

Enterprise Library Software

ELS Programming Reference

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Preface

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

- ? StorageTek™ Storage Management Component (SMC)
- ? StorageTek™ Host Software Component (HSC)
- ? StorageTek™ Virtual Tape Control Software (VTCS)
- ? StorageTek™ Concurrent Disaster Recovery Test (CDRT)

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

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

Refer to the publication *Introducing ELS* for an overview of the ELS solution.

Purpose

This book provides information about the following programming interfaces:

- ? The HSC Significant Event Notification Facility
- ? Various HSC Records
- ? VTCS SMF Records
- ? HSC Format User Exits 6, 14, and 15
- ? The ELS Unified User Interface (UII), including UII macros, UII sample programs, and ELS XML tags

Prerequisites

To use the information in this reference, you should already understand the following:

- ? The MVS Operating Environment
- ? JES2 or JES3
- ? System Management Facility (SMF)
- ? Error Recording Dataset (LOGREC)

Revisions

Revision 01 contains technical updates and corrections.

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Using the ELS Unified User Interface

Introduction to the Unified User Interface

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

- ? Execute commands via a utility.
- ? Invoke commands from a programmatic interface.
- ? Request output in text, XML or Comma Separated Values (CSV) format. For more information, see *ELS Command, Control Statement, and Utility Reference*.
- ? Invoke commands to a HSC server from a remote client.

ELS 7.0 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. In addition, support will be dropped for the ability to create “flat file reports” from the volume, VTV and MVC report utilities.

The UUI can be executed from the SLUADMIN and SMCUUI utilities; for more information, see *ELS Command, Control Statement, and Utility Reference*.

Using the UUI Programmatically

Tip – StorageTek recommends that you execute through the SLUADMIN utility those UUI commands that your program will use to validate the command syntax and validate the output before coding the UUI program.

Environment

In general a user program invoking the UUI requires:

- ? Inclusion of the library containing ELS modules in the linklist or steplib for the program. This library must be authorized.
- ? An active SMC subsystem on the same host.
- ? An exception exists for functions which do not require HSC services and require only access to a HSC CDS (such as VOLRPT, VTVRPT, MVCPRPT). These functions may be executed from an unauthorized library and do not require an active SMC.

TapePlex and UUI

The UUI is designed to execute in an environment where the SMC may be communicating with multiple TapePlexes, that is, multiple discrete HSC subsystems using different CDSs. Each UUI command must specify the TapePlex to which it is directed. The specified TapePlex can be one of the following:

- ? A TapePlex name defined to the SMC subsystem. A special UUI function provides a list of these names.
- ? The special name “SMC.” This indicates that the request is a native SMC command (such as Display Drive or Display Volume).
- ? The special name “CDSONLY.” This indicates that the caller does not require access to the HSC subsystem and can be used only for commands such as VOLRPT, VTVRPT, and MVCPRPT. The caller must also supply an SLSCNTL DD statement for the CDS.
- ? The special name “LOCALHSC.” This indicates that the caller wants the SMC to select the TapePlex that has a local HSC path.

Invoking the UUI

The invocation of the UUI requires initializing and destroying a UUI environment. An assembler macro NCSNUII is provided to allow assembler programs to perform the initialization and termination. In addition to setting up and destroying the UUI environment, this macro also loads and deletes the UUI interface module itself. The required parameters are:

- ? Function, either ALLC (load the module and set up the environment), CALL (call the UUI), or DEST (destroy the environment and delete the module). Normally the ALLC and DEST functions are performed only once during the execution of the calling program, while the CALL function is repeated as needed.

? Address of the NCSCOMM UUI control block.

UUI Program Flow

See the sample programs in “UUI Sample Programs” on page 204.

FIGURE 1-1 shows a typical program flow to invoke the UUI.

```
Set fixed NCSCOMM fields (NCOMID, NCOMLEN, NCOMVER).
Initialize UUI environment (NSCNUUI FUNC=ALLC).
Get TapePlex list (NCSNUUI FUNC=CALL, NCOMTYPE=NCOMPLXL).
Set NCSCOMM fields that apply to all requests (could include NCOMOFMT, output
format, and NCOMPLXN, the TapePlex name).
Do while more commands:
    For each command, set NCOMREQA (address of request) and NCOMOUTL
    (length of request).
    Set NCOMPLXN (TapePlex name) if needed.
    If CSV output is desired, format the CSV request fields.
    Initiate the command (NSCNUUI FUNC=CALL)
    Do while return code = UUI_MORE_DATA
        Process each returned output line. (NCOMOUTT indicates the
        type of response,
        while NCOMOUTA is the response text and NCOMOUTL is the length).
    Endwhile UUI_MORE_DATA
    If return code = UUI_CMD_WARNING or return code = UUI_CMD_ERROR,
    process error or warning.
Endwhile more commands
Terminate UUI environment (NCSNUUI FUNC=DEST).
```

FIGURE 1-1 UUI Program Flow Pseudocode

Using the UUI for Asynchronous Requests

Some programmatic interface callers may need to execute requests asynchronously, in order to process multiple functions at the same time. The UUI interface does not provide a specific asynchronous option, but the caller can execute the UUI requests from a subtask to accomplish this.

When the UUI is used for asynchronous requests, only the main task needs to do the NCSNUUI ALLC and NCSNUUI DEST functions. The UUI environment can be shared between tasks provided that the ATTACH macro does not specify the SZERO=NO parameter. The default for ATTACH is SZERO=YES, so you can either use the default or specify SZERO=YES. Each subordinate task should copy the main task’s NCSCOMM control block into its own version to obtain addressability to the common UUI environment. Each subordinate task then uses its local version of the NCSCOMM to perform its own requests.

When the UUI is used asynchronously it is possible to terminate (NCOMTYPE=NCOMCANC) active UUI requests before they have completed processing, or to periodically collect output from requests (NCOMTYPE=NCOMOUT). (Note that the CANCEL and OUTPUT options apply only to HSC UUI commands and are not implemented for VTCS commands.)

To use the cancel or output feature, the task must first obtain a task token ID using the NCOMTYPE NCOMGTTK. The monitoring task then uses the task token to issue a separate UUI request to cancel or receive output for the executing task. Output collected using the NCOMOUT type will not be returned to the executing task.

Program logic should be designed so that all UUI requests loop until all output data is returned. Attempting to terminate a UUI program before returning all output data may result in abnormal termination.

Comma Separated Values

Most programmatic UUI callers should use the CSV option as their output format. The UUI CSV option allows the caller to specify XML tag names of the data to be returned. For more information, see [“ELS XML Tags” on page 189](#).

Note that CSV tag names are case-sensitive.

A UUI caller using CSV input formats the required CSV control fields in the NCSCOMM:

- ? NCOMBKTG – the name of the XML header tag that should apply to each returned detail output, for example vtv_data. Note that all CSV tag names, including break tag names, are case-sensitive.
- ? NCOMFTGA – Address of the CSV field names, comma separated.
- ? NCOMFTGL – Length of the CSV field name data area.

It is recommended that the caller not suppress the CSV title line, and use the default title format. To simplify parsing the CSV output the caller may want to specify the option NCOMFIXD; any non-binary zero value in this flag indicates that each CSV output field should occupy the default maximum field length. The caller should parse the first returned CSV detail record to determine the fixed length of each field, as this could be changed by software maintenance.

The CSV title field is used both for initial debugging and for release compatibility. Any unrecognized tag name has a title of unknown_data_tag. Unknown data tags will never return any data, and will always have an output length of 0 bytes.

HSC Format User Exits 6, 14, and 15

This chapter describes the HSC format user exits 6, 14, and 15 and describes the primary function of each exit. For information on the legacy HSC user exits, see *ELS Legacy Interfaces Reference*.

Note – When migrating to a new release of the HSC, you are not required to reassemble your user exits. However, if you choose to do so, it is recommended that user modifications to user exits and other StorageTek-supplied programs be based on the source code shipped in the current release.

Implementing HSC-Managed User Exits

Overview

This section describes how HSC-managed user exits are implemented. The following user exits are invoked and managed by the HSC:

TABLE 2-1 HSC-Managed User Exits

Exit Number	Exit Name and Description
6	“Insert/Delete User Exit (SLSUX06)” on page 11
14	“Volume Access User Exit (SLSUX14)” on page 17
15	“Command Authorization User Exit (SLSUX15)” on page 26

These user exits are loaded at HSC subsystem initialization from the load library identified by ddname SLSUEXIT, or from the HSC load library with the default names.

- ? Each user exit can be defined to the HSC with the UEXIT PARMLIB control statement. Issue a separate control statement for each user exit you want to invoke by substituting the exit number in the SLSUX m parameter, or by specifying the entry point name used to link-edit the load module. The UEXIT statement allows you to load the exit in either an enabled or disabled state.
- ? If no UEXIT statement for a particular user exit is found in the HSC PARMLIB data set, the HSC loads that user exit’s default stub from one of two sources:
- ? the SLSUEXIT DD statement, if it is present in the HSC START procedure, or
- ? the HSC load library, if SLSUEXIT does not exist.

Unless replaced by the customer, the HSC load library contains the StorageTek default stubs of each user exit and sets a return code of 64, indicating the user exit is inactive. When the HSC receives a return code of 64 from an initial call to the user exit, it does not call the exit again during that HSC session unless the exit is explicitly reloaded or activated using the UEXIT operator command.

The HSC UEXIT command can be used to dynamically enable, disable, reload, or query the status of user exits.

Note –

- ? HSC managed user exits dummy exit source (SLSUXnn) and samples (UXnnSAMn) are distributed in the ELS SAMPLIB.
 - ? When migrating to a new release of the HSC, you are not required to reassemble your user exits. However, if you choose to do so, it is recommended that user modifications to user exits and other StorageTek programs be based on the source code shipped in the current release.
-

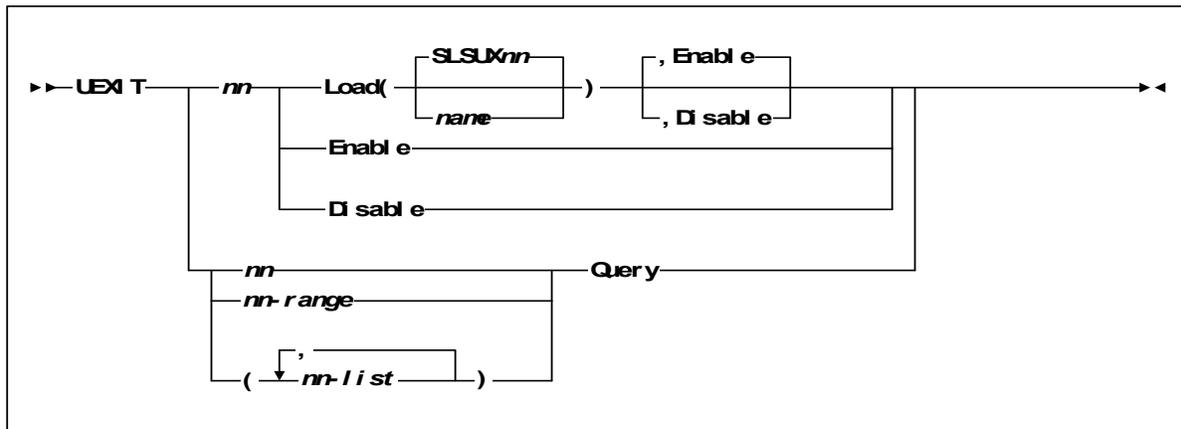
HSC User Exit (UEXIT) Command and Control Statement

HSC user exits permit 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.

This command provides a way for you to define how the HSC processes your user exits by allowing you to 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.

Syntax



Command Name

UEXIT

initiates the UEXIT command and control statement.

Parameters

nn

specifies the user exit number.

Load

causes the specified module to be loaded into storage.

SLSUXnn

specifies the default name for the user exit. If *name* is not specified, then the default name is used when the HSC loads the module into storage.

name

specifies 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.

Enable

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

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.

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.

Examples

The following examples illustrate the use of the UEXIT command and control statement.

Load User Exit 06 - Enabled

```
UEXIT 06 LOAD
```

Load User Exit 06 - Disabled

```
UEXIT 06 LOAD(SLSUX12),DISABLE
```

Display Status for a List of User Exits

```
UEXIT (06,14) Q
```

Display Status for a Range of User Exits

```
UEXIT 14-15 Q
```

Insert/Delete User Exit (SLSUX06)

Functional Description

The Insert/Delete User Exit provides you a way to obtain information when a volume is added to or deleted from the control data set.

At HSC initialization, a separate server task is attached that drives the user exit code. When a volume is inserted or deleted, a parameter list is built to describe the action. The server task is then posted to invoke the user code and pass the parameter list along. This parameter list shows the type of entry (insert, delete or HSC purge) and information on the volume, such as: VOLSER, location, status, date/time for insert or last use, and number of times selected.

At HSC termination, the server task is notified that termination is in progress. It creates a dummy parameter list with the UX06FUNC=UX06PURG bit on and passes it to the user code for clean up.

The installation-written exit routine must be named SLSUX06 and must be link-edited into an HSC library. Standard IBM OS linkage conventions must be observed.

Environment

This user exit is invoked by HSC, and executes in HSC's address space.

Note – This user exit must reside in an APF-authorized library.

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX06, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined
13	Pointer to register save area
14	Return address
15	Entry point address

Parameter List

The parameter list is mapped by macro SLSUX06P.

Conditions on Return To HSC From User Exit

Return Specifications

On return from SLSUX06, register contents are as follows:

Register	Contents
0-14	Values at entry to exit
15	Return code (hexadecimal)

Return Codes

TABLE 2-2 SLSUX06 Return Codes

Return Code	Name	Description
0	UX06OK	Normal return
64	UX06NOPR	Cancel exit
255	UX06INV	Invalid function code passed

Programming Considerations

The parameter list (SLSUX06P) is obtained from user key storage.

On initial entry, the UX06USER fullword is set to zero. If the user wants information to be maintained across all calls to the exit, they can GETMAIN a work area storage and place the address of that area in UX06USER. This is the only field in the parameter list that is maintained across exit calls. At termination (UX06FUNC=UX06PURG), the user must release any resources being held and FREEMAIN any obtained storage.

The exit routine should examine the UX06FUNC flag byte to determine the correct entry type.

Example:

```
UX06FUNC = UX06INS - volume inserted in database
UX06FUNC = UX06DEL - volume deleted from database
UX06FUNC = UX06PURG - purge call, cleanup before return
```

Program Attributes

The program must be linkedited RMODE=24, AMODE=24.

Special Considerations

Since the user code is invoked under a separate TCB, problems are not encountered in HSC if the exit has problems. It may open files, do I/O, or obtain resources. Upon receiving an entry type of UX06PURG in the parameter list, the user code must clean up resources and terminate.

If the user code is passed an invalid function type, it should return UX06INV in R15.

If the user code decides it does not want to be called again, it should perform all necessary clean up and return UX06NOPR in R15.

HSC server that invokes the user code enables MVS Dump Analysis and Elimination (DAE) to suppress duplicate SVC dumps. If user code is being tested that abends the same and a dump is needed, it may be necessary to temporarily turn off DAE on the system or to EDIT SYS1.DAE and remove the dump entry that is suppressing the dump.

Restrictions and Limitations

The following restrictions and limitations apply:

- ? HSC must be recycled to reactivate the exit.
- ? If the exit is deactivated or an abend occurs, any transactions not processed are lost.
- ? The user exit is entered in 24-bit addressing. This is a restriction when calling TMS functions.
- ? The user exit must be assembled using HSC and CA-1 (TMS) macro libraries.

Your systems programming staff may replace the default user exit with one designed to implement your system's specific needs.

User Exit 06 Parameter List

The parameter list is passed to the insert/delete user exit to pass information about the volume serial being added to or deleted from the database.

On the first call to the user code, it may obtain storage and save its address in the user word provided in the parameter list. The value of the user word is maintained across calls.

The user code is invoked for three actions: 1) insert - when a volume is added to the database, 2) delete - when a volume is deleted from the database and 3) purge - when HSC is brought down.

SLSUX06 Map

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	60	SLSUX06P	User Exit 06 Parameter List
0	(0)	CHARACTER	4	UX06ID	Eyecatcher 'UX6P'
4	(4)	FULLWORD	0	UX06DESC	Alignment/length
4	(4)	HEXSTRING	1	UX06SPID	Subpool ID
5	(5)	HEXSTRING	3	UX06LEN	Block length
8	(8)	FULLWORD	4	UX06FWD	Forward chain pointer
12	(C)	FULLWORD	4	UX06USER	Customer field; initially zero; preserved across calls
16	(10)	HEXSTRING	4	*	Reserved
20	(14)	BITSTRING	1	UX06FUNC	Exit function flag
		1		UX06INS	Volume inserted in database
		. 1		UX06DEL	Volume deleted from database
		. . 1		UX06PURG	Purge call, clean up before return
21	(15)	HEXSTRING	11	*	Reserved
32	(20)	CHARACTER	6	UX06VOL	Volume serial
38	(26)	BITSTRING	1	UX06FLGS	Label type
		1		UX06SCR	Volume is scratch
		. 1		UX06SEL	Volume is selected
		. . 1		UX06ELAB	Cartridge has external label
		. . . 1		UX06OCR	External label is OCR readable
		. . . . 1		UX06INUS	Database volume record is valid
39	(27)	HEXSTRING	1	UX06LOCK	Owning host ID
40	(28)	HEXSTRING	3	*	Reserved
43	(2B)	HEXSTRING	5	UX06LOC	Cartridge location
48	(30)	FULLWORD	4	UX06DATI	Date/time volume inserted
52	(34)	FULLWORD	4	UX06DATL	Date/time last selected
56	(38)	FULLWORD	4	UX06SCNT	Volume selected count
60	(3C)	HEXSTRING	20	*	Reserved
80	(50)			UX06L	Length of SLSUX06P

The following date/time values are TOD date/time values obtained from the first fullword of the 64-bit result of a 'TIME STCK' (Store Clock) instruction.

48	(30)	FULLWORD	4	UX06DATI	Date/time volume inserted
52	(34)	FULLWORD	4	UX06DATL	Date/time last selected
56	(38)	FULLWORD	4	UX06SCNT	Volume selected count
60	(3C)	HEXSTRING	20	*	Reserved
80	(50)			UX06L	Length of SLSUX06P

SLSUX06 Cross Reference

Name	Hex Offset	Hex Value
SLSUX06P	0	
UX06DATI	30	
UX06DATL	34	
UX06DEL		40
UX06DESC	4	
UX06ELAB		20
UX06FLGS	26	
UX06FUNC	14	
UX06FWD	8	
UX06ID	0	
UX06INS		80
UX06INUS		01
UX06INV		FF
UX06LEN	5	
UX06LOC	2B	
UX06LOCK	27	
UX06NOPR		40
UX06OCR		10
UX06OK		00
UX06PURG		20
UX06SCNT	38	
UX06SCR		80
UX06SEL		40
UX06SPID	4	
UX06USER	C	
UX06VOL	20	

Volume Access User Exit (SLSUX14)

Functional Description

The Volume Access User Exit enables you to invoke security checking for volume access at mount and eject time.

Security checking for volume access occurs when SLSUX14 is enabled and there is a request for a mount or eject of a given volume. If the volume access check is successful, no user notification occurs. If the requestor is notified, the information presented in the messages can include:

- ? job (for PGMI, Utilities and Job/Mount processing)
- ? operator request
- ? user-supplied data in EBCDIC.

Note – This exit is not called for:

- ? duplicate/unlabeled volumes being ejected by audit
 - ? volumes being ejected by the init-cart utility
 - ? any unlabeled volumes found in the LSM playground.
-

Environment

This user exit is invoked by HSC, and executes in HSC's address space.

Note – This user exit must reside in an APF-authorized library.

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX14, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined
13	Pointer to register save area
14	Return address
15	Entry point address

Parameter List

The parameter list is mapped by macro SLSUX14P.

Conditions on Return to HSC From User Exit

Return Specifications

On return from SLSUX14, register contents are as follows:

Register	Contents
0-14	Values at entry to exit
15	Return code (hexadecimal)

Return Codes

TABLE 2-3 SLSUX14 Return Codes

Return Code	Name	Description
0	UX14OK	Perform function
4	UX14NWRT	Write protect mount
8	UX14PWRD	HSC password check
12	UX14RJCT	Function reject
16	UX14RACF	HSC RACROUTE check (TAPEVOL)
20	UX14RACL	HSC RACROUTE check use UX14RCLS
64	UX14IACT	The user exit is inactive

TABLE 2-4 SLSUX14 Return Data in Parameter List

Name	Description
UX14PSWD	Blank padded password
UX14RCLS	RACF class to use for RACROUTE

Programming Considerations

You can still issue RACROUTE from within Volume Access User Exit or you can specify that HSC is to do a RACROUTE via an exit return code. You are provided with the following information:

- ? job name
- ? job request
- ? volume ID
- ? location
- ? issuer

The RACF user ID and group ID are provided, if they are available.

This information is extracted from the ACEE of the requestor and is sufficient to issue a RACROUTE request. If it is not available, the fields are binary zeros.

Note – For operator commands, MVS provides the information in the UTOKEN pointed to by the CIB and SSCM. However, this UTOKEN information is encrypted and is not usable.

You are provided with the following job processing-related information:

- ? program name
- ? data set name
- ? expiration date
- ? retention period.

If the information is not available, the fields are binary zeros.

You can use the information provided to affect the function in the following ways:

- ? allow the function to proceed
- ? make a mount write disabled (virtual thumbwheel)
- ? reject the function
- ? request or provide a password
- ? tell the HSC to issue a RACROUTE (optionally specifying the RACF class to use).

An audit trail message is issued in the event of a:

- ? command reject
- ? exit disabled (first time only)
- ? volume mount that is changed to write disabled via virtual thumbwheel
- ? password failure.

An operator prompt is generated when a password is requested. In all cases user information can be passed back to give a reason for the request or rejection.

To secure SLSUX14, the UEXIT command must also be secure. This is to ensure that SLSUX14 is not replaced by another UEXIT LOAD or disabled by UEXIT DISABLE.

SLSUX14 is dynamically loadable as long as it is in the SLSUEXIT DD data set.

Additional loads of SLSUX14 (and SLSUX15) are done dynamically through the UEXIT command if you are allowed to complete the command based on the SLSUX15 and/or security package rules.

UEXIT Command to Load an Exit

```
UEXIT 14 LOAD=UX14NEW
```

Restrictions and Limitations

Security Profile:

If SLSUX14 states that the HSC is to do security checking by returning UX14RACF or UX14RACL, the RACROUTE is issued for volume access based on job or user criteria. The following example shows a RACF TAPEVOL class profile and permission command set that would be matched against the HSC RACROUTE.

Example of RACF Profile and Permission Commands

```
*****  
*   Define a profile in the TAPEVOL class for volume 111111 *  
*   (No general access allowed)                               *  
*****  
RDEFINE TAPEVOL 111111 UACC(NONE)  
*****  
*   Permit user FRED*1 to have read access to volume 111111 *  
*****  
PERMIT 111111 CLASS(TAPEVOL) ID(FRED*1) ACCESS(READ)  
*****
```

A check is made for UPDATE authority. If access is allowed, the request is allowed; otherwise, a check is made for READ authority. If this is allowed, the tape is mounted write-protected. If neither UPDATE nor READ is allowed, the request is denied.

Note –

- ? UPDATE authority is required to eject a volume.
 - ? RACF 1.8.1or above must be installed to have SLSUX14 perform RACF checking.
-

User Exit 14 Parameter List

The parameter list is built by programs that request to have a volume mounted, entered or ejected. The user exit is called to determine if and how the request should proceed.

SLSUX14 Map

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	256	SLSUX14P	User Exit 14 Parameter List
0	(0)	BITSTRING	1	UX14FUNC	Requested function
		.... .1		UX14MNT	Mount
		.... .1.		UX14EJCT	Eject
1	(1)	BITSTRING	1	UX14TYPE	Request type
		.... ....		UX14UNKN	Unknown
		.... .1		UX14HSC	HSC initiated request
		.... .1.		UX14JOBP	Job processing request
		.... .11		UX14UTIL	Utility request
		.... .1..		UX14PGMI	Programmatic interface request
		.... .1.1		UX14OPER	Operator request
		.... .11.		UX14TMI	TMI request
		.11. .11		UX14LSTA	Library Station request
2	(2)	BITSTRING	1	UX14STAT	Request status
		1...		UX14WDSB	Write disable is set
3	(3)	BITSTRING	1	UX14FLG1	Flag byte
		1...		UX14F1SC	Scratch request
		.1..		UX14F1TV	'To' device number is valid
		..1.		UX14F1FV	'From' device number is valid
4	(4)	CHARACTER	6	UX14VOLS	Volume serial
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX14HOST	Host ID
20	(14)	CHARACTER	13	UX14SNAM	Scratch subpool name if available
33	(21)	HEXSTRING	3	*	Reserved
36	(24)	HEXSTRING	1	UX14SSUB	Scratch subpool number
37	(25)	HEXSTRING	3	*	Reserved
40	(28)	FULLWORD	4	UX14WORD	Customer field; initially zero; preserved across calls
44	(2C)	HEXSTRING	2	UX14UNT1	'From' device number
46	(2E)	BITSTRING	1	UX14FTYP	'From' location type
		.... .1		UX14CELL	'From' is a cell
		.... .1.		UX14CAPC	'From' is a cap cell
		.... .11		UX14DRIV	'From' is a drive
47	(2F)	HEXSTRING	1	UX14FACS	From ACS
48	(30)	HEXSTRING	1	UX14FLSM	From LSM
49	(31)	HEXSTRING	1	UX14FPNL	From panel
50	(32)	HEXSTRING	1	UX14FROW	From row

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
51	(33)	HEXSTRING	1	UX14FCOL	From column
52	(34)	HEXSTRING	1	UX14FCAP	From cap
53	(35)	HEXSTRING	3	*	Reserved
56	(38)	HEXSTRING	2	UX14UNT2	'To' unit
58	(3A)	HEXSTRING	1	UX14TTYP	'To' location type
59	(3B)	HEXSTRING	1	UX14TACS	To ACS
60	(3C)	HEXSTRING	1	UX14TLSM	To LSM
61	(3D)	HEXSTRING	1	UX14TPNL	To panel
62	(3E)	HEXSTRING	1	UX14TROW	To row
63	(3F)	HEXSTRING	1	UX14TCOL	To column
64	(40)	HEXSTRING	1	UX14TCAP	To cap
65	(41)	HEXSTRING	3	*	Reserved
68	(44)	CHARACTER	8	UX14RUSR	RACF user ID
76	(4C)	CHARACTER	8	UX14RGRP	RACF group
84	(54)	HEXSTRING	4	*	Reserved
88	(58)	HEXSTRING	4	UX14CONS	Console ID
92	(5C)	CHARACTER	8	UX14CNAM	Console name
100	(64)	CHARACTER	8	UX14USID	User ID
108	(6C)	HEXSTRING	4	*	Reserved
The following fields are for job processing requests.					
112	(70)	CHARACTER	8	UX14JOBN	Job name
120	(78)	CHARACTER	8	UX14STEP	Step name
128	(80)	CHARACTER	8	UX14PGNM	Program name
136	(88)	CHARACTER	44	UX14DSN	Dataset name
180	(B4)	HEXSTRING	3	UX14EXPD	Expiration date
183	(B7)	HEXSTRING	2	UX14RETN	Retention period
185	(B9)	HEXSTRING	11	*	Reserved
The following fields can be returned by the exit.					
196	(C4)	CHARACTER	8	UX14PSWD	Password, padded with blanks
204	(CC)	CHARACTER	9	UX14RCLS	RACF class to use for RACROUTE: 1 byte length followed by class name
213	(D5)	CHARACTER	32	UX14UMSG	User information
248	(F8)	HEXSTRING	8	*	Reserved
256	(100)			UX14L	Length of SLSUX14P

SLSUX14 Cross Reference

Name	Hex Offset	Hex Value
SLSUX14P	0	
UX14CAPC		02
UX14CELL		01
UX14CNAM	5C	
UX14CONS	58	
UX14DRIV		03
UX14DSN	88	
UX14EJCT		02
UX14EXPD	B4	
UX14FACS	2F	
UX14FCAP	34	
UX14FCOL	33	
UX14FLG1	3	
UX14FLSM	30	
UX14FPNL	31	
UX14FROW	32	
UX14FTYP	2E	
UX14FUNC	0	
UX14F1FV		20
UX14F1SC		80
UX14F1TV		40
UX14HOST	C	
UX14HSC		01
UX14IACT		40
UX14JOBP		02
UX14JOBN	70	
UX14LSTA		63
UX14MNT		01
UX14NWRT		04
UX14OK		00
UX14OPER		05
UX14PGMI		04
UX14PGMN	80	
UX14PSWD	C4	
UX14PWRD		08
UX14RACF		10
UX14RACL		14
UX14RCLS	CC	
UX14RETN	B7	
UX14RGRP	4C	
UX14RJCT		0C
UX14RUSR	44	
UX14SNAM	14	
UX14SSUB	24	

Name	Hex Offset	Hex Value
UX14STAT	2	
UX14STEP	78	
UX14TACS	3B	
UX14TCAP	40	
UX14TCOL	3F	
UX14TLSM	3C	
UX14TMI		06
UX14TPNL	3D	
UX14TROW	3E	
UX14TTYP	3A	
UX14TYPE	1	
UX14UMSG	D5	
UX14UNKN		00
UX14UNT1	2C	
UX14UNT2	38	
UX14USID	64	
UX14UTIL		03
UX14VOLS	4	
UX14WDSB		80
UX14WORD	28	

Command Authorization User Exit (SLSUX15)

Functional Description

The Command Authorization User Exit is used to ensure command security.

The Command Authorization User Exit is run for all commands issued within the HSC system. It is also run for all Unified User Interface (UI) commands that are issued by local utilities or origination from remote hosts (the SMC ROUTE command or the SMCUI utility).

A tier level presentation is used with the actual command string. Information to issue CMDAUTH from the exit is provided. This information includes:

- ? User
- ? Request
- ? Console
- ? Command
- ? Command string
- ? Command tier level: minimum to maximum

1. Query

2. Update

3. Control

- ? CIB address or SSCM address
- ? RACF UTOKEN
- ? Host Name

This information is used to:

- ? permit the use of the command
- ? supply and request a password
- ? reject the command
- ? request that HSC process CMDAUTH for the command.

You can use the default values that the HSC provides or the security matrix within the table together with the command string. The following table shows the minimum generic security levels.

TABLE 2-5 Command Security Level

Command	Minimum Level
ALLOC	Update
CAPPREF	Update
CDS	Control
CLEAN	Control
COMMPATH	Update
DIAG	Query
DISMOUNT	Control
DISPLAY	Query
DRAIN	Control
EJECT	Control
ENTER	Control
F	Control
JOURNAL	Update
LIST	Query
LOAD	Query
LS	Query
MN	Update
MNTD	Update
MODIFY	Control
MONITOR	Update
MOUNT	Control
MOVE	Control
OPTION	Update
PM	Update
RECOVER	Control
RELEASE	Control
RETRY	Control
SENDER	Control
SRVLEV	Control
STOPMN	Update
SWITCH	Control
TRACE	Query
UEXIT	Update
UNITDEF	Update
VARY	Control

TABLE 2-5 Command Security Level (Continued)

Command	Minimum Level
VIEW	Update
VOLDEF	Update
WARN	Update

Environment

This user exit executes in the HSC address space or the address space running the UUI command.

Note – This user exit must reside in an APF-authorized library.

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX15, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined
13	Pointer to register save area
14	Return address
15	Entry point address

Parameter List

The parameter list is mapped by macro SLSUX15P.

Execution Attributes

Shared enqueues held on major name SYSIEFSD, minor names Q4, CHNGDEVS, DDRTPUT, and DDRDA.

Conditions on Return To HSC From User Exit

Return Specifications

On return from SLSUX15, register contents are as follows:

Register	Contents
0-14	Values at entry to exit
15	Return code (hexadecimal)

Return Codes

TABLE 2-6 SLSUX15 Return Codes

Return Code	Name	Description
0	UX15OK	Perform function
4	UX15PWRD	Check password through HSC
8	UX15RJCT	Function reject
12	UX15CHKA	Check authority through CMDAUTH
16	UX15CHKS	Check authority through CMDAUTH for primary command (UX15CMND) then for secondary command (UX15SCMD). The secondary command will only be checked if access to primary command has been granted.
64	UX15IACT	The user exit is inactive

TABLE 2-7 SLSUX15 Return Data in Parameter List

Name	Description
UX15PSWD	Blank padded user password
UX15UDTA	User information

Programming Considerations

You can use the HSC default values provided for each command or define a new security matrix within a table you create and use in conjunction with the command string provided in SLSUX15. Parsing the command string past the first operand (the command) is your responsibility.

An audit trail is issued in the event of a rejected command, disabled exit, or password failure. An operator prompt is issued when a password is requested. Once the password is received, it is made unreadable. The operator's response is also made unreadable and compared with the encrypted password from the exit. After the compare, both are erased.

Note – The Command Authorization User Exit does not include control statements executed during HSC PARMLIB. Security for PARMLIB access must be defined through your security packages. Your security package can also control the execution of utility jobs.

The HSC programmatic interface (PGMI) is not controlled through SLSUX15 because it can be controlled through SLSUX05.

SLSUX15 is dynamically loadable as long as it is in the SLSUEXIT DD data set.

Additional loads of SLSUX15 are done dynamically through the UEXIT command if you are allowed to complete the command based on the SLSUX15 and/or security package rules.

UEXIT Command to Load an Exit

```
UEXIT 15 LOAD=UX15NEW
```

Restrictions and Limitations

Security Profile:

If SLSUX15 sets a return code of UX15CHKA, a CMDAUTH is issued for command authorization based on user criteria. The following example shows a RACF OPERCMDS class profile and permission command set that would be matched against the HSC CMDAUTH.

Example of RACF Profile and Permission Commands

```
*****  
*   Define a profile in the OPERCMDS class for Mount command   *  
*                               (No general access allowed)     *  
*****  
RDEFINE OPERCMDS subsystemname.MOUNT.* UACC(NONE)  
*****  
          Permit user FRED01 to have read access to volume 111111  
*****  
PERMIT subsystemname.MOUNT.* CLASS(OPERCMDS) ID(FRED01)  
ACCESS(UPDATE)  
*****
```

User Exit 15 Parameter List

The parameter list is built and provides users with the capability to check command authority with whatever security mechanisms are currently in place. When control is returned to the request processor routine, action will be taken based on the return code set in register 15.

SLSUX15 Map

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	520	SLSUX15P	User Exit 15 Parameter List
0	(0)	CHARACTER	8	UX15CMND	Command being processed
8	(8)	FULLWORD	4	UX15WORD	Customer field; initially zero; preserved across calls
12	(C)	HEXSTRING	4	UX15UTOK	Security user token
16	(10)	BITSTRING	1	UX15TIER	Security tier level
		.... 1.		UX15READ	Query (read)
		.... 1..		UX15UPDT	Policy setting (update)
		.... 11.		UX15CNTL	All functions (control)
17	(11)	BITSTRING	1	UX15TYPE	Type of request
		.... 1		UX15CMD	Command
18	(12)	HEXSTRING	2	*	Reserved
20	(14)	CHARACTER	8	UX15HOST	Host Name
28	(1C)	CHARACTER	8	UX15SCMD	UX15SCPR on, secondary command.
36	(24)	BITSTRING	1	UX15FLG1	Flags
		1... ..		UX15SRVR	UX15HOST is a server
		..1.. ..		UX15CLNT	UX15HOST is a client.
		...1.		UX15HSCI	HSC command interface
		....1		UX15UUII	UII Interface
		.... 1...		UX15CPR	Secondary command provided
37	(25)	HEXSTRING	3	*	Reserved
40	(28)	HEXSTRING	12	*	Reserved
52	(34)	CHARACTER	4	UX15SSYS	Subsystem name
56	(38)	ADDRESS	4	UX15CIB	Pointer to CIB
60	(3C)	ADDRESS	4	UX15SSCM	Pointer to SSCB
64	(40)	HEXSTRING	4	UX15CONS	Console ID
68	(44)	HEXSTRING	8	UX15CART	Cart token
76	(4C)	CHARACTER	8	UX15CNAM	Console name
84	(54)	CHARACTER	8	UX15USID	User ID
92	(5C)	CHARACTER	256	UX15STRG	Command string
348	(15C)	HEXSTRING	1	UX15PRFX	Command prefix
)				
349	(15D)	HEXSTRING	99	*	Reserved
)				
448	(1C0)	CHARACTER	8	UX15PSWD	Password, padded with blanks
)				

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
456	(1C8)	CHARACTER	32	UX15UDTA	User information
488	(1E8)	HEXSTRING	32	*	Reserved
520	(208)			UX15L	Length of SLSUX15P

SLSUX15 Cross Reference

Name	Hex Offset	Hex Value
SLSUX15P	0	
UX15CART	44	
UX15CHKA		0C
UX15CIB	38	
UX15CLNT		40
UX15CMD		01
UX15CMND	0	
UX15CNAM	4C	
UX15CNTL		06
UX15CONS	40	
UX15IACT		40
UX15HOST	14	
UX15HSCI		20
UX15IACT		40
UX15OK		00
UX15PRFX	15C	
UX15PSWD	1C0	
UX15PWRD		04
UX15READ		02
UX15RJCT		08
UX15SCMD	1C	
UX15SCPR		08
UX15SRVR		80
UX15SSCM	3C	
UX15SSYS	34	
UX15STRG	5C	
UX15TIER	10	
UX15TYPE	11	
UX15UDTA	1C8	
UX15UPDT		04
UX15USID	54	
UX15UTOK	C	
UX15UUII		10
UX15WORD	8	

Using the HSC Significant Event Notification Facility

HSC provides a Significant Event Notification Facility (SEN). The SEN has a macro interface that allows an application to request notification of specific HSC and VTCS events. The application can then process the data passed by the SEN. SEN notification requests are maintained across HSC warm starts and are purged on HSC cold starts. When HSC is cold started, therefore, all previously established notification requests must be reestablished.

The SEN macro interface is supported at HSC base service level. There is no operator interface for the SEN itself, but the Display command lists SEN notification requests.

For information on the XML format output of the supported SEN events, see [“VTCS and HSC Events XML Tags”](#) on page 61.

Caution – When HSC initializes, the SEN facility is disabled, so you must enable via the HSC OPTION SEN operator command. For example, to enable the SEN, enter the following:

```
.OPTION SEN=ON
```

Supported HSC and VTCS SEN Events

HSC Events

TABLE 3-1 describes the supported HSC SEN events.

TABLE 3-1 HSC SEN Events

Event Name	Numeric Equate
libvol_insert_event	18
libvol_delete_event	19
hsc_termination_event	20
ACS_added_event	23
ACS_removed_event	24
lsmrail_added_event	25
lsmrail_removed_event	26
libdrive_added_event	27
libdrive_removed_event	28

VTCS SEN Events

TABLE 3-2 describes the supported VTCS SEN events.

TABLE 3-2 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

TABLE 3-2 VTCS SEN Events

Event Name	Numeric Equate
mvc_usage_event	12
vtv_movement_event	13
vtv_scratch_event	14
vtv_replicate_event	15
vtv_unlink_from_mvc_event	16
clink_vary_event	17

Overview of the SEN Macro Interface

You invoke the SLSXSEN macro to make SEN requests. The SLSXSEN macro has two forms:

- A **list form** that generates a parameter list. The parameter list is mapped by macro SLSXSENM and must be included in routines invoking SLSXSEN.
- The **execute form** that populates the parameter list and calls the SEN request module SLSXSENR. Modules using the SLSXSEN macro must have an authorization code of 1 and reside in an APF authorized library.

The SLSXSEN macro supports the following four requests:

LISTEN

Request notification for SEN defined events, which requires providing a routine to be invoked when the event occurs.

DELETE

Remove a specific event notification request.

DISABLE

Disable the LISTEN routine for event notification request.

ENABLE

Enable the LISTEN routine for event notification request.

Programs invoking SLSXSEN LISTEN requests must supply the entry points of two routines:

- The SEN request module SLSXSENR.
- The listener routine to get control when an event occurs.

SLSXSENR must be loaded from an APF authorized library. The listener routine must reside in common storage. The invoking program is responsible for managing this storage.

The listener routine is validated during LISTEN request processing by invoking the routine with general purpose register 1 set to zeros. Therefore, the listener routine must be sensitive to this condition and process it accordingly. The listener routine can simply return back to the caller on this condition or perform any type of initialization required. If LISTEN request processing detects an abend during validation, the request is rejected. A successful LISTEN request returns a token. Programs invoking SLSXSEN with DELETE, DISABLE, or ENABLE requests must provide this token to target a specific LISTEN request. The ELS SAMPLIB contains a sample program showing the use of SLSXSEN. When events occur for which there is a listener routine, it is invoked and receives data that describes the event. The data passed is in XML format. For more information, see [“VTCS and HSC Events XML Tags” on page 61](#).

When SEN request processing completes and control is returned to the requesting program, the parameter list and Register 15 contain the return code. Return codes are described in [“Execute Form - Syntax and Parameters” on page 45](#).

If HSC detects an abend while the listener routine is in control, the associated request is disabled and must be programmatically reenabled or deleted. When a notification request is disabled, the listener routine is not invoked.

Note – The HSC OPTION command and control statement lets you set the SEN facility ON or OFF.

OPTion SEN(ON) | OPTion SEN(OFF)

Note that even if SEN is disabled, SLSXSEN requests can still be processed.

SEN Macro Interface Authorization Requirements and Module Attributes

Modules invoking the SEN macro interface must:

- ? Have an authorization code of 1 and reside in an APF authorized library, **or**
- ? Be running in key 0 - 7 or supervisor state and be running in AMODE 31.

The listener routine must be running in TCB mode (not in SRB mode) and must be re-entrant.

The SLSXSEN Macro

The SLSXSEN macro has two forms:

- ? A **list form** that generates a parameter list. The parameter list is mapped by macro SLSXSENM (see “[SLSXSEN Macro Format](#)” on page 43) and must be included in routines invoking SLSXSEN. On completion of SEN request processing, the SEN parameter list contains the return code and token response areas.
- ? The **execute form** that populates the parameter list and calls the SEN request module SLSXSEN.R.

List Form - Syntax and Parameters

Syntax



FIGURE 3-1 SLSXSEN Macro Syntax - List Form

Parameters

MF=L

Specifies that a remote parameter list is generated. All other options are ignored.

SLSXSENM Macro Format

TABLE 3-3 shows the format of macro SLSXSENM, which generates a DSECT that maps the SEN parameter list generated by the list form of macro SLSXSEN.

TABLE 3-3 SLSXSENM Macro Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0			SLSXSENM	Start of DSECT
0	0	hexstring	2	SLSXSLEN	Length of parameter list
2	3	bitstring	1	SLSXSFC	SEN request code
		X'01'		SLSXLIS	LISTEN
		X'02'		SLSXSDEL	DELETE
		X'03'		SLSXSDIS	DISABLE
		X'04'		SLSXSENA	ENABLE
3	3	bitstring	1	SLSXSFLG	Processing flag
		X'80'		SLSXSEOT	EOT = YES
		X'40'		SLSXSEOM	EOM = YES
4	4	hexstring	8	SLSXSEM	Event mask
12	C	hexstring	4	SLSXSILA	Listener routine address
16	10	hexstring	4	SLSXSRT	Current TCB of requestor
20	14	hexstring	4	SLSXSRA	ASCB of requestor
22	16	hexstring	2	SLSXSTOK	Listen request token
30	1E	character	8	SLSXSREQ	Requestor name
38	26	character	8	SLSXSLNR	Listener routine name
40	28	hexstring	2	SLSXSQA	SEN queue entry address
42	2A	hexstring	2	SLSXSRC	SEN return code
			36	SLXRDI	Duplicate request encountered, request ignored
			32	SLXRNHSC	HSC not active or at proper level
			28	SLXRBADA	Authorization requirements not met
			24	SLXRBILR	Listener failed validation
			20	SLSXRSAB	Abend in HSC SEN processing
			16	SLSXRIR	Invalid request
			12	SLSXRNSQ	No LISTEN request found for DELETE, DISABLE, or ENABLE
			08	SLSXRDR	Duplicate listener encountered
			04	SLSXRDOK	SEN request successful, however the SEN facility is disabled
44	2C	hexstring	4	SLSXSQA	Returned SENQ address
48	30	hexstring	4	SLSXRC	SEN return code

TABLE 3-3 SLSXSENM Macro Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
52	34	character	4	SLSXSSYS	Subsystem name, required with HSC in MULT mode
56	38			SLSXMSLN	Minimum length for SSYS support
56	38		12		Reserved
68	44				Length of SEN parm list

Execute Form - Syntax and Parameters

Syntax

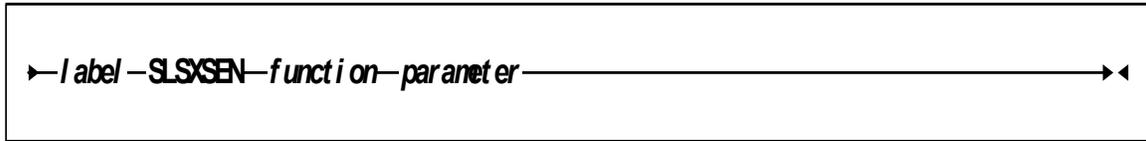


FIGURE 3-2 SLSXSEN Macro Syntax - Execute Form

Parameters

function is one of the following:

- ? [“LISTEN” on page 46](#)
- ? [“DELETE” on page 49.](#)
- ? [“DISABLE” on page 51](#)
- ? [“ENABLE” on page 53](#)

LISTEN

LISTEN requests notification for the events described in [“Supported HSC and VTCS SEN Events” on page 38](#). Also see [“The SEN Listener Exit Routine” on page 55](#).

Note – A sample program of a LISTEN request (SENQRST) is provided in the ELS SAMPLIB during SMP/E installation.

Syntax

```
label SLSXSEN LISTEN,  
      EVENT=(event_1,event_2,...),  
      RTOKEN=token,  
      LNRADR=listener_address,  
      SENRADR=SLSXSENR_address,  
      EOT=YES/NO,  
      EOM=YES/NO,  
      REQNAME=requestor_name,  
      LNRNAME=listener_name,  
      MF=(E,param_list)
```

Parameters

EVENT=

Specifies the event(s) requiring notification. For more information, see [“Supported HSC and VTCS SEN Events” on page 38](#). You can specify the event name or the numeric equate. Event names are case sensitive. You can specify a single event or EVENT=ALL. This parameter is required and there is no default.

Note – To specify multiple events on a single LISTEN request, StorageTek recommends that you use the numeric equates to ensure that the parameter value specified will not exceed IBM’s 256 byte size limitation for macro variables.

RTOKEN=

Specifies the address of a fullword token associated with a successful LISTEN request. Valid values are any RX-type address or registers 2 through 12. This parameter is required and there is no default.

LNRADR=

Specifies the entry point address of the listener routine that is invoked when the events specified occur. This program must reside in persistent common storage (that is, subpool 241) if EOT = YES or EOM=YES. It is your responsibility to delete the listener routine and free the storage associated with it. Valid values are any RX-type address or registers 2 through 12. This parameter is required and there is no default.

SENADR=

Specifies the entry point address of the SEN request module (SLSXSEN) that is provided with HSC. SLSXSEN must be loaded before invoking macro SLSXSEN. Valid values are any RX-type address or registers 2 through 12. This parameter is required and there is no default.

EOT=

Specifies whether the listener routine associated with this request is invoked if the task that issued the LISTEN request ends.

YES

Invoke the listener routine if the associated task ends.

NO

Do not invoke the listener routine if the task associated with this request ends.

This parameter is optional and NO is the default.

EOM=

Specifies whether the listener routine associated with this request is invoked if the address space that issued the LISTEN request ends.

YES

Invoke the listener routine if the associated address space ends.

NO

Do not invoke the listener routine if the address space associated with this request ends.

This parameter is optional and NO is the default.

Caution – EOT and EOM control execution of the listener routine, so make sure you set them to specify how you want the listener routine to operate.

REQNAME=

Specifies the name of the requestor and is used to uniquely identify a specify request for display purposes. The name must be an eight byte field containing a combination of uppercase alphanumeric values (A-Z,0-9), national characters (\$,@,#) with no embedded blanks. Valid values are any RX-type address or registers 2 through 12. This parameter is optional if LNRNAME is not specified and has no default.

LNRNAME=

Specifies the name of the listener routine. The name must be an eight byte field containing a combination of uppercase alphanumeric values (A-Z,0-9), national characters (\$,@,#) with no embedded blanks. Valid values are any RX-type address or registers 2 through 12. If LNRNAME is specified, REQNAME must also be specified. Otherwise, this parameter is optional and has no default.

Tip – Although not required, REQNAME and LNRNAME are very useful when displaying active SEN requests.

MF=(E,*parm_list*)

Specifies the execute form of the macro using the specified parameter list generated by the list form. The parameter list, *parm_list*, can be specified as any RX-type address or registers 2 through 12.

SSYS=*subsystem*

Specifies the subsystem name of the HSC subsystem, when HSC is executing in MULT mode. The name must be a 4-byte field. Valid values are any RX-type address, or registers 2-12. This parameter is optional and has no default. It is ignored if the HSC subsystem is not executing in MULT mode.

Responses

The return code is set in register 15 and the SEN parameter list. If the return code is zero, the address specified by RTOKEN contains the token representing this LISTEN request. This token is used when deleting, disabling or enabling a request. TABLE 3-4 describes the SLSXSEN LISTEN return codes.

TABLE 3-4 SLSXSEN LISTEN Return Codes

Return Code	Meaning
00	SEN LISTEN request successful
04	SEN LISTEN request successful however the SEN facility is disabled.
08	Listen request with conflicting event lists.
12	N/A
16	Invalid parameter list received.
20	Indicates that an abend occurred in HSC SEN processing, request rejected.
24	Indicates that listener routine validation failed, request rejected
28	The HSC determined that the SLSXSEN macro is being invoked by a program that does not meet the authorization requirements specified in “SEN Macro Interface Authorization Requirements and Module Attributes” on page 261.
32	The HSC is not active or at the proper initialization level for SEN services.
36	An identical LISTEN request already exists, request ignored.
40	Indicates that the REQNAME or LNRNAME syntax is invalid. Valid syntax is uppercase A-Z, 0-9, valid national characters (\$,#,@), with no embedded blanks.

DELETE

Syntax

```
label SLSXSEN DELETE,  
      RTOKEN=token,  
      MF=(E,parm_list)
```

Parameters

RTOKEN=

Specifies the address of a fullword token representing the request to be removed. This token was returned from a successful LISTEN request. This parameter is required and there is no default.

MF=(E,*parm_list*)

Specifies the execute form of the macro using the specified parameter list generated by the list form. The parameter list, *parm_list*, can be specified as any RX-type address or registers 2 through 12.

SSYS=*subsystem*

Specifies the subsystem name of the HSC subsystem, when HSC is executing in MULT mode. The name must be a 4-byte field. Valid values are any RX-type address, or registers 2-12. This parameter is optional and has no default. It is ignored if the HSC subsystem is not executing in MULT mode.

Note – All other parameters are ignored if entered on the DELETE request.

Responses

The return code is set in register 15 and the SEN parameter list. [TABLE 3-5](#) describes the SLSXSEN DELETE return codes.

TABLE 3-5 SLSXSEN DELETE Return Codes

Return Code	Meaning
00	SEN DELETE request successful.
04	N/A
08	N/A
12	No existing LISTEN request was found using the TOKEN specified on the DELETE request.
16	Invalid request received (not LISTEN, DELETE, DISABLE, or ENABLE).
20	An abend occurred in HSC SEN processing, request rejected.
24	N/A
28	The HSC determined that the SLSXSEN macro is being invoked by a program that does not meet the authorization requirements specified in “SEN Macro Interface Authorization Requirements and Module Attributes” on page 261.
32	HSC is not active or at the proper initialization level for SEN services.
36	N/A

DISABLE

Disable notification for a specific LISTEN request. The targeted request remains but the associated listener routine is not invoked when the specified events occur.

Syntax

label SLSXSEN DISABLE,
RTOKEN=*token*,

MF=(*E,parm_list*)

Parameters

RTOKEN=

Specifies the address of a fullword token representing the request to be disabled. This token was returned from a successful LISTEN request. This parameter is required and there is no default.

MF=(*E,parm_list*)

Specifies the execute form of the macro using the specified parameter list generated by the list form. The parameter list, *parm_list*, can be specified as any RX-type address or registers 2 through 12.

SSYS=*subsystem*

Specifies the subsystem name of the HSC subsystem, when HSC is executing in MULT mode. The name must be a 4-byte field. Valid values are any RX-type address, or registers 2-12. This parameter is optional and has no default. It is ignored if the HSC subsystem is not executing in MULT mode.

Note – All other parameters are ignored if entered on the DISABLE request.

Responses

The return code is set in register 15 and the SEN parameter list. [TABLE 3-6](#) describes the SLSXSEN DISABLE return codes.

TABLE 3-6 SLSXSEN DISABLE Return Codes

Return Code	Meaning
00	SEN DISABLE request successful.
04	SEN DISABLE request successful however the SEN facility is already disabled.
08	N/A
12	No existing LISTEN request was found using the TOKEN specified on the DISABLE request.
16	Invalid request received (not LISTEN, DELETE, DISABLE, or ENABLE).
20	An abend occurred in HSC SEN processing, request rejected.
24	N/A
28	The HSC determined that the SLSXSEN macro is being invoked by a program that does not meet the authorization requirements specified in “SEN Macro Interface Authorization Requirements and Module Attributes” on page 261.
32	HSC is not active or at the proper initialization level for SEN services.
36	N/A

ENABLE

Enable notification for a specific LISTEN request. The targeted request's listener routine is now invoked when the specified events occur.

Syntax

```
label SLSXSEN ENABLE,  
      RTOKEN=token,  
      MF=(E,parm_list)
```

Parameters

RTOKEN=

Specifies the address of a fullword token representing the request to be enabled. This token was returned from a successful LISTEN request. This parameter is required and there is no default.

MF=(E,*parm_list*)

Specifies the execute form of the macro using the specified parameter list generated by the list form. The parameter list, *parm_list*, can be specified as any RX-type address or registers 2 through 12.

SSYS=*subsystem*

Specifies the subsystem name of the HSC subsystem, when HSC is executing in MULT mode. The name must be a 4-byte field. Valid values are any RX-type address, or registers 2-12. This parameter is optional and has no default. It is ignored if the HSC subsystem is not executing in MULT mode.

Note – All other parameters are ignored if entered on the ENABLE request.

Responses

The return code is set in register 15 and the SEN parameter list. [TABLE 3-7](#) describes the SLSXSEN ENABLE return codes.

TABLE 3-7 SLSXSEN ENABLE Return Codes

Return Code	Meaning
00	SEN ENABLE request successful.
04	SEN ENABLE request successful however the SEN facility is disabled.
08	N/A
12	No existing LISTEN request was found using the TOKEN specified on the ENABLE request.
16	Invalid request received (not LISTEN, DELETE, DISABLE, or ENABLE).
20	An abend occurred in HSC SEN processing, request rejected.
24	N/A
28	The HSC determined that the SLSXSEN macro is being invoked by a program that does not meet the authorization requirements specified in “SEN Macro Interface Authorization Requirements and Module Attributes” on page 261.
32	HSC is not active or at the proper initialization level for SEN services.
36	N/A

The SEN Listener Exit Routine

To use the SEN, you must write a listener exit routine that is invoked when the requested event(s) occur. The following sections describe the requirements and implementation of this exit.

Input Registers

Registers on entry to the SEN listener routine are as follows:

- ? R1 points to the address of input parameter list (mapped by macro SWSPGMIA) or zero.
- ? R13 points to the address of register save area.
- ? R15 points to the listener routine entry point address.
- ? All other registers are undefined.

On entry, Register 1 always contains the address of the SWSPGMIA data area except during SEN event registration. When requesting an event, you must provide the address of a listener exit routine that is invoked whenever the specified event(s) occur. As part of this process, HSC invokes the listener exit routine to ensure the address provided is valid. When this validation call is made, Register 1 contains zeros, indicating validation is being performed. During validation, the listener routine can simply return control or perform any routine specific initialization. If the validation call is not successful, the SEN request fails.

Output Registers

Registers on exit from the SEN listener exit routine must be as follows:

- ? R13 points to the address of original register save area.
- ? All other registers are undefined (however R15 can be set to 4 upon return to instruct SEN to stop passing any further XML data).

Entry Environment

On entry, the SEN listener exit receives control as follows:

- ? STATE - supervisor
- ? KEY - key 0
- ? AMODE: 24 or 31 bit
- ? LOCKS - none

Listener Exit Routine Programming Considerations

During the SEN registration process each successful request is queued in FIFO order. When a SEN defined event occurs all registered listener exits are invoked serially, in the order in which registration requests were received. A potential performance degradation can occur if a listener exit performs long running units of work. This is particularly critical because each SEN event causes listener exits to be invoked multiple times.

StorageTek **strongly recommends** that you design “short running” listener exit routines. In addition, the use of facilities that can result in “wait conditions”, such as WAIT/POST, STIMER/STIMERM and file I/O, should be used with caution or avoided all together.

The SWSPGMIA Data Area

On entry to the SEN listener exit during event processing, Register 1 contains the address of a data area mapped by macro SWSPGMIA. This storage area contains pointers to the XML defined elements describing each SEN defined event. For more information on the XML structures and tags, see [“VTCS and HSC Events XML Tags” on page 61](#).

The listener exit XML interface basically consists of three types of tag definitions:

- ? Structure start tags
- ? Structure end tags
- ? Data tags and associated data

Structure start tags are passed to the listener exit, without any other data, and are used to indicate a set of logically grouped tags will follow.

Data tags (both start and end) along with the associated data are self defining XML elements.

Structure end tags are passed to the listener exit, without any other data, and are used to indicate the set of logically grouped tags has ended.

The following fields of SWSPGMIA support these XML tag structures:

PGMIRSVA

Address of complete XML element being passed.

PGMIRSVL

Length of the start tag plus, optionally, data length plus end tag length.

PGMIRSTA

Address of XML start or end tag.

PGMIRSTL

Length of the XML tag.

PGMIRSDA

Address of associated data, or zero.

PGMIRSDL

Length of associated data, or zero.

Fields PGMIRSVA, PGMIRSVL, PGMIRSTA, and PGMIRSTL always contain values.

PGMIRSVA contains the address of either a structure start tag, a structure end tag or a data start tag. If PGMIRSVA points to a structure start or end tag, PGMIRSVL contains the length of the

tag (including both the leading and trailing '<','>'). If PGMIRSVL points to a data tag, PGMIRSVL contains the length of the tag (including both the leading and trailing '<','>'), plus the length of the data, plus the length of the data end tag.

Fields PGMIRSTA and PGMIRSTL always contain values. PGMIRSTA contains the address of either a structure start tag or a structure end tag. PGMIRSTL contains the length of the tag (including both the leading and trailing '<','>'),

Fields PGMIRSDA and PGMIRSDL optionally contain values. If PGMIRSVL points to either a structure start or structure end tag, PGMIRSDA and PGMIRSDL will contain zero since there is no data associated with these tags. But if PGMIRSVL points to a data start tag, then PGMIRSDA will contain the address of the associated data, and PGMIRSDL will contain the data's length. The following sections show examples of how the listener exit routine processes XML structures and tags.

Example 1

XML tag <libvol_insert_event> is passed to the listener exit, which produces the following:

- ? PGMIRSVL points to: <libvol_insert_event>.
- ? PGMIRSVL contains: 00000015.
- ? PGMIRSTA points to: <libvol_insert_event>.
- ? PGMIRSTL contains: 00000015.

Because <libvol_insert_event> is a structure tag and has no related data:

- ? PGMIRSDA contains: 0.
- ? PGMIRSDL contains: 0.

Example 2

XML tag <hsc_version>7.0.0</hsc_version> is passed to the listener exit, which produces the following:

- ? PGMIRSVL points to: <hsc_version>.
- ? PGMIRSVL contains: 00000020.
- ? PGMIRSTA points to: <hsc_version>.
- ? PGMIRSTL contains: 0000000D.

Since <hsc_version> is a data start tag, it does have related data. As a result:

- ? PGMIRSDA points to: 7.0.0.
- ? PGMIRSDL contains: 00000005.

As described in "Listener Exit Routine Programming Considerations" on page 274, each SEN defined event causes multiple invocations of registered listener exit routines. For example, when an HSC insert volume event occurs the following XML structure is built. The listener routine will be invoked for each of the tag sets:

- <libvol_insert_event> (passed on the 1st call to listener exit)
- <header> (passed on 2nd call to the listener exit)
- <hsc_version>7.0.0</hsc_version> (passed on 3rd call to the listener exit)
- <date>2006Mar19</date> (passed on 4th call to the listener exit)
- <time>17:53:17</time> (passed on 5th call to the listener exit)

<host_name>HOSTA</host_name> (passed on 6th call to the listener exit)
</header> (passed on 7th call to listener exit)
<libvol_data> (passed on 8th call to listener exit)
<vol_status>xx</vol_status> (passed on 9th call to listener exit, xx is a 1 byte flag field documented in member SLSUX06P of the SLSMAC installation file, field UX06FLGS)
<volser>VOL001</volser> (passed on 10th call to listener exit)
<volume_location> (passed on 11th call to listener exit)
<acs>00</acs> (passed on 12th call to listener exit)
<lsm>000</lsm> (passed on 13th call to listener exit)
<panel>07</panel> (passed on 14th call to listener exit)
<row>02</row> (passed on 15th call to listener exit)
<column>10</column> (passed on 16th call to listener exit)
</volume_location> (passed on 17th call to listener exit)
<select_count>0</select_count> (passed on 18th call to listener exit)
</libvol_data> (passed on 19th call to listener exit)
</libvol_insert_event> (passed on 20th and final call to listener exit)

How to Tell SEN to Stop Calling Your Listener Routine During Event Processing

Because listener routines are invoked to process each XML tag for the event, the data required by the listener may be satisfied before the last tag for the event is passed. For example, your listener routine only requires ACS and LSM number when a cartridge is entered into an LSM. Using [“Example 2” on page 57](#), the listener routines requirements are satisfied on the 13th call. In this situation, a listener routine can set general purpose register 15 to 4 prior to returning control. This instructs SEN not to call it any more for this event. The remaining XML tags are bypassed.

Detecting Duplicate Listen Requests

When an application attempts to register a Listen request with the SEN facility, HSC first validates the request. As part of this validation, HSC insures duplicate registration requests are not accepted to prevent the same user exit routine from being called multiple times for a single event. The following list differentiates between a unique and a duplicate registration request:

- ⌚ If a new Listen request specifies an exit routine entry point address that is different than all other previously registered entry point addresses, the Listen request is accepted.
- ⌚ If a new Listen request specifies an exit routine entry point address that matches a previously registered entry point address but their respective event lists contain no common events (that is, each Listen request specified a unique event list), the Listen request is accepted.
- ⌚ If a new Listen request specifies an exit routine entry point address that matches a previously registered entry point address and their respective event lists contain all common events (that is, each Listen request specified identical event lists), the Listen request is rejected as an identical duplicate and terminates with a return code of 36.
- ⌚ If a new Listen request specifies an exit routine entry point address that matches a previously registered entry point address and their respective event lists contain some common events but not all (that is, each Listen request specified partially matching event lists), the Listen request is rejected as a duplicate with conflicting event lists and terminates with a return code of 8.

Display SEN Command

You can use the Display SEN command to display the SEN LISTEN requests and their statuses. The display can either show a specific request, using the requestor and listener names, a list of related requests using only the requestor name, or all SEN requests. The information displayed 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

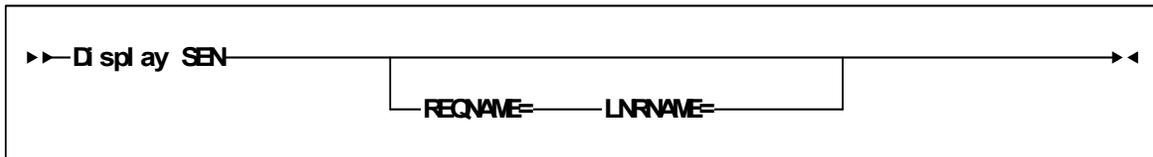


TABLE 3-8 Display SEN Syntax

Parameters

REQNAME=

Specifies the name of the requestor, which is a unique name eight byte alphanumeric field, and is used to uniquely identify a specify request for display purposes. Valid values are any RX-type address or registers 2 through 12. This parameter is optional if LNRNAME is not specified and has no default.

LNRNAME=

Specifies the name of the listener routine The name must be an eight byte alphanumeric field. Valid values are any RX-type address or registers 2 through 12. If LNRNAME is specified, REQNAME must also be specified. Otherwise, this parameter is optional and has no default.

Note – REQNAME= and LNRNAME= are optional. If you specify one, however, you must specify the other.

VTCS and HSC Events XML Tags

This section describes the XML output of the VTCS and HSC events processed by the HSC Significant Event Notification (SEN) facility as follows:

- ? Listing of the data tags.
- ? Tag definitions.
- ? Cross reference of data tags to structure or event tags.

For more information, see the following sections:

- ? [“VTCS Events XML Tags” on page 62](#)
- ? [“HSC Events XML Tags” on page 66](#)

VTCS Events XML Tags

TABLE 3-9 VTCS Events XML Tags

XML Tag	Definition	Where Used
<addresses_trapped>	From SMF11NAT in turn from NOADRTRP parm returned from Channel Interface Performance ECAM-T request. Contains the number of unit addresses trapped by a channel interface.	<chanif_data>
<async_end_tod>	Structure that contains date and time that the asynchronous event completed. Date is supplied as: <date>yyyymmdd</date> Time is supplied as: <time>hh:mm:ss.thm</time>	<vtv_mount_event>
		<vtv_dismount_event>
		<mvc_mount_event>
		<vtv_migrate_event>
		<vtv_recall_event>
		<vtv_replicate_event>
<async_start_tod>	Structure that contains date and time that the asynchronous event started. Contains <date> and <time> as in <async_end_tod>.	<vtv_mount_event>
		<vtv_dismount_event>
		<mvc_mount_event>
		<vtv_migrate_event>
		<vtv_recall_event>
		<vtv_replicate_event>
<base_cache_size>	Cache size in MB of VTSS	<vtss_performance_event>
<bytes_read_freespace_collection>	Bytes read for free space collection within a partition.	<part_data>
<bytes_xfered_read>	Bytes transferred for read	<rtd_preformance_event>
<bytes_xfered_write>	Bytes transferred for write	<rtd_preformance_event>
<chanif_data>	Structure that contains all the information for a single channel IF. Contains:	<vtss_chanif_performance_event>
	<name>	
	<installed>	

TABLE 3-9 VTCS Events XML Tags

XML Tag	Definition	Where Used
	<enabled>	
	<link_type>	
	<addresses_trapped>	
	<speed>	
	<io_count>	
	<cu_busy_count>	
<collected_free_backend_capacity>	Bytes read for free space collection with the VTSS partition.	<part_data>
<cu_busy_count>	Count of control unit busy events on a chan IF	<chanif_data>
<customer_cache_size>	Customer cache size in MB	<vtss_performance_event>
<dev_activity>	RTD activity (initial selects)	<rtd_preformance_event>
<dev_available_time>	RTD mounted time	<rtd_preformance_event>
<dev_connect_time>	RTD connected time	<rtd_preformance_event>
<dev_util_time>	RTD utilized time	<rtd_preformance_event>
<dsname>	Data set name of the VTV being mounted/dismounted	<vtv_mount_event>
		<vtv_dismount_event>
<ecam_bypassed_bufferspace_count>	Count of ECAM-T requests bypassed – no buffer space	<vtss_performance_event>
<ecam_bypassed_configbusy_count>	Count of ECAM-T requests bypassed – configuration busy	<vtss_performance_event>
<ecam_processed_count>	Count of ECAM-T requests processed	<vtss_performance_event>
<enabled>	Indicates if a channel if is enabled - contains YES/NO	<chanif_data>
<installed>	Indicates if a channel if installed - contains YES/NO	<chanif_data>
<io_count>	Number of I/Os on this channel interface since last report.	<chanif_data>
<jobname>	MVS jobname requesting the mount/dismount	<vtv_mount_event>
		<vtv_dismount_event>
<link_type>	Identifies the link type contains HOST/RTD	<chanif_data>
<mount_type>	Indicates the type of mount performed. Contains:	<vtv_mount_event>

TABLE 3-9 VTCS Events XML Tags

XML Tag	Definition	Where Used
	EXISTING-SPECIFIC	
	CREATE-SL	
	CREATE-AL	
	EXISTING-SCRATCH	
<name>	The configured name of the channel IF.	<chanif_data>
<new_mvc>	Structure that describes the target MVC on a VTV move. Contains <mvc_data>	<vtv_movement_event>
<nvs_size>	NVS Size (MB)	<vtss_performance_event>
<offline_cache_size>	Offline cache size	<vtss_performance_event>
<old_mvc>	Structure that describes the source MVC on a VTV move. Contains <mvc_data>	<vtv_movement_event>
<part_data>	Structure containing all the information from a VTSS partition. Contains:	<vtss_performance_event>
	<total_backend_capacity>	
	<total_free_backend_capacity>	
	<collected_free_backend_capacity>	
	<bytes_read_freespace_collection>	
	<standard_capacity_defined>	
< name>	Name of a VTSS partition	<part_data>
<pinned_cache_size>	Pinned Cache Size	<vtss_performance_event>
<read_buffered_log>	64-byte rbl data represented as 128 characters	<mvc_dismount_event>
<read_only>	Indicates whether or not the VTV was mounted READONLY – contains YES/NO	<vtv_mount_event>
<reason>	The reason for the VTV delete, MVC mount, VTV migrate, VTV recall or the VTV/MVC unlink.	<vtv_delete_event>
		<mvc_mount_event>
		<vtv_migrate_event>
		<vtv_recall_event>
		<vtv_unlink_from_mvc_event>

TABLE 3-9 VTCS Events XML Tags

XML Tag	Definition	Where Used
<recall_required>	Indicates whether or not a recall was required in order to mount the VTV – contains YES/NO	<vtv_mount_event>
<recall_with_error>	Indicates if the recall was performed with error – contains YES/NO	<vtv_recall_event>
<sense_data>	32-byte sense data represented as 64 characters	<mvc_mount_event>
		<mvc_dismount_event>
		<vtv_recall_event>
		<vtv_replicate_event>
<speed>	The speed of a channel IF.	<chanif_data>
<standard_capacity_defined>	Standard capacity defined for the partition	<part_data>
<stepname>	MVS stepname of the job requesting the mount/dismount of the VTV	<vtv_mount_event>
		<vtv_dismount_event>
<total_backend_capacity>	Total backend capacity for a partition	<part_data>
<total_free_backend_capacity>	Total free backend capacity for a partition.	<part_data>

HSC Events XML Tags

TABLE 3-10 HSC Events XML Tags

Head Tag	Structure/Data Tags		Definition
<header>			header structure, occurs in: <libvol_insert_event> <libvol_delete_event> <hsc_termination_event> Note: Any x22 abends resulting from the cancellation of HSC will not generate the HSC termination event. <libdrive_added_event> <libdrive_removed_event> <lsmrail_added_event> <lsmrail_removed_event>
	<hsc_version>		HSC Version
	<date>		date
	<time>		time
	<host_name>		host name
<libdrive_added_event>			dynamically added drive event
	<libdrive_data>		drive data
		<location_data>	drive location
			<acs> ACS
			<lsm> LSM
			<panel> panel

TABLE 3-10 HSC Events XML Tags

Head Tag	Structure/Data Tags			Definition
			<libdrive_number>	drive number
		<libdrive_model>		drive model (for example, 9840C)
		<libdrive_unit_address>		MVS unit address
<libdrive_removed_event>				dynamically removed drive event
	<libdrive_data>			drive data
		<location_data>		drive location
			<acs>	ACS
			<ism>	LSM
			<panel>	panel
			<libdrive_number>	drive number
		<libdrive_model>		drive model (for example, 9840C)
		<libdrive_unit_address>		MVS unit address
<ismrail_added_event>				dynamically added LSM rail event (SL8500 only)
	<ismrail_data>			LSM rail data
		<location_data>		rail location
			<acs>	ACS
			<ism>	LSM
<ismrail_removed_event>				dynamically removed LSM rail event (SL8500 only)
	<ismrail_data>			LSM rail data

TABLE 3-10 HSC Events XML Tags

Head Tag	Structure/Data Tags		Definition	
		<location_data>	rail location	
			<acs>	ACS
			<lsm>	LSM

HSC LOGREC Record Formats

This chapter provides the record formats for the HSC LOGREC records. These records are mapped by SMP/E-distributed macros.

Each record format contains the following information:

- ? decimal representation
- ? hexadecimal representation
- ? type
- ? length
- ? label information
- ? description.

Some important points to remember when referencing record formats are:

- ? Types “**Constant (CONST)**,” “**Character Constant (CHAR CONST)**,” “**BITMAP**,” and “**Length (LENGTH)**” contain values in the Decimal and Hexadecimal columns.
- ? Type “**AREA**” contains offsets in the Decimal and Hexadecimal columns. The Length is the length of an area. (An area defines an area of storage only.)
- ? Type “**STRUCTURE**” contains zeros in both the Decimal and Hexadecimal columns and the Label column contains a DSECT name. The Length is blank.
- ? With Label “**name (Rep count)**,” the Length is equal to the length of one element. The total length of the entire field is found by multiplying the Length times the Rep count.
- ? If the Label equals -RESERVED-, there is not a label for that particular field.
- ? Type “**Offset**” contains an offset in the Decimal and Hexadecimal columns and the Length is always blank.

LOGREC Mapping Macros

TABLE 4-1 Mapping Macros for LOGREC Records

Macro	Description
SLSSLHDR	LOGREC Header Layout
SLSSVLG1	LOGREC Volume/Cell Force Unselect Record
SLSSBLOG	LOGREC Initialization/Termination Record
SLSSLLG1	LOGREC LMU Driver Format 1
SLSSLLG2	LOGREC LMU Driver Format 2
SLSSLLG3	LOGREC LMU Driver Format 3
SLSSLLG4	LOGREC LMU Driver Format 4
SLSSLLG5	LOGREC Dual LMU Status Change
SLSSLLG6	LOGREC Robotics Motion & Soft Fail Counts Record
SLSSDJLR	LOGREC Database/Journaling
SLSSPSWI	LOGREC Primary/Shadow Switch Record
SLSSRL00	LOGREC Recovery Record 0
SLSSRL01	LOGREC Recovery Record 1
SLSSHLG1	LOGREC Host Communications Format 1

LOGREC Record Formats

SLSSLHDR

TABLE 4-2 SLSSLHDR Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLHDR - LOGREC RECORD HEADER MAP					
<p>FUNCTION: MAPS THE STANDARD LOGREC RECORD HEADER AS DEFINED IN THE EREP REFERENCE. IBM PROVIDES NO MAPPING MACRO. MAPS THE ACHS EXTENSIONS TO THE HEADER.</p> <p>SYMBOLICS: &TYPE - USED TO SELECT A VALID LOGREC SUBTYPE 4001 - VOL/CELL FORCE UNSELECT RECORD 5000 - INIT/TERM LOGREC RECORD 6501 - LMU DRIVER LOGREC FORMAT 1 6502 - LMU DRIVER LOGREC FORMAT 2 6503 - LMU DRIVER LOGREC FORMAT 3 6504 - LMU DRIVER LOGREC FORMAT 4 6505 - DUAL LMU STATUS CHANGE RECORD 6506 - R+ Robotic Motion & Softfail Counts 7000 - DATABASE JOURNALLING LOGREC RECORD 7001 - DATABASE PRIMARY SHADOW SWITCH LOGREC RECORD 8500 - RECOVERY ERDS RECORD 0 8501 - RECOVERY ERDS RECORD 1 9201 - HOST COMMUNICATIONS LOGREC FORMAT 1</p>					
0	(0)	STRUCTURE		SLSSLHDR	RECORD HEADER MAP
0	(0)	BITSTRING	1	OLHDKEY1	CLASS/SOURCE
		.1.. X'40'		OLHDSOFT	SOFTWARE DETECTED ERROR
1	(1)	BITSTRING	1	OLHDKEY2	SYSTEM RELEASE LEVEL
		1... X'80'		OLHDVS2	VS2 OR LATER RELEASE LEVEL
2	(2)	BITSTRING	1	OLHDSMS	RECORD INDEPENDENT SWITCHES
		.... 1... X'08'		OLHDTFLG	TIME MACRO USED
3	(3)	BITSTRING	1	OLHDSW2	RECORD DEPENDANT SWITCHES
		..1. X'20'		OLHDERF	RECORD CONTAINS AN ERROR ID
4	(4)	HEXSTRING	2	-RESERVED-	*** RESERVED
6	(6)	HEXSTRING	1	OLHDCDCT	RECORD COUNT

TABLE 4-2 SLSSLHDR Record Format

Dec	Hex	Type	Length	Label	Description
7	(7)	HEXSTRING	1	-RESERVED-	*** RESERVED
8	(8)	HEXSTRING	4	OLHDDATE	SYSTEM DATE OF ERROR
12	(C)	HEXSTRING	4	OLHDTIME	SYSTEM TIME OF ERROR
16	(10)	HEXSTRING	8	OLHDCPID	CPU ID
24	(18)	CHARACTER	8	OLHDJBID	JOB ID
MAP FIELDS FROM REAL SDWA					
32	(20)	OFFSET		OLHDERID	ERROR ID
32	(20)	HEXSTRING	400	OLHDRSDW	SDWA
32	(20)	CONST		SLSSTYPE	HSC software error subtype LOGREC data overlays SDWA area.
432	(1B0)	HEXSTRING	3	OLHDRARA	SDWARA
435	(1B3)	HEXSTRING	1	OLHRRAL	SDWAURAL (LENGTH OF VRA)
436	(1B4)	HEXSTRING	6	OLHDRVRA	VRA (ALIGN TO DOUBLE WORD+4)
442	(1BA)	HEXSTRING	152	OLHRRRC1	SDWARC1 (RECORABLE EXT 1)
594	(252)	HEXSTRING	16	OLHRRRC2	SDWARC2 (RECORABLE EXT 2)
610	(262)	HEXSTRING	32	OLHRRRC3	SDWARC3 (RECORABLE EXT 2)
642	(282)	HEXSTRING	2	OLHDRTYP	RECORD TYPE or Subtype number
642	(282)	CONST		LTPAREA	HSC SOFTWARE ERROR RECORD TYPE
163 85	(4001)	CONST		LTP4001	- VOL/CELL FORCE UNSELECT RECORD
204 80	(5000)	CONST		LTP5000	- INIT/TERM LOGREC RECORD
258 57	(6501)	CONST		LTP6501	- LMU DRIVER LOGREC FORMAT 1
258 58	(6502)	CONST		LTP6502	- LMU DRIVER LOGREC FORMAT 2
258 59	(6503)	CONST		LTP6503	- LMU DRIVER LOGREC FORMAT 3
258 60	(6504)	CONST		LTP6504	- LMU DRIVER LOGREC FORMAT 4
258 61	(6505)	CONST		LTP6505	- DUAL LMU STATUS CHANGE RECORD
258 62	(6506)	CONST		LTP6506	- R+ Robotic Motion & Softfail Counts

TABLE 4-2 SLSSLHDR Record Format

Dec	Hex	Type	Length	Label	Description
286 72	(7000)	CONST		LTYP7000	- DATABASE JOURNALING LOGREC RECORD
286 73	(7001)	CONST		LTYP7001	- DATABASE PRIMARY SHADOW SWITCH RECORD
340 48	(8500)	CONST		LTYP8500	- RECOVERY ERDS RECORD 0
340 49	(8501)	CONST		LTYP8501	- RECOVERY ERDS RECORD 1
373 77	(9201)	CONST		LTYP9201	- HOST COMMUNICATIONS LOGREC FORMAT 1
644	(284)	HEXSTRING	4	OLHDSTC	STC RECORD X'FEEDFACE'
648	(288)	HEXSTRING	4	OLHDETIM	TIMESTAMP
652	(28C)	LENGTH		OLHDL	LENGTH OF FIXED PORTION OF OLHD

Cross Reference

Name	Len	Offset Value
LTYPAREA	-	282
LTYP4001	-	4001
LTYP5000	-	5000
LTYP6501	-	6501
LTYP6502	-	6502
LTYP6503	-	6503
LTYP6504	-	6504
LTYP6505	-	6505
LTYP6506	-	6506
LTYP7000	-	7000
LTYP7001	-	7001
LTYP8500	-	8500
LTYP8501	-	8501
LTYP9201	-	9201
OLHDCDCT	000001	06
OLHDCPID	000008	10
OLHDDATE	000004	08
OLHDERF	-	20
OLHDERID	-	20
OLHDETIM	000004	288
OLHDJBID	000008	18
OLHDKEY1	000001	00
OLHDKEY2	000001	01
OLHDL	-	28C
OLHDRARA	000003	1B0
OLHRRAL	000001	1B3
OLHDRRC1	000152	1BA
OLHDRRC2	000016	252
OLHDRRC3	000032	262
OLHDRSDW	000400	20

Name	Len	Offset Value
OLHDRTYP	000002	282
OLHDRVRA	000006	1B4
OLHDSMS	000001	02
OLHDSOFT	-	40
OLHDSTC	000004	284
OLHDSW2	000001	03
OLHDFTLG	-	08
OLHDTIME	000004	0C
OLHDVS2	-	80
SLSSTYPE	-	20

SLSSVLG1

TABLE 4-3 SLSSVLG1 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSVLG1 - VOL/CELL LOGREC RECORD FORMAT 1					
FUNCTION: MAPS LOGREC RECORD CREATED WHEN A VOLUME IS FORCE UNSELECTED					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSVLG1	VOL/CELL FORCE UNSELECT RECORD
163 85	(4001)	CONST		VLG1SUBT	SUBTYPE X'4001'.
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	VLG1HDR	IDENTIFIER 'VLG1 '
4	(4)	A-ADDR	4	VLG1LEN	LENGTH OF THE VLG1
8	(8)	A-ADDR	1	VLG1SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	VLG1KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
VLG1 BODY					
12	(C)	CHARACTER	8	VLG1HOST	HOSTID REQUESTING FORCE UNSELECT
20	(14)	CHARACTER	8	VLG1JOBN	JOBNAME PERFORMING FORCE UNSELECT
28	(1C)	CHARACTER	6	VLG1VOLS	VOLSER FORCE UNSELECTED
34	(22)	CHARACTER	8	VLG1OWNR	HOSTID THAT HAD THE VOL SELECTED
42	(2A)	HEXSTRING	12	-RESERVED-	*** RESERVED
54	(36)	LENGTH		VLG1L	

Cross Reference

Name	Len	Offset Value
SLSSVLG1	000002	00
VLG1HDR	000004	00
VLG1HOST	000008	0C
VLG1JOBN	000008	14
VLG1KEY	000001	09
VLG1L	-	36
VLG1LEN	000004	04
VLG1OWNR	000008	22
VLG1SP	000001	08
VLG1SUBT	-	4001
VLG1VOLS	000006	1C

SLSSBLOG

TABLE 4-4 SLSSBLOG Record Format

Dec	Hex	Type	Length	Label	Description
SLSSBLOG - INIT/TERM LOGREC RECORD					
<p>FUNCTION: THIS MAPS THE LOGREC RECORD CREATED BY SLSBINIT WHENEVER THE SUBSYSTEM IS INITIALIZED OR TERMINATED, NORMALLY OR ABNORMALLY</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSBLOG	INIT/TERM LOGREC RECORD
204 80	(5000)	CONST		BLOGID	RECORD TYPE 5000
0	(0)	AREA	4	BLOGFLAG	FLAGS
0	(0)	BITSTRING	1	BLOGFLG0	FLAG1 BYTE
		1... X'80'		BLOGSTRT	SUBSYSTEM START RECORD
		.1.. X'40'		BLOGSHTD	SUBSYSTEM SHUTDOWN RECORD
		..1. X'20'		BLOGABND	SUBSYSTEM ABNORMAL SHUTDOWN
		...1 X'10'		BLOGCNCL	SUBSYSTEM WAS CANCELED
		.... 1... X'08'		BLOGRECO	RECONFIG STARTED
1	(1)	HEXSTRING	3	-RESERVED-	*** RESERVED
4	(4)	SIGNED-FWORD	4	-RESERVED-	*** RESERVED
8	(08)	LENGTH		BLOGL	LENGTH OF BLOG

Cross Reference

Name	Len	Offset Value
BLOGABND	-	20
BLOGCNCL	-	10
BLOGFLAG	000004	00
BLOGFLG0	000001	00
BLOGID	-	5000
BLOGL	-	08
BLOGRECO	-	08
BLOGSHTD	-	40
BLOGSTRT	-	80
SLSSBLOG	000002	00

SLSSLLG1

TABLE 4-5 SLSSLLG1 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLLG1 - LMU DRIVER LOGREC RECORD FORMAT ONE					
FUNCTION: MAPS LOGREC RECORD CREATED WHEN AN INVALID RESPONSE IS RECEIVED FROM THE LMU					
0	(0)	AREA	2	SLSSLLG1	LMU DRIVER LOGREC FORMAT ONE
258 57	(6501)	CONST		LLG1SUBT	SUBTYPE X'6501'
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	LLG1HDR	IDENTIFIER 'LLG1 '
4	(4)	A-ADDR	4	LLG1LEN	LENGTH OF THE LLG1
8	(8)	A-ADDR	1	LLG1SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	LLG1KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
LLG1 BODY					
12	(C)	HEXSTRING	1	LLG1ACS	ACSID OF REQUEST
13	(D)	HEXSTRING	2	LLG1STN	STATION RECEIVING RESPONSE
15	(F)	BITSTRING	1	LLG1ECD	ERROR CODE
		.... .1.. X'04'		LLG1INTCT	CAN'T HAVE INTERMEDIATE RESP
		.... 1... X'08'		LLG1NTNM	SEQUENCE NUMBER NOT NUMERIC
		.... 11.. X'0C'		LLG1NLRQ	NO LRQ WAS FOUND
		...1 X'10'		LLG1INVR	INVALID RESPONSE WAS FOUND
		...1 .1.. X'14'		LLG1RNTN	NON NUMERIC RESPONSE COUNT FOUND
		...1 1... X'18'		LLG1ERSP	ERROR RESPONSE RECEIVED
		...1 11.. X'1C'		LLG1DBKE	DEBLOCKING ERROR
		..1. X'20'		LLG1UNKB	UNKNOWN BROADCAST TYPE
		..1. .1.. X'24'		LLG1ACKE	ACK ERROR
		..1. 1... X'28'		LLG1INVB	INVALID BROADCAST WAS FOUND

TABLE 4-5 SLSSLLG1 Record Format

Dec	Hex	Type	Length	Label	Description
NOTE THAT ERRORS 1-99 ARE SENT TO LMU AS A BLOCK ERROR ACK					
16	(10)	BITSTRING	1	LLG1RCDE	ERROR SUBCODE (SEE LRQRSCDE)
1	(01)	CONST		LLG1NUNR	UNRECOGNIZABLE TRANSMISSION
2	(02)	CONST		LLG1NSOB	NO START OF BLOCK CHARACTER
3	(03)	CONST		LLG1NEOB	NO END OF BLOCK CHARACTER
4	(04)	CONST		LLG1NSOT	NO START OF TRANSACTION CHARACTER
5	(05)	CONST		LLG1NEOT	NO END OF TRANSACTION CHARACTER
6	(06)	CONST		LLG1NING	INTERFACE NOT GROUPED TO A HOST
7	(07)	CONST		LLG1NHNL	HOST-ID NOT IN LEGAL RANGE
8	(08)	CONST		LLG1NSHP	ILLEGAL SET HOST PATH OPTION
9	(09)	CONST		LLG1NCJI	CAN'T JOIN INT; ANOTHER HOST HAS
10	(0A)	CONST		LLG1NWHI	WRONG HOST-ID
11	(0B)	CONST		LLG1NNUM	NON-NUMERIC BLOCK HEADER
12	(0C)	CONST		LLG1SNOB	STANDBY LMU CANNOT ACCEPT B BLOCK
13	(0D)	CONST		LLG1SWAT	SWITCHOVER ALREADY ACTIVE
50	(32)	CONST		LLG1NWSN	WRONG SEQUENCE NUMBER THIS STN
51	(33)	CONST		LLG1ILGL	SLAVE LMU ACKED B BLOCK
52	(34)	CONST		LLG1ERTP	NON-NUMERIC ACK ERROR TYPE
100	(64)	CONST		LLG1BBLK	BAD BLOCK
132	(84)	CONST		LLG1ITYP	TRANSACTION TYPE IS INVALID
17	(11)	HEXSTRING	44	LLG1RQST	REQUEST
61	(3D)	HEXSTRING	32	LLG1RSPN	RESPONSE
93	(5D)	HEXSTRING	1	LLG1HDFL	R PLUS (R+) HARDFAIL INDICATOR.
94	(5E)	HEXSTRING	5	-RESERVED-	RESERVED FOR FUTURE USE

TABLE 4-5 SLSSLLG1 Record Format

Dec	Hex	Type	Length	Label	Description
99	(63)	CHARACTER	2	LLG1LMLV	LMU INTERFACE LEVEL
101	(65)	BITSTRING	1	LLG1STYP	STATION TYPE
		1... .. X'80'		LLG1STHN	STATION IS A NETWORK HOSTNAME
		.1... .. X'40'		LLG1STTC	STATION IS A NETWORK IP ADDRESS
FOR TCP/IP HOSTNAME ADDRESS:					
102	(66)	CHARACTER	24	LLG1SHNM	STATION NETWORK HOST NAME
FOR TCP/IP NETWORK ADDRESS:					
126	(7E)	HEXSTRING	4	LLG1STCP	STATION NETWORK IP ADDRESS
130	(82)	HEXSTRING	22	-RESERVED-	RESERVED FOR FUTURE USE
152	(98)	LENGTH	LLG1L		

Cross Reference

Name	Len	Offset Value
LLG1ACKE	-	24
LLG1ACS	000001	0C
LLG1BBLK	-	64
LLG1DBKE	-	1C
LLG1ECD	000001	0F
LLG1ERSP	-	18
LLG1ERTP	-	34
LLG1HDFL	000001	5D
LLG1HDR	000004	00
LLG1ILGL	-	33
LLG1INVB	-	28
LLG1INVR	-	10
LLG1ITYP	-	84
LLG1KEY	000001	09
LLG1L	-	98
LLG1LEN	000004	04
LLG1MLV	000002	63
LLG1NCJI	-	09
LLG1NEOB	-	03
LLG1NEOT	-	05
LLG1NHNL	-	07
LLG1NING	-	06
LLG1NLRQ	-	0C
LLG1NUM	-	0B
LLG1NSHP	-	08
LLG1NSOB	-	02
LLG1NSOT	-	04
LLG1NTCT	-	04
LLG1NTNM	-	08
LLG1NUNR	-	01

Name	Len	Offset Value
LLG1NWHI	-	0A
LLG1NWSN	-	32
LLG1RCDE	000001	10
LLG1RNTN	-	14
LLG1RQST	000044	11
LLG1RSPN	000032	3D
LLG1SHNM	000024	66
LLG1SNOB	-	0C
LLG1SP	000001	08
LLG1STCP	000004	7E
LLG1STHN	-	80
LLG1STN	000002	0D
LLG1STTC	-	40
LLG1STYP	000001	65
LLG1SUBT	-	6501
LLG1SWAT	-	0D
LLG1UNKB	-	20
SLSSLLG1	000002	00

SLSSLLG2

TABLE 4-6 SLSSLLG2 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLLG2 - LMU DRIVER LOGREC RECORD FORMAT TWO					
FUNCTION: MAPS LOGREC RECORD CREATED WHEN AN INVALID BLOCK IS RECEIVED FROM THE LMU					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSLLG2	LMU DRIVER LOGREC FORMAT TWO
258 58	(6502)	CONST		LLG2SUBT	SUBTYPE X'6502'
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	LLG2HDR	IDENTIFIER 'LLG2 '
4	(4)	A-ADDR	4	LLG2LEN	LENGTH OF THE LLG2
8	(8)	A-ADDR	1	LLG2SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	LLG2KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
LLG2 BODY					
12	(C)	HEXSTRING	1	LLG2ACS	ACSID OF BLOCK
13	(D)	HEXSTRING	2	LLG2STN	STATION RECEIVING BLOCK
15	(F)	BITSTRING	1	LLG2ECD	ERROR CODE
		.... .1.. X'04'		LLG2DBKE	DEBLOCKING ERROR
16	(10)	BITSTRING	1	LLG2RCDE	ERROR SUBCODE
124	(7C)	CONST		LLG2BLNN	BLOCK LENGTH IS NOT NUMERIC
136	(88)	CONST		LLG2ISEQ	INVALID SEQUENCE NUM
17	(11)	HEXSTRING	64	LLG2IBLK	INPUT BLOCK
81	(51)	HEXSTRING	64	LLG2OBLK	OUTPUT BLOCK
145	(91)	BITSTRING	1	LLG2STYP	STATION TYPE
		1... X'80'		LLG2STHN	STATION IS A NETWORK HOSTNAME

TABLE 4-6 SLSSLLG2 Record Format

Dec	Hex	Type	Length	Label	Description
		.1.. X'40'		LLG2STTC	STATION IS A NETWORK IP ADDRESS
FOR TCP/IP HOSTNAME ADDRESS:					
146	(92)	CHARACTER	24	LLG2SHNM	STATION NETWORK HOST NAME
FOR TCP/IP NETWORK ADDRESS:					
160	(AA)	HEXSTRING	4	LLG2STCP	STATION NETWORK IP ADDRESS
174	(AE)	HEXSTRING	26	-RESERVED-	RESERVED FOR FUTURE USE
200	(C8)	LENGTH		LLG2L	

Cross Reference

Name	Len	Offset Value
LLG2ACS	000001	0C
LLG2BLNN	-	7C
LLG2DBKE	-	04
LLG2ECD	000001	0F
LLG2HDR	000004	00
LLG2IBLK	000064	11
LLG2ISEQ	-	88
LLG2KEY	000001	09
LLG2L	-	C8
LLG2LEN	000004	04
LLG2OBLK	000064	51
LLG2RCDE	000001	10
LLG2SHNM	000024	92
LLG2SP	000001	08
LLG2STCP	000004	AA
LLG2STHN	-	80
LLG2STN	000002	0D
LLG2STTC	-	40
LLG2STYP	000001	91
LLG2SUBT	-	6502
SLSSLLG2	000002	00

SLSSLLG3

TABLE 4-7 SLSSLLG3 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLLG3 - LMU DRIVER LOGREC RECORD FORMAT THREE					
FUNCTION: DEFINES FORMAT OF DOOR OPEN LOGREC RECORD					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSLLG3	LMU DRIVER LOGREC FORMAT THREE
258 59	(6503)	CONST		LLG3SUBT	SUBTYPE X'6503'
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	LLG3HDR	IDENTIFIER 'LLG3 '
4	(4)	A-ADDR	4	LLG3LEN	LENGTH OF THE LLG3
8	(8)	A-ADDR	1	LLG3SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	LLG3KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
LLG3 BODY					
12	(C)	HEXSTRING	2	LLG3LSM	LSM ID
14	(0E)	LENGTH		LLG3L	

Cross Reference

Name	Len	Offset Value
LLG3HDR	000004	00
LLG3KEY	000001	09
LLG3L	-	0E
LLG3LEN	000004	04
LLG3LSM	000002	0C
LLG3SP	000001	08
LLG3SUBT	-	6503
SLSSLLG3	000002	00

SLSSLLG4

TABLE 4-8 SLSSLLG4 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLLG4 - LMU DRIVER LOGREC RECORD FORMAT FOUR FUNCTION: DEFINES FORMAT OF LMU DEGRADED RECORD SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSLLG4	LMU DRIVER LOGREC FORMAT FOUR
258 60	(6504)	CONST		LLG4SUBT	SUBTYPE X'6504'
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	LLG4HDR	IDENTIFIER 'LLG4'
4	(4)	A-ADDR	4	LLG4LEN	LENGTH OF THE LLG4
8	(8)	A-ADDR	1	LLG4SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	LLG4KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
LLG4 BODY					
12	(C)	HEXSTRING	2	LLG4DEVC	LSM ID (FF FOR LMU)
14	(E)	HEXSTRING	1	LLG4COND	1 (PWR DWN) OR 2 (DEGRD)
16	(10)	SIGNED-FWORD	4	LLG4FSC	FSC
20	(14)	LENGTH		LLG4L	

Cross Reference

Name	Len	Offset Value
LLG4COND	000001	0E
LLG4DEVC	000002	0C
LLG4FSC	000004	10
LLG4HDR	000004	00
LLG4KEY	000001	09
LLG4L	-	14
LLG4LEN	000004	04
LLG4SP	000001	08
LLG4SUBT	-	6504
SLSSLLG4	000002	00

SLSSLLG5

TABLE 4-9 SLSSLLG5 Record Format

Dec	Hex	Type	Length	Label	Description
<p>SLSSLLG5 - DUAL LMU STATUS CHANGE LOGREC RECORD</p> <p>FUNCTION: DEFINES FORMAT OF DUAL LMU STATUS CHANGE LOGREC RECORD</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSLLG5	DUAL LMU STATUS CHANGE LOGREC RECORD
258 61	(6505)	CONST		LLG5SUBT	SUBTYPE X'6505'
STANDARD SLS CONTROL BLOCK HEADER DEFINITION					
0	(0)	CHARACTER	4	LLG5HDR	IDENTIFIER 'LLG5'
4	(4)	A-ADDR	4	LLG5LEN	LENGTH OF THE LLG5
8	(8)	A-ADDR	1	LLG5SP	SUBPOOL NUMBER
9	(9)	A-ADDR	1	LLG5KEY	PROTECTION KEY
10	(A)	SIGNED-HWORD	2	-RESERVED-	*** RESERVED
LLG5 BODY					
12	(C)	HEXSTRING	1	LLG5ACS	ACS ID
13	(D)	HEXSTRING	2	LLG5STN	Station number
15	(F)	CHARACTER	1	LLG5OMST	Old Master LMU ID/Config Status
<p>0 = Dual LMU Not Configured Before A = LMU A Was Master LMU Before B = LMU B Was Master LMU Before</p>					
16	(10)	CHARACTER	1	LLG5OSLV	Old Standby LMU Status
<p>0 = Dual LMU Not Configured Before 1 = Standby LMU Was prev ready 2 = Standby LMU Was prev not ready</p>					
17	(11)	CHARACTER	1	LLG5NMST	New Master LMU ID/Config Status
<p>0 = Dual LMU Is Not Configured Now A = LMU A Is Master LMU Now B = LMU B Is Master LMU Now</p>					
18	(12)	CHARACTER	1	LLG5NSLV	New Standby LMU Status

TABLE 4-9 SLSSLLG5 Record Format

Dec	Hex	Type	Length	Label	Description
0 = Dual LMU Is Not Configured Now 1 = Standby LMU Is ready 2 = Standby LMU Is not ready					
19	(13)	BITSTRING 1... X'80' .1.. X'40'	1	LLG5STYP LLG5STHN LLG5STTC	STATION TYPE STATION IS A NETWORK HOSTNAME STATION IS A NETWORK IP ADDRESS
FOR TCP/IP HOSTNAME ADDRESS:					
20	(14)	CHARACTER	24	LLG5SHNM	STATION NETWORK HOSTNAME
FOR TCP/IP NETWORK ADDRESS:					
44	(2C)	HEXSTRING	4	LLG5STCP	STATION NETWORK IP ADDRESS
48	(30)	HEXSTRING	24	-RESERVED-	RESERVED FOR FUTURE USE
72	(48)	LENGTH		LLG5L	

Cross Reference

Name	Len	Offset Value
LLG5ACS	000001	0C
LLG5HDR	000004	00
LLG5KEY	000001	09
LLG5L	-	48
LLG5LEN	000004	04
LLG5NMST	000001	11
LLG5NSLV	000001	12
LLG5OMST	000001	0F
LLG5OSLV	000001	10
LLG5SHNM	000024	14
LLG5SP	000001	08
LLG5STCP	000004	2C
LLG5STHN	-	80
LLG5STN	000002	0D
LLG5STTC	-	40
LLG5STYP	000001	13
LLG5SUBT	-	6505
SLSSLLG5	000002	00

SLSSLLG6

TABLE 4-10 SLSSLLG6 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLLG6 - Robotic Motion & Softfail Counts LOGREC Record FUNCTION: DEFINES FORMAT OF Robotic Motion & Softfail Counts Record SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSLLG6	Robotic motion & softfail counts
258 62	(6506)	CONST		LLG6SUBT	Subtype X'6506'
Standard SLS control block header definition					
0	(0)	CHARACTER	4	LLG6HDR	Eyeball characters
4	(4)	A-ADDR	4	LLG6LEN	Length of variable part of record
8	(8)	A-ADDR	1	LLG6SP	Subpool Number
9	(9)	A-ADDR	1	LLG6KEY	Protection Key
10	(A)	SIGNED-HWORD	2	-RESERVED-	Reserved for future use
LLG6 Body					
12	(C)	HEXSTRING	1	LLG6ACS	ACS ID (binary 0-255)
13	(D)	HEXSTRING	1	-RESERVED-	Reserved
14	(E)	BITSTRING	1	LLG6FLG1	1st byte of LSM configuration flags.
		1... X'80'		LLG6L0AV	LSM 0 Configured if flag is on.
		.1.. X'40'		LLG6L1AV	LSM 1 Configured if flag is on.
		..1. X'20'		LLG6L2AV	LSM 2 Configured if flag is on.
		...1 X'10'		LLG6L3AV	LSM 3 Configured if flag is on.
		.... 1... X'08'		LLG6L4AV	LSM 4 Configured if flag is on.
		.... .1.. X'04'		LLG6L5AV	LSM 5 Configured if flag is on.
		.... ..1. X'02'		LLG6L6AV	LSM 6 Configured if flag is on.
		.... ...1 X'01'		LLG6L7AV	LSM 7 Configured if flag is on.
15	(F)	BITSTRING	1	LLG6FLG2	2nd byte of LSM configuration flags.
		1... X'80'		LLG6L8AV	LSM 8 Configured if flag is on.
		.1.. X'40'		LLG6L9AV	LSM 9 Configured if flag is on.

TABLE 4-10 SLSSLLG6 Record Format

Dec	Hex	Type	Length	Label	Description
		..1. X'20'		LLG6L10AV	LSM 10 Configured if flag is on.
		...1 X'10'		LLG6L11AV	LSM 11 Configured if flag is on.
		.... 1... X'08'		LLG6L12AV	LSM 12 Configured if flag is on.
		.... .1.. X'04'		LLG6L13AV	LSM 13 Configured if flag is on.
		.... ..1. X'02'		LLG6L14AV	LSM 14 Configured if flag is on.
		.... ....1 X'01'		LLG6L15AV	LSM 15 Configured if flag is on.
16	(10)	AREA	128	LLG6TAB	Stats table: 16 entries mapped by LLG6STAT
144	(90)	LENGTH		LLG6TBLN	Length of Stats table
144	(90)	LENGTH		LLG6L	Length of SLSSLLG6 DSECT
0	(0)	STRUCTURE		LLG6STAT	LLG6 Stats DSECT
0	(0)	SIGNED-FWORD		LLG6RM	LSM Robotic Motions Started LSM Softfails Recovered

Cross Reference

Name	Len	Offset Value
LLG6ACS	000001	0C
LLG6FLG1	000001	0E
LLG6FLG2	000001	0F
LLG6HDR	000004	00
LLG6KEY	000001	09
LLG6L	-	90
LLG6LEN	000004	04
LLG6L0AV	-	80
LLG6L0RM	000004	10
LLG6L0SF	000004	14
LLG6L1AV	-	40
LLG6L1RM	000004	18
LLG6L1SF	000004	1C
LLG6L10AV	-	20
LLG6L10RM	000004	60
LLG6L10SF	000004	64
LLG6L11AV	-	10
LLG6L11RM	000004	68
LLG6L11SF	000004	6C
LLG6L12AV	-	08
LLG6L12RM	000004	70
LLG6L12SF	000004	74
LLG6L13AV	-	04
LLG6L13RM	000004	78
LLG6L13SF	000004	7C
LLG6L14AV	-	02
LLG6L14RM	000004	80
LLG6L14SF	000004	84
LLG6L15AV	-	01
LLG6L15RM	000004	88

Name	Len	Offset Value
LLG6L15SF	000004	8C
LLG6L2AV	-	20
LLG6L2RM	000004	20
LLG6L2SF	000004	24
LLG6L3AV	-	10
LLG6L3RM	000004	28
LLG6L3SF	000004	2C
LLG6L4AV	-	08
LLG6L4RM	000004	30
LLG6L4SF	000004	34
LLG6L5AV	-	04
LLG6L5RM	000004	38
LLG6L5SF	000004	3C
LLG6L6AV	-	02
LLG6L6RM	000004	40
LLG6L6SF	000004	44
LLG6L7AV	-	01
LLG6L7RM	000004	48
LLG6L7SF	000004	4C
LLG6L8AV	-	80
LLG6L8RM	000004	50
LLG6L8SF	000004	54
LLG6L9AV	-	40
LLG6L9RM	000004	58
LLG6L9SF	000004	5C
LLG6SP	000001	08
LLG6SUBT	-	6506
SLSSLLG6	000002	00

SLSSDJLR

TABLE 4-11 SLSSDJLR Record Format

Dec	Hex	Type	Length	Label	Description
SLSSDJLR - DATABASE JOURNALING LOGREC MAP					
<p>FUNCTION: TO MAP THE VARIABLE LENGTH AREA OF THE JOURNALING ERDS LOG RECORD WHICH BEGINS AT LABEL OLHDCRD OF OLHDR LOGREC MAPPING MACRO. SPECIFYING OLHDR TYPE=7000 WILL GENERATE THIS MAP VIA AN INNER MACRO CALL WITHIN OLHDR.</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSDJLR	DATABASE JOURNALING LOGREC MAP.
286 72	(7000)	CONST		DJLRID	LOGREC SUBTYPE X'7000' IS PLACED INTO FIELD OLHDRTYP OF OLHDR LOGREC MAP. ID NUMBER MATCHES CORRESPOND- ING MESSAGES FROM WMSGTXTD MACRO.
0	(0)	BITSTRING	1	DJLRFLG1	FLAG BYTE.
		1... X'80'		DJLRIO	I/O ERROR IMMEDIATELY FOLLOWING JOURNAL SWITCH.
		.1.. X'40'		DJLRBIO	BOTH JOURNALS HAVE I/O ERRORS.
		..1. X'20'		DJLRIOFL	ONE JOURNAL HAS AN I/O ERROR, AND THE OTHER IS 100% FULL.
		...1 X'10'		DJLRNRST	NEWLY CURRENT JOURNAL ISN'T RESET.
		.... 1... X'08'		DJLR4BYT	USE 4 BYTE UNIT NAME FIELDS
1	(1)	CHARACTER	8	DJLRDDN1	INITIAL JOURNAL'S DDNAME.
9	(9)	CHARACTER	44	DJLRDSN1	INITIAL JOURNAL'S DSNAME.
53	(35)	CHARACTER	6	DJLRVOL1	INITIAL JOURNAL'S VOLUME SERIAL.
59	(3B)	CHARACTER	3	DJLRUNT1	INITIAL JOURNAL'S UNIT NAME.
62	(3E)	CHARACTER	8	DJLRDDN2	ALTERNATE JOURNAL'S DDNAME.
70	(46)	CHARACTER	44	DJLRDSN2	ALTERNATE JOURNAL'S DSNAME.

TABLE 4-11 SLSSDJLR Record Format

Dec	Hex	Type	Length	Label	Description
114	(72)	CHARACTER	6	DJLRVOL2	ALTERNATE JOURNAL'S VOLUME SERIAL.
120	(78)	CHARACTER	3	DJLRUNT2	ALTERNATE JOURNAL'S UNIT NAME.
120	(78)	CHARACTER	4	DJLRUN42	ALTERNATE JOURNAL'S UNIT NAME
124	(7C)	CHARACTER	4	DJLRUN41	INITIAL JOURNAL'S UNIT NAME
128	(80)	AREA	8	-RESERVED-	FORCE THE LENGTH OF DJLR TO A
128	(80)	LENGTH		DJLRL	DOUBLE-WORD MULTIPLE FOR GETMAIN.

Cross Reference

Name	Len	Offset Value
DJLRBIO	-	40
DJLRDDN1	000008	01
DJLRDDN2	000008	3E
DJLRDSN1	000044	09
DJLRDSN2	000044	46
DJLRFLG1	000001	00
DJLRID	-	7000
DJLRIO	-	80
DJLRIOFL	-	20
DJLRL	-	80
DJLRNRST	-	10
DJLRUNT1	000003	3B
DJLRUNT2	000003	78
DJLRUN41	000004	7C
DJLRUN42	000004	78
DJLRVOL1	000006	35
DJLRVOL2	000006	72
DJLR4BYT	-	08
SLSSDJLR	000002	00

SLSSPSWI

TABLE 4-12 SLSSPSWI Record Format

Dec	Hex	Type	Length	Label	Description
SLSSPSWI - PRIMARY/SHADOW SWITCH LOGREC RECORD					
<p>FUNCTION: THIS MAPS THE LOGREC RECORD CREATED BY SLSDRDSR WHENEVER THE SUBSYSTEM SWITCHES THE DATABASE FROM PRIMARY TO SHADOWING MODE</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSPSWI	
286 73	(7001)	CONST		PSWITID	RECORD TYPE 7001
0	(0)	AREA	4	PSWITFLG	FLAGS
0	(0)	HEXSTRING	1	PSWPRFLG	PRIMARY FLAG BYTE
1	(1)	HEXSTRING	1	PSWSCFLG	SECONDARY FLAG BYTE
2	(2)	HEXSTRING	2	-RESERVED-	*** RESERVED
4	(4)	SIGNED-FWORD	4	PSWITERR	ERROR CAUSING SWITCH TO SHADOW
8	(8)	SIGNED-FWORD	4	PSWPRDCB	DCB OF PRIMARY DATABASE
12	(C)	SIGNED-FWORD	4	PSWPRUCB	UCB OF PRIMARY DATABASE
16	(10)	CHARACTER	6	PSWPRVOL	VOLUME SERIAL OF PRIMARY DB
22	(16)	CHARACTER	44	PSWPRQNM	QNAME OF PRIMARY DATABASE
68	(44)	SIGNED-FWORD	4	PSWSCDCB	DCB OF SECONDARY DATABASE
72	(48)	SIGNED-FWORD	4	PSWSCUCB	UCB OF SECONDARY DATABASE
76	(4C)	CHARACTER	6	PSWSCVOL	VOLUME SERIAL OF SECONDARY DB
82	(52)	CHARACTER	44	PSWSCQNM	QNAME OF SECONDARY DATABASE
128	(80)	SIGNED-FWORD	4	-RESERVED-	*** RESERVED
132	(84)	LENGTH		PSWITL	LENGTH OF PSWIT

Cross Reference

Name	Len	Offset Value
PSWITERR	000004	04
PSWITFLG	000004	00
PSWITID	-	7001
PSWITL	-	84
PSWPRDCB	000004	08
PSWPRFLG	000001	00
PSWPRQNM	000044	16
PSWPRUCB	000004	0C
PSWPRVOL	000006	10
PSWSCDCB	000004	44
PSWSCFLG	000001	01
PSWSCQNM	000044	52
PSWSCUCB	000004	48
PSWSCVOL	000006	4C
SLSSPSWI	000002	00

SLSSRL00

TABLE 4-13 SLSSRL00 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSRL00 - RECOVERY ERDS RECORD 00 FUNCTION: THIS MAPS THE LOGREC RECORD CREATED BY SLSRAURE. IT CONTAINS THE LSM ID OF AN LSM REQUIRING AUDIT SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSRL00	RECOVERY ERDS RECORD 0
340 48	(8500)	CONST		RL00ID	EVENT = 8500
0	(0)	A-ADDR	2	RL00DEF	
2	(2)	CHARACTER	2	RL00LSMI	LSM REQUIRING AUDIT
8	(8)	LONG-FLOAT	8	-RESERVED-	*** RESERVED
16	(10)	LENGTH		RL00L	LENGTH OF RL00

Cross Reference

Name	Len	Offset Value
RL00DEF	000002	00
RL00ID	-	8500
RL00L	-	10
RL00LSMI	000002	02
SLSSRL00	000002	00

SLSSRL01

TABLE 4-14 SLSSRL01 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSRL01 - RECOVERY ERDS RECORD 01					
FUNCTION: THIS MAPS THE LOGREC RECORD CREATED BY SLSRHRVC. IT CONTAINS THE HOST ID OF A HOST BEING RECOVERED.					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSRL01	RECOVERY ERDS RECORD 1
340 49	(8501)	CONST		RL01ID	EVENT = 8501
0	(0)	A-ADDR	2	RL01DEF	
2	(2)	CHARACTER	1	RL01TAGF	CROSS OR SAME HOST RECOVERY
3	(3)	CHARACTER	8	RL01HOST	HOST ID BEING RECOVERED
16	(10)	LONG-FLOAT	8	-RESERVED-	*** RESERVED
24	(18)	LENGTH		RL01L	LENGTH OF RL01

Cross Reference

Name	Len	Offset Value
RL01DEF	000002	00
RL01HOST	000008	03
RL01ID	-	8501
RL01L	-	18
RL01TAGF	000001	02
SLSSRL01	000002	00

SLSSHLG1

TABLE 4-15 SLSSHLG1 Record Format

Dec	Hex	Type	Length	Label	Description
SLSSHLG1 - Host Communications LOGREC format 1					
FUNCTION: Defines the LOGREC record formatted for method switches.					
0	(0)	STRUCTURE		SLSSHLG1	Communications LOGREC format 1
37377	(9201)	CONST		HLG1SUBT	Subtype X'9201'
Standard SLS Control Block Header					
0	(0)	A-ADDR	4	HLG1HDR	Identifier
'HLG1'	(C8D3C7F1)	CHAR CONST		HLG1ID	Identifier 'HLG1'
4	(4)	A-ADDR	4	HLG1LEN	Length of control block
8	(8)	A-ADDR	1	HLG1SP	Subpool number
9	(9)	A-ADDR	1	HLG1KEY	Protection key
10	(A)	SIGNED-HWORD	2	-RESERVED-	Reserved for future use
HLG1 body					
12	(C)	SIGNED-FWORD	4	HLG1RC	Return code causing method switch
16	(10)	CHARACTER	8	HLG1LCLH	Hostid of local (executing) host
24	(18)	CHARACTER	8	HLG1SWTH	Hostid of host being switched
32	(20)	CHARACTER	8	HLG1INTH	Hostid of host initiating the switch
40	(28)	A-ADDR	4	HLG1PMTH	Previous communications method
40	(28)	A-ADDR	4	HLG1PLP	Previous LMUPATH (if specified)
40	(28)	A-ADDR	4	HLG1NMTH	New communications method
40	(28)	A-ADDR	4	HLG1NLP	New LMUPATH (if specified)
40	(28)	SIGNED-FWORD	4	-RESERVED-(4)	Reserved
Host Communications Services LOGREC flags					
56	(38)	A-ADDR	1	HLG1FLG1	Flag byte 1
		1... X'80'		HLG1ICMD	Initiated by operator command

TABLE 4-15 SLSSHLG1 Record Format

Dec	Hex	Type	Length	Label	Description
		.1. X'40'		HLG1IOTH	Initiated by other host (via message)
		..1. X'20'		HLG1IWRT	Initiated by WRITE function error
		...1 X'10'		HLG1IICN	Initiated by internal condition (meaning internal to HSC processing, for example, operator switched method for local host so method is switched for all other possible hosts)
57	(39)	A-ADDR	1	HLG1FLG2	Flag byte 2
58	(3A)	A-ADDR	2	-RESERVED-	Reserved
This is the header information of the module creating the LOGREC rec					
60	(3C)	CHARACTER	1	HLG1SLSI	SLSID information area
60	(3C)	A-ADDR	2	-RESERVED-	Reserved
64	(40)	SIGNED-FWORD	4	-RESERVED-(16)	reserved space
128	(80)	LENGTH		HLG1L	Size of the SLSSHLG1 record

Cross Reference

Name	Len	Offset Value
HLG1FLG1	000001	38
HLG1FLG2	000001	39
HLG1HDR	000004	00
HLG1ICMD	-	80
HLG1ID	-	'CVAL'
HLG1ICN	-	10
HLG1INTH	000008	20
HLG1IOTH	-	40
HLG1IWRT	-	20
HLG1KEY	000001	09
HLG1L	-	80
HLG1LCLH	000008	10
HLG1LEN	000004	04
HLG1NLP	000004	28
HLG1NMTH	000004	28
HLG1PLP	000004	28
HLG1PMTH	000004	28
HLG1RC	000004	0C
HLG1SLSI	000001	3C
HLG1SP	000001	08
HLG1SUBT	-	9201
HLG1SWTH	000008	18

SMF Record Formats

Each record format contains the following information:

- ? decimal representation
- ? hexadecimal representation
- ? type
- ? length
- ? label information
- ? description.

Some important points to remember when referencing record formats are:

- ? Types “**Constant (CONST)**,” “**Character Constant (CHAR CONST)**,” “**BITMAP**,” and “**Length (LENGTH)**” contain values in the Decimal and Hexadecimal columns.
- ? Type “**AREA**” contains offsets in the Decimal and Hexadecimal columns. The Length is the length of an area. (An area defines an area of storage only.)
- ? Type “**STRUCTURE**” contains zeros in both the Decimal and Hexadecimal columns and the Label column contains a DSECT name. The Length is blank.
- ? With Label “**name (Rep count)**,” the Length is equal to the length of one element. The total length of the entire field is found by multiplying the Length times the Rep count.
- ? If the Label equals -RESERVED-, there is not a label for that particular field.
- ? Type “**Offset**” contains an offset in the Decimal and Hexadecimal columns and the Length is always blank.

Note – In the record descriptions in this chapter, all generated timestamps, regardless of whether they are ttime or TOD values, are based on GMT time, not local time.

SMF Mapping Macros

TABLE 5-1 Mapping Macros for SMF Records

Macro	Description
SLSDVAR	Volume Attribute Record Data Length (within other SMF records)
SLSSFHDR	SMF Record Header Information
SLSSBLOS	SMF LSM Operations Statistics
SLSSCAPJ	SMF CAP Eject Record
SLSSCAPN	SMF CAP Enter Record
SLSSVSTA	SMF Vary Station Record
SLSSMLSM	SMF Modify LSM Record
SLSSLB	SMF LMU ATHS Statistics Buffer
SLSSMF07	SMF Move Detail Record
SLSSMF08	SMF View Detail Record

SMF Record Formats

SLSDVAR

TABLE 5-2 SLSDVAR Record Format

Dec	Hex	Type	Length	Label	Description
SLSDVAR - Distributed Volume Attribute Record Length					
FUNCTION: Pass the HSC Volume Attribute Record Length(VARL) for other Distributed HSC Macros to use as needed.					
0	(0)	HEXSTRING	40	SLSDVAR	Volume Attribute Record
40	(28)	LENGTH		VARL	Length of SLSDVAR(VAR)

Cross Reference

Name	Len	Offset Value
SLSDVAR	000040	00
VARL	-	28

SLSSFHDR

TABLE 5-3 SLSSFHDR Record Format

Dec	Hex	Type	Length	Label	Description
<p>SLSSFHDR - SMF RECORD HEADER MAP</p> <p>FUNCTION: MAPS THE STANDARD SMF RECORD HEADER AS DEFINED IN THE IBM SMF REFERENCE. IBM PROVIDES NO MAPPING MACRO. MAPS THE ACHS EXTENSIONS TO THE HEADER.</p> <p>SYMBOLICS: &TYPE - USED TO SELECT A VALID SMF RECORD TYPE</p> <p>1 - BLOS STATISTICS 2 - VARY STATION COMMAND 3 - MODIFY LSM COMMAND 4 - LMU READ STATISTICS 5 - CARTRIDGE EJECT 6 - CARTRIDGE ENTER 7 - MOVE DETAIL 8 - VIEW STATISTICS</p> <p>-----</p> <p>THE FOLLOWING VTCS SUBTYPES DO NOT SUPPORT DSECT GENERATION BY THIS SLSSFHDR.MACRO.</p> <p>-----</p> <p>10 - (VTCS) SUBSYSTEM PERFORMANCE REQUEST 11 - (VTCS) CHANNEL INTERFACE PERFORMANCE REQUEST 13 - (VTCS) VTV MOUNT REQUEST 14 - (VTCS) VTV DISMOUNT REQUEST 15 - (VTCS) VTV DELETE REQUEST 16 - (VTCS) RTD MOUNT REQUEST 17 - (VTCS) RTD DISMOUNT REQUEST 18 - (VTCS) VTV TO MVC REQUEST 19 - (VTCS) RECALL VTV FROM MVC REQUEST 20 - (VTCS) RTD PERFORMANCE REQUEST 21 - (VTCS) RTD VARY REQUEST 25 - (VTCS) MVC USAGE RECORDING 26 - (VTCS) VTV MOVEMENT 27 - (VTCS) VTV SCRATCH EVENT 28 - (VTCS) REPLICATE VTV TO CLUSTERED VTSS REQUEST</p>					
0	(0)	STRUCTURE		SLSSFHDR	RECORD HEADER
0	(0)	SIGNED-HWORD	2	OSHDRECL	RECORD LENGTH
2	(2)	SIGNED-HWORD	2	OSHDDESC	SEGMENT DESCRIPTOR
4	(4)	BITSTRING	1	OSHDFLAG	SYSTEM INDICATOR FLAGS
		.1.. X'40'		OSHDSTV	Subtypes are valid
5	(5)	HEXSTRING	1	OSHDRCTY	SMF RECORD TYPE
6	(6)	HEXSTRING	4	OSHDTIME	TIME RECORD WAS WRITTEN. BINARY HUNDREDTHS OF SECONDS.
10	(A)	HEXSTRING	4	OSHDDATE	DATE RECORD WAS WRITTEN. FORMAT: X'0CYDDDF'. THE DATE/TIME FIELDS ARE SET BY SLSSWSMF MODULE.
14	(E)	CHARACTER	4	OSHDSID	SYSTEM ID

TABLE 5-3 SLSSFHDR Record Format

Dec	Hex	Type	Length	Label	Description
18	(12)	CHARACTER	4	OSHDSSID	SUBSYSTEM ID
22	(16)	SIGNED-HWORD	2	OSHDRSTY	RECORD SUBTYPE. If adding new record subtype(s), change field OSHDMAXS and add an entry in the HSSUBS table of SLUPERF. Then reassemble modules SLSOOSMF, SLSOWSMF, and SLUPERF.
1	(01)	CONST		OSHDBLOS	BLOS STATISTICS SUBTYPE
2	(02)	CONST		OSHDVSTA	VARY STATION COMMAND SUBTYPE
3	(03)	CONST		OSHDMLSM	MODIFY LSM COMMAND SUBTYPE
4	(04)	CONST		OSHDLRST	LMU READ STATISTICS SUBTYPE
5	(05)	CONST		OSHD EJCT	CARTRIDGE EJECT SUBTYPE
6	(06)	CONST		OSHDENTR	CARTRIDGE ENTER SUBTYPE
7	(07)	CONST		OSHDRC07	MOVE DETAIL SUBTYPE
8	(08)	CONST		OSHDVIEW	VIEW STATISTICS
9	(09)	CONST		OSHDLS09	(VTCS) Subsystem Configuration Change
SLSSFHDR.mac will NOT generate DSECTS for the following VTCS SMF SUBTYPEs.					
10	(0A)	CONST		OSHDVT10	(VTCS) Subsystem Performance Request
11	(0B)	CONST		OSHDVT11	(VTCS) Channel Interface Performance Rqst
12	(0C)	CONST		OSHDVT12	(VTCS) State Save
13	(0D)	CONST		OSHDVT13	(VTCS) VTV MOUNT Request
14	(0E)	CONST		OSHDVT14	(VTCS) VTV DISMOUNT Request
15	(0F)	CONST		OSHDVT15	(VTCS) VTV DELETE Request
16	(10)	CONST		OSHDVT16	(VTCS) RTD MOUNT Request
17	(11)	CONST		OSHDVT17	(VTCS) RTD DISMOUNT Request
18	(12)	CONST		OSHDVT18	(VTCS) VTV to MVC Request
19	(13)	CONST		OSHDVT19	(VTCS) RECALL VTV from MVC Request
20	(14)	CONST		OSHDVT20	(VTCS) RTD PERFORMANCE Request
21	(15)	CONST		OSHDVT21	(VTCS) RTD VARY Request
22	(16)	CONST		OSHDVT22	(VTCS) HOST Initiated MIM Event
23	(17)	CONST		OSHDVT23	(VTCS) CHANGE of SCRATCH DELETION Policy
24	(18)	CONST		OSHDVT24	(VTCS) MVC Media DISCONTINUED USAGE Event
25	(19)	CONST		OSHDVT25	(VTCS) MVC USAGE Recording
26	(1A)	CONST		OSHDVT26	(VTCS) VTV MOVEMENT

TABLE 5-3 SLSSFHDR Record Format

Dec	Hex	Type	Length	Label	Description
27	(1B)	CONST		OSHDVT27	(VTCS) VTV SCRATCH Event
28	(1C)	CONST		OSHDVT28	(VTCS) REPLICATE VTV->CLUSTERED VTSS Rqst
29	(1D)	CONST		OSHDVT29	(VTCS) VTV/MVC unlink request
30	(1E)	CONST		OSHDVT30	(VTCS) VARY CLINK
31	(1F)	CONST		OSHDVT31	(VTCS) HSC/NCO reconfig request
28	(1F)	CONST		OSHDMAXS	MAXIMUM RECORD SUBTYPE VALUE
24	(18)	LENGTH		OSHDL	LENGTH OF FIXED PORTION OF OSHDR
24	(18)	OFFSET		SLSSTYPE	DEFINE EACH SMF SUBTYPE

Cross Reference

Name	Len	Offset Value
OSHDBLOS	-	01
OSHDDATE	000004	0A
OSHDDESC	000002	02
OSHDEJCT	-	05
OSHDENTR	-	06
OSHDFLAG	000001	04
OSHDL	-	18
OSHDLRST	-	04
OSHDMAXS	-	1C
OSHDMLSM	-	03
OSHDRCTY	000001	05
OSHDRC07	-	07
OSHDRECL	000002	00
OSHDRSTY	000002	16
OSHDSID	000004	0E
OSHDSSID	000004	12
OSHDSTV	-	40
OSHDTIME	000004	06
OSHDVIEW	-	08
OSHDVSTA	-	02
OSHDVT09	-	09
OSHDVT10	-	0A
OSHDVT11	-	0B
OSHDVT12	-	0C
OSHDVT13	-	0D
OSHDVT14	-	0E
OSHDVT15	-	0F
OSHDVT16	-	10
OSHDVT17	-	11
OSHDVT18	-	12
OSHDVT19	-	13

Name	Len	Offset Value
OSHDVT20	-	14
OSHDVT21	-	15
OSHDVT22	-	16
OSHDVT23	-	17
OSHDVT24	-	18
OSHDVT25	-	19
OSHDVT26	-	1A
OSHDVT27	-	1B
OSHDVT28	-	1C
SLSSTYPE	-	18

SLSSBLOS

TABLE 5-4 SLSSBLOS Record Format

Dec	Hex	Type	Length	Label	Description
<p>SLSSBLOS - LSM OPERATIONS STATISTICS</p> <p>FUNCTION: CONTAINS PERFORMANCE STATISTICS FOR THE LSM. THE SAME STRUCTURE IS USED TO CREATE THE SMF PERFORMANCE RECORD, HOWEVER THE CONTROL BLOCK HEADER IS ELIMINATED, AND ONLY THE FIXED AND MULTIPLE SECTIONS GENERATED. THE FIXED SECTION OF THE RECORD IS OSHDL OFF THE BEGINNING OF THE SMF RECORD. THE MULTIPLE SECTION IS BLOSLSSL OFF THE FIXED SECTION, AND THE FIELD BLOSKNT IN THE SMF RECORD DEFINES THE NUMBER OF MULTIPLE SECTIONS TO FOLLOW</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSBLOS	LSM OPERATIONS STATISTICS DATA AREA
START OF SMF FIXED PORTION					
0	(0)	SIGNED-HWORD	2	BLOSKNT	COUNT OF BLOS DATA AREAS TO FOLLOW
ZERO IN "IN MEMORY" VERSION.					
2	(02)	LENGTH		BLOSLSSL	LENGTH OF FIXED SMF PORTION.
START OF SMF MULTIPLE SECTION.					
2	(2)	A-ADDR	1	BLOSTYP0	TYPE OF STATISTIC FLAGS
		1... X'80'		BLOSMSS	MOUNT SCRATCH
		.1... X'40'		BLOSMNS	MOUNT NON-SCRATCH
		..1... X'20'		BLOSDSS	DISMOUNT SCRATCH
		...1... X'10'		BLOSDNS	DISMOUNT NON-SCRATCH
		.... 1... X'08'		BLOSSWS	SWAP
		.... .1.. X'04'		BLOSMOV	MOVE
		.... ..1. X'02'		BLOSNTNTR	ENTER
		.... ...1 X'01'		BLOSEJT	EJECT
3	(3)	A-ADDR	1	-RESERVED-	*** RESERVED
4	(4)	SIGNED-FWORD	4	BLOSSOPC	SAME LSM OPERATION COUNT
8	(8)	SIGNED-FWORD	4	BLOSTIM	SAME LSM ELAPSED TIME. BINARY INTEGER COUNT, IN MILLISECONDS - THOUSANDTHS OF SECONDS.
12	(C)	SIGNED-FWORD	4	BLOSDOPC	DIFFERENT LSM OPERATION COUNT
16	(10)	SIGNED-FWORD	4	BLOSDTIM	DIFFERENT LSM ELAPSED TIME

TABLE 5-4 SLSSBLOS Record Format

Dec	Hex	Type	Length	Label	Description
20	(14)	SIGNED-FWORD	4	BLOSPTRU	PASSTHRU COUNT
22	(16)	LENGTH		BLOSVL	LENGTH OF DATA SECTION
20	(14)	LENGTH		BLOSVL1	LENGTH OF COUNTER SECTION
24	(18)	LENGTH		BLOSL	BLOS LENGTH

Cross Reference

Name	Len	Offset Value
BLOSDNS	-	10
BLOSDOPC	000004	0C
BLOSDSS	-	20
BLOSDTIM	000004	10
BLOSEJT	-	01
BLOSKNT	000002	00
BLOSL	-	18
BLOSLSSL	-	02
BLOSMNS	-	40
BLOSMOV	-	04
BLOSMSS	-	80
BLOSNTR	-	02
BLOSPTRU	000004	14
BLOSSOPC	000004	04
BLOSSTIM	000004	08
BLOSSWS	-	08
BLOSTYP0	000001	02
BLOSVL	-	16
BLOSVL1	-	14
SLSSBLOS	000002	00

SLSSCAPJ

TABLE 5-5 SLSSCAPJ Record Format

Dec	Hex	Type	Len	Label	Description
SLSSCAPJ - CAP EJECT SMF RECORD					
FUNCTION: USED TO HOLD INFORMATION PASSED TO THE ALS SMF WRITER SERVICE ROUTINE FOR THE CARTRIDGE EJECT EVENT.					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA YES - PRODUCE A DSECT LISTING NO - NO DSECT					
6	(6)	AREA	2	SLSSCAPJ	CAP EJECT SMF RECORD SUBTYPE
6	(6)	HEXSTRING	6	CJSMFDES	DESTINATION CAP LOCATION
12	(C)	HEXSTRING	40	CJSMFVAR	VOL ATTRIBUTE RECORD FOR CARTRIDGE
46	(2E)	LENGTH		CJSMFL	LENGTH OF EJECT RECORD

Cross Reference

Name	Len	Offset Value
CJSMFDES	000006	06
CJSMFL	-	2E
CJSMFVAR	000040	0C
SLSSCAPJ	000002	06

SLSSCAPN

TABLE 5-6 SLSSCAPN Record Format

Dec	Hex	Type	Length	Label	Description
SLSSCAPN - CAP ENTER SMF RECORD					
FUNCTION: USED TO HOLD INFORMATION PASSED TO THE ALS SMF WRITER SERVICE ROUTINE FOR THE CARTRIDGE ENTER EVENT.					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
6	(6)	AREA	2	SLSSCAPN	CAP ENTER SMF RECORD SUBTYPE
6	(6)	HEXSTRING	6	CNSMFSRC	SOURCE CAP LOCATION
12	(C)	HEXSTRING	40	CNSMFVAR	VOL ATTRIBUTE RECORD FOR CARTRIDGE
46	(2E)	LENGTH		CNSMFL	LENGTH OF EJECT RECORD

Cross Reference

Name	Len	Offset Value
CNSMFL	-	2E
CNSMFSRC	000006	06
CNSMFVAR	000040	0C
SLSSCAPN	000002	06

SLSSVSTA

TABLE 5-7 SLSSVSTA Record Format

Dec	Hex	Type	Length	Label	Description
SLSSVSTA - VARY STATION SMF RECORD SUBTYPE MAP					
FUNCTION: CONTAINS A RECORD OF SUCCESSFUL SUBSYSTEM VARY COMMANDS.					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSVSTA	VARY STATION SMF RECORD SUBTYPE
0	(0)	SIGNED-FWORD	4	SVSTFLAG	FLAGS
0	(0)	A-ADDR	1	SVSTFLG0	TYPE OF STATISTIC FLAGS
		1... X'80'		SVSTVON	VARY ON
		.1.. X'40'		SVSTVOF	VARY OFF
		..1. X'20'		SVSTFOR	VARY FORCE
		...1 X'10'		SVSTACS	SET ACS MODE
		.... 1... X'08'		SVSTSTBY	STATION ON STANDBY
		.... .1.. X'04'		SVSTVACS	ACS VARY REQUESTED
1	(1)	A-ADDR	3	-RESERVED-	*** RESERVED
FOR STATION VARY:					
4	(4)	HEXSTRING	2	SVSTATID	STATION ID
6	(6)	HEXSTRING	2	SVSTUNID	MVS UNIT NUMBER
FOR ACS VARY:					
4	(4)	HEXSTRING	1	SVSTACID	ACS ID
5	(5)	A-ADDR	3	-RESERVED-	*** UNUSED FOR VARY ACS
8	(08)	LENGTH		SVSTL	LENGTH OF DATA SECTION

Cross Reference

Name	Len	Offset Value
SLSSVSTA	000002	00
SVSTACID	000001	04
SVSTACS	-	10
SVSTATID	000002	04
SVSTFLAG	000004	00
SVSTFLG0	000001	00
SVSTFOR	-	20
SVSTL	-	08
SVSTSTBY	-	08
SVSTUNID	000002	06
SVSTVACS	-	04
SVSTVOF	-	40
SVSTVON	-	80

SLSSMLSM

TABLE 5-8 SLSSMLSM Record Format

Dec	Hex	Type	Length	Label	Description
SLSSMLSM - MODIFY LSM SMF RECORD SUBTYPE MAP					
FUNCTION: CONTAINS A RECORD OF SUCCESSFUL SUBSYSTEM MODIFY COMMANDS.					
SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT					
0	(0)	AREA	2	SLSSMLSM	MODIFY LSM SMF RECORD SUBTYPE
0	(0)	SIGNED-FWORD	4	SMLSFLAG	FLAGS
0	(0)	A-ADDR	1	SMLSFLG0	TYPE OF STATISTIC FLAGS
		.1... X'80'		SMLSVON	MODIFY ON
		.1... X'40'		SMLSVOF	MODIFY OFF
		.1... X'20'		SMLSFOR	MODIFY FORCE
1	(1)	A-ADDR	3	-RESERVED-	RESERVED
4	(4)	HEXSTRING	2	SMLSATID	LSM ID
6	(06)	LENGTH		SMLSL	LENGTH OF DATA SECTION

Cross Reference

Name	Len	Offset Value
SLSSMLSM	000002	00
SMLSATID	000002	04
SMLSFLAG	000004	00
SMLSFLG0	000001	00
SMLSFOR	-	20
SMLSL	-	06
SMLSVOF	-	40
SMLSVON	-	80

SLSSLSB

TABLE 5-9 SLSSLSB Record Format

Dec	Hex	Type	Length	Label	Description
SLSSLSB - LMU STATISTICS BUFFER DATA BLOCK					
<p>FUNCTION: THE CALLER OF THE SLSLRSTA FUNCTION SUPPLIES THE ADDRESS OF A DATA BUFFER TO BE FILLED IN WITH THE RESPONSE DATA FROM AN LMU READ STATISTICS REQUEST. THE DATA AREA CONTAINS 16 ENTRIES, ONE FOR EACH LSM CONFIGURED TO THE LMU. INFORMATION SUPPLIED ABOUT EACH LSM INCLUDES:</p> <p>1) LSM ARM UTILIZATION PERCENTAGE. 2) LSM NUMBER MASTER PASSTHRU PORT ONE IS CONNECTED TO. 3) LSM NUMBER MASTER PASSTHRU PORT TWO IS CONNECTED TO.</p> <p>SYMBOLICS: &DSECT - DSECT OR CONTINUATION OF DATA AREA. YES - PRODUCE A DSECT LISTING NO - NO DSECT</p>					
0	(0)	AREA	2	SLSSLSB	LMU ATHS STATISTICS BUFFER
0	(0)	HEXSTRING	2	LSBMON	MONTH
2	(2)	HEXSTRING	2	LSBDAY	DAY
4	(4)	HEXSTRING	2	LSBHR	HOUR
6	(6)	HEXSTRING	2	LSBMIN	MINUTE
8	(8)	HEXSTRING	2	LSBSEC	SECOND
10	(A)	HEXSTRING	1	LSBACS	ACS ID RANGE IS X'00' TO X'FF'
11	(B)	FWORD	3	-RESERVED-	***RESERVED
14	(E)	HWORD	2	-RESERVED-	BOUNDARY ALIGNMENT
16	(10)	FWORD	4	-RESERVED-	*** RESERVED
20	(14)	LENGTH	99	LSBCONTB	NEW FORMAT LSMs 0-99 CONFIGURATION F0 (0) = FUTURE LSM F1 (1) = A CONFIGURED LSM F2 (2) = AN UN-CONFIGURED LSM
119	(77)	HEXSTRING	32	LSBLSBE	ONE FOR EACH LSM FOR 99 LSMS
99	(63)	CONST		LMULSMS	Max number of LSMs (zero based)
3287	(CD7)	LENGTH		LSBL	SIZE OF LSB
DSECT DESCRIBING EACH LSM STATISTICS BUFFER					
0	(0)	STRUCTURE		SLSSLSBE	LSM STATISTICS BUFFER.
0	(0)	SIGNED-FWORD	4	LSBEARMU	ARM UTILIZATION PERCENTAGE.
4	(4)	SIGNED-FWORD	4	LSBECNT1	PASSTHRU PORT 1 USAGE COUNT.

TABLE 5-9 SLSSLSB Record Format

Dec	Hex	Type	Length	Label	Description
8	(8)	SIGNED-FWORD	4	LSBECNT2	PASSTHRU PORT 2 USAGE COUNT.
12	(C)	HEXSTRING	6	LSBECON1	PASSTHRU PORT 1 CONNECTIVITY.
18	(12)	HEXSTRING	6	LSBECON2	PASSTHRU PORT 2 CONNECTIVITY.
LSBECON1 AND LSBECON2 HAVE THE FOLLOWING MAPPING: BYTE 0 - RESERVED BYTE 1 - ACSID BYTE 2 - SLAVE LSMID BYTE 3 - RESERVED BYTE 4 - RESERVED BYTE 5 - RESERVED					
24	(18)	2-FWORDS	8	-RESERVED-	*** RESERVED
32	20	LENGTH		LSBEL	SIZE OF LSBE.

Cross Reference

Name	Len	Offset Value
LSBACS	000001	0A
LSBCONTB	000099	14
LSBDAY	000002	02
LSBEARMU	000004	00
LSBECNT1	000004	04
LSBECNT2	000004	08
LSBECON1	000006	0C
LSBECON2	000006	12
LSBEL	-	20
LSBHR	000002	04
LSBL	-	CD7
LSBLE	-	20
LSBLSBE	000032	77
LSBMIN	000002	06
LSBMON	000002	00
LSBSEC	000002	08
SLSSLSB	000002	00
SLSSLSBE	-	00

SLSSMF07

TABLE 5-10 SLSSMF07 Record Format

Dec	Hex	Type	Length	Label	Description
<p>DSECT: SLSSMF07 - HSC RECORD TYPE 7 MAPPING MACRO</p> <p>FUNCTION: MAPS THE SUBTYPE 7 SMF RECORD PRODUCED BY THE HSC. THIS IS PRODUCED FOR EACH SUCCESSFUL MOVE INITIATED BY THE HSC.</p> <p>THESE RECORDS WERE ORIGINALLY DESIGNED TO PROVIDE OUR FIELD AND MARKETING STAFFS WITH STATISTICAL CARTRIDGE MOVEMENT, LMU TIMING, AND ROBOTICS TIMING INFORMATION. THESE RECORDS REPORT MOVEMENT SOURCE, DESTINATION, LMU TIMES, AND ROBOTICS TIMES. THESE RECORDS ALSO CONTAIN VALUABLE SYSTEM ID AND JOB INFORMATION.</p> <p>USAGE TIPS:</p> <p>TO FIND ENTER ACTIVITY WITH THE SLSSMF07 RECORDS:</p> <ul style="list-style-type: none"> • FIND ALL SLSSMF07 MOVE DETAIL RECORDS WITH A SOURCE IDENTIFIER (SMF07SRI) = "CAP"(SMF07SCP). • YOU CAN DETERMINE THE LIBRARY CARTRIDGE MOVEMENT TYPE THAT INITIATED THE ENTER BY CHECKING SMF07TYP. <p>TO FIND EJECT ACTIVITY WITHIN THE SLSSMF07 RECORDS:</p> <ul style="list-style-type: none"> • FIND ALL SLSSMF07 MOVE DETAIL RECORDS WITH A DESTINATION IDENTIFIER(SMF07DEI) = "CAP"(SMF07TCP). • YOU CAN DETERMINE THE LIBRARY CARTRIDGE MOVEMENT TYPE THAT INITIATED THE EJECT BY CHECKING SMF07TYP. 					
0	(0)	AREA	1	SLSSMF07	MOVE DETAIL SMF RECORD SUBTYPE
<p>THIS DSECT MAPS THE SUBTYPE 7 RECORD PRODUCED BY THE HSC FOR EACH SUCCESSFUL MOVE IF SUBTYPE 7 RECORDING IS ENABLED.</p>					
0	(0)	BITSTRING	1	SMF07TYP	TYPE OF RECORD
		1... .. X'80'		SMF07MSS	MOUNT SCRATCH
		.1... .. X'40'		SMF07MNS	MOUNT NON-SCRATCH
		..1... .. X'20'		SMF07DSS	DISMOUNT SCRATCH
		...1... .. X'10'		SMF07DNS	DISMOUNT NON-SCRATCH
		.... 1... X'08'		SMF07SWS	SWAP
		.... .1.. X'04'		SMF07MOV	MOVE
		.... ..1. X'02'		SMF07NTR	ENTER
		.... ...1 X'01'		SMF07EJT	EJECT
1	(1)	BITSTRING	1	SMF07RQS	REQUESTOR IDENTIFIER
		.... .. X'00'		SMF07UNK	UNKNOWN
		.... ...1 X'01'		SMF07HSC	HSC INITIATED (E.G. AUTOMATIC CLEANING OF A DRIVE)
		.... ..1. X'02'		SMF07JOB	JOB PROCESSING INITIATED
		.... ...11 X'03'		SMF07UTL	HSC UTILITY INITIATED
		.... .1.. X'04'		SMF07PRG	HSC PROGRAMMATIC INTERFACE

TABLE 5-10 SLSSMF07 Record Format

Dec	Hex	Type	Length	Label	Description
2	(2)	.... .1.1 X'05'	1	SMF07OPR	HSC OPERATOR COMMAND INITIATED
		.... .11. X'06'		SMF07TMI	VM TMI INTERFACE
		BITSTRING		SMF07FLG	FLAG BYTE
		1... X'80'		SMF07DSV	SMF07DRS CONTAINS A DRIVE DEVICE NUM
		.1... X'40'		SMF07DTV	SMF07DRT CONTAINS A DRIVE DEVICE NUM
		..1. X'20'		SMF07CNV	SMF07CON CONTAINS VALID DATA
		...1 X'10'		SMF07LMD	LMU DATA IS AVAILABLE
		.... 1... X'08'		SMF07PRF	PERFORMANCE SIGNIFICANTLY IMPACTED BY LMU RETRY
3	(3)	HEXSTRING	4	SMF07TTM	TIME IN HUNDREDTHS THE REQUEST WAS WAS RECEIVED BY THE HSC. ONLY
7	(7)	HEXSTRING	4	SMF07TDT	DATE THE REQUEST WAS RECEIVED BY THE HSC (0CYYDDDF)
11	(B)	HEXSTRING	4	SMF07LTM	TIME IN HUNDREDTHS THE REQUEST WAS WAS RECEIVED BY THE LMU SERVER
15	(F)	HEXSTRING	4	SMF07LDT	DATE THE REQUEST WAS RECEIVED BY THE LMU SERVER
19	(13)	HEXSTRING	4	SMF07NRD	INTERVAL IN HUNDREDTHS THE REQUEST WAS QUEUED BECAUSE A LSM WAS NOT READY.
23	(17)	HEXSTRING	4	SMF07CPO	INTERVAL IN HUNDREDTHS OF A SECOND THE REQUEST WAS DELAYED DUE TO CAP OPERATIONS. THIS INCLUDES THE WAIT TIME FOR THE DOOR TO OPEN, CLOSE THE DOOR, DOOR, FILL OR EMPTY THE CAP, CLOSE THE DOOR, AND SCAN THE CAP. HEX 'FFFFFFF' INDICATES COUNTER OVERFLOW
27	(1B)	CHARACTER	8	SMF07US1	THIS SHOULD ALWAYS ONLY CONTAIN DISPLAYABLE EBCDIC (INC BLANKS). JOBNAME IF REQ FROM JOB PROCESSING, HSC UTILITY, OR HSC PROGRAMATIC INTERFACE, OR HSC INITIATED. 'CONSOLE' IF INITIATED BY THE OPERATOR VIRTUAL MACHINE NAME THE IUCV RECEIVED FROM (VM TMS INTERFACE)

TABLE 5-10 SLSSMF07 Record Format

Dec	Hex	Type	Length	Label	Description
35	(23)	CHARACTER	8	SMF07US2	THIS SHOULD ALWAYS ONLY CONTAIN DISPLAYABLE EBCDIC (INC BLANKS). SMFID (JES2) IF REQ FROM JOB PROCESSING, HSC UTILITY, OR HSC MAIN PROCESSOR NAME (JES3). IF REQ FROM JOB PROCESSING, HSC UTILITY, OR HSC. THE CONSOLEID IN DISPLAYABLE FORMAT IF INITIATED BY THE OPERATOR NODE NAME (VM TMS INTERFACE)
43	(2B)	HEXSTRING	4	SMF07CON	CONSOLEID IF INITIATED BY THE OPERATOR
47	(2F)	CHARACTER	1	SMF07LBL	LABEL MODIFIER
'1'	(F1)	CHAR CONST		SMF07MVV	VERIFY LABEL VOLSER
'2'	(F2)	CHAR CONST		SMF07MVU	VERIFY UNLABELED CARTRIDGE
'3'	(F3)	CHAR CONST		SMF07MBV	BYPASS LABEL VERIFICATION
'4'	(F4)	CHAR CONST		SMF07MRC	RECOVERY CARTRIDGE
'5'	(F5)	CHAR CONST		SMF07VMT	VERIFY MEDIA AND BYPASS VOLSER
'6'	(F6)	CHAR CONST		SMF07VMV	VERIFY MEDIA AND VOLSER
'7'	(F7)	CHAR CONST		SMF07VMU	VERIFY MEDIA AND UNREADABLE LBL
48	(30)	CHARACTER	6	SMF07VOL	VOLSER BEING MOVED NOTE - ROW AND COLUMN COORDINATES HAVE DIFFERENT MEANINGS FOR CELLS, CAPS, AND DRIVES.
54	(36)	CHARACTER	1	SMF07SF1	SOURCE MODIFIER
'1'	(F1)	CHAR CONST		SMF07SFN	NORMAL
'2'	(F2)	CHAR CONST		SMF07SFI	ONLY SMF07SAC AND SMF07SLS VALID
55	(37)	CHARACTER	1	SMF07SRI	SOURCE IDENTIFIER
'1'	(F1)	CHAR CONST		SMF07SCE	CELL
'2'	(F2)	CHAR CONST		SMF07SCP	CAP
'3'	(F3)	CHAR CONST		SMF07SDR	DRIVE
56	(38)	HEXSTRING	1	SMF07SAC	SOURCE ACS
57	(39)	HEXSTRING	1	SMF07SLS	SOURCE LSM
58	(3A)	HEXSTRING	1	SMF07SPN	SOURCE PANEL
59	(3B)	HEXSTRING	1	SMF07SRO	SOURCE ROW
60	(3C)	HEXSTRING	1	SMF07SCO	SOURCE COLUMN
61	(3D)	CHARACTER	1	SMF07DEI	DESTINATION IDENTIFIER
'1'	(F1)	CHAR CONST		SMF07TCE	CELL
'2'	(F2)	CHAR CONST		SMF07TCP	CAP

TABLE 5-10 SLSSMF07 Record Format

Dec	Hex	Type	Length	Label	Description
'3'	(F3)	CHAR CONST		SMF07TDR	DRIVE
'5'	(F5)	CHAR CONST		SMF07TDW	DRIVE (WRITE PROTECT)
62	(3E)	HEXSTRING	1	SMF07TAC	DESTINATION ACS
63	(3F)	HEXSTRING	1	SMF07TLS	DESTINATION LSM
64	(40)	HEXSTRING	1	SMF07TPN	DESTINATION PANEL
65	(41)	HEXSTRING	1	SMF07TRO	DESTINATION ROW
66	(42)	HEXSTRING	1	SMF07TCO	DESTINATION COLUMN
67	(43)	HEXSTRING	2	SMF07DRS	SOURCE DRIVE DEVICE NUMBER INVOLVED WITH THE REQUEST. VALID ONLY IF SMF07DSV IS ON.
69	(45)	HEXSTRING	2	SMF07DRT	DESTINATION DRIVE DEVICE NUMBER INVOLVED WITH THE REQUEST. VALID ONLY IF SMF07DTV IS ON.
71	(47)	HEXSTRING	4	SMF07STM	TIME IN HUNDREDTHS THE REQUEST WAS SENT TO THE LMU
75	(4B)	HEXSTRING	4	SMF07SDT	DATE THE REQUEST WAS SENT TO THE LMU IN THE FORM 0CYYDDF.
79	(4F)	HEXSTRING	4	SMF07ETM	TIME IN HUNDREDTHS THE LMU INDICATED THE REQUEST WAS COMPLETE
83	(53)	HEXSTRING	4	SMF07EDT	DATE THE LMU INDICATED THE REQUEST WAS COMPLETE.
87	(57)	BITSTRING	1	SMF07TNM	NUMBER OF LSMS USED
88	(58)	LENGTH		SMF07SL	LENGTH OF NON-LMU PORTION OF SUBRECORD
THIS MAPS THE DATA RETURNED BY THE LMU. IT IS ONLY AVAILABLE IF SMF07LMD IS ON. NOTE THAT THE LMU TIMES ARE ONLY VALID TO A TENTH OF A SECOND. THE HSC CONVERTS THE TIMES TO HUNDREDTHS TO BE CONSISTENT WITH OTHER TIMES.					
88	(58)	HEXSTRING	4	SMF07LTO	INTERVAL IN HUNDREDTHS OF A SECOND THE LMU HAD THE REQUEST. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
92	(5C)	HEXSTRING	4	SMF07DWT	INTERVAL IN HUNDREDTHS OF A SECOND OF DRIVE WAIT TIME. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
96	(60)	HEXSTRING	4	SMF07DRO	INTERVAL IN HUNDREDTHS OF DESTINATION LSM ROBOTICS TIME. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
100	(64)	HEXSTRING	4	SMF07DRQ	INTERVAL IN HUNDREDTHS OF DESTINATION LSM ROBOTICS QUEUE TIME. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW

TABLE 5-10 SLSSMF07 Record Format

Dec	Hex	Type	Length	Label	Description
104	(68)	HEXSTRING	4	SMF07ORO	INTERVAL IN HUNDREDTHS OF ALL OTHER LSM ROBOTICS TIME HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
108	(6C)	HEXSTRING	4	SMF07ORQ	INTERVAL IN HUNDREDTHS OF ALL OTHER LSM ROBOTICS QUEUE TIME. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
112	(70)	HEXSTRING	4	SMF07PRO	INTERVAL IN HUNDREDTHS OF PASSTHRU ROBOTICS TIME HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
116	(74)	HEXSTRING	4	SMF07PRQ	INTERVAL IN HUNDREDTHS OF ALL PASSTHRU ROBOTICS QUEUE TIME. HEX 'FFFFFFF' INDICATES LMU COUNTER OVERFLOW
120	(78)	LENGTH		SMF07L	LENGTH OF FIXED PORTION OF SUBRECORD

Cross Reference

Name	Len	Offset Value
SLSSMF07	000001	00
SMF07CNV	-	20
SMF07CON	000004	2B
SMF07CPO	000004	17
SMF07DEI	000001	3D
SMF07DNS	-	10
SMF07DRO	000004	60
SMF07DRQ	000004	64
SMF07DRS	000002	43
SMF07DRT	000002	45
SMF07DSS	-	20
SMF07DSV	-	80
SMF07DTV	-	40
SMF07DWT	000004	5C
SMF07EDT	000004	53
SMF07EJT	-	01
SMF07ETM	000004	4F
SMF07FLG	000001	02
SMF07HSC	-	01
SMF07JOB	-	02
SMF07L	-	78
SMF07LBL	000001	2F
SMF07LDT	000004	0F
SMF07LMD	-	10
SMF07LTM	000004	0B
SMF07LTO	000004	58
SMF07MBV	-	'CVAL'
SMF07MNS	-	40
SMF07MOV	-	04
SMF07MRC	-	'CVAL'
SMF07MSS	-	80

Name	Len	Offset Value
SMF07MVU	-	'CVAL'
SMF07MVV	-	'CVAL'
SMF07NRD	000004	13
SMF07NTR	-	02
SMF07OPR	-	05
SMF07ORO	000004	68
SMF07ORQ	000004	6C
SMF07PRF	-	08
SMF07PRG	-	04
SMF07PRO	000004	70
SMF07PRQ	000004	74
SMF07RQS	000001	01
SMF07SAC	000001	38
SMF07SCE	-	'CVAL'
SMF07SCO	000001	3C
SMF07SCP	-	'CVAL'
SMF07SDR	-	'CVAL'
SMF07SDT	000004	4B
SMF07SFI	-	'CVAL'
SMF07SFN	-	'CVAL'
SMF07SFI	000001	36
SMF07SL	-	58
SMF07SLS	000001	39
SMF07SPN	000001	3A
SMF07SRI	000001	37
SMF07SRO	000001	3B
SMF07STM	000004	47
SMF07SWS	-	08
SMF07TAC	000001	3E
SMF07TCE	-	'CVAL'
SMF07TCO	000001	42
SMF07TCP	-	'CVAL'
SMF07TDR	-	'CVAL'

Name	Len	Offset Value
SMF07TDT	000004	07
SMF07TDW	-	'CVAL'
SMF07TLS	000001	3F
SMF07TMI	-	06
SMF07TNM	000001	57
SMF07TPN	000001	40
SMF07TRO	000001	41
SMF07TTM	000004	03
SMF07TYP	000001	00
SMF07UNK	-	00
SMF07US1	000008	1B
SMF07US2	000008	23
SMF07UTL	-	03
SMF07VMT	-	'CVAL'
SMF07VMU	-	'CVAL'
SMF07VMV	-	'CVAL'
SMF07VOL	000006	30

SLSSMF08

TABLE 5-11 SLSSMF08 Record Format

Dec	Hex	Type	Length	Label	Description
<p>SLSSMF08 - HSC RECORD TYPE 8 MAPPING MACRO</p> <p>FUNCTION: MAPS THE SUBTYPE 8 SMF RECORD PRODUCED BY THE HSC. THIS IS PRODUCED FOR EACH SUCCESSFUL VIEW COMMAND INITIATED BY THE HSC.</p> <p>SPECIAL CONSIDERATIONS: This data represents a record that is written out to the SMF data set.</p>					
0	(0)	AREA	1	SLSSMF08	VIEW DETAIL SMF RECORD SUBTYPE
<p>THIS DSECT MAPS THE SUBTYPE 8 RECORD PRODUCED BY THE HSC FOR EACH SUCCESSFUL VIEW COMMAND WHEN SUBTYPE 8 RECORDING IS ENABLED.</p>					
0	(0)	A-ADDR	1	SMF08ACS	ACS id.
1	(1)	A-ADDR	1	SMF08LSM	LSM number.
2	(2)	A-ADDR	1	SMF08CID	CAP id.
3	(3)	A-ADDR	1	SMF08MAG	MAG number.
4	(4)	A-ADDR	1	SMF08TYP	Type of VIEW completed.
		.... ..1 X'01'		SMF08CEL	Storage, diag., or playgrnd cell.
		.... ..1. X'02'		SMF08CAP	CAP cell.
		.... ..11 X'03'		SMF08DRV	Cartridge drive.
		.... ..1.. X'04'		SMF08PTP	pass-thru port cell.
5	(5)	AREA	1	SMF08PNL	Panel number (if SMF08TYP 1 or 3).
5	(5)	A-ADDR	1	SMF08LSM2	Connecting LSM (if SMF08TYP is 4).
6	(6)	AREA	1	SMF08ROW	Row number (if SMF08TYP 1 or 2).
6	(6)	AREA	1	SMF08XPT	Transport number (if SMF08TYP 3).
6	(6)	A-ADDR	1	SMF08SLT	PTP Slot number (if SMF08TYP 4).
7	(7)	A-ADDR	1	SMF08COL	Column number (if SMF08TYP 1 or 2)
8	(8)	A-ADDR	1	SMF08RTM	Requested VIEW time.
9	(9)	A-ADDR	1	SMF08VTM	Actual VIEW time.
10	(A)	CHARACTER	8	SMF08HST	Host name (if SMF08TYP 3).
18	(12)	HEXSTRING	2	SMF08CUA	Drive address (if SMF08TYP 3).
20	(14)	LENGTH		SMF08L	VIEW subtype 8 SMF record length.

Cross Reference

Name	Len	Offset Value
SLSSMF08	000001	00
SMF08ACS	000001	00
SMF08CAP	-	02
SMF08CEL	-	01
SMF08CID	000001	02
SMF08COL	000001	07
SMF08CUA	000002	12
SMF08DRV	-	03
SMF08HST	000008	0A
SMF08L	-	14
SMF08LSM	000001	01
SMF08LSM2	000001	05
SMF08MAG	000001	03
SMF08PNL	000001	05
SMF08PTP	-	04
SMF08ROW	000001	06
SMF08RTM	000001	08
SMF08SLT	000001	06
SMF08TYP	000001	04
SMF08VTM	000001	09
SMF08XPT	000001	06

SLSSMF10 - VTCS SMF Subtype 10 Record

Function

Records a VTSS subsystem performance request.

TABLE 5-12 SLSSMF10 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF10	VTCS SMF record subtype 10
0	0	character	8	SMF10VTS	VTSS ID
8	8	hexstring	2	SMF10BCH	base cache size (MB), where base cache is system space reserved for VTSS processing
10	A	hexstring	2	SMF10CCH	customer cache size (MB)
12	C	hexstring	4	SMF10OCH	offline cache size
16	10	hexstring	4	SMF10PCH	pinned cache size
20	14	hexstring	2	SMF10NSZ	nvs size (MB)
22	16	hexstring	8	SMF10TCT	reserved
30	1E	hexstring	8	SMF10TCP	total back end capacity
38	26	hexstring	8	SMF10FCT	reserved
46	2E	hexstring	8	SMF10FCP	total free back end capacity
54	36	hexstring	8	SMF10CFT	reserved
62	3E	hexstring	8	SMF10CFP	collected free back end capacity
70	46	hexstring	8	SMF10BRT	reserved

TABLE 5-12 SLSSMF10 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
78	4E	hexstring	8	SMF10BRP	bytes read for free space collection
86	56	hexstring	8	SMF10SCT	reserved
94	5E	hexstring	8	SMF10SCP	total amount of free space collection
102	66	hexstring	2	SMF10RGC	redundancy group count
104	68	hexstring	8	SMF10CDT	reserved
112	70	hexstring	8	SMF10CDP	standard capacity defined
120	78	hexstring	4	SMF10EMP	count of ECAM-T messages processed
124	7C	hexstring	4	SMF10EBS	count of ECAM-T messages bypassed because no buffer space available
128	80	hexstring	4	SMF10EBC	count of ECAM-T messages bypassed because configuration was busy
132	84	hexstring	4	SMF10ECP	number of ECAM-T channel programs

SLSSMF11 - VTCS SMF Subtype 11 Record

Function

Records a VTSS channel interface performance request.

TABLE 5-13 SLSSMF11 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF11	VTCS SMF record subtype 11
0	0	character	8	SMF11VTS	VTSS ID
8	8	hexstring	2	SMF11CNT	count of entries in this record the following fields repeat for each interface in this record
10	A	data		SMF11ENT	start of entry
10	A	character	8	SMF11INM	channel interface name
18	12	bitstring	2	SMF11CI	channel interface installed (y/n)
		X'0000'		SMF11CIN	no
		X'0001'		SMF11CIY	yes
20	14	bitstring	2	SMF11CE	channel interface enabled (y/n)
		X'0000'		SMF11CEN	no
		X'0001'		SMF11CEY	yes
22	16	hexstring	2	SMF11NAT	number of addresses trapped

TABLE 5-13 SLSSMF11 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
24	18	hexstring	2	SMF11CSP	Channel type
			X'0200'	SMF11CSE	ESCON channel
			X'1000'	SMF11CSI	IP link
			X'2000'	SMF11CSF	FICON channel
26	1A	hexstring	8	SMF11NIO	number of I/Os
34	22	hexstring	8	SMF11CUB	control unit busy (in U -seconds)
42	2A	bitstring	2	SMF11TOL	type of link
		X'0000'		SMF11TLH	host
		X'0001'		SMF11TLR	RTD
44	2C	length		SMF11ENL	length of each entry

SLSSMF13 - VTCS SMF Subtype 13 Record

Function

Records a VTV mount request.

TABLE 5-14 SLSSMF13 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF13	VTCS SMF record subtype 13
0	0	character	8	SMF13VTS	VTSS ID
8	8	character	6	SMF13VID	VTV volser ID
14	E	character	2	SMF13DID	VTD device ID
16	10	bitstring	2	SMF13RWS	read/write state (thumbwheel)
		X'0001'		SMF13RRO	read only
		X'0002'		SMF13RRW	read/write
18	12	bitstring	2	SMF13VMT	virtual mount type
		X'0001'		SMF13EXT	mount existing VTV
		X'0002'		SMF13SSL	mount sl scratch VTV
		X'0003'		SMF13SNL	mount existing VTV as scratch
		X'0004'		SMF13SAL	mount ANSI label scratch VTV
		X'0005'		SMF13IMP	mount for importing
20	14	hexstring	4	SMF13TIM	VTV timestamp (time format, seconds since 1/1/70)
24	18	bitstring	2	SMF13RCI	recall indicator
		X'0001'		SMF13MNR	mounted without a recall
		X'0002'		SMF13MRC	mounted after a recall
26	1A	bitstring	2	SMF13CTP	cartridge type
		X'0000'		SMF13SCT	S-cart (max 400MB size)
		X'0001'		SMF13ECT	E-cart (max 800MB size)
		X'0002'		SMF132GB	2000MB
		X'0003'		SMF134GB	4000MB

TABLE 5-14 SLSSMF13 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
28	1C	character	10		reserved
38	26	character	8	SMF13JNM	MVS jobname
46	2E	character	8	SMF13SNM	MVS stepname
54	36	character	44	SMF13DSN	MVS data set name
98	62	hexstring	8	SMF13MST	mount start timestamp (TOD), where mount start occurs when VTCS receives a mount request from HSC (or VTCS generates the request), generates a new thread to handle the mount request, then determines whether the request is for an existing, new, or scratch VTV
106	6A	hexstring	8	SMF13MET	mount end timestamp (TOD), where mount end occurs when VTSS generates a successful response to the ECAM-T request to mount the VTV on the selected RTD
114	72	character	8	SMF13MGT	VTV Management Class
122	7A	character	8	SMF13HST	Originating host name
130	82	character	8	SMF13PLX	TapePlex from which the VTV was received

SLSSMF14 - VTCS SMF Subtype 14 Record

Function

Records a VTV dismount request.

TABLE 5-15 SLSSMF14 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF14	VTCS SMF record subtype 14
0	0	character	8	SMF14VTS	VTSS ID
8	8	character	6	SMF14VID	VTV volser ID
14	E	bitstring	2	SMF14STA	VTV state
		X'0001'		SMF14MNT	VTV mounted
		X'0002'		SMF14DSM	VTV dismounted
		X'0003'		SMF14NON	VTV does not exist
		X'0004'		SMF14MIG	VTV is being migrated
		X'0005'		SMF14REC	VTV is being recalled
		X'0006'		SMF14VTM	VTV logically dismounted by VTVMaint
16	10	hexstring	2	SMF14DID	MVS device address
18	12	hexstring	4	SMF14VSZ	uncompressed size of the VTV in bytes Max: 4,294,967,295
22	16	hexstring	4	SMF14MSZ	the number of virtual tape pages in 32K increments required to migrate the VTV to an RTD
26	1A	hexstring	4	SMF14TIM	the last time the VTV was successfully mounted on a VTD (ttime format, seconds since 1/1/70)
30	1E	hexstring	2	SMF14UL#	number of MVCs to unlink
32	20	bitstring	2	SMF14CTP	cartridge type
		X'0000'		SMF14SCT	S-cart (max 400MB size)
		X'0001'		SMF14ECT	E-cart (max 800MB size)
		X'0002'		SMF142GB	2000MB

TABLE 5-15 SLSSMF14 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
		X'0003'		SMF144GB	4000MB
34	22	bitstring	2	SMF14VMT	virtual mount type
		X'0001'		SMF14EXT	mount existing VTV
		X'0002'		SMF14SSL	mount sl scratch VTV
		X'0003'		SMF14EXP	mounted for electronic import
36	24	character	8	SMF14JNM	MVS jobname
44	2C	character	8	SMF14SNM	MVS stepname
52	34	character	44	SMF14DSN	MVS data set name
96	60	character	8	SMF14MGT	VTV Management Class
104	68	character	8	SMF14HST	Originating host name
112	70	hexstring	4	SMF14N4K	UNCOMP SIZE - NO OF 4K UNITS
116	74	bitstring	2	SMF14SRS	Synchronous replication status
		X'0000'		SMF14SRN	Synchronous replication not requested
		X'0001'		SMF14SRC	Synchronous replication complete
		X'0002'		SMF14SRF	Synchronous replication failed
		X'0004'		SMF14ERC	Synchronous export complete
		X'0005'		SMF14ERF	Synchronous export failed
118	76	hexstring	8	SMF14RUN	rewind unload received time (TOD)
126	7E	character	8	SMF14PLX	TapePlex from which the VTV was received

SLSSMF15 - VTCS SMF Subtype 15 Record

Function

Records a delete VTV request.

TABLE 5-16 SLSSMF15 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF15	VTCS SMF record subtype 15
0	0	character	8	SMF15VTS	VTSS ID (blanks if migrated)
8	8	character	6	SMF15VID	virtual volser ID
14	E	character	4	SMF15TIM	VTV creation time (ttime format, seconds since 1/1/70)
18	12		4		reserved
22	16	character	4	SMF15LTR	time VTV last referenced (high order TOD value)
26	1A	bitstring	2	SMF15CTP	cartridge type
		X'0000'		SMF15SCT	S-cart (max 400MB size)
		X'0001'		SMF15ECT	E-cart (max 800MB size)
		X'0002'		SMF152GB	2000MB
		X'0003'		SMF154GB	4000MB
28	1C		2		reserved
30	1E	bitstring	2	SMF15RSN	VTV delete reason code
		X'0001'		SMF15NMM	VTV migrated then deleted
		X'0002'		SMF15MPR	VTV previously migrated
		X'0003'		SMF15SPR	VTV reclaimed
		X'0004'		SMF15CON	VTV consolidated
		X'0005'		SMF15OLD	invalid VTV version found
		X'0006'		SMF15DSC	VTV deleted on scratch
		X'0007'		SMF15IMP	VTV deleted by import
		X'0008'		SMF15DSU	VTV deleted by DELETSCR utility
		X'0009'		SMF15FRC	ensure VTV is not resident after failed recall
32	20	character	8	SMF15MGT	VTV Management Class

TABLE 5-16 SLSSMF15 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
40	28	bitstring	2	SMF15LRI	last residency indicator
		X'0001'		SMF15LRR	last residency was for recall
		X'0002'		SMF15LRC	last residency was for create

SLSSMF16 - VTCS SMF Subtype 16 Record

Function

Records an RTD mount request.

TABLE 0-1 SLSSMF16 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SMF16VTS	VTCS SMF record subtype 16
0	0	character	8	SMF16VTS	VTSS ID
8	8	hexstring	2	SMF16RID	RTD ID (0-F)
10	A	character	6	SMF16MID	MVC volser ID
16	10	character	6	SMF16AID	actual volser from VOL1 label
22	16	bitstring	2	SMF16RWS	read/write state (thumbwheel)
		X'0001'		SMF16RRO	read only state
		X'0002'		SMF16RRW	read/write state
24	18	bitstring	2	SMF16MT	mount request type
		X'0001'		SMF16MTM	migrate
		X'0002'		SMF16MTR	recall
		X'0003'		SMF16MTL	reclaim
		X'0004'		SMF16MTD	drain
		X'0005'		SMF16MTA	audit
		X'0006'		SMF16MTC	consolidate
		X'0007'		SMF16MTX	export
		X'0008'		SMF16MTI	inventory
26	1A	hexstring	32	SMF16SNS	RTD sense data (all zeros or all X'FF's unless RTD errors occur)
58	3A	hexstring	8	SMF16MST	mount start timestamp (TOD), where mount start occurs when HSC receives a successful request to load the requested MVC
66	42	hexstring	8	SMF16MET	mount end timestamp (TOD), where mount end occurs when the VTSS receives a successful ECAM-T request to mount the requested MVC on an RTD

TABLE 0-1 SLSSMF16 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
74	4A	character	8	SMF16SCL	MVC Storage Class (will contain hex zeros if the MVC is empty)
82	52	character	2	SMF16INF	RTD Channel Interface ID
84	54	character	4	SMF16ADR	MVS address of RTD
88	58	hexstring	2	SMF16LOC	Location name/ACS:LSM of the RTD
96	60	character	4	SMF16TYP	Device type name of the RTD

SLSSMF17 - VTCS SMF Subtype 17 Record

Function

Records an RTD dismount request.

TABLE 0-2 SLSSMF17 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF17	VTCS SMF record subtype 17
0	0	character	8	SMF17VTS	VTSS ID
8	8	hexstring	2	SMF17RID	RTD ID (0-F)
10	A	hexstring	64	SMF17BLD	RTD buffered log data
74	4A	hexstring	32	SMF17SNS	RTD sense data (all zeros or all X'FF's unless RTD errors occur)
106	6A	character	8	SMF17SCL	unused
114	72	character	6	SMF17MVC	MVC volser
120	78	character	2	SMF17INF	RTD Channel Interface ID
122	7A	character	4	SMF17ADR	MVS address of RTD
126	7E	bitstring	1	SMF17DFL	Dismount flag
		X'80'		SMF17DRX	retention period reduced
		X'40'		SMF17DAR	auto recall
		X'20'		SMF17DMF	full MVC
		X'10'		SMF17DVY	RTD vary command
		X'08'		SMF17DSW	MVC required on another drive or RTD required for another volume
		X'01'		SMF17DRT	retain period applied

SLSSMF18 - VTCS SMF Subtype 18 Record

Function

Records a migrate VTV request.

TABLE 0-3 SLSSMF18 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF18	VTCS SMF record subtype 18
0	0	character	8	SMF18VTS	VTSS ID
8	8	hexstring	2	SMF18RID	RTD ID (0-31)
10	A	character	6	SMF18VID	VTV volser ID
16	10	character	6	SMF18MID	MVC volser ID
22	16	hexstring	4	SMF18VPO	VTV position on this MVC (block ID)
26	1A	character	6	SMF18AID	actual volser from VOL1 label
32	20	hexstring	4	SMF18MSZ	uncompressed size of the VTV in bytes
36	24	hexstring	4	SMF18BCM	the number of virtual tape pages in 32K increments required to migrate the VTV to an RTD
40	28	hexstring	4	SMF18TIM	the last time the VTV was successfully mounted on a VTD (time format, seconds since 1/1/70)
44	2C	bitstring	2	SMF18MT	migrate request type
		X'0001'		SMF18MTA	auto
		X'0002'		SMF18MTI	immediate
		X'0003'		SMF18MTD	demand
		X'0004'		SMF18MTR	reclaim
		X'0005'		SMF18MTC	consolidate
		X'0006'		SMF18MTX	export
		X'0007'		SMF18MTN	drain
		X'0008'		SMF18MTM	VTV move
46	2E	bitstring	2	SMF18CTP	cartridge type
		X'0000'		SMF18SCT	S-cart (max 400MB size)
		X'0001'		SMF18ECT	E-cart (max 800MB size)
		X'0002'		SMF182GB	2000MB

TABLE 0-3 SLSSMF18 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
		X'0003'		SMF184GB	4000MB
48	30	hexstring	4	SMF18NPO	next MVC position (block ID)
52	34	hexstring	32	SMF18SNS	RTD sense
84	54	hexstring	8	SMF18MST	migrate start timestamp (TOD)
92	5C	hexstring	8	SMF18MET	migrate end timestamp (TOD)
100	64	character	8	SMF18MGT	VTV Management Class
108	6C	character	8	SMF18SCL	MVC Storage Class
116	74	hexstring	2	SMF18INF	RTD Channel Interface ID
118	78	character	4	SMF18ADR	MVS address of RTD

SLSSMF19 - VTCS SMF Subtype 19 Record

Function

Records a recall VTV request.

TABLE 0-4 SLSSMF19 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SMF19VTS	VTCS SMF record subtype 19
0	0	character	8	SMF19VTS	VTSS ID
8	8	hexstring	2	SMF19RID	RTD ID (0-31)
10	A	character	6	SMF19VID	VTV volser ID
16	10	character	6	SMF19MID	MVC volser ID
22	16	hexstring	4	SMF19VPO	VTV position on this MVC (block ID)
26	1A	bitstring	2	SMF19RE	recall with error
		X'0000'		SMF19REN	no
		X'0001'		SMF19REY	yes
28	1C	character	6	SMF19AID	actual volser from VOL1 label
34	22	hexstring	4	SMF19MSZ	VTV media size
38	26	hexstring	4	SMF19BCM	number of bytes currently recalled
42	2A	hexstring	4	SMF19TIM	the last time the VTV was successfully mounted on a VTD (ttime format, seconds since 1/1/70)
46	2E	bitstring	2	SMF19RT	recall request type
		X'0001'		SMF19RTA	auto
		X'0002'		SMF19RTN	drain
		X'0003'		SMF19RID	demand
		X'0004'		SMF19RTR	reclaim
		X'0005'		SMF19RTC	consolidate
		X'0006'		SMF19RTX	export
		X'0007'		SMF19RTM	VTV move
		X'0008'		SMF19RTE	alternate recall
48	30	bitstring	2	SMF19CTP	cartridge type
		X'0000'		SMF19SCT	S-cart (max 400MB size)
		X'0001'		SMF19ECT	E-cart (max 800MB size)

TABLE 0-4 SLSSMF19 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
		X'0002'		SMF192GB	2000MB
		X'0003'		SMF194GB	4000MB
50	32	hexstring	32	SMF19SNS	RTD sense
82	52	hexstring	8	SMF19RST	recall start timestamp (TOD)
90	5A	hexstring	8	SMF19RET	recall end timestamp (TOD)
98	62	character	8	SMF19MGT	VTV Management Class
106	6A	character	8	SMF19SCL	MVC Storage Class
114	72	hexstring	2	SMF19INF	RTD Channel Interface ID
116	74	character	4	SMF19ADR	MVS address of RTD

SLSSMF20 - VTCS SMF Subtype 20 Record

Function

Records an RTD performance request.

TABLE 5-17 SLSSMF20 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF20	VTCS SMF record subtype 20
0	0	character	8	SMF20VTS	VTSS ID
8	8	hexstring	2	SMF20CNT	count of entries in this record the following fields repeat for each RTD in this record
10	A	area		SMF20ENT	start of entry
10	A	character	8	SMF20RNM	RTD name
18	12	bitstring	2	SMF20ST	RTD state
		X'0000'		SMF20STU	unconfigured
		X'0001'		SMF20STC	configured
20	14	hexstring	8	SMF20ATM	device available time (U -seconds), which is the time the MVC is mounted on the RTD
28	1C	hexstring	8	SMF20ACT	device activity (initial selects)
36	24	hexstring	8	SMF20BTR	bytes transferred - read
44	2C	hexstring	8	SMF20BTW	bytes transferred - write
52	34	hexstring	8	SMF20DUT	device utilization time (U -seconds), which is the accumulated time of each CCW chain to device end
60	3C	hexstring	8	SMF20DCT	device connect time (U -seconds), which is the accumulated time of each CCW chain to device end

SLSSMF21 - VTCS SMF Subtype 21 Record

Function

Records a vary RTD.

TABLE 5-18 SLSSMF21 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF21	VTCS SMF record subtype 21
0	0	character	8	SMF21VTS	VTSS ID
8	8	hexstring	2	SMF21RTD	RTD ID (0-F)
10	A	bitstring	2	SMF21STA	new device state
		X'0001'		SMF21OFF	offline
		X'0002'		SMF21ON	online
		X'0003'		SMF21MAI	maintenance

SLSSMF25 - VTCS SMF Subtype 25 Record

Function

Records MVC status.

TABLE 5-19 SLSSMF25 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF25	VTCS SMF record subtype 25
0	0	character	6	SMF25MID	MVC volser ID
6	6	hexstring	4	SMF25TFS	total free space (includes any space for invalid VTVs)
10	A	hexstring	4	SMF25UFS	usable free space (after the last valid VTV on the MVC)
14	E	hexstring	4	SMF25NAV	number of active VTVs
18	12	character	8	SMF25SCL	MVC Storage Class
26	1A	hexstring	4	SMF25TUS	space in Kb used by current VTVs
30	1E	hexstring	4	SMF25NDV	number of "holes" (deleted VTVs)
34	22	hexstring	4	SMF25LUT	top 4 bytes of the TOD clock when the MVC was last used
38	26	hexstring	4	SMF25LWT	top 4 bytes of the TOD clock when the MVC was last updated

SLSSMF26 - VTCS SMF Subtype 26 Record

Function

Records VTV movement.

TABLE 5-20 SLSSMF26 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF26	VTCS SMF record subtype 26
0	0	character	8	SMF26VTS	VTSS ID
8	8	character	6	SMF26VID	VTV volser ID
14	E	character	6	SMF26OMI	old MVC volser ID
20	14	character	6	SMF26NMI	new MVC volser ID
26	1A	hexstring	4	SMF26VPO	VTV position on new MVC (block ID)
30	1E	hexstring	8	SMF26MST	move start timestamp (TOD)
38	26	hexstring	8	SMF26MET	move end timestamp (TOD)
46	2E	character	8	SMF26MGT	VTV Management Class

SLSSMF27 - VTCS SMF Subtype 27 Record

Function

Records VTV scratch status.

TABLE 5-21 SLSSMF27 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF27	VTCS SMF record subtype 27
0	0	character	6	SMF27VID	VTV volser ID
6	6	character	8	SMF27MCL	VTV Management Class
14	E	bitstring	2	SMF27STP	VTV scratch type
		X'0001'		SMF27STN	no delete on scratch
		X'0002'		SMF27STD	delete on scratch
16	10	hexstring	4	SMF27MSZ	VTV media size
20	14	hexstring	4	SMF27TIM	the last time the VTV was updated (ttime format, seconds since 1/1/70)
24	18	hexstring	4	SMF27LUS	the last time the VTV was used (TOD format)
28	1C	hexstring	6	SMF27MV1	volser of MVC 1 that contains the VTV
34	22	hexstring	6	SMF27MV2	volser of MVC 2 that contains the VTV
40	28	character	8	SMF27VTS	VTSS name
48	30	bitstring	1	SMF27RES	VTV last resident indicator
			X'80'	SMF27RVT	resident on VTSS
			X'40'	SMF27RM1	resident on MVC1
			X'20'	SMF27RM2	resident on MVC2
			X'10'	SMF27RM3	resident on MVC3
			X'08'	SMF27RM4	resident on MVC4
49	31		1	SMF27SPR	reserved
50	32	bitstring	2	SMF27CTP	cartridge type
		X'0000'		SMF27SCT	S-cart (max 400MB size)
		X'0001'		SMF27ECT	E-cart (max 800MB size)
		X'0002'		SMF2732GB	2000MB
		X'0003'		SMF274GB	4000MB

TABLE 5-21 SLSSMF27 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
52	34		4	SMF27SP2	reserved
56	38	character	6	SMF27MV3	volser of MVC3 that contains the VTV
62	3E	character	6	SMF27MV4	volser of MVC4 that contains the VTV

SLSSMF28 - VTCS SMF Subtype 28 Record

Function

Records a VTV replication.

TABLE 5-22 SLSSMF28 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF28	VTCS SMF Record sub-type 28
0	0	character	8	SMF28VTS	Primary VTSSname
8	8	character	8	SMF28SVT	Secondary VTSSname
16	10	character	8	SMF28CLN	Cluster Name
24	18	character	6	SMF28VID	VTV Volser
30	1E	hexstring	2	SMF28AID	CLINK CHANIF
32	20	hexstring	1	SMF28DID	CLINK device-id
Note: SMF28AID and SMF28DID will contain binary zeros if the replication is synchronous.					
33	21	hexstring	1		reserved
34	22	bitstring	2	SMF28CTP	cartridge type
		X'0000'		SMF28SCT	S-cart (max 400MB size)
		X'0001'		SMF28ECT	E-cart (max 800MB size)
		X'0002'		SMF272GB	2000MB
		X'0003'		SMF274GB	4000MB
36	24	bitstring	1	SMF28FLG	Replicate type
		X'80'		SMF28ASR	ASYNCHRONOUS REPLICATE
		X'40'		SMF28SYR	SYNCHRONOUS REPLICATE
		X'08'		SMF28ASE	ASYNCHRONOUS ELECTRONIC EXPORT
		X'04'		SMF28SYE	SYNCHRONOUS ELECTRONIC EXPORT

TABLE 5-22 SLSSMF28 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
37	25		3		reserved
40	28	hexstring	4	SMF28BCR	Bytes replicated for VTV
44	2C	hexstring	4	SMF28TIM	VTV last updated timestamp (seconds since 1/1/70)
48	30	hexstring	32	SMF28SNS	Sense data from CLINK
80	50	hexstring	8	SMF28RST	Replicate Start Time (TOD format)
88	58	hexstring	8	SMF28RET	Replicate End Time (TOD format)
96	60	hexstring	8	SMF28MGT	VTV Management Class
104	68	hexstring	8	SMF28RUN	Rewind unload received time (TOD)
112	70	character	8	SMF28PLX	Target TapePlex for export

SLSSMF29 - VTCS SMF Subtype 29 Record

Function

Records a VTV and MVC unlink event.

TABLE 5-23 SLSSMF29 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF29	VTCS SMF Record sub-type 29
0	0	character	6	SMF29VID	VTV volser
6	6	character	6	SMF29MVC	MVC volser
12	C	character	2	SMF29MV#	number of remaining MVCs
14	E	bitstring	2	SMF29RSN	reason for unlink
		X'0001'		SMF29NLC	VTV no longer current (dismount)
		X'0002'		SMF29DRN	MVC drain/reclaim
		X'0003'		SMF29DOS	delete on scratch
		X'0004'		SMF29IMP	VTV import
		X'0005'		SMF29VMN	VTVMaint utility
		X'0006'		SMF29MVC	MVC inventory
		X'0007'		SMF29VTS	VTSS inventory
		X'0008'		SMF29VAD	VTV audit
		X'0009'		SMF15DSU	DELETSCR utility
16	10		6		reserved

SLSSMF30 - VTCS SMF Subtype 30 Record

Function

Records a Vary Clink event.

TABLE 5-24 SLSSMF30 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF30	VTCS SMF Record sub-type 30
0	0	character	8	SMF30CLU	Cluster name
8	8	character	8	SMF30VTS	Primary or Sending VTSS name
16	10	character	8	SMF30PAR	Partner VTSS name
24	18	bitstring	2	SMF30CLI	Clink Id
26	1A	bitstring	2	SMF30STA	New Clink status
		X'0001'		SMF30OFF	Offline
		X'0002'		SMF30ON	Online
		X'0004'		SMF30ONA	Online/AUTO (SYNC REPLICATE)

SLSSMF31 - SMF Subtype 31 Record

Function

Records information about each dynamically added or deleted transport.

TABLE 5-25 SLSSMF31 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF31	SMF Record sub-type 31
0	0	character	6	SMF31DRV	"DRIVE" character string
6	6	character	12	SMF31DYN	"DYNAMICALLY" character string
18	12	character	8	SMF31TYP	Type of drive modification: ? ADDED - Drive has been dynamically added ? DELETED - Drive has been dynamically deleted
26	1A	character	6	SMF31CH1	"UNIT:" character string
32	20	character	4	SMF31UNT	transport unit address
36	24	character	10	SMF31CH2	"LOCATION:" character string
46	2E	character	11	SMF31LOC	transport location
57	39	character	7	SMF31CH3	"MODEL:" character string
64	40	character	8	SMF31MOD	HSC model type

SLSSMF32 - SMF Subtype 32 Record

Function

Reserved; Internal Use only.

TABLE 5-26 SLSSMF32 Record Format

Decimal Offset	Hexadecimal Offset	Type	Length	Label	Description
0	0	start of record		SLSSMF32	SMF Record sub-type 32
0	0		160		reserved

UUI Macros and Samples

This appendix contains the following sections:

- ? [“UUI Macros” on page 166](#)
- ? [“UUI Sample Programs” on page 179](#)

UUI Macros

NCSCOMM

```
MACRO
    NCSCOMM ,
    AGO .SKIPROM
**DATAPROLOGUE*****
**
*
* Copyright 2007-2008 StorageTek, Inc. All rights reserved. *
*
* NCSCOMM: NCS UUI parameter list
*
* FUNCTION:
*     Generates the DSECT for the NCSCOMM parameter list.
*     The NCSCOMM parameter list is used to request Unified
*     User Interface services in the NCS/SES environment.
*
* CHANGE HISTORY:
*=====
=*
* ISSUE(RELEASE)  STORY  PGMR   DATE      ROLLUP INFORMATION
*     DESCRIPTION
*=====
=*
* I6534454          NLR      03/14/07
*     Created for SMC 6.2. Updated for external distribution.
* SES700           NLR      05/19/08
*     Updated return codes.
*
**ENDPROLOGUE*****
**
.SKIPROM ANOP
.*
*****
**
* NCSCOMM: NCS UUI parameter list.
*****
**
NCSCOMM DSECT ,
NCOMID  DS    CL4          Eyecatcher "NCOM"
NCOMLEN DS    H           NCSCOMM area len
NCOMVER DS    X           NCSCOMM version
NCOMRELO EQU  X'00'      ...Original version 0
        DS    X
*
```

FIGURE A-1 NCSCOMM Macro (Part 1)

```

*=====
====*
* INPUT PARAMETERS: *
*=====
====*
*
*****
* Type of UII request. *
*****
NCOMTYPE DS C Type of request
NCOMPLXL EQU C'L' ...TAPEPLEX list request
NCOMUII EQU C'U' ...Normal UII request
NCOMGTTK EQU C'T' ...Assign token request
NCOMCANC EQU C'C' ...Cancel request
NCOMOUT EQU C'O' ...Retrieve current output request
NCOMPLXV EQU C'V' ...Validate TAPEPLEX name request
*
*****
* Requested output format is required for UII or OUT type requests.
*
*****
NCOMOFMT DS X Requested output format
NCOMRXML EQU X'80' ...XML requested
NCOMRTXT EQU X'40' ...Text requested
NCOMRCSV EQU X'20' ...Comma separated values (CSV)
*
NCOMRTRC DS X Trace request flag
* ...If true, then enable GTF trace
DS X
*
*****
* The request address and length are not used for CANCEL or GET
*
* TOKEN type requests. *
*****
NCOMREQA DS A Addr of input request
NCOMREQL DS F Len of input request
*
DS 3F
*

```

FIGURE A-2 NCSCOMM Macro (Part 2)


```

*****
* The RACF user and group IDs should be supplied for use by the *
* User Exit 15 on the HSC server for UII, CANCEL, and OUTPUT type *
* requests. *
*****
NCOMRUSR DS CL8 Remote client RACF userid
NCOMRGRP DS CL8 Remote client RACF groupid
*
*****
* The token is returned for GGTK type requests, and is required for *
* CANC and OUT type requests. *
*****
NCOMTKID DS CL16 Assigned task token
NCOMSMCN DS CL4 SMC name for internal testing
*
*****
* The following fields are for associating "get more data" input *
* (i.e. SMCUUUI DDDATA) with the specified input request. *
*****
NCOMGMDA DS A Addr of "get more data" input
NCOMGMDL DS F Len of "get more data" input
DS 8F
*
*=====
* RETURNED DATA: *
*=====
*
*****
* The response address and length are returned for PLXL, UII, and *
* OUT type requests. *
*****
NCOMOUTA DS A Addr of output record returned
NCOMOUTL DS F Len of output record returned
*
NCOMRSRC DS F Function return code
NCOMRSRS DS F Reason code associated with
* ..return code
NCOMOUTT DS X Response type
NCOMOUTT_PLXL EQU C'L' ..TAPEPLEX list response
* ..Undelimited list of 8 character
* ..blank padded TAPEPLEX names
* ..Plain text
NCOMOUTT_TEXT EQU C'T' ..Structured XML
NCOMOUTT_XML EQU C'S' ..CSV header (tag names)
NCOMOUTT_CSVH EQU C'U' ..CSV (Comma separated values)
NCOMOUTT_CSV EQU C'V' ..Start of text resulting in
NCOMOUTT_DERR EQU C'E' ..deferred error
* ..Exception response for CSV
NCOMOUTT_EXCP EQU C'X'
*
NCOMPLXR DS X TAPEPLEX reason code flag
* ..If true, then returned reason
* ..code is a TAPEPLEX return code
* ..Otherwise, reason code is
* ..an SMC UII return code
*
NCOMTXTS DS X Plain text record subtype
NCOMTXTS_CNTL EQU C'C' ..MLWTO control response
NCOMTXTS_DATA EQU C'D' ..MLWTO data response
NCOMTXTS_END EQU C'E' ..MLWTO end response
NCOMTXTS_LBL EQU C'L' ..MLWTO label response
NCOMTXTS_HDDR EQU C'H' ..Request header or start
* ..of new page
NCOMTXTS_WTO EQU C'W' ..Single line data WTO
NCOMTXTS_PRT EQU C'P' ..Print line
NCOMTXTS_RTTL EQU C'R' ..Report title
*
DS X
*

```

FIGURE A-4 NCSCOMM Macro (Part 4)

```

*=====
====*
* WORK AREA: *
*=====
====*
*
*****
*****
* The following fields are used by the NCSNUUI macro to invoke UUI.
*
*****
*****
NCOMENVA DS      A                      Addr of C DCALL environment
*                                     ...Supplied by NCSNUUI FUNC=ALLC
NCOMPLST DS      A                      Addr of generated plist
*                                     ...Used internally by NCSNUUI
NCOMNUUI DS      A                      Addr of the SMCNUUI module
*                                     ...Supplied by NCSNUUI FUNC=ALLC
          DS      2F
*
*****
*****
* The following area is reserved for internal UUI processing and
*
* should not be referenced by external callers. *
*****
*****
NCOMINTL DS      XL256                   Internal UUI work fields
*
NCSCOMML EQU     *-NCSCOMM              Len of NCSCOMM
*
*****
*****
* UUI Return Codes: *
*****
*****
UUI_MORE_DATA           EQU 1           More data to return
UUI_EOF                 EQU 2           All data was returned (EOF)
*
UUI_CMD_WARNING        EQU 4           Command issued warning msg
UUI_CMD_ERROR          EQU 8           Command issued error msg
UUI_CMD_FATAL          EQU 12          Command issued fatal error
*

```

FIGURE A-5 NCSCOMM Macro (Part 5)

```

*****
*****
* UUI Reason Codes: (HSC/VTCS or SMC) *
*****
*****
UUI_REQUEST_LENGTH_ERROR    EQU 4      Request length error
UUI_NO_EXITS_SPECIFIED      EQU 8      No exits specified
UUI_PARSE_ERROR             EQU 12     Request parse error
UUI_REQUEST_ORIGIN_ERROR    EQU 20     Request origin
UUI_NOT_AUTHORIZED          EQU 24     LINKLIB not authorized
UUI_INCOMPATIBLE_RELEASE    EQU 28     Server release incompatible
UUI_ADV_MANAGEMENT          EQU 32     Advanced Mgmt feature required
UUI_REQUEST_CANCELLED       EQU 36     Request cancelled or HSC inact
UUI_MALFORMED_XML           EQU 40     Server XML format error
UUI_INVALID_PARAMETER       EQU 48     Invalid parameter value
UUI_NO_VSM                  EQU 52     VSM inactive
UUI_CSV_PARM_ERROR          EQU 56     CSV parameter error
UUI_CSV_FORMAT_ERROR        EQU 60     CSV parameter format error
UUI_REMOTE_FILE_REQ_ERROR   EQU 64     Remote file I/O not supported
UUI_SERVICE_LEVEL_ERROR     EQU 68     HSC not required service
level
UUI_USER_NOT_AUTHORIZED     EQU 72     User is not authorized
UUI_TOKEN_NOT_FOUND         EQU 76     Token does not exist
UUI_RECON_ACTIVE            EQU 80     Dynamic reconfig active
*

```

FIGURE A-6 NCSCOMM Macro (Part 6)

```

*****
* UUI Reason Codes: (SMC) *
*****
UUI_SMC_INACTIVE EQU 300 SMC not active
UUI_NOT_SUPPORTED EQU 304 UUI unsupported in release
UUI_REQUEST_TYPE_ERROR EQU 308 Request type invalid
UUI_TOKEN_ERROR EQU 312 Error acquiring new token
UUI_LOAD_ERROR EQU 316 Module load error
UUI_ATTACH_ERROR EQU 320 Task attach error
UUI_NO_ELIGIBLE_TAPEPLEX EQU 324 No active TAPEPLEX for UUI
UUI_NO_TAPEPLEX_SPECIFIED EQU 328 No TAPEPLEX or LVT addr
*
...specified in NCSCOMM
UUI_TAPEPLEX_NOT_FOUND EQU 332 TAPEPLEX name not found
UUI_TAPEPLEX_DISABLED EQU 336 TAPEPLEX is disabled
UUI_TAPEPLEX_CSC EQU 340 TAPEPLEX is MVS/CSC
UUI_INVALID_TAPEPLEX_ADDR EQU 344 Invalid TAPEPLEX addr
UUI_INVALID_PLIST EQU 348 Invalid NCSCOMM PLIST
UUI_INVALID_OUTPUT_PLIST EQU 352 Invalid PLIST for OUTPUT
UUI_NO_LOCAL_HSC EQU 364 No local HSC for LOCALHSC
UUI_XML_PARSE_ERROR EQU 372 Parse error for remote XML
UUI_XML_NO_START_TAG EQU 376 XML start tag not found
UUI_XML_NO_END_TAG EQU 380 XML end tag not found
UUI_RESPONSE_LEN_ZERO EQU 392 Response length is 0
UUI_RESPONSE_LEN_OVERFLOW EQU 396 Response length overflow
*
UUI_SMC_SERVICE_INACTIVE EQU 400 Requested service inactive
UUI_SMC_SERVICE_ERROR EQU 404 SMC service error occurred
UUI_INCOMPATIBLE EQU 420 SMCPCPE release is not
*
...equal to SMCCVT release
UUI_NO_DATA EQU 424 No data returned for request
*
UUI_SMC_TERMINATED EQU 500 SMC STOP command issued or
*
...task cancelled
UUI_QAS_VERSION_ERROR EQU 504 Wrong version of SMCQASP
UUI_QAS_QUEUE_ERROR EQU 508 At max SMCQUEUE queue size
UUI_QAS_STORAGE_ERROR EQU 512 No GETMAIN storage
UUI_QAS_DATASPACE_ERROR EQU 516 No dataspace storage
UUI_QAS_INDEX_ERROR EQU 520 Invalid ASCOMM module index
UUI_QAS_TOKEN_ERROR EQU 524 QASTOKN acquisition error
UUI_QAS_TIMEOUT EQU 528 Response timeout occurred
UUI_QAS_ACK_TIMEOUT EQU 532 Final ACK timeout occurred
UUI_QAS_MODULE_NOT_FOUND EQU 536 Indexed module not found
UUI_QAS_ASYNC_IN_PROGRESS EQU 540 Async service already in
*
...progress, request bypassed
UUI_TAPEPLEX_TIMEOUT EQU 544 TAPEPLEX (non-SMC) ASCOMM
*
...timeout occurred
UUI_TAPEPLEX_ASCOMM_ERROR EQU 548 TAPEPLEX (non-SMC) ASCOMM
*
...error occurred
UUI_TAPEPLEX_ASCOMM_ABEND EQU 552 TAPEPLEX (non-SMC) ASCOMM
*

```

FIGURE A-7 NCSCOMM Macro (Part 7)

*		
UUI_NO_ACTIVE_COMMPATH	EQU 600	No active COMMPATH for TAPEPLEX
UUI_TAPEPLEX_INVALIDATED	EQU 604	TAPEPLEX was invalidated
UUI_LOCAL_SUBSYS_INACTIVE	EQU 608	Local HSC inactive
UUI_LOCAL_SUBSYS_ERROR	EQU 612	Local HSC not valid
UUI_LOCAL_SUBSYS_NOT_FOUND	EQU 616	Local HSC not on SSCVT
UUI_LOCAL_SUBSYS_REL_ERROR	EQU 620	Local HSC release error
*		
UUI_REMOTE_REQUEST_ERROR	EQU 700	Invalid remote transaction
UUI_CGI_NAME_NOT_SPECIFIED	EQU 704	CGI module not specified
UUI_IP_SETSOCKPARAM_ERROR	EQU 708	TCPIP setsockopt() error
UUI_IP_SOCKET_ERROR	EQU 712	TCPIP socket() error
UUI_IP_SETSOCKOPT_ERROR	EQU 716	TCPIP setsockopt() error
UUI_IP_NO_FREE_PORT_ERROR	EQU 720	No free port (SMCCTCPP)
UUI_IP_BIND_ERROR	EQU 724	TCPIP bind() error
UUI_IP_CONNECT_ERROR	EQU 728	TCPIP connect() error
UUI_IP_SEND_ERROR	EQU 732	TCPIP send() error
UUI_IP_RECV_ERROR	EQU 736	TCPIP recv() error
UUI_IP_TIMEOUT	EQU 740	TCPIP timeout occurred
UUI_IP_LISTEN_ERROR	EQU 744	TCPIP listen() error
UUI_IP_GETCLIENTID_ERROR	EQU 748	TCPIP getclientid() error
UUI_IP_ACCEPT_ERROR	EQU 752	TCPIP accept() error
UUI_IP_GIVESOCKET_ERROR	EQU 756	TCPIP givesocket() error
UUI_IP_TAKESOCKET_ERROR	EQU 760	TCPIP takesocket() error
*		
UUI_HTTP_TASK_LIMIT	EQU 800	HTTP task limit exceeded
UUI_HTTP_CGI_MOD_NOT_FOUND	EQU 804	CGI module not found
UUI_HTTP_CGI_MOD_ABEND	EQU 808	CGI module abended
UUI_HTTP_NOT_AUTHORIZED	EQU 812	CGI module not authorized
UUI_HTTP_NOT_SUPPORTED	EQU 816	CGI module not supported
UUI_CGI_RETURNED_ERROR	EQU 820	CGI module returned error
UUI_REMOTE_HSC_REL_ERROR	EQU 824	Remote HSC subsystem is ...incorrect release
*		
UUI_CGI_INPUT_ERROR	EQU 832	CGI input function error
UUI_CGI_OUTPUT_ERROR	EQU 836	CGI output function error
UUI_CGI_SERVICE_ERROR	EQU 840	CGI service function error
UUI_BROWSER_NOT_AUTHORIZED	EQU 844	Request from WEB browser ...not authorized
*		
*		
UUI_UNKNOWN_ERROR	EQU 996	Unknown logic error
*		
MAX_UUI_LINE_SIZE	EQU 4096	Max UUI line size
*		
		MEND

FIGURE A-8 NCSCOMM Macro (Part 8)

NCSNUII

```
MACRO
&LABEL NCSNUII &FUNC,      (Function)          +
          &NCSCOMM=        (Address of NCSCOMM)
          AGO .SKIPROM
          TITLE 'NCSNUII - NCS UII Call Service'
**MACROPROLOGUE*****
**
*
*           Copyright (2006-2008) StorageTek, Inc.      *
*                   All Rights Reserved                *
*
* MACRO:      NCSNUII - NCS UII Call Service           *
*
* FUNCTION:  Either sets up, calls, or destroys the NCS SMCNUII
*            environment.
*
* INPUT:
*   NAMEFIELD:
*   &LABEL----optional
*   ALLOWABLE VALUES:      Valid assembly label.
*   SPECIAL CONSIDERATIONS: None
*
*   POSITIONAL PARAMETER:
*
*   &FUNC-----required for all invocations, no default
*   ALLOWABLE VALUES: 1-4 character function
*   - ALLC = Allocate the SMCNUII environment
*   - DEST = Destroy the SMCNUII environment
*   - CALL = Call SMCNUII
*
*   KEYWORD PARAMETERS:
*
*   &NCSCOMM-----required for all functions, no default
*   ALLOWABLE VALUES: Address of NCSCOMM buffer
*   - label = Address of the NCSCOMM area
*   - (reg) = Register containing address of NCSCOMM
*             Caller must ensure that the register is
*             not 0, 1, 13, 14, or 15.
*
*   SPECIAL CONSIDERATIONS:
*   Requires NCSCOMM MACRO be included in same source file.
* *
```

FIGURE A-9 NCSNUII Macro (Part 1)

```

* CHANGE HISTORY:
*=====
=*
* ISSUE (RELEASE) STORY PGMR DATE ROLLUP INFORMATION
* DESCRIPTION
*=====
=*
* SMC620 1153 SMC 10/27/05
* New for SMC release 6.2.
* SMC620 1205 SMC 02/14/06
* Added some parens to avoid macro problems.
* SMC620 1220 SMC 03/18/06
* Use J instead of B instructions.
* SMC620 1241 SMC 05/01/06
* Add ERRET for LOADs. Remove SVERIREG macro.
* SES700 NLR 12/20/07
* Correct wrong length records.
* I6658563 CLB 02/04/08
* Move TITLE statement to correct position.
* I6738958 CLB 08/25/08
* Add return code and reason code for LOAD failures.
*
**ENDPROLOGUE*****
**
.SKIPROM ANOP
        LCLC &ERR1          Parameter for errors
        LCLC &ERR2          Parameter for errors
        LCLC &NREG          NCSCOMM register
.*
&ERR1 SETC '&FUNC'          Set possible error literal
        AIF ('&FUNC' EQ 'ALLC').NQU010
        AIF ('&FUNC' EQ 'CALL').NQU010
        AIF ('&FUNC' EQ 'DEST').NQU010
        AGO .E0\
.*
.NQU010 ANOP
&NREG SETC ''              Initialize NCSCOMM register
        AIF ('&NCSCOMM'(1,1) NE '(').NQU020          Not a register
&NREG SETC '&NCSCOMM'(2,K'&NCSCOMM-2)          Obtain register
.* Generate label and equates.
.*
.NQU020 ANOP
        AIF ('&LABEL' EQ '').NQU030
&LABEL DS 0H
.NQU030 ANOP
@ENVA&SYSNDX EQU NCOMENVA-NCSCOMM
@QPMA&SYSNDX EQU NCOMNUII-NCSCOMM
@RSRC&SYSNDX EQU NCOMRSRC-NCSCOMM
@RSRS&SYSNDX EQU NCOMRSRS-NCSCOMM
        AIF ('&FUNC' EQ 'CALL').NQU300
        AIF ('&FUNC' NE 'ALLC').NQU200
.*

```

FIGURE A-10 NCSNUII Macro (Part 2)

```

.* Generate FUNC=ALLC code
.*
.NQU100 ANOP                                FUNC=ALLC code
        AIF ('&NREG' NE '') .NQU110
        XC  &NCSCOMM+@ENVA&SYSNDX.(4), &NCSCOMM+@ENVA&SYSNDX
        AGO .NQU120
.NQU110 ANOP
        XC  @ENVA&SYSNDX.(4, &NREG), @ENVA&SYSNDX. (&NREG)
.NQU120 ANOP
        LOAD EP=SMCNUIIA, ERRET=NOUI&SYSNDX  Get SMCNUIIA entry
addr
        LTR  R15, R0                        Entry address found?
        JZ   NOUI&SYSNDX                    No, skip call
        BALR R14, R15                       Call SMCNUIIA
        AIF ('&NREG' NE '') .NQU130
        ST   R1, &NCSCOMM+@ENVA&SYSNDX    Save DCALL environment
        AGO .NQU140
.NQU130 ANOP
        ST   R1, @ENVA&SYSNDX. (&NREG)    Save DCALL environment
.NQU140 ANOP
        LOAD EP=SMCNUII, ERRET=NOUI&SYSNDX Get SMCNUII entry addr
        AIF ('&NREG' NE '') .NQU150
        ST   R0, &NCSCOMM+@QPMA&SYSNDX    Save SMCNUII address
        AGO .NQU190
.NQU150 ANOP
        ST   R0, @QPMA&SYSNDX. (&NREG)    Save SMCNUII address
.NQU190 ANOP
        B    NURC&SYSNDX
NOUI&SYSNDX DS 0H
        LA   R15, UII_LOAD_ERROR Set error reason code
        ST   R15, &NCSCOMM+@RSRS&SYSNDX
        LA   R15, UII_CMD_ERROR Set error return code
        ST   R15, &NCSCOMM+@RSRC&SYSNDX
NURC&SYSNDX DS 0H
        AGO .NQU900
.*

```

FIGURE A-11 NCSNUII Macro (Part 3)

```

.* Generate FUNC=DEST code.
.*
.NQU200 ANOP
        AIF ('&FUNC' NE 'DEST').NQU300
        LOAD EP=SMCNUIID,ERRET=NOUI&SYSNDX Get SMCNUIID entry addr
        LR R15,R0 Set address for call
        AIF ('&NREG' NE '').NQU210
        L R0,&NCSCOMM+@ENVA&SYSNDX Get DCALL environment
        AGO .NQU220
.NQU210 ANOP
        L R0,@ENVA&SYSNDX.(&NREG) Get DCALL environment
.NQU220 ANOP
        BALR R14,R15 Call SMCNUIID
        DELETE EP=SMCNUIIA Delete module SMCNUII
        DELETE EP=SMCNUII
        DELETE EP=SMCNUIID
        B NURC&SYSNDX
NOUI&SYSNDX DS 0H
        LA R15,UUI_LOAD_ERROR Set error reason code
        ST R15,&NCSCOMM+@RSRS&SYSNDX
        LA R15,UUI_CMD_ERROR Set error return code
        ST R15,&NCSCOMM+@RSRC&SYSNDX
NURC&SYSNDX DS 0H
        AIF ('&NREG' NE '').NQU230
        XC &NCSCOMM+@ENVA&SYSNDX.(4),&NCSCOMM+@ENVA&SYSNDX.
        XC &NCSCOMM+@QPMA&SYSNDX.(4),&NCSCOMM+@QPMA&SYSNDX.
        AGO .NQU900
.NQU230 ANOP
        XC @ENVA&SYSNDX.(4,&NREG),@ENVA&SYSNDX.(&NREG)
        XC @QPMA&SYSNDX.(4,&NREG),@QPMA&SYSNDX.(&NREG)
        AGO .NQU900
.*

```

FIGURE A-12 NCSNUII Macro (Part 4)

```

.* Generate FUNC=CALL code.
.*
.NQU300 ANOP
@PLST&SYSNDX EQU NCOMPLST-NCSCOMM
    AIF ('&NREG' NE '') .NQU310
    L   R15,&NCSCOMM+@QPMA&SYSNDX Get SMCNUII address
    L   R0,&NCSCOMM+@ENVA&SYSNDX Get DCALL address
    LA  R1,&NCSCOMM           Get NCSCOMM address
    AGO .NQU400
.NQU310 ANOP
    L   R15,@QPMA&SYSNDX.(&NREG) Get SMCNUII address
    L   R0,@ENVA&SYSNDX.(&NREG) Get DCALL address
    LR  R1,&NCSCOMM           Get NCSCOMM address
.NQU400 ANOP
    AIF ('&NREG' NE '') .NQU410
    ST  R1,&NCSCOMM+@PLST&SYSNDX Set NCSCOMM address
    LA  R1,&NCSCOMM+@PLST&SYSNDX Get address of NCSCOMM
address
    AGO .NQU420
.NQU410 ANOP
    ST  R1,@PLST&SYSNDX.(&NREG) Set NCSCOMM address
    LA  R1,@PLST&SYSNDX.(&NREG) Get address of NCSCOMM
address
.NQU420 ANOP
    BALR R14,R15           Call SMCNUII
    AGO .NQU900
.*
.* Error messages.
.*
.E0      MNOTE 8,'NCSNUII - &ERR1 keyword invalid.'
        AGO .NQU900
.E1      MNOTE 8,'NCSNUII - &ERR1 parameter invalid.'
.NQU900 ANOP
        MEND

```

FIGURE A-13 NCSNUII Macro (Part 5)

UII Sample Programs

HSC/VTCS Command Sample

```
UISAMP  TITLE 'UISAMP  - UII Programmatic Interface Sample'
**PROLOGUE*****
*****
*
* UISAMP  - Sample UII programmatic interface example
*
* FUNCTION: This routine illustrates calling the Unified User
*
*           Interface for an HSC/VTCS command from an application
*           program.
*
**ENDPROLOGUE*****
*****
UISAMP  CSECT
UISAMP  AMODE 31
UISAMP  RMODE ANY
**
*# Establish CSECT addressability
*#
        STM   R14,R12,12(R13)
        LR    R12,R15           Set base register.
        USING UISAMP,R12       Set CSECT addressability
        LA    R0,WAREAL        Get length of work area
        GETMAIN RC,LV=(R0),SP=0,LOC=ANY  Get a work area
ST      R13,4(R1)             Chain the backward save area pointer
ST      R1,8(R13)            Chain the forward save area pointer
        LR    R13,R1           Use the new save/work area
        USING WAREA,R13       Addressability for local work area
MVC     WWTO,CWTOPL          Move WTO parameter list to work area
        USING NCSCOMM,WNCSCOMM  Set NCSCOMM addressability
        LA    R0,WNCSCOMM      Clear NCSCOMM work area
        LA    R1,NCSCOMML
        LA    R2,0
        LA    R3,0
        MVCL R0,R2
        MVC   NCOMID,=CL4'NCOM'  Initialize header
        LA    R0,NCSCOMML
        STH   R0,NCOMLEN
MVI     NCOMRTRC,KTRUE       Enable trace (GTF trace for testing)
*
        NCSNUII ALLC,NCSCOMM=WNCSCOMM
ST      R15,WRC              Save return code in case of error
LTR     R15,R15              Any initialization errors?
BNZ     RETURN               Yes, exit
*#
```

FIGURE A-14 HSC/VTCS UII Sample Program (Part 1)

```

*# Get the list of TapePlex names.  This example uses only the
*# first name as the TapePlex to which UII commands are directed.
*#
        MVI   NCOMTYPE,NCOMPLXL  TapePlex list request
        NCSNUII CALL,NCSCOMM=NCSCOMM  Get TapePlex name list
        ST    R15,WRC             Save return code
        LTR   R15,R15             Successful?
        BNZ   TERMUII             No, exit
        L     R1,NCOMOUTL         Get TapePlex response length
        C     R1,=F'8'           Have at least one TapePlex?
        BNL   HAVEPLEX           Yes, continue
        WTO   'No TapePlex returned',ROUTCDE=11
        MVC   WRC,=F'16'         Set error return code
        B     TERMUII
*
HAVEPLEX DS    0H
        L     R1,NCOMOUTA         Get address of TapePlex list
        MVC   WPLEX,0(R1)         Move TapePlex name to workarea
        MVC   NCOMPLXN,WPLEX      Move TapePlex name to NCSCOMM
*#
*# UII command processing.  To process multiple UII commands, this
*# routine would be a loop.
*#
DOCMDS  DS    0H
        LA   R1,CMDLIT           Get address of command
        ST   R1,NCOMREQA         Put into NCSCOMM
        LA   R1,L'CMDLIT         Get length of command
        ST   R1,NCOMREQL         Put into NCSCOMM
        OI   NCOMOFMT,NCOMRCSV   Set format to return
        MVC  NCOMBKTG,CSVBREAK   Set CSV break tag
        LA   R1,CSVFIELD         Point to CSV field names
        ST   R1,NCOMFTGA         Put in NCSCOMM
        LA   R1,L'CSVFIELD       Length of CSV field names
        ST   R1,NCOMFTGL         Put in NCSCOMM
        MVI  NCOMFIXD,KTRUE      Indicate fixed CSV format
        MVI  NCOMTYPE,NCOMUII    Indicate normal UII request
*#
*# Loop to initiate command and retrieve output.
*#
CMDLOOP DS    0H
        NCSNUII CALL,NCSCOMM=NCSCOMM  Output data loop
        C     R15,=A(UII_EOF)       End of output?
        BE   ENDCMDLP             Yes, terminate this command
        C     R15,=A(UII_MORE_DATA)  UII line returned?
        BE   PROCOUTP             Yes, process it
        ST   R15,WRC             Save error return code
        B     TERMUII             Exit
*#

```

FIGURE A-15 HSC/VTCS UII Sample Program (Part 2)

```

*# Process output data.
*#
PROCOUTP DS      0H
          CLI     NCOMOUTT,NCOMOUTT_CSVH   CSV title line?
          BNE     CSVDATA                   No, must be CSV data
*#
*# Check title line for invalid tag names if desired
*#
          B       CMDLOOP
CSVDATA DS      0H
          L       R1,NCOMOUTA              Point to output data
          USING  MYCSV,R1                  Map it
          CLI     MCDEN,C' '              Have density?
          BE      CMDLOOP                  No, not interested
          MVC     WTOVOL,MCVOLSER          Set up volser
          MVC     WTODEN,MCDEN             Set up density
          MVC     WTOENCR,MCENCR           Set up encrypted
          WTO     MF=(E,WWTO)
          B       CMDLOOP
*#
*# Command terminated successfully.
*#
ENDCMDLP DS      0H
          WTO     'Command terminated',ROUTCDE=11
          L       R15,NCOMRSRC             Get command response RC
*#
*# Terminate the UUI environment
*#
TERMUUI DS      0H
          NCSNUII DEST,NCSCOMM=WNCSCOMM Terminate UUI
**
*# Return.
*#
RETURN DS      0H
          L       R3,WRC                    Preserve return code
          LA      R0,WAREAL                 Get length to free.
          LR      R1,R13                    Get address to free
          L       R13,4(,R13)              Get the caller's save area.
          FREEMAIN RC,A=(R1),LV=(R0),SP=0
          LR      R15,R3                    Set R15 to return code
          L       R14,12(0,R13)            Restore caller's reg 14
          LM      R0,R12,20(R13)           Get the caller's regs
          BR      R14                       Return to caller
*
          LTORG ,
*

```

FIGURE A-16 HSC/VTCS UUI Sample Program (Part 3)

```

KTRUE    EQU    X'01'
CWTOPL   WTO    'Volser: XXXXXX, Density Rectech: XXXXXXXX Encrypt:
XXX +
                                     ',ROUTCDE=11,                                     +
                                     MF=L
CWTOPLL  EQU    *-CWTOPL
*
CMDLIT   DC     C'VOLRPT'
CSVFIELD DC     C'volser,density,encrypted' Must be mixed case
CSVBREAK DC     CL32'volume_data' Must be mixed case
*
WAREA    DSECT  ,                               Local work area
SAVEAREA DS     18F                             Savearea
WRC      DS     F
WPLEX    DS     CL8                             TapePlex name
WWTO     DS     XL(CWTOPLL)                     For WTO
        ORG    WWTO
        DS     CL12
WTOVOL   DS     CL6
        DS     CL19
WTODEN   DS     CL8
        DS     CL10
WTOENCR  DS     CL3
        ORG    ,
        DS     0D
WNCSCOMM DS     XL(NCSCOMML)                   Area for NCSCOMM parmlist
WAREAL   EQU    *-WAREA                         Length of local work area
*
MYCSV    DSECT  ,
MCVOLSER DS     CL6                             Returned volser
        DS     CL1                             Comma
MCDEN    DS     CL8                             Density rectech name
        DS     CL1                             Comma
MCENCR   DS     CL3                             Encrypted yes|no
*
        NCSCOMM ,
        YREGS
        END

```

FIGURE A-17 HSC/VTCS UUI Sample Program (Part 4)

SMC Command Sample

```
UUISAMP2 TITLE 'UUISAMP2 - UII Programmatic Interface Sample for
SMC'
**PROLOGUE*****
*****
*
* UUISAMP2 - Sample UII programmatic interface example for SMC
*
*
* FUNCTION: This routine illustrates calling the Unified User
*
*         Interface to execute an SMC command.
*         This is a called module which will query a volume to
*         determine if it is mounted, and if so, will return
*         volume and drive characteristics.
*
* PARAMETER LIST:
*         Volume serial (6 characters, input)
*         Device address on which the volume is mounted
*         (4 characters, output)
*         Volume media (8 characters, output)
*         Device recording technique (8 characters, output)
*
* RETURN CODES:
*         0 - Volume mounted, data returned
*         4 - SMC not active
*         8 - Volume not mounted (or not found)
*         16 - Unexpected UII error (WTO message displayed)
*
* SPECIAL CONSIDERATIONS:
*         This module must be run from an authorized library and
*         must be linkedited as authorized (AC(1)).
*
**ENDPROLOGUE*****
*****
UUISAMP2 CSECT
UUISAMP2 AMODE 31
UUISAMP2 RMODE ANY
**
```

FIGURE A-18 SMC UII Sample Program (Part 1)

```

*# Establish CSECT addressability
*#
    STM    R14,R12,12(R13)
    LR     R12,R15           Set base register
    USING  UUISAMP2,R12     Set CSECT addressability
    LR     R5,R1            Point to input parameter list
    USING  INPARM,R5        Set addressability
    LA     R0,WAREAL        Get length of work area
    GETMAIN RC,LV=(R0),SP=0,LOC=ANY    Get a work area
ST    R13,4(R1)           Chain the backward save area pointer
ST    R1,8(R13)          Chain the forward save area pointer
    LR     R13,R1           Use the new save/work area
    USING  WAREA,R13        Addressability for local work area
    USING  NCSCOMM,WNCSCOMM    Set NCSCOMM addressability
    LA     R0,WNCSCOMM      Clear NCSCOMM work area
    LA     R1,NCSCOMML
    LA     R2,0
    LA     R3,0
    MVCL  R0,R2
    MVC   NCOMID,=CL4'NCOM'    Initialize header
    LA     R0,NCSCOMML
    STH   R0,NCOMLEN
    MVI   NCOMRTRC,KTRUE      Enable trace (GTF trace for testing)
*
    NCSNUII ALLC,NCSCOMM=WNCSCOMM
    LTR   R15,R15           Any initialization errors?
    BNZ   OTHERR           Yes, format error and exit
*
    OI    WFLAG,WINITOK    Indicate UUI initialized
    MVC   NCOMPLXN,PLEXSMC    Move TapePlex name SMC to NCSCOMM
    MVI   NCOMFIXD,KTRUE     Indicate fixed CSV format
    MVI   NCOMNOTI,KTRUE     Indicate no CSV title
    MVI   NCOMTYPE,NCOMUUI   Indicate normal UUI request
    LA    R1,WCMD           Get address of command
    ST    R1,NCOMREQA       Put into NCSCOMM
    LA    R1,L'WCMD         Get length of command
    ST    R1,NCOMREQQL     Put into NCSCOMM
    OI    NCOMOFMT,NCOMRCSV    Set format for output
*#
*# Initialize UUI volume query.
*#
BLDCMD1 DS    0H
    MVC   WCMD,CMDLITV      Set up for DISPLAY VOLUME
    MVC   WCMDVOL,INPVOL    Move input volser to command
    MVC   NCOMBKTG,CSVBRK1  Set CSV break tag
    LA    R1,CSVFLD1        Point to CSV field names
    ST    R1,NCOMFTGA       Put in NCSCOMM
    LA    R1,L'CSVFLD1      Length of CSV field names
    ST    R1,NCOMFTGL       Put in NCSCOMM
    LA    R3,PROCOUT1        Processing routine
    LA    R4,ENDCMD1        EOF routine
*#

```

FIGURE A-19 SMC UUI Sample Program (Part 2)

```

*# Loop to initiate command and retrieve output.
*#
DOCMD  DS  0H
        NCSNUII CALL,NCSCOMM=NCSCOMM  Output data loop
        C      R15,=A(UUI_EOF)        End of output?
        BER    R4                      Yes, end of output routine
        C      R15,=A(UUI_MORE_DATA)  UUI line returned?
        BER    R3                      Yes, processing routine
        C      R15,=A(UUI_CMD_FATAL)  Is RC a reason code?
        BNH   HAVERESN                No, continue
        ST    R15,NCOMRSRS           Set RC as reason code
        LA    R15,UUI_CMD_ERROR      Set RC error
*
HAVERESN DS  0H
        CLC   NCOMRSRS,=A(UUI_SMC_INACTIVE)  SMC inactive?
        BNE   OTHERR
        LA    R15,KNOSMC             Set SMC not active RC
        B     TERMUUI               Return to caller
*#
*# For any unexpected error, format the return code and
*# display a message on the console.
*#
OTHERR  DS  0H
        CVD  R15,WKDOUBLE           Convert RC to decimal
        UNPK WKDISPRC,WKDOUBLE      Make displayable
        OI   WKDISPRC+L'WKDISPRC-1,X'F0'  Unsign
        MVC  WWTO,CWTOPL            Set up WTO
        MVC  WTORC,WKDISPRC         Move displayable RC
        L    R15,NCOMRSRS           Load reason code
        CVD  R15,WKDOUBLE           Convert to decimal
        UNPK WKDISPRC,WKDOUBLE      Make displayable
        OI   WKDISPRC+L'WKDISPRC-1,X'F0'  Unsign
        MVC  WTOREAS,WKDISPRC       Move displayable reason
        WTO  MF=(E,WWTO)            Display error
        LA   R15,KBADRC             Unexpected error
        B    TERMUUI               Exit
*#
*# Process volume query output data.
*#
PROCOUT1 DS  0H
        L    R1,NCOMOUTA           Point to output data
        USING MYCSV1,R1            Map it
        CLC  MC1MNTD,=C'yes'       Is volume mounted?
        BNE  DOCMD                 No, see if other occurrence of vol
        MVC  INPDVADR,MC1DVADR      Move device address to output
        MVC  INPMEDIA,MC1MEDIA      Move media to output
        OI   WFLAG,WMNTD            Indicate volume mounted
        B    DOCMD                 Must loop until EOF returned
*#
*# If the volume was not found, or was not mounted, then
*# return to caller with a return code that indicates not mounted.
*#
ENDCMD1 DS  0H
        L    R15,NCOMRSRC
        C    R15,=A(UUI_CMD_WARNING)
        BH   OTHERR                Display error
        TM   WFLAG,WMNTD            Volume mounted?
        BO   DOCMD2                 Yes, continue with drive info
        LA   R15,KNOTMNTD           Not mounted return code
        B    TERMUUI               Exit
*#

```

FIGURE A-20 SMC UUI Sample Program (Part 3)

```

*# If the volume was found mounted, perform the DISPLAY DRIVE
*# command to determine the device recording technique.
*#
DOCMD2  DS      0H
        MVC     WCMD,CMDLITD      Set up D DR command
        MVC     WCMDDRV,INPDVADR  Put device address in command
        MVC     NCOMBKTG,CSVBRK2  Set CSV break tag
        LA      R1,CSVFLD2        Point to CSV field names
        ST      R1,NCOMFTGA       Put in NCSCOMM
        LA      R1,L'CSVFLD2      Length of CSV field names
        ST      R1,NCOMFTGL       Put in NCSCOMM
        LA      R3,PROCOUT2       Output routine
        LA      R4,SETRC0         Terminate CMD2
        B       DOCMD             Initiate command

*#
*# Format output from the DISPLAY DRIVE command.
*#
PROCOUT2 DS      0H
        L       R1,NCOMOUTA       Point to output data
        USING   MYCSV2,R1         Map it
        MVC     INPRECT,MC2RECT   Move rectech to output
        B       DOCMD             Only one line, but loop to EOF
*
SETRC0  DS      0H
        SR      R15,R15           Good return

*#
*# Terminate the UII environment
*#
TERMUUI DS      0H
        LR      R3,R15            Preserve return code
        TM      WFLAG,WINITOK     UII initialized?
        BNO     RETURN            No, skip termination
        NCSNUII DEST,NCSCOMM=WNCSCOMM Terminate UII
**

```

FIGURE A-21 SMC UII Sample Program (Part 4)

```

#
RETURN   DS    0H
         LA    R0,WAREAL           Get length to free.
         LR    R1,R13             Get address to free
         L     R13,4(,R13)        Get the caller's save area.
FREEMAIN RC,A=(R1),LV=(R0),SP=0
         LR    R15,R3             Set R15 to return code
         L     R14,12(0,R13)      Restore caller's reg 14
         LM    R0,R12,20(R13)    Get the caller's regs
         BR    R14               Return to caller

*
        LTORG ,

*
KTRUE    EQU   X'01'
KNOSMC   EQU   4
KNOTMNTD EQU   8
KBADRC   EQU   16
PLEXSMC  DC    CL8'SMC'
CMDLITV  DC    CL20'D VOL '
CMDLITD  DC    CL20'D DR  '
CSVFLD1  DC    C'volser,mounted,media,device_address'
CSVFLD2  DC    C'device_address,rectech'
CSVBRK1  DC    CL32'volume_data' Must be mixed case
CSVBRK2  DC    CL32'drive_data'
CWTOPL   WTO   'Unexpected RC=XXXX reason=XXXX from SMC UII request  +
                                                ',ROUTCDE=11,      +
        MF=L
CWTOPLL  EQU   *-CWTOPL
*
WAREA    DSECT ,                 Local work area
SAVEAREA DS    18F               Savearea
WKDOUBLE DS    D
WKDISPRC DS    CL4
WFLAG    DS    X                 Flag
WINITOK  EQU   X'80'             UII initialized successfully
WMNTD    EQU   X'40'             Found mounted volume
WWTO     DS    XL(CWTOPLL)       For WTO
        ORG   WWTO
        DS    CL18
WTORC    DS    CL4
        DS    CL8
WTOREAS  DS    CL4
        ORG   ,
WCMD     DS    XL(L'CMDLITV)     Work area for UII command
        ORG   WCMD
        DS    CL6               Command constant
WCMDVOL  DS    CL6               Volser for command
        ORG   WCMDVOL
WCMDDRV  DS    CL4
        ORG   ,
        DS    0D
WNCSCOMM DS    XL(NCSCOMML)     Area for NCSCOMM parmlist
WAREAL   EQU   *-WAREA          Length of local work area
*

```

FIGURE A-22 SMC UII Sample Program (Part 5)

```

*
INPARM  DSECT ,
INPVOL  DS    CL6      Input volser
INPDVADR DS    CL4      Device address
INPMEDIA DS    CL8      Volume media
INPRECT DS    CL8      Device rectech
*
MYCSV1  DSECT ,
MC1VOL  DS    CL6      Returned volser
        DS    CL1      Comma
MC1MNTD DS    CL3      Mounted (yes|no)
        DS    CL1      Comma
MC1MEDIA DS    CL8      Media
        DS    CL1      Comma
MC1DVADR DS    CL4      Device address
*
MYCSV2  DSECT ,
MC2DVADR DS    CL4      Device address
        DS    CL1      Comma
MC2RECT DS    CL8      Rectech
*
        NCSCOMM ,
        YREGS
        END

```

FIGURE A-23 SMC UUI Sample Program (Part 6)

ELS XML Tags

“ELS XML Schema” on page 207 describes the XML schema for ELS UII capable commands. All UII capable commands produce XML using only “data” and “header/trailer tags”. Data tags always contain a “string” value between the data start tag (e.g. <data_tag_name>) and data end tag (e.g. </data_tag_name>). In the schema diagrams that follow, the “Data Tag” column shows ONLY the data start tag; the string value and data end tag always immediately follow the data start tag and are omitted from the diagrams for clarity.

An example of a complete data tag object (found in all schema) is:

```
"<els_version>7.0.0</version>
```

Header/trailer tags never contain “string” values within their start and end tag, but they usually contain one or more data tag object. Header and trailer tags are simply the start and end tags for a named object (e.g. <drive_data> is called a header tag, while </drive_data>, with the “</” is called a trailer tag). Header tags provide structure for the XML showing the relationship between a “parent” object (such as “<drive_data>”) and its definition “children” objects such as “<device_address>, <library_location>, <media> etc. In the schema diagrams that follow, the “Header/Trailer” column shows BOTH the header tag (e.g. <drive_data>) and trailer tag (e.g. </drive_data>), on different lines, any data tags listed between the header and trailer tags (with the same name) represent the “children” of the header tag. This “parent-child” relationship can be used to define CSV attributes.

An example of a complete header/trailer with multiple data objects (found in the SMC Display (or Query) DRive command schema) is:

```
<drive_data>
    <device_address>9100</device_address>
    <tapeplex_name>HSCQ</tapeplex_name>
    <model>VIRTUAL</model>
    <rectech>VIRTUAL</virtual>
    <vtss_name>SVTSS2</vtss_name>
    <mvs_drive_status>offline</mvs_drive_status>
</drive_data>
```

Not all “Data Tag” names listed in the XML schema will be produced for all requests. In this instance, since the <model> was virtual, and returned a <vtss_name>, attributes such as <library_location>, or <location> would have been superfluous. Also there was no <smc_drive_status> to report.

In general:

- ⌘ Entire header/trailer objects + multiple imbedded data objects, or same name data objects may be repeated in the XML response without any indication of the repeating character of the data. Possible repeating structures or values are indicated by an “(nn...)” in the header or data tag columns of the schema (but “(nn...)” does not appear in the XML response; it is only shown in the table to show you the possible repeating objects. As examples see <drive_data> in the SMC DIisplay (or Query) DRive command schema, or <esoteric_name> in the SMC POLicy LIst command schema. Note that his last example is an exception to the general rule, and the tag <esoteric_count> does provide an indication and count of the repeating data objects.
- ⌘ Where a data tag object, if present, would make another data tag object superfluous, that data tag object will not be produced at all (rather than send back an null value for the data object).
- ⌘ Where the string value is defined as “flag” (which is a 1 character “Y” or “N”), only the “Y” value is normally returned. If the data tag cannot be found in the returned XML, then the assumption is that the value is “N”.
- ⌘ In evaluating a data tag object, you must be aware of the immediate “parent”, because the same data tag “children” names may be found under different “parent” names. For example in the SMC POLicy VALidate schema the data object <policy_validate_return_code> is found under both the <policy_info> and <policy_validate_request> headers; in the first instance, the <policy_validate_return_code> represents the return code for the specified <policy_name>; in the second instance, the <policy_validate_return_code> represents the highest return code for all listed policies.

Other XML syntactical elements such as attributes, CDATA, comments, etc. are not used within the XML. Data tags are further described in “[ELS XML Tag Definitions](#)” on page 191, where the “string” value is further defined as “Format” date, time, number, hex, character, and flag corresponding to the type of characters that will be found in each string. These strings are variable length; the actual string length must be inferred programmatically.

ELS XML Tag Definitions

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<accessible>	Yes/no. Indicates whether a VTSS is accessible from this host.
<acs_count>	ACS count for this CDS.
<acs_mvc_counts>	
<acs_status>	ACS status <CONNECTED | DISCONNECTED>.
<acs>	<ul style="list-style-type: none"> ? ACS ID where the MVCs reside. ? ACS ID where the RTD is attached. ? ACS ID specified in the Storage Class. ? ACS ID where the MVC resides. ? Default ACS ID. ? ACS ID <real subpools only>.
<active_migrate_tasks>	Number of active migration tasks.
<active_server>	The SERVER name for the currently active communications path to the specified TAPEPLEX. If specified as “<local>” then the currently active communication path is the local HSC or MCS/CSC.
<active>	Yes/no. Indicates whether the host is active.
<adjacent_count>	Number of adjacent LSMs for this LSM.
<adjacent_lsm>	ID of LSM adjacent to this LSM.
<advanced_management>	Yes/no. Indicates if Advanced Management Feature enabled.
<alias_host>	The <host_name> that this client will send to the specified TAPEPLEX.
<archive_status>	<ul style="list-style-type: none"> ? Archived - the VTV was archived to this MVC. ? Consolid - the VTV was consolidated/exported to this MVC. ? Deletion - the VTV was migrated to this MVC, but this MVC copy is in addition to that dictated by the VTV's MGMTCLAS. ? Migrated - the VTV was migrated to this MVC. ? Reconcil - the VTV should not have been migrated to this MVC. RECONCIL should be run.
<audit>	Yes/no. Audit in progress or previous audit failed.
<auto_migrate_threshold>	Current threshold for automatic migration.
<auto_migration_list>	List of VTVs scheduled for automatic migration.
<available_3105>	CDS compatibility: <cds_compatible_v4>, <cds_compatible_v5>, <cds_compatible_v6>

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<block_id>	Block ID of the VTV on the MVC.
<broken>	Yes/no. Indicates MVC error status.
<cap_count>	CAP count for this CDS. CAP count for this LSM.
<cap>	CAP ID.
<capacity_mb>	Capacity of VTSS in Mb.
<cds_block>	The block number <bbb> of the MVC within the relevant CDS subfile.
<CDS_compatible_V4>	Yes/no.
<CDS_compatible_V5>	Yes/no.
<CDS_compatible_V6>	Yes/no.
<cds_record>	The block record number <rrr> of the MVC within the relevant CDS subfile.
<cell_count>	Storage cell count for this LSM. Cell count for this CAP.
<CF_lock_number>	Coupling Facility lock number.
<CF_lock_owning_host>	Coupling Facility lock owner.
<CF_lock_type>	Coupling Facility lock type.
<channel_id>	The channel id of a single RTD/CLINK.
<cleaner_count>	Cleaner cartridge count for this LSM.
<cleaner_over_maxclean>	Yes/no. Indicates whether a cleaning cartridge is over the MAXCLEAN value.
<cleaner_prefix>	Cleaning cartridge prefix for this CDS.
<cleaner_usable>	Yes/no. Indicates whether a cleaning cartridge is usable.
<client_subsystem_name>	The SMC subsystem name of the client.
<clink_id>	Internal ID of a CLINK.
<compress_percent>	Percentage compression for the VTV.
<conflicting_exclusion_criteria>	“Y” indicates that during a SIMulate command, an SMC0045 and SMC0046 “conflicting exclusion criteria” messages were issued.
<connected_device_types>	RTD device types connected to the VTSS.
<consolidate_date>	Date YYYYMMDD that the MVC was used for consolidation.
<consolidate_time>	Time HH:MM:SS that the MVC was used for consolidation.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<consolidated>	? Yes/no. Indicates whether a VTV is currently consolidated. ? Indicates that this MVC is a consolidated MVC
<contains_free_MVCs>	Yes/no. Indicates whether the MVC Pool contains free MVCs.
<copies_to_migrate>	1, 2, 3, or 4. Indicates number of migration copies of a VTV.
<cuaddr>	A DECOM or CONFIG control unit identifier for a VTD that matches its value in the IOCP.
<data_check>	Yes/no. Indicates whether an MVC has had a data check.
<dataset_type>	CDS data set type (Primary, Secondary, Standby).
<date_created>	Date YYYYMMDD that the VTV was created.
<date_last_mounted>	Date YYYYMMDD that the MVC was last mounted.
<date_last_used>	Date YYYYMMDD that the VTV was last used.
<date>	The date in the requested XMLDATE format.
<date>	Date YYYYMMDD that the XML was generated.
<date>	Date YYYYMMDD that the XML was generated.
<dbu>	DBU % for a single VTSS.
<ddname>	The MVS DDname for the request.
<default_acs>	The configured default ACS ID for this VTSS.
<density>	The volume density either 0 <for density not applicable>, 1 <low density>, 2, or 3 <for high density>
<density>	Real media density <1, 2, and so forth.
<device_address>	The MVS hexadecimal device address.
<device_address>	? The configured device address for an RTD. ? Drive unit address <uuuu>
<device_type>	The device type of the RTD.
<devtpref_record>	The record number within the TREQDEF file that supplied the DEVTPREF information.
<devtpref_scope_record>	The record number within the TREQDEF file that supplied the DEVTPREF SCOPE information.
<devtpref_scope>	The DEVTPREF SCOPE numeric value. 64 represents SCOPE<LSM> and 128 represents SCOPE<LIBrary>.
<devtpref>	The DEVTPREF number corresponding to the DEVTPREF preferred device list.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<dismount_time>	The time an MVC is retained on a RTD.
<drain>	Yes/no. Indicates whether the MVC is being drained.
<drive_count>	Drive count for this CDS.
<drive_location>	The drive location for non-library transports. "nonlib" means that the transport is outside the ACS, and a UNITATTR command supplied the drive type; "unknown" means that the transport is outside the ACS, and the MVS UCB supplied the drive type.
<drive_location>	Drive location <aa:ll:pp:rr:cc>.
<dsname>	The MVS dataset name which may include the PDS member name.
<dsname>	CDS DSname.
<dual_lmu_config>	Yes/no. Indicates whether dual LMU is configured.
<eject>	Yes/no. Indicates whether the MVC is ejected.
<els_version>	The NCS or ELS software version in n.n.n format <i.e. "7.0.0" is ELS 7.0)
<els_version>	Defines the ELS version that generated the XML in v.r.m format currently 7.0.0
<encrypted>	"Y" indicates that the volume is encrypted
<encrypted>	Yes/no. Indicates whether the volume is encrypted.
<errant>	Yes/no. Indicates whether the volume is errant.
<error>	Hex reason code produced by a scratch/unscratch request's outcome.
<esoteric_count>	A number between 1 and 8 representing the number of esoterics defined for the specified POLICY.
<esoteric_preference_method>	The POLICY ESOTERIC preference method; specified as "ESOTERIC" or "COUNT" for scratch policy and "LOCATION" or "ESOTERIC" for specific policy.
<esoteric_record>	The record number within the TREQDEF file that supplied the ESOTERIC information.
<esoteric>	An esoteric name; either the specified esoteric or substituted esoteric.
<expiration_date>	Expiration date. Returned in specified XMLDATE format.
<export>	Yes/no. Indicates whether the MVC is exported.
<external_label>	Yes/no. Indicates whether the volume has an external label.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<extvol_esoteric> (nm)	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 library.
<extvol_esoteric_count>	The number of esoterics in the external volume esoteric list.
<fenced>	Yes/no. Indicates whether a VTV is currently fenced.
<free_cell_count>	ACS free cell count.
<free_count>	LSM free cell count. Panel free cell count.
<free_size>	Free space in GB.
<free_volumes>	Number of free MVCs.
<from_volser>	Starting volser of a range.
<frozen>	Yes/no. Indicates whether panel is frozen.
<full>	Yes/no. Indicates whether the MVC is considered full.
<function>	VTCS function being performed.
<future_lsm>	Yes/no. Indicates whether the LSM is a future LSM.
<global_lock_structure>	The name of an MVS Coupling Facility Structure where VTCS CDS Record Locks are stored.
<global_maxvtv>	Maximum VTVs per MVC <4-32000).
<global_mvcfree>	Free MVC threshold for reclaim <0-255).
<global_recall_with_error>	Whether VTCS recalls VTVs with read data checks: ? YES - recall VTVs with read data checks. ? NO - do not recall VTVs with read data checks.
<global_replicat>	REPLICAT setting <ALWAYS | CHANGED).
<global_sync_replicate>	SYNCHREP setting <YES | NO).
<global_vtvattr>	When a Management Class is assigned to a VTV: ? SCRATCH - after a scratch mount. ? ALLMOUNT - after any mount.
<global_vtvpagesize>	STANDARD or LARGE
<high_volser>	high volser in range
<high>	The end of a volser range.
<home_cell>	Volser's home cell <aa:ll:pp:rr:cc).
<host_count>	Host count for this CDS.
<host_id>	? The host where the command was issued <QUERY CONFIG command only). ? Host ID.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<host_name>	The TCP/IP or MVS host name.
<host_name>	<ul style="list-style-type: none"> ⌚ Host where XML was generated. ⌚ Host attached to the Primary VTSS. ⌚ Host owning the lock. ⌚ Host using a CLINK.
<idax_esoteric>	The specified POLICY IDAX ESOTERIC name.
<idax_expiration_date_flag>	"Y" indicates that the POLICY IDAX EXPDT parameter was specified.
<idax_expiration_date>	The specified POLICY IDAX EXPDT date. Returned in specified XMLDATE format.
<idax_matched_policy_flag>	"Y" indicates that the SIMulated allocation event SMS MGMTCLAS matched an SMC POLICY name.
<idax_matched_tapereq_flag>	"Y" indicates that the SIMulated allocation event job characteristics matched an SMC TAPEREQ statement during SMS IDAX processing.
<idax_policy_esoteric_flag>	"Y" indicates that SIMulated allocated event substituted the SMC POLICY ESOTERIC for the original esoteric during SMS IDAX processing.
<idax_program_flag>	"Y" indicates that the POLICY IDAX PROGRAM parameter was specified.
<idax_program>	The specified POLICY IDAX PROGRAM name.
<idax_retention_period_flag>	"Y" indicates that the POLICY IDAX RETPD parameter was specified.
<idax_retention_period>	The specified POLICY IDAX RETPD value.
<idax_storgrp_esoteric_flag>	"Y" indicates that the SIMulated allocation event substituted an esoteric name based upon the STK1 STORGRP value.
<idax_subsystem_flag>	"Y" indicates that the POLICY IDAX SUBSYS parameter was specified.
<idax_subsystem>	The specified POLICY IDAX SUBSYS name.
<idax_volume_count_flag>	"Y" indicates that the POLICY IDAX VOLCNT parameter was specified.
<idax_volume_count>	The specified POLICY IDAX VOLCNT value.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<idax_vtvmxvol_flag>	"Y" indicates that the IDAX <not POLICY> VTVMAXVOL paramter was specified and was applied during the SIMulated allocation event during SMS IDAX processing.
<immediate_migration_list>	List of VTVs scheduled for immediate migration.
<initialised>	Yes/no. Indicates whether a VTV or MVC has been used.
<insert_date>	Date YYYYMMDD that the volume was inserted into the CDS.
<insert_time>	Time HH:MM:SS that the volume was inserted into the CDS.
<internal_device_type>	The internal coding of the device type <dd>.
<invalid_management_class_flag>	"Y" indicates that the specified VTCS management class value is not defined.
<invalid_mir>	Yes/no. Indicates whether the MVC has an invalid MIR.
<invalid_subpool_flag>	"Y" indicates that the specified HSC subpool name is not defined.
<ipaddress>	An IP address specified in dotted decimal notation.
<jcl_esoteric>	The name of a device esoteric group to be matched with the esoteric supplied in the JCL (or via IDAXESOT).
<jobname>	The MVS jobname
<label_readable>	Yes/no. Indicates whether the volume's external label is readable.
<label_type>	The label type to be used to select the policy. Valid values are SL, NL, AL and NSL.
<library_location>	library <TapePlex> location
<library_name>	The specified TapePlex name. The common <header> portion of the XML response uses <library_name> to refer to the <tapeplex_name>.
<locdisable_flag>	"Y" indicates that the local communication path was found to be disabled.
<lost>	Yes/no. Indicates whether the MVC is lost <mount could not complete>.
<low_scratch_method>	The number corresponding to the low scratch method returned by user exit processing during a SIMulated allocation event.
<low_volser>	low volser in range

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<low>	The start of a range.
<lsm_count>	LSM count for this CDS. LSM count for this ACS.
<lsm_plus_one>	LSM ID plus one that contains the RTD.
<lsm_preference_method>	The number corresponding to the LSM preference method returned by user exit processing during a SIMulated allocation event.
<lsm>	? LSM ID that contains the RTD. ? LSM ID <real subpools only>.
<management_class_record>	The record number within the TREQDEF file that supplied the MGMTCLAS name.
<management_class>	The MVS or VTCS management class name.
<management_class>	The Management Class assigned to this VTV.
<max_clean>	MAXCLEAN value for pool.
<max_size>	Maximum volume size in GB.
<maximum_migrate_tasks>	Maximum number of auto-migrate tasks for this VTSS.
<maximum_size>	The maximum size of a VTV in Mb <400 or 800>.
<maxvttv>	Yes/no. Indicates whether the MVC has reached the limit of VTVs.
<media_label>	Yes/no/NA. Indicates whether the volume has a media label.
<media_match>	Yes/no/undefined. Indicates whether the volume's media matches its media label.
<media_rectech_record>	The record number within the TREQDEF file that supplied the MEDIA type.
<media_size>	The size in Mb of the MVC.
<media_type>	Volser's media type <MEDIA>.
<media>	The specified MEDIA type for the volume or drive <transport>.
<media>	? MVC media type. ? Drive compatible media name. ? Subpool media name. ? Scratch volser media name.
<media>virtual</media>	Media virtual <virtual subpools only>.
<member>	DEF data set member name.
<migrate_hamt>	High auto-migrate threshold.
<migrate_lamt>	Low auto-migrate threshold.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<migrate_status>	<ul style="list-style-type: none"> ⌚ Consolid - the VTV was consolidated/exported to this MVC. ⌚ Deletion - the VTV was migrated to this MVC, but this MVC copy is in addition to that dictated by the VTV's MGMTCLAS. ⌚ Migrated - the VTV was migrated to this MVC. ⌚ Reconcil - the VTV should not have been migrated to this MVC. RECONCIL should be run.
<migrated>	Yes/no. Indicates whether a VTV is currently resident on one or more MVCs.
<migrates>	Yes/no. Indicates whether this host supports migrate.
<migration_failure_time>	Time of automatic migration failure.
<migration_vtv_count>	Number of VTVs schedule for automatic or immediate migration.
<mode>	Operational state of a cluster. <ul style="list-style-type: none"> ⌚ LSM mode <AUTOMATIC | MANUAL>. ⌚ CAP mode <IDLE | BUSY>.
<model>	The specified model type for the drive <transport>
<model>	<ul style="list-style-type: none"> ⌚ Drive model. ⌚ LSM model.
<mount_suitability>	The mount suitability of the MVC <ss>.
<mounted>	"Y" indicates that the specified volume or volser is mounted on a drive.
<mounted>	Yes/no. Indicates whether a volser <VTV or MVC> is currently mounted.
<mvc_cache_entry>	The MVC cache entry <ccccc>.
<mvc_cache_indexing_entry>	The cache/indexing entry <iiii>.
<mvc_indexing_flags>	The indexing flags <ff>.
<mvcpool_is_defined>	Yes/no. Indicates whether the MVC pool is defined.
<mvcpool>	The MVC Pool name specified in a STORCLAS statement.
<mvs_drive_status>	The drive <transport> status known to MVS as inferred from the UCB.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<name>	<ul style="list-style-type: none"> ? Identifier of RTD. ? Identifier of VTSS. ? Identifier of MVCPOOL. ? Identifier of CLUSTER. ? Identifier of HOST. ? Identifier of MVCPOOL. ? Trace type <ALLOCATION, ASCOMM, CAP, CONFIGURATION, DATABASE, INIT/TERM, LMUDRIVER, MOUNT/DISMOUNT, OPERATOR, RECOVERY, UTILITIES, VOLUME/CELL, WTO SERVER, HOST COMMUNICATIONS, XML ASCOMM, UUI, VTCS, LIBRARYSTATION)
<new_create>	Yes/no. Indicates whether the VTV was newly created when it was last resident.
<no_library_scratch_flag>	"Y" indicates that HSC volume lookup could not find a scratch volume for the request.
<no_owning_tapeplex_flag>	"Y" indicates that an owning TapePlex could not be determined.
<no_scratch_for_lbltype_flag>	"Y" indicates that HSC volume lookup could not find a scratch volume for the request because of the specified LBLTYPE.
<non_scratch_count>	Non-Scratch count <real subpools only).
<noreclam>	Reclaim on for this host <YES | NO)
<not_in_library_flag>	"Y" indicates that HSC volume lookup could not find the specified volser.
<noverify>	Yes/no. Indicates whether VTCS verifies the VTD addresses versus the MVS device addresses in the IOCP.
<number_rtds>	Number of RTDs configured for a VTSS.
<number_vtds>	Number of VTDs configured for a VTSS.
<number_vtvs>	Number of VTVs currently resident on a VTSS.
<owner_vtss>	The VTSS currently using an RTD.
<owning_tapeplex>	The TapePlex that "owns" the allocation event.
<panel_count>	Panel count for this LSM.
<panel_type>	Panel type.
<panel>	Panel ID.
<parent_id>	Task ID of the parent task to the task listed.
<pending_config_flag>	"Y" indicates that the specified TapePlex is required to request configuration information, because the HSC indicates that the configuration has changed.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<pending_mount_flag>	"Y" indicates that the specified TapePlex has a pending mount outstanding for one of its library drives.
<percent_available>	The amount of space available for migrations on this MVC.
<percent_fragmented>	The amount of unusable space on this MVC due to fragmentation.
<percent_used>	The amount of space on this MVC occupied by VTVs.
<policy_info_flag>	"Y" indicates that a SIMulated allocation event was influenced by returned POLICY information.
<policy_name_record>	The record number within the TREQDEF file that supplied the POLICY object name.
<policy_name>	The POLICY object name.
<policy_no_tapeplex_flag>	"Y" indicates that the POLICY NOTAPEPLEX paramter was specified.
<policy_validate_reason>	The reason text corresponding to the POLICY VALIDATE return code.
<policy_validate_return_code>	The POLICY VALIDATE return code for specified POLICY name, or the highest POLICY VALIDATE return code for all POLICY objects.
<port>	The specified SERVER PORT number.
<prefer_library_flag>	"Y" indicates that a user exit returned "prefer library drives" during a SIMulated allocation event.
<preference_value>	The preference value assigned to the drive during allocation.
<primary_name>	VTSS name of Primary VTSS.
<primary_state>	Status of Primary VTSS.
<priority>	CAP priority.
<process_id>	The internal VTCS ID for a request.
<program_name>	The MVS program name.
<read_only>	Yes/no. Indicates whether the MVC is readonly.
<reason>	<ul style="list-style-type: none"> ? Text message showing the reason for an exception condition. ? SLS message number and test produced by a scratch/unsratch request's outcome.
<reclaim_maxmvc>	MVC limit for a single reclaim.
<reclaim_size>	Reclaim space in GB.
<reclaim_space_to_move>	The amount of space that reclaim will move (<mmmmmmmm>).

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<reclaim_start>	Reclaim start threshold.
<reclaim_suitability>	The reclaim suitability <sssssss>).
<reclaim_threshold>	Fragmented space threshold.
<reclaim_volumes>	Number of volumes available for reclaim.
<reclaims>	Yes/no. Indicates whether this host supports reclaim.
<rectech>	The specified RECTECH method used to record data tracks on the tape surface for the volser or drive <transport>).
<rectech>	<ul style="list-style-type: none"> ? Volser’s recording technique <RECTECH>. ? Subpool’s recording technique <RECTECH>. ? Scratch volser’s recording technique <RECTECH>.
<replicate_difference>	
<replicate_frequency>	
<replicate_oldest>	
<replicate_qdepth>	Number of VTVs waiting to be replicated.
<replicate_skip>	
<replication_capability>	SYNCHRONOUS | ASYNCHRONOUS
<replication>	<ul style="list-style-type: none"> ? “not replicated” indicates that a VTV has no replication requirements. ? “replicated” indicates that a VTV is fully replicated. ? “replication started” indicates that replication has started for this VTV. ? “replication required” indicates that replication is needed for this VTV.
<requests_queued>	Requests queued for this RTD.
<resident>	Yes/no. Indicates whether a VTV is currently resident on a VTSS buffer.
<result>	Success/Failure. Indicates a scratch/unscratch request’s outcome.
<retention_period>	The specified RETPD.
<retired>	Yes/no. Indicates whether the MVC is retired.
<scratch_count>	<ul style="list-style-type: none"> ? Scratch count <real subpools only>). ? ACS scratch count. ? LSM scratch count. ? Subpool’s scratch count
<scratch>	Yes/no. Indicates the volume’s scratch status.
<secondary_name>	Name of secondary VTSS
<secondary_state>	State of secondary VTSS.
<select_count>	Number of times volume was selected.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<select_date>	Date YYYYMMDD that the volume was last selected.
<select_time>	Time HH:MM:SS that the volume was last selected.
<selected>	Yes/no. Indicates the volume's selection status.
<server_name>	The name specified in a SERVER command.
<server_status>	A character representing the status for the specified SERVER: "A" indicates active; "I" indicates inactive; "D" indicates disabled; and "N" represents not yet tested.
<server_type>	Server type (for example, HSC).
<service_level>	The service level of the HSC for the specified TAPEPLEX or SERVER object: "B" indicates BASE level and "F" indicates FULL level.
<size_compressed>	The compressed size of a VTV in Mb.
<size_uncompressed>	The uncompressed size of a VTV in Mb.
<smc_drive_status>	The drive <transport> status as known to SMC and inferred from internal SMC drive structures.
<smc_version>	Defines the SMC version that generated the XML in v.r.m format currently 7.0.0.
<smf_number>	SMF number for this CDS.
<sms_info_flag>	"Y" indicates SMS processing influenced the SIMulated allocation event.
<sms_management_class_flag>	"Y" indicates that an SMS MGMTCLAS was returned during the SIMulated allocation event.
<state>	State <ONLINE | OFFLINE>.
<status>	? Drive status <On Drive|Mounting|Dismounting>. ? LSM status <READY | NOTREADY> ? CAP status <AUTOMATIC | MANUAL>
<status>	? Operational state of: ? RTD. ? VTD. ? CLINK.
<stepname>	The MVS step name.
<storage_class>	The Storage Class assigned to an MVC.
<storclas_name>	The Storage Class name specified in a STORCLAS statement.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<subpool_index_flag>	"Y" indicates that a user exit returned a subpool index during the SIMulated allocation event.
<subpool_index>	The specified subpool index returned by a user exit.
<subpool_index>	Subpool index.
<subpool_label>	Subpool label.
<subpool_name_record>	The record number within the TREQDEF file that supplied the SUBPOOL name.
<subpool_name>	The specified SUBPOOL name.
<subpool_name>	Scratch subpool name.
<subsystem_name>	The HSC subsystem name on the server to which the request will be directed.
<suitable_RTD_online>	Yes/no. Indicates whether an RTD compatible with the requested MVC media type is online.
<tapeplex_name>	The specified TAPEPLEX name <see also <library_name>).
<tapeplex_name>	TapePlex name
<tapeplex_status>	A character representing the status for the specified TAPEPLEX: "A" indicates active; "I" indicates inactive; and "D" indicates disabled.
<tapeplex_type>	A character representing the TAPEPLEX type as determined by SMC: "H" represents HSC; and "C" represents MCS/CSC.
<tapereq_info_flag>	"Y" indicates that a SIMulated allocation event was influenced by returned TAPEREQ information.
<task_number>	? The task number associated with the lock. ? The task number for each task on the current host.
<task_token>	A unique token identifier for the request.
<task_type>	? The task type of each task on the current host. ? The task type associated with the lock.
<termination_in_progress>	Yes/no. Indicates if server termination in progress.
<threshold_count>	Threshold count.
<time_created>	Time HH:MM:SS that a VTV was created.
<time_last_mounted>	Time HH:MM:SS that an MVC was last mounted.
<time_last_used>	Time HH:MM:SS that a VTV was last used.
<time>	HH:MM:SS
<time>	Time HH:MM:SS that the XML was generated.
<time>	Time HH:MM:SS that the XML was generated.

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<times_mounted>	The mount count of an MVC.
<to_volser>	Ending volser of a range.
<trace_flag>	"Y" indicates that the request is to be traced on the server.
<trace>	On/off. Indicates whether tracing is active.
<type>	CDS type <Primary, Secondary, Standby> DEF data set type <SCRPDEF LKEYDEF LMUPDEF MGMTDEF MVC DEF MPPOOL00 VOLDEF)
<unit>	CDS unit address <uuuu>.
<usable>	Yes/no. Indicates whether the MVC can be used for migration.
<usage>	Current activity on a CLINK.
<usage>	Current activity on a VTD <ECAM only for replication, otherwise blank)
<use_acs>	A user exit returned a specific ACS number to use during the SIMulated allocation event.
<use_library_flag>	"Y" indicates that a user exit returned "use library drives" during the SIMulated allocation event.
<use_non_library_flag>	"Y" indicates that a user exit returned "use non-library drives" during the SIMulated allocation event.
<use_specvol_flag>	"Y" indicates that a user exit returned "use specvol" during the SIMulated allocation event.
<use_virtual_flag>	"Y" indicates that a user exit returned "use virtual drives" during the SIMulated allocation event.
<used_size>	Total used space.
<used_volumes>	Initialized MVCs that are not eligible for space reclamation.
<userexit_info_flag>	"Y" indicates that a SIMulated allocation event was influenced by returned user exit information.
<version>	A number representing the version of the XML.
<volser>	The volser of the volume.
<volser>	Volser of: ? MVC ? VTV ? VTV on VTD ? CDS volser ? Nearline volume

TABLE B-1 ELS XML Tag Definitions

Data Tag	Definition
<voltype>	A character representing the POLICY type; "N" represents non-specific volser; "S" represents specific volser.
<vtcs_available>	Yes/no. Indicates if VTCS is available.
<vtcs_version>	Defines the VTCS version that generated the XML in v.r.m format currently 7.0.0.
<vtss_last_mounted>	The VTSS name that the MVC was last mounted on.
<vtss_name>	The VTSS name as defined by VTSS CONFIG.
<vtss_name>	VTSS name: ? that the VTV was last resident on. ? of the primary attached to CLINK. ? used during QUERY VTD. ? Primary VTSS name.
<vtss_subsystems>	Number of VTSS subsystems.
<vtv_count>	Count of VTVs on an MVC.
<wait_time>	A number representing the timeout value for the request.
<waiting_host>	The host waiting for the lock.
<waiting_task>	The task waiting for the lock.
<warranty_expired>	Yes/no. Indicates whether the MVC's warranty has expired.
<wtordest_client_flag>	"Y" indicates that the TAPEPLEX WTORDEST CLIENT parameter was specified.

ELS XML Schema

“SMC XML Schema” on page 208 and “HSC and VTCS XML Schema” on page 220 describe the XML schema for the ELS commands that produce XML output. Each command is described in its own table with the header/trailer tags shown in the left column and the data tags in the right column. In addition, if a data group or individual data object can occur multiple times, the number of occurrences is shown in parentheses (for example, (4) or (*nm*)).

SMC XML Schema

Display DRIve Command

TABLE B-2 Display (or Query) DRIve Command

Header or Trailer Tag	Data Tag
<display_drive_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<drive_data> (mn)	
	<device_address>
	<tapeplex_name>
	<model>
	<rectech>
	<library_location>
	<vtss_name>
	<drive_location>
	<smc_drive_status>
	<mvs_drive_status>
</drive_data>	
</display_drive_request>	

Display (or Query) Volume (or VOLSer) Command

TABLE B-3 Display (or Query) Volume (or VOLSer) Command

Header or Trailer Tag	Data Tag
<display_volume_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<volume_data> (nn)	
	<volser>
	<tapeplex_name>
	<library_location>
	<vtss_name>
	<mounted>
	<device_address>
	<media>
	<rectech>
	<density>
	<encrypted>
</volume_data>	
</display_volume_request>	

POLicy LIst Request

TABLE B-4 POLicy LIst Request

Header or Trailer Tag	Data Tag
<policy_list_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<policy_info> (nn)	
	<policy_name>
	<voltype>
	<esoteric_count>
	<esoteric_preference_method>
<esoteric_list>	
	<esoteric> (nn = <esoteric_count>)
</esoteric_list>	
<extvol_esoteric_list>	
	<extvol_esoteric> (nn)
	<extvol_esoteric_count>
</extvol_esoteric_list>	
	<media>
	<rectech>
	<management_class>
	<subpool_name>
	<policy_no_tapeplex_flag>
	<tapeplex_name>
	<idax_esoteric>

TABLE B-4 POLicy LIst Request

Header or Trailer Tag	Data Tag
	<idax_expiration_date>
	<idax_program>
	<idax_retention_period>
	<idax_subsystem>
	<idax_volume_count>
</policy_info>	
</policy_list_request>	

POLicy VALidate Request

TABLE B-5 POLicy VALidate Request

Header or Trailer Tag	Data Tag
<policy_validate_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<policy_info> (nn)	
	<policy_name>
	<voltype>
	<esoteric_count>
	<esoteric_preference_method>
<esoteric_list>	
	<esoteric> (nn = <esoteric_count>)
</esoteric_list>	
	<media>
	<rectech>
	<management_class>
	<subpool_name>
	<policy_no_tapeplex_flag>
	<tapeplex_name>
	<idax_esoteric>
	<idax_expiration_date>
	<idax_program>
	<idax_retention_period>
	<idax_subsystem>
	<idax_volume_count>

TABLE B-5 POLicy VALidate Request

Header or Trailer Tag	Data Tag
	<no_owning_tapeplex_flag>
	<owning_tapeplex>
	<policy_validate_return_code>
	<policy_validate_reason>
</policy_info>	
	<policy_validate_return_code>
</policy_validate_request>	

SIMulate Command

TABLE B-6 SIMulate Command

Header or Trailer Tag	Data Tag
<simulate_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<job_info>	
	<jobname>
	<stepname>
	<program_name>
	<ddname>
	<dsname>
	<esoteric>
	<expiration_date>
	<retention_period>
	<jcl_esoteric>
	<label_type>
</jobinfo>	
	<sms_info_flag>
	<tapereq_info_flag>
	<policy_info_flag>
	<userexit_info_flag>
<sms_info>	
	<idax_expiration_date_flag>
	<idax_retention_period_flag>
	<idax_matched_policy_flag>
	<idax_matched_tapereq_flag>

TABLE B-6 SIMulate Command

Header or Trailer Tag	Data Tag
	<idax_policy_esoteric_flag>
	<idax_storgrp_esoteric_flag>
	<idax_program_flag>
	<idax_subsystem_flag>
	<idax_volume_count_flag>
	<idax_vtvmaxvol_flag>
	<esoteric>
	<media>
	<rectech>
	<sms_management_class_flag>
	<management_class>
</sms_info>	
<tapereq_info>	
	<devtpref>
	<devtpref_record>
	<devtpref_scope>
	<devtpref_scope_record>
	<esoteric>
	<esoteric_record>
	<media>
	<rectech>
	<media_rectech_record>
	<management_class>
	<mamagement_class_record>
	<policy_name>
	<policy_name_record>
	<subpool_name>
	<subpool_name_record>
</tapereq_info>	
<policy_info>	
	<policy_name>
	<voltype>
	<esoteric_count>
	<esoteric_preference_method>
<esoteric_list>	

TABLE B-6 SIMulate Command

Header or Trailer Tag	Data Tag
	<esoteric> (nn = <esoteric_count>)
</esoteric_list>	
<extvol_esoteric_list>	
	<extvol_esoteric> (nn)
	<extvol_esoteric_count>
</extvol_esoteric_list>	
	<media>
	<rectech>
	<management_class>
	<subpool_name>
	<policy_no_tapeplex_flag>
	<tapeplex_name>
	<idax_esoteric>
	<idax_expiration_date>
	<idax_program>
	<idax_retention_period>
	<idax_subsystem>
	<idax_volume_count>
</policy_info>	
<userexit_info>	
	<esoteric>
	<lsm_preference_method>
	<low_scratch_method>
	<prefer_library_flag>
	<subpool_index_flag>
	<subpool_index>
	<subpool_name>
	<subsystem_name>
	<tapeplex_name>
	<use_acs>
	<use_library_flag>
	<use_non_library_flag>
	<use_specvol_flag>
	<use_virtual_flag>
</userexit_info>	

TABLE B-6 SIMulate Command

Header or Trailer Tag	Data Tag
<volume_lookup_info>	
	<invalid_management_class_flag>
	<invalid_subpool_flag>
	<media>
	<rectech>
	<no_library_scratch_flag>
	<no_scratch_for_lbltype_flag>
	<no_owning_tapeplex_flag>
	<not_in_library_flag>
	<owning_tapeplex>
</volume_lookup_info>	
<edl_info>	
	<conflicting_exclusion_criteria>
<drive_data> (nn)	
	<device_address>
	<rectech>
	<tapeplex_name>
	<library_location>
	<vtss_name>
	<preference_value>
</drive_data>	
</edl_info>	
</simulate_request>	

TAPEplex Llist Command

TABLE B-7 TAPEplex Llist Command

Header or Trailer Tag	Data Tag
<tapeplex_list_request>	
<header>	
	<version>
	<host_name>
	<client_subsystem_name>
	<jobname>
	<library_name>
	<server_name>
	<subsystem_name>
	<wait_time>
	<trace_flag>
	<task_token>
</header>	
<tapeplex_info> (nn)	
	<tapeplex_name>
	<tapeplex_type>
	<tapeplex_status>
	<host_name>
	<els_version>
	<date>
	<time>
	<service_level>
	<active_server>
	<alias_host>
	<wtordest_client_flag>
	<locdisable_flag>
	<pending_mount_flag>
	<pending_config_flag>
<server_info> (nn)	
	<server_name>
	<server_status>
	<host>
	<els_version>
	<date>

TABLE B-7 TAPEPlex LList Command

Header or Trailer Tag	Data Tag
	<time>
	<ipaddress>
	<port>
</server_info>	
</tapeplex_info>	
</tapeplex_list_request>	

HSC and VTCS XML Schema

ARCHIVE Command

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<archive_vtv>	
<vtv_data> (nn)	
	<volser>
	<size_compressed>
	<compress_percent>
	<date_created>
	<time_created>
	<management_class>
<mvc_instance> (4)	
	<volser>
</mvc_instance>	
</vtv_data>	
</archive_vtv>	
<archive_mvc>	
<mvc_data> (nn)	
	<volser>
	<media>
	<media_size>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<acs>
	<candidate_vtv_count>
	<total_vtv_size>
<vtv_instance> (nn)	

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<volser>
</vtv_instance>	
</mvc_data>	
</archive_mvc>	
<move_vtvs_summary>	
	<process_id> (nn)
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</move_vtvs_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtvs>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types> (16)	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtss>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types> (16)	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<eexport_summary>	
	<process_id> (nn)
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</eexport_summary>	
<eexport_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types> (16)	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>

TABLE B-8 ARCHIVE Command

Header or Trailer Tag	Data Tag
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</eexport_process>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</archive_report>	

AUDIT INVLDMIR Command

TABLE B-9 AUDIT INVLDMIR Command

Header or Trailer Tag	Data Tag
<audit_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-9 AUDIT INVLDMIR Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-9 AUDIT INVLDMIR Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-9 AUDIT INVLDMIR Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
<vtss_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>

TABLE B-9 AUDIT INVLDMIR Command

Header or Trailer Tag	Data Tag
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</vtss_inventory>	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</audit_request>	

AUDIT MVC Command

TABLE B-10 AUDIT MVC Command

Header or Trailer Tag	Data Tag
<audit_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-10 AUDIT MVC Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-10 AUDIT MVC Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtlds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-10 AUDIT MVC Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
<vtss_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>

TABLE B-10 AUDIT MVC Command

Header or Trailer Tag	Data Tag
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</vtss_inventory>	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</audit_request>	

AUDIT VTSS Command

TABLE B-11 AUDIT VTSS Command

Header or Trailer Tag	Data Tag
<audit_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-11 AUDIT VTSS Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-11 AUDIT VTSS Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtlds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-11 AUDIT VTSS Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
<vtss_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>

TABLE B-11 AUDIT VTSS Command

Header or Trailer Tag	Data Tag
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</vtss_inventory>	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</audit_request>	

CANCEL Command

TABLE B-12 CANCEL Command

Header or Trailer Tag	Data Tag
<cancel_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_request>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
	<vtss_name>
	<vtss_list_name>
	<function>
	<process_id>
	<parent_id>
	<task_type>

TABLE B-12 CANCEL Command

Header or Trailer Tag	Data Tag
	<acs>
	<lsm>
	<internal_device_type>
	<for_mount>
	<for_vtv_move>
<vtv_data>	
	<volser>
</vtv_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtd_data>	
	<device_address>
</vtd_data>	
	<local_wait_time>
<mvc_instance> (4)	
	<volser>
	<acs>
	<lsm>
	<internal_device_type>
</mvc_instance>	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>

TABLE B-12 CANCEL Command

Header or Trailer Tag	Data Tag
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types> (16)	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtcs_request>	
<exceptions>	

CDSDATA Command

TABLE B-13 CDSDATA Command

Header or Trailer Tag	Data Tag
<cdsdata>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<cap_data>	
	<cap_id>
	<cap_active>
	<recover_cap>
	<cap_in_auto_mode>
	<cap_online>
	<cap_status>
	<cap_existence>
	<cap_undefined_to_hw>
	<host_id>
	<cell_count>
	<row_count>
	<column_count>
	<magazine_count>
	<cells_per_magazine>
	<panel>
	<type>
</cap_data>	
<drive_data>	
	<drive_location>
	<model>
	<mounted_volume>
	<host_id>
<device_data>	
	<host_id>
	<device_address>
</device_data>	

TABLE B-13 CDSDATA Command

Header or Trailer Tag	Data Tag
</drive_data>	
<cds_data>	
	<cds_level>
	<date_created>
	<time_created>
	<eng_name>
	<recovery_characteristics>
	<last_backup_date>
	<last_backup_time>
	<restoration_date>
	<restoration_time>
	<dsname>
	<volser>
	<unit>
<dsn_data>	
	<dataset_type>
	<dsname>
</dsn_data>	
</cds_data>	
<lsm_data>	
	<acs>
	<lsm>
	<lsm_status>
	<offline_pending>
	<unallocated>
	<host_id>
	<max_cell_count>
	<lsm_type>
	<panel_count>
	<cap_count>
	<pass_thru_port_count>
	<playground_cell_count>
	<inside_panel_index>
	<outside_panel_index>
	<drives_per_panel>
	<transport_count>

TABLE B-13 CDSDATA Command

Header or Trailer Tag	Data Tag
	<inside_door_panel_number>
	<outside_door_panel_number>
	<lcu_panel_number>
	<outside_panel_row_count>
	<outside_panel_col_count>
	<inside_panel_row_count>
	<inside_panel_col_count>
	<drive_panel_count>
	<adjacent_lsms_count>
	<adjacent_lsms>
	<free_cell_count>
	<cleaner_count>
	<selected_count>
	<low_cleaner_volser>
	<high_cleaner_volser>
	<last_cleaner_selected>
	<scratch_count>
	<future_lsm>
<panel_data>	
	<panel>
	<panel_type>
	<cell_count>
	<free_cell_count>
	<frozen>
</panel_data>	
</lsm_data>	
<volpool_data>	
<volpool_entry>	
	<low_volser>
	<high_volser>
	<media>
	<rectech>
	<maxclean>
	<initial_status_scratch>
</volpool_entry>	
</volpool_data>	

TABLE B-13 CDSDATA Command

Header or Trailer Tag	Data Tag
<mvcpool_data>	
<mvcpool_entry>	
	<low_volser>
	<high_volser>
	<subpool_name>
	<global_mvcfree>
	<reclaim_maxmvc>
	<reclaim_threshold>
	<reclaim_start>
	<noreclam>
	<drtest_pool>
	<nomigration_status>
</mvcpool_entry>	
</mvcpool_data>	
<scripool_data>	
<scripool_entry>	
	<low_volser>
	<high_volser>
	<subpool_name>
	<subpool_index>
	<subpool_label>
	<drtest_pool>
<host_data>	
	<host_id>
</host_data>	
</scripool_entry>	
</scripool_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</cdsdata>	

CONFIG Command

TABLE B-14 CONFIG Command

Header or Trailer Tag	Data Tag
<configuration>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_data>	
	<global_mvcfree>
	<global_maxvtv>
	<global_vtvattr>
	<global_recall_with_error>
	<global_replicat>
	<global_vtv_pagesize>
	<global_log_policy>
	<global_lock_structure>
	<global_sync_replicate>
	<global_max_rtds>
	<global_fast_migrate>
	<global_nlibdrnr>
	<global_nlibmigr>
	<global_nlibrecl>
	<global_mvcmntto>
	<CDS_compatible_V4>
	<CDS_compatible_V5>
	<CDS_compatible_V6>
	<CDS_compatible_V61>
	<CDS_compatible_V62>
	<CDS_compatible_V70>
	<reclaim_maxmvc>
	<reclaim_start>
	<reclaim_conmvc>
	<reclaim_threshold>
	<list_deleted_ranges>

TABLE B-14 CONFIG Command

Header or Trailer Tag	Data Tag
	<tapeplex_name>
</vtcs_data>	
<vtvvol> (nn)	
	<low>
	<high>
</vtvvol>	
<mvcvol> (nn)	
	<low>
	<high>
</mvcvol>	
<deleted_vtvvol> (nn)	
	<low>
	<high>
</deleted_vtvvol>	
<deleted_mvcvol> (nn)	
	<low>
	<high>
</deleted_mvcvol>	
<receive_from> (nn)	
	<tapeplex_name>
</receive_from>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<dismount_time>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<acs>
<rtd_data> (16)	
	<name>
	<device_address>
	<channel_id>
</rtd_data>	
<clink_data> (16)	
	<vtss_name>

TABLE B-14 CONFIG Command

Header or Trailer Tag	Data Tag
	<partner_vtss>
	<channel_id>
	<clink_id>
	<tapeplex_name>
</clink_data>	
<host_data> (16)	
	<name>
	<migrates>
	<reclaims>
<vtd_range> (256)	
	<low>
	<high>
	<cuaddr>
	<noverify>
</vtd_range>	
</host_data>	
</vtss_data>	
<cluster_data>	
	<name>
<connected_vtss> (nn)	
	<vtss_name>
	<direction>
</connected_vtss>	
</cluster_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</configuration>	

CONSOLID Command

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
<consolidate_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<consolidate_summary>	
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</consolidate_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvttv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vttv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vttv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>

TABLE B-15 CONSOLID Command

Header or Trailer Tag	Data Tag
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</consolidate_request>	

DECOMP Command

TABLE B-16 DECOMP Command

Header or Trailer Tag	Data Tag
<decompile>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_data>	
	<global_mvcfree>
	<global_maxvtv>
	<global_vtvattr>
	<global_recall_with_error>
	<global_replicat>
	<global_vtv_pagesize>
	<global_log_policy>
	<global_lock_structure>
	<global_sync_replicate>
	<global_max_rtds>
	<global_fast_migrate>
	<global_nlibdrnr>
	<global_nlibmigr>
	<global_nlibrecl>
	<global_mvcmntto>
	<CDS_compatible_V4>
	<CDS_compatible_V5>
	<CDS_compatible_V6>
	<CDS_compatible_V61>
	<CDS_compatible_V62>
	<CDS_compatible_V70>
	<reclaim_maxmvc>
	<reclaim_start>
	<reclaim_conmvc>
	<reclaim_threshold>
	<list_deleted_ranges>

TABLE B-16 DECOMP Command

Header or Trailer Tag	Data Tag
	<tapeplex_name>
	<CDS_compatible_V71>
	<global_reclaim_INPLACE_setting>
	<Reclaim_INPLACE_threshold>
	<CDS_free_blocks>
</vtcs_data>	
<vtvvol> (nn)	
	<low>
	<high>
</vtvvol>	
<mvcvol> (nn)	
	<low>
	<high>
</mvcvol>	
<deleted_vtvvol> (nn)	
	<low>
	<high>
</deleted_vtvvol>	
<deleted_mvcvol> (nn)	
	<low>
	<high>
</deleted_mvcvol>	
<receive_from> (nn)	
	<tapeplex_name>
</receive_from>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<dismount_time>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<acs>
<rtddata> (16)	
	<name>
	<device_address>

TABLE B-16 DECOMP Command

Header or Trailer Tag	Data Tag
	<channel_id>
</rtd_data>	
<clink_data> (16)	
	<vtss_name>
	<partner_vtss>
	<channel_id>
	<clink_id>
	<tapeplex_name>
</clink_data>	
<host_data> (16)	
	<name>
	<migrates>
	<reclaims>
<vtd_range> (256)	
	<low>
	<high>
	<cuaddr>
	<noverify>
</vtd_range>	
</host_data>	
</vtss_data>	
<cluster_data>	
	<name>
<connected_vtss> (nn)	
	<vtss_name>
	<direction>
</connected_vtss>	
</cluster_data>	
<mvc_counts>	
	<MVCPOOL_INPLACE_threshold>
</mvc_counts>	
<mvcpool_data>	
	<init_standard_mvcs>
	init_partitioned_mvcs>
</mvcpool_data>	
<mvc_data>	

TABLE B-16 DECOMP Command

Header or Trailer Tag	Data Tag
	<eot_partition_id>
/<mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</decompile>	

DELETSCR Command

TABLE B-17 DELETSCR Command

Header or Trailer Tag	Data Tag
<delete_scratch_vtv>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>

TABLE B-17 DELETSCR Command

Header or Trailer Tag	Data Tag
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</delete_scratch_vtv>	

DISMOUNT Command

TABLE B-18 DISMOUNT Command

Header or Trailer Tag	Data Tag
<dismount_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<dismount_data>	
	<volser>
	<device_address>
	<host_id>
</dismount_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</dismount_request>	

DISPLAY ACS Command

TABLE B-19 DISPLAY ACS Command

Header or Trailer Tag	Data Tag
<display_acs_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<ACS_data>	
	<acs>
	<acs_status>
	<lsm_count>
	<scratch_count>
	<free_cell_count>
	<dual_lmu_config>
</ACS_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</display_acs_request>	

DISPLAY ACTIVE Command

TABLE B-20 DISPLAY ACTIVE Command

Header or Trailer Tag	Data Tag
<query_active>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_request>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
	<vtss_name>
	<vtss_list_name>
	<function>
	<process_id>
	<parent_id>
	<task_type>

TABLE B-20 DISPLAY ACTIVE Command

Header or Trailer Tag	Data Tag
	<acs>
	<lsm>
	<internal_device_type>
	<for_mount>
	<for_vtv_move>
<vtv_data>	
	<volser>
</vtv_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtd_data>	
	<device_address>
</vtd_data>	
	<local_wait_time>
<mvc_instance> (4)	
	<volser>
	<acs>
	<lsm>
	<internal_device_type>
</mvc_instance>	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>

TABLE B-20 DISPLAY ACTIVE Command

Header or Trailer Tag	Data Tag
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types>	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtcs_request>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_active>	

DISPLAY CAP Command

TABLE B-21 DISPLAY CAP Command

Header or Trailer Tag	Data Tag
<display_cap_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<cap_data>	
	<acs>
	<lsm>
	<cap>
	<host_id>
	<cell_count>
	<priority>
	<mode>
	<status>
	<state>
</cap_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</display_cap_request>	

DISPLAY CDS Command

TABLE B-22 DISPLAY CDS Command

Header or Trailer Tag	Data Tag
<display_cds_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<cds_data>	
	<smf_number>
	<cleaner_prefix>
	<acs_count>
	<lsm_count>
	<cap_count>
	<drive_count>
	<host_count>
	<maxclean>
	<eng_name>
<dsn_data> (10)	
	<dataset_type>
	<dsname>
	<member>
	<volser>
	<unit>
	<active>
</dsn_data>	
<host_data> (16)	
	<host_id>
	<active>
	<els_version>
</host_data>	
</cds_data>	
<exceptions>	

TABLE B-22 DISPLAY CDS Command

Header or Trailer Tag	Data Tag
	<reason> (nn)
</exceptions>	
</display_cds_request>	

DISPLAY CLINK Command

TABLE B-23 DISPLAY CLINK Command

Header or Trailer Tag	Data Tag
<query_clink>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<clink_data> (nn)	
	<vtss_name>
	<partner_vtss>
	<clink_id>
	<channel_id>
	<tapeplex_name>
	<status>
	<usage>
	<host_name>
	<replication_capability>
</clink_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_clink>	

DISPLAY CLUSTER Command

TABLE B-24 DISPLAY CLUSTER Command

Header or Trailer Tag	Data Tag
<query_cluster>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<cluster_data>	
	<name>
<connected_vtss> (nn)	
	<vtss_name>
	<partner_vtss>
	<vtss_state>
	<direction>
	<mode>
	<replication_capability>
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtss>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>

TABLE B-24 DISPLAY CLUSTER Command

Header or Trailer Tag	Data Tag
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
</connected_vtss>	
</cluster_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_cluster>	

DISPLAY COMMAND Command

TABLE B-25 DISPLAY COMMAND Command

Header or Trailer Tag	Data Tag
<help_command_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<command_data>	
	<command_name>
	<command_verb>
	<uui>
	<console>
	<utility>
	<vm_command>
	<subcommand_required>
	<command_type>
</command_data>	
<help_lines_data>	
	<help_line> (nn)
</help_lines_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</help_command_request>	

DISPLAY CONFIG Command

TABLE B-26 DISPLAY CONFIG Command

Header or Trailer Tag	Data Tag
<query_config>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_data>	
	<host_id>
	<vtss_subsystems>
	<global_mvcfree>
	<global_maxvtv>
	<global_vtvattr>
	<global_recall_with_error>
	<global_replicat>
	<global_vtv_pagesize>
	<tapeplex_name>
	<global_lock_structure>
	<global_sync_replicate>
	<global_max_rtds>
	<global_fast_migrate>
	<global_nlibdrnr>
	<global_nlibmigr>
	<global_nlibrecl>
	<global_mvcmntto>
	<global_log_policy>
	<CDS_compatible_V4>
	<CDS_compatible_V5>
	<CDS_compatible_V6>
	<CDS_compatible_V61>
	<CDS_compatible_V62>
	<reclaim_maxmvc>

TABLE B-26 DISPLAY CONFIG Command

Header or Trailer Tag	Data Tag
	<reclaim_start>
	<reclaim_conmvc>
	<reclaim_threshold>
	<CDS_compatible_V71>
	<global_reclaim_INPLACE_setting>
	<Reclaim_INPLACE_threshold>
	<CDS_free_blocks>
</vtcs_data>	
<receive_from> (nn)	
	<tapeplex_name>
</receive_from>	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>

TABLE B-26 DISPLAY CONFIG Command

Header or Trailer Tag	Data Tag
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<rtddata> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
	</vtss_data>
	<name>
	<vtss_data>
</rtddata>	
<mvc_counts>	
	<MVCPOOL_INPLACE_threshold>
</mvc_counts>	
<mvcpool_data>	
	<init_standard_mvcs>
	init_partitioned_mvcs>
</mvcpool_data>	
<mvc_data>	
	<eot_partition_id>

TABLE B-26 DISPLAY CONFIG Command

Header or Trailer Tag	Data Tag
/<mvc_data>	
	<initialised> standard | partitioned | NO
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_config>	

DISPLAY DRIVES Command

TABLE B-27 DISPLAY DRIVES Command

Header or Trailer Tag	Data Tag
<display_drives_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<drive_data>	
	<device_address>
	<drive_location>
	<volser>
	<status>
	<model>
	<media>
</drive_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</display_drives_request	

DISPLAY LICENSE Command

TABLE B-28 DISPLAY LICENSE Command

Header or Trailer Tag	Data Tag
<display_license_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<license_data>	
	<product_version>
	<license_key_flag>
	<trial_period>
	<days_before_expiration>
</license_data>	
</display_license_request	

DISPLAY LOCKS Command

TABLE B-29 DISPLAY LOCKS Command

Header or Trailer Tag	Data Tag
<query_locks>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<lock_data> (nn)	
	<host_name>
	<task_number>
	<task_type>
	<slot_id>
	<waiting_host>
	<waiting_task>
<vtd_data>	
	<device_address>
</vtd_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtv_data>	
	<volser>
</vtv_data>	
<rtd_data>	
	<device_address>
</rtd_data>	
</lock_data>	
<CF_lock_data> (nn)	
	<CF_lock_number>
	<CF_lock_type>
	<CF_lock_owning_host>
</CF_lock_data>	
<exceptions>	

TABLE B-29 DISPLAY LOCKS Command

Header or Trailer Tag	Data Tag
	<reason> (nn)
</exceptions>	
</query_locks>	

DISPLAY LSM Command

TABLE B-30 DISPLAY LSM Command

Header or Trailer Tags	Data Tag
<display_lsm_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<lsm_data>	
	<acs>
	<lsm>
	<model>
	<state>
	<status>
	<mode>
	<panel_count>
	<cell_count>
	<free_cell_count>
	<scratch_count>
	<future_lsm>
	<cleaner_count>
	<cap_count>
	<adjacent_count>
	<adjacent_lsms>
<panel_data> (20)	
	<panel>
	<panel_type>
	<free_cell_count>
	<frozen>
	<cell_count>
</panel_data>	
</lsm_data>	
<exceptions>	

TABLE B-30 DISPLAY LSM Command

Header or Trailer Tags	Data Tag
	<reason> (nn)
</exceptions>	
</display_lsm_request>	

DISPLAY MESSAGE Command

TABLE B-31 DISPLAY MESSAGE Command

Header or Trailer Tag	Data Tag
<help_message_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
	<message_id>
<help_lines_data>	
	<help_line> (nn)
</help_lines_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</help_message_request>	

DISPLAY MIGRATE Command

TABLE B-32 DISPLAY MIGRATE Command

Header or Trailer Tag	Data Tag
<query_migrate>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>

TABLE B-32 DISPLAY MIGRATE Command

Header or Trailer Tag	Data Tag
	<acs>
	<suitable_RTD_online>
</connected_device_types	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types>	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_migrate>	

DISPLAY MVC Command

TABLE B-33 DISPLAY MVC Command

Header or Trailer Tag	Data Tag
<query_mvc>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>

TABLE B-33 DISPLAY MVC Command

Header or Trailer Tag	Data Tag
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
	<cds_block>
	<cds_record>
	<mvc_cache_indexing_entry>
	<mvc_indexing_flags>
	<reclaim_suitability>
	<reclaim_space_to_move>
	<mvc_cache_entry>
</mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_mvc>	

DISPLAY MVCPOOL Command

TABLE B-34 DISPLAY MVCPOOL Command

Header or Trailer Tag	Data Tag
<query_mvcpool>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<mvcpool_counts> (nn)	
	<name>
<acs_mvc_counts> (254)	
	<acs>
<media_mvc_counts> (31)	
	<media>
<storclas_counts> (nn)	
	<name>
	<reclaim_volumes>
	<reclaim_size>
	<used_volumes>
	<used_size>
</storclas_counts>	
	<free_volumes>
	<free_size>
	<reclaim_volumes>
	<reclaim_size>
	<used_volumes>
	<used_size>
</media_mvc_counts>	
</acs_mvc_counts>	
</mvcpool_counts>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_mvcpool>	

DISPLAY QUEUE Command

TABLE B-35 DISPLAY QUEUE Command

Header or Trailer Tag	Data Tag
<query_queued>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtcs_request>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
	<vtss_name>
	<vtss_list_name>
	<function>
	<process_id>
	<parent_id>
	<task_type>

TABLE B-35 DISPLAY QUEUE Command

Header or Trailer Tag	Data Tag
	<acs>
	<lsm>
	<internal_device_type>
	<for_mount>
	<for_vtv_move>
<vtv_data>	
	<volser>
</vtv_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtd_data>	
	<device_address>
</vtd_data>	
	<local_wait_time>
<mvc_instance> (4)	
	<volser>
	<acs>
	<lsm>
	<internal_device_type>
</mvc_instance>	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>

TABLE B-35 DISPLAY QUEUE Command

Header or Trailer Tag	Data Tag
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types>	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtcs_request>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_queued>	

DISPLAY REPLICAT Command

TABLE B-36 DISPLAY REPLICAT Command

Header or Trailer Tag	Data Tag
<query_replicate>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<replication_data> (nn)	
	<vtss_name>
	<tapeplex_name>
<host_replicate_queues>	
	<host_name>
	<replicate_qdepth>
	<replicate_oldest>
</host_replicate_queues>	
</replication_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_replicate>	

DISPLAY RTD Command

TABLE B-37 DISPLAY RTD Command

Header or Trailer Tag	Data Tag
<query_rtd>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
<vtcs_request>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>
	<MVC_allocated>

TABLE B-37 DISPLAY RTD Command

Header or Trailer Tag	Data Tag
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
	<vtss_name>
	<vtss_list_name>
	<function>
	<process_id>
	<parent_id>
	<task_type>
	<acs>
	<lsm>
	<internal_device_type>
	<for_mount>
	<for_vtv_move>
<vtv_data>	
	<volser>
</vtv_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtd_data>	
	<device_address>
</vtd_data>	
	<local_wait_time>
<mvc_instance> (4)	
	<volser>

TABLE B-37 DISPLAY RTD Command

Header or Trailer Tag	Data Tag
	<acs>
	<lsm>
	<internal_device_type>
</mvc_instance>	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types>	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtcs_request>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_rtd>	

DISPLAY REMOTE Command

TABLE B-38 DISPLAY REMOTE Command

Header or Trailer Tag	Data Tag
<query_remote>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_remote>	

DISPLAY SCRATCH Command

TABLE B-39 DISPLAY SCRATCH Command

Header or Trailer Tag	Data Tag
<display_scratch_request	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<subpool_data> (nn)	
	<acs>
	<lsm>
	<subpool_name>
	<label_type>
	<media>
	<rectech>
	<scratch_count>
	<threshold_count>
</subpool_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</display_scratch_reques	

DISPLAY SERVER Command

TABLE B-40 DISPLAY SERVER Command

Header or Trailer Tag	Header, Trailer, or Data Tag	Data Tag
<display_server_request>		
<header>		
	<els_version>	
	<date>	
	<time>	
	<host_name>	
</header>		
<server_data>		
	<server_type>	
	<service_level>	
	<subsystem_name>	
	<termination_in_progress>	
	<vtcs_available>	
	<advanced_management>	
	<dsn_data>	
		<dataset_type>
		<dsname>
		<active>
	</dsn_data>	
</server_data>		
</display_server_request		

DISPLAY SERVLEV Command

TABLE B-41 DISPLAY SERVLEV Command

Header or Trailer Tag	Data Tag
<display_server_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<server_data>	
	<server_type>
	<service_level>
</server_data>	
</display_server_request	

DISPLAY TASKS Command

TABLE B-42 DISPLAY TASKS Command

Header or Trailer Tag	Data Tag
<query_tasks>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<task_data> (nn)	
	<task_number>
	<task_type>
	<slot_id>
	<process_id>
	<waiting_count>
	<pending_count>
<vtss_data>	
	<name>
</vtss_data>	
<rtd_data>	
	<name>
</rtd_data>	
<locks_held_data>	
	<lock_task>
	<lock_mvc>
	<lock_vtv>
	<lock_vtd>
	<lock_rtd>
</locks_held_data>	
<vtcs_request>	
<rtd_data> (nn)	
	<device_address>
	<device_type>
	<name>
	<channel_id>

TABLE B-42 DISPLAY TASKS Command

Header or Trailer Tag	Data Tag
	<MVC_allocated>
	<MVC_mounted>
	<host_id>
	<status>
	<volser>
	<owner_vtss>
	<internal_device_type>
	<acs>
	<lsm>
	<requests_queued>
	<allocation_time_remaining>
	<local_wait_time>
	<global_wait_time>
</rtd_data>	
	<vtss_name>
	<vtss_list_name>
	<function>
	<process_id>
	<parent_id>
	<task_type>
	<acs>
	<lsm>
	<internal_device_type>
	<for_mount>
	<for_vtv_move>
<vtv_data>	
	<volser>
</vtv_data>	
<mvc_data>	
	<volser>
</mvc_data>	
<vtd_data>	
	<device_address>
</vtd_data>	
	<local_wait_time>
<mvc_instance> (4)	

TABLE B-42 DISPLAY TASKS Command

Header or Trailer Tag	Data Tag
	<volser>
	<acs>
	<lsm>
	<internal_device_type>
</mvc_instance>	
<storclas_data>	
	<storclas_name>
	<mvcpool>
	<acs>
	<vtss_name>
	<immediate_migrate_wait>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<immediate_delay_queue>
<immediate_migrate>	
	<vtv_count>
	<total_vtv_size>
</immediate_migrate>	
<auto_migrate>	
	<vtv_count>
	<total_vtv_size>
</auto_migrate>	
	<media> (31)
<required_device_types>	
	<device_type>
	<internal_device_type>
</required_device_types>	
</storclas_data>	
</vtcs_request>	
</task_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_tasks>	

DISPLAY THRESHLD Command

TABLE B-43 DISPLAY THRESHLD Command

Header or Trailer Tag	Data Tag
<display_threshold_reque	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<subpool_data> (nn)	
	<acs>
	<lsm>
	<subpool_name>
	<label_type>
	<media>
	<rectech>
	<scratch_count>
	<threshold_count>
</subpool_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</display_threshold_requ	

DISPLAY VOLSER Command

TABLE B-44 DISPLAY VOLSER Command

Header or Trailer Tag	Data Tag
<display_volume_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<volume_data>	
	<volser>
	<home_cell>
	<mount_location>
	<host_id>
	<scratch>
	<selected>
	<mounted>
	<errant>
	<external_label>
	<label_readable>
	<insert_date>
	<insert_time>
	<select_date>
	<select_time>
	<select_count>
	<media>
	<rectech>
	<media_label>
	<media_match>
	<density>
	<encrypted>
</volume_data>	
<exceptions>	

TABLE B-44 DISPLAY VOLSER Command

Header or Trailer Tag	Data Tag
	<reason> (nn)
</exceptions>	
</display_volume_request	

DISPLAY VTD Command

TABLE B-45 DISPLAY VTD Command

Header or Trailer Tag	Data Tag
<query_vtd>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtd_data> (256)	
	<device_address>
	<vtss_name>
	<volser>
	<status>
	<usage>
</vtd_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_vtd>	

DISPLAY VTSS Command

TABLE B-46 DISPLAY VTSS Command

Header or Trailer Tag	Data Tag
<query_vtss>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>

TABLE B-46 DISPLAY VTSS Command

Header or Trailer Tag	Data Tag
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_vtss>	

DISPLAY VTV Command

TABLE B-47 DISPLAY VTV Command

Header or Trailer Tag	Data Tag
<query_vtv>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<vtv_data>	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>

TABLE B-47 DISPLAY VTV Command

Header or Trailer Tag	Data Tag
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
	<archive>
	<migrate_pending>
	<storage_class> (4)
	<partition_id>
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
	<migrate_status>
	<acs>
	<lsm>
	<internal_device_type>
	<mount_suitability>
	<storage_class>
</mvc_instance>	
	<cds_block>
	<cds_record>
</vtv_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</query_vtv>	

EEXPORT Command

TABLE B-48 EEXPORT Command

Header or Trailer Tag	Data Tag
<eexport_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<eexport_summary>	
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</eexport_summary>	
<eexport_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>

TABLE B-48 EEXPORT Command

Header or Trailer Tag	Data Tag
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>

TABLE B-48 EEXPORT Command

Header or Trailer Tag	Data Tag
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</eexport_process>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</eexport_request>	

EJECT Command

TABLE B-49 EJECT Command

Header or Trailer Tag	Data Tag
<eject_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<eject_data>	
	<volser>
	<acs>
	<lsm>
	<cap>
	<row>
	<column>
	<result>
	<error>
	<reason>
</eject_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</eject_request>	

ENTER Command

TABLE B-50 ENTER Command

Header or Trailer Tag	Data Tag
<enter_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<enter_data>	
	<volser>
	<lsm_id>
	<result>
	<reason>
</enter_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</enter_request>	

EXPORT Command

TABLE B-51 EXPORT Command

Header or Trailer Tag	Data Tag
<export_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-51 EXPORT Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-51 EXPORT Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</export_request>	

IMPORT Command

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
<import_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtr_data>	
</mvc_inventory>	
</mvc_data>	
<drain_summary>	
	<process_id> (nn)
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</drain_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>

TABLE B-52 IMPORT Command

Header or Trailer Tag	Data Tag
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_eot_reset>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</import_request>	

MERGMFST Command

TABLE B-53 MERGMFST Command

Header or Trailer Tag	Data Tag
<manifest_merge_event>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-53 MERGMFST Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>

TABLE B-53 MERGMFST Command

Header or Trailer Tag	Data Tag
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</manifest_merge_event>	

MIGRATE Command

TABLE B-54 MIGRATE Command

Header or Trailer Tag	Data Tag
<migrate_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<migrate_summary>	
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</migrate_summary>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-54 MIGRATE Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-54 MIGRATE Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvttv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vttv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vttv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-54 MIGRATE Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</migrate_request>	

MOUNT Command

TABLE B-55 MOUNT Command

Header or Trailer Tag	Data Tag
<mount_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mount_data>	
	<volser>
	<device_address>
	<host_id>
</mount_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	

MOVEVTVS Command

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
<move_vtvs_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<move_vtvs_summary>	
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</move_vtvs_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtlds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>

TABLE B-56 MOVEVTVS Command

Header or Trailer Tag	Data Tag
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<exceptions>	
	<reason> (nn)
</exceptions>	
</move_vtvs_request>	

MVCDRAIN Command

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
<drain_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<drain_summary>	
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</drain_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (0A)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>

TABLE B-57 MVCDRAIN Command

Header or Trailer Tag	Data Tag
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_eot_reset>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</drain_request>	

MVCMaint Command

TABLE B-58 MVCMaint Command

Header or Trailer Tag	Data Tag
<mvcmaint_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvcmaint_summary>	
	<process_id> (nn)
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</mvcmaint_summary>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>

TABLE B-58 MVCMAINT Command

Header or Trailer Tag	Data Tag
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<mvc_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>

TABLE B-58 MVCMAINT Command

Header or Trailer Tag	Data Tag
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</mvcmaint_request>	

MVCPLRPT Command

TABLE B-59 MVCPLRPT Command

Header or Trailer Tag	Data Tag
<mvcpool_report>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvcpool_data> (nn)	
	<name>
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-59 MVCPLRPT Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<storclas_counts> (nn)	
	<name>
	<total_mvcs>
	<free_compatible_mvcs>
	<free_compatible_acs_mvcs>
	<audit_mvcs>
	<drain_mvcs>
	<full_mvcs>
	<maxvtv_mvcs>
	<readonly_mvcs>
	<broken_mvcs>
	<lost_mvcs>
	<expired_warranty_mvcs>
	<retired_mvcs>
	<invalid_mir_mvcs>
	<datachk_mvcs>
	<usable_mvcs>
</storclas_counts>	
<mvcpool_counts> (1)	
	<total_mvcs>
	<init_mvcs>

TABLE B-59 MVCPLRPT Command

Header or Trailer Tag	Data Tag
	<unit_mvcs>
	<free_mvcs>
	<audit_mvcs>
	<drain_mvcs>
	<export_mvcs>
	<ejected_mvcs>
	<full_mvcs>
	<maxvtv_mvcs>
	<readonly_mvcs>
	<broken_mvcs>
	<lost_mvcs>
	<expired_warranty_mvcs>
	<retired_mvcs>
	<invalid_mir_mvcs>
	<datachk_mvcs>
	<consolidate_mvcs>
	<usable_mvcs>
</mvcpool_counts>	
</mvcpool_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</mvcpool_report>	

MVCRPT Command

TABLE B-60 MVCRPT Command

Header or Trailer Tag	Data Tag
<mvc_report>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<mvc_data> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>

TABLE B-60 MVC RPT Command

Header or Trailer Tag	Data Tag
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvttv>
	<export>
	<consolidated>
	<full>
	<eot_partition_id>
	<initialised> standard | partitioned | NO
<mvc_inventory>	
<vttv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vttv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-60 MVCRPT Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
	<partition_id>
</mvc_instance>	
</vtv_data>	
</mvc_inventory>	
</mvc_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</mvc_report>	

RECALL Command

TABLE B-61 RECALL Command

Header or Trailer Tag	Data Tag
<recall_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<recall_summary>	
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</recall_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-61 RECALL Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-61 RECALL Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvttv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vttv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vttv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-61 RECALL Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</recall_request>	

RECLAIM Command

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
<reclaim_request>	
<header>	
	<els_version>
	<process_id>
	<date>
	<time>
	<host_name>
</header>	
<reclaim_summary>	
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</reclaim_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvttv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vttv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vttv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTID_online>
</connected_device_types	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>

TABLE B-62 RECLAIM Command

Header or Trailer Tag	Data Tag
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_eot_reset>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</reclaim_request>	

RECONCILE Command

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
<reconcile_report>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<reconcile_vtv>	
<vtv_data> (nn)	
	<volser>
	<size_compressed>
	<compress_percent>
	<date_created>
	<time_created>
	<management_class>
<mvc_instance> (4)	
	<volser>
</mvc_instance>	
	<copy_tapeplex> (2)
	<reconcile_reason> (8)
</vtv_data>	
</reconcile_vtv>	
<reconcile_mvc>	
<mvc_data> (nn)	
	<volser>
	<media>
	<media_size>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<acs>
	<candidate_vtv_count>
	<total_vtv_size>
<vtv_instance> (nn)	

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
	<volser>
</vtv_instance>	
</mvc_data>	
<tapeplex_data> (nn)	
	<name>
	<candidate_vtv_count>
	<total_vtv_size>
<vtv_instance> (nn)	
	<volser>
</vtv_instance>	
</tapeplex_data>	
</reconcile_mvc>	
<move_vtvs_summary>	
	<process_id> (nn)
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
<mvc_data> (nn)	
	<volser>
	<reason>
</mvc_data>	
</move_vtvs_summary>	
<recall_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtvs>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</recall_process>	
<migrate_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<mvc_data>	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
</mvc_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</migrate_process>	
<mvc_eot_reset> (nn)	
	<volser>
	<migrated_count>
	<vtv_count>
	<media>
	<percent_used>
	<percent_fragmented>
	<percent_available>
	<media_size>

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
	<times_mounted>
	<initialised>
	<broken>
	<lost>
	<data_check>
	<read_only>
	<retired>
	<warranty_expired>
	<invalid_mir>
	<date_last_mounted>
	<time_last_mounted>
	<date_last_migrate>
	<time_last_migrate>
	<date_last_reclaim>
	<time_last_reclaim>
	<vtss_last_mounted>
	<acs>
	<consolidate_date>
	<consolidate_time>
	<storage_class>
	<eot_block_id>
	<block_id_first_space>
	<usable>
	<audit>
	<eject>
	<drain>
	<maxvtv>
	<export>
	<consolidated>
	<full>
<eexport_summary>	
	<process_id> (nn)
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
</eexport_summary>	
<eexport_process> (nn)	
<vtss_data>	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>
	<suitable_RTD_online>
</connected_device_types>	
</vtss_data>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>

TABLE B-63 RECONCIL Command

Header or Trailer Tag	Data Tag
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</eexport_process>	
<exceptions>	

TABLE B-63 RECONCILE Command

Header or Trailer Tag	Data Tag
	<reason> (nn)
</exceptions>	
</reconcile_report>	

REPLACEALL Command

TABLE B-64 REPLACEALL Command

Header or Trailer Tag	Data Tag
<replaceall_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<volume_data>	
	<result>
	<error>
	<reason>
</volume_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</replaceall_request>	

SCRATCH Command

TABLE B-65 SCRATCH Command

Header or Trailer Tag	Data Tag
<scratch_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<volume_data>	
	<result>
	<error>
	<reason>
</volume_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</scratch_request>	

UNSCRATCH Command

TABLE B-66 UNSCRATCH Command

Header or Trailer Tag	Data Tag
<unscratch_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<volume_data>	
	<result>
	<error>
	<reason>
</volume_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</unscratch_request>	

VOLRPT Command

TABLE B-67 VOLRPT Command

Header or Trailer Tag	Data Tag
<volrpt>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<volume_data>	
	<volser>
	<home_cell>
	<scratch>
	<selected>
	<mounted>
	<errant>
	<external_label>
	<label_readable>
	<cleaner_usable>
	<cleaner_over_maxclean>
	<insert_date>
	<insert_time>
	<select_date>
	<select_time>
	<select_count>
	<media>
	<rectech>
	<subpool_name>
	<subpool_label>
	<subpool_index>
	<date_last_mounted>
	<time_last_mounted>
	<volume_usable>
	<density>
	<encrypted>
</volume_data>	

TABLE B-67 VOLRPT Command

Header or Trailer Tag	Data Tag
<subpool_summary_data>	
<subpool_data>	
	<subpool_name>
	<subpool_label>
	<subpool_index>
	<from_volser>
	<to_volser>
<scratch_data>	
	<acs>
	<lsm>
	<media>
	<rectech>
	<scratch_count>
	<non_scratch_count>
</scratch_data>	
</subpool_data>	
</subpool_summary_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</volrpt>	

VTSSRPT Command

TABLE B-68 VTSSRPT Command

Header or Trailer Tag	Data Tag
<vtss_report>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vtss_data> (nn)	
	<name>
	<migrate_lamt>
	<migrate_hamt>
	<number_vtds>
	<number_rtds>
	<minimum_migrate_tasks>
	<maximum_migrate_tasks>
	<active_migrate_tasks>
	<default_acs>
	<vtss_model>
	<maximum_size>
	<vtv_pagesize>
	<capacity_mb>
	<dbu>
	<number_vtvs>
	<status>
	<accessible>
	<migrates>
	<reclaims>
	<auto_migrate_host>
	<auto_migrate_threshold>
	<immediate_migrate_wait>
<connected_device_types>	
	<device_type>
	<internal_device_type>
	<acs>

TABLE B-68 VTSSRPT Command

Header or Trailer Tag	Data Tag
	<suitable_RTD_online>
</connected_device_types	
<vtss_inventory>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	

TABLE B-68 VTSSRPT Command

Header or Trailer Tag	Data Tag
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
</vtss_inventory>	
</vtss_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vtss_report>	

VTVMAINT Command

TABLE B-69 VTVMAINT Command

Header or Trailer Tag	Data Tag
<vtvmaint_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vtvmaint_summary>	
	<process_id> (nn)
<vtv_data> (nn)	
	<volser>
	<reason>
</vtv_data>	
</vtvmaint_summary>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>

TABLE B-69 VTMMAINT Command

Header or Trailer Tag	Data Tag
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vtvmaint_request>	

VTVRPT Command

TABLE B-70 VTVRPT Command

Header or Trailer Tag	Data Tag
<vtv_report>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vtv_data> (nn)	
	<volser>
	<initialised>
	<mounted>
	<resident>
	<scratch>
	<fenced>
	<new_create>
	<copies_to_migrate>
	<times_read>
	<consolidated>
	<migrated>
	<replication>
	<size_compressed>
	<size_uncompressed>
	<compress_percent>
	<maximum_size>
	<vtv_pagesize>
	<date_last_used>
	<time_last_used>
	<date_last_mount>
	<time_last_mount>
	<date_last_recall>
	<time_last_recall>
	<date_created>
	<time_created>
	<management_class>

TABLE B-70 VTVRPT Command

Header or Trailer Tag	Data Tag
	<vtss_name>
	<multiple_start>
	<multiple_next>
	<owning_tapeplex>
	<copy_tapeplex> (2)
	<partition_id>
<mvc_instance> (4)	
	<volser>
	<block_id>
	<date_migrated>
</mvc_instance>	
</vtv_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vtv_report>	

VVOL Command

TABLE B-71 VVOL Command

Header or Trailer Tag	Data Tag
<vvol_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
	<result>
<vault_volume_data>	
	<volser>
	<vault_seq_nbr>
	<vault_name>
	<slot_number>
	<assigned_date>
	<assigned_time>
	<scheduled_return_date>
	<scheduled_return_time>
	<ejected_date>
	<ejected_time>
</vault_volume_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vvol_request>	

VVAULT Command

TABLE B-72 VVAULT Command

Header or Trailer Tag	Data Tag
<vault_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vault_data>	
	<vault_seq_nbr>
	<vault_name>
	<vault_desc>
	<tsm_vault_name>
	<nbr_vault_slots>
	<nbr_vault_slots_used>
</vault_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vault_request>	

VVOL Command

TABLE B-73 VVOL Command

Header or Trailer Tag	Data Tag
<vvol_request>	
<header>	
	<els_version>
	<date>
	<time>
	<host_name>
</header>	
<vault_volume_data>	
	<volser>
	<vault_seq_nbr>
	<vault_name>
	<slot_number>
	<assigned_date>
	<assigned_time>
	<scheduled_return_date>
	<scheduled_return_time>
	<ejected_date>
	<ejected_time>
</vault_volume_data>	
<exceptions>	
	<reason> (nn)
</exceptions>	
</vvol_request>	

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