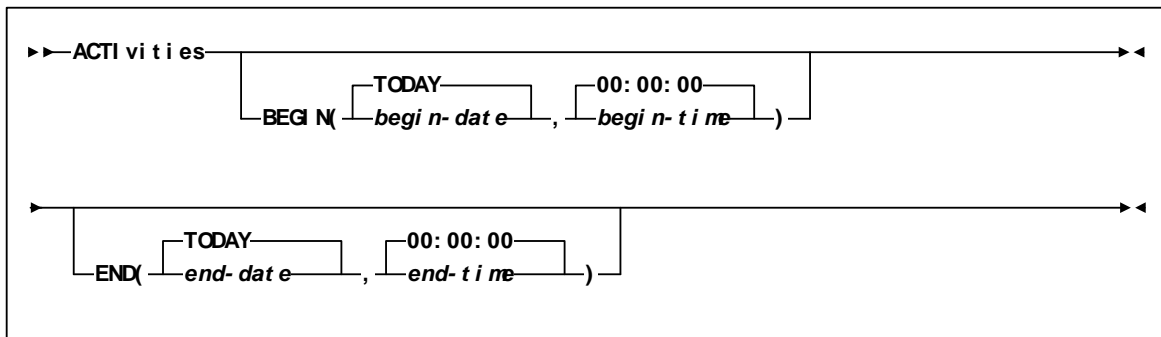
FIGURE 3-1 ACTIvities syntax

Parameters

BEGIN

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

begin-date

the starting date of the analysis, expressed in *mm/dd/yy* or *yyyymmdd* format.

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

TODAY

the default date.

begin-time

the beginning time-of-day (24-hour value), expressed in *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(10/27/08,00:00:00)
BEGIN(20081027,00:00:00)
BEGIN(TODAY,00:00:00)
BEGIN(,00:00:00)
```

END

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

end-date

the ending date of the analysis, expressed in *mm/dd/yy* or *yyyymmdd* format. If *begin-date* is specified, *end-date* must be in the same format.

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

TODAY

is the default date.

end-time

> the ending time-of-day (24-hour value), expressed in *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 , the following definition statements apply to the ACTIvities JCL:

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.

> The SMF record type defined to HSC is the only SMF record used by ACTIVITIES. To reduce the ACTIVITIES run time, use the IFASMFDP utility to create a new SMF data set containing only the SMF record type defined to HSC. The following example can be used to create the HSC only SMF data set:

```
//jobcard
//SMFCOPY    EXEC PGM=IFASMFDP
//MAN        DD DISP=SHR,DSN=input.smf.data
//DUMPOUT    DD DISP=(NEW,CATLG,DELETE),UNIT=your_esoteric,
//              SPACE=(CYL,(500,500),RLSE),DSN=hsc.only.data
//SYSPRINT   DD SYSOUT=*
//SYSIN      DD *
INDD(MAN,OPTIONS(DUMP))
OUTDD(DUMPOUT,TYPE(your_HSC_SMF_record_number))
.
Note - A DISPLAY CDS command can be issued to find
your_HSC_SMF_record_number.
```

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.

```
//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
```

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.
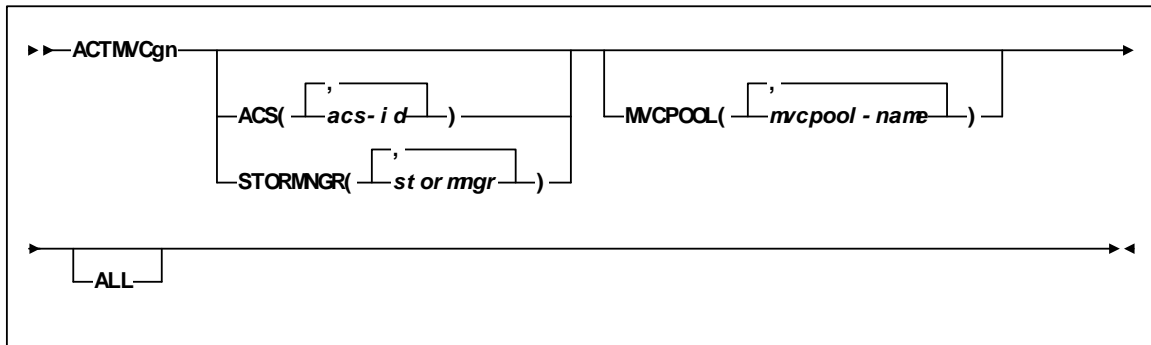
Syntax

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 , 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
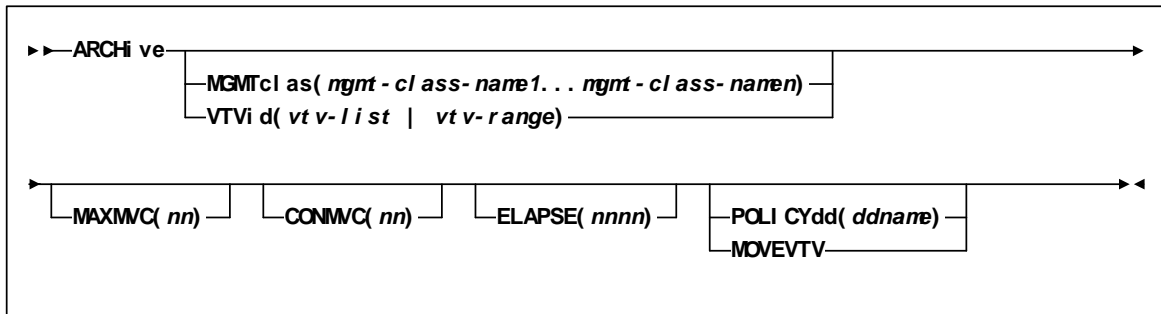
FIGURE 3-3 ARCHive syntax

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.

VTVid

optionally, specifies a list or range of VTVs. This parameter is mutually exclusive with MGMTclas.

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. This parameter is mutually exclusive with MOVEVTV.

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 (no VTVs are moved). This parameter is mutually exclusive with POLICYdd.

ARCHive Reports

ARCHive Report (MOVEVTV not specified)

FIGURE 3-4 shows an example of an ARCHive report (MOVEVTV not specified).

```
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00002
TIME 15:50:09                                    ARCHIVE VTV REPORT                                 DATE 2012-06-17

VTV     SIZE    %COMP    <------------CREATION------------>   MGMT
VOLSER  (MB)             DATE            TIME                 CLASS    MVC1    MVC2    MVC3    MVC4


Y00001  1.62    39       2008JAN15       04:11:18             MJ4      02250   02251   02252   02253
Y00002  1.62    39       2008JAN15       04:03:57             MJ4      02250   02251   02252   02253
Y00003  1.62    39       2008JAN15       03:50:59             MJ3      02254   02255
Y00004  1.62    39       2008JAN15       03:45:04             MJ2      02256   02257   02268
Y00005  0.01    0        2008JAN17       23:56:00             MJ1      02259
Y00006  0.01    0        2008JAN17       23:41:37             MJ1      02259
Y00007  1.62    39       2008JAN05       06:15:46             MJ4      02250   02251   02252   02253

TOTAL VTVS=23           TOTAL SIZE=29.32MB


TIME 15:50:09                                    ARCHIVE MVC REPORT                                 DATE 2012-06-17

MVC     MEDIA   MEDIA    STORAGE           LOCATION          CANDIDATE          TOTAL VTV
VOLSER  TYPE    SIZE(MB) CLASS             (ACS ID)          VTVS               SIZE(MB)

022550  9840    20000    SC1               00                3                  4.86
Y00001  Y00002  Y00007

022551  9840C   40000    SC3                                 3                  4.86
Y00001  Y00002  Y00007

022559  9940A   60000    SC4                                 17                 18.50
Y00005  Y00006  Y00015   Y00027            Y00042            Y00048   Y00053
Y00059  Y00061  Y00067   Y00073            Y00078   Y00084   Y00088   Y00101   Y00123
```

FIGURE 3-4 ARCHive report example (MOVEVTV not specified)

Fields (VTV Report)

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.

Fields (MVC Report)

The following list describes the ARCHive MVC report fields. The data for each MVC is followed by one or more VTV volsers 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.

ARCHive MOVEVTV Report

FIGURE 3-5 shows an example of an ARCHive MOVEVTV report.

```
SLUADMIN (7.2.0)    StorageTek Enterprise Library Software Utility    PAGE 0001
TIME 10:07:10                   ARCHIVE 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 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 ARCHive MOVEVTV report example

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
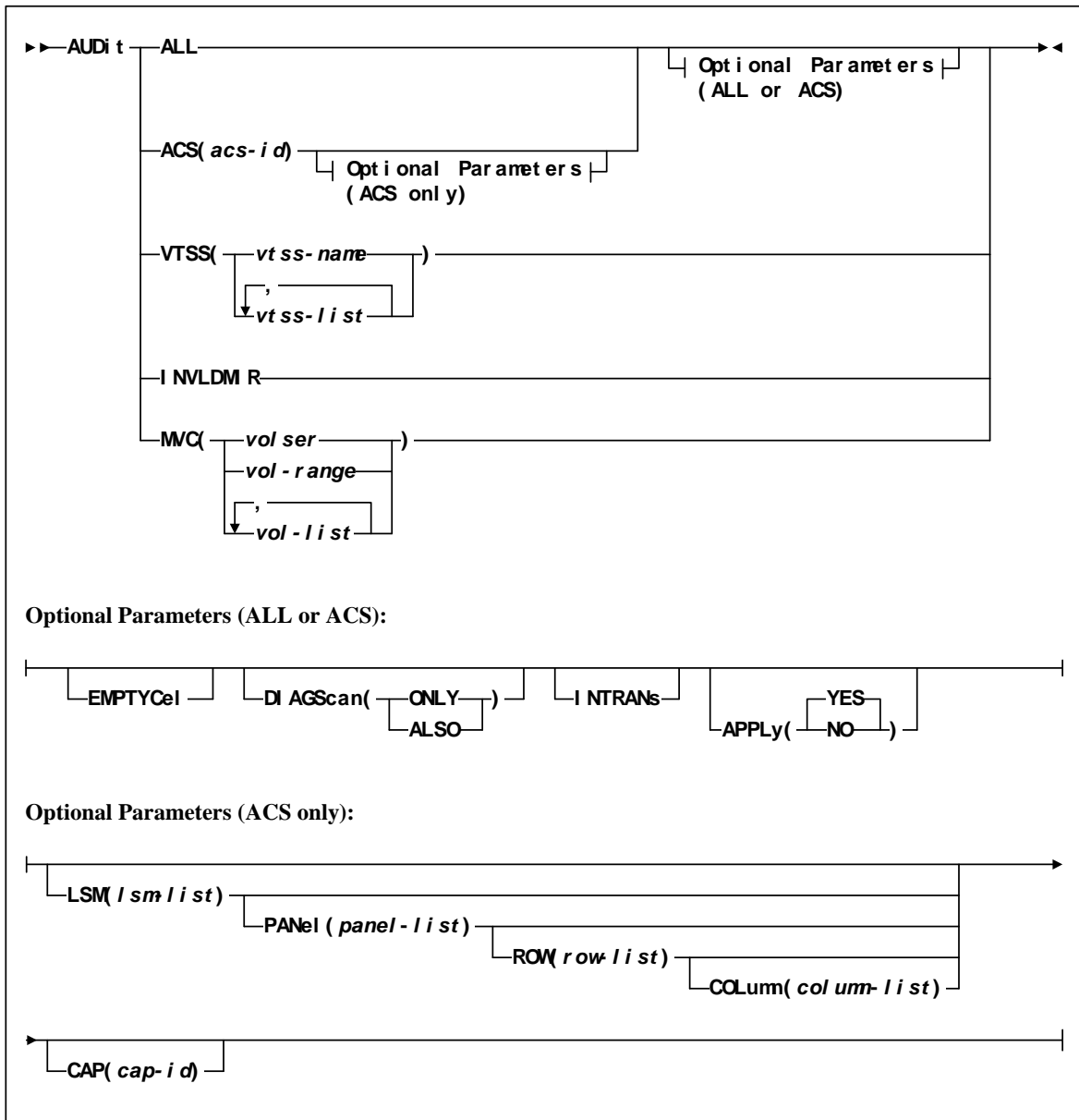
FIGURE 3-6   AUDit syntax

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 one or two digit hexadecimal ACS identifier.

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.

Optional Parameters (ALL or ACS)

The following parameters may be specified with either ALL or ACS:

EMPTYCel

optionally, specifies that only empty cells are to be audited. **This parameter cannot be used in combination with AUDIt parameter 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 is not substantially reduced.

Typically, users may 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.

ONLY

specifies that only diagnostic cells should be scanned. **This parameter cannot be specified in combination with the EMPTYCel parameter.**

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).
- 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.

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.

Optional Parameters (ACS Only)

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 735 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

A *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 737 for a list of valid values.

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COLumn

optionally, specifies that only certain columns (cells) within an LSM panel row are to be audited.

column-list

A *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 738 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.

cap-id

A *cap-id* identifies one or more CAPs. The format is *AA:LL:CC*, where *AA:LL* is the LSMid, and *CC* is the CAP. See "CAP Numbers" on page 734 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 165 for more information.
- Multi-ACS audits cannot specify the CAP parameter. A CAP is chosen for each ACS based upon CAP preference values.

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.

```
SLUADMIN (7.2.0)    StorageTek Enterprise Library Software Utility    PAGE 00001
TIME 03:15:42                      VTCS AUDIT                      DATE 2012-03-31


AUDIT REPORT FOR MVC EVT500
X28955 VTV ADDED AS PRIMARY COPY (BLOCK:00000000)
X20000 VTV ADDED AS PRIMARY COPY (BLOCK:0940044D)
======== AUDIT OF MVC EVT500 COMPLETED SUCCESSFULLY ========

AUDIT REPORT FOR MVC EVT501
X28956 VTV ADDED AS PRIMARY COPY (BLOCK:00000000)
X20007 VTV ADDED AS PRIMARY COPY (BLOCK:0940044D)
X20010 VTV ADDED AS SECONDARY COPY (BLOCK:11400899)
X20069 VTV NOT CURRENT (BLOCK:1A400CE5)
X20067 VTV NOT CURRENT (BLOCK:334016AB)
======== AUDIT OF MVC EVT501 COMPLETED SUCCESSFULLY ========

AUDIT REPORT FOR VTSS HBVTSS17
X20000 VTV VALID
X20002 VTV VALID
X20005 VTV VALID
X20006 VTV VALID
X20007 VTV VALID
X30052 VTV VALID
X30053 VTV VALID
X30054 VTV VALID
 ======== AUDIT OF VTSS HBVTSS17 COMPLETED SUCCESSFULLY ========

AUDIT REPORT FOR VTSS HBVTSS16
X20183 VTV VALID
X20185 VTV VALID
X20188 VTV VALID
X20190 VTV VALID
X20191 VTV VALID
X20194 VTV VALID
X41091 VTV VALID
X41093 VTV VALID
======== AUDIT OF VTSS HBVTSS16 COMPLETED WITH 1 WARNING ========
AUDIT EXCEPTION REPORT
 VTSS HBVTSS16: 1 WARNINGS REPORTED
 SLS1315I SWS500.V5.CDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET
```

FIGURE 3-7   AUDIT report example

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:

vvvvvv `VTV possibly corrupt (Block:`*bbbbbb*`)`

Explanation: During the audit, an I/O error occurred for VTV *vvvvvv* at block *bbbbbb* 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 t he VTV.

vvvvvv `VTV not found on CDS (Block:`*bbbbbb*`)`

Explanation: The audit expected but did not find VTV *vvvvvv at block bbbbbb on the MVC being audited.*

vvvvvv `VTV not current (Block:`*bbbbbb*`)`

Explanation: The audit found a non-current copy of VTV *vvvvvv at block bbbbbb on the MVC being audited.*

vvvvvv `VTV copy valid (Block:`*bbbbbb*`)`

Explanation: The audit found a valid copy VTV *vvvvvv* at block *bbbbbb* of the MVC being audited; its location matches the CDS entry for the VTV.

vvvvvv `VTV Added as primary copy (Block:`*bbbbbb*`)`

Explanation: The audit found the most current copy of VTV *vvvvvv* at block *bbbbbb* 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:`*bbbbbb*`)`

Explanation: The audit found the second most current copy of VTV *vvvvvv* at block *bbbbbb* 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:`*bbbbbb*`)`

Explanation: The audit found a duplicate copy of VTV *vvvvvv* at block *bbbbbb* and ignored this copy.

vvvvv `Link to old version on MVC` *mmmmmm* `removed`

Explanation: The audit found a newer version of the VTV and removed the link to the old version from the CDS.

vvvvv `Old VTV version deleted from VTSS` *ssssssss*

Explanation: The audit found an old version of the VTV and deleted it from the VTSS.

vvvvv `Old version of VTV retained [ VTSS` *ssssssss* `]`

Explanation: The audit found an old version of the VTV, which is the only copy, and retained this version.   If VTSS *ssssssss* appears, the audit found the VTV on a different VTSS than the one that was audited.

vvvvv `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.

vvvvv `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.

vvvvv `VTV discovered [ VTSS` *ssssssss* `]`

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 on VTSS *sssssss* appears, the audit found the VTV on a different VTSS than the one that was audited.

vvvvv `VTV valid [ VTSS` *ssssssss* `]`

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.

*** vvvvv `no access to VTSS` *ssssssss* *****

Explanation: The audit found a valid version of the VTV which is on a VTSS that the host cannot access.

`MVC` *mmmmmm* `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` **mmmmmm** `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` **mmmmmm** `IS AN OUTPUT MVC FROM AN EXPORT OPERATION - FORCING READONLY`

Explanation: The audit forced read-only status on export MVC *mmmmmm*.

`Audit terminated. Unable to determine the position of the end of VTV` **vvvvvv** `on MVC` **mmmmmm**

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

Note – Backup to tape is **not** supported.

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 copies of the CDS are in different locations.

Syntax

```
►►─BACKup────────────────────────────────────────────────────────────────◄
```
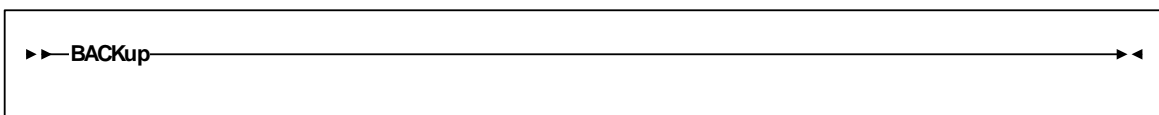
FIGURE 3-8   BACKup syntax

Parameters

None required. Refer to the *ELS Legacy Interfaces Reference* for information about using BACKup when copies of the CDS are in different locations.

Additional JCL Requirements

In addition to the required JCL definition statements described in , 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──┘
```
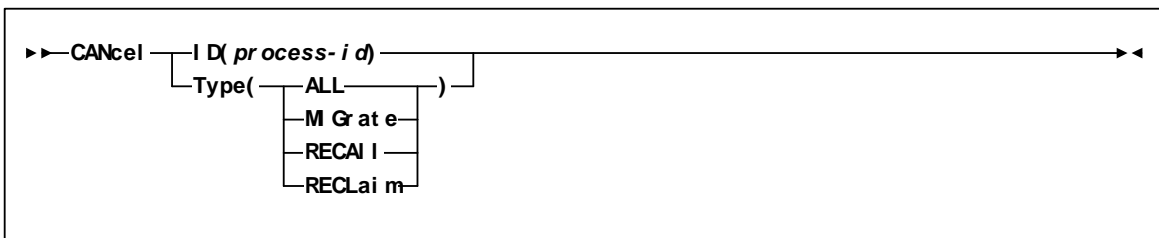
FIGURE 3-9   CANcel syntax

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
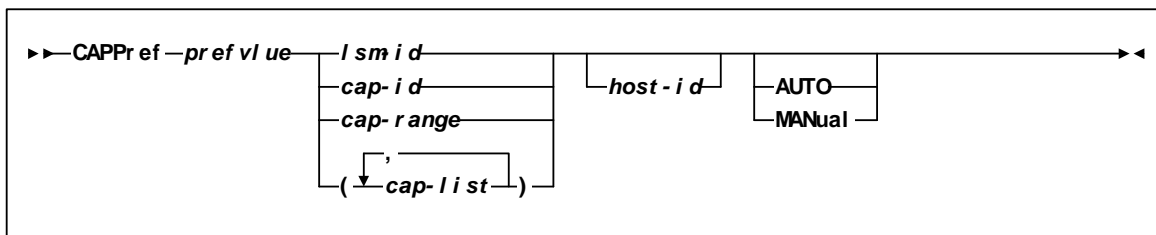
FIGURE 3-10 CAPPref syntax

Parameters

prefvlue

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 prefvlue of 0.

---

lsm-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 734 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 JES).

- 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
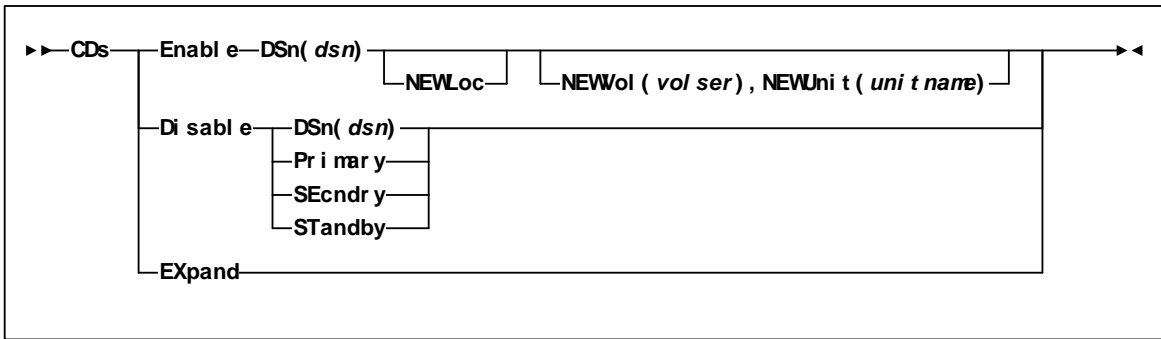
FIGURE 3-11 CDs syntax

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. MSP 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. MSP uses the catalog facility to determine the volume location of the relocated CDS.

NEWVol

optionally, specifies the volume for a relocated CDS copy. In MSP, 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.

CDSCREat

Interfaces:

SLUADMIN utility only
UUI: Yes

Subsystem Requirements:

None

Description

The CDSCREAT utility uses a small set of parameters to define the CDS for a tapeless configuration. A tapeless configuration may include VLE hardware but may not include any defined ACSs or real tape drives.

Syntax

```
►►─CDSCREat─HOSTid(hostid-list)──────────────────────────────────────────►
                              └─COMPRFX(hh)─┘        ┌─255─┐
                                              └─SMF─┴─nnn─┘


►──────────────────────────────────────────────────────────────────────►
      ┌─SL──┐                                          ┌─NONE───┐
  └─SCRLABL(┼─AL──┼─)─┘ └─DRVHOST(hostname)─┘ └─TCHNIQUE(┼─SHADOW─┼─)─┘
           ├─NL──┤                                      └─STANDBY─┘
           └─NSL─┘


►────────────────────────────────────────────────────────────────────◄
          ┌─STKALSQN─┐
  └─MAJNAME(┴─name────┴─)─┘ └─TAPEPLEX(tapeplex-name)─┘ └─OVRLAYOK─────┘
```
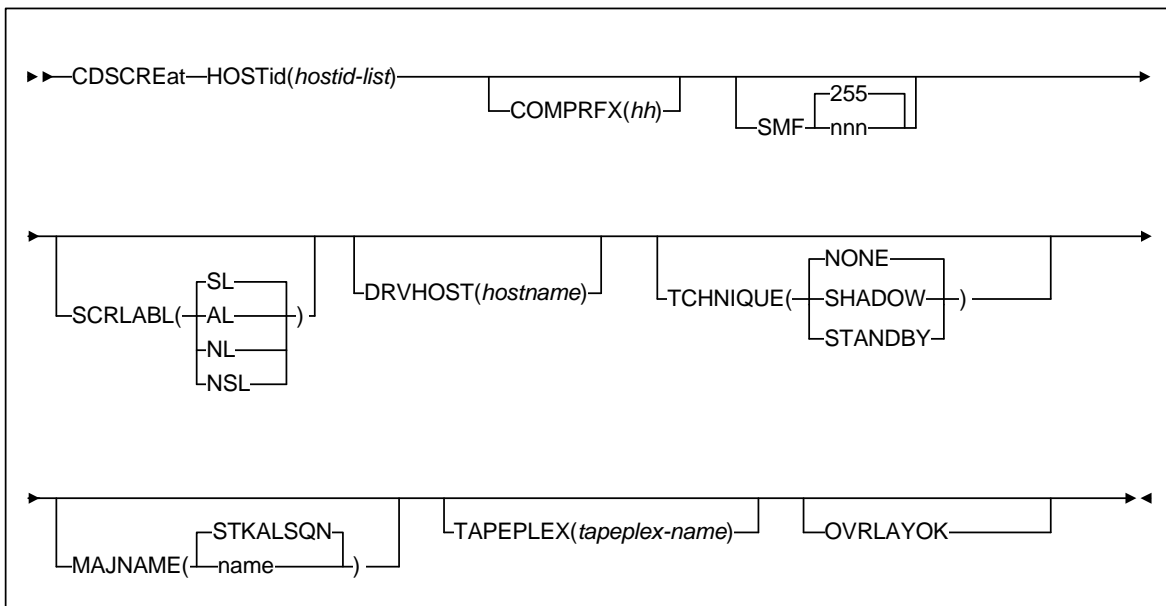
FIGURE 3-12 CDSCREat syntax

Parameters

HOSTid

specifies the list of SMF host IDs on which this system can be executed. This parameter is required.

hostid-list

one or more host ids. You can specify a maximum of 16 host IDs.

COMPRFX

optionally, specifies the two-character hexadecimal representation of the command prefix to be used to enter commands to the subsystem. If this parameter is omitted or is set to a null value (40), then you must use the MSP MODIFY command to direct requests to the subsystem, for example, F HSC0,D CDS. See the table under the SET COMPRFX utility for valid values.

hh

the two-character hexadecimal value.

SMF

optionally, specifies the SMF ID of statistics data that will be written to the SMF data set.

nnn

the SMF ID. The value must be between 128 and 255.

If this parameter is omitted, the value is set to 255.

SCRLABL

optionally, specifies the label type used as the scratch default.

SL

standard-labeled tape. This is the default if the parameter is omitted.

AL

ANSI-labeled tape

NL

nonlabeled tape

NSL

nonstandard labeled tape

DRVHOST

optionally, specifies the host ID that will be used as the "master" value for drive addresses. If drive addresses are different for different hosts, a DRVHOST should be set to allow SMC to map client drive addresses to fixed server drive addresses.

host-name

the "master" host id.

TCHNIQE

optionally, specifies the recovery technique (number of CDS copies) that will be created and used by the system.

NONE

Specifies one CDS copy. This is the default if the parameter is omitted.

SHADOW

specifies two CDS copies.

STANDBY

specifies three CDS copies.

If this parameter is omitted, the default value is NONE. The CDSCREAT utility validates that the specified (or implied) technique matches the number of CDS DD statements specified.

MAJNAME

optionally, specifies a ENQ/DEQ/RESERVE QNAME.

name

a 1-8 character QNAME

If this parameter is omitted, the default value is STKALSQN.

TAPEPLEX

optionally, specifies a TapePlex name for the HSC/VTCS system.

tapeplex-name

a 1-8 character TapePlex name. This must match the SMC TAPEPlex name.

If this parameter is omitted, it is set automatically when SMC initially communicates with HSC/VTCS.

OVRLAYOK

optionally, specifies that the input CDS file(s) may be existing CDS data sets, and that they may be overlaid by the create process. If this parameter is omitted, and any CDS file is an existing CDS file, the CDSCREAT process fails.

Additional JCL Requirements

Execution of this utility requires specification of a DD statement for each CDS copy indicated by the TCHNIQE parameter (or exactly one DD statement if the TCHNIQE parameter is omitted).

In addition to the required JCL definition statements described in , the following definition statements apply to the CDSCREat 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.

CDSDAta

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active HSC not required

Description

The CDSDAta command produces XML output data for library configuration and volume and pool definitions from VOLPARM control statements.

Note – No text output is produced by this command, so the SLSXML DD statement must be included in the SLUADMIN execution to create output from this command. See "UUI Output Definition Statements" on page 690 for more information.
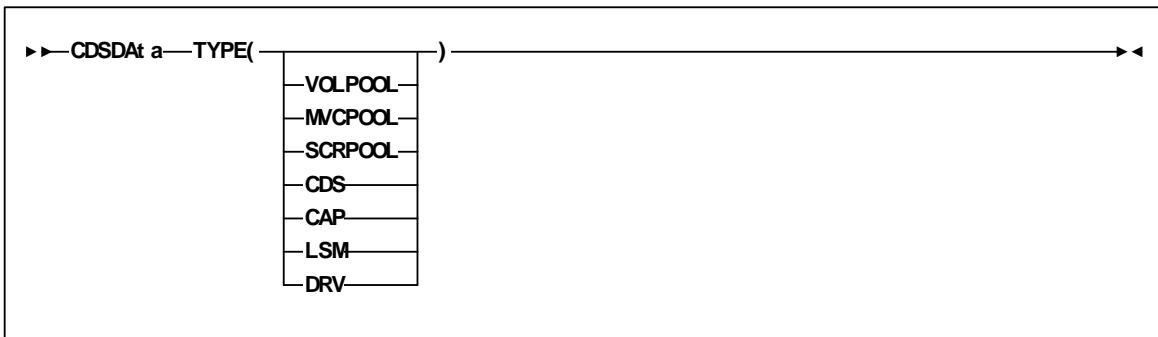
Syntax

FIGURE 3-13 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
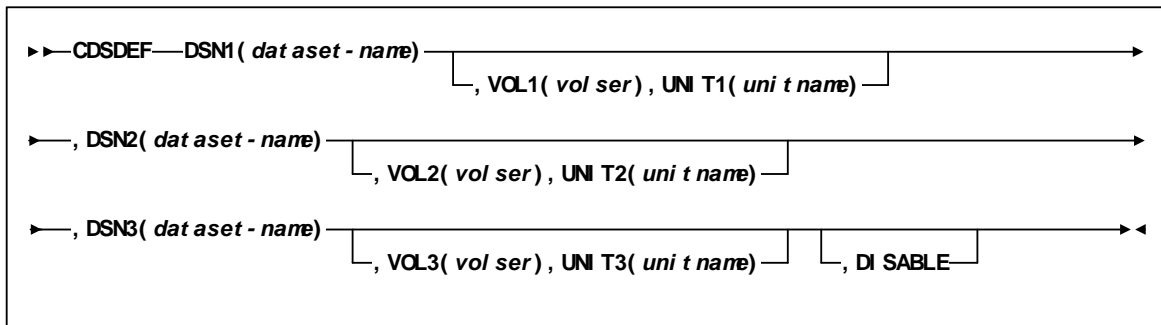
FIGURE 3-14 CDSDEF syntax

Parameters

DSN*x*

> ***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.

VOL*x*

> 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 MSP catalog, and the **UNIT*x*** parameter is ignored.

UNIT*x*

> 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 Fujitsu-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───────────┬──┬────────┬──┬──────┬──────►◄
           │                   │  │ host-id│  │ IMMED│
           ├──dev-range────────┤  └────────┘  └──────┘
           │          ┌─ , ──┐  │
           └──( ──┴─dev-list─┴── ) ──┘
```
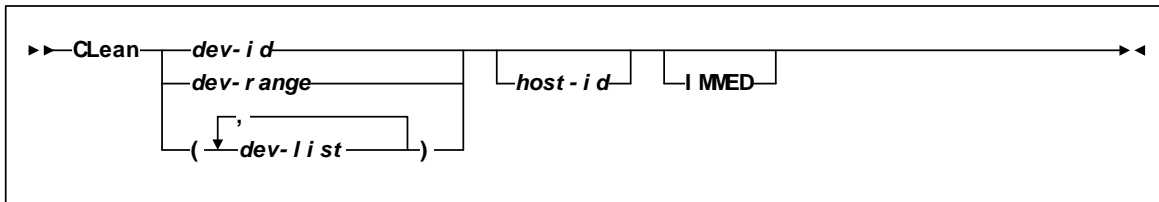
FIGURE 3-15 CLean syntax

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 JES).

IMMED

optionally, specifies that an immediate clean of the device is to be preformed if the drive is idle. This occurs regardless of the MNTD Autocln setting. If the device is not idle then the device is scheduled to be cleaned after the dismount of the volume that is currently mounted.

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.

Note – Oracle strongly recommends the use of VTAM host-to-host communications, because a VTAM network does not place a performance burden on HSC components or the library. VTAM COMMPATH is strongly recommended for all VSM environments. Refer to "Adding Definitions for ACF/VTAM Communications" in the publication *Configuring HSC and VTCS* for more information

---
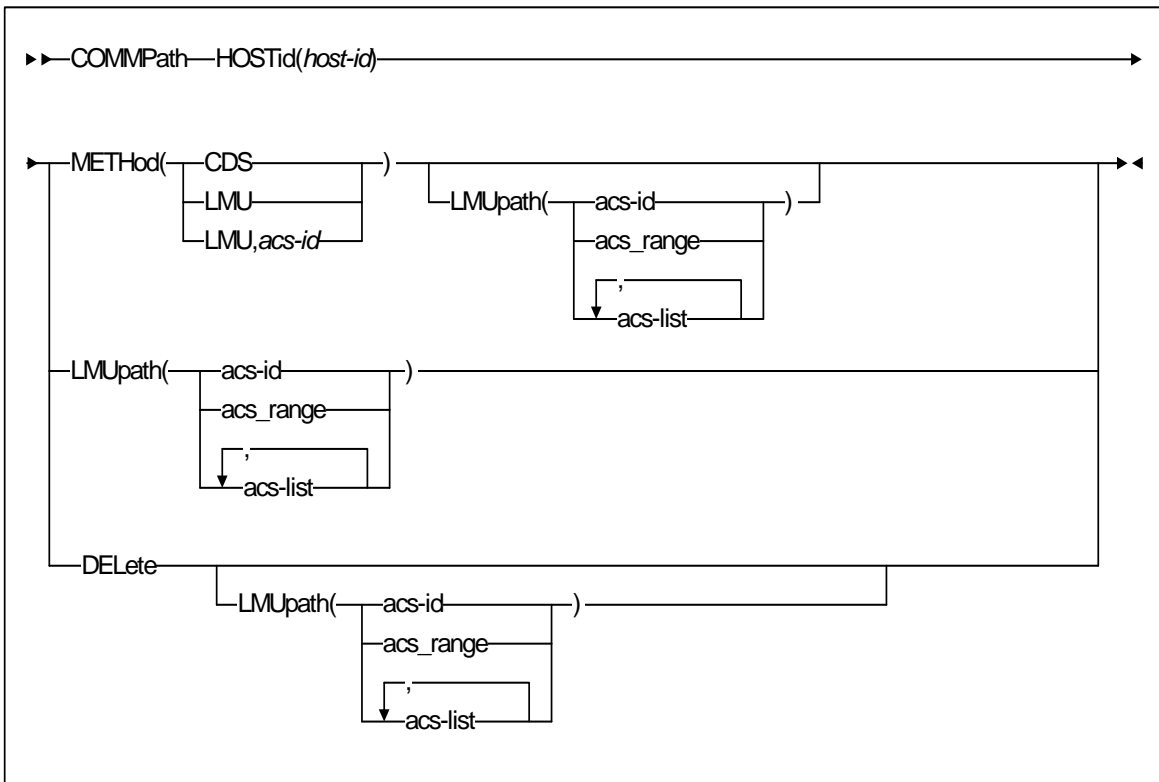
Syntax

FIGURE 3-16 COMMPath 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 JES).

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.

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.

DELete

specifies to delete the definitions specified by the LMUpath 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.

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.
- Support for 32GB VTVs requires an I level CDS.

Syntax

```
►►─CONFIg─┬────────┬─┬─CDSLEVEL(─┬─V61 ABOVE──┬─)─┬─┬────────────┬─►◄
          └─RESET──┘ │           ├─V62 ABOVE──┤   │ └─NOUPDATE───┘
                     │           ├─V71 ABOVE──┤   │
                     │           └─V73 ABOVE──┘   │
```
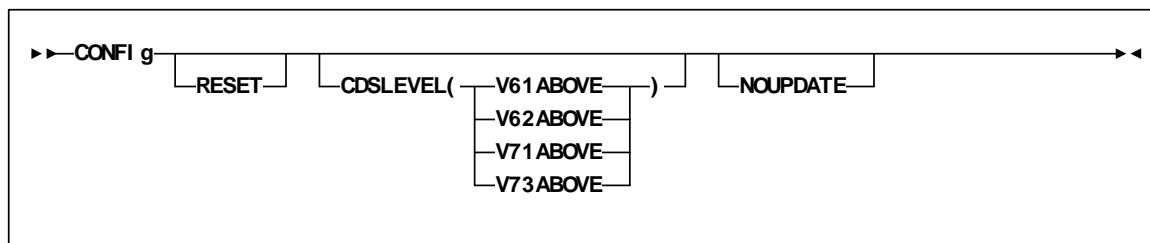
FIGURE 3-17 CONFIg syntax

Parameters

RESET

resets the VSM configuration in the CDS.

Specify RESET when:

- Changing the CDS to a lower level.
- Adding LOCKSTR=*structure-name* (through CONFIg GLOBAL) to a CDS that did not previously use LOCKSTR=*structure-name.*
- Removing LOCKSTR=*structure-name* (through CONFIg GLOBAL) from a CDS.
- Removing 32 RTD support (i.e. move from a CDS that supported 32 RTDs to one that doesn't).

Do not specify RESET when:

- Changing the CDS from F to G, G to H, or H to I
- Changing lock structure names (for example, going from LOCKSTR=VTCSL1 to LOCKSTR=VTCSL2).
- Changing 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.
- Changing VSM policies (such as changing AMT values).

Note –

- HSC must be down on all hosts when you run CONFIG RESET. The changes you made to RTD definitions take effect when you restart HSC.
- Although some changes can be done dynamically by running CONFIG and not restarting HSC/VTCS, there may be additional parameter changes required to use any additional resources.
- 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.

CDSLEVEL

One of the following CDS levels:

V61ABOVE

creates an "F" level CDS, which provides the following enhancements:

- Full VSM4 Support
- 4 MVC copies
- 800Mb VTVs
- 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

V73ABOVE

creates an "I" level CDS, which provides 32GB VTV support.

Note – 32GB support requires the following minimum microcode levels:

- VSM 6 microcode level 6.2
- VLE microcode level 1.5.1 (if VLE is included in the configuration)

The update to a 'I' level CDS may be run non-disruptively with 7.3 hosts active.

Downgrading from an 'I' level CDS to an 'H' or 'G' level CDS is permitted. However, VTVs that have been written in a 32GB format will be reported and must be deleted. To do this, change the management class to one with the delete-on-scratch attribute and then scratch the VTV.

NOUPDATE

specifies that the configuration is checked and any appropriate messages output, but no updates are made to the CDS.

CONFIg CLINK Statement

The CONFIg 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 CONFIg CLUSTER statement specifies more than two VTSS members.

Refer to the publication *ELS Disaster Recovery and Offsite Data Management Guide* for examples.

Syntax
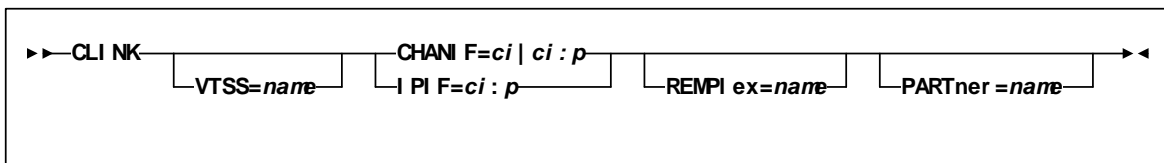
FIGURE 3-18 CONFIg CLINK statement syntax

Parameters

VTSS=*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.

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:

```
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
CLINK VTSS=VTSS1 CHANIF=0A
```

The following is not valid unless VTSS1 is already defined in the CDS:

```
CLINK VTSS=VTSS1 CHANIF=0A
VTSSNAME=VTSS1 LOW=70 HIGH=80 MAXMIG=3 RETAIN=5
```

CHANIF=*ci* or *ci: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).

For VSM 5s, this value must match the actual FICON interface values. For VSM 6s, this must be unique for each VTSS, and does not correspond to an actual value on the VSM 6 FICON ports.

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=*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 *Configuring HSC and VTCS* for more information.

IPIF=*ci:p*

optionally, allows Ethernet connection of two Native IP (IFF3 card) ports, where the *ci:p* values are shown in parentheses before each Target IP Address on the IFF IP Configuration Status screen for each IFF ethernet port. Valid values for *c:ip* are:

- *c* is the VTSS Storage Cluster number (0 or 1).
- *i* is the interface number (A or I)
- *p* is the device number on the interface (0, 1, 2, or 3).

For VSM5s, this value must match the value specified on the VSM5 IFF Configuration Status Screen. For VSM 6s, this must be unique for each VTSS; and does not correspond to an actual value on the VSM 6 TCP/IP ports.

Refer to the publication *Configuring HSC and VTCS* for more information.

Note – The CLINK statement must contain either the CHANIF or the IPIF parameter, but not both.

REMPlex=*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.

PARTner=*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.

CONFIg CLUSTER Statement

The CONFIg CLUSTER statement defines two VTSSs in a Cluster.

Syntax

```
►►─CLUSTER──NAME=nnnnnnnn──VTSSs( vtss-list ) ───────────────────────────────►◄
```

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 186 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 DEComp utility outputs CLUSTER statements with blanks instead of commas as separators, which is also valid input to CONFIG. For example, DEComp outputs the following, which is valid input to CONFIG:

```
CLUSTER NAME=CLUSTER1 VTSSs=(VTSS1 VTSS2)
```

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CONFIg GLOBAL Statement

The CONFIg GLOBAL statement specifies VTCS global values. This statement is required.

Syntax
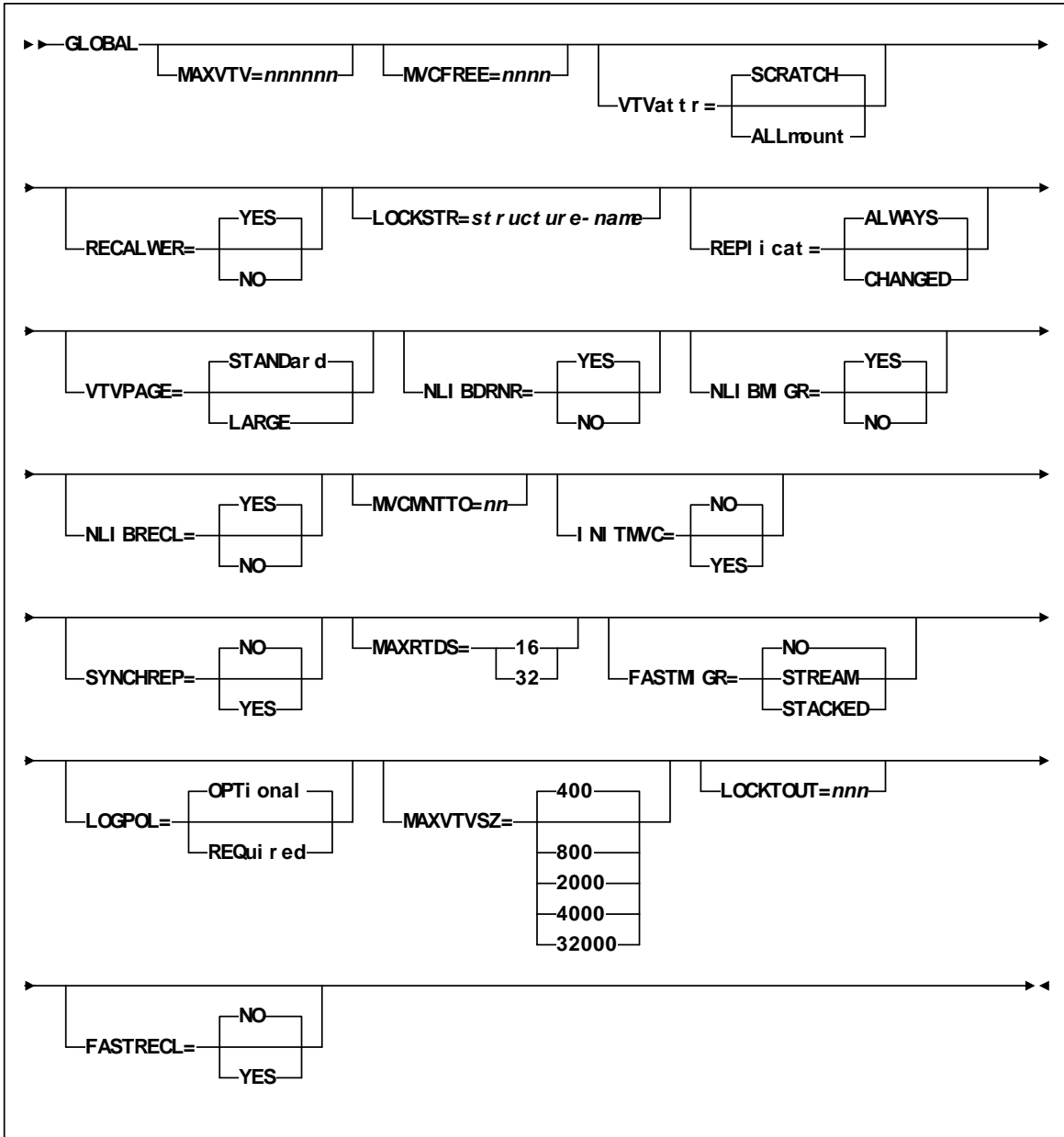
FIGURE 3-20 CONFIg GLOBAL statement syntax

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 "CONFIg" on page 183.

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.

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 Fujitsu'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).

REPlicat

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 either of the following have occurred:

- 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.

Note – Once the expected number of MVC copies exist, replication does not occur.

Caution –

Regardless of the CONFIG GLOBAL REPlicat 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 REPlicat value, you must specify REPlicat(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 "CONFIg" on page 183. For 2, 4, and 32 GB VTVs (MAXVtvsz 2000, 4000, or 32000), 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 how VTCS handles non-library resident MVCs for drain/reclaim processing.

YES

VTCS requests the mount of the non-library MVC. This is the default.

NO

VTCS suppresses the mount and purges the request.

Note –

- For reclaim, only library resident MVCs can be selected for processing, never non-library ones. However, between the time a library resident MVC is selected and the time it is actually processed, it may have become non-resident by being ejected.

- For drain, non-library resident MVCs can 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.

Note – 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"MGMTclas Control Statement" on page 421.

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 or streamed migrates feature is enabled for all VTSSs that support this feature.

STREAM

Specifies to use the streaming method for migrations. VTCS monitors responses from the RTD and uses them to decide as to when a VTV has become migrated. Full advantage is made of the buffer within the RTD to improve the throughput when performing migration.

This option also implies the use of the STACKED feature.

STACKED

Specifies to use the stacked method for migrations. VTCS maintains a small queue of requests to the VTSS. Advantage is made of the various buffers in the VTSS and RTD to improve the throughput when performing a migration. For backward compatibility, the value YES is the equivalent of STACKED.

No

Disable stacked migrates (the default).

Note – FASTMIGR=STREAM|STACKED has the following prerequisites:

- FASTMIGR=STACKED: 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.
- FASTMIGR=STREAM: VSM4/VSM5 microcode D02.15.xx.00 or higher. If this level of microcode is not installed on all VTSSs in the configuration, Streamed Migration will be limited to the VTSSs that have it installed.
- ELS 7.0 or higher with PTFs.
- CDS level G 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 and does not support or tolerate stacked migrates, then the CONFIG utility returns an error.
- If a host is started and does not support or tolerate this feature, then the host shuts 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 7.0/7.1/7.2 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 level 7.0 or higher.

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 compressed VTV size (MB) 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.

32000

32GB. The CDS must be at I level.

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.
- "MAXVTVSZ(32000) requires VSM6 minimum microcode level 6.2 and VLE minimum microcode level 1.5.1, if VLE is in the configuration.
- 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

FASTRECL

Optionally specifies whether VTCS should perform Early Time to First Byte (ETTFB), also known as concurrent tape recall/mount, for all VTSSs that support the feature. This parameter applies to recalls from RTDs **and** recalls from VLE.

NO

Disable the ETTFB feature. This is the default.

YES

Enable the ETTFB feature. If you globally enable this feature, you can disable it for individual VTSSs through the CONFIG VTSS NOERLYMT parameter. See "CONFIg VTSS Statement" on page 213 for more information.

CONFIg HOST Statement

The CONFIG HOST statement is an optional statement that defines an MSP 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
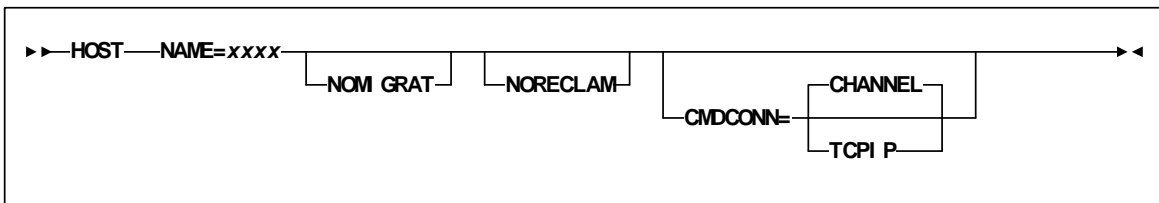
FIGURE 3-21 CONFIg HOST statement syntax

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.

CMDCONN=CHANNEL|TCPIP

optionally, specifies the VTSS access method:

CHANNEL

indicates ESCON or FICON channel access. This is the default.

TCPIP

indicates TCP/IP access. TCPIP requires a valid CONFIG VTSS IPCONN=(*name-list*) value.

CONFIg MVCVOL Statement

The CONFIg 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 569 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.

CONFIg RECLAIM Statement

The CONFIg RECLAIM statement controls demand and automatic MVC and VMVC space reclamation.

Syntax
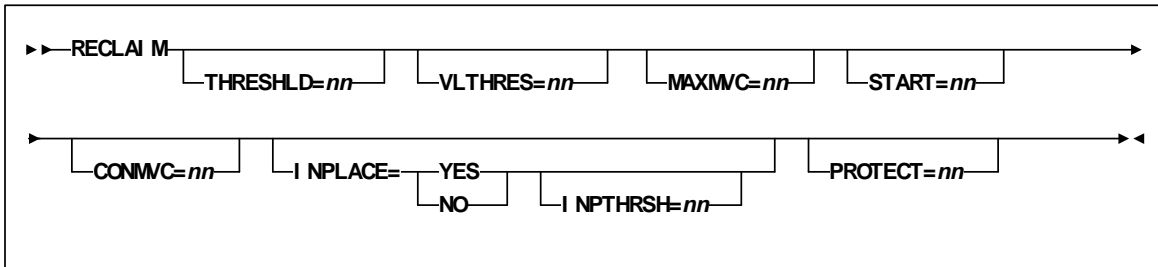
FIGURE 3-22 CONFIg RECLAIM statement syntax

Parameters

THRESHLD=*mm*

> 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:

> ***Reclaim Candidates / (Reclaim Candidates + Free MVCs) * 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.

PROTECT=*nn*

optionally, specifies the time, in hours, to prevent (or protect) an MVC from being reused after it is drained or reclaimed. Valid values are 1 to 99.

CONFIg RTDpath Statement

The VTCS CONFIg RTDpath statement defines the path to one of the following:

- RTDs operating under a local TapePlex. Local RTD connections are defined via the DEVNO and CHANIF parameters and **no** STORMGNR parameter. Refer to *Configuring HSC and VTCS* for more information.

- A remote library. Remote library connections are defined via the DEVNO, CHANIF and STORMGNR parameters. Refer to *Configuring HSC and VTCS* for more information.

- A VLE connected to a VTSS, defined via only via the STORMNGR and IPIF parameters. Refer to *Configuring the Host Software* for VLE for more information.

Except in tapeless environments, CONFIg RTDpath 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 or VSM6, 32 RTDs.
- For a VSM5 or VSM6, 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 184 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

```
►►──RTDpat h──NAME=xxxxxxxx────────────────────────────────────►◄
                      └─STORMNGR=st or mgr─┘   ┌─I PI F=ci : p──────────────┐
                                              └─DEVNO=nnnn──CHANI F=ci | ci : p─┘
```
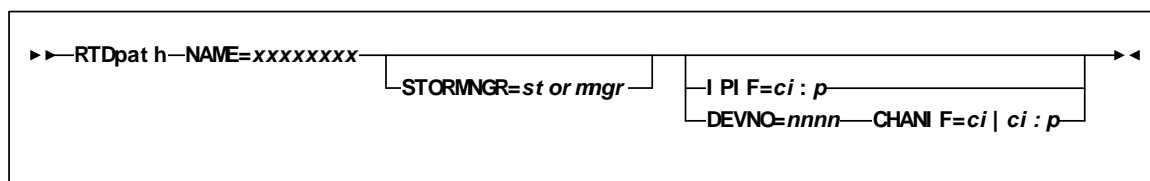
FIGURE 3-23 CONFIg RTDpath statement syntax

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 VLEs or remote libraries, use any meaningful 1 to 8 character identifier.

This parameter is required; there is no default value.

STORMNGR

specifies one of the following:

- VLE subsystem name
- remote library

stormngr

the Storage Manager name:

- For VLEs, this value must match the VLE Subsystem Name.
- For remote libraries, this value must match a TapePlex name defined on the SMC TAPEPLEX NAME parameter.

For more information, refer to the publication *Configuring the Host Software for VLE*.

IPIF=*ci:p*

The IPIF value for each VTSS to VLE port connection in ci:p format where:

- *c* is the VTSS Storage Cluster number (0 or 1).
- *i* is the interface number (A or I)
- *p* is the device number on the interface (0, 1, 2, or 3).

For VSM5s, this value must match the values specified on the VSM5 IFF Configuration Status Screen. For VSM 6s, this must be unique for each VTSS; and does not correspond to an actual value on the VSM 6 TCP/IP ports.

DEVNO=*nnnn*

specifies the unit address of the RTD or remote library.

This parameter is required with CHANIF; there is no default value.

CHANIF=*ci* or *ci: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).

Note – For VSM5s, this CHANIF value must match the actual FICON interface values. For VSM 6s, this must be unique for each VTSS; and **does not** correspond to an actual value on the VSM 6 FICON ports. For remote library connections, this value must be unique for each library and must follow the *ci:p* rules for RTDs.

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=*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 *Configuring HSC and VTCS* for more information.

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 MSP 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 STORMNGR Statement

The CONFIg STORMNGR statement defines a VLE to VTCS.

Note –

- Do not specify this statement when down-level hosts are active. Once CONFIg STORMNGR is specified, down-level hosts no longer function.

- This statement requires CDS level V62ABOVE or higher.

- This statement is an alternative to "CONFIg TAPEPLEX Statement" on page 209. That is, you can either specify a list of VLEs on CONFIG TAPEPLEX or each VLE individually via CONFIG STORMNGR. If you code CONFIG STORMNGR statements, they must immediately follow the CONFIG TAPEPLEX statement to which the CONFIG STORMNGR statements apply.

- For VTCS 7.2, you can define additional emulated VLE RTDs with the VLEDEV parameter. For more information, see *Configuring the Host Software for VLE*.

Syntax

```
►►──STORMNGR──────NAME=name────────────────────────────────────►◄
                         └─VLEDEV( device-id-list )─┘
```
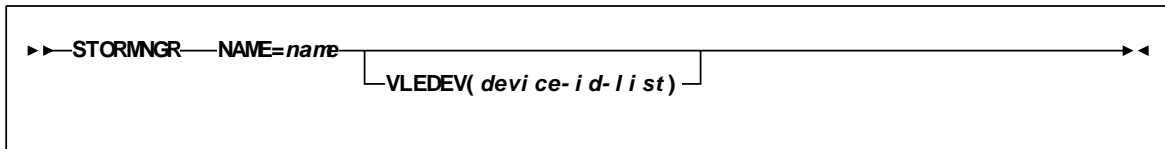
FIGURE 3-24 CONFIg STORMNGR statement syntax

Parameters

STORMNGR

specifies Subsystem Name of the VLE attached to the preceding TAPEPLEX statement.

NAME=name

the Subsystem name of the VLE, which is set by the VLE installation scripts.

VLEDEV

optionally, specifies the logical device IDs of a VLE. This parameter requires CONFIG CDSLEVEL=V71ABOVE (CDS Level H) and applies to VLE 1.2.

device-id-list

a list or range of device IDs whose format is an 'S' prefix followed by three hexadecimal characters. These IDs are similar to MSP device addresses but do not overlap with the MSP name space. You can specify up to 96 device IDs per VLE, which defines each VLE with 96 emulated devices, which allows VTCS to schedule up to 96 processes on each VLE.

CONFIg TAPEPLEX Statement

The CONFIg 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 CONFIg 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
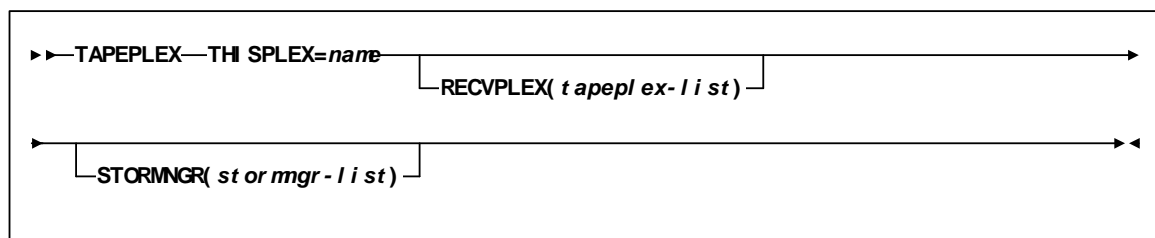
FIGURE 3-25 CONFIg TAPEPLEX statement syntax

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. 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.

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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. 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 – 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 VLEs 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*.

CONFIg VTD Statement

The CONFIg VTD statement defines the MSP 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 and later models 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 for more information.

Syntax

FIGURE 3-26 CONFIg VTD statement syntax

Parameters

LOW=*xxxx*

specifies a four character valid MSP unit address as the start of a range of VTDs.

HIGH=*xxxx*

specifies a four character valid MSP 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 MSP 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 MSP 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 MSP.
■ 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** overgenned devices (including VTDs) on all MSP 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 VTSS Statement

The CONFIg 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

```
►►──VTSS───NAME=xxxxxxxx──────────────────────────────────────────────►
                          └─DEFLTACS=acs-id─┘   └─LOW=nn─┘   └─HIGH=nn─┘

►───────────────────────────────────────────────────────────────────►◄
     └─MAXMIG=n─┘   └─MINMIG=n─┘   └─RETAIN=nn─┘   └─NOERLYMT─┘

►───────────────────────────────────────────────────────────────────►◄
         ┌─CHANNEL─┐
     └─CMDCONN=─┤         ├─  └─IPCONN=(namelist)─┘
         └─TCPIP───┘
```
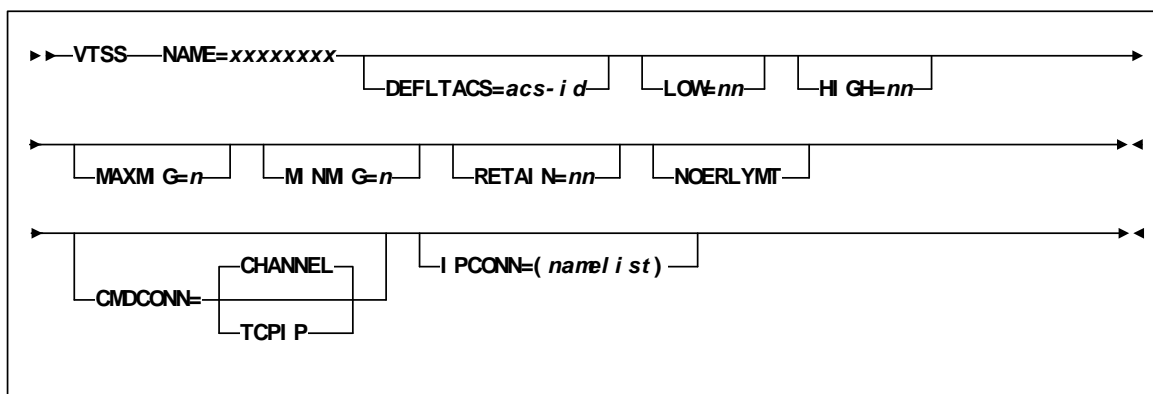
FIGURE 3-27 CONFIg VTSS statement syntax

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 CONFIG 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 retains 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 15.

An MVC on an idle RTD is not dismounted until the RETAIN time has elapsed, unless the RTD in question is required, and no other 'like RTDs' (same ACS, LSM, and device type) are free.

An exception to this behavior occurs when the last operation on the RTD was a job-initiated recall or an 'MVC is full' condition has occurred. In this case, the MVC is dismounted from the idle MVC when VTCS has determined that, although the RTD is not currently needed, there are no other 'like' RTDs free.

NOERLYMT

optionally, disables Early Time to First Byte (ETTFB), also known as the concurrent tape recall/mount feature, for this VTSS. This parameter only applies if CONFIg GLOBAL FASTRECL=YES. This parameter applies to recalls from RTDs **and** recalls from VLE.

CMDCONN=CHANNEL|TCPIP

optionally, specifies the VTSS access method:

CHANNEL

indicates ESCON or FICON channel access. This is the default.

TCPIP

indicates TCP/IP access. TCPIP requires a valid CONFIG VTSS IPCONN=(*name-list*) value.

IPCONN=(*name-list)*

optionally, specifies a comma-separated list of one to four IP addresses, either explicitly as IP addresses or implicitly by names that resolve to IP addresses, used to define TCP/IP connections.

Values entered in the list cannot be verified until a VTCS system is initialized to use them. They must meet the following requirements:

- Any IPv4 values must be specified in format *nnn.nnn.nnn.nnn*, where each byte is one to four hexadecimal characters. There must be four bytes, numeric only except for the decimal points.

- Any IPv6 values must be specified in format *x.x.x.x.x.x.x.x*, where each byte is 0-255. There must be four bytes: 0-9, A-F (or a-f). IPv6 abbreviations are not allowed. The full eight part address must be specified.

- If names are specified, they can be a maximum of 60 characters. A name can be any valid DNSname containing only the characters A-Z, a-z, 0-9, '-', or '.'.

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 569 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.

CONSolid

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

The CONSolid command consolidates VTVs on MVCs.

Syntax
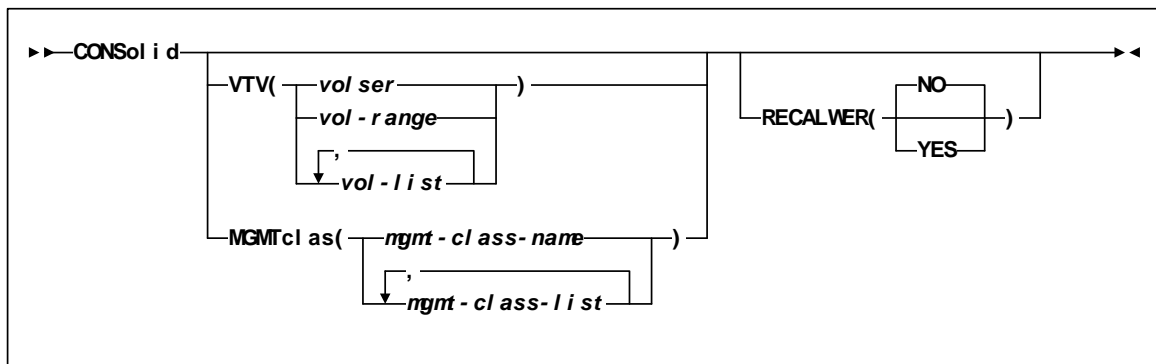
FIGURE 3-28 CONSolid syntax

Parameters

VTV

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 421. 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.

NO

Do not recall VTVs with read data checks. This is the default.

YES

Recall VTVs with read data checks.

CONSolid Report Messages

The consolidation report displays the following messages:

MIGRATE ONLY FROM VTSS v*tssname*

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) ─┘  └─LI STDELR─┘
```
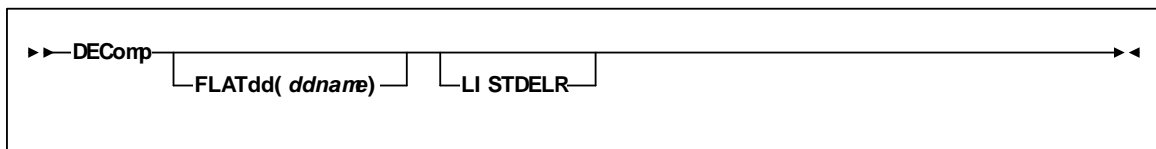
FIGURE 3-29 DEComp syntax

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 3-30 shows an example of DEComp output with the FLATDD parameter.

```
CONFIG CDSLEVEL(V62ABOVE)
GLOBALMAXVTV=32000 MVCFREE=40 VTVattr=ALLmount RECALWER=YES
REPlicat=ALWAYS LOCKSTR=STK_VTCS_LOCKS
 RECLAIMTHRESHLD=70 MAXMVC=40  START=35  CONMVC=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 3-30 Example DEComp FLATDD output

SLSPRINT Output

FIGURE 3-31 shows an example of DEComp output to SLSPRINT.

```
SLUADMIN (7.2.0)     StorageTek Enterprise Library Software Utility    PAGE 0001
TIME 09:07:06                   Control Card Image Listing          DATE 2012-03-31

 DECOM
 SLS1315I SSRDMP.P775644.TESTCDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET
 TIME 09:07:06 VTCS DECOMPILE
CONFIG CDSLEVEL(V62ABOVE)
GLOBALMAXVTV=32000 MVCFREE=40 VTVattr=ALLmount RECALWER=YES
REPlicat=ALWAYS LOCKSTR=STK_VTCS_LOCKS
RECLAIMTHRESHLD=70 MAXMVC=40  START=35  CONMVC=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 3-31 Example DEComp SLSPRINT output

DELETSCR

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

The DELETSCR command deletes scratch VTVs from VTSSs and unlinks any migrated VTVs from MVCs.

Syntax

```
►►──DELETSCR────────────────────────────────────────────────────────►
              ├──VTVid(──┬──vol ser──────┬──)──┤
              │          ├──vol-range────┤      │
              │          │    ┌──,──┐     │      │
              │          └────▼─vol-list─┘      │
              │                                  │
              │            ┌──,──────────┐       │
              ├──MGMTclas(──▼─mgmt-clas-name─┴──)──┤
              │            ┌──,──────┐             │
              ├──SCRPool(──▼─scrpool─┴──)──────────┤
              │                                     │
              └──VTSS(vtss-name)───────────────────┘

►──NOTREF(days)──────────────────────────────────────────────►◄
                 └─MAXVTV(nnn)─┘  └─DETail─┘
```
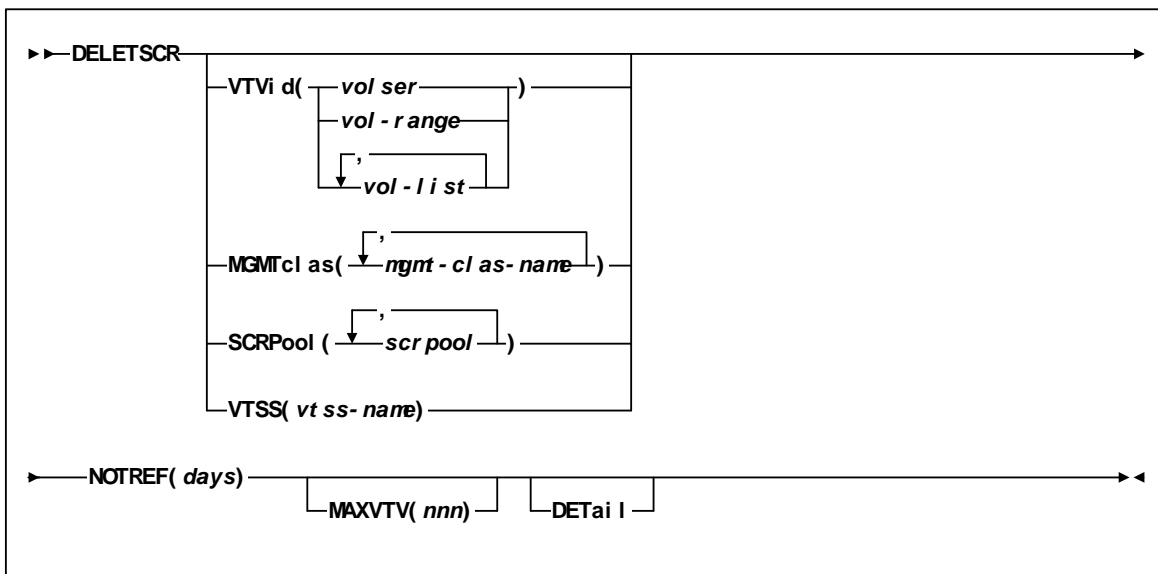
FIGURE 3-32 DELETSCR syntax

Parameters

VTVid

optionally, specifies one or more VTVs to be deleted.

volser, *vol-range* or *vol-list*

the volsers 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

shows an example of a DELETSCR report for the following batch invocation:

DELETSCR MGMTCLAS(MC1) NOTREF(60) MAXVTV(10) DET

```
SLUADMIN (7.2.0)  StorageTek Enterprise Library Software Utility     PAGE 0001
TIME 06:32:03                  SCRATCH VTV DELETE              DATE 2012-03-31

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
SLS6834I VTV VTV107 deleted
SLS6833I VTV VTV108 deleted from MVC M00072
SLS6833I VTV VTV110 deleted from MVC M00757
SLS6833I VTV VTV111 deleted from MVC M00767
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 3-33 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

Subsystem 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

►►─DIRBLD───►◄

FIGURE 3-34 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
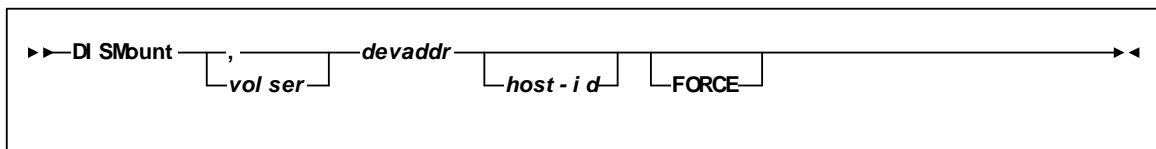
FIGURE 3-35 DISMount syntax

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 JES).

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 3-1   Display options

This option:	Displays the following output:
Acs	status for one or more ACSs.
ACTive	active VTCS processes
ALl	CDS and ACS status
ALLOC	HSC allocation settings
Cap	CAP settings and status
CDS	status of all copies of the CDS, some operational settings (e.g., the cleaning cartridge prefix, SMF record type, etc.), and the status of all HSC-defined hosts
CLink	cluster link status
CLUster	cluster status
CMD	detailed information for an ELS command
COMMPath	current settings for HSC host-to-host communications
CONFIG	CONFIG parameter settings
DRives	current and queued mount activity for each transport address
DRIVE_INFO	status information for real and/or virtual drives
EXceptns	hardware status
LMUPDEF	information about the definition data set, containing LMUPATH statements, that is currently loaded
LOCKs	VTCS lock status
Lsm	LSM status
Message	detailed information for an ELS message
MGMTDEF	information about active MGMTclas statements
MIGrate	migration status
MNTD	current settings for HSC mount options set by the MNTD command
MONitor	list of monitoring consoles. **Note:** Refer to the *ELS Legacy Interfaces Reference* for more information about this option.
MVC	information about a specific MVC

TABLE 3-1   Display options (Continued)

This option:	Displays the following output:
MVCDEF	information about active MVCPool statements **Note:** Refer to the *ELS Legacy Interfaces Reference* for more information about this option.
MVCPool	information about a specific MVC pool
OPTion	current settings for general HSC options set by the OPTion command
PATH	status of paths from VTSSs to either RTDs or Virtual Libraries.
Queue	status of queued VTCS processes
REPlicat	VTV replication status
Requests	all pending LMU requests
RTD	usage information for the one or more RTDs
SCRatch	scratch counts by subpool name, ACS id, LSM id, media type, recording technique, or owning host name
SCRPDEF	information about the definition data set, containing SCRPOol statements, that is currently loaded **Note:** Refer to the *ELS Legacy Interfaces Reference* for more information about this option.
SEN	SEN LISTEN requests and their status.
SERVER	Server (HSC) status, including service level and features
SRVlev	current service level of the HSC on the system from which you issue the command
Status	status of pending requests currently active on the host issuing the command
STORCLas	information about a Storage Class
STORMNgr	status of an external storage manager and the paths defined to it from the VTSSs.
TASKs	task status
THReshld	scratch count and scratch threshold information by subpool name, ACS id, LSM id, media name, and recording technique name
VOLDEF	information about the definition data set, containing VOLATTR statements, that is currently loaded **Note:** Refer to the *ELS Legacy Interfaces Reference* for more information about this option.
Volser	volume information
VOLume_Info	status information for real and/or virtual volumes
VSCRatch	diagnostic information for virtual scratch counts
VTD	VTD status
VTSS	VTSS status
VTV	VTV status

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
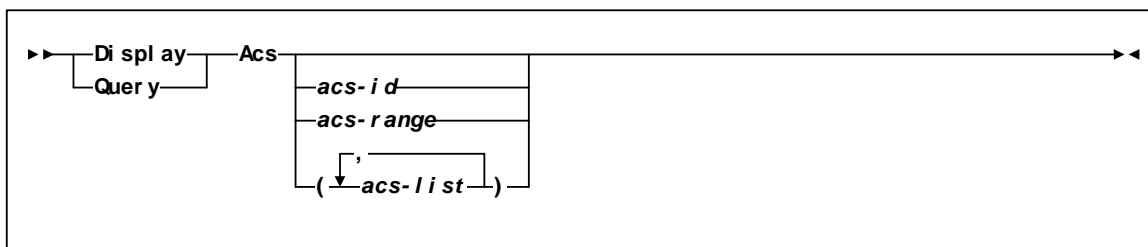
FIGURE 3-36 Display Acs syntax

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

The following figure shows an example of the output produced by the Display Acs command:

```
SLS0000I D ACS
SLS1969I User exit 15 module SLSUX15 INACTIVE
SLS1000I ACS 00 status: Connected
Active Queue elements               1
Partition ID=005
Compatibility levels: HSC=23, LMU=23
Redundant Electronics is Configured
Scratch Volumes available......       0
Free Cells available...........      20
SLS1000I ACS 01 status: Disconnect


ACS slots available for COMPLEX       7
```

FIGURE 3-37 Display ACS output example

Display ACTive

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display ACTive displays active VTCS processes.

Syntax

```
►►─┬─Display─┬─ACTive──────────────────────────────────────►◄
   └─Query───┘        └─DETail─┬──────────────────┘
                              └─VTSS( vtss-name) ─┘
```

FIGURE 3-38 Display ACTive syntax

Parameters

Active

  DETail

    optionally, display detailed status.

    VTSS

      optionally, display processes for the specified VTSS.

      vtss-name

      the VTSS name.

Output

The following figure shows an example of the output produced by the Display Active command.

```
MIGRATES=3 RECALLS=2 RECLAIMS=0
```

FIGURE 3-39 Display Active output example (no detail)

The following figure shows an example of the output produced by the Display Active DETail command.

```
Function      ID      VTV          MVC       RTD     VTSS        Task    Reason
Reclaim@      01509   -            -         -       -           RCM     Child Finish
.ReclmMVC     01516   *ABORT       021688    -       -           RCM     Active
.ReclmMVC     01517   -            021591    -       -           RCM     Child Finish
.VtvMover     01532   -            021591    -       -           RCM     Child Finish
.Recall       01533                021591    -       !ALLVTSS    Drv     RTD allocation
.ReclmMVC     01518   -            021752    -       -           RCM     Child Finish
.VtvMover     01582   -            021752    -       -           RCM     Child Finish
.Recall       01583   -            021752    -       !ALLVTSS    Drv     RTD allocation
.ReclmMVC     01519   -            022527    -       -           RCM     Queued
.ReclmMVC     01520   -            021650    -       -           RCM     Queued
.ReclmMVC     01521   -            022535    -       -           RCM     Queued
.ReclmMVC     01522   -            021620    -       -           RCM     Queued
.ReclmMVC     01523   -            021545    -       -           RCM     Queued
.ReclmMVC     01524   -            021668    -       -           RCM     Queued
Migrate@      01563   Demand       <=10      -       -           Cmd     Child Finish
.Migrate      01564   -            -         -       HBVTSS19    Cmd     Active
Migrate       01568   X00560       021763    2A0A    HBVTSS18    RTD     VTV lock
Migrate       01569   X00560       021766    2A0B    HBVTSS18    RTD     VTV lock
Migrate       01570   X00560       022534    2A01    HBVTSS18    RTD     VTV lock
Migrate       01571   X00560       022525    2A06    HBVTSS18    RTD     MVC mount
Reclaim@      01580   -            -         -       -           RCM     Queued
Display@      01590   -            -         -       -           DSP     Active
```

FIGURE 3-40 Display Active DETail output example

Note – *ABORT appears in the display of reclaim requests if the request has cancelled or abended.

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

MEDVERfy

Media Verify parent task

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 include a Cross TapePlex Autorecall (CTA) request from the mounting system.

Recall 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 a 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

```
►►──┬─Display─┬──ALl───────────────────────────────────────────►◄
    └─Query───┘
```
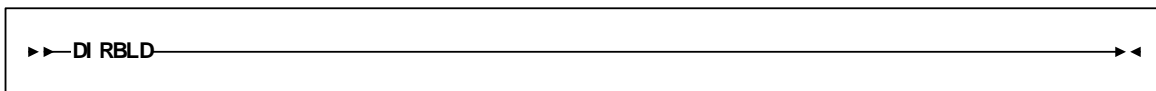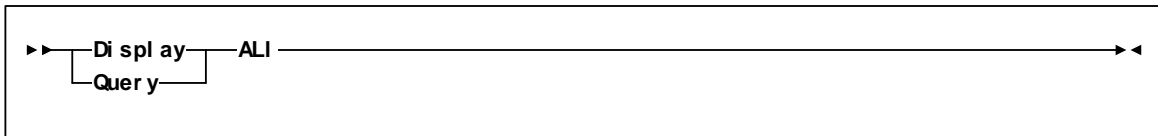
FIGURE 3-41 Display ALl syntax

Parameters

None.

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
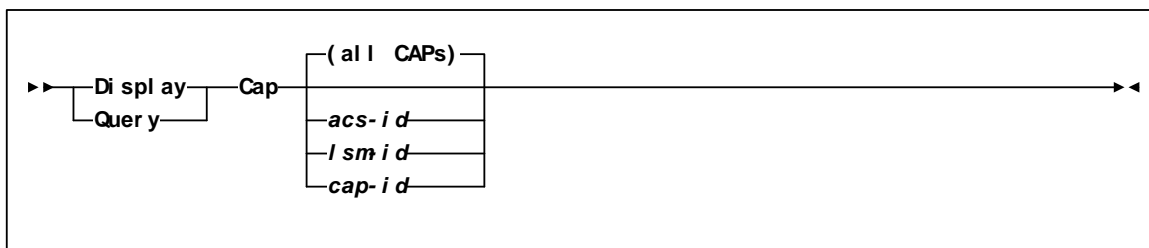
FIGURE 3-42 Display Cap syntax

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*, *lsmid*, 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*, *lsmid*, and *capid* may be expressed as a list.

Output

The Display Cap command displays 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); 39-cell (SL8500 CAP); or 36-cell (SL8500Bulk 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.

FIGURE 3-43 shows Bulk CAPs with 36-cell capacity.

```
CAP ID     Size      Partid  Hostid   Priority  Mode    Status
--------------------------------------------------------------
00:00:00  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:00:01  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:01:00  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:01:01  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:02:00  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:02:01  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:03:00  36-CELL    None    None     00        Idle    Manual
                                                         Online
00:03:01  36-CELL    None    None     00        Idle    Manual
                                                         Online
```

FIGURE 3-43 Example Display Cap output

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, 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

```
►►──┬─Di spl ay─┬──CDS─────────────────────────────────────────►◄
    └─Quer y────┘
```
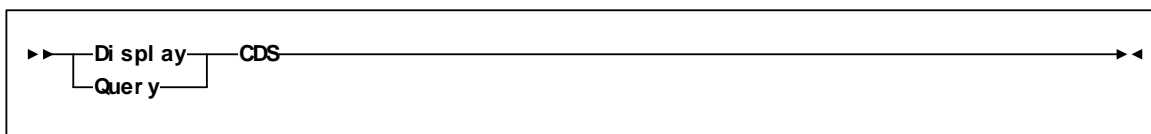
FIGURE 3-44 Display CDS Syntax

Parameters

None.

Output

FIGURE 3-45 shows Display CDS output.

```
PRIMARY   = SEA710.SPRG1.DBASEPRM.LGEN8501
 VOLSER   = HSC20J  ACTIVE
SECONDARY = SEA710.SPRG1.DBASESEC.LGEN8501
 VOLSER   = HSC20G  ACTIVE

CDS LEVEL = 060100         VER = 16012446

CDS CREATE      = 20141203 13:49:56
LAST CDS BACKUP  = NONE
LAST CDS RESTORE = NONE

CDS BLOCK COUNT = 7,200
CDS FREE BLOCKS = 4,135
ENQNAME       = STKSBADD    SMFTYPE = 245
CLEAN PREFIX  = CLN         LABTYPE = (00) SL

NO LOG FILE DSN(S) DEFINED

VAULT RECORDS NOT FOUND IN THIS CDS

CDKLOCK RECORDS NOT FOUND IN THIS CDS

LAST NCO ON ECCY
 START = 12/03/14 13:50:55
 END   = 12/03/14 13:53:19

HOSTID---LEVEL---DESCRIPTION--------------------
ECCL     -.-.-   -INACTIVE-
ECCY     7.1.0   ACTIVE PRIMARY SECONDARY
EC20     -.-.-   -INACTIVE-
EC21     -.-.-   -INACTIVE-

Global Bulk CAP SKIP OFF

Database Information End
```

FIGURE 3-45 Example Display CDS output

Display CLInk

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display CLInk displays Cluster link status.

Syntax

```
►►──┬─Display─┬──CLInk────────────────────────────────────────►◄
    └─Query───┘
```
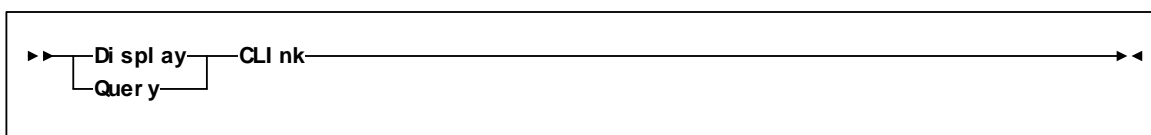
FIGURE 3-46 Display CLInk syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display CLInk command.

```
VTSS      Clink   Name      Status    Usage      Host       Partner   VTD
HBVTSS16 07 1A:0 PLEXNAME Online    Free                  REMOTEAA 7
         06 1E:0 PLEXNAME Online    Free                  REMOTEBB 6
HBVTSS18 07 1A:0 -Cluster Online    Free                  HBVTSS19 AB07
         06 1E:0 -Cluster Online    Free                  HBVTSS19 AB06
*SLS5013I Command completed (0)
```

FIGURE 3-47 Display CLInk output example

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Fields

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_offlne

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.

UUI 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 MSP 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
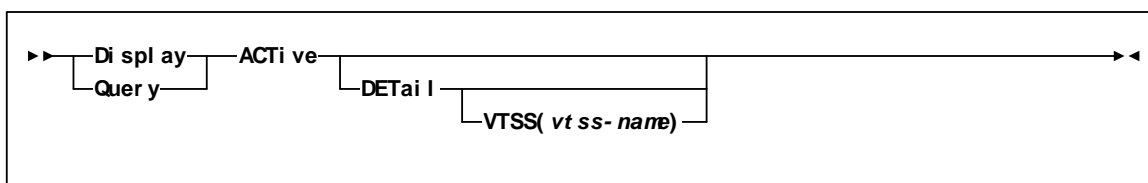
Display CLUster displays Cluster status.

Syntax

```
►►──┬──Display──┬──CLUster─────────────────────────────────────────►◄
    └──Query────┘
```
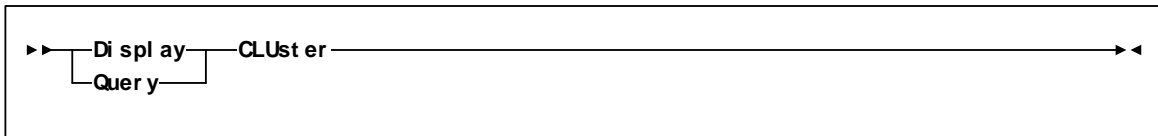
FIGURE 3-48 Display CLUster syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display CLUster command:

```
NAME       VTSS        STATE       DIRECTION   VTSS        STATE       MODE
CLUSTER1   HBVTSS16    ONLINE      ------>     HBVTSS17    ONLINE      Sync-replicate
CLUSTER2   HBVTSS18    ONLINE      <------     HBVTSS19    QUIESCED    DEGRADED
CLUSTER3   HBVTSS20    ONLINE      <------     HBVTSS21    ONLINE      Async-replicate
CLUSTER4   HBVTSS22    QUIESCED    <----->     HBVTSS23    ONLINEDEGRADED
```

FIGURE 3-49 Display CLUster output example

Fields

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-2ndary

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 2ndary

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
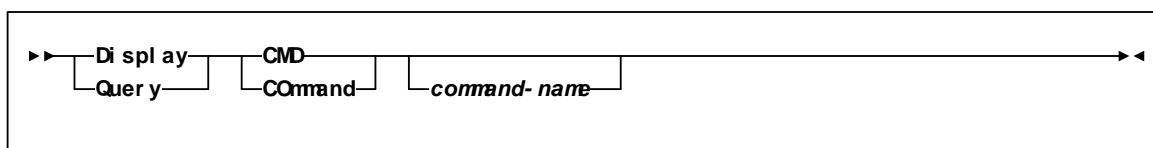
FIGURE 3-50 Display CMD syntax

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
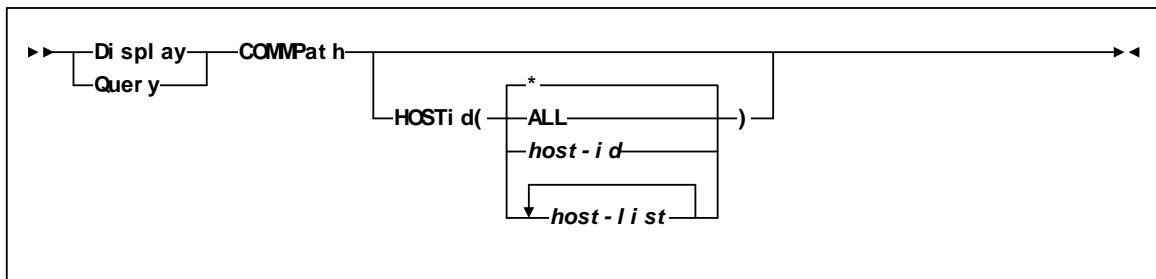
FIGURE 3-51 Display COMMPath syntax

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──────────────────────────────────►◄
    └──Query────┘
```
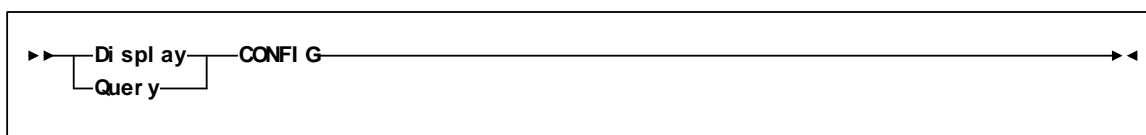
FIGURE 3-52 Display CONFIG syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display CONFIG command:

```
SLS6603I Configuration information
MaxVTV   MVCFree   VTVAttr   RECALWER   REPlicat   VTVPAGE   SYNCHREP
4000     2         Scratch   Yes        Always     Standard  No

MAXRTDs  FASTMIGR  INITMVC   MAXVTVSZ   FASTRECL   LOCKTOUT
32       Yes       Yes       4000       Yes        10

NLIBDRNR  NLIBMIGR  NLIBRECL  MVCMNTTO  LOGPOL
No        No        No        15        Optional

This tapeplex: LOCALPLX

CDS level support:  V5/5.1  V6  V6.1 V6.2  V7  V7.1
                                     *    *    *

Reclaim : Max MVC   Start   Conmvc   Threshold: Tape VL
          4         10      1                   30   70

Reclaim: MaxMVC Start Conmvc 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       TMSPB   10      DVTSS16   SS162A01  01  0A:0
2A02   36CTRACK  No       00      10      DVTSS16   SS162A02  02  0E:0
```

FIGURE 3-53 Display CONFIG output example

Fields

Note – See "CONFIg GLOBAL Statement" on page 190 for more information about CONFIg GLOBAL statement parameters.

MaxVTV
the CONFIg GLOBAL MAXVTV setting.

MVCFree
the CONFIg GLOBAL MVCFREE setting.

VTVAttr
the CONFIg GLOBAL VTVattr setting (SCRATCH or ALLmount).

RECALWER

the CONFIg 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, 4000, or 32000).

FASTRECL

the CONFIG GLOBAL FASTRECL setting (YES or NO).

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).

MVCMNTTO

the CONFIg GLOBAL MVCMNTTO 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

RTD MSP device numbers for the VTSS (RTD DEVNO settings), or device numbers for a VLE, as generated by VTCS.

- Single-node VLE device numbers start with a "V".
- Multi-node VLE device numbers are prefixed with an "S".

RTD TYPE

the RTD type. This can include the VLE device type.

Inplace

the Storclas INPLACE setting.

ACS

- For local tape drives, this column displays the ACS or LSM to which the drive is attached.
- For remote RTDs, this column displays '*name:number*' where *name* is then name of the TapePlex and *number* is the number of the ACS in decimal.
- For VLEs, this column displays the VLE name.

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
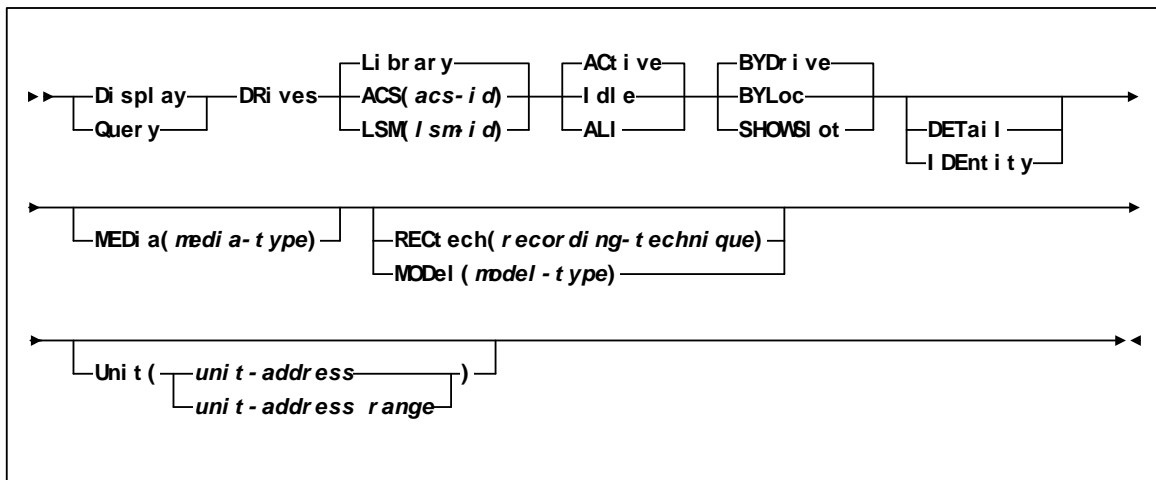
FIGURE 3-54 Display DRives syntax

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.

SHOWSlot

optionally, displays the drives by host device address, and displays the drive bay location (slot) for drives in SL3000 and SL8500 libraries.

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.

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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
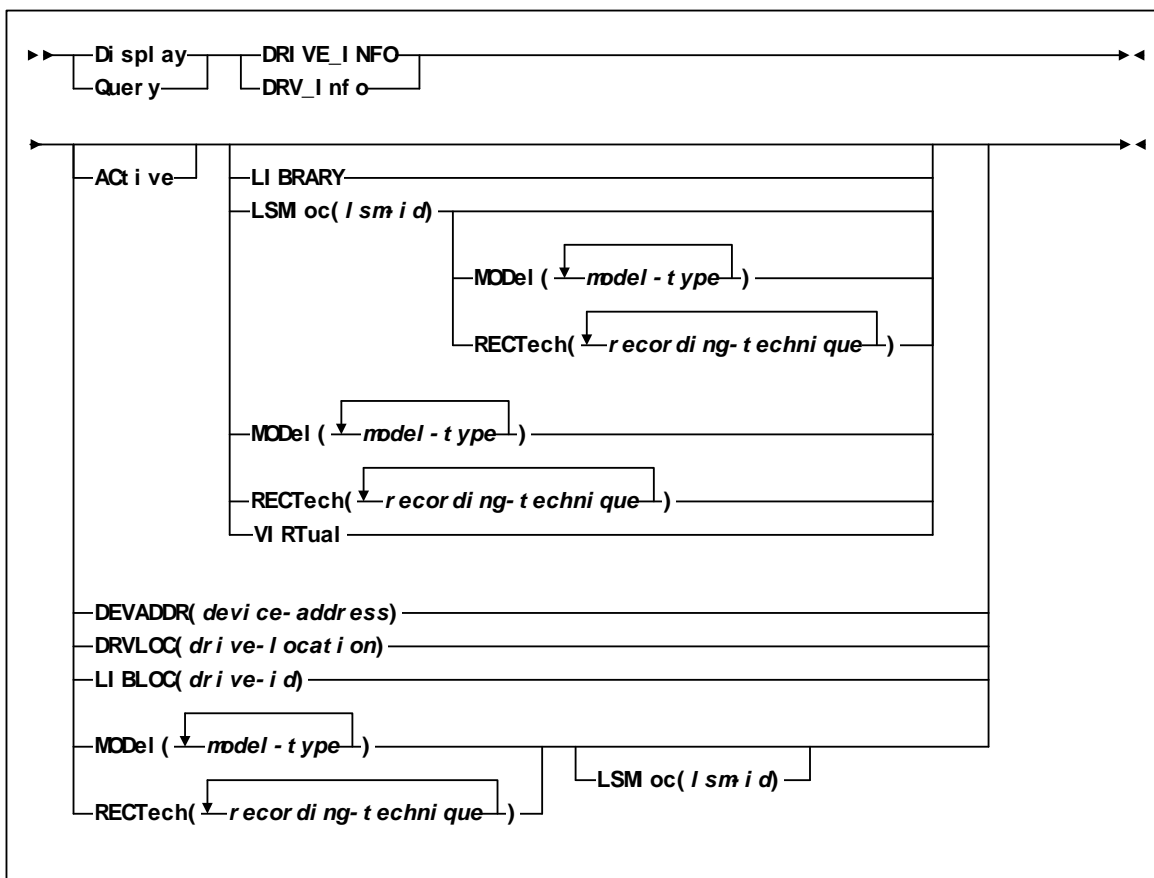
FIGURE 3-55 Display DRIVE_INFO syntax

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

```
►►──┬─Display─┬──┬─EXceptns─┬────────────────────────────────────►◄
    └─Query───┘  └─X────────┘
```
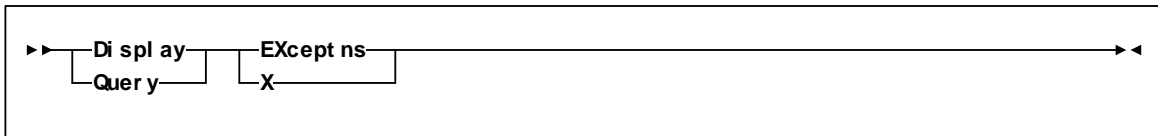
FIGURE 3-56 Display EXceptns syntax

Parameters

EXceptns or **X**

displays hardware status.

Errors are reported in either LSM *AA:LL* or *AA:LL:CC* format where *AA* is the hexadecimal value for the ACS (00-FF), *LL* is hexadecimal value for the LSM (00-17), and *CC* is the hexadecimal value for the CAP identifier (00 through 0B).

Output

Display EXceptns displays the status of the following:

- all LMUs
- all LSMs
- all CAPs
- all robotic hands
- all pass-thru ports (PTPs)
- all stations.

Errors are reported in *AA:LL:CC* format, where *AA* is the decimal value for the ACS (00-99), *LL* is decimal value for the LSM (00-99), and *CC* decimal value for the CAP identifier (00 through 11). The following error messages are possible:

Message:	Description:
CAP Not Operational	
CAP Door is Open	
CAP Door is Unlocked	
CAP is Reserved	
Pass Thru Port is Inoperative	
Robot Hand is Inoperative	
Robot Hand needs Maintenance	
LSM is Not Ready	
LSM is Offline	
LSM is Offline Pending	
LSM is in Maint Mode	
LSM Door is Open	
LMU Compat 10 or less; not all functions supported:	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.
Station nn has Inactive Connection:	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.
Station nn Inoperative; Host not responding:	The station number is in hex, so Station 0A is the tenth station, and Station 10 is really the sixteenth.

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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

```
►►──┬──Display──┬──LMUPDEF───────────────────────────────────────►◄
    └──Query────┘
```
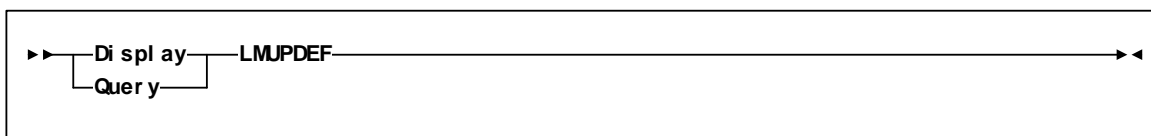
FIGURE 3-57 Display LMUPDEF syntax

Parameters

None.

Display LOCKs

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display LOCKs displays VTCS lock status.

Syntax

```
►►──┬─Display─┬──LOCKs──────────────────────────────────────►◄
    └─Query───┘
```
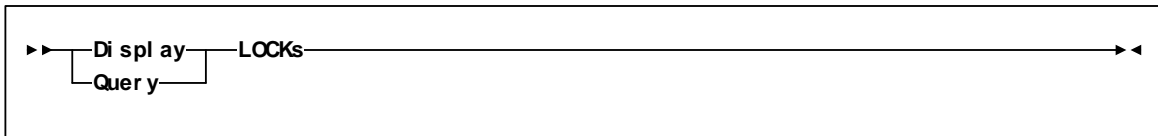
FIGURE 3-58 Display LOCKs syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display LOCKs command:

```
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
```

FIGURE 3-59 Display LOCKs output example

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 MSP.

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
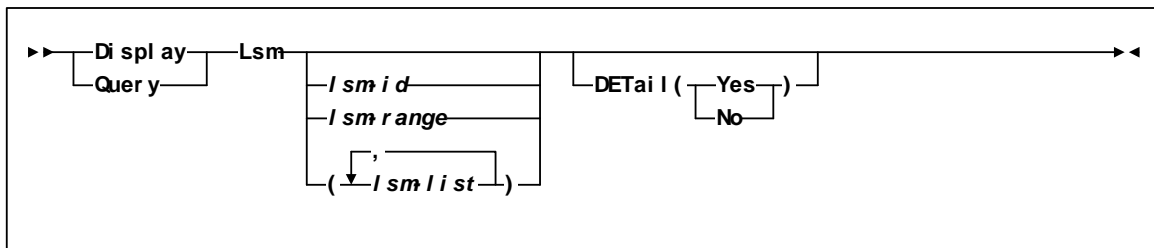
FIGURE 3-60 Display Lsm syntax

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).

DETail

optionally, specifies whether detail information is displayed for each LSM.

Yes

All detailed information is displayed for each LSM.

No

Only summary information is displayed for each LSM.

When DETail(No) is specified, the current Ready/Not ready status is not determined; the LSM shows as Ready unless it is offline.

Note – If the DETail parameter is not specified, then detailed information is displayed only if specific LSM IDs are entered.

Output

Display Lsm displays the status of the following:

- LSMid
- LSM type
- Online/offline status
- Ready/not ready status
- Automatic/manual status
- May include detail information:
  - Audits in progress (if any)
  - CAP status, priority and owning host if CAP is not drained
  - Number of free cells and scratch volumes. (Note: The number of free cells in the LSM does NOT include free cells on frozen panels.)
  - Each frozen panel, showing the total number of cells and number of 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.
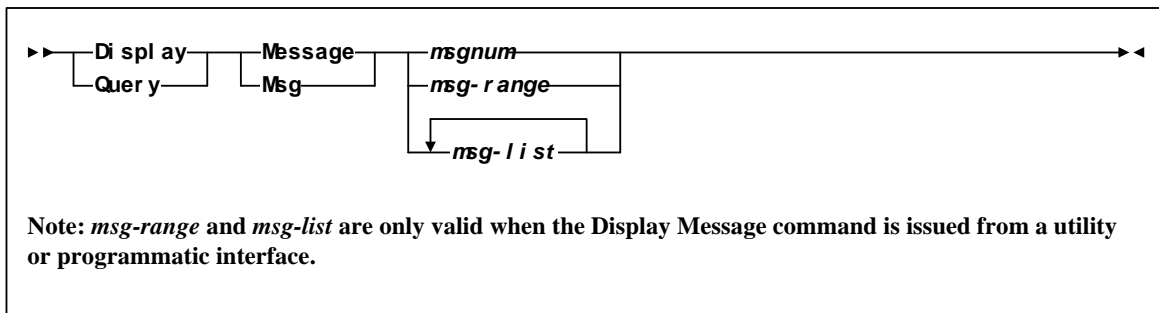
Syntax

FIGURE 3-61 Display Message 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
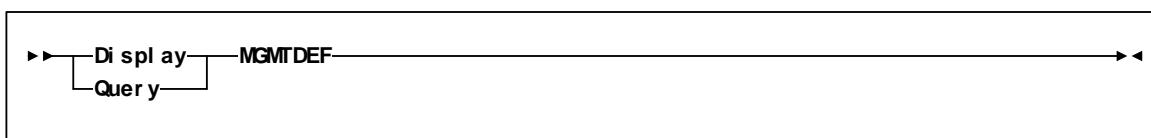
FIGURE 3-62 Display MGMTDEF syntax

Parameters

None.

Display MIGrate

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display MIGrate displays migration status.

Syntax
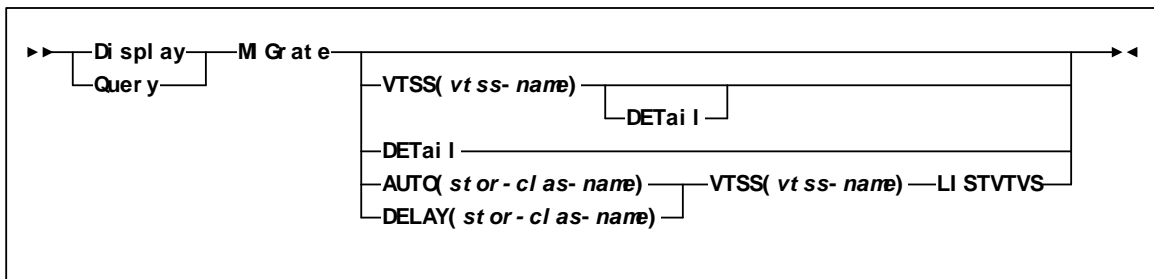
FIGURE 3-63 Display MIGrate syntax

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

Display MIGrate Output

The following figure shows an example of the output produced by the Display MIGrate
output:

```
/SLS0000I D MIG VTSS(HBVTSS16)

VTSSNAME: HBVTSS16

Active migration tasks: 4

Immediate migrate:                Max wait: 5 MINUTES

Immediate delay queue: Active

Auto migrate:                     Host: EC20 MIGRATION TARGET: 70%
```

FIGURE 3-64 Display MIGrate output example

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

The following figure shows an example of the output produced by the Display MIGrate DETail command:

```
/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

 Storage   ACS  Max/Onl  ---SCH--  Req  --Auto--  ---Immed---   Weight
  Class         RTDs     Lim Pref  Act      GB    Delay    GB   /Skip
 S1        00   16  16    1   0     1       -       1      9    50/ 0
 S2        00   16  16    1   0     1       -       1      9    50/ 0
```

FIGURE 3-65 Display MIGrate DETail output example

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. For migrations to VLEs, this is the VLE name. If this column indicates **ANY**, then migrations to any location are allowed, subject to any other restrictions.

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

The following figure shows an example of the output produced by the Display MIGrate AUTO command.:

```
/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 3-66 Display MIGrate AUTO output example

Display MIGrate DELAY Output

The following figure shows an example of the output produced by the Display MIGrate DELAY command:

```
/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 3-67 Display MIGrate DELAY output example

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

```
►►──┬─Di spl ay─┬──MNTD──────────────────────────────────►◄
    └─Quer y───┘
```
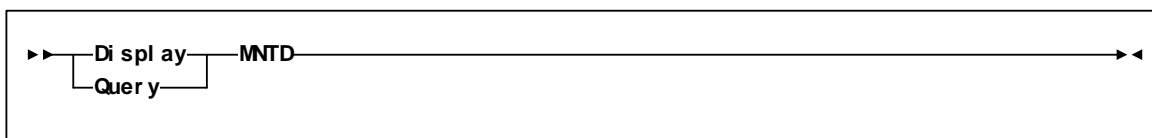
FIGURE 3-68 Display MNTD syntax

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
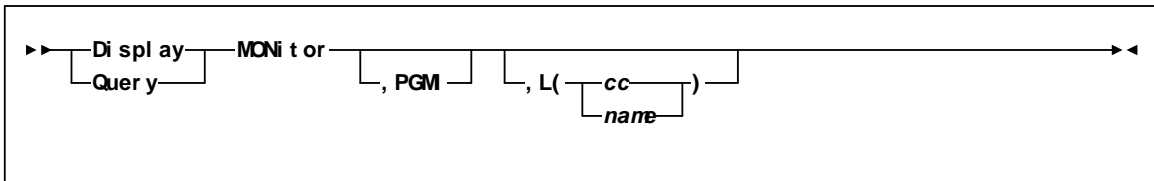
FIGURE 3-69 Display MONitor syntax

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 )──────────────────────────────►◄
    └─Query──┘
```
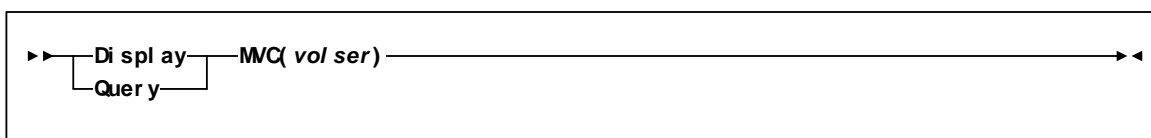
FIGURE 3-70 Display MVC syntax

Parameters

volser

> the volser of the MVC.

Output

The following figure shows an example of the output produced by the Display MVC command:

```
Volser:               702532
 Media:               T1B000T1
 ACSid:               00
 Size(Mb):            1000000
 Migrated Count:      19
 Vtv Count:           19
 %Used:               7.41
 %Fragmented:         0.00
 %Available:          92.59
 %Usable:             0.00
 Times Mounted:       77
 Last Mounted:        2010Mar15 10:40:54
 Last Migration:      2010Jan14 14:41:04
 Last Drain/Reclaim:  2010Feb23 13:55:26
 Owner:               ALP
 VTSS:                HBVTSSY
 MVCPOOL:             ALPMVC
 Security access:     No profile
 Status:              Initialized
 Format:              Partitioned
```

FIGURE 3-71 Display MVC output example

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 containing the MVC, or the VLE containing remote MVC volumes or VMVCs in VLEs. This will not appear if the MVC has been ejected from the library.

MANY indicates that an MVC with a specific volser has been discovered in more than one location. MVCs in this state are marked unusable.

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 VERIFIED

the date and time at which the last VTV media verify was performed to the MVC.

This date reflects the last time that VTCS knew the MVC contents were valid where the date is the most recent of the following:

- The date/time the MVC was verified with MEDVERfy.
- The date/time the MVC was migrated to from an empty state.

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.

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.

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.

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 or T10000 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.

DEDUP requested on last mount

DEDUP(YES) was requested on the last mount.

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
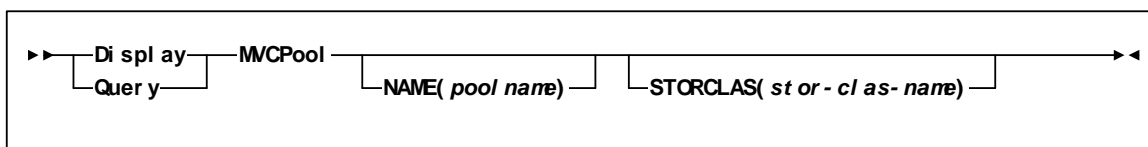
FIGURE 3-72 Display MVCPool syntax

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 439 for more information.

To display all Storage Classes, specify ALL or omit the STORCLAS parameter.

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Output

The following figure shows an example of the output produced by the Display MVCPool command with pool name POOL1 specified:

```
MVCPOOL (POOL1) INFORMATION

INITMVC    MVCFREE    THRESHOLD    INPTHRSH    MAXMVC    START    RECLAIM
NO         2          30           43          4         10       DEMand

ACS     Media        FREE-MVCS              RECLAIM-MVCS     USED-MVCS
                     VOLS      GB          VOLS     GB      VOLS     GB
00      ECART        120       96          2        0.5     90       45
TMSPB   STK1R        30        600         1        3.5     25       350

00      TOTAL        150       696         3        4.0     115      395
```

FIGURE 3-73 Display MVCPool output example (NAME POOL1)

The following figure shows an example of the output produced by the Display MVCPool command with no pool name specified:

```
MVCPOOL INFORMATION

INITMVC    MVCFREE    THRESHOLD    INPTHRSH    MAXMVC    START
NO         2          30           43          4         10

ACS     MEDIA        FREE-MVCS              RECLAIM-MVCS     USED-MVCS
                     VOLS      GB          VOLS     GB      VOLS     GB
00      ECART        310       248         4        1.2     100      65
00      ZCART        120       192         1        0.5     250      400

00      TOTAL        430       440         5        1.7     350      465
01      ECART        90        144         15       6.2     322      485
01      ZCART        35        700         3        11.3    43       675

01      TOTAL        125       844         18       17.5    365      1160
NLIB    STK2P        22        1100        0        0       12       1565
NLIB    TOTAL        22        1100        0        0       12       1565
```

FIGURE 3-74 Display MVCPool output example (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.

INPTHRSH

the fragmented space threshold (as a percentage) that determines when an MVC in partitioned format is eligible for dynamic reclaim processing.

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.

RECLAIM

specifies the space reclamation setting for the MVC pool.

ACS

- For local tape drives, this column displays the ACS or LSM to which the drive is attached.
- For remote RTDs, this column displays '*name:number*' where *name* is then name of the TapePlex and *number* is the number of the ACS in decimal.
- For VLEs, this column displays the VLE name.
- NLIB indicates MVCs that are now outside the library.
- **MANY** indicates that an MVC with a specific volser has been discovered in more than one location. MVCs in this state are marked unusable.
- ACSs with no attached RTDs are flagged.

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──────────────────────────────────►◄
   └─Query───┘
```
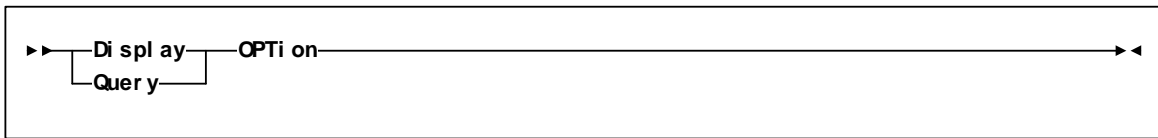
FIGURE 3-75 Display OPTion syntax

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
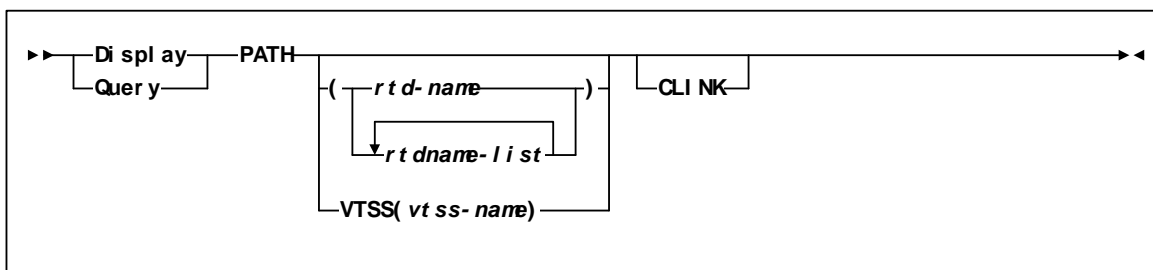
FIGURE 3-76 Display PATH syntax

Parameters

PATH

optionally, restricts the display to the specified paths

rtdname, **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.

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Output

The following figure shows an example of the output produced by the Display PATH command:

```
VTSSNAME   Type   RTD NAME   CHANIF      Device Target      State
HBVTSS18   RTD    SS182A01   01 C0E      2A01               Online
           RTD    SS182A06   00 C0I      2A06               Online
           CLINK  HBVTSS19   06 C1A             CLUSTER1    On-Async
           VLIB   SS18IP0    04 I0A:0    V000   WILDCAT1     Online
           VLIB   SS18IP2    04 I1A:0           WILDCAT2     Online
           EEXP   HBVTSS16   05 I0I:0           PRIMARY      On-Sync
HBVTSS19   RTD    SS192A02   01 C0E      2A02               Online
           RTD    SS192A07   00 C0I      2A07               Online
           VLIB   SS19IP0    04 I0A:0    V010   WILDCAT1     Online
           VLIB   SS19IP2    04 I1A:0           WILDCAT2     Online
           EEXP   HBVTSS16   05 I0I:0           PRIMARY      On-Sync
```

FIGURE 3-77 Display PATH output example

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 MSP 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─┬──────────────────────────────────►◄
   └─Query───┘       └─DETail─┬──────────────────┐
                             └─VTSS(vtss-name)─┘
```
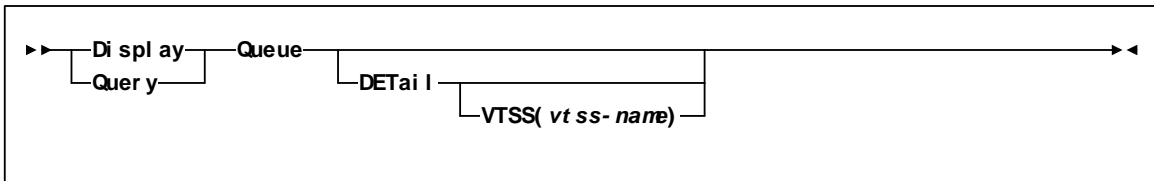
FIGURE 3-78 Display Queue syntax

Parameters

DETail

optionally, display detailed status.

VTSS

optionally, display processes for the specified VTSS.

vtss-name

the VTSS name.

Output

The following figure shows an example of the output produced by the Display Queue command:

```
MIGRATES=3 RECALLS=2 RECLAIMS=0
```

FIGURE 3-79 Display Active output example (no detail)

Display REPlicat

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display REPlicat displays VTV replication status.

Syntax

```
►►─┬─Display─┬──REPlicat ──────────────────────────────►◄
   └─Query───┘
```
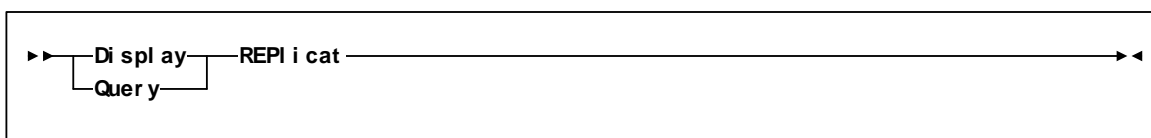
FIGURE 3-80 Display REPlicat syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display REPlicat command:

```
VTSS      Name      Host     Qdepth
HBVTSSY   PLEX1819  EC20          0
                    EC21          0
                    ECCL          0
                    ECCY          0
HBVTSS18 -Cluster   EC20          0
                    EC21          0
                    ECCL          0
                    ECCY          0
*SLS5013I Command completed (0)
```

FIGURE 3-81 Display REPlicat output example

Fields

VTSS

the Primary or sendingVTSS 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
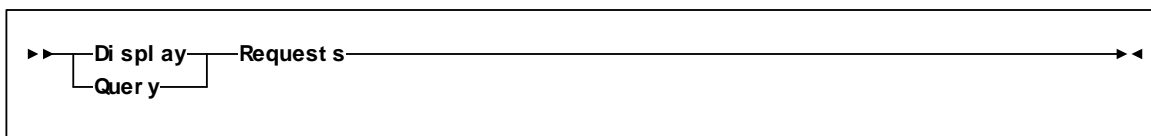
FIGURE 3-82 Display Requests syntax

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
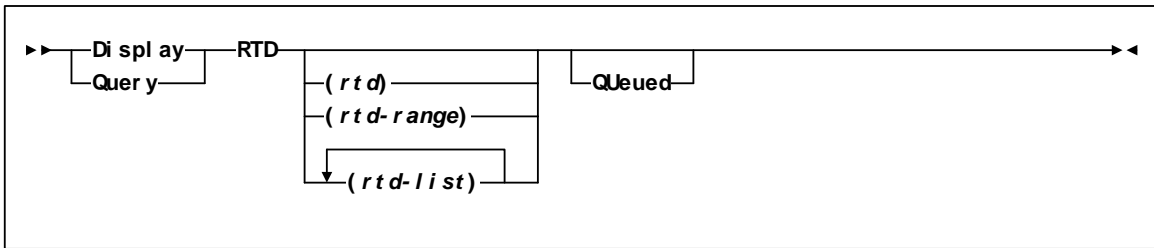
FIGURE 3-83 Display RTD syntax

Parameters

rtd–id, ***rtd-range***, or ***rtd-list***

optionally, the unit addresses of one or more RTDs.

QUeued

optionally, display information about requests queued for the RTD.

Output

The following figure shows an example of the output produced by the Display RTD command:

```
RTD    MOUNT    ALLOC    HOST    VTSS    Status         Top ID    Top Host
B200   -        -        -       DHSS16  Offline        01265     ECC20
B201   -        -        -       DHSS16  Offline        02368     ECC20
B202   -        -        -       DHSS16  Online/free
B201   -        -        -       DHSS16  Online/free
0B79   -        -        -       DHSS16  Online/free
0B7A   DMV051*  DMV051   EC20    DHSS18  Recall VTV
1600                                     MSP1 :Migrate
1601                                     MSP1 :Migrate
```

FIGURE 3-84 Display RTD output example

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

one of the following:

- The VTSS that is currently connected to the RTD.
- The VTSS that has paths to the Storage Manager containing the vRTD.
- '-' indicates that there are multiple VTSSs with paths to the Storage Manager containing the vRTD.

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 MAINT

One or more paths to the RTD have been varied into maintenance mode.

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.

PATHS OFFLNE

There are no online paths to the Storage Manager containing the vRTD and all paths to the Storage Manager containing the vRTD from at least one online VTSS are offline.

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 card 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.

UNKNOWN

There are no online paths to the Storage Manager containing the vRTD and none of the following statuses apply:

- Paths Offlne
- VTSS Offline
- VTSSs Offlne

UNLOAD MVC

A forced unload of the RTD is occurring.

VTSS Offline

One of the following:

- The VTSS to which the RTD is connected is offline.
- There are no online paths to the Storage Manager containing the vRTD, 'Paths offlne' does not apply, and there is one offline VTSS with paths to the Storage Manager containing the vRTD.

VTSSs Offlne

One of the following:

- The RTD is connected to multiple VTSSs, all of which are offline.
- There are no online paths to the Storage Manager containing the vRTD, 'Paths offlne' does not apply and there are multiple offline VTSSs with paths to the Storage Manager containing the vRTD.

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 at the top of the queue to use this RTD. The TOP HOST indicates which host has the top claim upon the RTD.

Display RTD Queued Output

The following figure shows an example of the output produced by the Display RTD command with the QUed parameter:

```
ID         Function        Weight           VTSS        MVC list /
                                                        Storage Class

01360      <X00029>        432*             HBVTSS18    021748 022524
01425      Recall          2                !ALLVTSS    021754
01423      Recall          2                !ALLVTSS    021675
01368      Recall          2                !ALLVTSS    022551
01381      Migrate         2                HBVTSS19 -  *HBVTSS19
```

FIGURE 3-85 Display RTD output example (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 sufficiently 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 an MVC, this will be empty.

STORAGE CLASS

the storage class for which the migration is destined. An asterisks (*) next to the value indicates that this 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
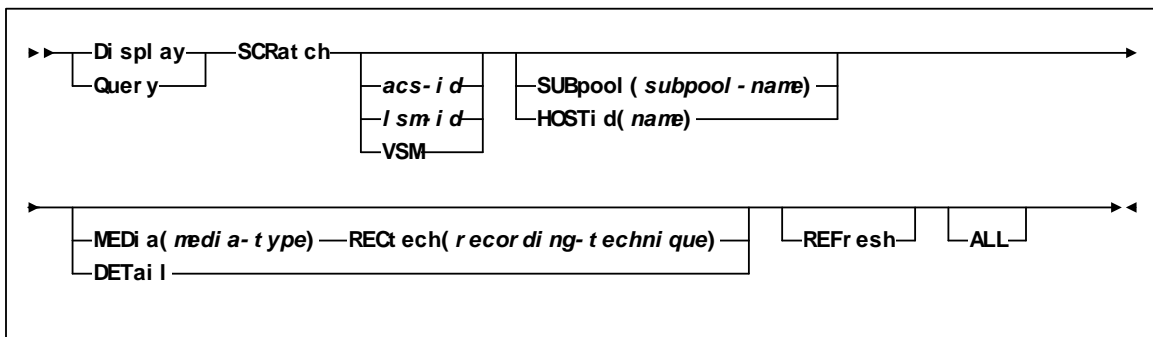
FIGURE 3-86 Display SCRatch syntax

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.

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.

REFresh

optionally, updates VSM scratch counts prior to the display occurring.

Note – The REFresh parameter causes additional I/Os to the CDS and must be used sparingly.

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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

The following figures show examples of the output produced by the Display SCRatch command. This command displays counts for all LSMs in all ACSs:

```
DISPLAY SCRATCH

SLS2638I Scratch Summary

ACS/LSM      Subpool Name Label Media     Rectech     Count
===========================================================
VSM          SPV001       SL    VIRTUAL   VIRTUAL       930
VSM          SPV002       SL    VIRTUAL   VIRTUAL      1036
VSM          SPM001       SL    VIRTUAL   VIRTUAL        25
VSM          Total              VIRTUAL   VIRTUAL      1991

-----------------------------------------------------------
 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
===========================================================
```

FIGURE 3-87 Display SCRatch output example (all)

Display scratch counts for a single subpool:

```
DISPLAY SCRATCH SUBPOOL(SPM001)

SLS2638I Scratch Summary

ACS/LSM      Subpool Name Label Media     Rectech     Count
===========================================================
VSM         SPM001       SL    VIRTUAL   VIRTUAL        25
-----------------------------------------------------------
 LSM 00:00  SPM001       SL    All                     235
ACS 00      SPM001       SL    All                     235
===========================================================
```

FIGURE 3-88 Display SCRatch output example (subpool)

Display scratch counts for a single ACS:

```
DISPLAY SCRATCH ACS 00

SLS2638I Scratch Summary

ACS/LSM      Subpool Name Label Media     Rectech     Count
===========================================================
 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
===========================================================
```

FIGURE 3-89 Display SCRatch output example (ACS)

Display scratch count detail for a single LSM:

```
DISPLAY SCRATCH LSM 01:00 DETAIL

SLS2638I Scratch Summary

ACS/LSM      Subpool Name Label Media      Rectech      Count
============================================================
 LSM 01:00  SP002        SL    ECART      36TRACK          1
 LSM 01:00  SP002        SL    STANDARD 18TRACK            5
 LSM 01:00  SP002        SL    STANDARD 36TRACK            5
 LSM 01:00  Non-Subpool        All                         8
 LSM 01:00  Total              All                        19
============================================================
```

FIGURE 3-90 Display SCRatch output example (LSM)

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

```
►►──┬─Display──┬──SEN──────────────────────────────────────►◄
    └─Query────┘    └─REQNAME=──LNRNAME=─┘
```
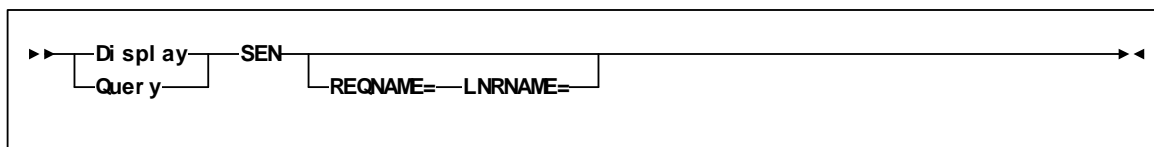
FIGURE 3-91 Display SEN

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).

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Supported HSC and VTCS SEN Events

HSC SEN Events

TABLE 3-2   HSC SEN Events

Event Name	Numeric Equate
libvol_insert_event	18
libvol_delete_event	19
hsc_termination_event	20
lsmrail_added_event	25
lsmrail_removed_event	26
libdrive_added_event	27
libdrive_removed_event	28

VTCS SEN Events

TABLE 3-3   VTCS SEN Events

Event Name	Numeric Equate
vtss_performance_event	01
vtss_chanif_performace_event	02
vtv_mount_event	03
vtv_dismount_event	04
vtv_delete_event	05
mvc_mount_event	06
mvc_dismount_event	07
vtv_migrate_event	08
vtv_recall_event	09
rtd_performance_event	10
rtd_vary_event	11
mvc_usage_event	12
vtv_movement_event	13
vtv_scratch_event	14
vtv_replicate_event	15
tv_unlink_from_mvc_event	16
clink_vary_event	17

Display SERVER

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display SERVER displays service level and database status.

Syntax

```
►►─┬─Display──┬──SERVER──────────────────────────────────►◄
   └─Query────┘
```
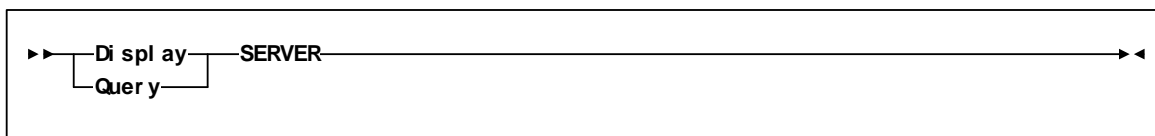
FIGURE 3-92 Display SERVER syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the 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 3-93 Display SERVER output example

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

```
►►──┬─Di spl ay─┬──SRVl ev──────────────────────────────►◄
    └─Quer y────┘
```
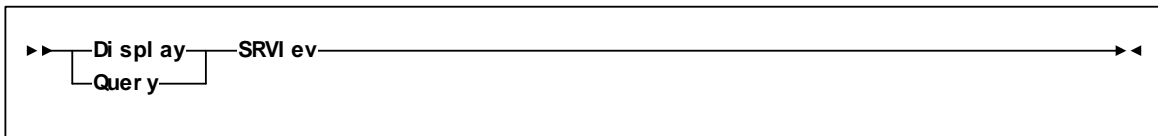
FIGURE 3-94 Display SRVlev syntax

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

```
►►──┬─Di spl ay─┬──St at us──────────────────────────────►◄
    └─Quer y────┘
```
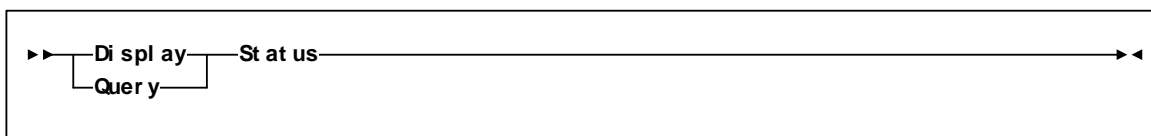
FIGURE 3-95 Display Status syntax

Parameters

None.

Output

The Display Status command displays 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
    - whether a switch is in progress for an ACS

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.

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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)─────────────────────────────►◄
   └─Query────┘          └─DETail─┘ └─MAXvtv( nnnn)─┘
```
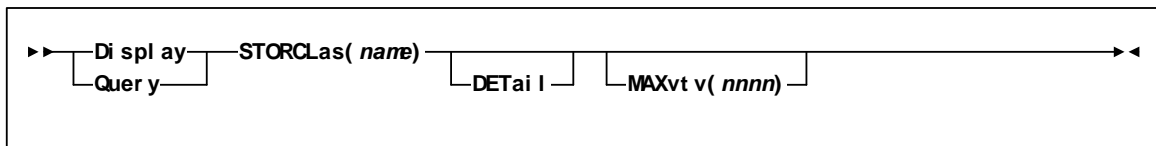
Parameters

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

The following figure shows an example of the output produced by the Display STORCLas command:

```
Summary of storage class XCA8:

MVCs must be in ACS 00 and MVCPool DEFAULTPOOL

RTDs can be any device type
MVCPool DEFAULTPOOL contains no free MVCs

There is 1 VTV awaiting auto-migration from VTSS CLIVSS16
V00002 with MGMTCLAS XCA8

VTSS CLIVSS16 has no suitable RTDs online in ACS 00
VTSS CLIVSS17 has no suitable RTDs online in ACS 00
```

FIGURE 3-97 Display STORCLas output example

As shown in FIGURE 3-97, 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 ( name) ───────────────────────────►◄
    └─Query───┘
```
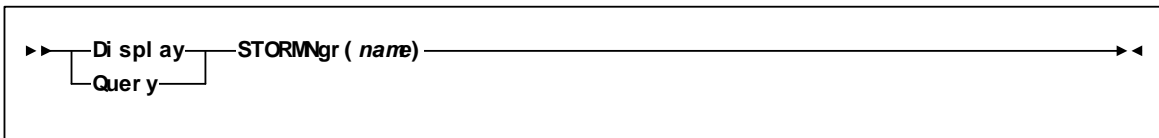
FIGURE 3-98 Display STORMNgr syntax

Parameters

STORMNGR

specifies the external storage manager to be displayed

name

the storage manager name

Output

The following figure shows an example of the output produced by the Display
STORMNgr command:

```
Name       Type      Version       Status
VLELIB0    VLE       1.1           Online

Features: Unknown

Device  Name       VTSS      CHANIF
V000    SS16IP0    DVTSS16   08 I0A:0
V002    SS16IP1    DVTSS16   09 I0I:0
V001    SS16IP2    DVTSS16   0A I1A:0
V003    SS16IP3    DVTSS16   0B I1I:0
V010    SS17IP0    DVTSS17   08 I0A:0
V012    SS17IP1    DVTSS17   09 I0I:0
V011    SS17IP2    DVTSS17   0A I1A:0
V013    SS17IP3    DVTSS17   0B I1I:0
```

FIGURE 3-99 Display STORMNgr output example

Fields

Name

the name of the external storage manager

Type

the type of Storage Manager:

- HSC – An HSC in another TapePlex
- VLE – A VLE

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──────────────────────────────────────────►◄
    └─Query────┘
```
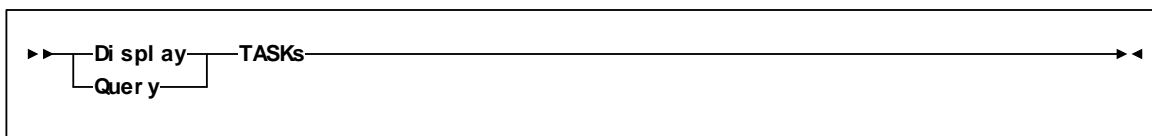
FIGURE 3-100 Display TASKs syntax

Parameters

None.

Output

The following figure shows an example of the output produced by the Display TASKs command:

```
TASK     TASK     SLOT ID   VTSS       RTD        CURRENT    LOCKS   WAITQ   PENDQ
NBR      TYPE     003                             PROCESS    HELD    COUN    COUNT
000      DSP      019                             518        T
001      SS       034       HBVTSS16   SS16B200              T
002      RTD      035       HBVTSS16   SS16B201              R
003      RTD      036       HBVTSS16   SS160B79              R
004      RTD      044       HBVTSS16   SS160B7A              R       1
005      RTD      045       HBVTSS16   SS160B7C              R
```

FIGURE 3-101 Display TASKs output example

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
Ctc	Cross TapePlex Communication Manager
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
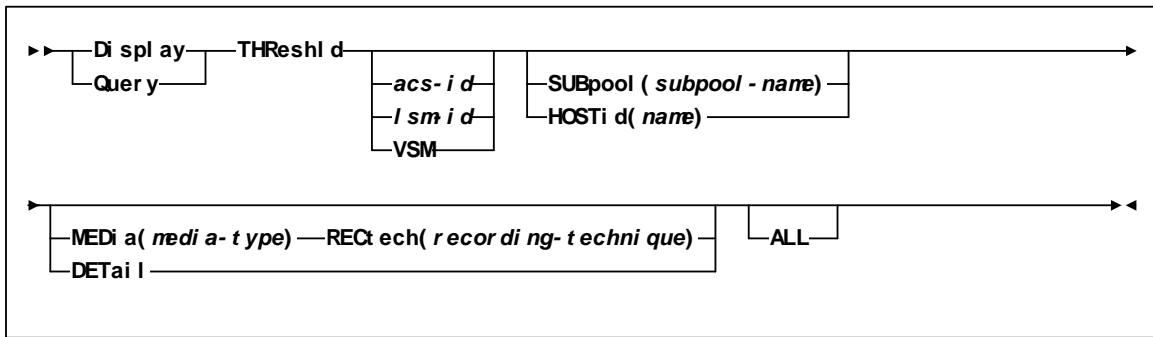
FIGURE 3-102 Display THReshld syntax

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 THReshold 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 ALIASHOST ID of the host. Specify up to 8 characters.

MEDia

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 the output produced by the Display THReshld command:

```
DISPLAY THRESHOLD

SLS2649I Threshold Value Summary

ACS/LSM     Subpool Name Label Media     Rectech     Count   Thresh
==================================================================
===
VSM         SPV001       SL    VIRTUAL   VIRTUAL      930        0
VSM         SPV002       SL    VIRTUAL   VIRTUAL     1036        0
VSM         SPM001       SL    VIRTUAL   VIRTUAL       25        0
VSM         Total              VIRTUAL   VIRTUAL     1991        0
------------------------------------------------------------------
---
 LSM 00:00  SP001        SL    All                    13        0
 LSM 00:00  SP002        SL    All                    31        0
 LSM 00:00  SPM001       SL    All                   235        0
 LSM 00:00  Total              All                   290        0
 LSM 00:01  SP001        SL    All                     9        0
 LSM 00:01  Total              All                    15        0
ACS 00      SP001        SL    All                    22        0
ACS 00      SP002        SL    All                    31        0
ACS 00      SPM001       SL    All                   235        0
ACS 00 Total               All                      305        0
==================================================================
```

FIGURE 3-103 Display THReshld output example

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
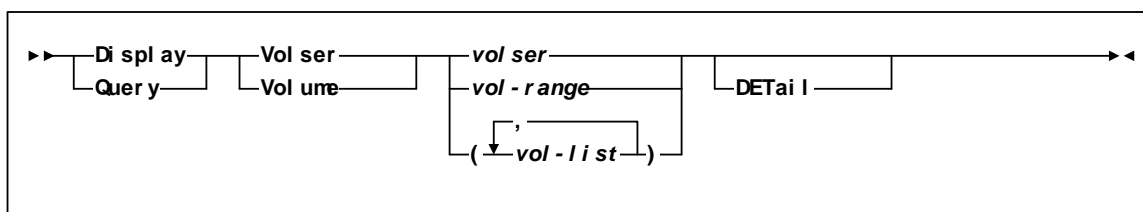
FIGURE 3-104 Display Volser syntax

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 Display Volser command displays the following information:

- home cell location
- whether or not the volume is a scratch cartridge
- whether or not the volume is selected
- owning host (displayed if the volume is selected)
- 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
- select count
- media type for the volume
- 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:

YES	The media label and the VOLPARM defined for the volume agree.
NO	The media label and the VOLPARM defined for the volume do not agree.
VOLATTR Only	A VOLPARM has been defined, but the LMU has not determined the media type.
Label Only	The LMU has determined the media type, but a VOLPARM has not been defined.
Undefined	A VOLPARM has not been defined, and the LMU has not determined the media type.

- whether or not the volumes are unusable (i.e., spent cleaning cartridges)
- volume density for STK1 and STK2 media volumes.
- 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
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display VOLume_Info displays information for real and/or virtual volumes.

Syntax
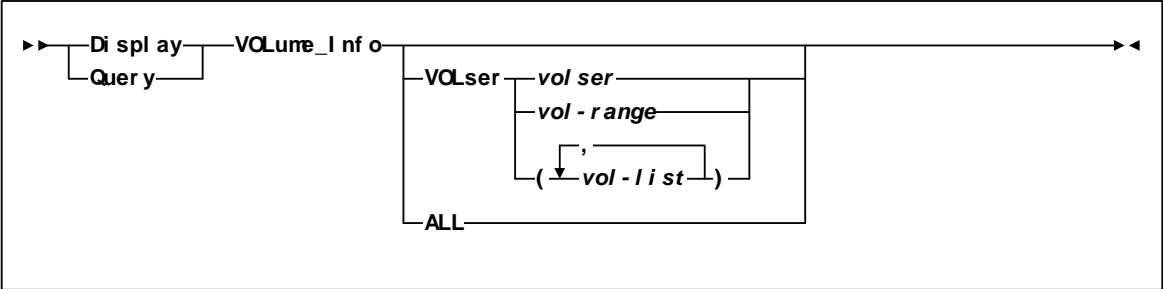
FIGURE 3-105 Display VOLUME_INFO syntax

Parameters

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 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.

ALL

Only real (non-virtual) volumes are listed. Volumes are listed in random order.

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Display VSCRatch

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display VSCRatch displays diagnostic information for virtual scratch counts.

Syntax
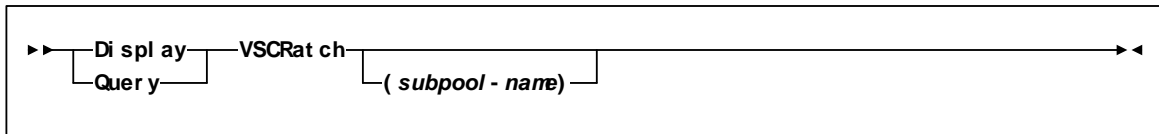
FIGURE 3-106 Display VSCRatch syntax

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 the output produced by the Display VSCRatch command:

```
                 Scratch  Label  <------- Sizes available -------->
 Subpool-Name      Count   Type  0.4GB  0.8GB    2GB    4GB   32GB
 M0                  972     SL    Yes    Yes    Yes    Yes    N/A
 M1                  994     SL    Yes    Yes    Yes    Yes    N/A
 M2                1,000     SL    Yes    Yes    Yes    Yes    N/A
```

FIGURE 3-107 Display VSCRatch output example

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 Count

the number of scratch counts. The maximum number of scratch VTVs that can be displayed is 99,999,999.

Label Type

one of the following scratch label types:

- SL (standard labeled)
- AL (ANSI-labeled)
- NL (Nonlabeled)
- NSL (Nonstandard labeled)

Sizes available

valid VTV sizes (0.4GB, 0.8GB, 2GB, 4GB, 32GB).

Display VTD

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display VTD displays VTD status.

Syntax
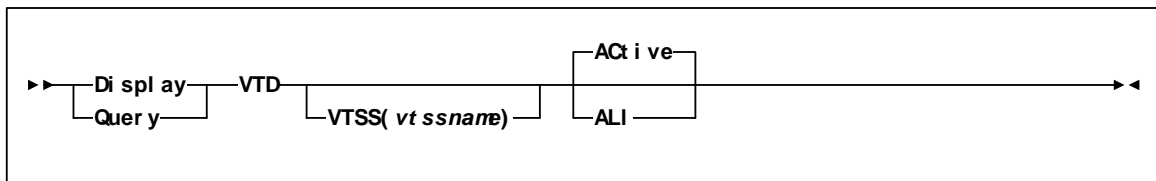
FIGURE 3-108 Display VTD syntax

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

The following figure shows an example of the output produced by the Display VTD command:

```
Drive     Location    VTV       Status       Usage            Client address
A800      HBVTSS16    X00778    Available    ECAM only
A801      HBVTSS16              Available    ECAM only
A802      HBVTSS16              Available    ECAM only
A803      HBVTSS16              Available                     EC21:B412
```

FIGURE 3-109 Display VTD output example

Fields

Drive

the MSP 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.

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.

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.

Importing

The VTV volser shown in the VTV column is being electronically imported via the VTD.

Mounted

The VTV volser shown in the VTV column is mounted on the VTD.

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.

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.

Not Available

The VTD is not available for work.

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.

Replicating

The VTV volser shown in the VTV column is in the process of being replicated.

Undefined

The VTV volser shown in the VTV column is undefined.

Unknown

The VTV volser shown in the VTV column is unknown.

Usage

one of the following:

Configuring

Configuration of the VTD is in progress.

ECAM init error

Unable to initialise VTD through ECAM-t with VTSS.

ECAM I/O error

ECAM-t I/O has failed on this VTD.

ECAM only

The VTD is one of the VTDs connected to another VTSS for the process of replicating VTVs. In FIGURE 3-109 on page 331, X00778 is the VTV being replicated.

Not accessed

The VTD is not found in the VTSS configuration.

Not verified

The VTD is defined with NOVERIFY in the configuration.

Client address

the address of the drive as reported by the client that last performed a mount on the VTD.

Display VTSS

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

Display VTSS displays VTSS status.

Syntax
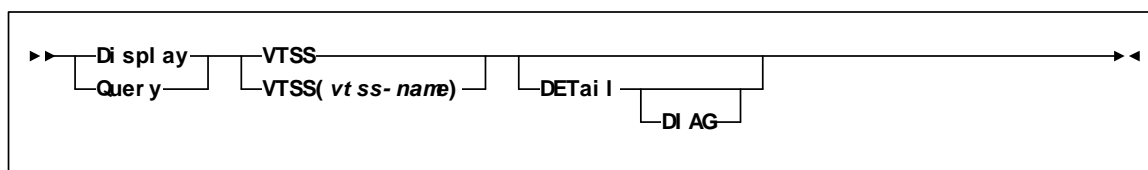
FIGURE 3-110 Display VTSS syntax

Parameters

VTSS

vtss-name

optionally, the VTSS for which to display status.

DETail

optionally, display detailed VTSS status information including supported features.

DIAG

optionally, display more detailed diagnostic information about the TCP/IP connections and control parameters in effect.

Output

The following figure shows an example of the output produced by the Display VTSS command:

```
VTSSNAME  CAPACITY(GB) DBU  HI   LOW   VTV    MX  MN  Def   AUTOMIG  STATE  RTDs
                            AMT  AMT   COUNT  MT  MT  ACS
HBVTSS16  56.209       9    35   30    204    6   1   --              On-P   Yes
HBVTSS17  56.209       7    35   30    218    4   3   02              On-P   Yes
HBVTSS18  N/A          N/A  35   30    N/A    3   1   01              Off    Yes
HBVTSS19  93.184       5    35   30    110    3   1   01              On     Yes
```

FIGURE 3-111 Display VTSS output example

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

The following figure shows an example of the output produced by the Display VTSS
DETail command:

```
Vtss            Host           Nomigrat      Noreclam      State
HBVTSS16        EC104              Y             Y          Online
HBVTSS16        EC21               N             Y          Online
HBVTSS17        EC21               N             Y          Quiesced
HBVTSS17        EC10               Y             Y          Offline


VTSS            TYPE           SUPPORTED FEATURES
HBVTSS16        VSM5           2/4GB VTVS
                               LARGE PAGE VTVS
                               NOWAIT ON RTD MOUNT
                               BUDDY QUEUING
                               SYNC REPLICATE
                               LAST USE HINT
                               MGMT CLASS ON MVCS
                               CONNECT to 32 RTDS
                               STACKED MIGRATES
```

FIGURE 3-112 Display VTSS Detail 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).

ACCESS

The connection method employed for the host, either TCPIP or CHANNEL ECAM-T protocol.

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.

PARTITIONED RTDs

Partitioned RTDS enabled.

T10KC Partition RTDs

T10KC partitioned RTDs enabled.

Write New VOL1 Label

VTSS supports MVC labeling.

CONCURRENT PORT I/O

VTSS supports multiple I/Os on a single physical nearlink interface.

MANY-TO-MANY CONNECT

VTSS supports target VTD selection for a CLINK.

IP REPLICATION

VTSS supports IP CLINKs and therefore a VLE connection.

CONCURRENT TAPE RECALL/MOUNT

VTV mounts on VTDs can occur before the recall has completed.

CONCURRENT TAPE RECALL/MOUNT *DISABLED

The Concurrent Tape Recall/mount feature is installed on the VTSS but has been disabled by either CONFIG GLOBAL FASTRECL=NO or CONFIG VTSS NOERLYMT.

UNKNOWN VTSS FEATURE

VTSS feature found not supported by VTCS software level.

NONE

No VTSS features defined.

Note –

■ If ETTB (Early Time to First Byte) is enabled, the following is displayed:

```
VTV mounts on VTDs can occur before the recall has completed.
```

■ If ETTFB is disabled, the following is displayed:

```
The concurrent tape recall/mount feature is installed on the VTSS but
has been disabled by either CONFIG GLOBAL FASTRECL=NO or CONFIG VTSS
NOERLYMT.
```

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───┘
```
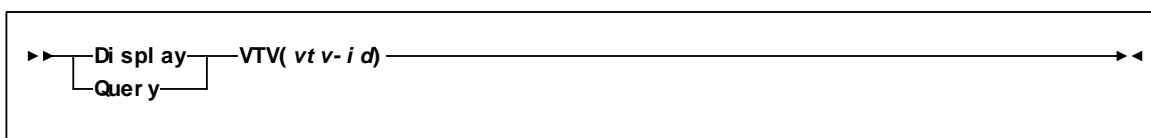
FIGURE 3-113 Display VTV syntax

Parameters

vtv-id

the ID of the VTV.

Output

The following figure shows an example of the output produced by the Display VTV command:

```
Volser:                 X00000
VTSS                    HBVTSS19
Mounted                 A800
Uncompressed Size (Mb)  99.01
Compressed Size (Mb)    97.88
Maximum VTV size (Mb)   800
Page Size               Standard
Creation Date           2008Feb21 09:32:22
Last Mounted            2008Feb21 09:32:23
Last Recalled           2008Apr05 08:15:47
First Migrated          2008Apr25 08:58:28
Last Used Date          2008Apr25 08:58:28
MVC(s)                  021681                   021645
Block-id(s)             1A400D24                 25401185
Management Class        M13                      SB
Migrate Pending         SA
Status                  Initialized
```

FIGURE 3-114 Display VTV output example

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.

Partition-Id(s)

the starting partition id on the 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-NOT POSSIBLE

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.

AVOID EARLY MOUNT

Concurrent recall/mount encountered an error with this VTV. No further concurrent recall/mount activity will be attempted for this VTV.

Note – VTVs that have incurred an ETTFB recall error have an error flag set in their VTV record in the CDS. This error indicates to VTCS that no further ETTFB recalls will occur for this VTV. When the error flag is on, the following is displayed:

```
concurrent recall/mount encountered an error with this VTV. No further
concurrent recall/mount activity will be attempted for this VTV.
```

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
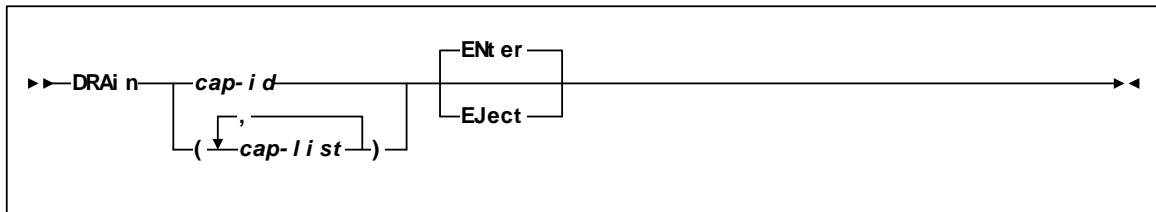
FIGURE 3-115 DRAin syntax

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 734 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.

DRCHKPT

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC/VTCS at FULL service level

Description

The DRCHKPT command establishes the system recovery point (checkpoint) from which MVC content can be recovered from for a period of time.

Syntax
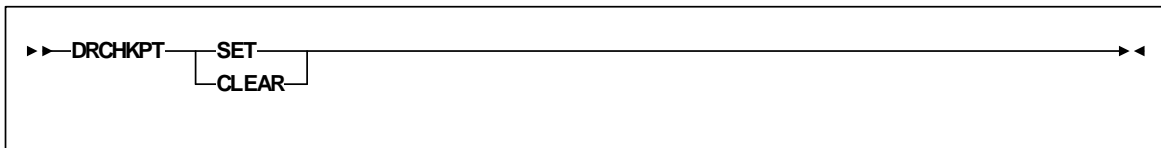
FIGURE 3-116 DRCHKPT syntax

Parameters

SET

Sets a date/time stamp in the active CDS which establishes the recovery point. Beginning at this recovery point, MVC content is guaranteed for a period of time in the future (for example, until another DRCHKPT utility is run).

CLEAR

Removes any recovery point set in the active CDS. Once removed, MVC content cannot be guaranteed.

DRMONitr

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC/VTCS at FULL service level

Description

The DRMONitr utility stalls job stream processing to ensure that critical data reaches its target destination. Once all identified data is accounted for, the utility ends.

DRMONitr can monitor for MVC and remote TapePlex copies being complete. It can also monitor for cluster replication being complete, in support of tapeless environments.

DRMONitr reports any VTV exception conditions found during execution.

Syntax
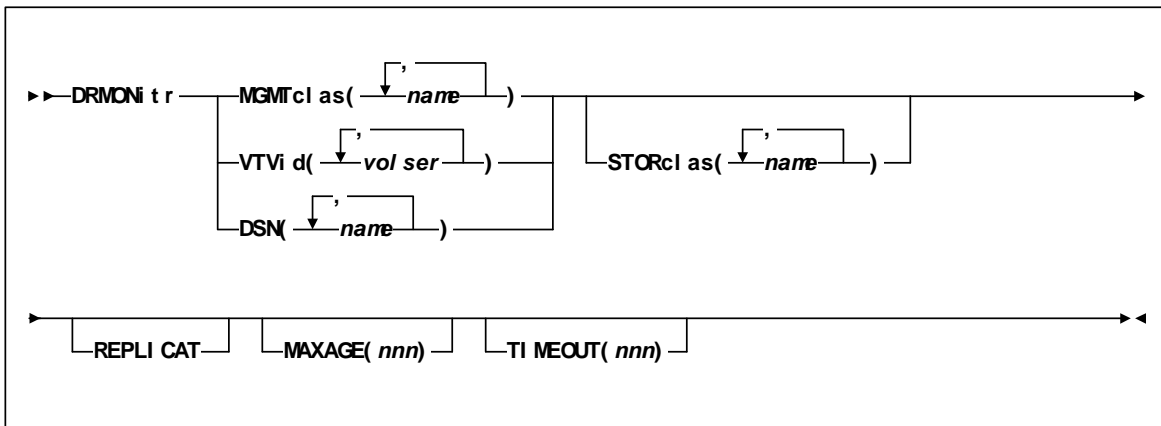
FIGURE 3-117 DRMONitr syntax

Parameters

The MGMTclas, VTVid, and DSN parameters are mutually exclusive.

MGMTclas(*name*)

optionally, specifies a list of Management Classes to be monitored for VTV migrate/copy completion.

Specified Management Classes must be defined to the active VTCS system and must specify immediate migrate. For tapeless environments, specified Management Classes must specify REPLICAT.

VTVid(*volser*)

optionally, specifies a list and/or range of VTV volsers to be monitored for migrate/copy completion.

The VTV's Management Class must be defined to the active VTCS system and must specify immediate migrate, i.e. the Management Class must specify IMMEDmig(KEEP), IMMEDmig(DELETE) or IMMDELAY(*n*)."

For tapeless environments, the VTV's Management Class must specify REPLICAT.

DSN(*name*)

optionally, specifies a list of data sets to be monitored for migrate/copy completion.

The VTVs containing these data sets must have Management Classes defined to the active VTCS system and must specify immediate migrate. For tapeless environments, the VTV's Management Class must specify REPLICAT.

STORclas(*name*)

optionally, specifies the Storage Class locations that the identified VTV data is to be delivered to.

Specified Storage Classes must be defined to the active VTCS system. Although this parameter is optional, the STORclas parameter should only be omitted in tapeless environments.

REPLICAT

optionally, specifies that VTV cluster replication is to be monitored for completion. Replication must be specified on the VTV's Management Class policy for the VTV to be selected for monitoring. If replications are monitored in a tape environment, their completion overrides any Storage Class requirement.

MAXAGE(*nnn*)

optionally, specifies the maximum VTV age (time since last update), in hours, when monitoring migrations by Management Class (a MGMTclas value is required). Valid values are 1 to 999. There is no default.

If the VTV's age (time since last update) is greater than MAXAGE, the VTV is not monitored. DRMONitr reports the number of skipped VTVs due to MAXAGE, if specified.

If you do not specify MAXAGE, any active VTV belonging to the specified Management Classes, regardless of age, is monitored for migrate/copy completion.

TIMEOUT(*nnn*)

optionally, specifies the maximum time, in minutes, for DRMONitr to run.

Valid values are zero to 999. If you do not specify a TIMEOUT value, there is no limit on the time the utility can run (stall).

A TIMEOUT value of zero does not stall the DRMONitr utility. This special case reports on incomplete copies of specified VTV data.

If a non-zero TIMEOUT value is exceeded, DRMONitr ends with RC 8 and generates an error message. If the TIMEOUT value specified was zero, a return code of 4 is set if a VTV's copy is detected as incomplete, otherwise a return code 0 is set.

Note – You must specify either STORclas or REPLICAT or both to specify the destination criteria. Otherwise DRMONitr ends with RC 8 and generates an error message. Additionally, Oracle recommends that you do not specify (or monitor) Storage Classes in tapeless environments because migrations are not possible.

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 3-4   DRTEST options

This option:	can be issued from:	and performs the following function:
CREATE	SLUADMIN utility only	creates a DR test CDS, normally run at the DR test site
PRIMEprd	SLUADMIN utility only	updates the production CDS without creating a DRTEST CDS
RESET	SLUADMIN utility only	removes all DR test settings in the production CDS
START	SLUADMIN utility or console	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.
STOP	SLUADMIN utility or console	stops the DR test on the production site

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 354 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)
```
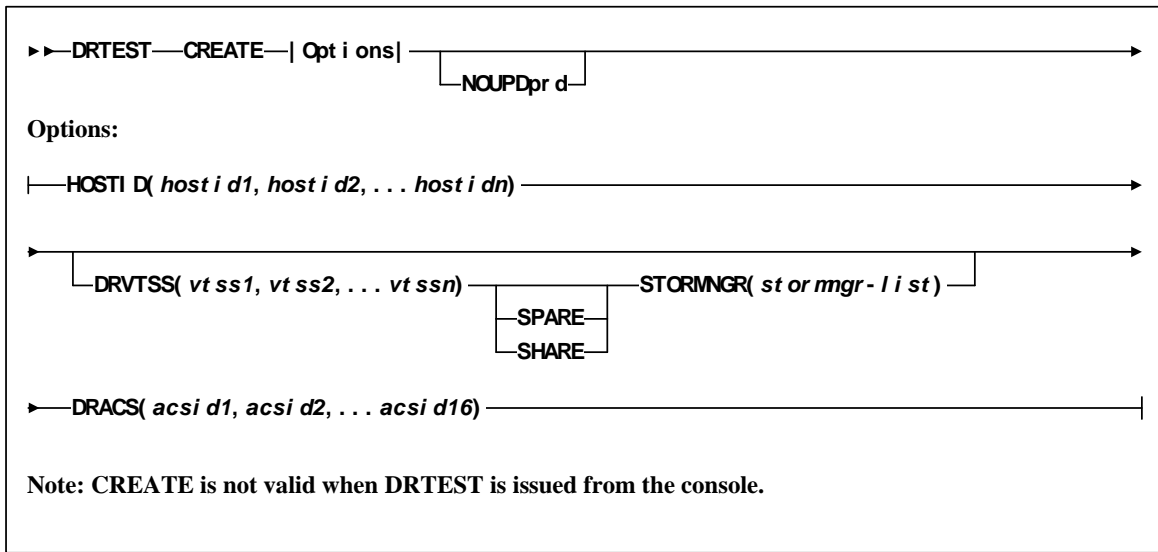
Syntax

FIGURE 3-118 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 also specify the SHARE or SPARE parameter, these VTSSs are offline to the production site and online to the DR test site when the DR test starts.

SPARE

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.

SHARE

Optionally, specifies that the DR test VTSS(s) are shared with the production site. During the DR test, both the test and production site may create VTVs in the DR test VTSS (based on the VOLPARM definitions). The DR test cannot modify VTVs that are not in a DR test subpool. The parameters DRACS and STORMNGR cannot be specified if SHARE is specified.

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STORMNGR(*stormngr-list***)**

Optionally, specifies the Subsystem Names of the VLEs 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, acsid2,...acsid16***)**

Optionally, 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.

If the DRVTSS SHARE parameter is specified, the DRACS parameter is not allowed.

If the STORMNGR parameter is specified, the DRACS parameter is allowed but not required.

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 for more information.

Additional JCL Requirements

In addition to the required JCL definition statements described in , 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 – SLSJRN*nn*

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 560 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(PRI1)
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRI2)
SET SLISTATN(00E7,00E8),FORACS(01),FORHOST(PRIY)
```

FIGURE 3-119 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 183 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=MSP1
       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=MSP2
VTD    LOW=9900 HIGH=993F
```

FIGURE 3-120 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)
```
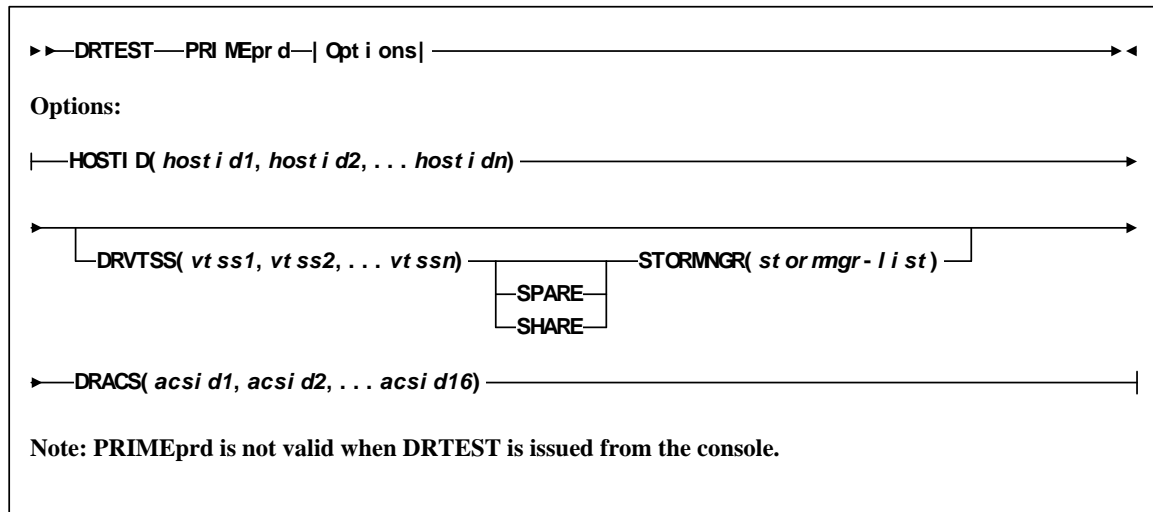
Syntax

FIGURE 3-121 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 also specify the SHARE or SPARE parameter, these VTSSs are offline to the production site and online to the DR test site when the DR test starts.

SPARE

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.

SHARE

Optionally, specifies that the DR test VTSS(s) are shared with the production site. During the DR test, both the test and production site may create VTVs in the DR test VTSS (based on the VOLPARM definitions). The DR test cannot modify VTVs that are not in a DR test subpool. The parameters DRACS and STORMNGR cannot be specified if SHARE is specified.

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STORMNGR(*stormngr-list***)**

Optionally, specifies the Subsystem Names of the VLEs 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, acsid2,...acsid16***)**

Optionally, 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.

If the DRVTSS SHARE parameter is specified, the DRACS parameter is not allowed.

If the STORMNGR parameter is specified, the DRACS parameter is allowed but not required.

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.
```
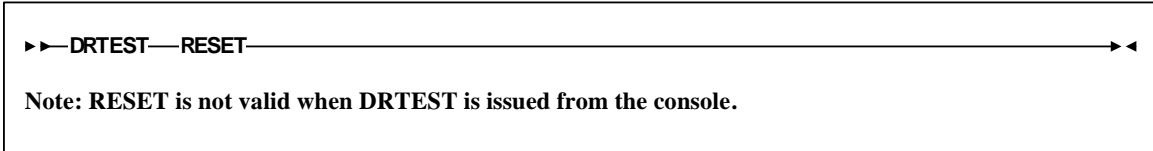
FIGURE 3-122 DRTEST RESET syntax

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──────────────────────────────────────────────►◄
```
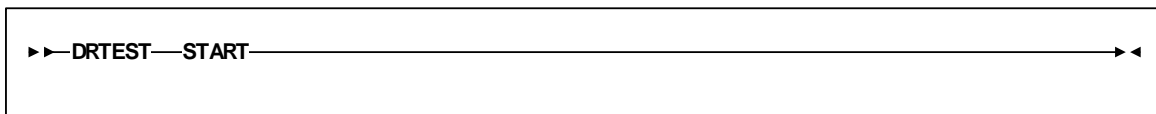
FIGURE 3-123 DRTEST START syntax

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.
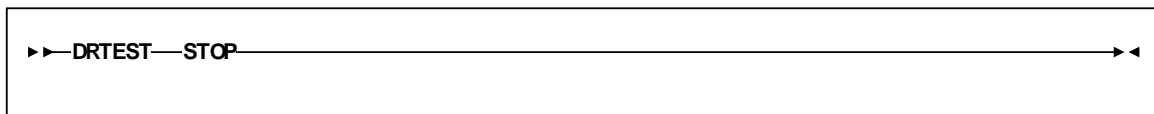
Syntax

►►─DRTEST──STOP──►◄

FIGURE 3-124 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
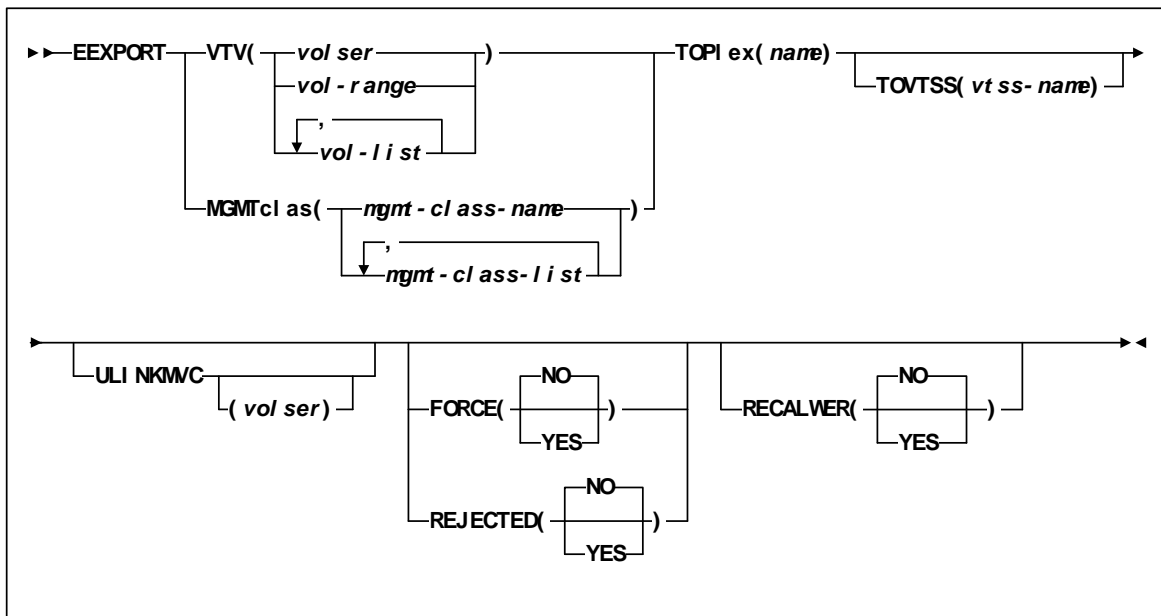
FIGURE 3-125 EEXPORT syntax

Parameters

VTV

specifies one or more VTVs to electronically export.

volser, *vol-range*, or *vol-list*

the volsers of one or more VTVs. You can specify a maximum of 2,000 volsers.

MGMTclas

specifies one or more names of Management Classes that determine the VTVs to electronically export.

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.

name

the target TapePlex name.

TOVTSS

optionally, specifies the VTSS name to be preferenced as the receiving VTSS within the target TapePlex specified by the TOPlex parameter.

vtss-name

the VTSS name.

Note – This is a preference only. Validation of the value is **not** performed.

ULINKMVC

specifies whether MVC copies on the target TapePlex are to be deleted as part of the export process.

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.

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.

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.

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.

NO

Do not recall VTVs with read data checks. This is the default.

YES

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 165).

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
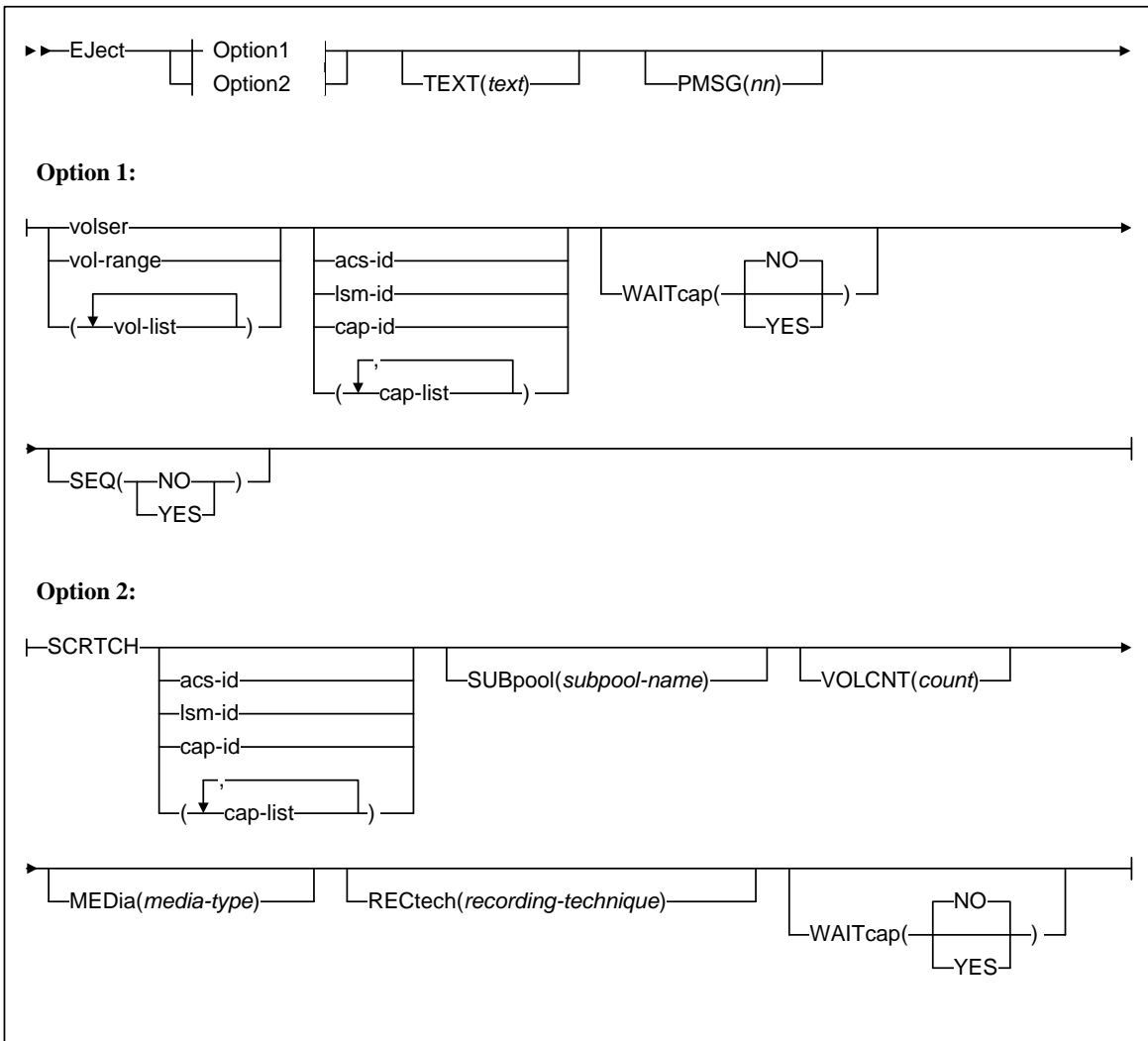
FIGURE 3-126 EJect syntax

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.

text

the text string.

PMSG

optionally, specifies a user-defined message to be displayed in the SLConsole CAP status screen for a CAP when the door is unlocked for cartridge removal.

nn

A two-character number from 00 to 99. The following are the possible values for *nn*:

- 00 – No message is displayed.
- 01 – Display "Remove cartridges" message.
- 02 – Display "Lib not available" message.
- 03 – Display "Load cartridges" message.
- 04-99 - Display customized user messages.

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

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

optionally, specifies that a designated number of scratch volumes are to be ejected.

count

the number of scratch volumes to be ejected.

MEDia

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

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 165 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 734 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
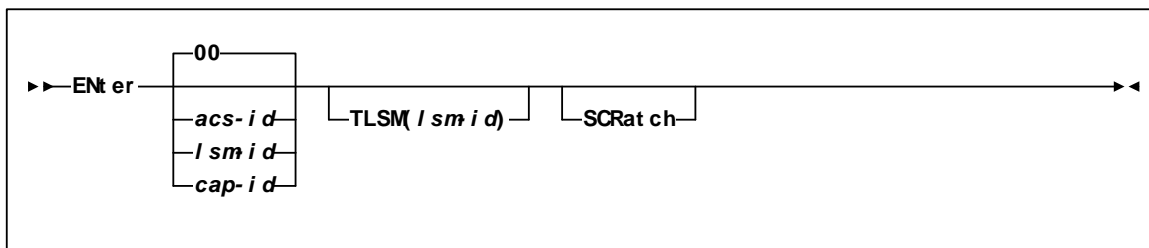
FIGURE 3-127 ENter syntax

Parameters

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.

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.

cap-id

specifies a specific manual mode CAP to use regardless of availability or CAP preference. 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 734 for a list of valid values.

TLSM

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
UUI: 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───────────────────────────────────────────────────────────►
                 ┌─Yes─┐            ┌─, Eid( gtfeid )─┐  ┌─, Fid( gtffid )─┐
            └─MSGPRFX(─┴─No─┴─)─┘

►────────────────────────────────────────────────────────────────────►◄
   └─, HOSTID( host-id )─┘
```
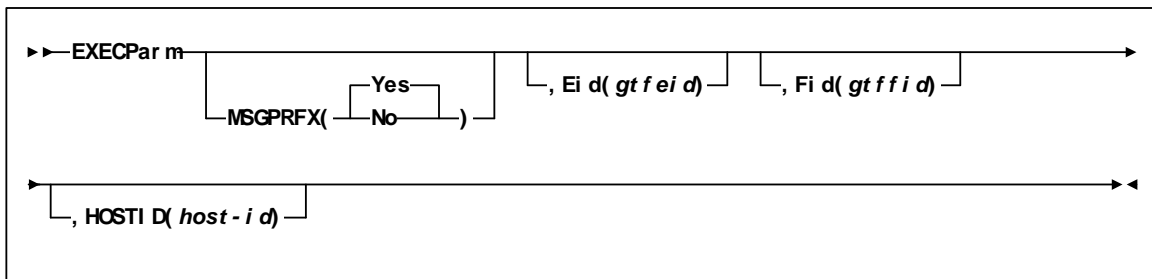
FIGURE 3-128 EXECParm syntax

Parameters

MSGPRFX

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 or MGMTCLAS parameter.
- Active HSC/VTCS not required when specifying the MVC or STORclas parameter.

Note – The CDS used by the utility must not be accessed by any other currently active HSC/VTCS host(s). Otherwise, error message SLS6716E is issued and the utility fails.

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
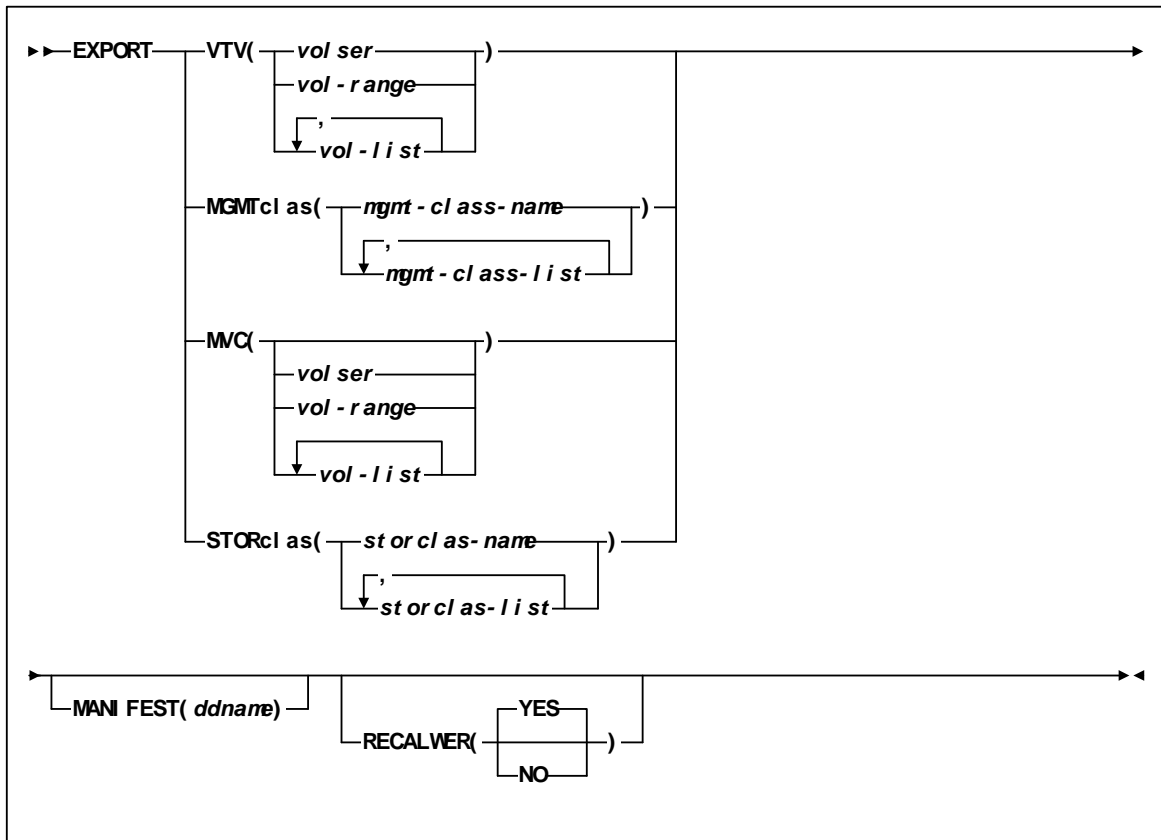
FIGURE 3-129 EXPORT syntax

Parameters

VTV

specifies one or more VTVs to consolidate for export.

When an export by VTV is performed, the CDS does not maintain the MVC information in the VTV record. The MVC is marked as (E)xport.

volser, *vol-range* or *vol-list*

the volsers 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.

When an export by MGMTclas is performed, the CDS does not maintain the MVC information in the VTV record. The MVC is marked as (E)xport.

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 421 for more information.

MVC

specifies one or more MVCs for export.

When an Export by MVC is performed, the CDS maintains the MVC information in the VTV record of the CDS. The MVC will is marked as (R)ead-Only.

volser, *vol-range* or *vol-list*

the volsers of one or more MVCs.

STORclas

specifies one or more Storage Classes that determine one or more MVCs for export.

When an Export by STORclas is performed, the CDS maintains the MVC information in the VTV record of the CDS. The MVC will is marked as (R)ead-Only.

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 439 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.

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Additional JCL Requirements

In addition to the required JCL definition statements described in , 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 SET LOGFILE utility command. See "SET LOGFILE" on page 547 for more information. You must execute the OFFload LOGfile before executing SET LOGFILE to specify a different log file dataset name. See "OFFload" on page 500 for more information.

Syntax

```
►►──FMTLOG───────────────────────────────────────────────────►◄
```
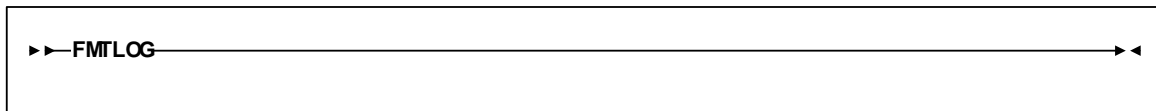
FIGURE 3-130 FMTLOG syntax

Parameters

None.

Additional JCL Requirements

In addition to the required JCL definition statements described in "Invoking SLUADMIN" on page 686, 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
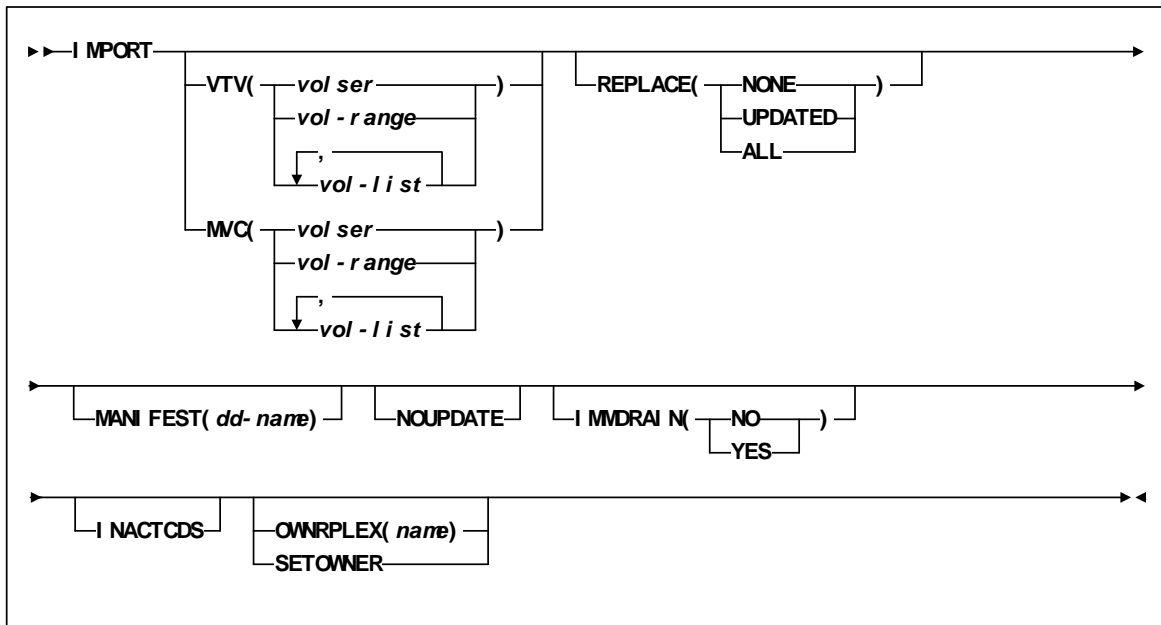
FIGURE 3-131 IMPORT syntax

Parameters

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 VTCS 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.

UPDATED

Replace the VTV record if it is a more recent version of the VTV, or if the CDS has no migrated or resident versions of the VTV. If it is an older or the same version, do not replace the VTV record.

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 CONFIg 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 SERTOWNER 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 , 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 MSP system running SMC and using a local HSC server.

Syntax
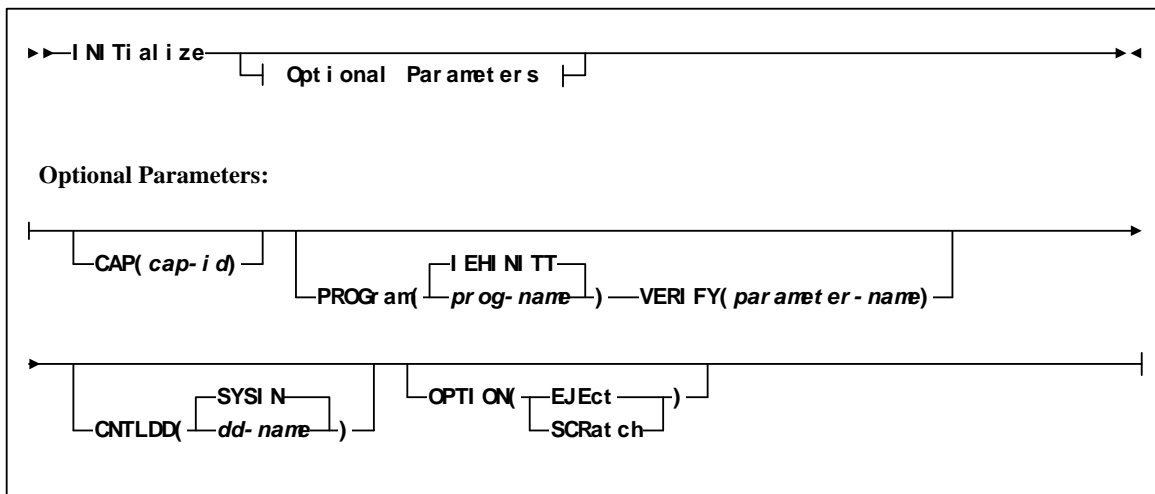
FIGURE 3-132 INITialize syntax

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 734 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 , 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.

INVENTRY

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

The INVENTRY 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.
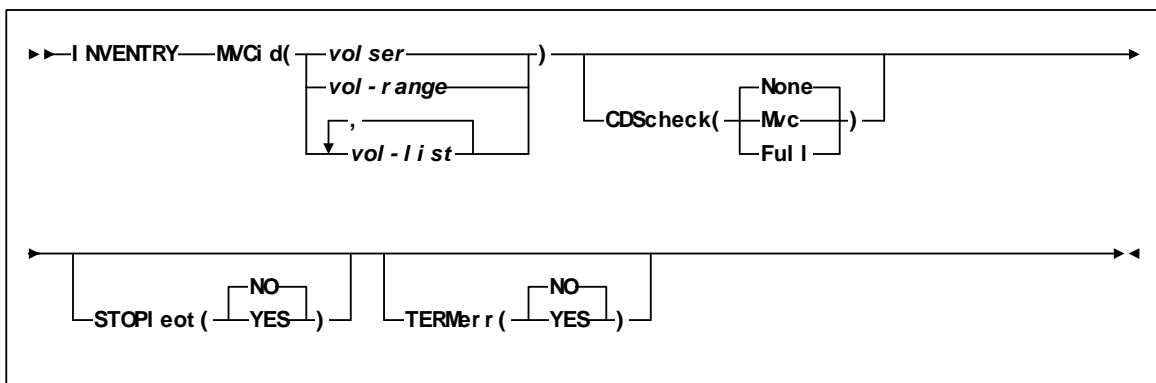
Syntax

FIGURE 3-133 INVENTRY syntax

Parameters

MVCid

specifies the MVC(s) to be inventoried.

volser, ***vol-range***, or ***vol-list***

the volsers 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 3-5   INVENTRY Return Codes

Return Code	Description
0	All requested updates completed successfully.
4	One or more errors found. Errors are listed via message SLS6935E, SLS6396E, SLS6938E, SLS6939E, SLS6940E or SLS6941E.
8	One or more errors found that are not specific to INVENTRY processing (e.g. ECAM errors)

Inventory Report

The following figure shows an example of an INVENTRY report produced by the following command:

```
INVENTRY 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.

```
SLUADMIN (7.2.0)            StorageTek Enterprise Library Software Utility            PAGE 00004
TIME 10:23:30                                 Inventory                               DATE 2012-03-31

Inventory report for MVC 021549

 SLS6933I MVC 021549 block 00000000: VTV Y00486  Created 2007Jul17 06:33:22  Migrated 2007Jul17

 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
```

FIGURE 3-134 INVENTRY report example

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─────────────────────────────────────────►◄
            │              ┌─NO─┐              │
            └─TAPELESS──┴─YES─┘
```
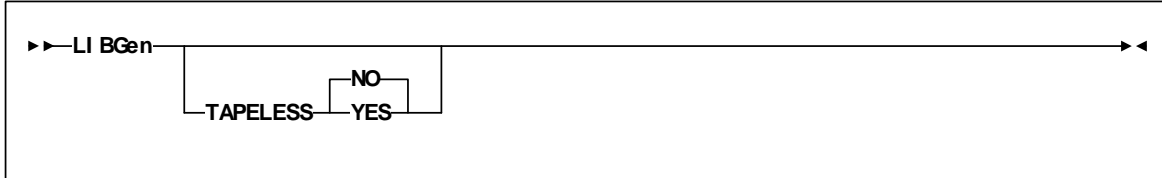
FIGURE 3-135 LIBGen utility syntax

Parameters

TAPELESS

Optionally, provides a method to generate CDSCREat syntax from a CDS that currently contains library definitions, or to create LIBGEN macro syntax from a CDS currently defined as tapeless. If this parameter is omitted, the default is based on the input CDS; that is, a tapeless CDS generates CDSCREat syntax and a CDS with library definitions generates LIBGEN macro syntax. When TAPELESS(NO) is specified for a tapeless CDS, ACSs and LSMs must be defined prior to using the LIBGEN macros to define a new CDS.

Additional JCL Requirements

In addition to the required JCL definition statements described in "Invoking SLUADMIN" on page 686, 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.

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.

SLSSET

> output CDSCREAT, SET VOLPARM, SET VAULT/VAULTVOL, and/or SET LOGFILE control statements from the CDS. If the LIBGEN utility attempts to output one of the above types of control statements and the SLSSET DD statement is missing, a message SLS0212I is issued. If the statement to be produced is CDSCREAT, the utility terminates with a return code of 8; otherwise, processing continues and a return code of 4 is generated.

Output

LIBGen output includes the following:

- 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 3-6.

  - 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 3-6 Label Descriptions for Devices in Output LIBGen

Device	Label	Description
ACS	ACS*aa*	*aa* is the sequential decimal ACSid value (00 through 99), beginning with zero.
LSM	LSM*aall*	*aa* is the ACSid, and *ll* is the sequential decimal LSMid value (00 through 99), beginning with zero.
STATION	ST*aah*	*aa* is the ACSid, and *h* is the sequential hexadecimal host index value (0 through F), beginning with zero.
PANEL	P*aallpp*	*aa* is the ACSid, *ll* is the LSMid, and *pp* is the sequential decimal panel number (0 through 10).
DRIVE	D*aallpph*	*aa* is the ACSid, *ll is* the LSMid, *pp* is the decimal panel number, and *h* is the hexadecimal host index value, beginning with zero.

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
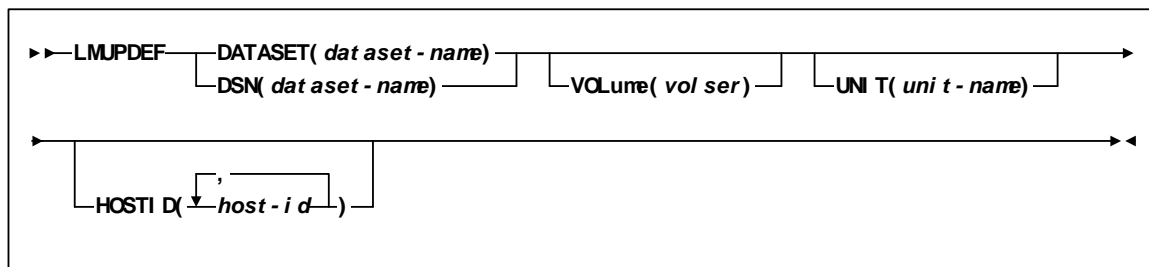
FIGURE 3-136 LMUPDEF syntax

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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 502 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,

```
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
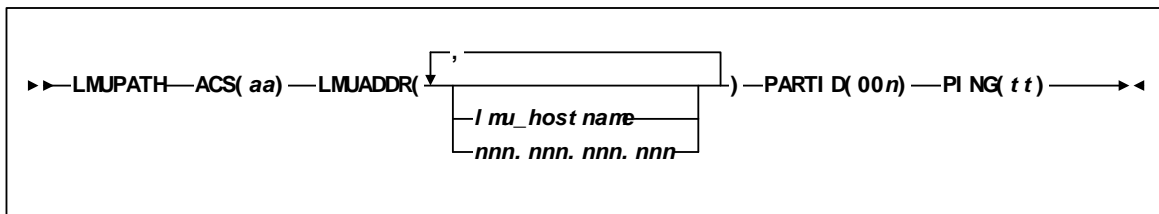
FIGURE 3-137 LMUPATH control statement syntax

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 40 IP addresses can be specified.

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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.

00*n*

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: No

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──LOGDD( ddname) ────────────────────────────────────────────►

►──┬──────────────────────────────────────────────────────┬──────────────►
   └─FROMDATE( yyyy-mm-dd)─┬──────────────────────────┐
                          │                ┌─00:00:01─┐ │
                          └─FROMTIME(──┴─hh:mm:ss─┴─)─┘

►──┬──────────────────────────────────────────────────────┬──────────────►
   └─TODATE( yyyy-mm-dd) ──┬──────────────────────────┐
                          │                ┌─00:00:01─┐ │
                          └─TOTIME(──┴─hh:mm:ss─┴─)─┘

►──┬──────────────────────────┬────────────────────────────────────────►◄
   └─COMMANDS( ddname)─┘
```
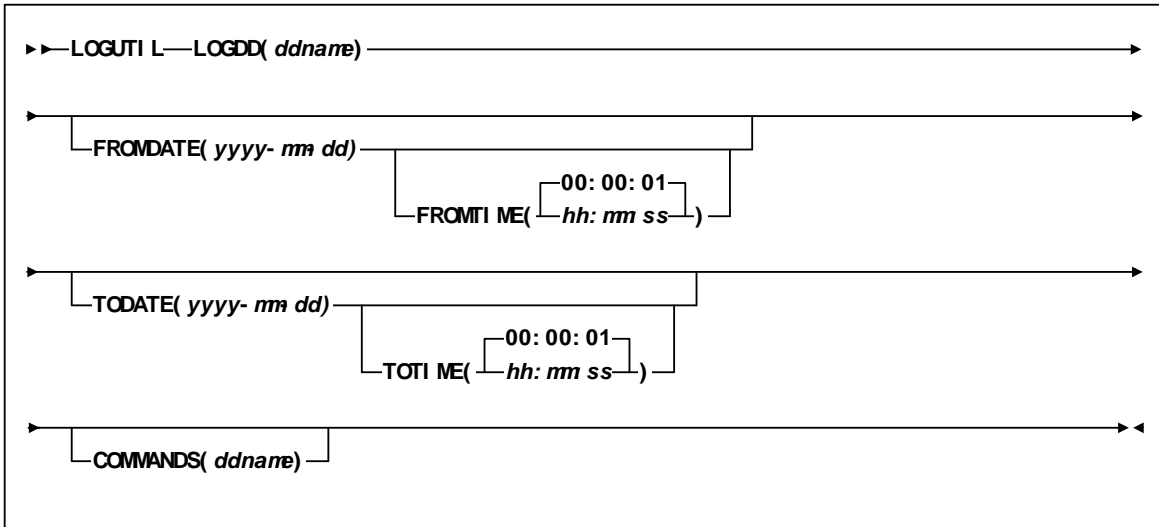
FIGURE 3-138 LOGUTIL syntax

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 00:00:00.

Note – For FROMDATE and FROMTIME, specify local dates/times as seen from the MSP system on which LOGUTIL runs.

TODATE

optionally, specifies an ending date and time for logged events

yyyy-mm-dd

the ending date.

TOTIME

optionally, specifies an ending time for logged events.

hh:mm:ss

the ending time. The default is 00:00:01.

Note – For TODATE and TOTIME, specify local dates/times as seen from the MSP system on which LOGUTIL runs.

COMMANDS

optionally, specifies the DD name of a data set that contains recovery commands.

ddname

the DD name.

LOGUTIL FOR_LOSTMVC Statement

The LOGUTIL FOR_LOSTMVC statement recovers VTVs that resided on lost or damaged MVCs.

Syntax
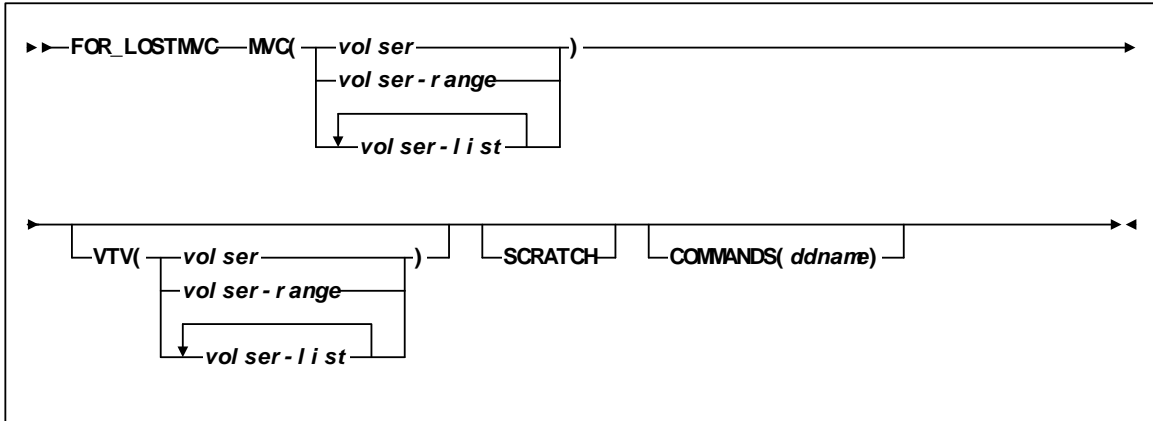
FIGURE 3-139 LOGUTIL FOR_LOSTMVC statement syntax

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

```
►►─GENAUDIT──────────────────────────────────────────────►◄
             └─COMMANDS( ddname)─┘
```
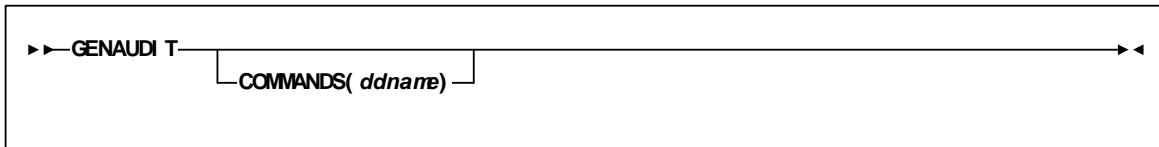
FIGURE 3-140 LOGUTIL GENAUDIT statement syntax

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.

ddname

the DD name.

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
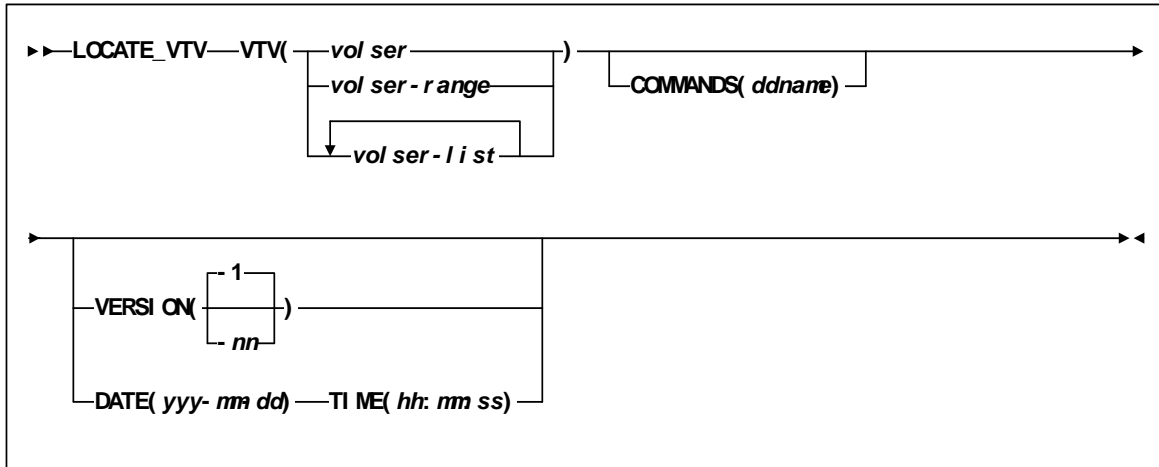
FIGURE 3-141 LOGUTIL LOCATE_VTV statement syntax

Parameters

VTV

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.
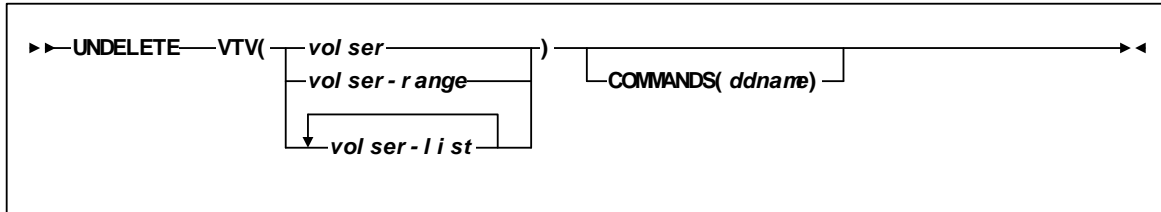
Syntax

FIGURE 3-142 LOGUTIL UNDELETE statement syntax

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.

MEDVERfy

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC/VTCS

Description

The MEDVERfy utility performs a Media Verification (MV) by verifying that VTV data can be read on MVCs or VMVCs (ELS 7.1 and VLE 1.2 and above only). For VLE, MEDVERfy ensures that deduplicated VMVCs can be "rehydrated" (reconstituted).

The utility reports on MVCs that pass or fail verification and also produces XML output.

Syntax
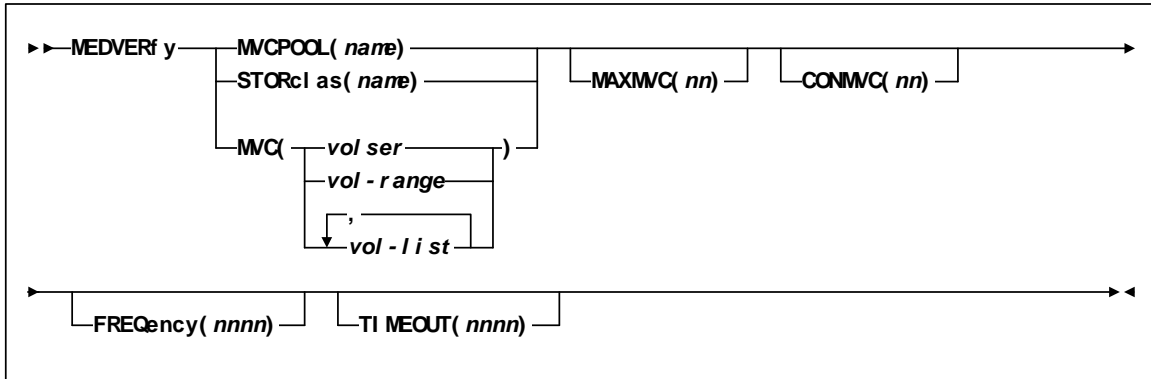
FIGURE 3-143 MEDVERfy syntax

Parameters

The following 3, mutually exclusive, keyword parameters identify the MVCs to be verified:

MVCPOOL(*name*)

optionally, specifies an MVCPOOL containing MVCs requiring data verification.

An undefined MVCPOOL value aborts the utility with RC 8.

STORCLAS(*name*)

optionally, specifies a storage class for MVCs requiring data verification. Based on time of last verify and/or any frequency specified on the command, the utility selects the best MVC candidates for verification processing.

An undefined STORclas value aborts the utility with RC 8.

MVCid(*volser*, *vol-range* or *vol-list*)

optionally, specifies a list or range of MVCs to be verified. For individual MVCs whose volser falls outside those defined in the CDS, the utility aborts with RC 8.

Note – Based on time of last verify and/or any frequency specified on the command, the utility selects the best MVC candidates, within the specified selection criteria, for verification processing.

MAXMVC(*nn*)

optionally, specifies the maximum number of MVCs that will be processed by a single media verification task. Valid values are 1–99. If not specified, the default is 99.

CONMVC(*nn*)

optionally, specifies the maximum number of MVCs that VTCS concurrently processes for media verification. Valid values are 1–99. If not specified, the default is 1.

FREQency(*nnnn*)

optionally, establishes the verification scheduling interval, in days, that MVCs are to be verified. To be selected for verification, the number of days since the MVC's last verify date must be greater than the number of days specified. Valid values are 1–9999. There is no default. If not specified, the MVC's last verify date, alone, is used for selecting MVCs to verify.

TIMEOUT(*nnnn*)

optionally, specifies the allowable time, in minutes, for the media verification utility to run. If TIMEOUT is specified, the value must be between 1 and 9999. There is no default. If TIMEOUT is not specified there is no limit on utility run time.

Note – Similar to RECLAIM processing, if any MVCs are being processed when the TIMEOUT value is reached, MEDVERfy completes processing on those MVCs, and then stops.

MEDVERfy Report

The following figure shows an example of a Media Verify report that indicates successful verification for MVC DMV100:

```
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00001
TIME 15:50:09                                        MEDIA VERIFY                                       DATE 2012-06-17

Media Verify - -----------Media Verify request 6-----------
Media Verify - 1 MVC(s) selected for processing
MVC DMV100 - verifying media
MVC DMV100 - verify complete
No exceptions to report

SLS0155I Condition code for utility function is 0
```

FIGURE 3-144 MEDVERfy report example (1 of 2)

The report also lists MVCs not selected for MV processing under certain conditions. For example, in the following report, MVC DMV800 is skipped because it was mounted during verification selection:

```
MEDVER MVC(DMV100,DMV800) CONMVC(1) TIMEOUT(180)

SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00001
TIME 15:50:09                                        MEDIA VERIFY                                       DATE 2012-06-17

MVC DMV800 skipped, is mounted
Media Verify - -----------Media Verify request 21-----------
Media Verify - 1 MVC(s) selected for processing
MVC DMV100 - verifying media
MVC DMV100 - verify complete
No exceptions to report

No exceptions to report
SLS0155I Condition code for utility function is 0
```

FIGURE 3-145 MEDVERfy report example (2 of 2)

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─────────────────────────────────────────────────────►◄
               └─VALIDate─┘  └─ALL─┘  └─DELVirt─┘  └─NOMSG─┘


Note: If ALL is not specified, MERGEcds reads the parameters specified in the
      SLSMERGE DD statement.
```
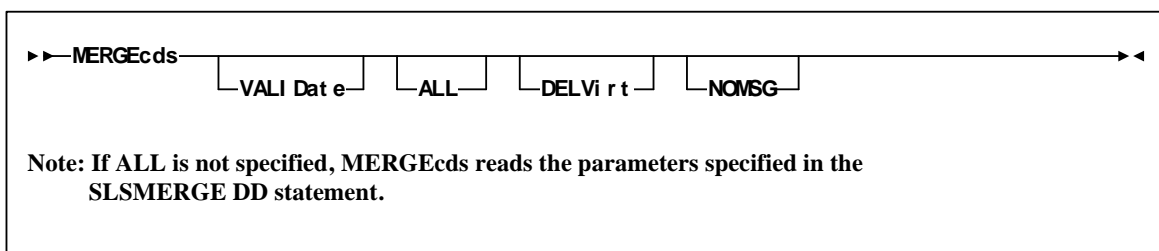
FIGURE 3-146 MERGEcds syntax

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. You can also specify the ALL parameter to convert a CDS to extended format.

- For a CDS merge, the ACS ID and LSM IDs, and VTSS names must match.
- If you are using VTCS, MVCs that are in the source (input) CDS but are not configured in the target (output) CDS, must be empty. An MVC is considered empty if it contains no current VTVs and, if previously used, has been drained.

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 412 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 volsers 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 686, 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──────────────────────────────────┤
          └─NOVALT────────────────────────────────────┘
```
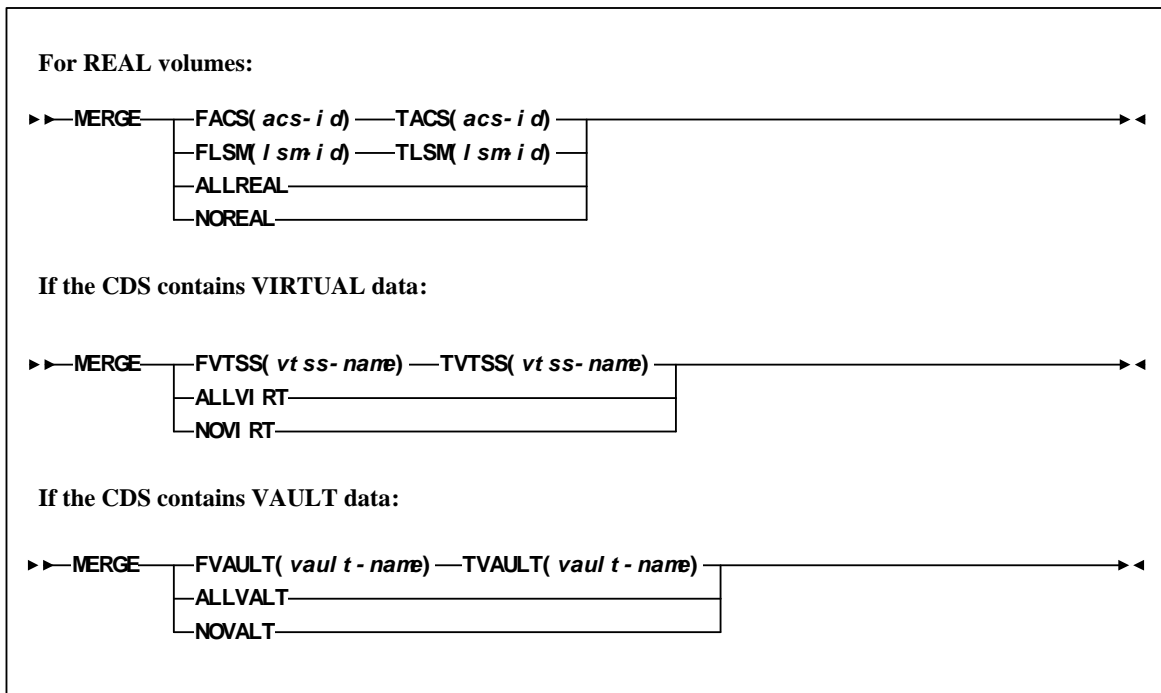
FIGURE 3-147 SLSMERGE DD statement syntax

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.

ALLVALT

Merge all vault data only.

NOVALT

Do not merge vault data.

MERGMFST

Interfaces:

Utility only
UUI: Yes
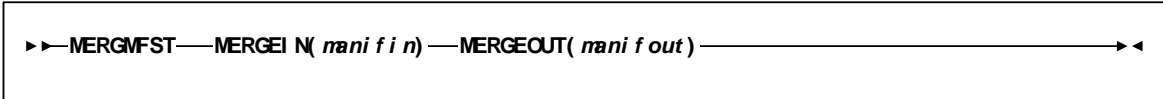
Subsystem Requirements:

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 3-148 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 , 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.

METAdata

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

The METAdata command displays XML tags associated with a function that produces XML output.

Note – No text output is produced by the METAdata command. If neither XML nor CSV output is requested, the command will not produce any output.
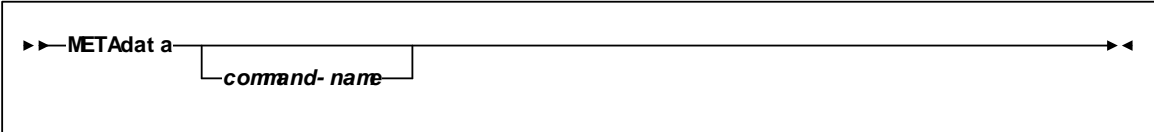
Syntax

FIGURE 3-149 MGMTDEF syntax

Parameters

command_name

> The command for which metadata is to be produced.

> When the command contains "two parts" such as Display Volume, both portions should be entered. The METAdata command uses the same abbreviations for the command_name as the command itself, for example:

```
METAdata D V
```

The METAdata command itself does not support metadata.

The following tags are produced by the METAdata command:

<command_name>

> The full name of the command.

<security_level>

> Required security level if command authorization is in effect. Values are QUERY, SET, and ADMIN.

<command_tags>

> Header tag for all XML tags.

The following tags are produced for each XML tag in the requested command:

<tag_data>

> Header tag for each XML tag.

<tag_name>

> The XML tag name, for example, volser.

<tag_type>

> Values are header (header XML tag), data (XML data tag, normally associated with a value), and trailer (indicates the position of the trailer tag associated with a header tag).

<occurrences>

> The maximum number of expected occurrences, for tags that may occur multiple times. This may be either a numeric value or "unlimited."

The following tags are produced only for data-type tags.

<data_type>

> Indicates the type of data expected in the tag value. Produced only for data tags. Values include: char, numeric, flag, hex, date, time.

<maximum_size>

> Indicates the maximum output data size.

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
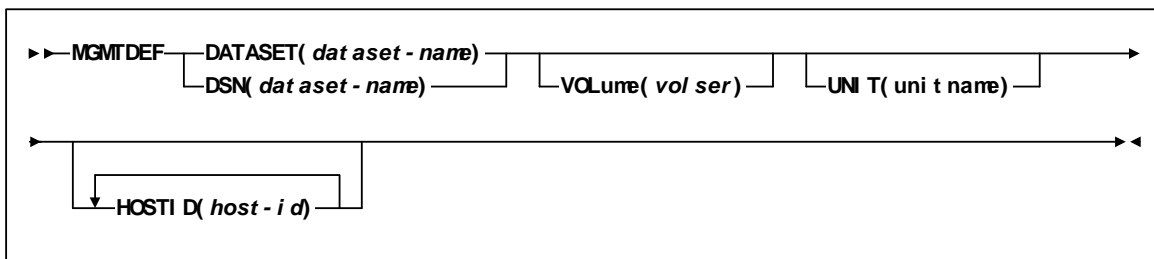
FIGURE 3-150 MGMTDEF syntax

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 one storage class to two, you must recall the VTV to allow for creation of the second migrated copy.

Syntax

```
►►─MGMTclas──NAME( mgmt-class-name)──────────────────────────────────────────►
                                  └─ACSlist( acs-id | acs-id, acs-id)─┘

►─────────────────────────────────────────────────────────────────────────────►
  └─ARCHAge( nnn)──ARCHPol( s1 | s1, s2 | s1, s2, s3 | s1, s2, s3, s4)─┘

►───────────────────────────────────────────────────────────────────────────►
  └─CONSRC( stor-class-name)─┘  └─CONTGT( stor-class-name)─┘    ┌─NO────┐
                                                           └─DELSCR(─┤       ├─)─┘
                                                                    ├─YES──┤
                                                                    └─FORCE─┘

►───────────────────────────────────────────────────────────────────────────►
           ┌─9999─┐            ┌─NO──┐
  └─DISCARD=┤      ├─   └─DUPLEX(─┤     ├─)────────────────────────────────┘
           └─nnnn─┘            └─YES─┘
                       └─MIGpol( s1 | s1, s2 | s1, s2, s3 | s1, s2, s3, s4)─┘

►───────────────────────────────────────────────────────────────────────────►
  └─EEXpol( s1| s1, s2)─┘   ┌─9999─┐
                      └─IMMDELAY=─┤      ├─┘
                                └─nnnn─┘

►───────────────────────────────────────────────────────────────────────────►
         ┌─400───┐                        ┌─NO───────┐
  └─MAXVtvsz(─┤       ├─  └─NOMIGRAT─┘  └─REPlicat(─┤          ├─)─┘
         ├─800───┤                        ├─YES──────┤
         ├─2000──┤                        └─YES_SYNC─┘
         ├─4000──┤
         └─32000─┘

►───────────────────────────────────────────────────────────────────────────►◄
  └─RESTIME( nnnn)─┘  └─VTVPAGE( STANDard | LARGE)─┘    ┌─MANY───┐
                                                  └─WRITE(─┤        ├─)─┘
                                                         ├─ONCE──┤
                                                         └─APPEND─┘
```

FIGURE 3-151 MGMTclas control statement syntax

Parameters

NAME

specifies the name of the Management Class.

mgmt-class-name

the Management Class name. This name must be one to eight alphanumeric characters beginning with an alpha character and must follow SMS naming conventions.

ACSlist

optionally, specifies the ACSs from which RTDs and MVCs are selected.

If not specified, the default is the ACS specified on the CONFIG DEFLTACS 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 (i.e. executing CONSolid, EXPORT VTV or EXPORT MGMTclas). 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 scratched VTVs unless this would cause a processing delay due to unavailable resources.

FORCE

Delete scratched 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 702 for more information about HSC scratch synchronization with the Scratch Conversion Utility (SLUCONDB).

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 3-7   MGMTclas ACSlist/DUPlex Scenarios

DUPlex Setting	ACSlist Setting	Action
YES	two ACSs	VSM migrates the VTVs to two MVCs, one in each ACS. (This scenario is the normal one for duplexing to two ACSs.)
YES	one ACS	VSM migrates the VTVs to two MVCs in the ACS specified
NO	two ACSs	VSM ignores the DUPlex policy and migrates the VTVs to two MVCs, one in each ACS.
NO	one ACS	VSM migrates the VTVs to one MVC in the ACS specified

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(V61ABOVE) 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.

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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 through auto or 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:

IMMDELAY/DISCARD values	Equivalent IMMEDmig value	Action
IMMDELAY(1-9998)	None	Delay migration for the specified number of minutes.
IMMDELAY(9999)	IMMED(NO)	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.
IMMDELAY(0) DISCARD(9999)	IMMED(KEEP)	VSM immediately migrates a VTV and keeps a copy resident on the VTSS until the VTV becomes eligible for deletion.
IMMDELAY(0) DISCARD(0)	IMMED(DELETE)	VSM immediately migrates the VTV and then deletes it from the VTSS.

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.

32000

32GB. The CDS must be at an I 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.
- "MAXVTVSZ(32000) requires VSM6 minimum microcode level 6.2 and VLE minimum microcode level 1.5.1, if VLE is in the configuration.

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 through the CONFIG GLOBAL SYNCHREP parameter. For more information, see "CONFIg GLOBAL Statement" on page 190.

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 183. For 2, 4, or 32 GB VTVs (MAXVtvsz 2000, 4000, or 32000), 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.

WRITE

optionally, specifies the VTSS-resident VTV VOLSAFE policy as follows:

MANY

specifies no VOLSAFE write protection. This is the default.

ONCE

specifies partial (write once) VOLSAFE protection. After the VTV is non-scratch, it cannot be overwritten or appended while it is VTSS-resident.

APPEND

specifies full VOLSAFE protection. This is **only** supported for VSM6 systems.

- VTV data can be appended once non-scratch.

- Data cannot be overwritten.

The Display VTV command and VTVRPT report will indicate that the VTV is write-append protected.

VTVs with full VOLSAFE protection can only be scratched with RACF ALTER authority. Use the following RACF commands to set RACF authority:

```
RDEFINE TAPEVOL volser UACC(NONE)
PERMIT volser CLASS(TAPEVOL) ID(userid) ACCESS(ALTER)
```

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)─┘

►──────────────────────────────────────────────────────────────────────────►◄
      ┌─999─┐              ┌─0─┐              ┌─99─┐
   └─IMMWAIT(─nnn─)─┘   └─SCHPREF(─n─)─┘   └─SCHLIMIT(─nn─)─┘
```
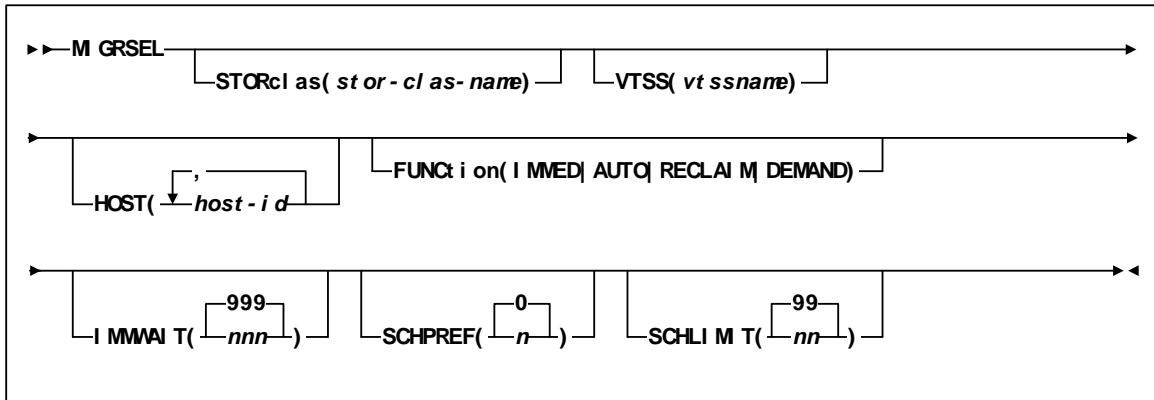
FIGURE 3-152 MIGRSEL control statement syntax

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.

This statement defines how the behavior of an individual immediate migrate should be modified depending upon various environmental considerations. The MIGRVTV rules are searched for each immediate migrate instance of a VTV. The first match found for each instance is used to modify the immediate migrate.

Syntax
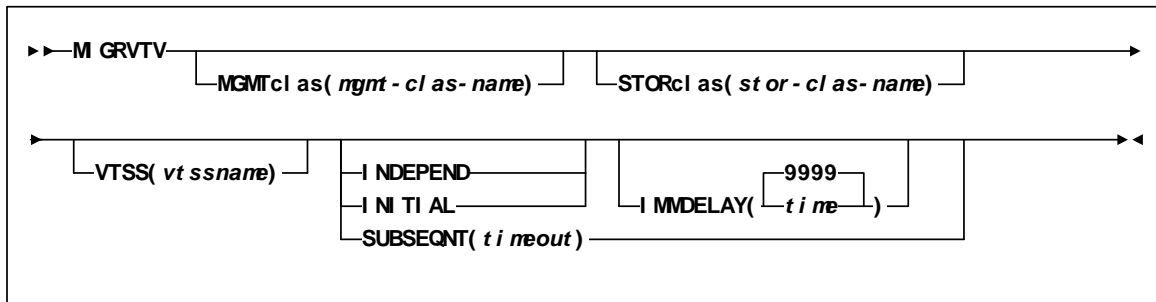
FIGURE 3-153 MIGRVTV control statement syntax

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.

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INDEPEND

Affected VTVs are independent of any other VTV migrate instance. This is the default and applies to any migrates that do not match a MIGRVTV rule or any rule without an INITIAL or SUBSEQNT parameter.

INITIAL

Affected VTV migrates are scheduled and performed before any migrate instances that match to a rule with the SUBSEQNT parameter.

SUBSEQNT

Affected VTV migrates are scheduled and performed after any migrate instances that match to a rule with the INITIAL parameter.

timeout

the time in minutes after which the rule expires. This is in addition to any IMMDELAY value applied to the INITIAL migrate instances.

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.

This IMMDELAY parameter may be used to override the IMMDELAY value in the management class definition for the VTV as a whole. If the delay exceeds the DISCARD value in the management class, then the migrate will cause an implicit deletion of the VTV copy from the source VTSS.

If a delay time of 9999 is specified by this parameter or the IMMDELAY parameter in the management class, then the specific migrate instance is deleted and must later be serviced using auto/command 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 421 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 ) ─────────────────────────►◄
```
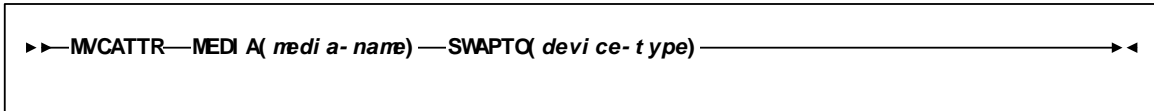
FIGURE 3-154 MVCATTR control statement syntax

Parameters

MEDIA

specifies the MVC media name to which the attribute is assigned.

Note – Only one MVCATTR should be coded for each *media-name*.

---

media-name

the MVC media name; see TABLE 3-8.

SWAPTO

defines the RTD device type the MVC is swapped to (if possible).

device-type

the RTD device type; see TABLE 3-8.

TABLE 3-8   Valid MVC Media Names and Compatible SWAPTO RTD Device Types

Valid MEDIA Names	Compatible SWAPTO Device Types
STK1R	STK1RA34, STK1RB34, STK1RD34, STK1RDE4 **Note:** STK1RA34 and STK1RB34 devices are equivalent to VTCS, so you cannot ensure a swap to these specific device types.
STK1RC	STK1RC34, STK1RD34, STK1RDE4
STK1RD	STK1RD34, STK1RDE4
STK1RDE	STK1RDE4
STK2P	STK2PA34, STK2PB34
STK2PB	STK2PB34
T10000T1	T1A34, T1AE34, T1B34, T1BE34
T10000TS	T1A34, T1AE34, T1B34, T1BE34
T10000E1	T1AE34, T1BE34

TABLE 3-8   Valid MVC Media Names and Compatible SWAPTO RTD Device Types

Valid MEDIA Names	Compatible SWAPTO Device Types
T10000ES	T1AE34, T1BE34
T1B000T1	T1B34, T1BE34
T1B000TS	T1B34, T1BE34
T1B000E1	T1BE34
T1B000ES	T1BE34

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.

Syntax
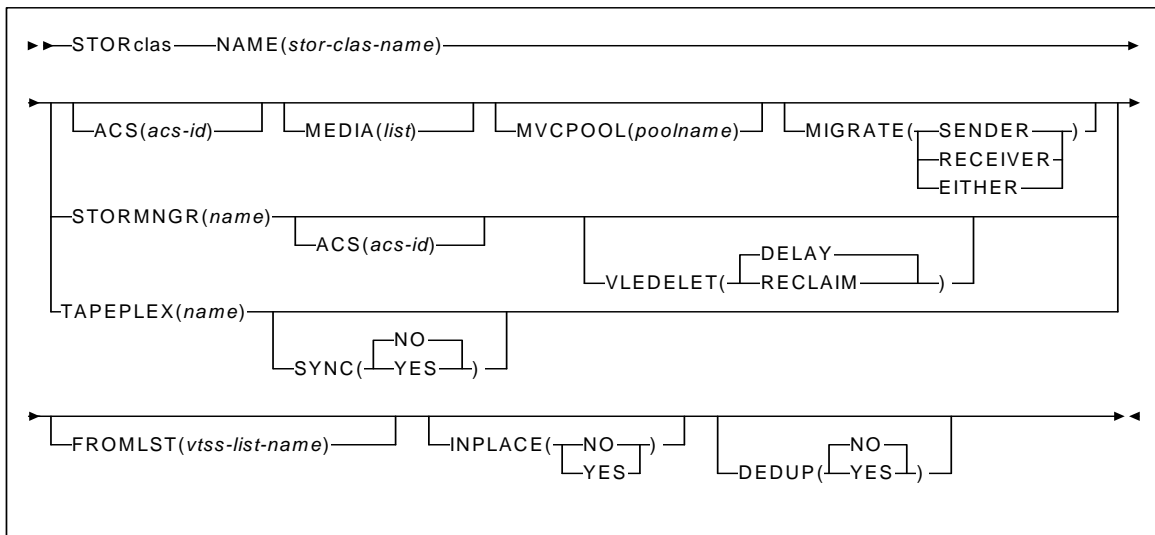
FIGURE 3-155 STORclas control statement syntax

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 one of the following:

- VLE subsystem name
- remote library

name

the Storage Manager name:

- For VLEs, this value must match the VLE Subsystem Name.
- For remote libraries, this value must match a TapePlex name defined on the SMC TAPEPLEX NAME parameter.

For more information, refer to the publication *Configuring the Host Software for VLE*.

You can specify both STORMNGR and ACS parameters to restrict selection of MVCs to the library in the remote TapePlex with the designated ACS number.

VLEDELET

optionally, controls when deletion of the VTV from the VLE occurs.

DELAY

The deletion of the VTV from the VLE will be delayed until the vMVC is mounted for migration. DELAY is the default.

RECLAIM

The deletion of the VTV from the VLE will be done when the RECLAIM utility is run against the vMVC.

Caution – The current CDS backup can no longer be used as a DR baseline for vMVC content if you use the DRCHKPT utility and/or the CONFIG RECLAIM PROTECT parameter to protect CDS backup content for vMVCs, and then RECLAIM a vMVC for a STORCLAS that specifies VLEDELET(RECLAIM).

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 REPLICAT(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, when migrating or exporting to a Storage Class, provides VTCS with a list of VTSSs to source the VTV. FROMLST applies to both Clustered VTSSs and to VLE to VLE connections. For more information, see "FROMLST Parameter Usage" on page 445.

vtss-list-name

the name of a VTSS list (as specified in a MGMTDEF VTSSLST control statement). See "VTSSLST Control Statement" on page 449 for more information.

INPLACE

optionally, specifies whether Dynamic Reclaim is enabled for this Storage Class. See "Dynamic Reclaim Usage" on page 443 for more information.

NO

Dynamic Reclaim is not enabled for this Storage Class.

YES

Dynamic Reclaim is enabled for this Storage Class.

DEDUP

optionally, specifies whether VTV data migrated to VMVCs in a VLE is deduplicated.

NO

Do not deduplicate VTVs. This is the default.

YES

Deduplicate VTVs when migrated to VMVCs.

The DEDUP value is a Storage Class attribute that applies to all VMVC mount requests sent to a VLE. DEDUP applies to all migrations that occur for the life of the mount. To change the DEDUP value, the VMVC is dismounted, the DEDUP value is changed, and the VMVC is remounted.

Dynamic Reclaim Usage

- Dynamic Reclaim **only** applies to T10000B and above media (full and full encrypted only) that have been formatted by T10000 drives capable of creating partitions. It requires an H level CDS, VSM5 microcode D02.11.16.00 or later, and T1010000B firmware 1.41a.209 or later.

- You can specify Dynamic Reclaim policies at the global, system wide level or on a Storage Class and MVC pool level. Use the VTCS CONFIG RECLAIM statement to set the global policies:

    - The INPLACE(YES/NO) parameter controls the usage of Dynamic Reclaim. Its setting can either be explicitly specified on the STORCLAS statement or inherited from the RECLAIM statement in the VTCS configuration. The default is INPLACE=NO. The setting that is derived for a Storage Class does not force usage of media formatted in either mode. It is acceptable to use this parameter with drives or media that do not support partitioning. Also, any media written in a different mode continues to be a migration target. This helps avoid the need to actively manage the transition when Dynamic Reclaim is enabled. Its effect is to cause new media allocated to the Storage Class to be formatted and written in either standard (INPLACE=NO) or partitioned (INPLACE=YES) mode. The switch can only occur when media is empty.

    - If a hard switch-over between standard and dynamic reclaim is required, then a lengthy process involving parameter settings (for example, MEDIA on the STORCLAS statement) is required. MVCs must be removed from the MVC pool or set into a read-only state, using MVCMAINT. Also, MVCs formatted in the wrong mode must be drained.

    - The INPTHRSH parameter specifies the fragmentation level that makes partitioned MVCs eligible for Dynamic Reclaim. When a partitioned MVC's fragmentation falls between the INPTHRSH and THRESH values, it first becomes eligible for Dynamic Reclaim. If no space is freed on the initial reclaim attempt, the reclaim is retried when the fragmentation level has risen significantly. Should the fragmentation level reach the standard THRESHOLD, then a fall-back method of moving VTVs is performed.

- VTCS CONFIG RECLAIM statements provide the global defaults for the system. You can override these defaults at the Storage Class and MVCPool level:

    - The STORCLAS INPLACE parameter specifies whether Dynamic Reclaim is enabled for a Storage Class. Initially, you may wish to specify INPLACE(NO) in the VTCS CONFIG RECLAIM statement and INPLACE(YES) for selected Storage Classes, in order to evaluate the effects of Dynamic Reclaim. Subsequently, if you wish to apply Dynamic Reclaim to all eligible media, you can specify INPLACE(YES) on the VTCS CONFIG RECLAIM statement.

    - The INPTHRSH parameter on the POOLPARM statement can be used to set a Dynamic Reclaim threshold specifically for this set of MVC media. This is useful when you wish to treat certain MVCs differently from the VTCS CONFIG RECLAIM defaults.

- Dynamic Reclaim can be disabled either globally at a system wide level or at the Storage Class level:

    - To disable Dynamic Reclaim globally, specify INPLACE(NO) in the VTCS CONFIG RECLAIM statement and ensure that any Storage Class definition does not override this setting.

    - To disable Dynamic Reclaim for one or more Storage Classes, change INPLACE to NO in the Storage Class policy statements.

Note – Any MVCs that are currently in use for migration will continue in partitioned format. If you wish to stop active MVCs from further migrates, then use the MVCMAINT utility to mark them as read-only. Once the partitioned volumes are empty, they are automatically re-used in non-partitioned mode. An MVC becomes empty either when all VTVs have expired or the MVC has been DRAINed.

STORMNGR and ACS Parameter Interactions

The STORclas statement now allows specifying both the ACS and STORMNGR parameters. The statement is generally neutral to whether the target is to a local HSC tape library, a VLE or a remote tape library. The interaction of these parameters is as follows:

- If neither the ACS or STORMNGR parameters is specified, MVCs are selected from all available.
- If only the ACS parameter is specified, the selection of MVCs is restricted to the library serviced by the local HSC with the designated ACS number.
- If only the STORMNGR parameter is specified, then selection of MVCs is restricted to the specified VLE or remote library complex. For a remote library complex, this applies only to ACS 0.
- If both the ACS and STORMNGR parameters are specified, selection of MVCs is restricted to the library in the remote tapeplex with the designated ACS number.

The ACS and STORMNGR parameters allow the explicit specification of the location of the Storage Class. Whenever possible, use ACS and STORMNGR instead of implicit location selection by using the MVCPOOL and MEDIA parameters.

FROMLST Parameter Usage

If you do **not** specify FROMLST, the **default** behavior is as follows:

■ For Clustered VTSSs, if a copy resides on multiple VTSSs in the cluster, the VTV can be sourced from any available VTSS, which may not be optimal if the VTSS and the connected ACS are geographically distant from each other.

■ For VLE to VLE connections, if a VTV copy resides on both a VTSS and one VLE and you want to migrate it to a connected VLE, the default is to use the VLE to VLE connection. Similarly, this may not be optimal if the connected VLEs are geographically distant from each other.

FIGURE 3-156 shows a DR scenario with a local VLE (LOCVLE) and remote VLE (REMVLE) connected to VTSSA. You wish to migrate two VTV copies:

■ First, a local copy from VTSSA to LOCVLE

■ Second, a copy via VLE-to VLE copy from LOCVLE to REMVLE.
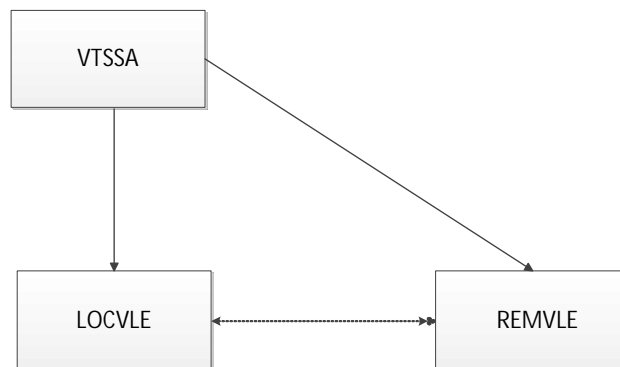
FIGURE 3-156 VLE to VLE Replication (Versus VTSS to VLE)

To make the VTV copies as desired, do the following:

1. Create a VTSSLST statement to create a VTSS list that contains only VTSSA.

   ```
   VTSSLST NAME(VSM2VLE) VTSS(VTSSA)
   ```

2. Create a STORCLAS statement that sends a VTV copy to REMVLE.

   ```
   STORCLAS NAME(FORREMOT) STORMNGR(REMVLE)
   ```

3. Create a MIGRVTV statement that delays the migration copy to REMVLE.

   ```
   MIGRVTV STOR(FORREMOT) IMMDELAY(360)
   ```

The migration delay is 360 minutes to allow the migration to the local site occur first; then the migration to the remote site is by VLE-to-VLE copy. **Note that** 360 minutes is just an example value, you can specify values of up to 9998 (**do not** specify 9999, because then the VTV is only migrated via automigration).

4. Create a STORCLAS statement that sends a VTV copy to LOCVLE.

   ```
   STORCLAS NAME(FORLOCAL) STORMNGR(LOCVLE) FROMLST(VSM2VLE)
   ```

   Note that the FROMLST parameter specifies that the local VTV copy is sourced from VTSSA.

5. Finally, create a MGMTCLAS statement that specifies two VTV copies, one to the local site and one to the remote site:

   ```
   MGMTCLAS NAME(DRVLE) MIGPOL(FORLOCAL,FORREMOT)
   ```

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-class-name─┬─) ──────────►
                                                └─────,─────────┘

►──────────────────────────────────────────────────────────────────────────►◄
         ┌──────────5──────────┐
    └─PRIority(──┬──order──┬─)─┘
                 └────,────┘
```
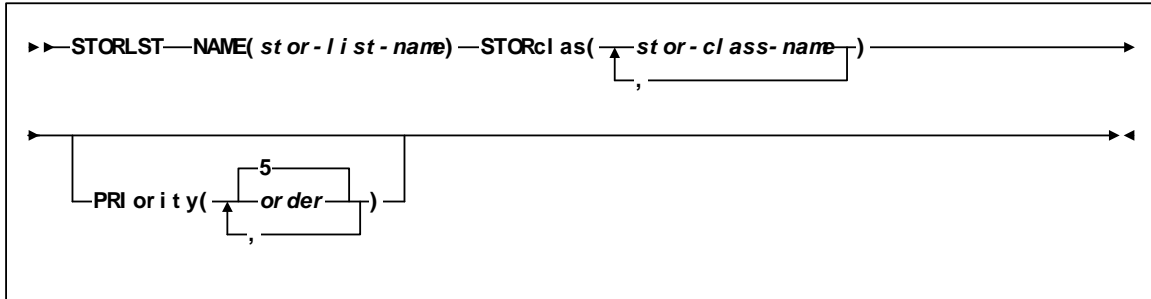
FIGURE 3-157 STORLST control statement syntax

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 ten 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.
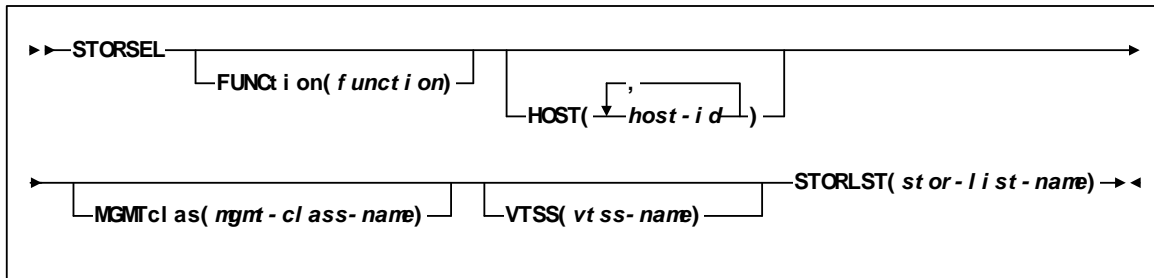
Syntax

FIGURE 3-158 STORSEL 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 3-9.

TABLE 3-9   STORSEL Functions

Function	Explanation
SPECIFIC	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.
RECALL	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.
EXPORT	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.
CONSOLID	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.

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
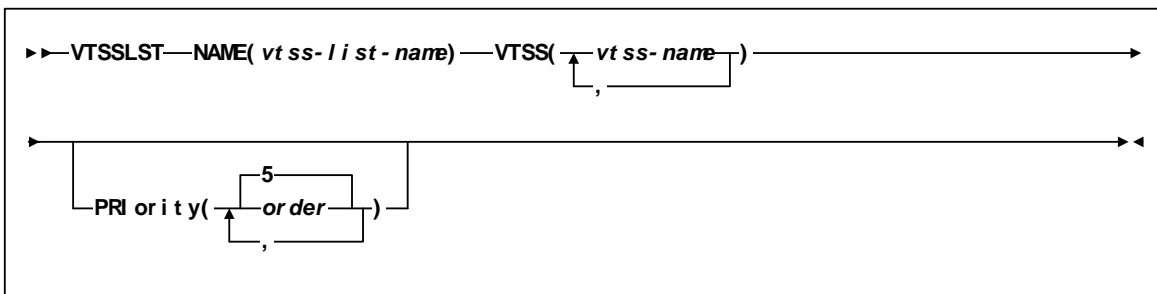
FIGURE 3-159 VTSSLST control statement syntax

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 twenty VTSSs on the VTSS list.

vtss-name

a VTSS name.

PRIority

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, all RTDs offline, or all VTDs are busy). Specifying priority zero does not ensure that the VTSS will never be selected. To ensure that the VTSS is never selected, do not specify the VTSS in the VTSS(..) list.

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
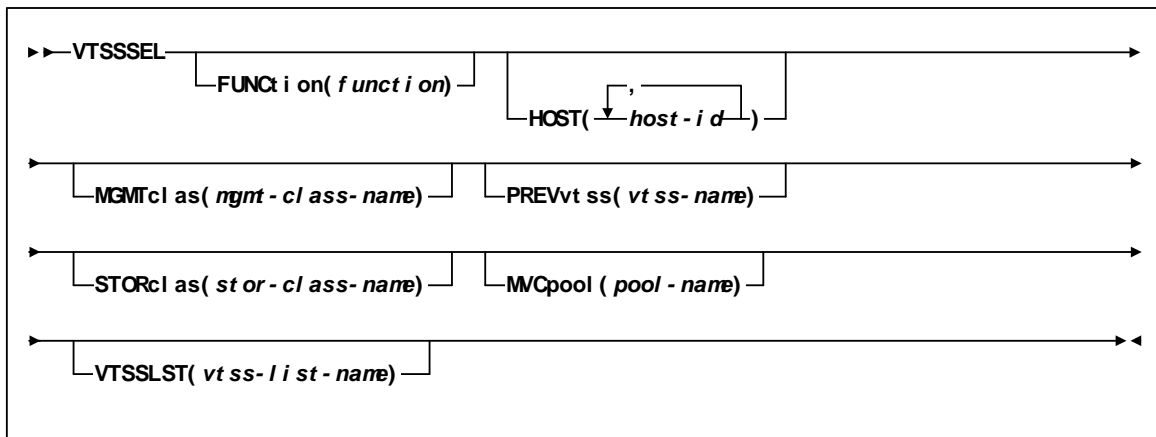
FIGURE 3-160 VTSSSEL control statement syntax

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 3-10 VTSSSEL Functions

Function	Explanation
SCRATCH	Applies to non-specific (scratch) VTV allocation. The list of eligible VTDs is determined by the specified VTSSLST statement. The PREVVTSS, STORclas and MVCpool parameters do not apply.
SPECIFIC	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.
RECALL	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.
RECLAIM	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.
DRAIN	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.
MOVEVTVS	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.
AUDIT	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.
EXPORT	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.
CONSOLID	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.

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)
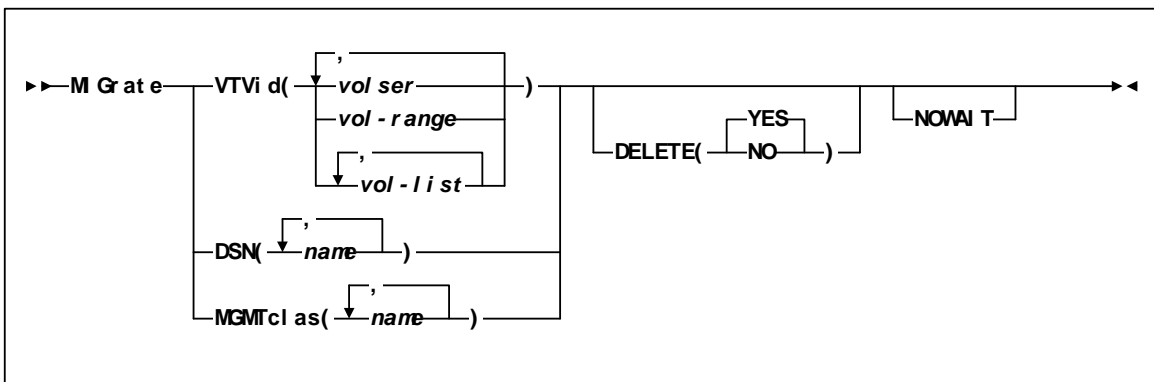
FIGURE 3-161 MIGrate syntax (Format 1)

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 3-11 describes the valid wild cards for data set names. You cannot address a member of a GDG using a wildcard.

TABLE 3-11   Valid Wildcards

Wildcard	Stands for...
*	A qualifier or one or more characters within a qualifier. An asterisk can precede or follow a set of characters.
**	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.
% or ?	Exactly one alphanumeric or national character.
%% or ??	One to eight percent signs or question marks can be specified in each qualifier.

Note – Wildcard are only supported on MSP systems running DFSMS/MSP 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 | *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 421.

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.
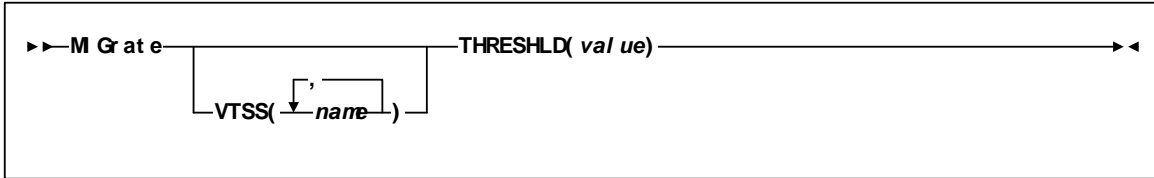
Syntax (Format 2)

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
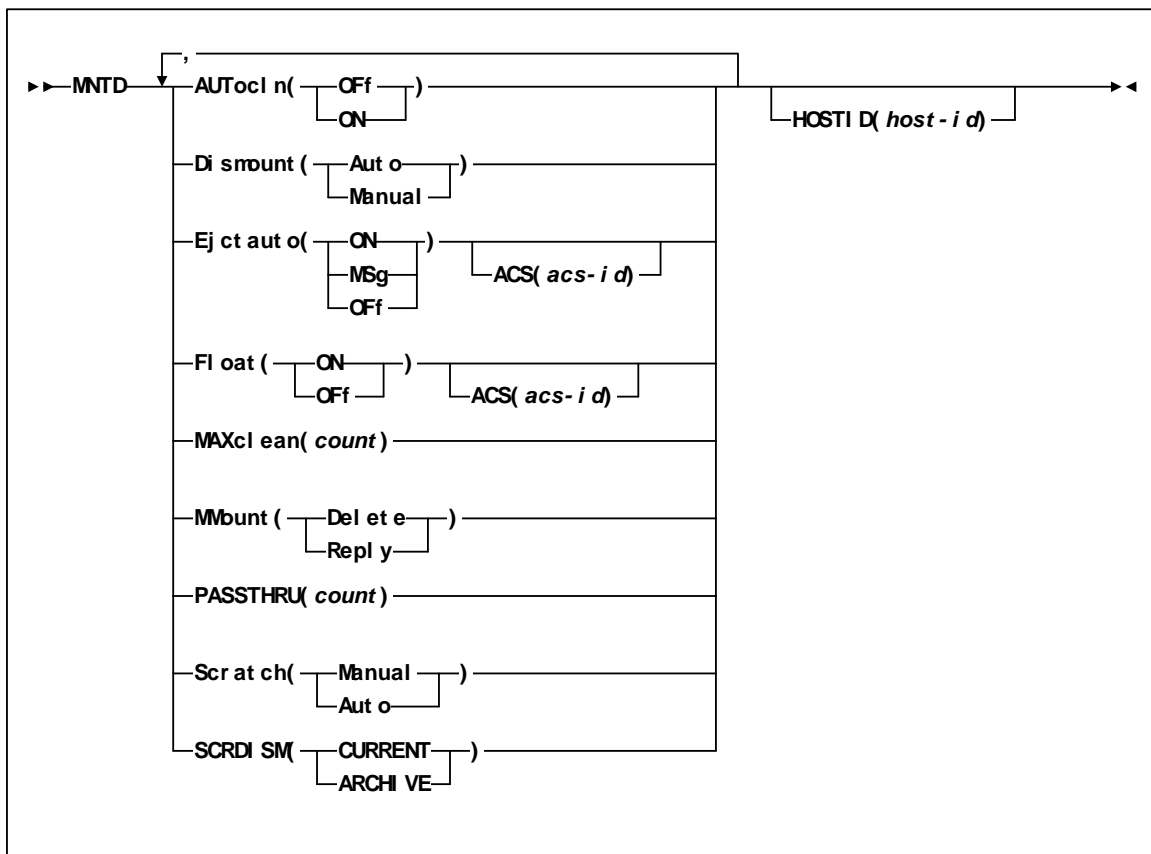
FIGURE 3-163 MNTD syntax

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. For an LMU at level 22 or above, the cleaning occurs after the next dismount. For all other levels, the cleaning occurs 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 178 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, a location is chosen in the nearest LSM with free cells or the volume can be forced to its original home cell. 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 JES).

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
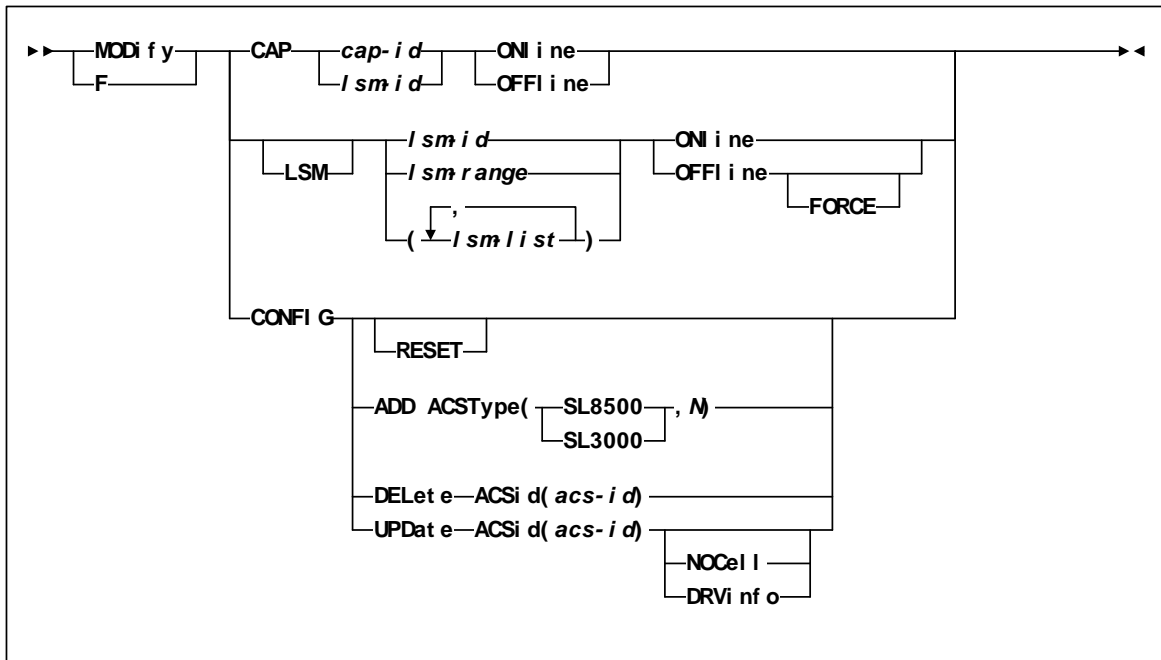
FIGURE 3-164 MODify syntax

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 734 for a list of valid values.

lsm-id

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.

lsm-id or **lsm-range** or **lsm-list**

one or more LSMs to be modified online/offline to all hosts. Each *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 *AA:LL*, where *AA* is the ACSid (decimal 00-99) and *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.

Note – 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.

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ADD

initiates an NCO configuration change to add one or more ACSs 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 SLILIBRY FUTRACS parameter.

ACSType

specifies the library type to use for the configuration change. Options are SL3000 or SL8500.

Additionally, you can specify *N* (separated by a comma) to indicate the number of ACSs to add, from 1 to 9. If this keyword is not specified, 1 is the default.

DELete

initiates an NCO configuration change to delete the disconnected ACS specified in the ACSid(*acs-id*) parameter.

After the ACSid is deleted, the ACS cannot be re-added if the ACS was defined by a SLIACS statement. If the ACS was added by a prior MODify CONFIG ADD command, the ACS can be re-added.

If the ACSid is the not highest numbered ACS, the ACS is placed in "unallocated" status.

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. The RESET also terminates any active dynamic hardware reconfiguration in the HSC complex during the hardware and software comparison phase. 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(*acs-id*) parameter. This is a system wide change, and other hosts connected to the CDS are notified of the change.

The ADD and DELete parameters are only valid if the FUTRACS parameter was specified in the SLILIBRY macro during the LIBGEN process.

NOCell

Used in conjunction with ACS *acs-id* to bypass cell discovery within the ACS. This option is used only for drive and/or CAP changes and will reduce the reconfiguration time.

DRVinfo

Used in conjunction with ACS *acs-id* to update drive information (for example, serial number, worldwide name) for all drives of an ACS. This option is used only when replacing defective drives with drives of the same type.

Note – When this command option is invoked, it executes immediately and does not disrupt library activity.

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 89 for more information.

Syntax

To mount a specific Nearline volume on a transport:

```
►►─Mount ──vol ser ──devaddr ──────────────────────────────────────►◄
                           └──┬──────────┬─┬──────────┬─┬────────┬──┘
                              └─host-id──┘ └─Readonly─┘ └─ForceRT─┘
```

To mount a scratch volume on a transport:

```
►►─Mount ─────────────────────────────────────────────────────────►
   ──┬─────────────────────────────────────────────────────────┬──►◄
     └─┬─SCRTCH─┬─devaddr ─┬──────────┬─┬───────────────────────┬─┬───────────────────┘
       └─PRIVAT─┘          └─host-id──┘ └─SUBpool ( subpool-name)─┘ └─MEDia( media-type)─┘
```

To mount a VTV on a VTD and optionally, assign a management class to the VTV:

```
►►─Mount ─┬─vol ser─┬─devaddr ───────────────────────────────────►◄
          └─SCRTCH──┘        └─MGMTclas( mgmt-clas-name)─┘
```

FIGURE 3-165 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 JES).

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
```

ForceRT

optionally, allows a volume to be mounted on a device with a different recording technique. The media type for the volume must be compatible with the device. Caution should be used because it is possible to mount a volume written at a high density on a drive that is not capable of reading the high density.

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 JES).

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 scractch 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 | SCRTCH

specifies a specific VTV volser or the scratch VTV attribute (SCRTCH).

volser

the volser of a specific VTV.

devaddr

specifies the MSP 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.
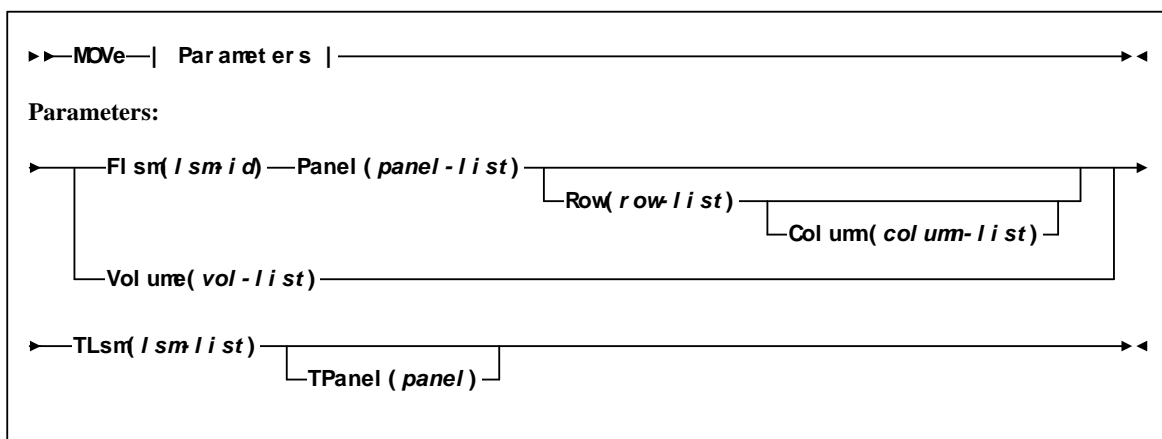

Syntax

FIGURE 3-166 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 735 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 737 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 738 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 LSMs 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 LSMs (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 (:).

TPanel

optionally, specifies the panel in the **TLsm** to move the cartridge(s) to.

panel

a one or two digit panel number. This parameter cannot contain a list or range. See "Panels" on page 735 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.
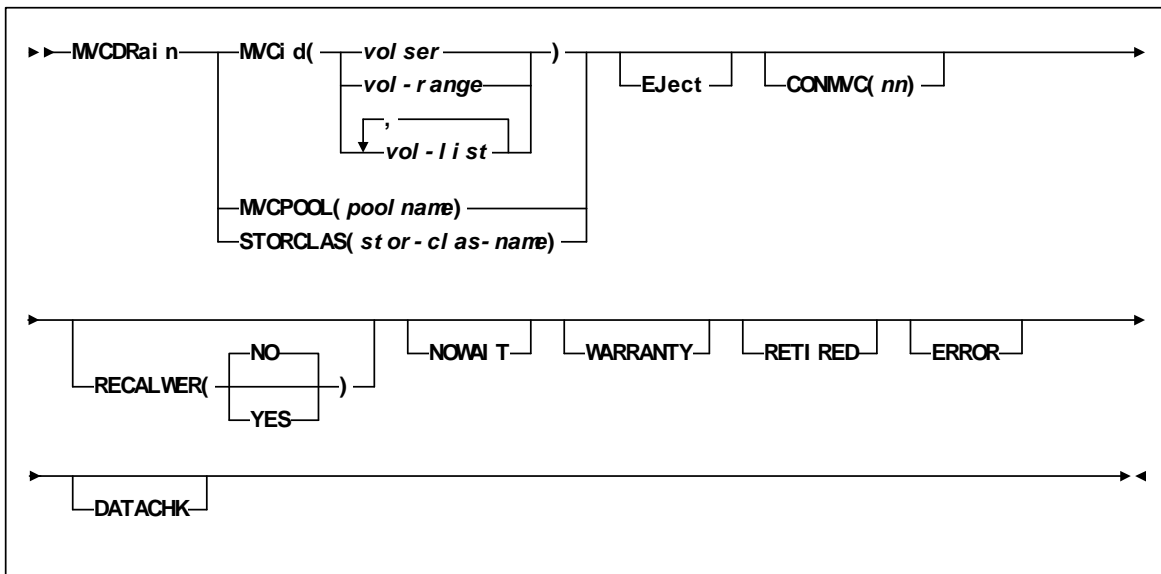
Syntax

```
►►─ MVCDRain ─┬─ MVCid( ─┬─ volser ──────┬─ ) ─┬──┬─────────┬─┬─ EJect ─┬─┬─ CONMVC( nn) ─┬─►
              │          ├─ vol-range ───┤     │  │         │ │         │ │               │
              │          │    ┌─ , ◄─┐   │     │  │         │ │         │ │               │
              │          └────┴─ vol-list ┘    │  │         │ │         │ │               │
              │                                │  │         │ │         │ │               │
              ├─ MVCPOOL( pool name) ──────────┤  │         │ │         │ │               │
              └─ STORCLAS( stor-clas-name) ────┘  │         │ │         │ │               │

►─┬────────────────────┬─┬─ NOWAIT ─┬─┬─ WARRANTY ─┬─┬─ RETIRED ─┬─┬─ ERROR ─┬─►
  │ ┌─ NO ──┐          │ └──────────┘ └────────────┘ └───────────┘ └─────────┘
  └─ RECALWER( ─┼───────┼─ ) ─┘
               └─ YES ─┘

►─┬──────────┬───────────────────────────────────────────────────────►◄
  └─ DATACHK ─┘
```

FIGURE 3-167 MVCDRain syntax

Parameters

MVCid

drain one or more MVCs by volser.

volser, ***vol-range***, or ***vol-list***

the volsers of one or more MVCs up to a maximum of 50.

MVCPOOL

drain the 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.

STORCLAS

drain 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 439.

EJect

optionally, specifies that VTCS "virtually" ejects the MVC (the MVC will not be used for output).

For VMCs:

- MVCDRAIN with the EJECT parameter physically deletes the VTVs.

Caution – The current CDS backup can no longer be used as a DR baseline for vMVC content if you use the DRCHKPT utility and/or the CONFIG RECLAIM PROTECT parameter to protect CDS backup content for vMVCs, and then issue the MVCDRAIN EJECT command.

- MVCDRAIN without the EJECT parameter does not delete the VTVs, but updates the CDS record to show no VTVs on the VMVC.

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.

RECALWER

optionally, specifies whether VTCS recalls VTVs with read data checks.

NO

Do not recall VTVs with read data checks. This is the default.

YES

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.

WARRANTY

optionally, selects MVCs with expired warranties (denoted by a W in the Status T column on an MVC Report).

RETIRED

optionally, selects MVCs that are retired (denoted by a T in the Status T column on an MVC Report).

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

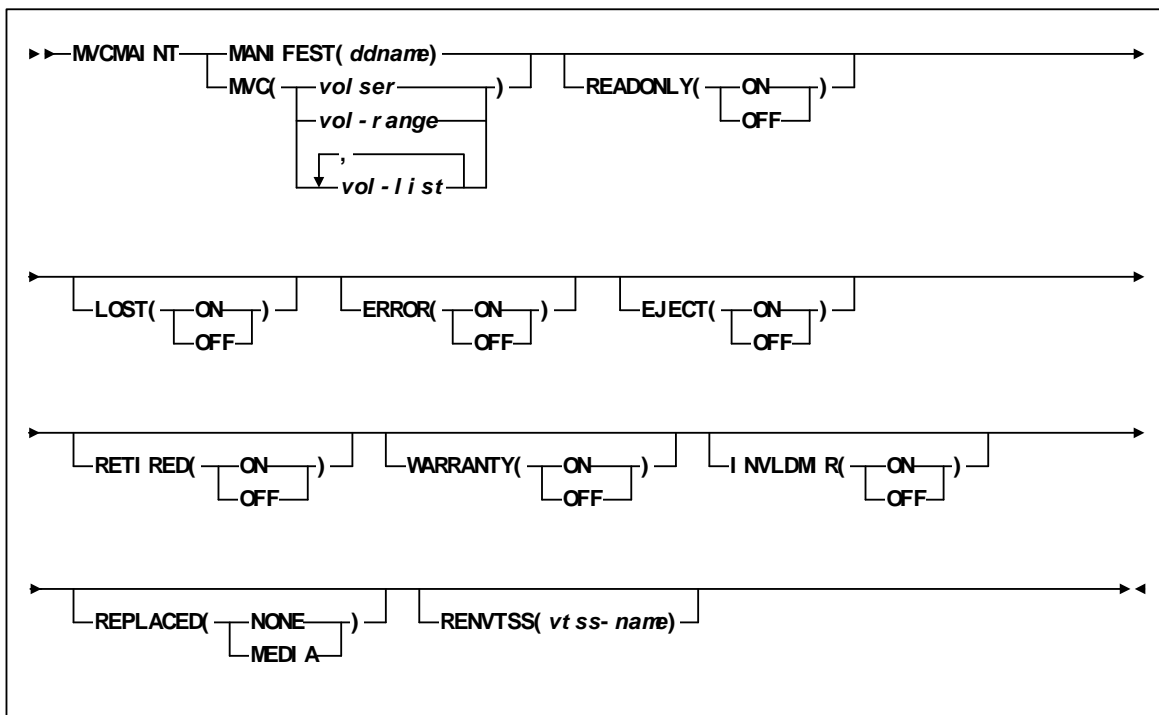The MVCMAINT command specifies MVC attributes.

Syntax

FIGURE 3-168 MVCMAINT syntax

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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 volsers of one or more MVCs. You can specify a maximum of 50 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".

RETIRED

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 RETIRED are mutually exclusive.

INVLDMIR

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 689, 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 3-12   MVCMAINT Return Codes

Return Code	Description
0	All requested updates for the MVC completed successfully.
4	One requested update for the MVC failed and at lest one other requested update completed successfully.
8	All requested updates for the MVC failed.

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 Report

The following figure shows an example of an MVCMAINT report produced by the following command:

```
MVCMAINT MVC(022577-022579) READONLY=OFF
```

```
SLUADMIN (7.2.0)                STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00002
TIME 15:50:09                                    MVC MAINTENANCE                                    DATE 2012-06-17

MVC          RC
022577       04
022578       04
022579       04

MVCMAINT EXCEPTION REPORT
*SLS6737I MVC 022578 ALREADY HAS READONLY(OFF); REQUEST IGNORED
*SLS6737I MVC 022579 ALREADY HAS READONLY(OFF); REQUEST IGNORED
SLS1315I SWS500.V5.CDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET

MVC      Number                  Size   Mount  <----Status--->  <------Last Mounted----->
Volser   VTVs  %Used %Avail %Frag (GB)   Count  I B L D R U T M  Date       Time     VTSS    ACSID  Owner/
                                                                                                    Consolidate Time
022577   0     0.00  99.96  0.04  .4     1      I - - - - C - -  2012Feb04  09:14:23          00     S1
022578   0     0.00  99.96  0.04  .4     4      I - - - - U - -  2012Mar08  10:11:04 VTSS16   00     S1
022579   0     0.00  99.96  0.04  .4     4      I - - - - U - -  2012Mar08  10:11:04          00     S1

         3    INITIALIZED MVCS PROCESSED
         0    NON_INITIALIZED MVCS PROCESSED
         0    NON-LIBRARY MVCS PROCESSED
```

FIGURE 3-169 MVCMAINT report example

As shown in FIGURE 3-169, 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/VTCS

Description

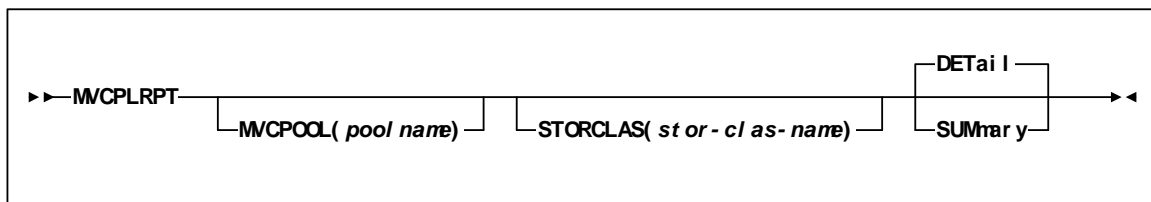The MVCPLRPT command reports the status of a named MVC Pool or MVC Storage Class.

Syntax

FIGURE 3-170 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 439 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 Report

The following figure shows an example of a report for Named MVC Pool CUST1POOL.

```
SLUADMIN (7.2.0)              StorageTek Enterprise Library Software Utility          Page 0001
TIME 03:17:54                 VTCS MVC Summary Report - MVCPOOL=CUST1POOL             Date 2012-03-31

MVC     Number                    Size  Mount  <----Status--->  <------Last Mounted----->
Volser  VTVs   %Used %Avail %Frag (GB)  Count  I B L D R U T M  Date      Time     VTSS   ACSID  Owner/
                                                                                                 Consolidate Time
EVS99   200    10.80 84.57  4.63  2     1      I - - - - U W -  2012Feb04 09:14:23 VTSS8  00     S1
EVS100  0      0.00  100.00 0.00  UNKNOWN 4    I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS101  1009   99.00 0.00   1.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS102  5      8.25  91.75  0.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS103  EXPVTV 0.12  99.88  0.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS104  0      0.00  100.00 0.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS105  200    10.80 84.57  4.63  10.2  4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS106  200    0.00  100.00 0.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1
EVS107  200    0.00  100.00 0.00  .4    4      I - - - R U T -  2012Mar08 10:11:04 VTSS8  00     S1


SUMMARY FOR MVCPOOL=CUST1POOL

ACS     MEDIA        FREE-MVCs         RECLAIM-MVCs        USED MVCs
                     VOLS   GB         VOLS   GB           VOLS   GB


00      ECART        120    96         2      0.5          90     45
00      STK1R        30     600        1      3.5          25     350
00      TOTAL        150    696        3      4.0          115    395

SUMMARY OF MVCS BY USAGE:

137 TOTAL MVCS PROCESSED
135 INITIALIZED MVCS PROCESSED
2 UN-INITIALIZED MVCS PROCESSE
41 FREE MVCS AVAILABLE
0 MVCS WITH STATUS AUDIT
6 MVCS WITH STATUS DRAIN
4 MVCS WITH STATUS EXPORT
0 MVCS MARKED EJECTED
60 MVCS MARKED FULL
0 MVCS WITH MAXIMUM VTVS
82 MVCS MARKED READ-ONLY
3 MVCS WITH STATUS BROKEN
7 MVCS WITH STATUS LOST
0 MVCS MARKED RETIRED
0 MVCS WITH EXPIRED WARRANTY
0 MVCS HAVE INVALID MIRS
1 MVCS HAVE DATACHECKS
5 MVCS WITH STATUS CONSOLIDATE
```

FIGURE 3-171 MVCPLRPT report example

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 (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.

Note that MVCs in a VLE have a nominal capacity of 250GB. When VTVs are migrated with deduplication to a VMVC, the VTVs are divided into VTV unique data and data shared with other VTVs, which can reside on different VMVCs. As a result:

The sum of the VTVs can exceed the 250GB VMVC media size, because the VTVs reference shared data that exists on other VMVCs.

Conversely, the sum of the VTV sizes on a full VMVC can be less than the 250GB media size because the VMVC contains shared data for VTVs that reside on other MVCs. For example, in an extreme case, a VMVC can have zero VTV copies but have zero available or fragmented space (the MVC is full of shared VTV data).

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.

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.

W

The MVC's warranty has expired.

M

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 containing the MVC, or the VLE containing remote MVC volumes or VMVCs in VLEs.

MANY indicates that an MVC with a specific volser has been discovered in more than one location. MVCs in this state are marked unusable.

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.

Summary for Storage Class or Named MVC Pool

This section shows 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

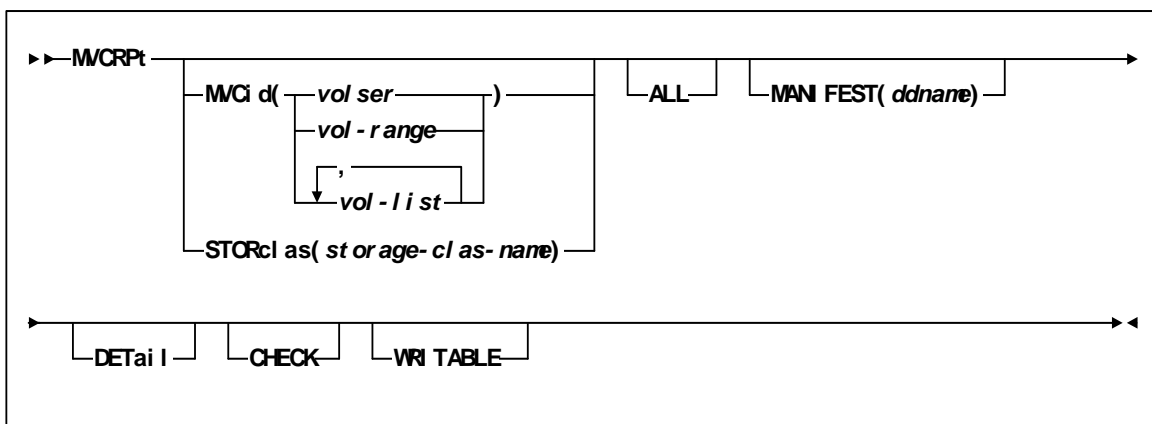The MVCRPt command reports the status of your VSM system's MVCs.

Syntax

FIGURE 3-172 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 according to the selection criteria, even those that would otherwise be omitted.

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 3-174 on page 498 for an example. If you do not specify this option, the default is to produce a summary MVC report; see FIGURE 3-173 on page 493 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 produced by the MVCRPT command.

MVC Summary Report

The following figure shows an example of an MVC summary report:

```
SLUADMIN (7.2.0)              Sun Microsystems Enterprise Library Software Utility          PAGE 00002
TIME 08:41:28                         VTCS MVC Summary Report                              DATE 2012-11-06
MVC    Number                    Size  Mount  <----Status--->  <------Last Mounted-------> Location Owner/Comment/
Volser VTVs  %Used %Avail  %Frag (GB)  Count  I B L D R U T M  Date       Time     VTSS    / ACS ID Consolidate Time
DMV600   40  11.11  70.60  18.29 930.0  257   P - - - - U - -  2009Sep30 13:42:27 DVTSS16  00       DMV600
DMV601    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV602    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV603    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV604    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV605    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV606    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV607    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV608    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV609    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV610    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV611    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV612    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV613    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV614    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV615    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV616    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV617    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV618    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
DMV619    0   0.00 100.00   0.00 500.0  256   I - - - - U - -  2009Sep29 16:59:59          00
         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 3-173 MVCRPt MVC summary report example

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.

Note that MVCs in a VLE have a nominal capacity of 250GB. When VTVs are migrated with deduplication to a VMVC, the VTVs are divided into VTV unique data and data shared with other VTVs, which can reside on different VMVCs. As a result:

The sum of the VTVs can exceed the 250GB VMVC media size, because the VTVs reference shared data that exists on other VMVCs.

Conversely, the sum of the VTV sizes on a full VMVC can be less than the 250GB media size because the VMVC contains shared data for VTVs that reside on other MVCs. For example, in an extreme case, a VMVC can have zero VTV copies but have zero available or fragmented space (the MVC is full of shared VTV data).

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-preference 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.

M

VTCS has received status from an RTD to indicate the MIR (media information record) for a 9x40 or T10000 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.

Location/ACS ID

the ACS containing the MVC, or the VLE containing remote MVC volumes or VMVCs in VLEs.

MANY indicates that an MVC with a specific volser has been discovered in more than one location. MVCs in this state are marked unusable.

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.

MVC Detailed Report

The MVC detailed report provides all the fields from the MVC summary report and a separate section that lists additional fields. The following figure shows an example of these additional fields from an MVC detailed report.

```
SLUADMIN (7.2.0)              StorageTek Enterprise Library Software Utility    SSYS=HSCC    PAGE 00003
TIME 13:00:46                          MVC DMV600 Detail Report                           DATE 2012-08-16
Vtv      Size     Block              Management  Migration  Block   Message
Volser   (MB)     Id                 Class       Date       Count
DX0000   1802.24  0000/00000000         MF        2010Aug16  29078
DX0001    282.62  0000/00007196         MF        2010Aug16   4567
DX0002   3850.24  0000/0000836D-0001    MF        2010Aug16  62109
DX0003   1802.24  0001/0001760A         MF        2010Aug16  29077
DX0004   2764.80  0001/0001E79F-0002    MF        2010Aug16  44602
DX0005    778.24  0002/000295D9         MF        2010Aug16  12561
DX0006   1802.24  0002/0002C6EA         MF        2010Aug16  29077
DX0007    180.22  0002/0003387F         MF        2010Aug16   2915
DX0008   2826.24  0002/000343E2-0003    MF        2010Aug16  45593
DX0009   3850.24  0003/0003F5FB-0004    MF        2010Aug16  62109
DX0010    266.24  0004/0004E898         MF        2010Aug16   4303
DX0011   3440.64  0004/0004F967-0005    MF        2010Aug16  55503
DX0012   1290.24  0005/0005D236         MF        2010Aug16  20819
DX0013    282.62  0005/00062389         MF        2010Aug16   4567
DX0014   3850.24  0005/00063560-0006    MF        2010Aug16  62109
DX0015   1802.24  0006/000727FD         MF        2010Aug16  29077
DX0016    282.62  0006/00079992         MF        2010Aug16   4567
DX0017   1802.24  0006/0007AB69         MF        2010Aug16  29077
DX0018   2826.24  0006/00081CFE-0007    MF        2010Aug16  45593
DX0019    778.24  0007/0008CF17         MF        2010Aug16  12561
DX0020   1802.24  0007/00090028-0008    MF        2010Aug16  29077
DX0021   2826.24  0008/000971BD         MF        2010Aug16  45593
DX0022   3850.24  0008/000A23D6-0009    MF        2010Aug16  62109
DX0023    282.62  0009/000B1673         MF        2010Aug16   4567
DX0024   3850.24  0009/000B284A-000A    MF        2010Aug16  62109
25 VTVs found for MVC:DMV600     Last migrate:2010Aug16 13:00:04
181 unused / 11 used partitions found for MVC:DMV600
Unused partitions :
--- --- --- --- --- --- --- --- --- --- 00B 00C 00D 00E 00F 010 011 012 013 014 015 016 017 018 019 01A 01B 01C 01D
01E 01F 020 021 022 023 024 025 026 027 028 029 02A 02B 02C 02D 02E 02F 030 031 032 033 034 035 036 037 038 039 03A 03B
03C 03D 03E 03F 040 041 042 043 044 045 046 047 048 049 04A 04B 04C 04D 04E 04F 050 051 052 053 054 055 056 057 058 059
05A 05B 05C 05D 05E 05F 060 061 062 063 064 065 066 067 068 069 06A 06B 06C 06D 06E 06F 070 071 072 073 074 075 076 077
078 079 07A 07B 07C 07D 07E 07F 080 081 082 083 084 085 086 087 088 089 08A 08B 08C 08D 08E 08F 090 091 092 093 094 095
096 097 098 099 09A 09B 09C 09D 09E 09F 0A0 0A1 0A2 0A3 0A4 0A5 0A6 0A7 0A8 0A9 0AA 0AB 0AC 0AD 0AE 0AF 0B0 0B1 0B2 0B3
0B4 0B5 0B6 0B7 0B8 0B9 0BA 0BB 0BC 0BD 0BE 0BF
```

FIGURE 3-174 MVCRPt 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 volsers 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 migrates 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.

nnnn empty space to previous

Explanation. Informational message, indicating that there are *nnnn* (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

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC not required

Description

The OFFload 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.
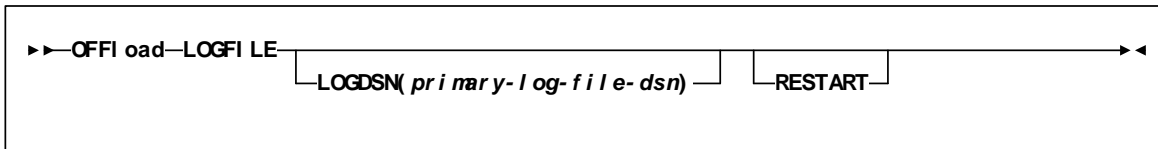
Syntax

FIGURE 3-175 OFFload 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 686, 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(identifying-string)─────────────────────────►◄
                                    ├──TRACE──┤
                                    └──TRACEF──┘
```
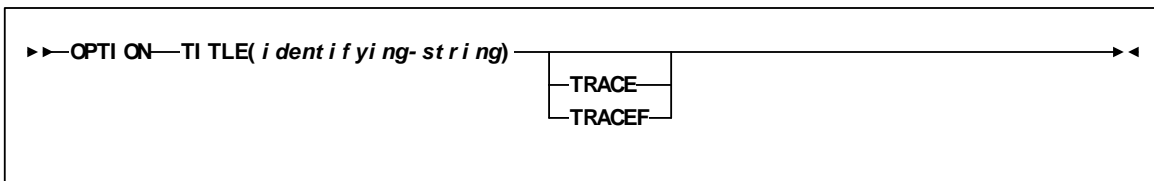
FIGURE 3-176 OPTION TITLE syntax

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

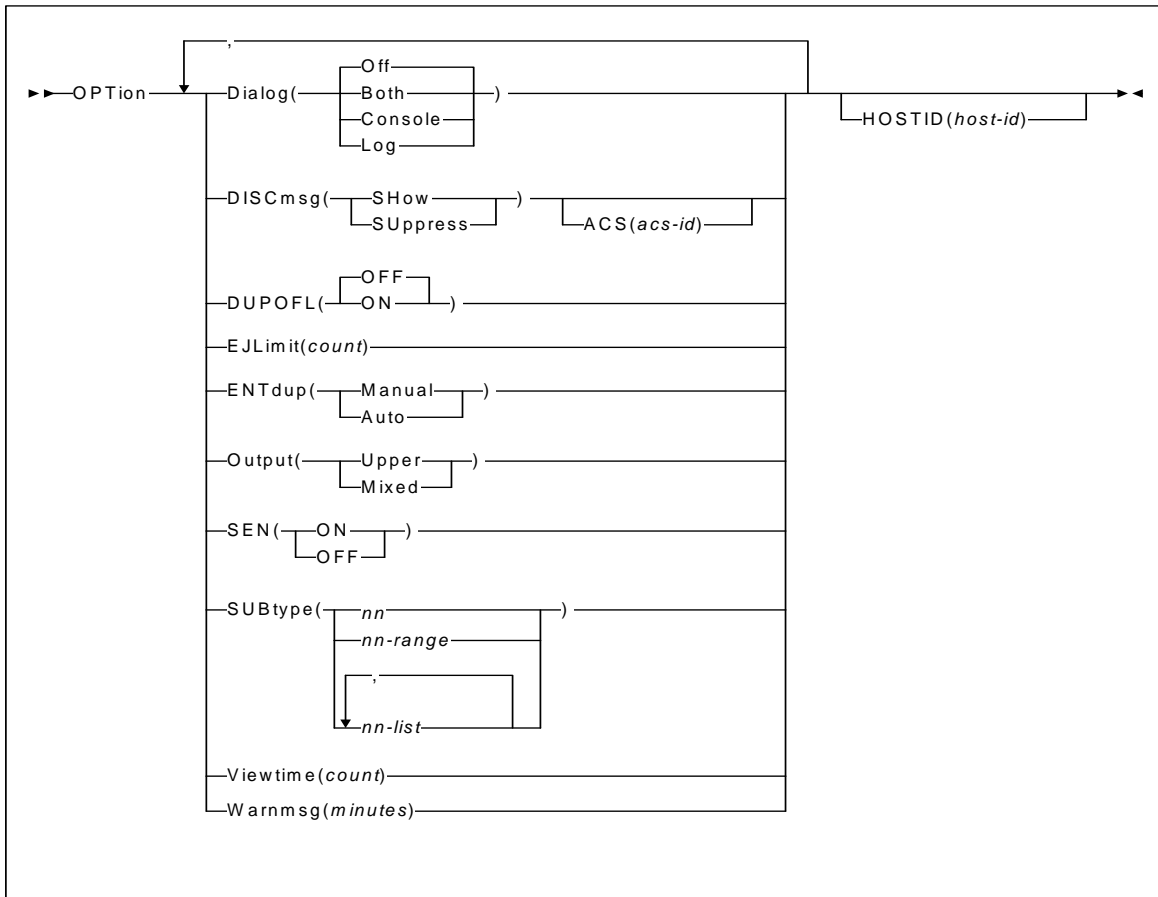The OPTion command sets or changes general HSC options.

Syntax

FIGURE 3-177 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 *acs-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 *acs-id* is disconnected" message (SLS1664A) for an ACS. This is the initial value.

SUppress

Suppresses the "ACS *acs-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.

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.

SUBtype

specifies the SMF subtype records to be written. At HSC startup, the default is for no SMF data to be collected. Valid values are 1-8 for HSC only, and 1-30 for VTCS.

nn **or** *nn-range* **or** *nn-list*

specifies a single subtype, and range of subtypes, or a list of subtypes.

When you specify a range of subtype numbers, the beginning number must be separated from the ending number by a hyphen.

Example: (1-10)

In a list of subtypes, the subtype numbers must be separated by commas.

Example: (1,6,8,12)

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 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 JES).

Note – If the *host-id* does not match the host executing the command, a message is issued and the command is not processed.

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
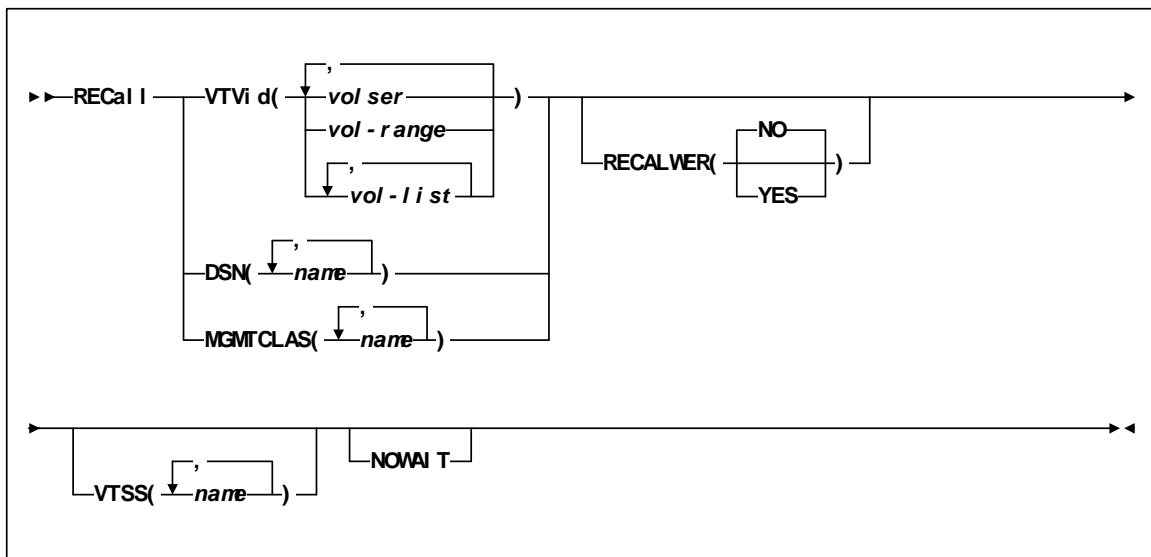
FIGURE 3-178 RECall syntax

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. 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 421.

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 VTVs, 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.

RECALWER

optionally, specifies whether VTCS recalls VTVs with read data checks.

NO

Do not recall VTVs with read data checks. This is the default.

YES

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.
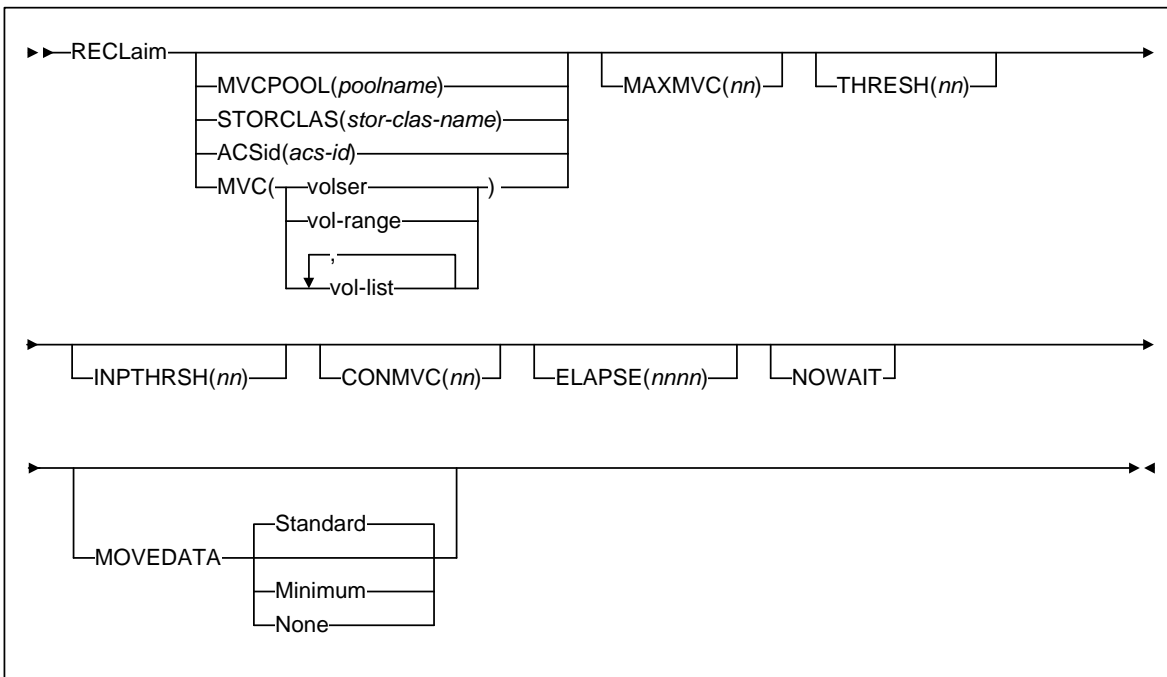
Syntax

FIGURE 3-179 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 439.

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 volsers 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.

INPTHRSH

optionally, specifies the percentage of fragmented space that makes an MVC in partitioned format eligible for dynamic reclaim processing. This value overrides the global INPTHRSH value specified in the CONFIg RECLAIM statement. If this parameter is not specified, the current active global INPTHRSH value is used.

nn

a percentage between 3 and 97. This value must be less than the THRESHLD value.

Note – 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.

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(*nnnn)*

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
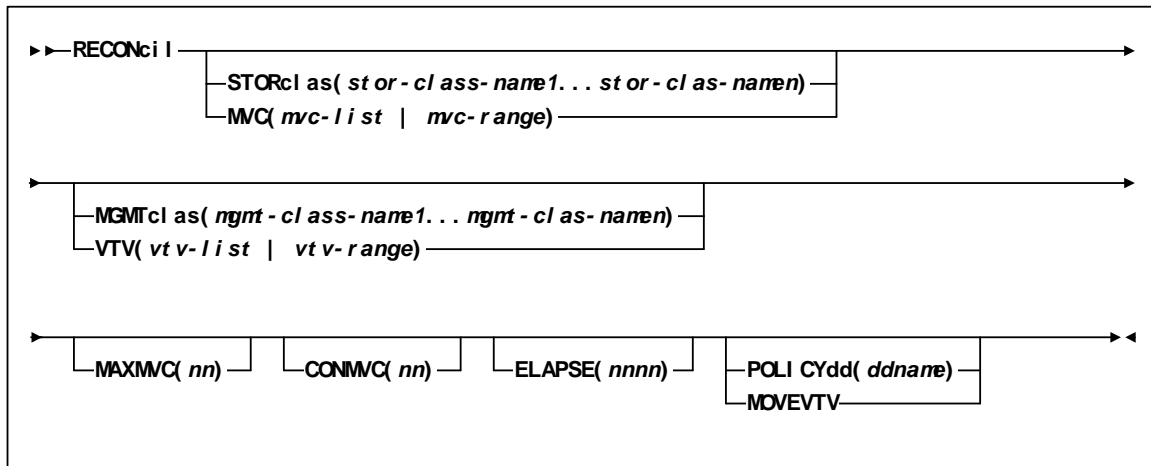
FIGURE 3-180 RECONcil syntax

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.

stor-class-name1...stor-class-namen

one or more Storage Classes.

MVC

a list or range of MVCs. This parameter is mutually exclusive with STORclas.

mvc-list | 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. This parameter is mutually exclusive with VTVid.

mgmt-class-name1...mgmt-class-namen

one or more Management Classes.

VTV

optionally, specifies a list or range of VTVs. This parameter is mutually exclusive with MGMTclas.

vtv-list | *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. This parameter is mutually exclusive with MOVEVTV.

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. (no VTVs are moved). This parameter is mutually exclusive with POLICYdd.

RECONcil Reports

RECONcil Report (MOVEVTV Not Specified)

The following figure shows an example of a RECONcil report:

```
SLUADMIN (7.2.0)              StorageTek Enterprise Library Software Utility                    PAGE 00002
TIME 08:06:35                            Reconcile VTV Report                                DATE 2012-03-31

VTV       Size Comp  <----Creation---->  MGMT     MVC1   MVC2   MVC3   MVC4   Tapeplex          REASON
Volser    (MB)   %  Date      Time       CLASS
DX1000   358.4   0  2009Jan18 16:00:00   M5                                  SECNDARY          EEXPORT
DX1001   358.4   0  2009Jan18 15:59:58   M5                                  SECNDARY          EEXPORT
DX1008   358.4   0  2009Jan18 15:59:43   M5                                  SECNDARY          EEXPORT
DX1009   358.4   0  2009Jan18 15:59:41   M5                                  SECNDARY          EEXPORT
DX1010   358.4   0  2009Jan18 15:59:40   M5                                  SECNDARY          EEXPORT
DX1011    25.6   0  2009Jan18 15:59:38   M5                                  SECNDARY          EEXPORT
DX1020   358.4   0  2009Jan18 15:59:19   M5                                  SECNDARY          EEXPORT
DX1021   358.4   0  2009Jan18 15:59:18   M5                                  SECNDARY          EEXPORT
DX1024   358.4   0  2009Jan18 15:59:12   M5                                  SECNDARY          EEXPORT
DX1025   358.4   0  2009Jan18 15:59:10   M5                                  SECNDARY          EEXPORT
DX1028   358.4   0  2009Jan18 15:59:04   M6                                  SECNDARY          EEXPORT
DX1029   358.4   0  2009Jan18 15:59:01   M6                                  SECNDARY          EEXPORT
DX1032   358.4   0  2009Jan18 15:58:56   M6                                  SECNDARY          EEXPORT
DX1033   358.4   0  2009Jan18 15:58:54   M6                                  SECNDARY          EEXPORT
DX1036   358.4   0  2009Jan18 15:58:48   M5                                  SECNDARY          EEXPORT
DX1037   358.4   0  2009Jan18 15:58:46   M6                                  SECNDARY          EEXPORT
DX1050    51.2   0  2009Jan18 15:58:20   M5                                  SECNDARY          EEXPORT
DX1051    51.2   0  2009Jan18 15:58:17   M5                                  SECNDARY          EEXPORT
DX1052    51.2   0  2009Jan18 15:58:15   M5                                  SECNDARY          EEXPORT
DX1053    51.2   0  2009Jan18 15:58:14   M5                                  SECNDARY          EEXPORT
DX1054    51.2   0  2009Jan18 15:58:12   M5                                  SECNDARY          EEXPORT
DX1055    51.2   0  2009Jan18 15:58:10   M6                                  SECNDARY          EEXPORT
DX1056    51.2   0  2009Jan18 15:58:08   M6                                  SECNDARY          EEXPORT
DX1057    51.2   0  2009Jan18 15:58:06   M6                                  SECNDARY          EEXPORT
DX1058    51.2   0  2009Jan18 15:58:04   M6                                  SECNDARY          EEXPORT
DX1059    51.2   0  2009Jan18 15:58:02   M6                                  SECNDARY          EEXPORT
Total VTVs =            26   Total Size =         5913MB

SLUADMIN (7.2.0)              StorageTek Enterprise Library Software Utility                    PAGE 00003
TIME 08:06:35                          Reconcile Tapeplex Report                             DATE 2012-01-19

Tapeplex  Candidate VTVs  Total VTV size (MB)
SECNDARY         26          5913.60
       DX1000  DX1001  DX1008  DX1009  DX1010  DX1011  DX1020  DX1021  DX1024  DX1025  DX1028  DX1029  DX1032  DX1033
       DX1036  DX1037  DX1050  DX1051  DX1052  DX1053  DX1054  DX1055  DX1056  DX1057  DX1058  DX1059
Total tapeplexes =       1   Total Size =         5913MB
SLS0155I Condition code for utility function is 0
```

FIGURE 3-181 RECONcil report example

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 volsers 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.

RECONcil MOVEVTV Report

The following figure shows an example of a RECONcil report produced by the RECONcil command issued with the MOVEVTV parameter:

```
SLUADMIN (7.2.0)    StorageTek Enterprise Library Software Utility    PAGE 0001
TIME 10:07:10                 RECONCILE MOVEVTV REPORT            DATE 2012-03-31

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 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
SLS6637I Recall from MVC 022631 completed
```

FIGURE 3-182 RECONcil MOVEVTV report example

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─┘
```
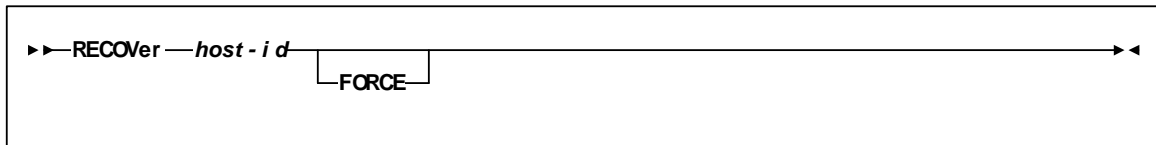
FIGURE 3-183 RECOVer syntax

Parameters

host-id

identifies the host for which to perform recovery (the SMF system identifier for JES).

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.
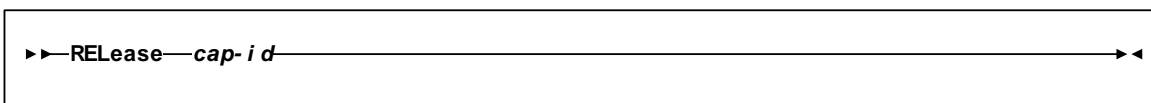
This command can be issued from any connected host. The operator is required to confirm the release operation by responding to a console message.

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

```
►►─RELease──cap-id───────────────────────────────────────────────►◄
```

FIGURE 3-184 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 734 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 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 --) -|
```
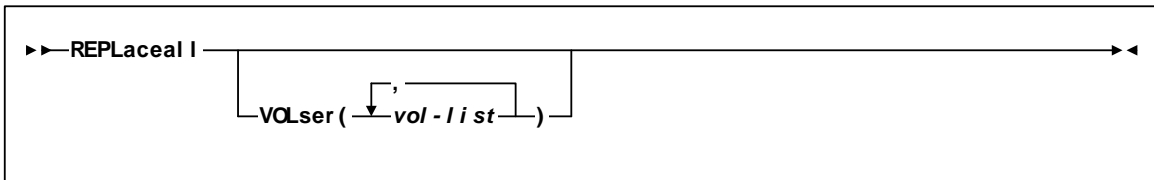
FIGURE 3-185 REPLaceall syntax

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.

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

```
►►─RESTor e──────────────────────────────────────────────────────►◄
```
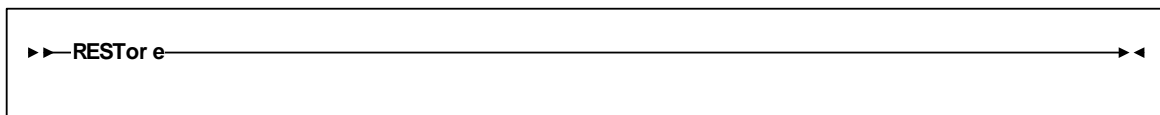
FIGURE 3-186 RESTore syntax

Parameters

None required.

Additional JCL Requirements

In addition to the required JCL definition statements described in , 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 FULL service level

Description

The SCRAtch command scratches one or more volumes.
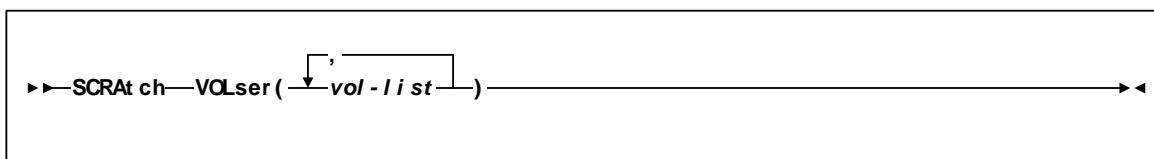
Syntax

FIGURE 3-187 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. You can specify a maximum of 100 volume serial numbers. 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
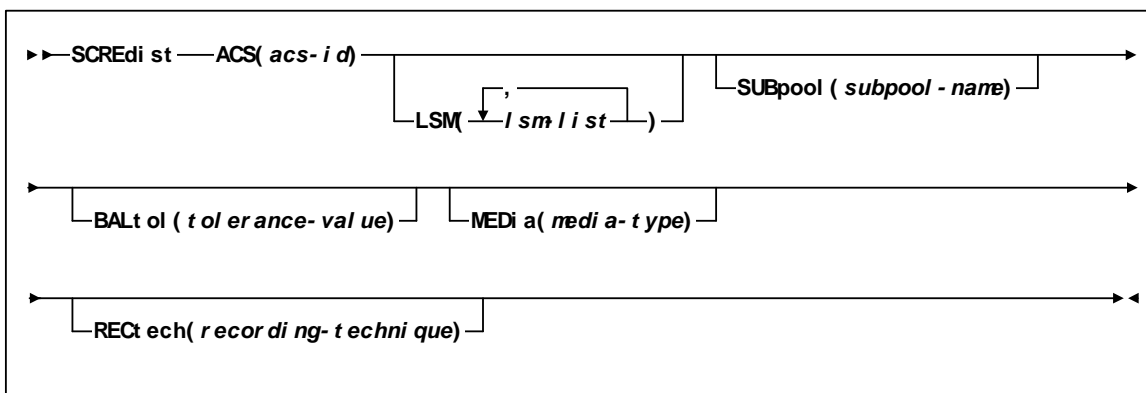
FIGURE 3-188 SCREdist syntax

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).

lsm-list

a single LSM or a list of LSMids. An LSMid (*lsm-id*) 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 *lsm-list* 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:

$$expnumlsm = totscracs * \frac{totcellslsm}{totcellsacs}$$

where:

expnumlsm

expected number of scratches for each LSM.

totscracs

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:

$$\text{BALtol range} = \textit{expnumlsm} \; \begin{array}{c} + \\ - \end{array} \; \frac{\textit{baltol} \; / \; 1000 \; * \; \textit{totscracs}}{2}$$

where:

BALtol range

range of balance tolerance value.

expnumlsm

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.

SCRPT

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

- Active HSC not required.
- SMC must be active and communicating with at least one VLE with the deduplication feature enabled to generate data in the report output. The output report must run from an authorized library.

Description

The SCRPT command reports on VLE usage by Storage Class.

Syntax
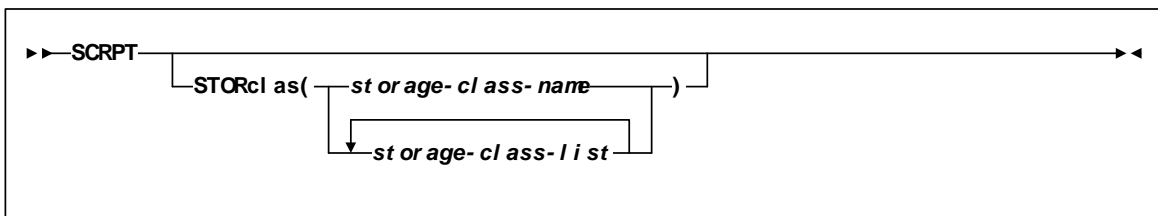
FIGURE 3-189 SCRPT syntax

Parameters

STORclas

specifies the name of the Storage Class. If not specified, the report applies to all Storage Classes.

storage-class-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.

storage-class-list

a list of Storage Classes.

SCRPT Report

The following figure shows an example of the SCRPT report:

```
SLUADMIN (7.2.0)              StorageTek Enterprise Library Software Utility                    Page 0001
TIME 03:17:54                            VTCS SCRPT Report                                Date 2012-03-31

Storage   STORMNGR    Node    Total    Capacity    Used    Compressed    Uncompressed    Reduction
Class                         MVCs     (GB)        (GB)    (GB)          (GB)            Ratio

PROD1     VLELIB1     0       4        1000        200     800           3200            16.0:1
                      1       3        750         200     400           1600            8.0:1
                      2       5        1250        200     400           1600            8.0:1
                      3       4        1000        0       0             0               1.0:1

          VLELIB1             16       4000        600     1600          6400            10.7:1

Total=                        16       4000        600     1600          6400            10.7:1

{All}     VLELIB1     0       4        1000        200     800           3200            16.0:1
                      1       3        750         200     400           1600            8.0:1
                      2       5        1250        200     400           1600            8.0:1
                      3       4        1000        0       0             0               1.0:1

          VLELIB1             16       4000        600     1600          6400            10.7:1

Total=                        16       4000        600     1600          6400            10.7:1
```

FIGURE 3-190 SCRPT report example

Fields

Storage Class

the Storage Class.

STORMNGR

the VLE subsystem name.

NODE

the server node.

Total MVCs

Total count of VMVCs in this grouping.

Capacity (Gb)

Total capacity in Gbs of all VMVCs in this grouping.

Used (Gb)

Total Gbs of used VMVC space in this grouping.

Compressed (Gb)

Total Gbs of compressed data in this grouping, which is equal to the size of the data as the VTSS compresses it (at a 4:1 ratio) and writes it to a VTV.

Uncompressed (Gb)

Total Gbs of uncompressed data in this grouping, which equals the original size of the data before the VTSS compresses it and writes it to a VTV.

Reduction Ratio

The approximate reduction ratio for the data, which is Uncompressed Gb divided by Used Gb. The Reduction Ratio, therefore, includes both VTSS compression and VLE deduplication. A larger reduction ratio indicates more effective compression and deduplication. For example, the VTSS receives 16 Mb of data, compresses it to 4Mb, and writes the compressed data to a VTV. VLE subsequently deduplicates the VTV to 2Mb and writes it to a VMVC. Thus, the reduction ratio is 16Mb2Mb or 8.0:1.

Because the calculation is done using Mb, it is possible to see 0Gb in the Used or Uncompressed fields, yet see a reduction ratio other than 1.0:1.

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────────────────────────────────────────►◄
```
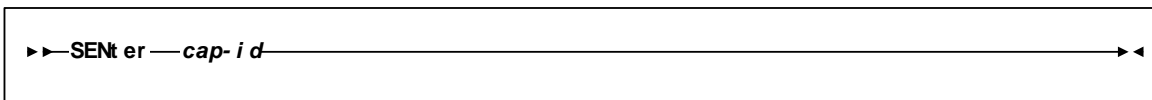
FIGURE 3-191 SENter syntax

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 734 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 3-13   SET options

This option:	Sets:
CLNPRFX	cleaning cartridge prefix
COMPRFX	HSC/VTCS command prefix
DRVHOST	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.
EJCTPAS	eject password
EJCTSKP	SL8500 Bulk CAP skip global setting
FREEZE	whether to disallow (freeze) or allow (unfreeze) additional cartridges to be stored on a panel or LSM
HOSTID	changes an old host id to a new host id
HSCLEVel	specifies that the HSC active and release level indicators are to be cleared for the designated host
LOGFILE	defines primary and secondary log files to include logical transactions necessary to recover the CDS.
MAJNAME	specifies that the ENQ/DEQ/RESERVE QNAME is to be set
MIGOPT	changes the following VTCS migration parameters: ■ maximum and minimum concurrent automatic migration, immediate migration, and migrate-to-threshold tasks ■ high and low AMTs
NEWHOST	specifies that a new host is to be added
RMM	enables or disables the VTCS to DFSMSrmm interface
SCRLABL	specifies the scratch label type is to be set.
SLISTATN	specifies that the LMU station addresses are to be set.
SLIDRIVS	specifies that the device numbers for the drives in a particular panel are being changed or added
SMF	specifies that the SMF record type used by the HSC is to be set
TAPEPlex	specifies that the TapePlex is to be set
TCHNIQE	specifies that the control data set recovery technique is to be set
VAULT	The SET Vault utility is used to define the VAULT information of a server complex.
VAULTVOL	The SET VAULTVOL utility is used to define the VAULT Volume area.

TABLE 3-13 SET options (Continued)

This option:	Sets:
VOLPARM	The SET VOLPARM utility defines the volume and pool information of a server complex.
VOLPARM UPDATE	The SET VOLPARM UPDATE utility defines the changes to the volume and pool information for a server complex.
VOLPARM JOIN	The SET VOLPARM JOIN utility merges contiguous volume ranges defined on multiple VOLPARM statements into one new VOLPARM statement.

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) ──────────────────────────────────►◄
```
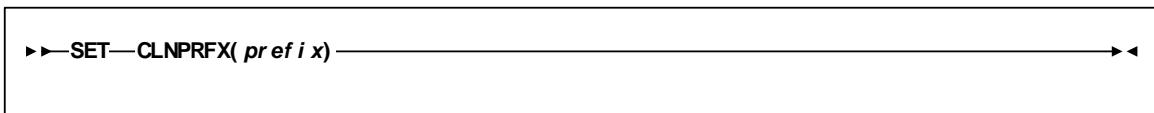
FIGURE 3-192 SET CLNPRFX syntax

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
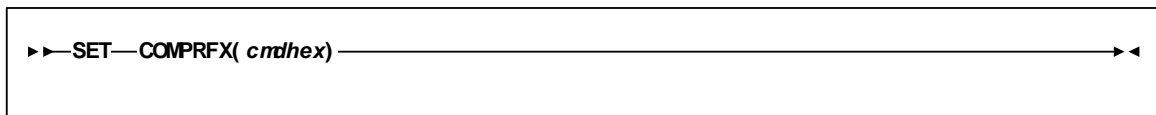
►►─SET──COMPRFX(*cmdhex*) ───►◄

FIGURE 3-193 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 3-14 on page 539.

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 JES, or '';'' the delimiter for TSO).

  ■ the command delimiter for MSP, specified as the value for the CMDDELIM keyword in SYS1.PARMLIB (CONSOL*xx*) and described in the Fujitsu *MSP/EX Installation and Tuning Guide*.

  ■ a JES line editing character as specified in the JES installation statements or default. For JES the initialization statement is CCOMCHR.

■ If you are running the HSC on a VM host that shares the CDS with a HSC running on MSP, make sure that your command prefix character does not conflict with any of the VM facilities, such as the CP line editing symbol.

TABLE 3-14   Mapping of Command Prefix Codes to Characters

Hex	Character	Description
40	null	blank
4A	¢	cent
4B	.	period
4C	<	less than
4D	(	left parenthesis
4E	+	plus
4F	|	vertical bar
50	&	ampersand
5A	!	exclamation point
5B	$	dollar sign
5C	*	asterisk
5D	)	right parenthesis
5E	;	semicolon
5F	¬	not symbol
60	-	minus
61	/	slash
6B	,	comma
6C	%	percent
6D	_	underscore
6E	>	greater than
6F	?	question mark
7A	:	colon
7B	#	crosshatch
7C	@	at sign
7E	=	equals sign
7F	"	double quote

Note: If you specify a null command prefix (hex 40), you must use the MSP MODIFY command to perform any HSC operator command.
Example: F SLS0 MOUNT EDU050,B30
where:
F   an abbreviation for the MSP 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 40 for more information about the SMC DRIVemap command.

Syntax

```
►►─SET─DRVHOST(──┬─OFF──────┬──)──────────────────────────────────────►◄
                 └─host-id──┘
```
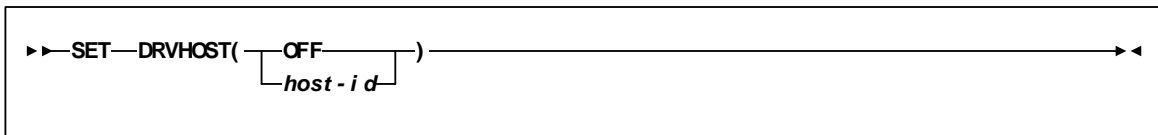
FIGURE 3-194 SET DRVHOST syntax

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
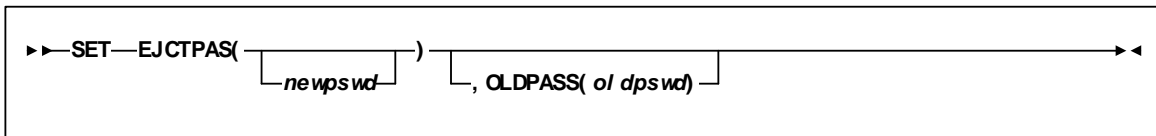
FIGURE 3-195 SET EJCTPAS syntax

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 EJCTSKP

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC not required

Description

SET EJCTSKP enables or disables the SL8500 Bulk CAP skip global setting to skip the last slot of each magazine for rails 1-3 and the first slot of each magazine for rail 4. This allows a user to use the empty slot of a magazine as a handle.

Syntax

```
►►─SET─EJCTSKP(─┬─ON──┬─)────────────────────►◄
               └─OFf─┘
```
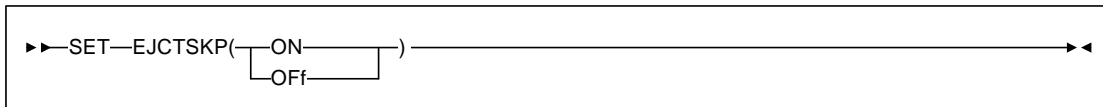
FIGURE 3-196 SET EJCTPAS syntax

Parameters

EJCTSKP

specifies the SL8500 Bulk CAP skip global setting.

ON

turns this setting on for all Bulk CAPs.

OFf

turns this setting off for all Bulk CAPs.

Note – Refer to the ELS publication *Configuring HSC and VTCS* for information about how to change CAP types from SL8500 standard rotational CAPs to Bulk CAPs, or vice versa.

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
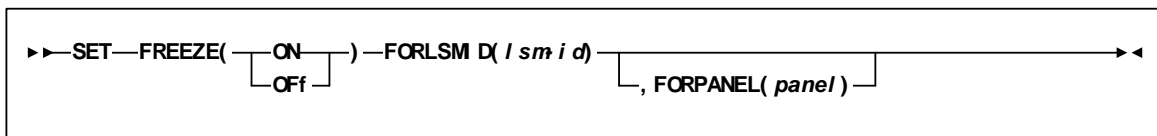
FIGURE 3-197 SET FREEZE syntax

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.

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FORLSMID

specifies that the operation is being restricted to a specific panel or LSM.

lsm_id

the LSMid (*AA:LL*) of the LSM being frozen or unfrozen. An LSMid (*lsm-id*) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:).

FORPANEL

optionally, specifies that the operation is being restricted to a specific panel.

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 735 for a list of valid values.

Note –

■ 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.

If you want some panels to remain frozen after unfreezing the entire LSM, you can add SET FREEZE ON FORLSMID FORPANEL statements to the same SLUADMIN JOBSTEP.

■ 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.

■ 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 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 **did not** change, the panel remains frozen after a merge or reconfiguration.

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 3-198 SET HOSTID syntax

Parameters

HOSTID

specifies that the old host ID is being changed to a new name.

newhost

a 1-8 character host ID, which represents the SMF system ID for JES. *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 546 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.
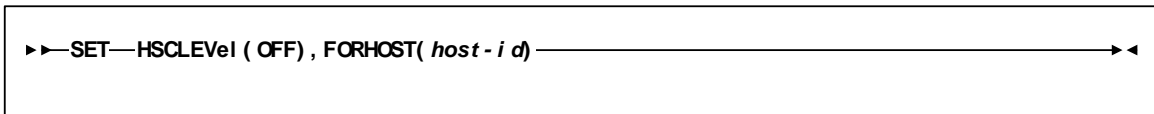
Note – If used, HSCLEVel should be performed **only when the host designated in** *host-id* **is inactive**.

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 - i d) ─────────────────────────►◄
```

FIGURE 3-199 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 377 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 500 for more information.
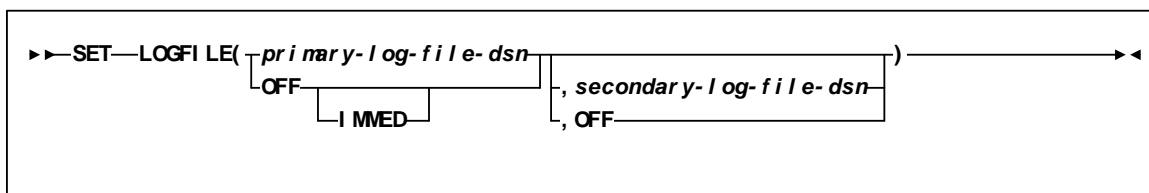
Syntax

FIGURE 3-200 SET LOGFILE syntax

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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 3-201 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 MSP 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

FIGURE 3-202 SET MIGOPT syntax

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

optionally, 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

optionally, 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
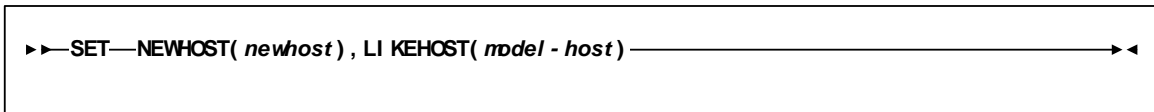
Subsystem Requirements:

Active HSC not required

Description

SET NEWHOST defines a new host.

Syntax

```
►►─SET──NEWHOST( newhost ) , LI KEHOST( model - host ) ──────────────────►◄
```

FIGURE 3-203 SET NEWHOST syntax

Parameters

NEWHOST

newhost

a 1-8 character host ID, which represents the SMF system ID for JES.

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

```
►►─SET──RMM─────────────────────────────────────────────────────►◄
               ├─ENable─┤
               └─DISable─┘
```
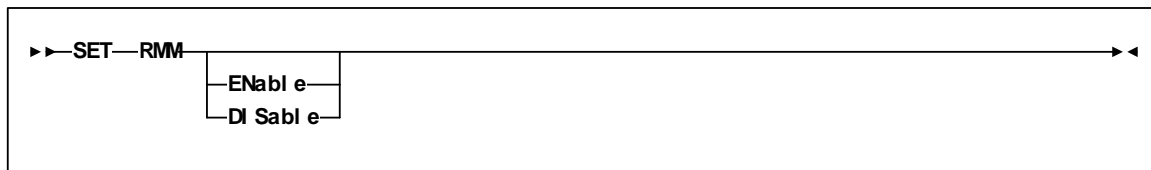
FIGURE 3-204 SET RMM syntax

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 Fujitsu 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 SLSSYS*xx* 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 REPLaceall 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
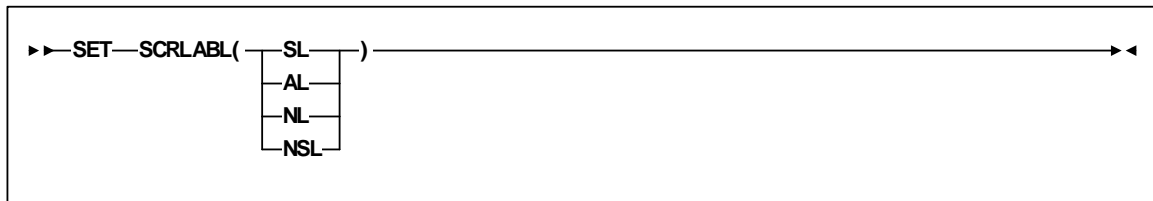
FIGURE 3-205 SET SCRLABL syntax

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 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 3-15 on page 558 describes some instances where the HSC can remain active, however, unpredictable results can occur.

Syntax
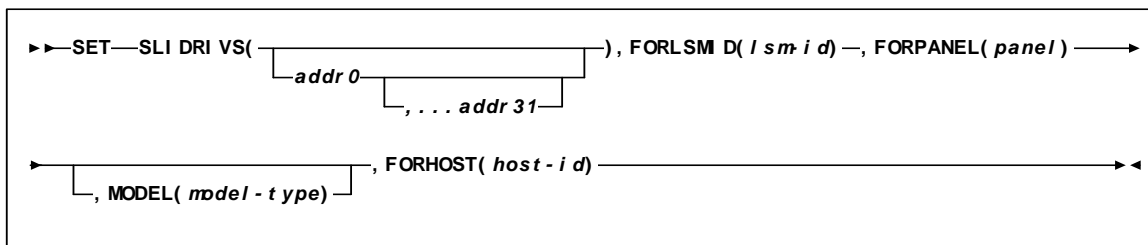
FIGURE 3-206 SET SLIDRIVS syntax

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 *addr0* representing the topmost drive and *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:

  ```
  SET SLIDRIVS(,,,,,BD4,BD3,BD2,BD1,BD0),FORLSMID(lsm-id),
                  FORPANEL(panel)
  ```

  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.

FORLSMID

specifies that the operation is being restricted to a specific LSM.

lsm-id

the LSMid (*AA:LL*) containing the drive panel whose addresses are being changed. An LSMid (*lsm-id*) is made up of the ACSid (decimal 00-99) and the LSM number (decimal 00-99) separated by a colon (:).

FORPANEL

specifies that the operation is being restricted to a specific panel.

panel

the 2-digit ID of the panel containing the drives whose addresses are being changed. See "Panels" on page 735 for a list of valid values.

Note – The specified panel must be an existing drive panel in the LSM.

MODEL

optionally, specifies the transport model number.

model-type

the model type.

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

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 3-15 defines options for running SET SLIDRIVS.

TABLE 3-15 HSC State/SET SLIDRIVS Operation

HSC State	Effect on SET SLIDRIVS
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
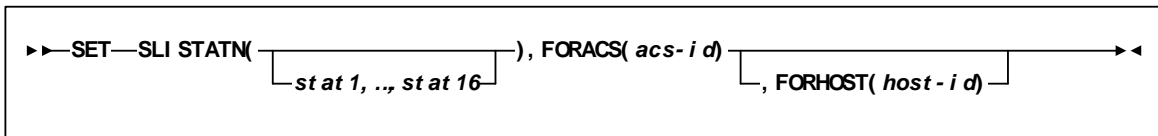
FIGURE 3-207 SET SLISTATN syntax

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( l i bt ype) ─────────────────────────────────────────►◄
```
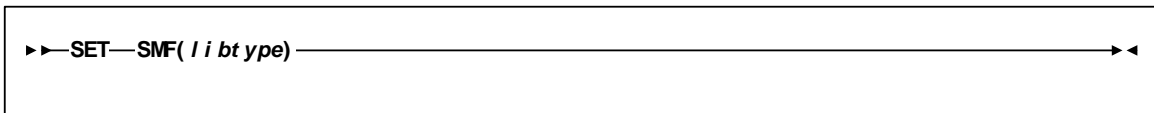
FIGURE 3-208 SET SMF syntax

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
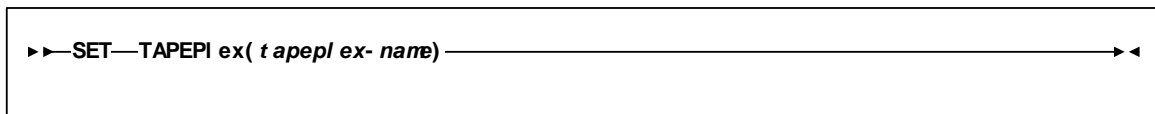
Subsystem Requirements:

Active HSC not required

Description

SET TAPEPlex sets a TapePlex name.

Syntax

```
►►─SET──TAPEPlex( tapeplex-name) ──────────────────────────────────────────►◄
```

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 102 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─────┬──)──────────────────────────►◄
                   ├──SHADOW───┤
                   └──STANDBY──┘
```

FIGURE 3-210 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.

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.

STANDBY

specifies that primary, secondary, and standby control data sets are to be recorded for recovery purposes. No journals are recorded during HSC operation.

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
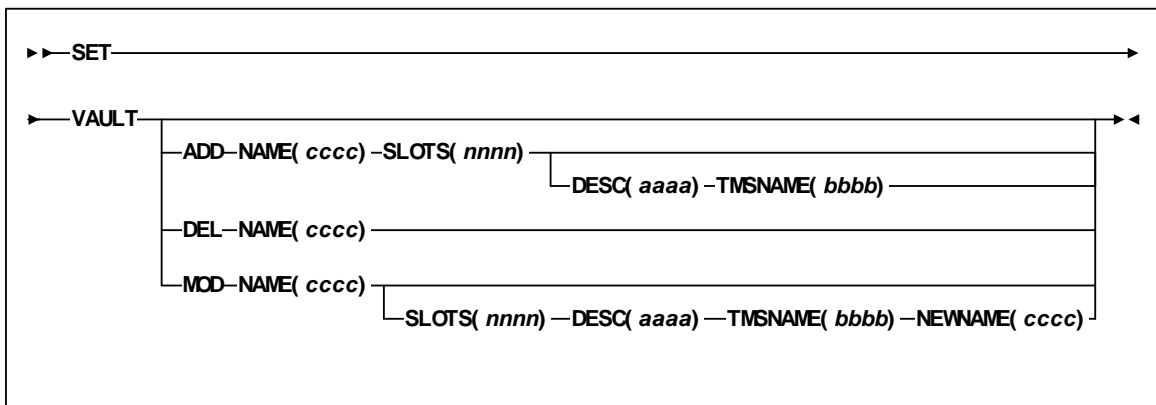
FIGURE 3-211 SET VAULT syntax

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 3-212 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.
- Specify REGION=0M on the EXEC PGM=SLUADMIN statement when the number of input statements exceeds 10,000 card images.
- If you delete MVCs or VTVs from the configuration as a result of either SET VOLPARM or CONFIG MVCVOL/VTVVOL processing:
  - If MVCs were deleted, you cannot re-enter the volsers into the configuration as VTVs.
  - If VTVs were deleted, you cannot re-enter the volsers into the configuration as MVCs.
  - Do not use the volsers for native HSC tapes.

  Message SLS6944I indicates the number of MVCs or VTVs that have been deleted.

The following commands are disabled for systems (ELS 7.0 or higher) after SET VOLPARM:

HSC:
- VOLDEF
- SCRPDEF

VTCS:
- MVCDEF
- CONFIG VTVVOL/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

```
►►──SET──VOLPARM───────────────────────────────────────────────►◄
                    │           ┌─NO─┐        │
                    └─APPLY(────┤    ├───)────┘
                                └─YES─┘
```
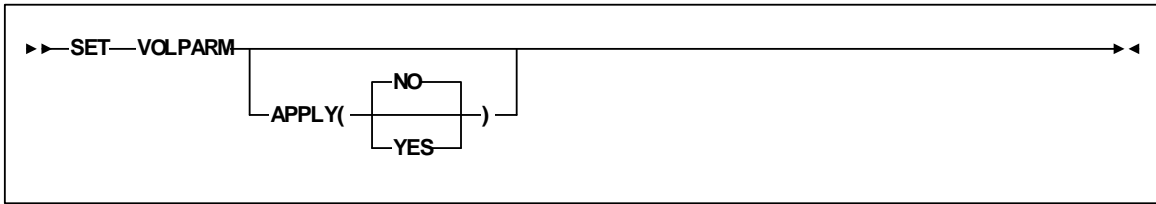
Parameters

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. Additionally, the date and time of this action is stored in the CDS, and is output by the Display CDS command.

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 572 and "VOLPARM Control Statement" on page 578 for more information.

Additional JCL Requirements

In addition to the required JCL definition statements described in "Invoking SLUADMIN" on page 686, the following definition statement applies to the SET VOLPARM JCL:

SLSPARM

specifies the data set that contains the POOLPARM and VOLPARM control statements that define volumes and pools.

Using SET VOLPARM to Disable POOLPARM/VOLPARM

To disable POOLPARM/VOLPARM, run the SET VOLPARM utility with an empty SLSPARM input file.

Once POOLPARM/VOLPARM is disabled:

- The previous version of POOLPARM/VOLPARM remains in effect for MVC and VTV definitions until you run VTCS CONFIG.
- The previous POOLPARM/VOLPARM POOL definitions remain in effect until you run the VOLDEF, SCRPDEF and MVCDEF commands on the HSC host(s).

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 569 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

```
►►─POOLPARM──| TYPE Parameters |────────────────────────►◄


TYPE Parameters:

├─TYPE( SCRATCH) ──NAME( nnnn)──────────────────────────────────┤
                         │                          ┌─SL─┐  ┌─DRTEST─┐
                         └─HOSTid( ┬─host id─)   └─LABEL( ┼─NL─┼─)─┘  └────────┘
                                  └─,◄─┘              ├─AL─┤
                                                      └─NSL─┘


├──TYPE( CLEAN)──────────────────────────────────────────────┤
            └─MAXclean( nn) ─┘


├──TYPE( MVC)────────────────────────────────────────────────►
        └─NAME( nnnn)─┘  └─DRTEST─┘  └─INITMVC( ┬─YES─┬─)─┘
                                               └─NO──┘


►──┬─MVCFREE( nn)─┬──┬─MAXMVC( nn)─┬──┬─START( nn)─┬──┬─THRESH( nn)─┬──┬─INPTHRSH( nn)─┬──────────┤
   │                                                                                    │
   │                    ┌─AUTo────────┐
   ├─RECLaim( ┼─DEMand───────┼────────────────────────────────────┤
   │                    ├─REPort only──┤
   │                    └─NONe────────┘
   │
   ├─NORECLAIM────────────────────────────────────────────────────┤
   └─NOMIGRAT──────────────────────────────────────────────────────┘


├──TYPE( EXTERNAL) ──NAME( nnnn)─────────────────────────────┤
                           └─OWNRPLEX( tapeplex- name)─┘
```
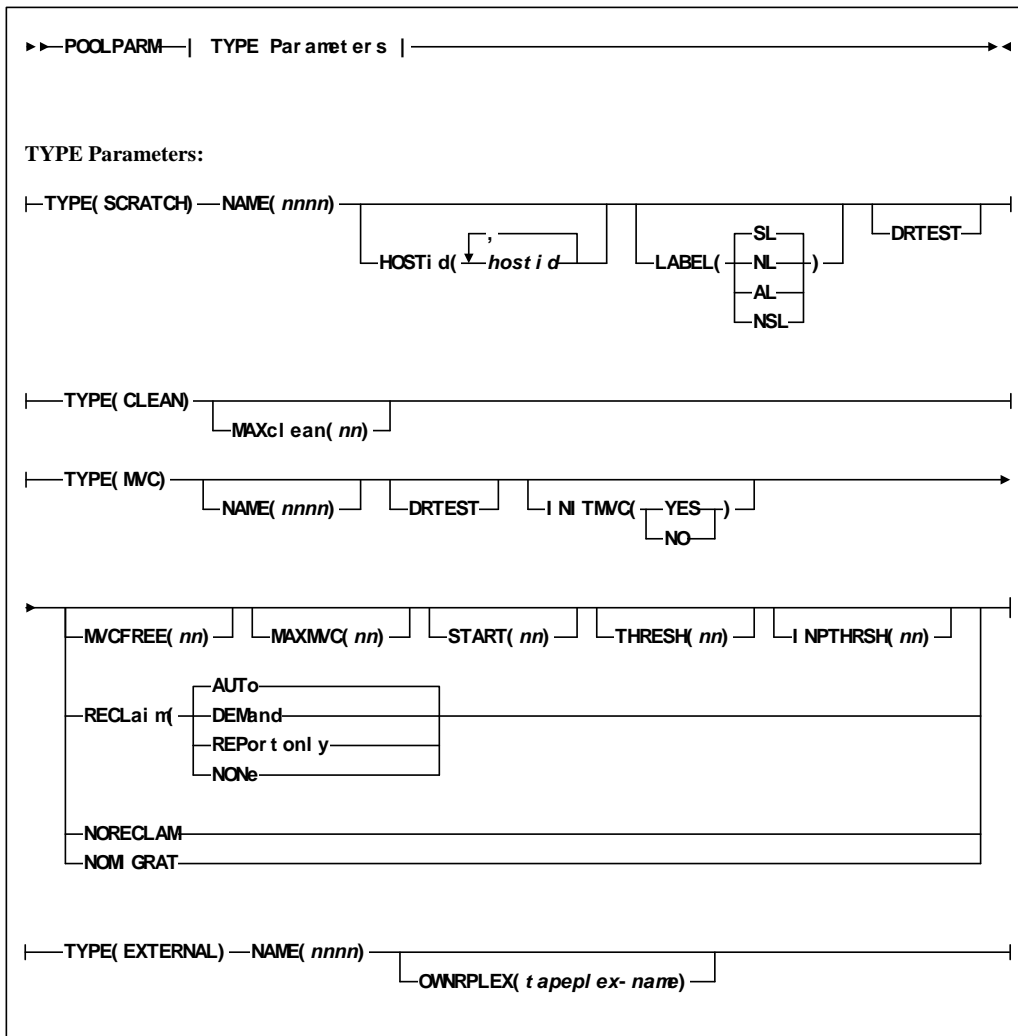
FIGURE 3-214 POOLPARM control statement syntax

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 MSP 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.

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:

Reclaim Candidates / (*Reclaim Candidates + Free MVCs*) * 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(*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.

INPTHRSH

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 INPTHRSH value specified in the CONFIg RECLAIM statement. If this parameter is not specified, the current active global INPTHRSH value is used.

> ***nn***
>
> a percentage between 3 and 97. This value must be less than the THRESHLD value.

Note – 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.

RECLaim

optionally, specifies space reclaim behavior of the MVCPOOL.

AUTo

VTCS will output message SLS6699E and schedule automatic space reclaims. Reclaims may also be invoked using the RECLAIM command. This is the default.

DEMand

VTCS will not output message SLS6699E and will not schedule automatic space reclaims. Reclaims may be invoked using the RECLAIM command.

RECLaim(DEMand) is mutually exclusive with MVCFREE and START.

REPortonly

> VTCS will output message SLS6699E but will not schedule automatic space reclaims. Reclaims may not be invoked using the RECLAIM command.
>
> RECLaim(REPortonly) is mutually exclusive with MAXMVC, START, and THRESH.

Note – REPortonly is equivalent to, and replaces, the NORECLAM parameter though NORECLAM is still tolerated if the RECLaim parameter is not specified.

NONe

> VTCS will not output message SLS6699E and will not schedule automatic space reclaims. Reclaims may not be invoked using the RECLAIM command.
>
> RECLaim(NONe) is mutually exclusive with MVCFREE, MAXMVC, START, and THRESH.

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 569 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
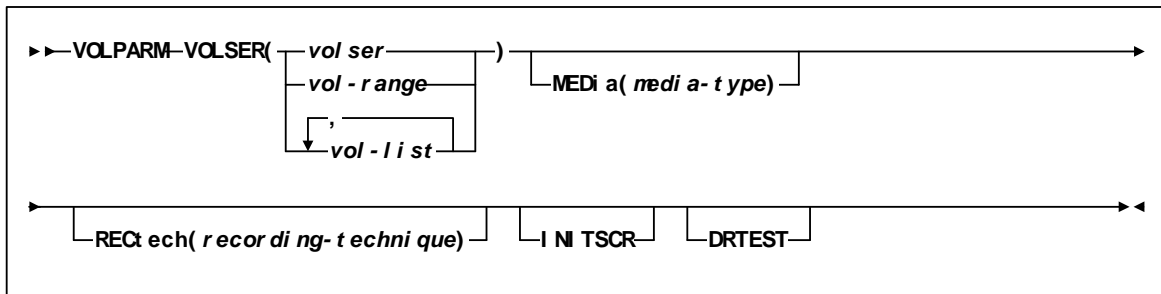
FIGURE 3-215 VOLPARM syntax

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 726 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 730 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.

SET VOLPARM UPDATE

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC not required

Description

SET VOLPARM UPDATE defines the changes to the volume and pool information for a server complex. The information stored in the CDS by the SET VOLPARM utility is changed to reflect the new VOLUME/POOL information.

The HSC/VTCS systems do not need to be recycled for the updated volume 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.
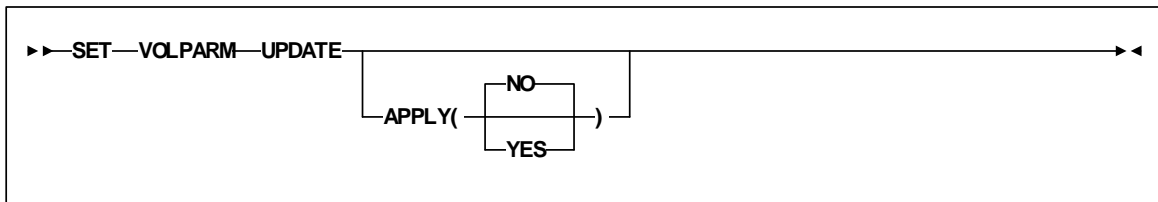
Syntax

FIGURE 3-216 SET VOLPARM UPDATE syntax

Parameters

VOLPARM UPDATE

APPLY

specifies whether the POOLPARM/VOLPARM changes are to be applied to the CDS:

NO

Validate the changes but do not apply them to the CDS (the default).

YES

Apply the changes. If you specify YES, the SLSPARM data set containing the POOLPARM and VOLPARM change control statements is read and applied to the CDS.

POOLPARM and VOLPARM change 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-subpool (subpool 0) volumes.

Additional JCL Requirements

In addition to the required JCL definition statements described in , the following definition statement applies to the SET VOLPARM UPDATE JCL:

SLSPARM

> specifies the data set that contains the POOLPARM and VOLPARM change control statements that define the pool and volume changes to the CDS volume and pool information.

POOLPARM Change Control Statement

POOLPARM change control statements define new pool information for a server complex in the form of named pools of specific types.

VOLPARM change control statements define or remove a volser, volser list, or volser range associated with the specified POOLPARM change statement.

POOLPARM and VOLPARM Change statements are defined in the SLSPARM data set, and are loaded using the SET VOLPARM UPDATE utility. See "SET VOLPARM" on page 569 for more information.

- When a POOLPARM change statement is read, all subsequent VOLPARM change statements encountered before the next POOLPARM change statement are applied.

- When VOLPARM change statements are read without a prior POOLPARM, those VOLSER volumes are considered non-subpool (subpool 0) volumes.

Syntax

```
►►──POOLPARM──| change type |──| pool parameters |────────────────►◄
```
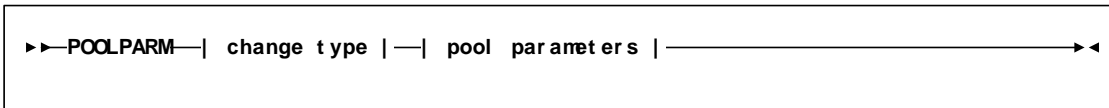
FIGURE 3-217 POOLPARM Change control statement syntax

Parameters

change_type

ADD

A new pool is to be added to the server complex. VOLPARM change statements that follow this POOLPARM change statement will define the volumes associated with this pool.

DELETE

An existing pool is to be deleted. When the pool is deleted, the associated volumes will also be deleted.

UPDATE

An existing pool definition is to be changed. UPDATE can be used to change POOLPARM parameters. For example, the value of the MVCFREE parameter may be changed. UPDATE is also used to associate the VOLPARM change statements that follow with the correct pool.

Note – UPDATE cannot be used to change the name of a pool.

---

pool_parameters

The POOLPARM statement parameters. See "POOLPARM Control Statement" on page 572 for valid parameters.

Note – When deleting or updating a POOLPARM statement, specify all of the parameters of the original POOLPARM statement.

VOLPARM Change Control Statement

VOLPARM change control statements define or remove a specific volser, volser list, or volser range associated with the previous POOLPARM UPDATE change statement.

POOLPARM and VOLPARM change statements are defined in the SLSPARM data set, and are loaded using the SET VOLPARM UPDATE utility.

■ When a POOLPARM change statement is read, all subsequent VOLPARM change statements encountered before the next POOLPARM change statement are applied.

■ When VOLPARM change statements are read without a prior POOLPARM, those VOLSER volumes are considered non-subpool (subpool 0) volumes.

Syntax

```
►►──VOLPARM──| change type |──| pool parameters |──────────────────►◄
```

FIGURE 3-218 VOLPARM Change control statement syntax

Parameters

change_type

ADD

A new volume, volume list or range is added to the pool defined by the previous POOLPARM UPDATE statement. When no prior POOLPARM UPDATE statement exists, the VOLPARM information will be added as non-subpool (subpool 0) volumes.

DELETE

An existing volume, volume list or range is to be deleted.

volume_parameters

The VOLPARM statement parameters. See "VOLPARM Control Statement" on page 578 for valid parameters.

Note – When deleting a VOLPARM statement, specify all of the parameters of the original VOLPARM statement.

SET VOLPARM JOIN

Interfaces:

SLUADMIN utility only
UUI: No

Subsystem Requirements:

Active HSC not required

Description

SET VOLPARM JOIN merges contiguous volume ranges defined on multiple VOLPARM statements into one new VOLPARM statement.

The output of this utility can be used as input to the SET VOLPARM utility to replace the original server complex volume and pool information in the CDS.

Syntax

```
►►──SET──VOLPARM──JOIN──────────────────────────────────────────────►◄
```
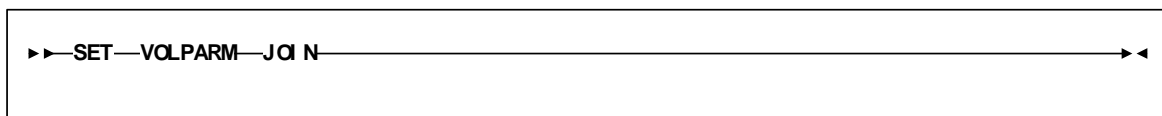
FIGURE 3-219 SET VOLPARM JOIN syntax

Parameters

None

Additional JCL Requirements

In addition to the required JCL definition statements described in , the following definition statement applies to the SET VOLPARM JOIN JCL:

SLSPARM

specifies the input data set that contains the POOLPARM and VOLPARM control statements that define the pool and volume contained in the CDS.

SLSPARM2

specifies the output data set that contains the POOLPARM and the VOLPARM statements after the volume range merge operations have been accomplished.

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 11 for information about BASE and FULL service levels.

Syntax

```
►►──SRVl ev──┬─BASE─┬──────────────────────────────────►◄
             └─FULL─┘
```
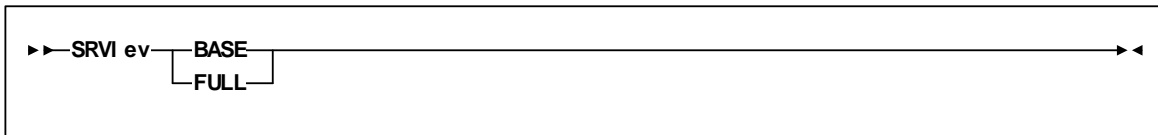
FIGURE 3-220 SRVlev syntax

Parameters

BASE

   specifies that the HSC is to operate at the BASE service level.

Note – When the HSC service level drops to BASE, host-to-host communications using the LMU method are switched to the CDS method. When the HSC FULL service level is restored, you must issue the COMMPath command to return to LMU communications.

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

```
▶▶─┬─STOPMN─┬─PGMI──────────────────────────────────────────────────▶◀
   └─PM─────┘   └─, L(─┬──────┬─)─┘
                       ├─cc───┤
                       └─name─┘
```
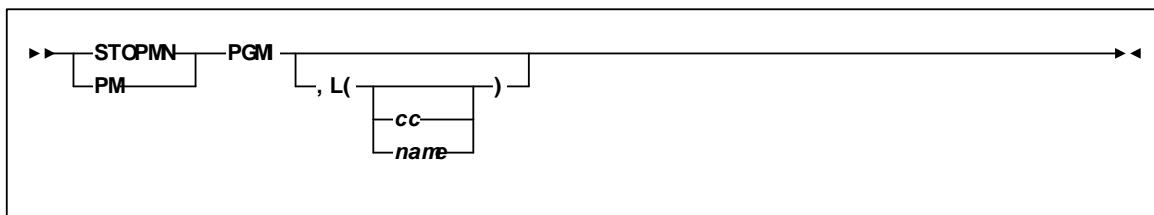
FIGURE 3-221 STOPMN syntax

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.
■ Before you issue the switch command, stop all HSC activity.
■ After you issue the SWitch command, do not start HSC on any other hosts and do not start any HSC activity (i.e. mounts, dismounts, Display ACS, and any other commands) until the switch process is complete.

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

```
►►─SWtch─┬──────────────┬──┬─────────────────┬────►◄
         │              │  └─LIBrary lib-id──┘
         └─Acs acs-id───┤
             └─RESET─┘
```

Note: ACS *acs-id* is optional in a single ACS environment; it is required in a multi-ACS environment.
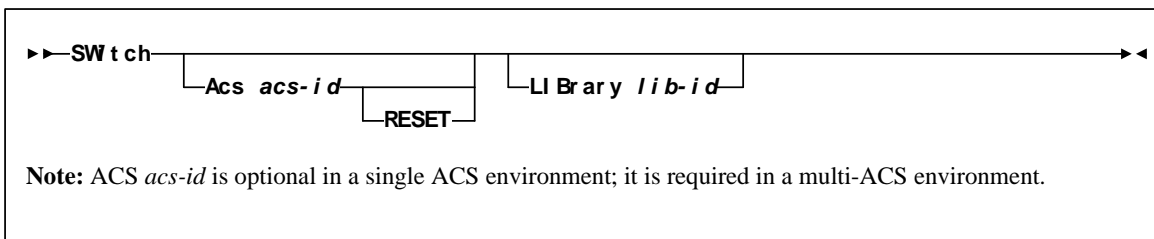
FIGURE 3-222 SWitch syntax

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.

RESET

Optionally, used in conjunction with ACS *acs-id* to reset the internal switch setting and internal conflict counts for an ACS. This is helpful when a SWitch is invoked for an SL8500 library and one or more LSMs fail to reach ready state after the SWitch process completes.

Note –

■ Before using the RESET, it is recommended that you enter the Display Status command to determine which ACS(s) are in the switch process and which ACSs are conflict active.

■ Verify that the library has completed the switch process before you consider issuing a RESET, as indicated by SLS0668I messages.

■ Verify that a RESET is complete before you consider issuing another SWitch command.

Use the following guidelines to determine when to issue a SWitch RESET command after a SWitch ACS command is issued:

a. Issue SWitch RESET after the following message is displayed:

```
SLS0694I ACS aa: Switch has completed
```

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If this message is not displayed, wait for the SLS6013I message to be displayed for the active connection before issuing the SWitch RESET command.

b. If you receive the following message after the switch process has completed:

```
SLS1004I ACS aa cannot switch; ACS is busy
```

Issue the SWitch RESET command on another host. If the SLS1004I message is displayed again, bring up another HSC host and issue the SWitch RESET command, or restart an HSC host and then issue the SWitch RESET command.

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.

SL8500 ACS

LSM=00		LSM=04		LSM=08		LSM=0C	
LSM=01		LSM=05		LSM=09		LSM=0D	
LSM=02		LSM=06		LSM=0A		LSM=0E	
LSM=03	ID=1	LSM=07	ID=2	LSM=0B	ID=3	LSM=0F	ID=4

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:

Library ID	LSM ID Range	Library ID	LSM ID Range
1	00-03	9	20-23
2	04-07	A	24-27
3	08-0B	B	28-2B
4	0C-0F	C	2C-2F
5	10-13	D	30-33
6	14-17	E	34-37
7	18-1B	F	38-3B
8	1C-1F	G	3C-3F

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 show 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 MSP 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
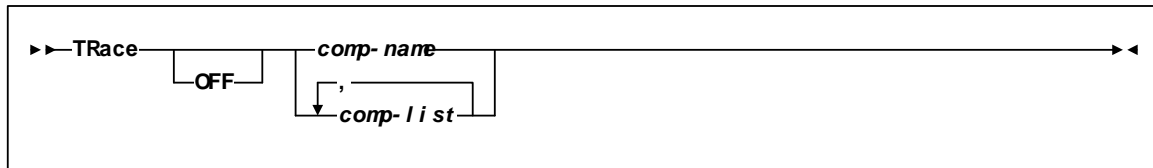
FIGURE 3-223 TRace syntax

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.

ALloc	Allocation volume lookup
AScomm	Aaddress Space Communications
CAp	CAP Common
COnfigur	Configuration Control
Database	Database server
FP	Function Points **Note:** FP tracing is used only by Oracle developers.
HComm	Host Communications
Initiali	Initialization
Lmu	LMU Server
Mount	Mount/Dismount
Operator	Operator Commands
Recovery	Recovery (Note: must also trace SERvice)
SERvice	Services
Utilitie	Utilities
UUI	Unified User Interface
Volume	Volume/Cell
VTcs	VTCS
Wto	WTO Services
XMl	XML Interface

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).

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
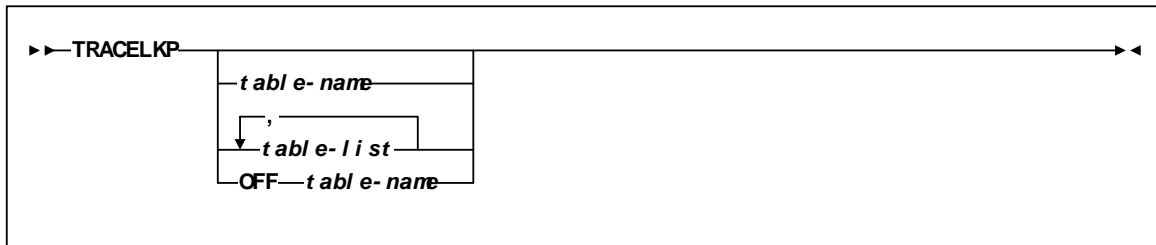
FIGURE 3-224 TRACELKP syntax

Parameters

OFF

disables 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.

VOLATTR	VOLATTR (VOLDEF) table
LMUPATH	LMUPATH (LMUPDEF) table
MVCPOOL	MVCPOOL (MVCDEF) table
MGMTCLAS	MGMTCLAS (MGMTDEF) table
STORCLAS	STORCLAS (STORDEF) table
LOOKFAIL	Trace the LOOKUP failures in detail. If LOOKFAIL is specified, the detail failure trace records are output for all events that are ON.
MIGRSEL	MIGRSEL (MGMTDEF) table
MIGRVTV	MIGRVTV (MGMTDEF) 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.
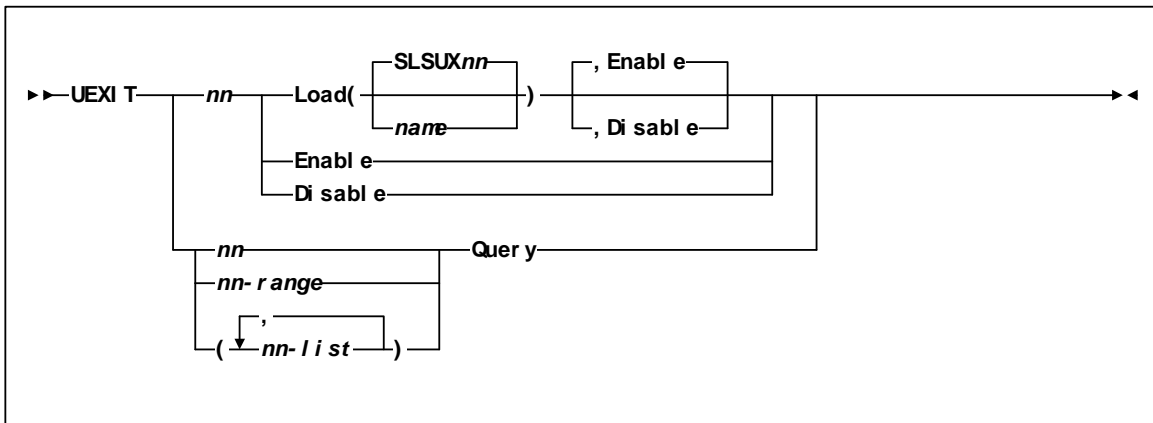
Syntax

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.

SLSUX*nn*

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 FULL service level

Description

The UNSCratch command unscratches one or more volumes.
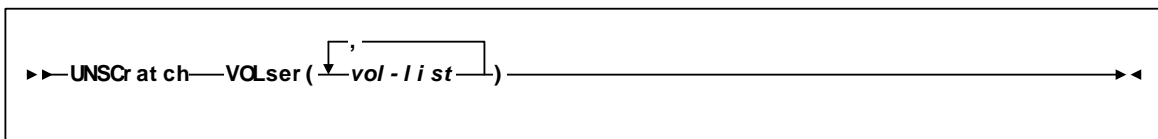
Syntax

FIGURE 3-226 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. You can specify a maximum of 100 volume serial numbers. 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

```
►►──UNSElect ──VOLser ( vol ser )──────────────────────────────────►◄
                              └─, FORCE─┘
```
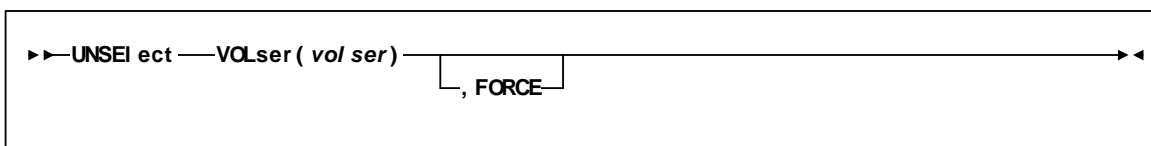
FIGURE 3-227 UNSElect syntax

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
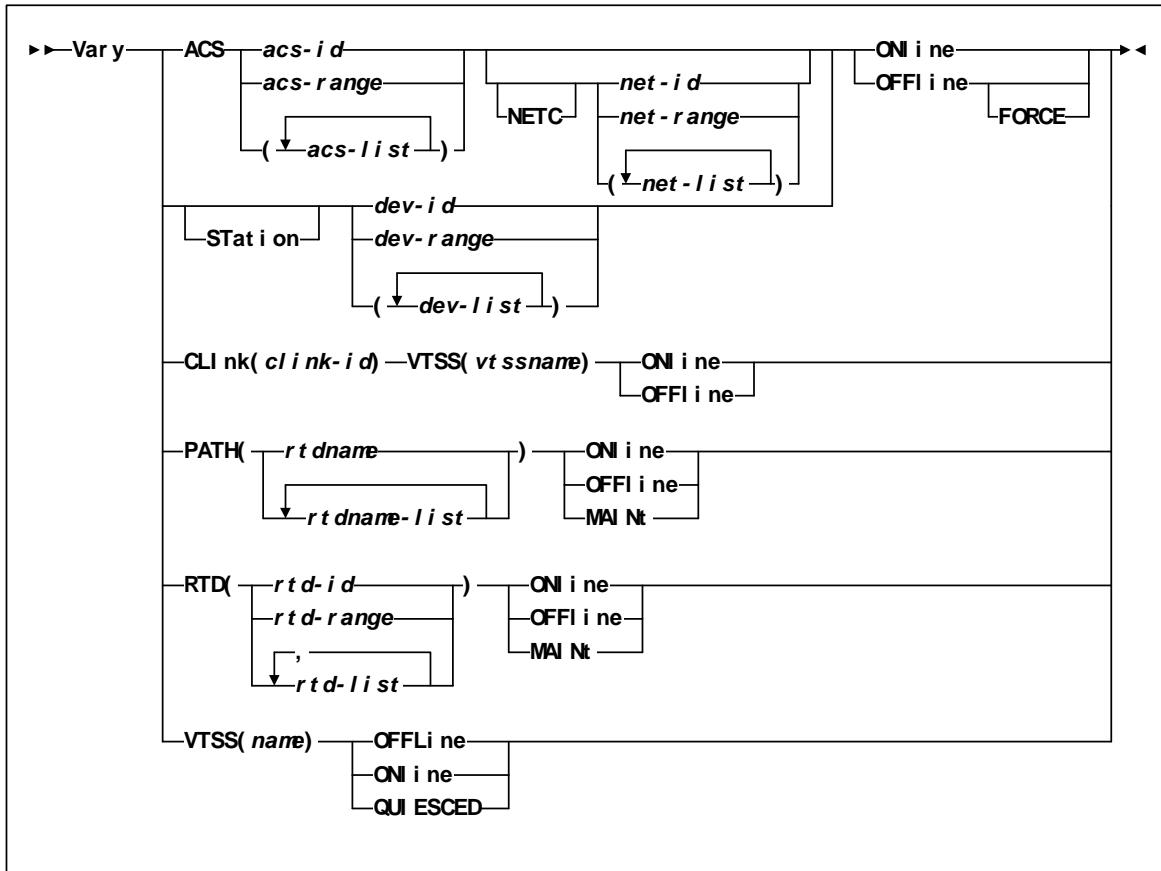
optionally, specifies the ACS to be made online, offline, or standby to this host.

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.

NETC

optionally, used in conjunction with ACS acs-id to vary online/offline a single, range, or list of HSC library network connections.

net-id or *net-range* or *net-list*

one or more network connection to be varied. Each *net-list* element can be either a single net-id or a net-id 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.

Note –

■ The last active network connection cannot be varied offline. The ACS must be varied offline in order to vary the last active network connection offline.

■ The Vary ACS *acs-id* NETC *net-id* ONLINE|OFFLINE command cannot be issued unless the ACS is online first. If the ACS was not varied online first, message SLS0050I is displayed when the Vary command with the NETC parameter is entered.

For example, the following command modifies network connection 2 of ACS 00 online:

```
V ACS 00 NETC 02 ONLINE
```

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.

VIew

Interfaces:

Console or PARMLIB only
UUI: No

Subsystem Requirements:

Active HSC at FULL service level

Description

The VIew command allows you to see specified internal components of the LSM when video monitors are attached to the LSM.

Syntax
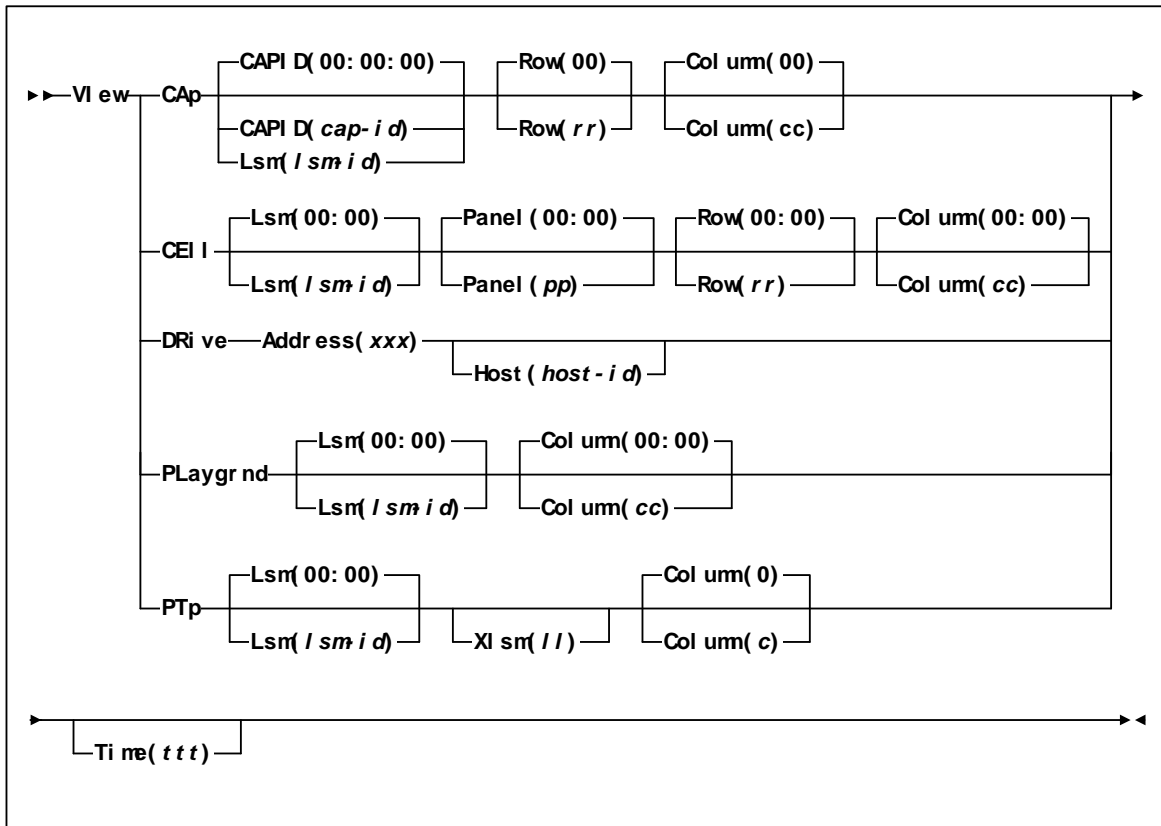
FIGURE 3-229 VIew syntax

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 *AA:LL:CC*, where *AA:LL* is the LSMid, and *CC* is the CAP. See "CAPid" on page 734 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 *AA:LL*, where *AA* is the ACSid (decimal 00-99) and *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 *rr* are decimal and are specific to the LSM type. See "Rows" on page 737 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.

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 738 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 735 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 737 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 738 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 VIew 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 VIew 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*).

ll

the LSM number of the adjacent LSM. Values for *ll* 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.

VLEMAINT

Interfaces:

Console or utility
UUI: Yes

Subsystem Requirements:

Active HSC/VTCS

Description

The VLEMAINT utility command moves or copies VLE based MVC (VMVC) data content to a specified VLE system, without using VTSS storage resources.

This utility should only be used under the guidance of Oracle Support personnel.

Syntax
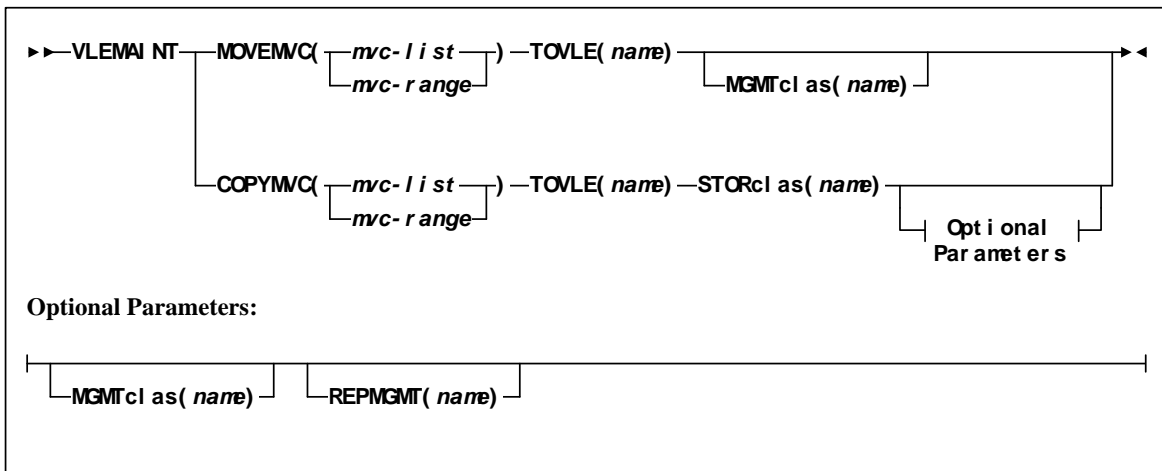
FIGURE 3-230 VLEMAINT syntax

Parameters

MOVEMVC

specifies a list or range of VLE based MVCs whose content is to be moved to the specified target VLE system. MVCs selected in the target VLE system inherit the storage class of the source MVC.

MOVEMVC is mutually exclusive with COPYMVC.

COPYMVC

specifies a list or range of VLE based MVCs whose content is to be copied to the specified target VLE system. COPYMVC creates an additional copy of the data to another storage class on the target VLE system.

COPYMVC is mutually exclusive with MOVEMVC. COPYMVC requires a STORclas name to be specified.

TOVLE

specifies the target VLE to receive the source VMVC data. This parameter is required.

name

the target VLE name. This VLE must be valid (defined to the configuration). Otherwise, the utility aborts with a return code 8.

MGMTclas

optionally, specifies a single management class used to filter data sent to the target VLE. Only VTVs with this management class are sent to the target VLE.

name

the management class name. This name must be valid (defined in MGMTDEF). Otherwise, the utility aborts with return code 8.

STORclas

optionally, specifies the storage class assigned to the VMVC selected at the target VLE for COPYMVC processing. This parameter is required when COPYMVC is specified.

name

the storage class name. This name must be valid (defined in MGMTDEF). Otherwise, the utility aborts with a return code 8.

Optional Parameters (VLEMAINT COPYMVC)

MGMTclas

optionally, specifies a single management class used to filter data sent to the target VLE. Only VTVs with this management class are sent to the target VLE.

name

the management class name. This name must be valid (defined in MGMTDEF). Otherwise, the utility aborts with return code 8.

REPMGMT

optionally, specifies a single management class name assigned to the VTV data after it is received by the target VLE system for COPYMVC processing.

name

the management class name. This name must be valid (defined in MGMTDEF). Otherwise, the utility aborts with return code 8.

Note – During COPYMVC processing, any VTV found with the management class specified in REPMGMT is bypassed. This could potentially serve as a copy complete acknowledgment if utility restarts occur.

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──────────────────────────────────────────────────────►◄
             │              ┌─CLN────┐  │
             └─CLNPRFX( ──┴─prefix─┴──) ─┘
```
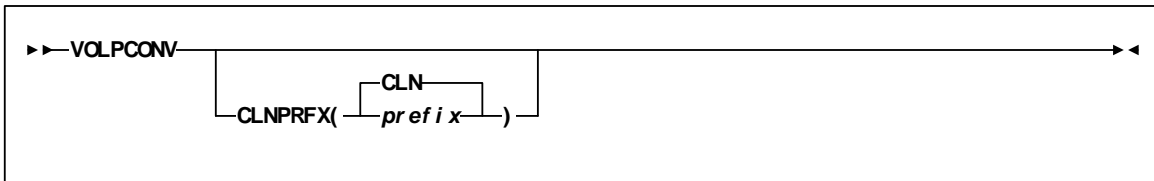
FIGURE 3-231 VOLPCONV control statement syntax

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 , 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 DEComp 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
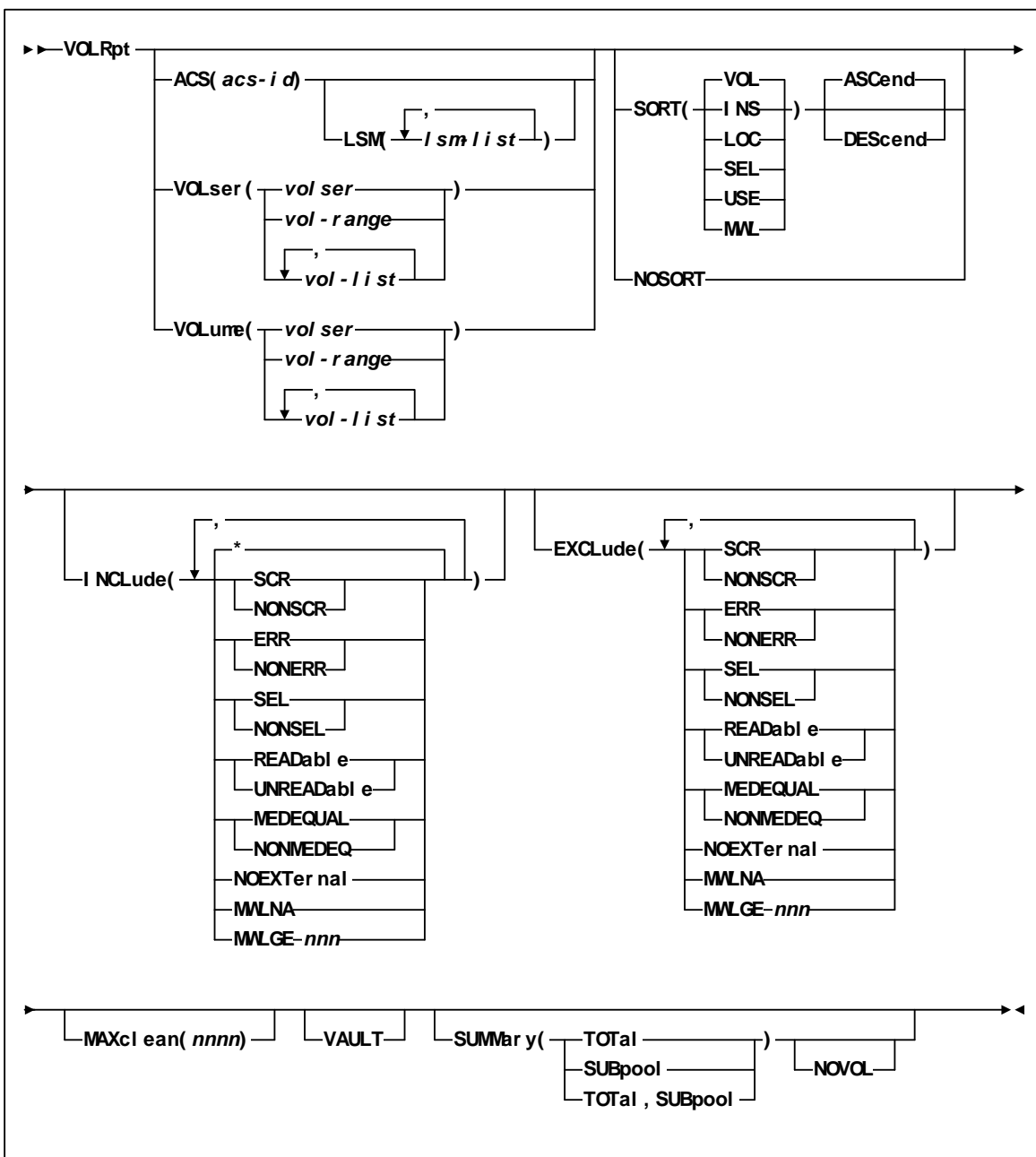
FIGURE 3-232 VOLRpt syntax

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%0000-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, **SORT(INS,USE)** produces a report sorted by date inserted in the control data set, and then for each date, sorted by select count.

Note – SORT and NOSORT are mutually exclusive.

The following SORT options are available:

VOL

indicates that the report is to be sorted by volume serial number (**VOL** is the default).

INS

indicates that the report is to be sorted by date and time the volume was inserted into the control data set.

LOC

indicates that the report is to be sorted by location.

SEL

indicates that the report is to be sorted by date and time the volume was last selected.

USE

indicates that the report is to be sorted by selection count.

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%.

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.

NOSORT

specifies that an unsorted report is to be produced.

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.

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 can be provided using the VOLPARM facility. See "VOLPARM Control Statement" on page 578 for more information about defining VOLPARM information. For alternative methods of specifying subpool information, refer to the *ELS Legacy Interfaces Reference*.

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 should not be specified by itself.

Note – NOVOL is mutually exclusive with ACS, VOLser, VOLume, SORT, NOSORT, INCLude, EXCLude, MAXclean, and VAULT.

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.

Volume Report

The following figure shows an example of a volume report produced by the VOLRpt command issued with the SUMMary(SUBpool) parameter:

```
Volume                  Cell Loc    Err   Sel Ext Cln           |--- Inserted --| |-- Last Used --|  Times  MWL
Serial  Media   Rectech AA:LL:Pa:Ro:Co | Scr |  Lbl Use    Subpool ID    Date      Time     Date      Time   Selected  %
B00141  T10000T1 T1B35   01:01:02:08:01   Y       R       SMCT10K      20110725 15:52:13 20110920 10:44:52      13   0


                                   Subpool Totals, all Ranges

                              Subpool ID     Label Type    Range Limits      DRTEST?
                              DEFAULTPOOL        SL        N/A -  N/A         No
```

FIGURE 3-233 VOLRpt report example

Fields

The following list describes the VOLRpt report fields.

Volume Serial

the volume serial number

Media

the media type. See Appendix A, "MEDia, RECtech, and MODel Values".

The media field may be immediately preceded by an asterisk '*' or dash '-'.

- An asterisk '*' indicates that the media defined by a VOLATTR statement is not compatible with the media label value.
- A dash '-' indicates that the volume has no VOLATTR or VOLPARM defined media value.

Rectech

the recording technique. See Appendix A, "MEDia, RECtech, and MODel Values".

Cell Loc

the cell location field shows cartridge location by ACS (AA), LSM(LL), panel (PA), rown (RO), and column (CO).

Err, Scr, Sel

A "Y" (yes) flag under the Errant, Scratch, or Selected headings indicates that the volume is currently in that status.

A volume in Errant (Err) status shows the volume's home cell in the Cell Loc column.

A "Y" (yes) flag under the Selected heading indicates that the volume is currently selected, that is, being mounted, dismounted, ejected, or moved. An "M" flag indicates that the volume is currently mounted. The Selected column on the totals report includes both selected and mounted volumes. The volume's home cell appears in the Cell Loc column.

Ext Lbl

External Label:

- "R" indicates that the volume has a readable external label.
- "U" indicates that the volume has an unreadable external label.
- "N" indicates that the volume has no external label.

Cln Use

Cartridge Usability:

- "N" indicates that the volume is not usable, for example, a spent cleaning cartridge that is not usable because it has exhausted its cleaning surface.
- "M" indicates that a cleaning cartridge has exceeded its maximum usage set by the MAXclean value (as specified by the MNTD MAXclean or VOLATTR MAXclean parameters).

Subpool ID

the subpool ID.

Scratch subpools for volumes are listed if scratch subpool definitions have been provided using VOLPARM control statements.

- *NON-VOLPARM* indicates that VOLPARM is in effect, but this volume is not defined in VOLPARM.
- DEFAULTPOOL indicates that the volume is defined in VOLPARM with no associated pool.
- *MVC* indicates that the volume is reserved for VTCS usage as a migration volume.
- *DEFAULT* indicates that the volume is a cleaning cartridge but has not been included in a VOLPARM defined subpool, *DEFAULT* appears.

If VOLPARM is not used, the generated report is the same as in the HSC 6.2 release. See the *HSC 6.2 System Programmer's Guide* for more information.

Inserted

date and time that the volume was inserted

Last Used

date and time that the volume was last used

MWL Media Warranty Life

Media Warranty Life (MWL) is a percentage value that is obtained at volume dismount for tape libraries that are at LMU compatibility level 21 or later. If you do not know the compatibility level, enter the HSC Display Acs command to display it. See "Display Acs" on page 231 for more information.

The MWL percent indicates how much of the media life has been used and is considered to be "expired" at 100%. Values may range from 0 to 254. If the field is blank, the MWL is unknown.

Totals Reports

Two totals reports can be produced:

- volume report totals
- subpool totals.

Volume Report Totals

Total of cartridges with various characteristics are displayed for LSMs, ACSs, and the entire library.

The total selected volumes is the sum of the number of volumes currently selected and the number of volumes currently mounted.

Note – The free storage cells reported do not include free cells on frozen panels. An LSM with at least one frozen panel is indicated by an asterisk after the free cell count.

Subpool Totals

Totals of cartridges by subpool are produced for LSMs, ACSs, and the entire library.

Note – A value of Y in the DRTEST column indicates that the pool is defined using the VOLPARM control statement feature with the keyword DRTEST(YES).

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
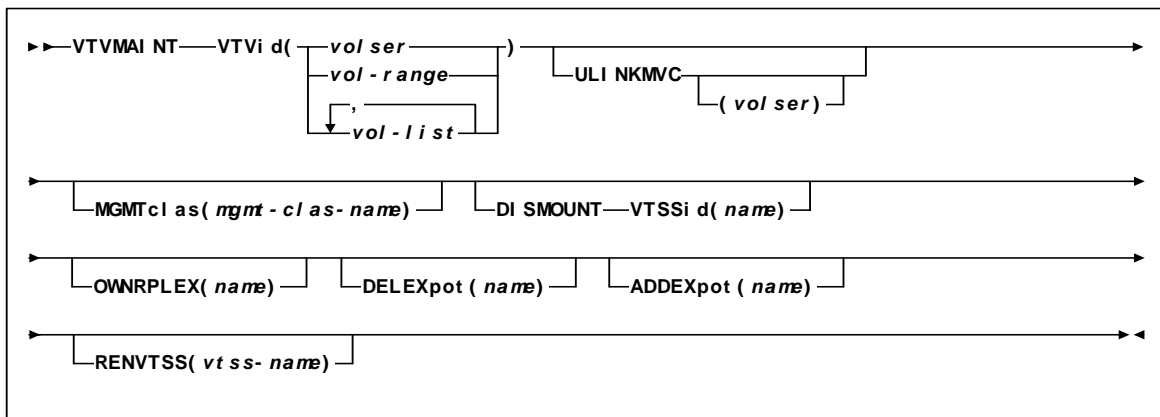
FIGURE 3-234 VTVMAINT syntax

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 421.

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 VTVMAINT is run must have access to the owning VTSS.

Return Codes

TABLE 3-16 VTVMAINT Return Codes

Return Code	Description
0	All requested updates for the VTV completed successfully.
4	One requested update for the VTV failed and at lest one other requested update completed successfully.
8	All requested updates for the VTV failed.

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

The following figure shows an example of a VTVMAINT report produced by the following command:

```
VTVMAINT VTV(X00000-X00002) ULINKMVC MGMTCLAS(M1)
```

```
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00002
TIME 15:50:09                                     VTV MAINTENANCE                                        DATE 2012-06-17

VTV          RC
X00000       04
X00001       04
X00002       04

VTVMAINT EXCEPTION REPORT
VTV X00000 IS ALREADY IN MGMTCLAS M1
VTV X00001 IS ALREADY IN MGMTCLAS M1
VTV X00002 IS ALREADY IN MGMTCLAS M1
SLS1315I SWS500.V5.CDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET


SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00003
TIME 15:50:09                                     VTCS VTV REPORT                                        DATE 2012-06-17
VTV      SIZE  COMP <----CREATION----> <--LAST USED--> MGR SCR REPL  MGMT                                        MAX
VOLSER   (MB)   %  DATE      TIME       DATE      TIME  RES IMP EXPT  CLASS     MVC1   MVC2   MVC3   MVC4  VTV VTSSNAME

X00000   0.01   0  2012MAY19 05:02:08 2012MAY19 05:22 - - R - -      M1        022550 022551 022552 022553 800
X00001   0.01   0  2012MAY19 05:02:08 2012MAY19 05:22 - - R - -      M1        033550 033551 033552 033553 800
X00002   0.01   0  2012MAY19 05:02:08 2012MAY19 05:22 - - R - -      M1        044550 044551 044552 044553 800

         3 INITIALIZED VTVS PROCESSED
         0 NON-INITIALIZED VTVS PROCESSED
```

FIGURE 3-235 VTVMAINT report example

The VTVMAINT report shows the following:

- 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.

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 3-17 VTVRPt options

This option:	Performs the following function:
BASIC	generates a basic VTV report
COPIES	generates a VTV report indicating where all current copies of a VTV reside

VTVRPt BASIC

Interfaces:

Utility only
UUI: Yes

Subsystem Requirements:

Active HSC not required

Description

VTVRPt BASIC generates a basic VTV report.

Syntax
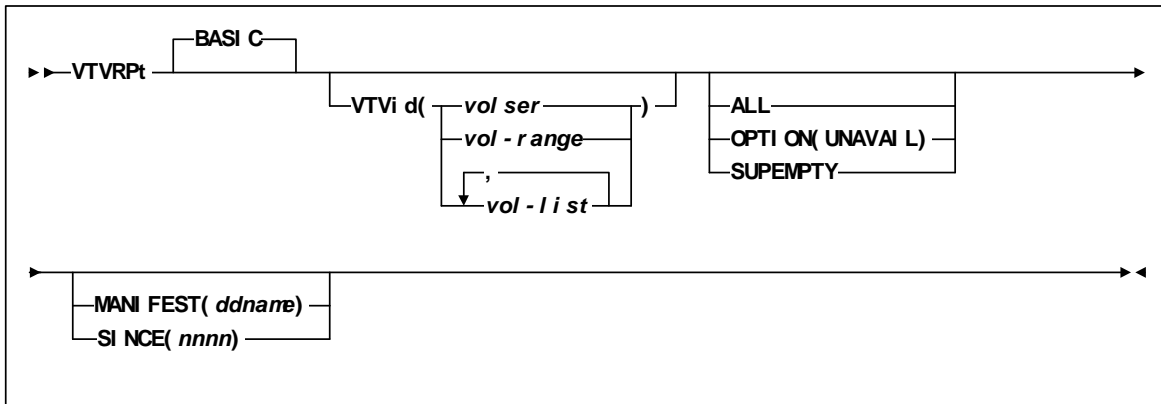
FIGURE 3-236 VTVRPt BASIC syntax

Parameters

BASIC

Generate a basic VTVRPT report.

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.

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).

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.

Note – MANIFEST is mutually exclusive with SINCE.

SINCE

optionally, specifies a time in minutes. Only VTVs that have been accessed within the specified time are processed.

nnn

the time in minutes, from 1 to 9999.

Note – SINCE is mutually exclusive with MANIFEST.

VTV Report (Basic)

The following figure shows an example of a VTV report produced by the VTVRPt BASIC command:

```
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00002
TIME 15:50:09                                     VTCS VTV REPORT                                       DATE 2012-06-17
SLS1315I HSC1.V70EC21.CDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00003
TIME 15:50:09                                     VTCS VTV REPORT                                       DATE 2012-06-17
VTV       SIZE  COMP <----CREATION----> <--LAST USED--> MGR SCR REPL  MGMT                                    MAX
VOLSER    (MB)    %  DATE     TIME       DATE     TIME  RES IMP EXPT  CLASS     MVC1   MVC2   MVC3   MVC4     VTV VTSSNAME
A00240    66.4   85 2010MAY22 16:27:44 2010MAY22 16:57 R - - -  -    TRACE                                   4.0 VTSS92
A00241    14.0    0 2010MAY21 13:02:30 2010MAY22 07:48 - M - -  -    MGMT2CP   702972                        0.4 VTSS90
A00406    14.0    0 2010MAY21 13:03:50 2010MAY22 08:45 - M - -  -    EXHPDM    700486                        4.0 VTSS90
DX0104     0.1   68 2015Apr04 02:51:16 2015Apr04 02:51 R - O -  -    ME
...
X50000  2,430.0   0 2009NOV18 09:04:18 2009NOV18 09:07 R - - I - PE  EEXPORT                                 4.0 VTSS91
X50047   280.0   96 2009DEC03 14:29:35 2010APR30 06:48 R M - I - PE  QUADYES   700483 700491 700494 700498   4.0 VTSS91
X50048   280.0   96 2009DEC03 14:29:41 2010MAY27 21:06 - M - I  -    QUADYES   702979 700492 700497 700499   4.0 VTSS91
X50060     0.0    0                                    - - S I  -
X50066   280.0   96 2009DEC03 14:56:17 2010MAY27 21:06 - M - I  -    DLVTVYES  702978                        4.0 VTSS92
X50067    42.0    0 2010JAN21 11:28:55 2010JAN21 11:28 R - - I  -    EEXPORT                                 4.0 VTSS91
Y50000     4.8    0 2009NOV20 09:59:52 2009DEC18 11:56 R - - -  - E  OTHERDIR                                0.4 VTSS91
Y50008  1,260.0  75 2009NOV20 09:59:56 2010MAY27 21:09 - M - -  - E  OTHERDIR  702978                        0.4 VTSS92
Y50184   578.6   34 2010FEB02 22:25:27 2010MAY22 08:42 - M S -  -    APOOL     702972                        0.4 VTSS90
    485434 INITIALIZED VTVS PROCESSED
    116566 NON-INITIALIZED VTVS PROCESSED
SLS0155I CONDITION CODE FOR UTILITY FUNCTION IS 0
```

FIGURE 3-237 VTVRPt BASIC report example

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 lease 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.
- An 'O' in the left column indicates that the VTV has partial (write once) VOLSAFE protection.
- An 'A' in the left column indicates that the VTV has full VOLSAFE protection.

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 requires electronic export.

SE

Electronic export of the VTV has started.

FE

Electronic export of the VTV has been rejected by the remote TapePlex.

E

Electronic export 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
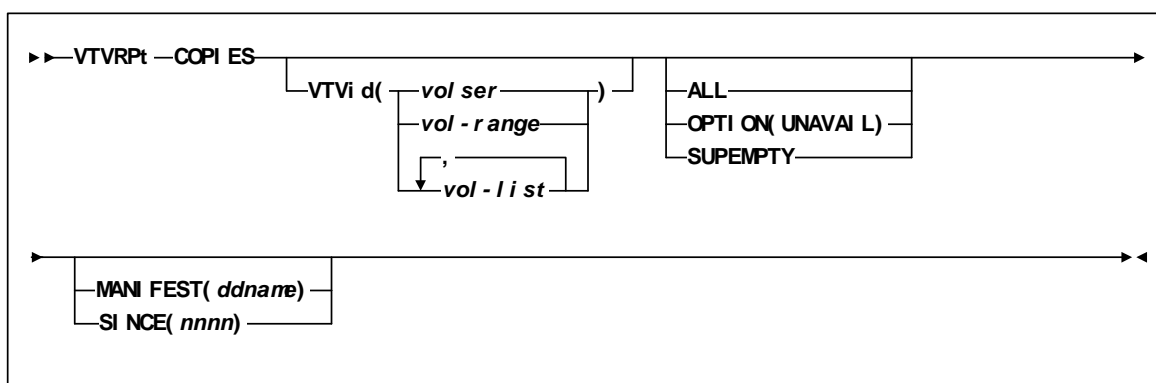
FIGURE 3-238 VTVRPt COPIES syntax

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.

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).

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.

Note – MANIFEST is mutually exclusive with SINCE.

SINCE

optionally, specifies a time in minutes. Only VTVs that have been accessed within the specified time are processed.

nnn

the time in minutes, from 1 to 9999.

Note – SINCE is mutually exclusive with MANIFEST.

VTV Report (COPIES)

The following figure shows an example of a VTV report produced by the VTVRPt COPIES command:

```
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00002
TIME 15:50:43                                     VTCS VTV REPORT                                    DATE 2012-06-17
SLS1315I HSC1.V70EC21.CDS WAS SELECTED AS THE PRIMARY CONTROL DATA SET
SLUADMIN (7.2.0)                    STORAGETEK ENTERPRISE LIBRARY SOFTWARE UTILITY        SSYS=HSCI      PAGE 00003
TIME 15:50:43                                     VTCS VTV REPORT                                    DATE 2012-06-17
VTV       SIZE   MGMT       <--VTSS COPIES-->  OWNING    <----MVC COPIES AND LOCATIONS---->  <-EXPORT COPIES-->
VOLSER    (MB)   CLASS   SCR PRIMARY  REPLICA   TAPEPLEX  MVC1/3  ACS      MVC2/4  ACS        TAPEPLEX  TAPEPLEX

00240     10.5   TRACE    -  VTSS92   -         -
A00241    14.3   MGMT2CP  -  -        -         -         702972  00
A00406    14.1   EXHPDM   -  -        -         -         700486  00
...
X50000  2,462.3  EEXPORT  -  VTSS91   -         EC20REM
X50047    11.4   DLVTVYES -  VTSS91   -         EC20REM   700483  00
X50048    11.4   DLVTVYES -  -        -         EC20REM   702979  00
X50060  NO COPY  DLVTVYES    -                  SEC20REM
X50066    11.4   DLVTVYES -  -        -         EC20REM   702978  00
X50067    42.5   EEXPORT  -  VTSS91   -         EC20REM
Y50000    13.3   OTHERDIR -  VTSS91   -         -                                            EC20REM
Y50008   316.6   OTHERDIR -  -        -         -         702978  00                         EC20REM
Y50184   385.2   APOOL    S  -        -         -         702972  00
     485434 INITIALIZED VTVS PROCESSED
     116566 NON-INITIALIZED VTVS PROCESSED
SLS0155I CONDITION CODE FOR UTILITY FUNCTION IS 0
```

FIGURE 3-239 VTVRPt COPIES report example

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) ─┘
```
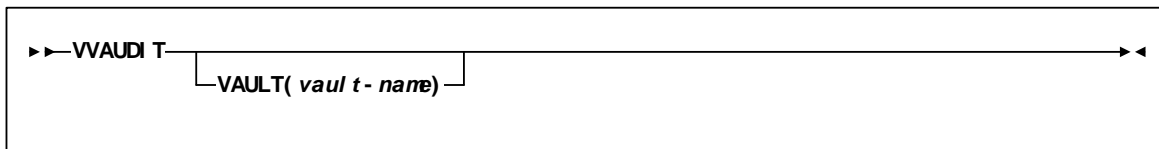
FIGURE 3-240 VVAUDIT syntax

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 322 for more information.
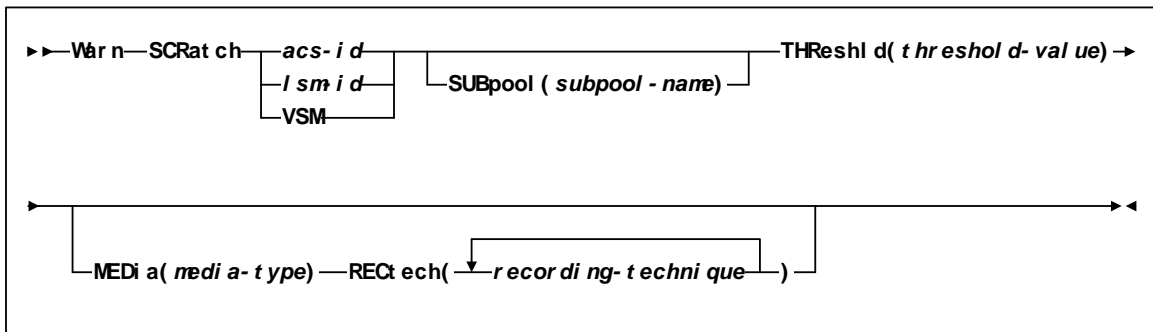
Syntax

FIGURE 3-241 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 (SMCUDBX)**

  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.

- **Trace Format utility (SMCUGTF)**

  This utility supports scratch synchronization between the SMC client host and the HSC CDS.

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.
- A return code of 12 is returned when an error prevents the initiation of the utility.

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 692 for more information.

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 SMCUUUI utility.

Note –

■ In general, error messages are **not** produced for CSV output. To view error messages produces 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, MVCRPT, 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.

---

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=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=yourcsv.output.dataset,DISP=SHR
//XMLOUT   DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT  DD DSN=yourtext.output.dataset,DISP=SHR
```

Required Data Set Definition (DD) Statements

You must specify the UUIIN data set definition.

UUIIN Data Set

The UUIIN data set can contain:

- SMCUUUI utility control statements
- SDD command (See .)
- 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 692.

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
//UUIIN DD *
PLEXDEST HSCN                    /*Statement #1 */
CSV ...csv parameters            /*Statement #2 */
SCRATCH VOL ACT001-ACT002        /*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 SMCUUUI utility reports the input and final completion code for each UUI request.

The STDOUT DD statement is not required. However, Oracle recommends that it be included in case any utility errors occur.

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 SMCUUUI utility outputs the structured XML output corresponding to the UUIIN command, as shown in the following example:

```
//yourstd JOB card
//STEP EXEC PGM=SMCUUUI
...
//UUIIN  DD *
SCRATCH VOL(400720)
//XMLOUT DD DSN=yourxml.output.dataset,DISP=SHR
...
```

The XMLOUT DD would contain the following output:

```
<scratch_request>
<header>
<hsc_version>7.2.0</hsc_version>
<date>2008Apr19</date>
<time>13:54:34</time>
<host_name>MSPB</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>
```

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.

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.

Remote UUI Input and Output

A new XAPI/UUI interface supports remote UUI input and output. To enable this support, Include the SDD command in the SMCUUUI utility.

Note – Remote UUI input and output may also be requested using the NCSCOMM interface. See the *ELS Programming Reference* for more information.

Remote UUI Input

A data set is transmitted from the client to a remote server for input, without the data set needing to be resident on the server.

Remote UUI input is required for commands that require large amounts of input data from sources other than the command line. Commands include VTCS CONFIg, IMPORT, and MERGMFST.

Remote UUI Output

A remote command produces an output data set that is transmitted and physically written on the requesting client without it being physically written on the server.

Remote UUI output is required for commands that produce non-text, non-XML, non-CSV output data sets. Commands include VTCS EXPORT and MERGMFST.

SDD Command

The SDD command defines an input or output data set to be associated with a "real" HSC or VTCS command that immediately follows it.

In the following example, the SDD command is associated with the IMPORT command, but not the subsequent VTVRPT command:

```
SDD DDNAME(MAININ) INPUT BINARY
IMPORT MANIFEST(MANIIN)
CSV FIELD(VOLSER,DATE_MIGRATED),BREAK(VTV_DATA)
VTVRPT VTV(SA2000-SA2999)
```

The SDD command can be used in either the SLUADMIN or SMCUUUI utility. However, **only** the SMCUUUI utility supports remote UUI command execution.

Syntax
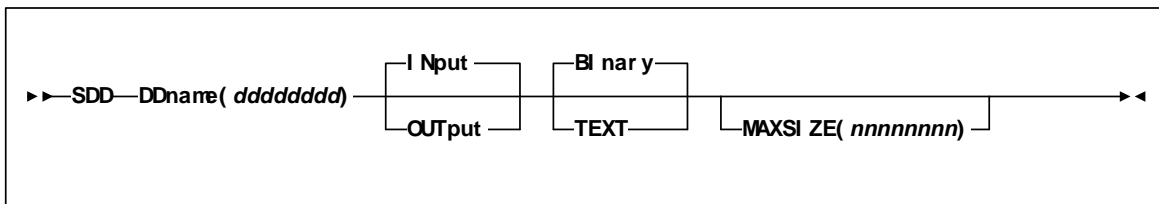
FIGURE 4-2   SDD syntax

Parameters

DDname(*dddddddd***)**

the name of the JCL DD that either contains the additional non-command line input, or will contain the output data set upon command completion.

INput|OUTput

optionally, specifies whether the data set specified by the DDname parameter is an input or output data set.

INput specifies that the data set is read to supply additional non-command line input to the command. This is the default if neither INput or OUTput are specified.

OUTput specifies that the data set is written to contain the non-XML, non-text, non-CSV output produced by the command.

BInary|TEXT

optionally, specifies whether the data read or produced contains Binary (i.e., non display) characters, or is in SLSIN TEXT command format.

If you specify TEXT along with the INput parameter, this specifies that the input data is in SLSIN format. Only the first 72 characters are read and continuation characters may be present. Comment statements are not passed to the HSC or VTCS command that follows.

BInary is the default if neither BInary or TEXT is specified.

> **Note –** You must specify TEXT when the SDD control statement is to be associated with the VTCS CONFIG command.

MAXSIZE(*nnnnnnnn***)**

　　optionally, specifies the maximum size (in K units) of the input or output file. If MAXsize is not specified, there is no limit to the maximum size.

CONFIg Command Example

Without the SDD command, the VTCS CONFIg command is only supported under the SLUADMIN utility. Under SLUADMIN without the SDD command, SLUADMIN CONFIg reads the remainder of the SLSIN data set and assumes that the remaining input cards are CONFIg control statements.

The SDD command allows VTCS CONFIg to be specified under either the SMCUUUI or SLUADMIN utility. Additionally, it allows other commands to execute in the same input stream after the VTCS CONFIG command, as shown in the following examples:

SLUADMIN:

```
//jobname job (account),programmer,REGION=0M
//S1 EXEC  PGM=SLUADMIN,PARM=MIXED
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//****************************************************************
//* Optional UUI output definition DD(s)                        *
//****************************************************************
//SLSCSV   DD DSN=yourcsv.output.dataset,DISP=SHR
//SLSXML   DD DSN=yourxml.output.dataset,DISP=SHR
//****************************************************************
//* SDD associated DD(s)                                        *
//****************************************************************
//CONFIGIN DD DSN=your.config.dataset,DISP=SHR
//****************************************************************
//* Required SLUADMIN output and input DDs                      *
//****************************************************************
//SLSPRINT DD SYSOUT=A
//SLSIN    DD *
SDD DDNAME(CONFIGIN) INPUT TEXT
.CONFIG CDSLEVEL(V61ABOVE)
DISPLAY CLINK
/*
```

SMCUUUI:

```
//jobname job (account),programmer,REGION=0M
//S1 EXEC   PGM=SMCUUUI,PARM=MIXED
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//****************************************************************
//* Specify as least one of the following output definitions   *
//****************************************************************
//CSVOUT   DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT   DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT  DD SYSOUT=A
//****************************************************************
//* SDD associated DD(s)                                        *
//****************************************************************
//CONFIGIN DD DSN=your.config.dataset,DISP=SHR
//****************************************************************
//* Required SMCUUUI input DD                                   *
//****************************************************************
//UUIIN    DD *
SDD DDNAME(CONFIGIN) INPUT TEXT
CONFIG CDSLEVEL(V61ABOVE)
DISPLAY CLINK
/*
```

Note –

■ The CONFIGIN data set is read and internally packaged for possible transmittal before the CONFIg command is read. The TEXT parameter results in any SLSIN formatting to be resolved as part of the internal packaging (i.e. '+' concatenated statements are resolved).

■ If any SDD command errors are encountered (i.e. the CONFIGIN DD is missing in the JCL or the data set cannot be read), then the succeeding CONFIg statement is bypassed.

■ In either of the above examples, the SDD command TEXT parameter is required when associated with the CONFIg command. The SDD command INPUT parameter is the default and may be omitted.

IMPORT Command Example

Without the SDD command, the VTCS IMPORT command is only supported for local processing under either the SLUADMIN or SMCUUUI utility.

The SDD command allows VTCS IMPORT to be executed on a remote server using the SMCUUUI utility, as shown in the following example:

```
//jobname job (account),programmer,REGION=0M
//S1 EXEC  PGM=SMCUUUI,PARM=MIXED
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//***************************************************************
//* Specify as least one of the following output definitions   *
//***************************************************************
//CSVOUT   DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT   DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT  DD SYSOUT=A
//***************************************************************
//* SDD associated DD(s)                                        *
//***************************************************************
//MANIIN   DD DSN=your.manifest.dataset,DISP=SHR
//***************************************************************
//* Required SMCUUUI input DD                                   *
//***************************************************************
//UUIIN    DD *
SDD DDNAME(MANIIN) MVCS(volser) INPUT BINARY
.IMPORT REPLACE=ALL MANIFEST(MANIIN)
/*
```

Note –

- The MANIIN data set is read and internally packaged for possible transmittal across the network before the IMPORT command is read. The BINARY parameter results in the transmittal of record images.

- In the above example, both the SDD command BINARY and INPUT parameters are the defaults and may be omitted.

- While a similar SLUADMIN job with the SDD command could be constructed, it would still be limited to local execution. **Only** the SMCUUUI utility supports remote UUI command execution.

EXPORT Command Example

Without the SDD command, the VTCS EXPORT command is only supported for local processing under either the SLUADMIN or SMCUUUI utility. The SDD command allows VTCS EXPORT to be executed on a remote server using the SMCUUUI utility, as shown in the following example:

```
//jobname job (account),programmer,REGION=0M
//S1 EXEC  PGM=SMCUUUI,PARM=MIXED
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//***************************************************************
//* Specify as least one of the following output definitions   *
//***************************************************************
//CSVOUT   DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT   DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT  DD SYSOUT=A
//***************************************************************
//* SDD associated DD(s)                                        *
//***************************************************************
//MANIOUT  DD DSN=your.manifest.dataset,DISP=SHR
//***************************************************************
//* Required SMCUUUI input DD                                   *
//***************************************************************
//UUIIN    DD *
SDD DDNAME(MANIOUT) OUTPUT BINARY
EXPORT MVC(volser) MANIFEST(MANIIN)
/*
```

Note –

- The MANIOUT data set is written on the client when remote output is received. However the MANIOUT DD will be validated before the EXPORT command is read.

- In the above example, the SDD command parameter OUTPUT must be specified for EXPORT. However, BINARY is the default and may be omitted.

- While a similar SLUADMIN job with SDD command could be constructed it would still be limited to local execution. **Only** the SMCUUUI utility supports remote UUI command execution.

MERGMST Command Example

The MERGMFST process uses a combination of input and output SDD commands in the SMCUUUI utility, as shown in the following example:

```
//jobname job (account),programmer,REGION=0M
//S1 EXEC  PGM=SMCUUUI,PARM=MIXED
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//***************************************************************
//* Specify as least one of the following output definitions   *
//***************************************************************
//CSVOUT   DD DSN=yourcsv.output.dataset,DISP=SHR
//XMLOUT   DD DSN=yourxml.output.dataset,DISP=SHR
//TEXTOUT  DD SYSOUT=A
//***************************************************************
//* SDD associated DD(s)                                        *
//***************************************************************
//MANIIN   DD DSN=your.mergein.dataset1,DISP=SHR
//         DD DSN=your.mergein.dataset2,DISP=SHR
. . .
//         DD DSN=your.mergein.datasetn,DISP=SHR
//MANIOUT  DD DSN=your.mergeout.dataset,DISP=SHR
//***************************************************************
//* Required SMCUUUI input DD                                   *
//***************************************************************
//UUIIN    DD *
SDD DDNAME(MANIIN) INPUT BINARY
SDD DDNAME(MANIOUT) OUTPUT BINARY
.MERGMFST MERGEIN(MANIIN) MERGEOUT(MANIOUT)
/*
```

Note –

- The MANIOUT data set is written on the client when remote output is received. However, the MANIOUT DD will be validated before the MERGMFST command is read.

- In the above example, the SDD MANIOUT command OUTPUT parameter must be specified for the MERGEOUT associated DD. However, BINARY is the default and may be omitted.

- While a similar SLUADMIN job with SDD commands could be constructed, it would still be limited to local execution. **Only** the SMCUUUI utility supports remote UUI command execution.

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:

Column	Length	Field	Format
1	4	ID	"POL1" required identifier
6	8	jobname	1-8 character non-generic jobname
15	8	stepname	1-8 character non-generic stepname
24	8	program name	1-8 character non-generic program name
33	8	ddname	1-8 character non-generic ddname
42	4	retention period	4 digit retention period
47	8	expiration date	*yyddd*, *yyyyddd*, or *yyyy/ddd* format expiration date
56	8	management class	1-8 character non-generic SMS management class name

Card 2:

Column	Length	Field	Format
1	4	ID	"POL2" required identifier
6	1	volume type	"S" for specific "N" for non-specific (scratch)
8	6	volume serial	6 character volser
15	44	dataset name	44 character non-PDS MSP dataset name

Card 3:

Column	Length	Field	Format
1	4	ID	"POL3" required identifier
6	8	actual RECTECH	Valid recording technique
15	3	label type	Values SL, NL, AL, NSL
19	8	JCL esoteric	Esoteric name

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. 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 7.2.0              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, 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:
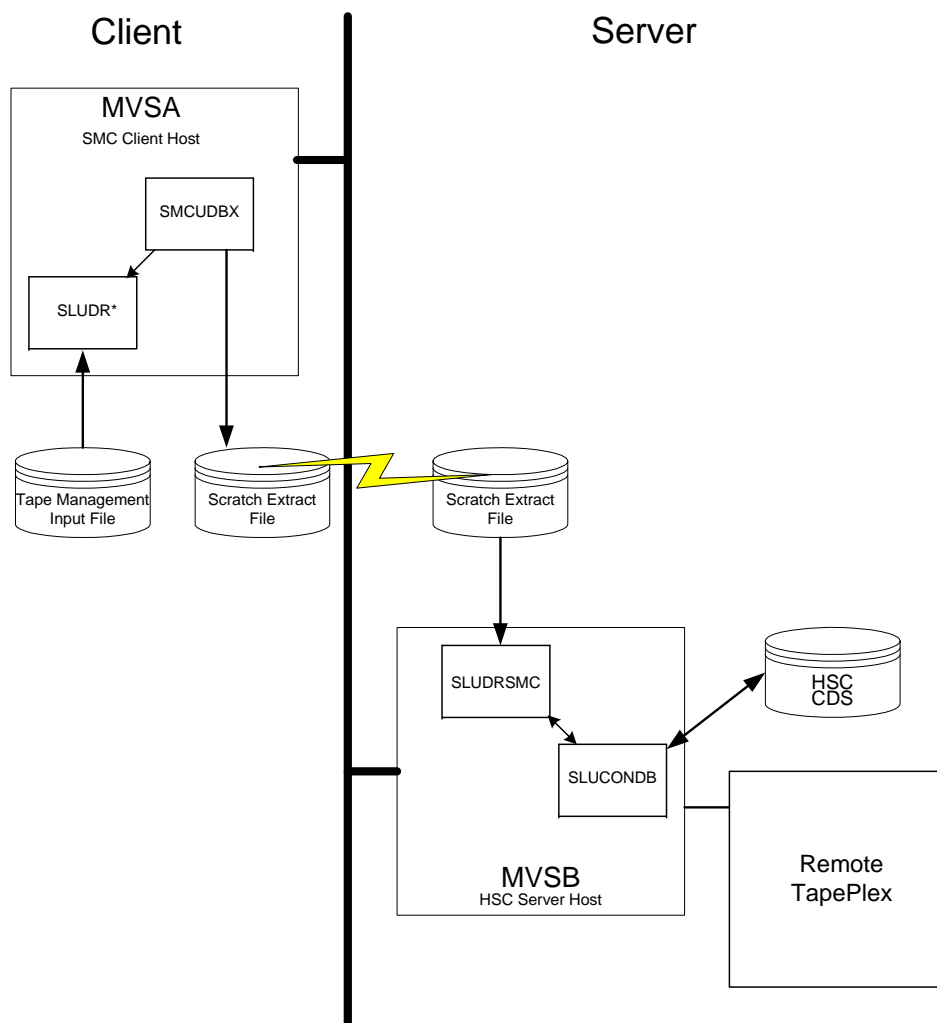
FIGURE 4-5 Scratch Synchronization Between SMC Client Host and HSC CDS

If the client and server share a tape management system, the HSC utility SLUCONDB may be run directly using the common tape management system data base 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 SLUDRCA1, SLUDRRMM, SLUDRTLM, SLUDRSMC, SLUDRTLM, or SLUDRZAR, or you can write your own program to produce an extract file in the following format:

Position	Field	Format
1	Scratch volume	CL6
7	GMT of run	XL8
15	Unused	CL2

The time filed in the SMC scratch extract file is a character representation of the first four bytes of the output of the MSP 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, SLUDRCA1, 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 MACLIB 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 671 for information about modifying and 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 (ZARAAPI1). 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.

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.
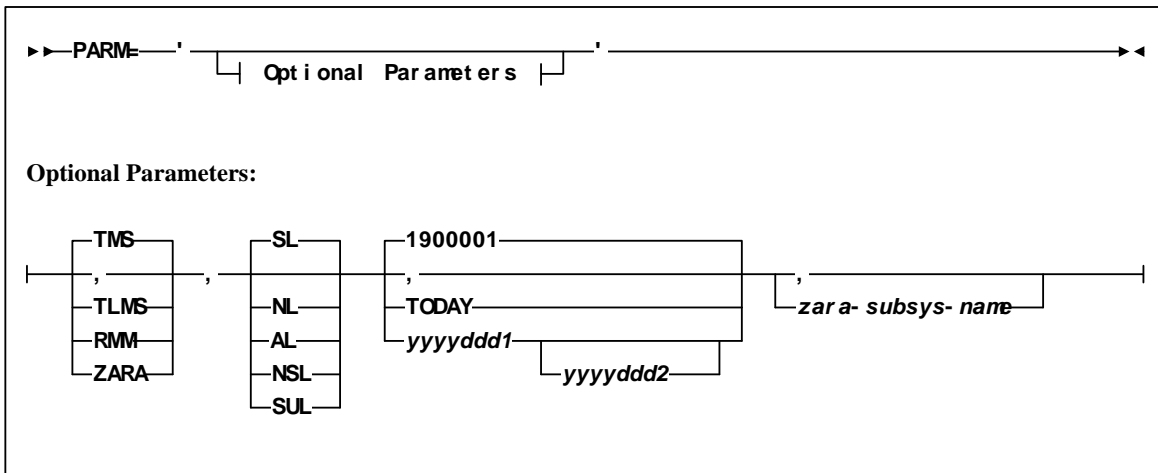
FIGURE 4-6 SMCUDBX PARM parameter syntax

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.

Note – The following date-related parameters specify the date or date range when a volume became scratch in the TMC.

1900001

optionally, specifies January 1, 1900 as the date. This is the default.

TODAY

optionally, indicates the current system date. Only volumes placed in scratch status on this date are processed.

yyyyddd1

optionally, the "from" date. The "to" date defaults to the current system date. All specified dates are in Julian notation.

All volumes placed in scratch status starting on day *yyyyddd1* through today's date are processed.

yyyyddd1*-*yyyyddd2

optionally, the date range in which the volumes became scratch. Neither of these dates can be greater than the current system date.

All volumes placed in scratch status starting on day *yyyyddd1* through day *yyyyddd2* are processed.

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 MSP 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.

```
SMCUDBX 7.2.0      SMC TMS DB SCRATCH EXTRACT                    Page 0001
TIME 15:26:41                                           Date  2012-08-14


Total records extracted for scratch volumes = 977
```

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 MSP 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 4 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 SMCUUUI 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:

```
//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
//         DD DISP=SHR,DSN=your.sea.exitlib
//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
  UUI 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.

nn

specifies the highest allowed return code. If an SMC command executed from the SMCPARMS or SMCCMDS data set exceeds this value, then SMC0236 and SMC0237 messages are produced, and the SMCUSIM utility terminates before any commands are read from the UUIIN DD. Allowable values are 0, 4, 8, and 12.

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.

PLEXRC

specifies whether SMC subsystem initialization is to be terminated based on the status of TapePlexes returned from the automatically issued RESYNC command.

If PLEXRC is not specified, then the SMC subsystem will complete its initialization regardless of the outcome of the RESYNC command. This is the default behavior.

n

specifies the highest allowed return code from the RESYNC command. Valid values are 0 and 4.

The SMC RESYNC command sets a return code of 8 if SMC is unable to communicate with any defined TapePlex, and a return code of 4 if SMC is able to communicate with one or more, but not all, defined TapePlexes.

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(*nn*)

> optionally, specifies TEXTOUT report pagination line count setting.
>
> *nn* is the number of lines per page. Valid values are 10-99.

Note – LINECNT and NOHDR are mutually exclusive.

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 *ELS Programming Reference* for a complete list of XML tags and their structure.

```
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
```

Trace Format Utility (SMCUGTF)

The SMCUGTF utility converts SMC GTF output created with the "compact" format (the default format) into the original SMC trace format.

Sample JCL

The following JCL sample executes the SMCUGTF utility.

```
// yourstd jobcard
//STEP     EXEC PGM=SMCUGTF
//STEPLIB  DD DSN=your.sea.linklib,DISP=SHR
//GTFIN    DD DSN=your.compact.gtftrace.dsn,DISP=SHR
//GTFOUT   DD DSN=your.formatted.gtftrace.dsn,
//         DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
//         SPACE=(space parameters)
```

FIGURE 4-10 JCL to Execute the SMCUGTF Utility

Note – Space required for the output GTF trace is approximately 6 times the size of the COMPACT input file.

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)

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. This parameter only affects programs that
produce report output., such as ACTIvities, VOLRpt, and VTVRpt, etc.

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

NOPHDR

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 – NOPHDR 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:

- *yyyymondd*
- *yyyy-mm-dd*
- *yyyy-mon-dd*
- HEXSTCK (hex character STCK format)

The default format is *yyyymondd.* 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).

Note – SLSIN can also include the SDD command, See "SDD Command" on page 658 for more information.

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 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.

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
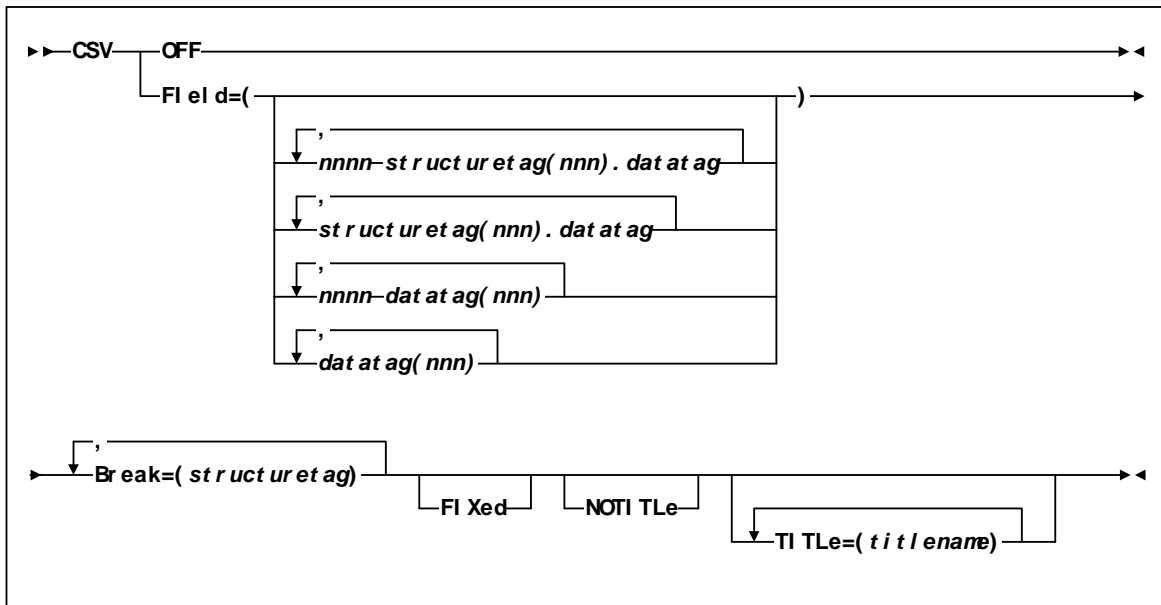
FIGURE 5-1   CSV syntax

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.

nnnn-

an optional field name prefix containing 1 to 4 numeric characters followed by a dash. When a field name is prefixed by "*n*(*nnn*)-", the CSV output for the field always contains exactly the number of characters specified. Numeric fields are right-justified with the most left-most digits truncated; other fields are left-justified with the right-most characters truncated. If the value specified is longer than the actual value, it is padded with blanks on the left for numeric fields and blanks on the right for other fields.

For example:

- 8-acs_status truncates the acs_status value to 8 characters.

- 12-acs_status blank-pads the acs_status value to 12 characters.

The maximum value of *nnnn* is 1024. The specification of "*nnnn-*" is valid only when the parameter FIXed is also specified.

structuretag(nnn).datatag

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_cell_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_cell_count requests the free cell count from the lsm_data structure; specifying panel_data.free_cell_count requests the free cell count from the panel_data structure. If no structure tag is coded for a data tag that occurs under multiple structure tags, the first occurrence of the data tag in the generated XML is used.

nnn

an optional subscript that determines how many of the multiple XML data values are included 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. A subscript value can be specified in BOTH the structure tag name AND the data tag name, for example:

```
CSV FIELD=(mvc_instance(4).volser,+
mvc_instance(4).partition_id(2))
```

creates CSV output with 12 fields, four mvc_instance volser occurrences, followed by two fields representing the partition_id values associated with the first MVC volser, then two fields representing the partition_id values associated with the second MVC, etc.

datatag(*nnn*)

an optional XML data tag.

If a data tag does not under more than one structure tag in a request, it is not necessary to specify a structure tag qualifier.

nnn

an optional subscript that determines how many of the multiple XML data values are included 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.

Note – The XML tag names are NOT case-sensitive and can be specified in any combination of upper and lower case characters.

BReak

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.

```
//MVCREPT JOB x,CHRIS,CLASS=A,MSGCLASS=E
//*
//*
//*
//MVCRPT 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
/* //*
//
```

FIGURE 5-2   JCL Example: CSV Output for the MVCRPT command.

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

Return Code	Description
0	All utility functions requested via control statements completed normally.
4	At least one utility function encountered an abnormal situation, but it did not cause termination of that utility function or any subsequent utility functions.
8	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.
12	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.

Note – If the return code occurred because of a problem with the HSC CDS, 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.SLSCNTL3,                 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
//********************************************************************
//*
```

FIGURE 5-3   SLICREAT JCL example

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 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).

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: DDDDDDDDDDDD 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 Acs 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:

```
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 669 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.

■ The SLUCONDB module is no longer distributed as source. 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.

Input Formats

SLUCONDB uses program parameters to determine the Tape Management System interface (SLUDR*) routine to invoke. See Appendix C, "Tape Management System Interface (SLUDR*) Routines" for more information about these routines.

You can supply SLUCONDB input values using the PARM parameter on the JCL EXEC statement when running the SLUCONDB utility. You can use either the following formats:

■ Keyword Format

■ Positional Format

Consider the following:

■ The GRACE parameter is only permitted using the keyword format.

■ The LIBONLY parameter is only permitted using the positional format.

Keyword Format

Syntax
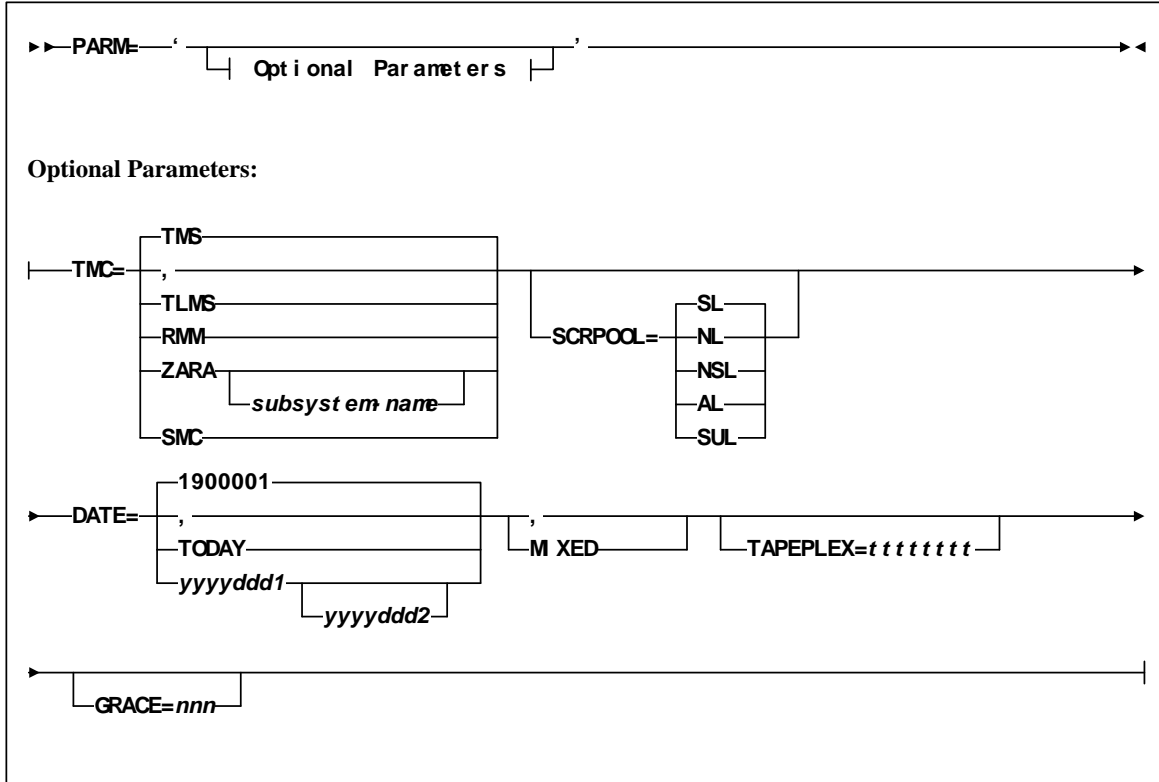
FIGURE 5-4 SLUCONDB PARM parameter syntax (keyword format)

Parameters

If you use the keyword format, adhere to the following syntax rules:

- Keywords and values must be separated by "=" (except for the "MIXED" keyword, which does not have a value).
- Extraneous commas between keywords are not allowed. For example, the following is invalid:

  ```
  PARM='TMC=TMS,,MIXED'
  ```
- Duplicate keywords are not allowed.

The following parameters:

PARM=

> specifies that 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
> - Scratch eligibility begins on January 1, 1900 and ends on the current system date
> - Uppercase only
> - Generate scratch transactions (no direct update).

TMC=

> optionally, specifies the tape management system. For example:
>
> **TMS**
>
> > 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.
>
> **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.)
>
> **ZARA**
>
> > optionally, specifies the ZARA tape management system.
>
> ***subsystem-name***
>
> > an optional subsystem name.

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.

DATE=

optionally, specifies the date or date range when a volume became scratch in the TMC.

1900001

optionally, specifies January 1, 1900 as the date. This is the default.

TODAY

optionally, indicates the current system date. Only volumes placed in scratch status on this date are processed.

yyyyddd1

optionally, the "from" date. The "to" date defaults to the current system date. All specified dates are in Julian notation.

All volumes placed in scratch status starting on day *yyyyddd1* through today's date are processed.

yyyyddd1-yyyyddd2

optionally, the date range in which the volumes became scratch. Neither of these dates can be greater than the current system date.

All volumes placed in scratch status starting on day *yyyyddd1* through day *yyyyddd2* are processed.

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.

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.

GRACE=

optionally, specifies a grace period (in hours) for scratch eligibility. A volume accessed after the start of the SLUCONDB run, minus the grace period, is not eligible for scratch.

nnn

a 1-3 digit numeric value from 0 to 999, representing the grace period in hours.

Positional Format

Note – You must enter parameters in the specified order and include commas for omitted parameters.
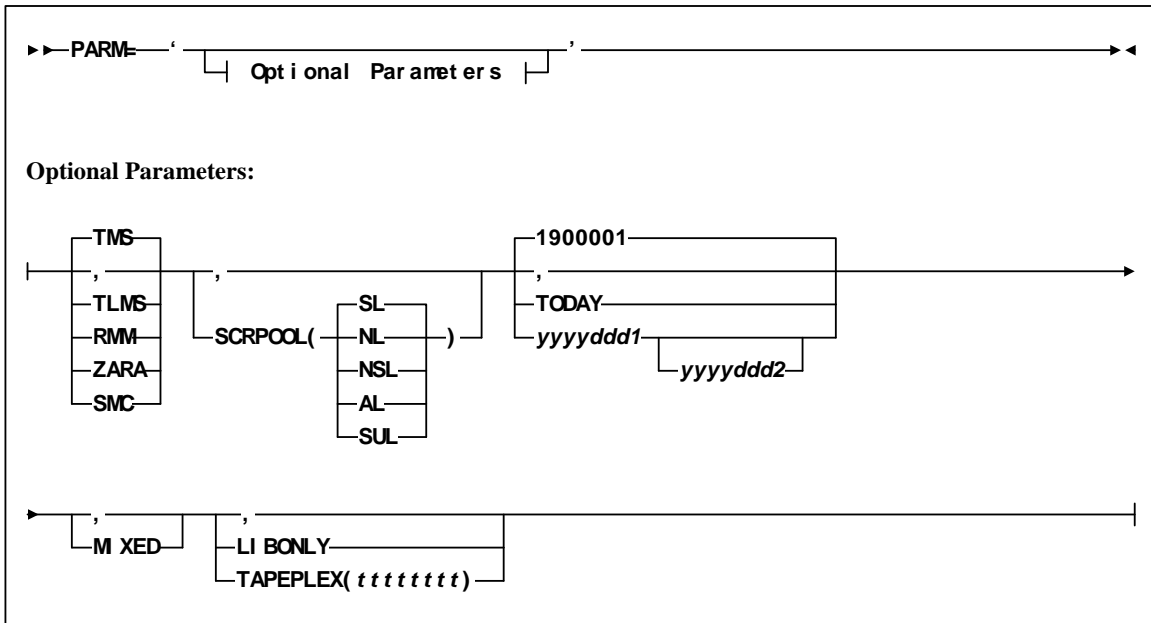
FIGURE 5-5   SLUCONDB PARM parameter syntax (positional format)

Parameters

PARM=

specifies that 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
- Scratch eligibility begins on January 1, 1900 and ends on 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.

Note – The following date-related parameters specify the date or date range when a volume became scratch in the TMC.

1900001

optionally, specifies January 1, 1900 as the date. This is the default.

TODAY

optionally, indicates the current system date. Only volumes placed in scratch status on this date are processed.

yyyyddd1

optionally, the "from" date. The "to" date defaults to the current system date. All specified dates are in Julian notation.

All volumes placed in scratch status starting on day *yyyyddd1* through today's date are processed.

yyyyddd1-yyyyddd2

optionally, the date range in which the volumes became scratch. Neither of these dates can be greater than the current system date.

All volumes placed in scratch status starting on day *yyyyddd1* through day *yyyyddd2* are processed.

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

```
//JOBSCUP JOB (account),programmer
//STEP1     EXEC PGM=SLUCONDB,
//             PARM=('TLMS,,,MIXED')
//STEPLIB   DD DISP=SHR,DSN=your.sea.smp/e.loadlib
//SLSTMS    DD DSN=TMS.MASTER.FILE,DISP=SHR
//SLSSOUT   DD DSN=&&SCUPINPT,DISP=(NEW,PASS),
//          UNIT=,SPACE=,DCB=
//SLSPRINT  DD SYSOUT=*
//*
//STEP2     EXEC PGM=SLUADMIN,COND=(4,LT,STEP1),PARM=MIXED
//SLSIN     DD DSN=&&SCUPINPT,DISP=(OLD,DELETE)
//SLSPRINT  DD SYSOUT=*
//
```

JCL to Process TMS Database, with HSC CDS DDnames, Generating Scratch Update Transactions

```
//JOBSCUP JOB (account),programmer
//STEP1     EXEC PGM=SLUCONDB,
//             PARM=(',,2009100-2009110,MIXED')
//STEPLIB   DD DISP=SHR,DSN=your.sea.smp/e.loadlib
//SLSTMS    DD DSN=TMS.MASTER.FILE,DISP=SHR
//SLSSOUT   DD DSN=&&SCUPINPT,DISP=(NEW,PASS),
//          UNIT=,SPACE=,DCB=
//SLSPRINT  DD SYSOUT=*
//SLSCNTL   DD DSN=primary.control.dataset,DISP=SHR
//SLSCNTL2  DD DSN=secondary.control.dataset,DISP=SHR
//SLSSTBY   DD DSN=standby.control.dataset,DISP=SHR
//*
//STEP2     EXEC PGM=SLUADMIN,COND=(4,LT,STEP1),PARM=MIXED
//SLSIN     DD DSN=&&SCUPINPT,DISP=(OLD,DELETE)
//SLSPRINT  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.sea.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.sea.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.sea.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 TAPEPELX is not specified).

```
StorageTek Enterprise Library Software Scratch Conversion Utility    Page 00001
Time 12:15:39                                                 Date 2010-03-31


SLS4723I Volume (VTV) 400021 used after SLUCONDB start or TODATE
SLS0286I 000005 volumes have been selected
SLS0155I Condition code for utility function is 0
```

FIGURE 5-6   Scratch Conversion Utility output example (without LIBONLY or TAPEPLEX)

```
StorageTek Enterprise Library Software Scratch Conversion Utility    Page 00001
Time 12:15:39                                                 Date 2010-03-31


SLS2321I Volume A00020 successfully added to VSM as scratch
SLS2321I Volume A00023 successfully added to VSM as scratch
SLS0167I Volume FB2110 successfully added to library as scratch
SLS0167I Volume TIM021 successfully added to library as scratch
SLS2280I Volume 400021 selected after SCRATCH command USETOKN
SLS1312I 000004 volumes successfully scratched
SLS0155I Condition code for utility function is 4
```

FIGURE 5-7   Scratch Conversion Utility output example (with LIBONLY or TAPEPLEX)

VTCS Stand-Alone Utilities

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
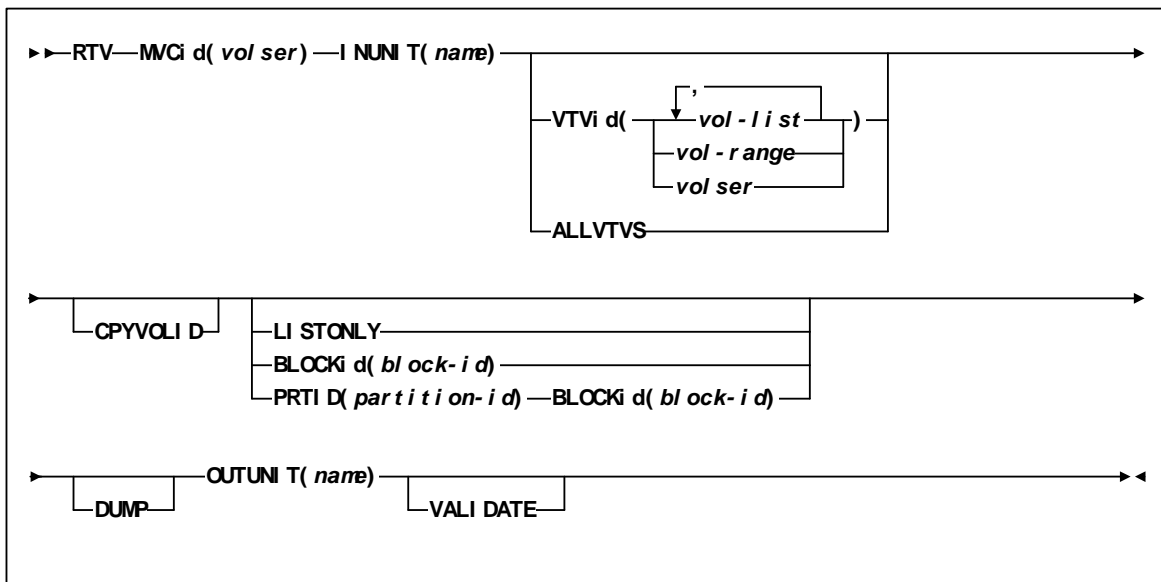
FIGURE 6-1 RTV utility syntax

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 MSP 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 volsers 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.

TABLE 6-1   RTV Label Types

VTV Label Type	Output Standard Label	Output ANSI Label	Output Non-Label
Standard label	VOL1 label not copied	WTOR issued	VOL1 label is copied
ANSI label	WTOR issued	VOL1 label not copied	VOL1 label is copied

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 721.

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 721 supplies a Block ID value that you can use as input to the RTV utility to convert a VTV to a volume.

PRTID

optionally, specifies the partition id of the VTV being recovered from a partitioned MVC.

partition-id

the hexadecimal partition ID

Note –

■ If PRTID is specified, BLOCKid must also be specified.

■ PRTID 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 MSP 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.

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:

STEPLIB

specifies the link library (SEALINK) that contains the RTV modules.

SLSPRINT

specifies the destination of the RTV utility report.

SLSIN

specifies the input to the SWSRTV program (RTV utility name and parameters).

SYSMDUMP

optional DD to capture dump.

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 Fujitsu *MSP 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: 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.

SWSRTV		(1.0.0)		StorageTek VTCS RTV Utility				
PAGE 0001								
TIME 14:23:33				Control Card Image Listing				
DATE 12/01/00								
RTV MVC(C83107) LISTONLY								
SWSRTV		(1.0.0)		StorageTek VTCS RTV Utility				
PAGE 0002								
TIME 14:23:33				MVC C83107 Contents Report				
DATE 12/01/00								
VTV	File	Block	<---Created--->		<---Migrated--->		VTVPAGE	VTV
Volser	#	ID	Date	Time	Date	Time	Size	Status
VV6825	1	00000000	20060Nov30	12:07:56	20060Nov30	12:15:56	Large	
VV6863	2	92005F0F	20060Sep27	12:57:54	20060Sep27	12:59:54	Large	
VV6893	3	92005F18	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	
VV0403	4	92005F21	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	

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).

SWSRTV		(1.0.0)		StorageTek VTCS RTV Utility				
PAGE 0001								
TIME 14:28:33				Control Card Image Listing			DATE 2010-1-31	
RTV MVC(C8228) VTV(VV6800-VV6900) CPYVOLID								
SWSRTV		(1.0.0)		StorageTek VTCS RTV Utility				
PAGE 0002								
TIME 14:28:33				MVC C83223 Contents Report			DATE 2010-1-31	
VTV	File	Block	<---Created--->		<---Migrated--->		VTVPAGE	VTV
Volser	#	ID	Date	Time	Date	Time	Size	Status
VV6070	1	00000000	20060Nov30	12:07:56	20060Nov30	12:15:56	Large	
VV0874	2	2B001384	20060Sep27	12:57:54	20060Sep27	12:59:54	Large	
VV0772	3	A3002707	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	
VV6828	4	9B002AB9	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	Not current
VV6828	5	9B002AC2	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	
VV6826	6	9B002ACB	20060Aug18	08:57:26	20060Aug18	08:59:26	Large	
SWSRTV		(1.0.0)		StorageTek VTCS RTV Utility				
PAGE 0003								
TIME 14:28:33				MVC C83223 Decompress Report			DATE 2010-1-31	
VTV		Mounted			Final		Decompress	
Volser		Volser			Volser		Status	
VV6826		XX0772			VV6826		Successful	
VV6828		XX0773			VV6828		Successful	

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/D media types and recording techniques.

■ The SL3000 library supports only the T9840C/D, LTO, SDLT, and T10000A/B/C/D media types and recording techniques.

■ LTO and SDLT drives are not supported in an MSP 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 A-1   Media Types

Media Type	Description
LONGItud	Indicates any Standard or enhanced (ECART) cartridge.
ZLONGI	Indicates standard, enhanced (ECART), or extended-enhanced (ZCART) capacity cartridges.
Standard	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.
ECART	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.
ZCART	Indicates a 3490E, extended-enhanced capacity cartridge. It can be used only on a 9490EE drive. ZCART can be abbreviated as Z.
Virtual	Indicates a VTV (Virtual Tape Volume) mounted on a VTD (Virtual Tape Drive).
HELical	Indicates a helical cartridge. A helical cartridge can be used only on RedWood drives. The following subtypes and abbreviations specify a helical cartridge: **DD3** indicates any DD3A, DD3B, or DD3C helical cartridge. **DD3A or A** indicates a helical cartridge with a 10GB media capacity. **DD3B or B** indicates a helical cartridge with a 25GB media capacity. **DD3C or C** indicates a helical cartridge with a 50GB media capacity. The seventh position in the external label is encoded with the cartridge type (i.e., A, B, or C).
STK1	Indicates any T9840 cartridge.
STK1R	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).
STK1U	Indicates a T9840A, T9840B, or T9840C cleaning cartridge. STK1U can be abbreviated as U.
STK1Y	Indicates a T9840D cleaning cartridge. STK1Y can be abbreviated to Y.
STK2	Indicates any T9940 cartridge.
STK2P	Indicates a T9940 data cartridge. STK2P can be abbreviated as P. T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).
STK2W	Indicates a T9940 cleaning cartridge. STK2W can be abbreviated as W.
LTO-10G	Indicates an LTO 10GB capacity cartridge.
LTO-35G	Indicates an LTO 35GB capacity cartridge.

TABLE A-1 Media Types (Continued)

Media Type	Description
LTO-50G	Indicates an LTO 50GB capacity cartridge.
LTO-100G	Indicates an LTO 100GB capacity cartridge.
LTO-200G	Indicates an LTO 200GB capacity cartridge.
LTO-400G	Indicates an LTO 400GB capacity cartridge.
LTO-400W	Indicates an LTO Generation 3 WORM cartridge.
LTO-800G	Indicates an LTO 800GB capacity cartridge.
LTO-800W	Indicates an LTO Generation 4 WORM cartridge.
LTO-1.5T	Indicates an LTO 1.5TB capacity cartridge.
LTO-1.5W	Indicates an LTO Generation 5 WORM cartridge.
LTO-2.5T	Indicates an LTO 2.5TB capacity cartridge.
LTO-2.5W	Indicates an LTO Generation 6 WORM cartridge.
LTO-CLN1	Indicates an LTO type 1 cleaning cartridge.
LTO-CLN2	Indicates an LTO type 2 cleaning cartridge.
LTO-CLNU	Indicates an LTO universal cleaning cartridge.
SDLT	Indicates an SDLT 160GB cartridge.
SDLT-2	Indicates an SDLT 125GB cartridge.
SDLT-S1	Indicates an SDLT Generation S1 cartridge.
SDLT-S2	Indicates an SDLT Generation S2 cartridge.
SDLT-S3	Indicates an SDLT Generation S3 cartridge.
SDLT-S4	Indicates an SDLT Generation S4 cartridge.
SDLT-4	Indicates an SDLT Generation 4 cartridge.
T10000T1	Indicates a full-capacity 500GB T10000A or 1TB T10000B cartridge. T10000T1 can be abbreviated as T1.
T10000TS	Indicates a smaller-capacity 120GB T10000A or 240GB T10000B cartridge. T10000TS can be abbreviated as TS.
T10000CT	Indicates a T10000A or T10000B cleaning cartridge. T10000CT can be abbreviated as CT.
T10000T2	Indicates a full-capacity 5TB T10000C or 8TB T10000D cartridge. T10000T2 can be abbreviated as T2.
T10000TT	Indicates a smaller-capacity 1TB T10000C or 1.6TB T10000D cartridge. T10000TT can be abbreviated as TT.
T10000CL	Indicates a T10000A, T10000B, T10000C, or T10000D cleaning cartridge. T10000CL can be abbreviated as CL.

Note – T10000C and T10000D drives can read T10000T1 or T10000TS media but cannot write to that media. T10000C and T10000D 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 A-2 Media Type Defaults

RECtech Entered	MEDia Default
18track	Standard
36track, 36Atrack, 36Btrack	LONGItud
36Ctrack	ZLONGI
LONGItud	LONGItud
DD3, Helical	DD3A
STK1R, STK1R34, STK1R35 STK1RA, STK1RA34, STK1RA35 STK1RB, STK1RB34, STK1RB35 STK1RAB, STK1RAB34, STK1RAB35 STK1RC, STK1RC34, STK1RC35 STK1RD, STK1RDE, STK1RDN, STK1RD34, STK1RD35, STK1RDE4, STK1RDE5	STK1R
STK2P, STK2P34, STK2P35 STK2PA, STK2PA34, STK2PA35 STK2PB, STK2PB34, STK2PB35	STK2P
T10K, T10KN, T10KE T10KA, T10KAN, T1A34, T1A35, T10KAE, T1AE34, T1AE35 T10KB, T10KBN, T1B34, T1B35, T10KBE, T1BE34, T1BE35 T10KC, T10KCN, T1C34, T1C35, T10KCE, T1CE34, T1CE35 T10KD, T10KDN, T1D34, T1D35, T10KDE, T1DE34, T1DE35	T10000T1*

* T10000C and T10000D drives can read T10000T1 or T10000TS media but cannot write to that media. T10000C and T10000D 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 A-3   Recording Techniques

Recording Technique	Description
LONGItud	Indicates any device that uses longitudinal recording. Devices include 4480, 4490, 9490, and 9490EE drives.
18track	Indicates a 4480 drive.
36track	Indicates a 4490, 9490, or 9490EE drive (any device that records in 36-track mode).
36Atrack	Indicates a 4490 (Silverton) drive.
36Btrack	Indicates a 9490 (Timberline) drive.
36Ctrack	Indicates a 9490EE drive.
HELical	Indicates a device using helical recording.
DD3	Indicates a device using helical recording.
LTO2	Indicates any HP or Fujitsu LTO Generation 2 drive.
LTO3	Indicates any HP or Fujitsu LTO Generation 3 drive.
LTO4	Indicates any HP or Fujitsu LTO Generation 4 drive.
LTO5	Indicates any HP or Fujitsu LTO Generation 5 drive.
LTO6	Indicates any HP or Fujitsu LTO Generation 6 drive.
STK1R	Indicates any T9840 drive.
STK1R34	Indicates a 3490E-image T9840 drive.
STK1R35	Indicates a 3590-image T9840 drive.

TABLE A-3 Recording Techniques (Continued)

Recording Technique	Description
STK1RA	Indicates any T9840A drive.
STK1RA34	Indicates a 3490E-image T9840A drive.
STK1RA35	Indicates a 3590-image T9840A drive.
STK1RB	Indicates any T9840B drive.
STK1RB34	Indicates a 3490E-image T9840B drive.
STK1RB35	Indicates a 3590-image T9840B drive.
STK1RAB	Indicates any T9840A or T9840B drive.
STK1RAB4	Indicates a 3490E-image T9840A or T9840B drive.
STK1RAB5	Indicates a 3590-image T9840A or T9840B drive.
STK1RC	Indicates any T9840C drive.
STK1RC34	Indicates a 3490E-image T9840C drive.
STK1RC35	Indicates a 3590-image T9840C drive.
STK1RD	Indicates any T9840D drive.
STK1RDE	Indicates an encryption-enabled T9840D drive.
STK1RDN	Indicates a non-encryption-enabled T9840D drive.
STK1RD34	Indicates a non-encryption-enabled 3490E-image T9840D drive.
STK1RD35	Indicates a non-encryption-enabled 3590-image T9840D drive.
STK1RDE4	Indicates an encryption-enabled 3490E-image T9840D drive.
STK1RDE5	Indicates an encryption-enabled 3590-image T9840D drive.
STK2P	Indicates any T9940 drive.
STK2P34	Indicates a 3490E-image T9940 drive.
STK2P35	Indicates a 3590-image T9940 drive.
STK2PA	Indicates any T9940A drive.
STK2PA34	Indicates a 3490E-image T9940A drive.
STK2PA35	Indicates a 3590-image T9940A drive.
STK2PB	Indicates any T9940B drive.
STK2PB34	Indicates a 3490E-image T9940B drive.
STK2PB35	Indicates a 3590-image T9940B drive.
T10K	Indicates any T10000 drives.
T10KN	Indicates all non-encrypted T10000 drives.
T10KE	Indicates all encrypted T10000 drives.
T10KA	Indicates any T10000A drive.
T10KAN	Indicates a non-encryption enabled 3490E- or 3590-image T10000A drive.
T1A34	Indicates a non-encryption enabled 3490E-image T10000A drive.

TABLE A-3   Recording Techniques (Continued)

Recording Technique	Description
T1A35	Indicates a non-encryption enabled 3590-image T10000A drive.
T10KAE	Indicates an encryption-enabled 3490E- or 3590-image T10000A drive.
T1AE34	Indicates an encryption-enabled 3490E-image T10000A drive.
T1AE35	Indicates an encryption-enabled 3590-image T10000A drive.
T10KB	Indicates any T10000B drive.
T10KBN	Indicates a non-encryption enabled 3490E- or 3590-image T10000B drive.
T1B34	Indicates a non-encryption enabled 3490E-image T10000B drive.
T1B35	Indicates a non-encryption enabled 3590-image T10000B drive.
T10KBE	Indicates an encryption-enabled 3490E- or 3590-image T10000B drive.
T1BE34	Indicates an encryption-enabled 3490E-image T10000B drive.
T1BE35	Indicates an encryption-enabled 3590-image T10000B drive.
T10KC	Indicates any T10000C drive.
T10KCN	Indicates a non-encrypted 3490E- or 3590-image T10000C drive.
T1C34	Indicates a non-encrypted 3490E-image T10000C drive.
T1C35	Indicates a non-encrypted 3590-image T10000C drive.
T10KCE	Indicates an encryption-enabled 3490E- or 3590-image T10000C drive.
T1CE34	Indicates an encryption-enabled 3490E-image T10000C drive.
T1CE35	Indicates an encryption-enabled 3590-image T10000C drive.
T10KD	Indicates any T10000D drive.
T10KDN	Indicates a non-encrypted 3490E- or 3590-image T10000D drive
T1D34	Indicates a non-encrypted 3490E-image T10000D drive.
T1D35	Indicates a non-encrypted 3590-image T10000D drive.
T10KDE	Indicates an encryption-enabled 3490E- or 3590-image T10000D drive.
T1DE34	Indicates an encryption-enabled 3490E-image T10000D drive.
T1DE35	Indicates an encryption-enabled 3590-image T10000D drive.
Virtual	Indicates a VTV (Virtual Tape Volume) mounted on a VTD (Virtual Tape Drive).

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 A-4 Recording Technique Defaults

MEDia Entered	RECtech Default
LONGItud	LONGItud
ZLONGI	LONGitude
Standard	LONGItud
ECART	36track
ZCART	36Ctrack
DD3A, DD3B, DD3C, DD3D	DD3
STKR, STK1U, STKY	STK1R
STK2P, STK2W	STK2P
T10000T1, T10000TS, T10000CL	T10K
T10000CT	T10KA + T10KB
T10000T2, T10000TT	T10KC + T10KD
Virtual	Virtual

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 A-5   Model Types

Model Type	Description
4480	Indicates a 4480 (18-track) drive.
4490	Indicates a 4490 (36-track Silverton) drive.
9490	Indicates a 9490 (36-track Timberline) drive.
9490EE	Indicates a 9490EE (36-track Timberline EE) drive.
SD3	Indicates an SD-3 (RedWood) drive.
9840	Indicates a 3490E-image T9840A drive.
984035	Indicates a 3590-image T9840A drive.
T9840B	Indicates a 3490E-image T9840B drive.
T9840B35	Indicates a 3590-image T9840B drive.
T9840C	Indicates a 3490E-image T9840C drive.
T9840C35	Indicates a 3590-image T9840C drive.
T9840D	Indicates a non encryption-enabled 3490E-image T9840D drive.
T9840D35	Indicates a non encryption-enabled 3590E-image T9840D drive.

TABLE A-5 Model Types (Continued)

Model Type	Description
T9840DE	Indicates an encryption-enabled 3490E-image T9840D drive.
T9840DE5	Indicates an encryption-enabled 3590E-image T9840D drive.
T9940A	Indicates a 3490E-image T9940A drive.
T9940A35	Indicates a 3590-image T9940A drive.
T9940B	Indicates a 3490E-image T9940B drive.
T9940B35	Indicates a 3590-image T9940B drive.
HP-LTO2	Indicates an HP LTO Generation 2 drive.
HP-LTO3	Indicates an HP LTO Generation 3 drive.
HP-LTO4	Indicates an HP LTO Generation 4 drive.
HP-LTO5	Indicates an HP LTO Generation 5 drive.
HP-LTO6	Indicates an HP LTO Generation 6 drive.
IBM-LTO2	Indicates an IBM LTO Generation 2 drive.
IBM-LTO3	Indicates an IBM LTO Generation 3 drive.
IBM-LTO4	Indicates an IBM LTO Generation 4 drive.
IBM-LTO5	Indicates an IBM LTO Generation 5 drive.
IBM-LTO6	Indicates an IBM LTO Generation 6 drive.
SDLT-600	Indicates a SuperDLT model 600 drive.
DLT-S4	Indicates a Quantum DLT-S4 drive.
T1A34	indicates a non-encryption enabled 3490E-image T10000A drive.
T1A35	Indicates a non-encryption enabled 3590-image T10000A drive.
T1AE34	Indicates an encryption-enabled 3490E-image T10000A drive.
T1AE35	Indicates an encryption-enabled 3590-image T10000A drive.
T1B34	Indicates a non-encryption enabled 3490E-image T10000B drive.
T1B35	Indicates a non-encryption enabled 3590E-image T10000B drive.
T1BE34	Indicates an encryption-enabled 3490E-image T10000B drive.
T1BE35	Indicates an encryption-enabled 3590-image T10000B drive.
T1C34	indicates a non-encryption enabled 3490E-image T10000C drive.
T1C35	Indicates a non-encryption enabled 3590-image T10000C drive.
T1CE34	Indicates an encryption-enabled 3490E-image T10000C drive.
T1CE35	Indicates an encryption-enabled 3590-image T10000C drive.
T1D34	Indicates a non-encryption enabled 3490E-image T10000D drive.
T1D35	Indicates a non-encryption enabled 3590-image T10000D drive.
T1DE34	Indicates an encryption-enabled 3490E-image T10000D drive.
T1DE35	Indicates an encryption-enabled 3590-image T10000D drive.
Virtual	Indicates a VTV (Virtual Tape Volume) mounted on a VTD (Virtual Tape Drive).

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.
- For SL8500 LSMs, the Bulk CAP consists of 3, 12-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.
- For SL8500 LSMs, the optional Bulk CAP consists of 3, 12-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
    - 2-23 (expansion panel is 8-15)
  - With two expansion panels
    - 2-26 (expansion panels are 8-23)
  - With three expansion panels
    - 2-34 (expansion panels are 8-31)
  - With four expansion panels
    - 2-42 (expansion panels are 8-39)
  - With five expansion panels
    - 2-50 (expansion panels are 8-47)

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.

SLUDRRMM

The SLUDRRMM routine is called to read the DFSMSrmm report extract file when DFSMSrmm is defined as the tape management system. SLUDRRMM 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).

SLUDRRMM 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 SLUDRRMM.

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.

SLUDRZAR

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.

Glossary

This glossary defines terms and abbreviations used in this publication.

> **Note –** Glossary entries that include the (I) designation are credited to the *IBM Dictionary of Computing*.

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 (ACSLS) 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.

B

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.

C

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.(I)

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.

D

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 call 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.(I)

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.

E

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.

F

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.

G

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.

H

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.

I

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.

J

JCL *See* Job Control Language.

JES Job entry subsystem.(I)

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.(I)

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.(I)

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.

L

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/LCUs.

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.

P

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.

S

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 volsers 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 middle ware 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 Fujitsu's MSP/EX 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.

T

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).

TCP/IP Transmission Control Protocol/Internet Protocol.

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.

U

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.

V

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.

W

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.

X

XCF Cross-system coupling facility.

Z

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.

T10000D The StorageTek high-capacity cartridge transport capable of reading and writing 1.6TB or 8TB T10000D cartridges.

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