StorageTek Enterprise Library Software

Legacy Interfaces Reference

Release 7.2

Part Number: E37157-05
September 2016

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StorageTek Enterprise Library Software Legacy Interfaces Reference

E37157-05

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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

Purpose

This book provides information about interfaces that are still supported for ELS 7.2 but whose use is **strongly deprecated, because support may be dropped in any future release for any legacy feature**:

- All User Exits other than HSC format exits 6, 14, and 15
- HSC PGMI
- HSC Batch API
- Old TAPEREQ format
- Old DFSMS interface format
- Various legacy commands and control statements
- Managing LSMs in manual mode
- Managing remote-linked libraries
- IVP programs

Note – Support for the CDS journaling option will be dropped in the next ELS release. If you are currently using the journaling option, please review the CDS logging feature and other CDS recovery procedures to ensure that you can recover your CDS if necessary.

Prerequisites

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

- z/OS operating system
- JES2 or JES3
- System Management Facility (SMF)

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What's New?

This revision includes the following update:

- Added the MVCPool Control Statement INPTHRSH parameter, which specifies the percentage of fragmented space that makes an MVC in partitioned format eligible for dynamic reclamation processing.

  See "MVCPool Control Statement" on page 437.

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CHAPTER 1

HSC Programmatic Interface

Note – The HSC PGMI has been superseded by the ELS UUI. For more information, see *ELS Programming Reference*.

HSC provides a programmatic interface for users and software developers to request services from HSC. This interface is functional at the HSC FULL service level.

Those services are:

- query information
- volume movement
- scratch volume control.

The interfaces defined in this document are provided to allow programs that do not use certain MVS services (e.g., unique tape management systems) to request certain services from HSC.

Query Information

A user can query HSC for information about configuration, data sets, drive selection, scratch pools, volume location and status. This includes some information available from HSC Display command. The information is returned in structured control blocks.

A program can query HSC to determine if a volume is resident in the ACS, and if it is, what drives are the closest. This permits programs doing their own dynamic allocation to make an appropriate choice.

Volume Movement

Interfaces are provided for issuing requests to HSC to mount, dismount, and eject volumes. If the interface is not used, a program must go through allocation, OPEN/CLOSE/EOV, and the appropriate mount and dismount messages must be issued. HSC intercepts the messages and instructs the ACS to perform the necessary operations. For further information on intercepted messages, refer to “Intercepted Messages List” in *Configuring and Managing SMC* .

Scratch Volume Control

HSC supports the following scratch processing options:

- request a scratch volume to use; request HSC to select a VOLSER HSC thinks is scratch
- return a volume to scratch status
- mark a volume as nonscratch
- provide scratch subpool support.

This permits an installation more control over scratch processing.

Using the Interface

Requests for HSC services are made via the SLSXREQ macro. The request parameter list and response areas are mapped by the SLSXREQM macro. An assembler program that uses SLSXREQ is also required to have SLSXREQM generate the DSECTs used by the SLSXREQ macro.

SLSXREQ calls module SLSXCAL to actually get the request over to HSC. The primary purpose of this routine is to locate HSC program call (PC) number for cross address space communication. The user is required to have previously loaded SLSXCAL. The address of the routine is passed to the SLSXREQ macro. SLSXCAL is reentrant, so the LOAD need only be done once.

The normal return code (in R15) from the SLSXREQ macro is zero. This indicates the function was successfully initiated. When HSC is unavailable, a SLSXREQ request receives a return code of SLXRNT (X'20') in register 15. The QHSC request can be used to periodically poll HSC status to determine when it becomes available.

When request processing completes, HSC returns the address of the response area and its length. R1 contains the address of the response area and R0 contains the length of the response. The response area is in non-fetch protected, HSC key storage. The user should not attempt to freemain or alter the response area. This response area is valid until the next SLSXREQ call, after which it no longer contains the response.

Both synchronous and asynchronous interfaces are provided. Synchronous requests cause the requestor to wait until the request is complete. Asynchronous mode allows the user to have multiple requests active at once, and returns control to the requestor immediately.

Note – Asynchronous requests are not supported for the QHSC and READ functions.

Upon returning from an asynchronous request, R0 will contain a token and R1 will contain the address of an ECB. When the request is complete, the ECB will be posted. After the post, the user must issue a SLSXREQ READ function specifying the returned token. This causes a single response to be made available to the requestor. The ECB and token are no longer valid after the response has been read.

If the PGMI application terminates before all asynchronous requests have completed, any pending requests are canceled. To make sure all requests have completed, the PGMI application must wait for all ECBs to be posted.

Note – If an asynchronous request specifies selected CAPs or volumes, and the PGMI does not wait until all ECBs are posted before terminating, CAPs may need to be released by entering the RELease CAP command and VOLSERs may need to be ''unselected'' using the UNSElect utility.

The responses are mapped by the SLSXREQM macro. The response block always contains a Reply Header, mapped by the SLX DSECT. The contents of the elements that follow the SLX header depend on the type of request made. Elements of a similar type are always contiguous (e.g., all drive elements are together). The Reply Header contains the number of each type of element, the offset from the start of Reply Header to the

start of the elements of a specified type, and the length of each element type. In order to provide compatibility with future enhancements, the length in the Reply Header should be used at run time; not an assembled constant.

In the event that HSC is made unavailable in the middle of a request, the ECB will be posted and the response area will indicate that HSC is unavailable.

A request can only be issued in task mode with no locks held. A task can have multiple requests active at once. If the requesting task terminates, no responses will be sent and any returned response areas will no longer be valid.

SLSXREQ Functions

The sections below describe the SLSXREQ functions.

Query Requests

Query requests can be issued to obtain information from HSC. These requests include

- QCAP – Requests a CAP query to determine the number of CAPs available and the capacity and status of each CAP.
- QCONFIG – Requests certain configuration data from HSC. It returns the number of ACSs and LSMs in the library.
- QDRIVES – Requests drive configuration data from HSC.
- QDRLIST – Requests a list of drives sorted by proximity to a specified volume. An empty list is returned if the volume is not in the library. For scratch requests, drives are sorted by LSM. Drives attached to the LSM containing the most scratch volumes for a specified subpool are listed first.
- QDSN – Requests information about the current data sets in use by HSC.
- QHSC – Requests the status (up or down) of HSC.
- QEJECT – Determine the status of all vol-ids within a given eject request.
- QSCRATCH – Requests the scratch counts for each LSM in the library.
- QVOLUME – Requests information about a specified volume.

Motion Requests

Motion requests can be issued to have HSC move a cartridge. The motions that can be requested are

- DISMOUNT – Dismount a cartridge and place it in a cell.
- EJECT – Move a cartridge from a cell, place the cartridge in a CAP, and have the operator remove the cartridge.
- MOUNT – Move a cartridge to a drive and mount it.
- MOVE – Move a volume(s) within an LSM or to another LSM.
- RESET – Attempt to dismount all cartridges mounted on behalf of a specified host.

Scratch Requests

The following requests can be issued to alter the scratch status of a volume:

- SCRATCH – Mark a volume as being in scratch status.
- SELSCR – Pick a volume in a specified scratch subpool and mark it as nonscratch.
- UNSCRATCH – Mark a volume as not being in scratch status.

Control Requests

The following requests can be issued to control processing of requests:

- READQ – Read a response associated with a specific token.
- STOP – Terminate a specific PGMI request.

Authorization

HSC provides a user exit (SLSUX05) to perform authorization checking. If the user exit disables itself (setting return code UX05NOPR) or ABENDs, HSC allows all users to issue the query and READ requests. The remaining requests can only be issued by APF-authorized, key 0-7, or supervisor state requestors.

If desired, an installation can use the user exit (SLSUX05) to perform different authorization (e.g., use RACF or similar product).

Functional Description

The user exit is invoked for all requests received from the user interface. This does not include HSC internal requests (e.g., job processing, utilities). The user exit should evaluate the request, and set a return code to indicate if HSC should permit the request to be executed.

The installation written exit routine, which replaces the StorageTek default routine, must be named SLSUX05, and is link-edited into a HSC library. Standard IBM OS linkage conventions must be observed.

Macros

HSC programmatic interface uses the SLSXREQ invocation macro to format a parameter list and call SLSXCAL to continue processing. It is assumed that the caller has previously loaded SLSXCAL.

The SLSXREQM macro must be specified to generate a mapping of the parameter list and reply areas

R13 must point to a 72-byte register save area.

Addresses and Registers

- RS-type address: specifies an address that would be valid in an RS-type instruction
- RX-type address: specifies an address that would be valid in an RX-type instruction.
- Register (2) - (12): indicates that one of the general registers, 2 through 12, should be specified, enclosed in parentheses. The register must have been previously loaded with the value required by the parameter. Unused bits must be zeroed.
- Register (0): specifies general register 0, previously loaded as indicated above for register (2) - (12).

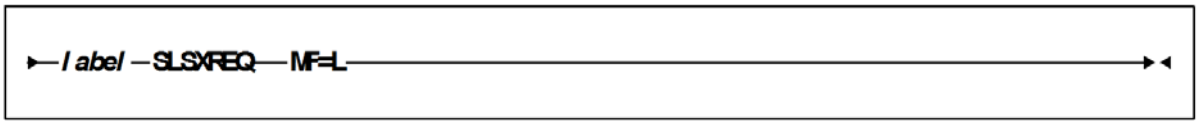
Macro SLSXREQ Syntax

Only list and execute forms of the SLSXREQ macro are available.

List Form

The list form defines a remote parameter list that is referenced by the execute form of the macro

The syntax for the list form is:



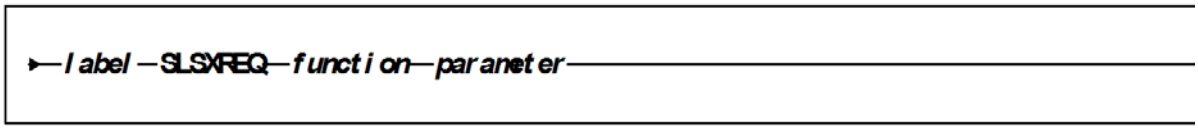
Parameters

MF=L specifies that a remote parameter list is generated. All other options are ignored.

Execute Form

The execute form stores parameters in the area defined by the list form and calls SLSXCAL.

The syntax for the execute form is:



where *function* is:

DISMOUNT	Dismount volume
EJECT	Eject volume(s) from an ACS
MOUNT	Mount volume
MOVE	Move volume(s) within library
QCAP	Get the number, capacity, and status of each CAP in an ACS

QCONFIG	Get configuration data
QDRIVES	Get drive information
QDRLIST	Get list of drives for mount
QDSN	Get data set information
QEJECT	Determine the status of individual vol-ids within a specific eject request
QHSC	Determine HSC status
QSCRATCH	Get LSM scratch counts
QVOLUME	Get volume status
READ	Read a response
RESET	Dismount all volumes mounted for a specified host
SCRATCH	Return a volume to scratch status
SELSCR	Select a scratch volume
STOP	Terminate a specific PGMI unit-of-work (or list of units-of-work)
UNSCRATCH	Remove a volume from scratch status

and *parameter* is:

,ACSID=*acsidaddr*

,CAP=*capidaddr*

,COL=*columnaddr*

,COUNT=*countaddr*

,DRIVE=*driveaddr*

,DSN=*datasetname*

,EXPDT=*expirationdate*

,HOSTID=*hostaddr* or *hostidaddr*

,JOB=*jobname* ,

,LIST=*itemlistaddr*

,LSM=*lsmidaddr* or *lsmaddr*

,LTYPE={LDT | SL | NL | AL | NSL | (*r*)}

,MEDIA=*medaddr*

,MF=(E,*parmaddr*)

,OPTION={SYNCH | ASYNCH}

,PAN=*paneladdr*

,PGM=*pgmname*

,PROTECT={YES | (*r*)}

,RECTECH=*recaddr*

,RETPD=*retentionperiod*

,ROW=*rowaddr*

,SCRATCH={YES | (*r*)}

,SCRPOOL=*value*

,STEP=*stepname*

,SUBPOOL=*subpoolname* or *value*

,TEXT=*textaddr*

,TOKEN=*tokenaddr*

,TOLSM=*lsmaddr*

,TOPAN=*paneladdr*

,VOLSER=*voladdr* or *volumeaddr*

,VOLTYPE={Specfic | Nonspecfic}

,XCALADR=*rtnaddr* or *subrtnaddr*

The following parameters from the list above are selection criteria (input) parameters taken from the TAPEREQ control statement:

- DSN
- EXPDT
- JOB
- PGM
- RETPD
- STEP
- VOLTYPE.

Note – EXPDT and RETPD are mutually exclusive.

MEDIA and RECTECH are media and format requirements (output) parameters also associated with TAPEREQ.

The PGMI determines media and recording technique values for a request either by using MEDia and RECtech parameters directly or by searching the TAPEREQ selection criteria (input) parameters in the following order:

1. If both MEDia and RECtech are specified, all TAPEREQ parameters are ignored.

Note – PGMI TAPEREQ values (i.e., DSN, EXPDT, JOB, PGM, RETPD, STEP, and VOLTYPE) are ignored as well.

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2. If either MEDia or RECtech is specified, the implied default is used for the parameter not entered (e.g., if MEDia is supplied, the RECtech default is taken).

3. If neither MEDia nor RECtech is specified, the PGMI TAPEREQ values (i.e., DSN, EXPDT, JOB, PGM, RETPD, STEP, or VOLTYPE) are searched to determine a media type and recording technique from the TAPEREQ statement(s).
4. If none of the PGMI TAPEREQ values is specified, HSC tries to find a TAPEREQ that matches all the TAPEREQ default values. If that fails, the default values for MEDia and RECtech are used.

Return Specifications

Return Codes

Upon return, R15 contains a decimal return code as follows:

Return Field Name	Decimal Value and Description
SLXROK	0 - Wait can be issued (OPTION=ASYNCH) or check response area for status (OPTION=SYNCH).
SLXRNHSC	20 - HSC not available. No SLX response is returned.

After the ECB associated with the request (for OPTION=ASYNCH) has been posted, or upon return for OPTION=SYNCH, the field SLXCMDRC (Return Code) will indicate the status (decimal) of the request.

Reason Codes

Reason Code Field Name	Decimal Value and Description
SLXANOALS	32772 - HSC is not active.
SLXQNOA	32788 - ASCOMM is not active.
SLXINVOP	32792 - Invalid QUAB option. Internal error; contact StorageTek.
SLXINVFC	32780 - Invalid function code. Internal error; contact StorageTek.
SLXNOLVT	32784 - No LVT. Internal error; contact StorageTek.
SLXTABND	32804 - ASCOMM server task abended.
SLXTINTR	32818 - Current task interrupted.
SLXSANF	32822 - Search argument not found.
SLXMSTT	32826 - Mismatch token types.
SLXTRNF	32832 - Token request area not found.
SLXSFUL	32848 - Reply area space is full.

DISMOUNT

The DISMOUNT request directs HSC to dismount a volume from a specified transport.

DISMOUNT Considerations

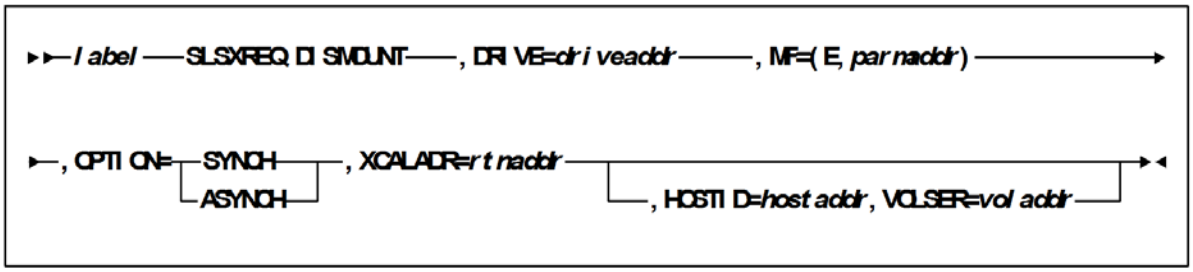
If the operation fails, normal messages to the operator are still sent.

If the volume was temp-entered (see the MOUNT request), it will be ejected to the highest preference available CAP. Otherwise, it is moved to a cell chosen by HSC.

The requestor is responsible for ensuring that the cartridge on the drive has been rewound. If it has not, the operator is asked for permission to rewind the drive. If the operator grants permission, the drive is unloaded, regardless of whether the drive is in use.

A DISMOUNT request may cancel a MOUNT request provided it is issued before the cartridge is removed from its cell. This is called suppression. If this happens, both requests fail, and the response reason codes indicate ''suppression'' has occurred.

Syntax



Parameters

DRIVE

driveaddr specifies the address of the 2-byte drive specification (0cua) from which a volume needs dismounting. Specify either an RX-type address of the data or the register (2) - (12) containing the address of the data.

This parameter is required.

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional. If the parameter is not specified, the host ID executing the request is used.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required if HOSTID is specified.

Response to DISMOUNT Request

A return code (SLXCMDRC in the SLSXREQM macro) indicates the success of the operation. If the drive is now empty, a return code of SLXROK is placed in SLXCMDRC. If the dismount failed, a return code of SLXRFAIL is placed there.

If the return code is SLXROK or SLXRFAIL, a reason code or message is placed in SLXSRC, and a message text element (mapped by SLXSMSG) is returned. The reason code is the binary message number of the message that HSC issued when the request completed. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

The response is returned at the completion of the request.

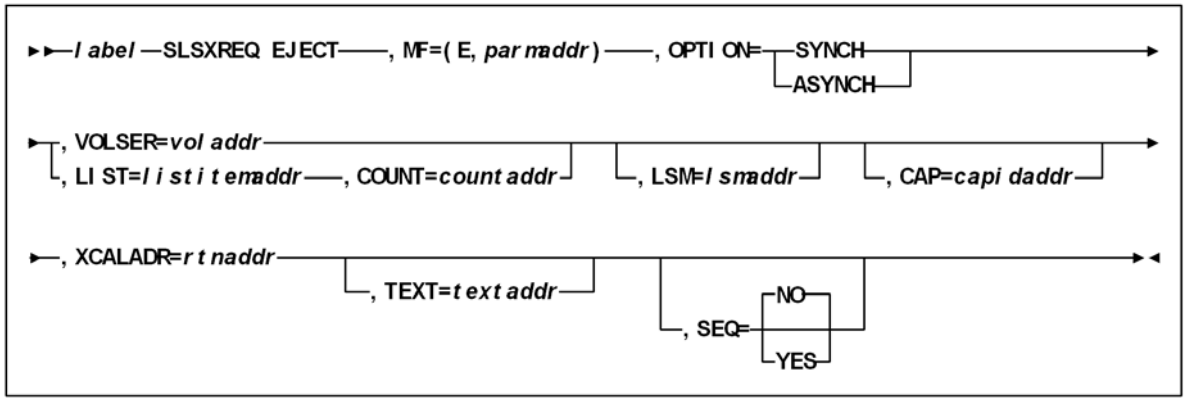
EJECT

The EJECT request causes HSC to eject a specific volume from the library using the parameter VOLSER, or a list of volumes using the parameters LIST and COUNT. The volume is ejected to the available CAP with the highest preference. The volume may also be ejected at a designated LSM by issuing the LSM parameter.

EJECT Considerations

This request duplicates the operator EJect command with the exception that there is no limit of 100 VOLSERs specified with the COUNT parameter.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required if LIST and COUNT are not specified. Either VOLSER or LIST and COUNT must be specified.

LIST

listitemaddr specifies the address of a list of elements.

For EJECT, LIST designates a list of 6-byte VOLSERs.

This parameter is required if VOLSER is not specified.

COUNT

countaddr specifies the address of a two-byte count value.

This parameter is required when LIST is specified.

For EJECT, COUNT specifies the number of VOLSERs in the list designated by the corequisite LIST parameter. Either COUNT and LIST or VOLSER must be specified.

LSM

specifies the address of an LSMid. The format of an LSMid is *AALL*, where *AA* is the ACS number (00-FF hexadecimal) and *LL* is the LSM number (*LL* is 00-17 hexadecimal). For example, 0102 is ACS 01, LSM 02.

Specify either an RX-type address of the LSMid or the register (2) - (12) containing the address of the LSMid.

This parameter is optional.

CAP

specifies the address of the CAP used to satisfy the request. *capidaddr* specifies either the RX-type address of the data or the number of the register containing the address of the data.

The format of *capidaddr* is *AALLCC*00, where *AA* is the ACS number (hexadecimal 00-FF), *LL* is the LSM number (hexadecimal 00-17), and *CC* is the CAP number. These identifiers are always followed by 00.

This parameter is optional.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

TEXT

specifies the address of a 32-byte text string issued whenever the operator is requested to open the CAP for an EJECT request.

This parameter is optional.

SEQ

specifies whether or not CAP eject processing fills the CAP cells sequentially or by home location distance.

Note – The SEQ parameter is effective for all LSM types but is used primarily for the SL8500 environment. If sequential order is desired for other LSM types, you must code SEQ=YES.

This parameter is optional.

NO

specifies that the EJECT process order the requested volumes by home location. EJECT fills the CAP or magazine (for the SL8500) according to the volume home location distance to the CAP; that is, volumes closest to the CAP are ejected first.

This is the default.

YES

specifies that the EJECT process place cartridges in the CAP beginning with the topmost available CAP cell and continuing sequentially.

Response to EJECT Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the volume was ejected, a return code of SLXROK is placed in SLXCMDRC. If the eject failed, a return code of SLXRFAIL is placed there. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

The response is returned at the completion of the request.

MOUNT

The MOUNT request directs HSC to mount a volume.

MOUNT Considerations

When a cartridge is removed from its home cell, it becomes ''selected'' and remains in that state until the requested operation is complete. A cartridge in the selected state cannot be used by the following requests:

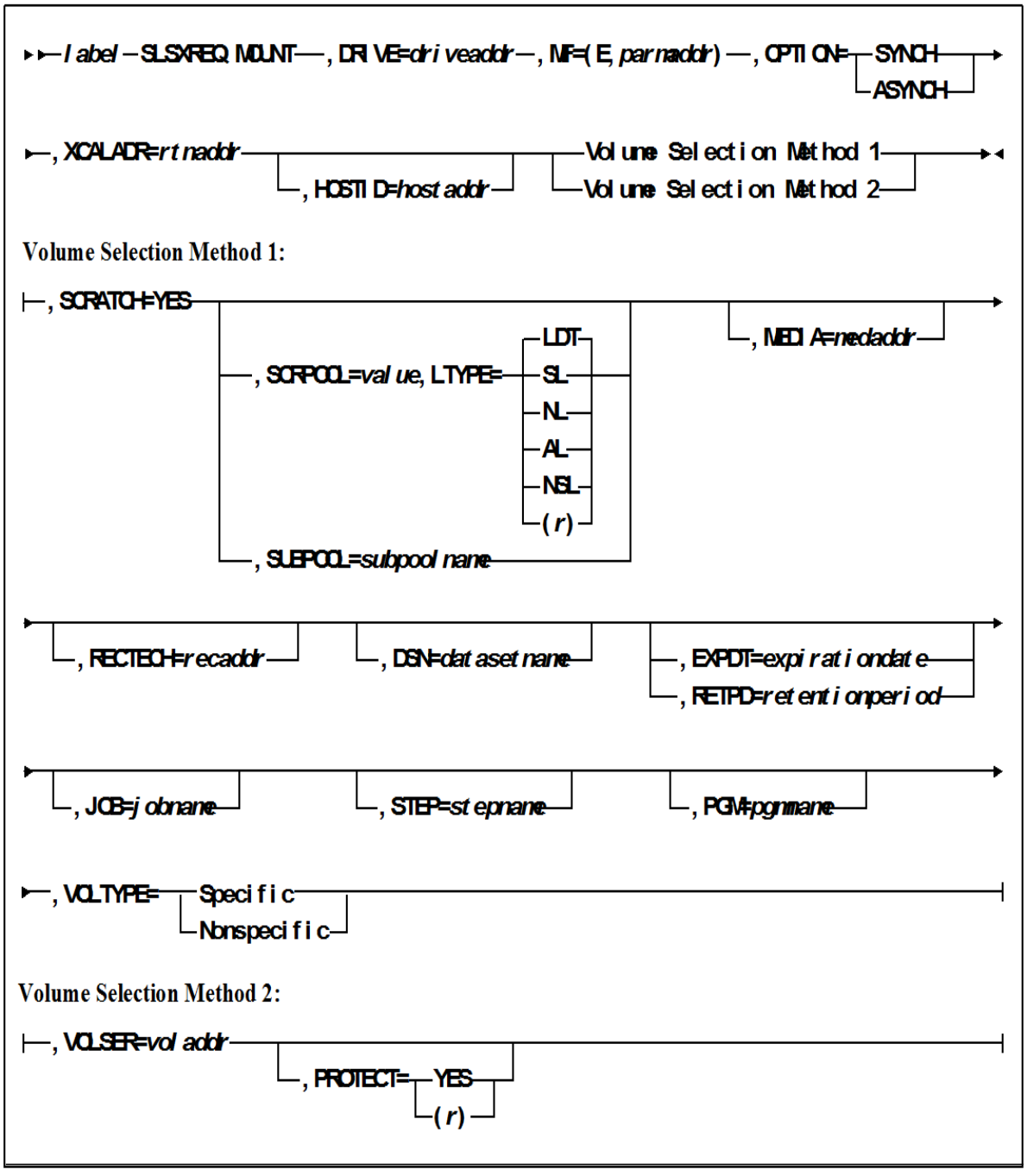
- EJECT
- MOUNT
- MOVE
- SCRATCH
- UNSCRATCH.

If the target transport for the mount has a volume mounted but unloaded, that volume will be dismounted automatically when the next mount for that transport is requested.

If the volume to be mounted is not in the library, the operator will be given a chance to enter the volume in the library, either permanently or temporarily (temp-enter). If the volume is temp-entered, it will be automatically ejected when dismounted.

Note – To enter a volume in the library, there must be an empty cell in the ACS for the volume, even if it is being temp-entered.

Syntax


label SLSXREQ MOUNT, DRIVE=driveaddr, MF=(E,parmaddr), OPTION=SYNCH ASYNCH
, XCALADR=rtnaddr
, HOSTID=hostaddr
Volume Selection Method 1
Volume Selection Method 2
Volume Selection Method 1:
, SCRATCH=YES
, SCRPOOL=value, LTYPE=LDT SL NL AL NSL (r)
, SUBPOOL=subpoolname
, MEDIA=medaddr
, RECTECH=recaddr
, DSN=datasetname
, EXPDT=expirationdate
, RETPD=retentionperiod
, JOB=jobname
, STEP=stepname
, PGM=pgmname
, VOLTYPE=Specific Nonspecific
Volume Selection Method 2:
, VOLSER=voladdr
, PROTECT=YES (r)

Parameters

DRIVE

driveaddr specifies the address of the 2-byte drive specification (0cua) on which a volume needs to be mounted.

Specify either an RX-type address of the data or the register (2) - (12) containing the address of the data.

This parameter is required.

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional. If the parameter is not specified, the host ID executing the request is used.

SCRATCH

specifies that the request is for a nonspecific (scratch) volume.

A VOLSER is selected at this time and mounted on the specified transport.

This parameter is required if VOLSER is not specified. Either SCRATCH or VOLSER must be specified.

SCRPOOL

specifies the scratch subpool index for each request. The index ranges from 0 to 255. A value of zero indicates no special subpool request and any available scratch volume is usable. These subpools are defined by the user in the PARMLIB data set.

value specifies either an RX-type address of the one-byte subpool or the register (2) - (12) containing the subpool in byte 3 (rightmost).

This parameter is optional and defaults to 0 (any scratch volume).

When SCRPOOL is specified, an LTYPE value is also required. SCRPOOL only has meaning for a scratch request and is disregarded when a SUBPOOL value is issued.

LTYPE

specifies the label type for scratch processing. This parameter causes scratch processing to be restricted to the set of scratch volumes associated with the label type specified. These label types are defined in a user defined PARMLIB data set.

LDT

specifies the library default label type.

SL

specifies the standard-labeled pool.

NL

specifies the nonlabeled pool.

AL

specifies the ANSI-labeled pool.

NSL

specifies the nonstandard-labeled pool.

(*r*)

specifies a register (2) - (12) containing the label type in the left-most byte of the register. That value is either SLSXLLDT (library default), SLSXLSL (standard label), SLSXLAL (ANSI label), SLSXLNL (nonlabeled) or SLSXLNS (nonstandard label).

This parameter defaults to library default type (LDT). If the default value is accepted for LTYPE, then SCRPOOL defaults to zero (0). If the label type is not the library default type, a nonzero subpool (SCRPOOL) must be specified.

When SCRPOOL is specified, an LTYPE parameter must also be specified. LTYPE has meaning for a SCRATCH=YES request only. When SUBPOOL is specified, SCRPOOL and LTYPE have no meaning.

SUBPOOL

specifies the address of a 13-character field containing the scratch subpool name for the scratch subpool.

If *subpoolname* is not provided, the subpool index is converted into three EBCDIC decimal digits and placed in the leftmost three positions of the subpool name.

Specify either an RX-type address of the data or the number of the register containing the address of the data. When SUBPOOL is specified, SCRPOOL and LTYPE have no meaning.

This parameter is optional.

MEDia

specifies the address of an 8-byte character field containing the media type of the cartridge to be mounted. **This parameter is optional.**

Note –

- If **MEDia** is not specified, the next scratch cartridge is mounted without regard to media type.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**
- LTO and SDLT transports are not supported in an MVS environment. These transports are recognized by HSC but are accessible only to open systems clients using LibraryStation.

medaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid media types are:

LONGItud

indicates any Standard or ECART cartridge.

Standard

indicates a standard length, 3480 cartridge. It can be read on any longitudinal drives (4480, 4490, 9490, or 9490EE). Data can be written in 36-track mode on a 4490, 9490, or 9490EE transport but cannot be read on an 18-track (4480) drive. Synonyms for this type of cartridge include:

- CST
- MEDIA1
- STD
- 1
- 3480

ECART

indicates a 3490E, extended capacity cartridge. It can be used only on a 36-track drive (4490, 9490, or 9490EE). Synonyms include:

- E
- ECCST
- ETAPE
- Long
- MEDIA2
- 3490E

ZCART

indicates a 3490E, extended capacity cartridge that provides greater storage capacity than an ECART. It can be used only on a 9490EE drive.

ZCART can be abbreviated as Z.

DD3

indicates any DD3A, DD3B, or DD3C (HELical) cartridge. HELical is a synonym for DD3.

DD3A, DD3B, DD3C

indicates a helical cartridge. The media indicator in the external label is encoded with the cartridge type (A, B, or C). DD3A, DD3B, or DD3C can be abbreviated to A, B, or C, respectively.

Types of helical cartridges, along with their associated media capacities, are:

- A — 10GB
- B — 25GB
- C — 50GB.

Data capacity differences between DD3A, DD3B, and DD3C cartridges are related to the length of the tape in the cartridge, not to the recording density of the data.

STK1

indicates any T9840 cartridge.

STK1R

indicates a T9840 cartridge. The media indicator in the external label is encoded with the cartridge type (R). STK1R can be abbreviated to R.

T9840 cartridge media capacities are 20GB (T9840A and T9840B) or 40GB (T9840C).

STK2

indicates any T9940 cartridge.

STK2P

indicates a T9940 data cartridge. The media indicator in the external label is encoded with the cartridge type (P). STK2P can be abbreviated to P.

T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).

LTO-10G

indicates an LTO 10GB capacity cartridge.

LTO-35G

indicates an LTO 35GB capacity cartridge.

LTO-50G

indicates an LTO 50GB capacity cartridge.

LTO-100G

indicates an LTO 100GB capacity cartridge.

LTO-200G

indicates an LTO 200GB capacity cartridge.

LTO-400G

indicates an LTO 400GB capacity cartridge.

LTO-400W

indicates an LTO Generation 3 WORM cartridge.

SDLT

indicates an SDLT 160GB cartridge.

SDLT-2

indicates an SDLT 125GB cartridge.

SDLT-S1

indicates an SDLT Generation S1 cartridge.

SDLT-S2

indicates an SDLT Generation S2 cartridge.

SDLT-S3

indicates an SDLT Generation S3 cartridge.

SDLT-S4

indicates an SDLT Generation S4 cartridge.

SDLT-4

indicates an SDLT Generation 4 cartridge.

T10000T1 or T1

indicates a full-capacity 500GB T10000 cartridge. **T10000T1** can be abbreviated as **T1**.

T10000TS or TS

indicates a smaller-capacity 120GB T10000 cartridge. **T10000TS** can be abbreviated as **TS**.

RECtech

specifies the address of an 8-byte field containing the recording technique used to record data tracks on the tape surface. **This parameter is optional.**

Note –

- If RECtech is not specified, the next scratch cartridge is mounted depending on the MEDia type that has been specified.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**

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recaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid recording techniques are:

LONGItud

indicates any device that uses longitudinal recording.

18track

indicates a 4480 transport.

36track

indicates a 4490, 9490, or 9490EE transport (any device that records in 36-track mode).

36Atrack

indicates a 4490 (Silverton) transport.

36Btrack

indicates a 9490 (Timberline) transport.

36Ctrack

indicates a 9490EE transport.

HELical
: indicates a device using helical recording.

DD3
: indicates a device using helical recording.

STK1R
: indicates any 9840 transport.

STK1R34
: indicates any 3490E-image 9840 transport.

STK1R35
: indicates any 3590-image 9840 transport.

STK1RA
: indicates a 3490E or 3590-image T9840A transport.

STK1RA34
: indicates a 3490E-image T9840A transport.

STK1RA35
: indicates a 3590-image T9840A transport.

STK1RB
: indicates a 3490E or 3590-image T9840B transport.

STK1RB34
: indicates a 3490E-image T9840B transport.

STK1RB35
: indicates a 3590-image T9840B transport.

STK1RAB
: indicates a 3490E or 3590-image T9840A or T9840B transport.

STK1RAB4
: indicates a 3490E-image T9840A or T9840B transport.

STK1RAB5
: indicates a 3590E-image T9840A or T9840B transport.

STK1RC
: indicates a 3490E or 3590-image T9840C transport.

STK1RC34
: indicates a 3490-image T9840C transport.

STK1RC35
: indicates a 3590-image T9840C transport.

STK2P
: indicates any 9940 transport.

STK2P34
: indicates any 3490E-image 9940 transport.

STK2P35
: indicates any 3590-image 9940 transport.

STK2PA

indicates a T9940A transport.

STK2PA34

indicates a 3490E-image T9940A transport.

STK2PA35

indicates a 3590-image T9940A transport.

STK2PB

indicates a T9940B transport.

STK2PB34

indicates a 3490E-image T9940B transport.

STK2PB35

indicates a 3590-image T9940B transport.

T1A

indicates any T10000 transport.

T1AN

indicates a non-encryption enabled 3490E- or 3590-image T10000 transport.

T1A34

indicates a non-encryption enabled 3490E-image T10000 transport.

T1A35

indicates a non-encryption enabled 3590-image T10000 transport.

T1AE

indicates an encryption-enabled 3490E- or 3590-image T10000 transport.

T1AE34

indicates an encryption-enabled 3490E-image T10000 transport.

T1AE35

indicates an encryption-enabled 3590-image T10000 transport.

Note – The following parameters are ignored if Media, RECtech, or both are specified.

DSN

datasetname specifies the data set name.

This parameter is optional.

EXPDT

expirationdate specifies the expiration date of the data set in *yyddd* or *yyy/ddd* format.

This parameter is optional.

RETPD

retentionperiod specifies the retention period for the data set in days. Specify the number of days as a one- to four-digit decimal number.

This parameter is optional.

JOB

jobname specifies the job name.

This parameter is optional.

STEP

stepname specifies the step name.

This parameter is optional.

PGM

pgmname specifies the step name.

This parameter is optional.

VOLTYPE

indicates whether or not a nonspecific volume was requested.

Specific

requests a specific volume to be mounted.

Nonspecific

requests a nonspecific volume to be mounted

This parameter is optional.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required if SCRATCH is not specified. Either VOLSER or SCRATCH must be specified.

PROTECT

PROTECT=YES - Specifies the volume is disabled for writing. It causes a volume enabled by the physical thumbwheel to be write disabled for this mount. There is no way to write-enable a cartridge whose thumbwheel indicates the volume is write disabled.

PROTECT=(*r*) - Specifies a register (2) - (12) that contains the write disablement in byte 2 of the register. If bit SLSXPROT is on, writing is disabled. If not on, the thumbwheel determines the write enablement.

This parameter is optional. If omitted, the write enablement is determined by the thumbwheel on the cartridge.

Response to MOUNT Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXROK or SLXRFAIL, a reason code or message is placed in SLXSRC, and a message text element (mapped by SLXSMSG) is returned. The reason code corresponds to the message in the message text. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

If the volume was mounted, a return code of SLXROK is placed in SLXCMDRC. A volume information element (mapped by SLXSVOL) is returned for the mounted volume.

The response is returned at the completion of the request.

MOVE

The MOVE request permits you to request HSC to move a single volume to another location within a library complex.

MOVE Considerations

The following apply before using the MOVE request:

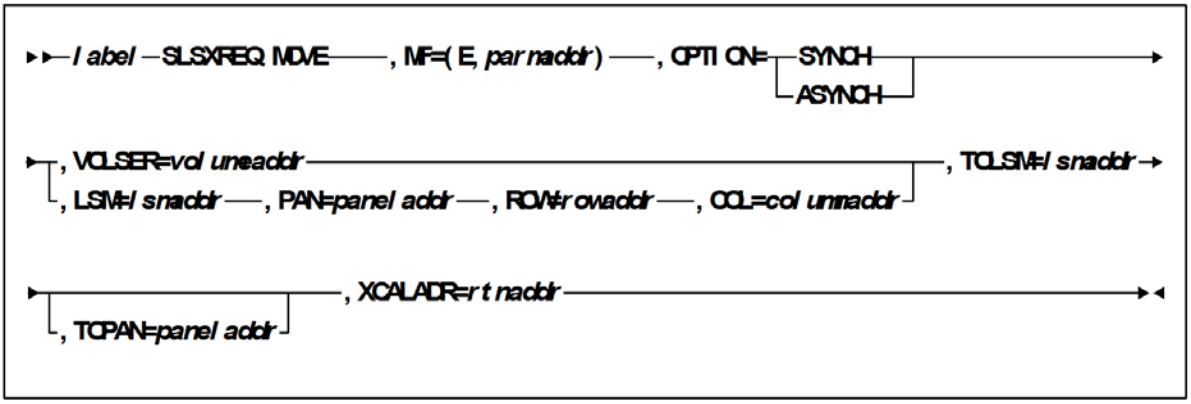
- Movement of volumes to the same panel in the same LSM, or to a frozen panel, is not allowed.

The following volume move functions are permitted:

  - Move a single volume from a panel within an LSM to another panel of the same LSM.
  - Move a single volume from a panel within an LSM to any panel of a different LSM within the library complex.

- Movement of volumes to LSMs is done on a first-come first-serve basis. As volumes are moved, if an LSM is filled before the move request is finished for that LSM, the move request continues with the movement of volumes designated for the next LSM specified in the request. An LSM is full if all available cells contain tape cartridges. This process continues until the entire move request is completed.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

VOLSER

specifies the address of a volume.

volumeaddr specifies either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the volume. The format of VOLSER is six characters (*vvvvvv*). Valid characters are A-Z, 0-9, #, $, ¥, and trailing blanks.

This parameter is required if LSM is not specified.

LSM

specifies the address of an LSMid. The format of an LSMid is *AALL*, where *AA* is the ACS number (00-FF hexadecimal) and *LL* is the LSM number (*LL* is 00-17 hexadecimal). For example, 010A is ACS 01, LSM 10.

Specify either an RX-type address of the LSMid or the register (2) - (12) containing the address of the LSMid.

The COL, PAN, and ROW parameters must accompany the LSM parameter. **This parameter is required if VOL is not specified.**

PAN

specifies the address of a panel number. The format of the panel number is *nn*, where '*nn*' is a one-byte hexadecimal number.

Specify either an RX-type address of the panel or the register (2) - (12) containing the address of the panel.

The COL, ROW, and LSM parameters must accompany the PAN parameter. **These four parameters or the VOL parameter must be issued.**

ROW

specifies the address of a row number. The format of the row number is *nn*, where '*nn*' is a one-byte hexadecimal number.

Specify either an RX-type address of the Row or the register (2) - (12) containing the address of the Row.

The COL, PAN, and LSM parameters must accompany the ROW parameter. **These four parameters or the VOL parameter must be issued**.

COL

specifies the address of a column number. The format of the column number is *nn*, where '*nn*' is a one-byte hexadecimal number.

Specify either an RX-type address of the COL or the register (2) - (12) containing the address of the COL.

The LSM, PAN, and ROW parameters must accompany the COL parameter. **These four parameters or the VOL parameter must be issued**.

TOLSM

specifies the address of the LSMid where the volume is moved. The LSMid is two hexadecimal bytes in the format *AA*0*LL*, where *AA* is the ACS number (00-FF hexadecimal) and 0*LL* is the LSM number (*LL* is 00-17 hexadecimal).

lsmaddr specifies either an RX-type address of the LSMid or the register (2) - (12) containing the address of the LSMid.

This parameter is required.

TOPAN

specifies the address of a panel number. The format of the panel number is *nn*, where '*nn*' is a one-byte hexadecimal number.

Specify either an RX-type address of the panel or the register (2) - (12) containing the address of the panel.

This parameter is optional.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to Move Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXROK or SLXRFAIL, a reason code is placed in SLXSRC, and a message text element (mapped by SLXSMSG) is returned. The reason code corresponds to the message in the message text.

If the volume was moved, a return code of SLXROK is placed in SLXCMDRC. A volume information element (mapped by SLXSVOL) is returned for the moved volume and the new location is returned in SLXVLOC field.

The response is returned at the completion of the request.

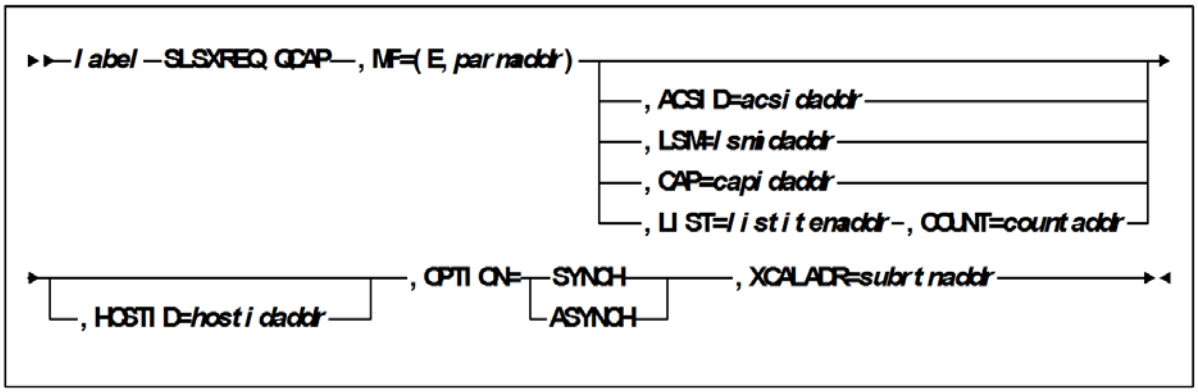
QCAP

This request is used to query the capacity and status of a CAP.

QCAP Considerations

There are no considerations for this PGMI function.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

ACSID

acsidaddr specifies the address of the ACS used to satisfy the request. The format of *acsidaddr* is *AA*, where *AA* is the ACS number (00-FF hexadecimal). For example, 01, designates ACS 01. Specify either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional. If specified, the returned data is for the specific ACS.

If ACSID, LSM, CAP, or LIST and COUNT, are not specified, the data returned is for all CAPs.

LSM

specifies the address of an LSMid. The format of an LSMid is *AALL*, where *AA* is the ACS number (00-FF hexadecimal) and *LL* is the LSM number (*LL* is 00-17 hexadecimal). For example, 0102 is ACS 01, LSM 02. All values are in hexadecimal format.

Specify either an RX-type address of the LSMid or the register (2) - (12) containing the address of the LSMid. **This parameter is optional.**

If specified, the returned data is for the specific LSM.

If ACSID, LSM, CAP, or LIST and COUNT, are not specified, the data returned is for all CAPs.

CAP

specifies the address of the CAP used to satisfy the request. *capidaddr* specifies either the RX-type address of the data or the number of the register containing the address of the data.

The format of *capidaddr* is *AALLCC*00, where *AA* is the ACS number (hexadecimal 00-FF), *LL* is the LSM number (hexadecimal 00-17), and *CC* is the CAP number. These identifiers are always followed by 00. **This parameter is optional**.

If specified, the returned data is for the specific CAP.

If ACSID, LSM, CAP, or LIST and COUNT, are not specified, the data returned is for all CAPs.

LIST

listitemaddr specifies the address of the CAPIDs used to satisfy the request. Specify either an RX-type address of the data or the number of the register containing the address of the data. **This parameter is optional.**

If specified, the returned data is for the specific CAPIDs.

If ACSID, LSM, CAP, or LIST and COUNT, are not specified, the data returned is for all CAPs.

COUNT

countaddr specifies the address of a two-byte count value.

This parameter is required when LIST is specified.

For QCAP, COUNT specifies the number of CAPIDs in the list designated by the corequisite LIST parameter.

If ACSID, LSM, CAP, or LIST and COUNT, are not specified, the data returned is for all CAPs.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostidaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional. If the parameter is not specified, the host ID executing the request is used.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

subrtnaddr specifies a location containing the address of the SLSXCAL routine.

Specify either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QCAP Request

A return code (SLSXQCAP in SLSXREQM macro) indicates the success of the operation. A value of 1A in R15 indicates that a QCAP has been requested. A value of zero indicates that the request has processed.

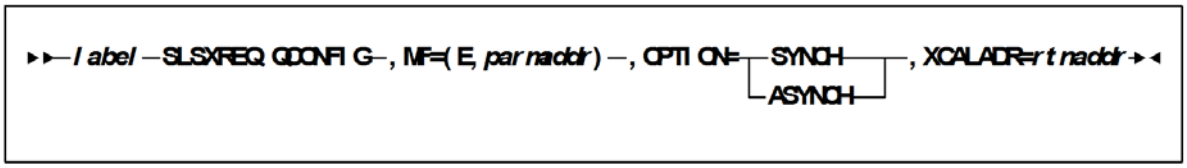
QCONFIG

This request is provided to enable the requestor to get information about the library configuration.

QCONFIG Considerations

There are no special considerations associated with the QCONFIG request.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QCONFIG Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

In addition to the Reply Header, the Configuration Summary Section, mapped by SLXSCFG is returned.

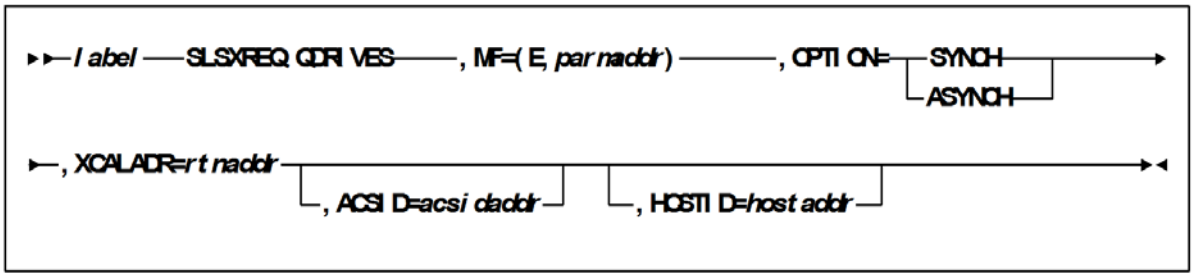
QDRIVES

This request retrieves drive related configuration data. The response includes the ACS and LSM address of the transports, whether or not an enhanced CAP is present, and LSM pass-thru connections.

QDRIVES Considerations

There are no special considerations associated with the QDRIVES request.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

ACSID

acsidaddr specifies the address of the ACS used to satisfy the request. The format of *acsidaddr* is *AA*, where *AA* is the ACS number (00-FF hexadecimal). For example, 01, designates ACS 01. Specify either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional. If the parameter is not specified, the host ID executing the request is used.

Response to QDRIVES Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in"Reason Codes" on page 12.

In addition to the Reply Header, the Drive Information Section (mapped by SLXSDRV) and LSM Information Section (mapped by SLXSLSM) are returned.

QDRLIST

The QDRLIST request is used to obtain HSC recommendation for a library transport for use on a subsequent MOUNT request.

QDRLIST Considerations

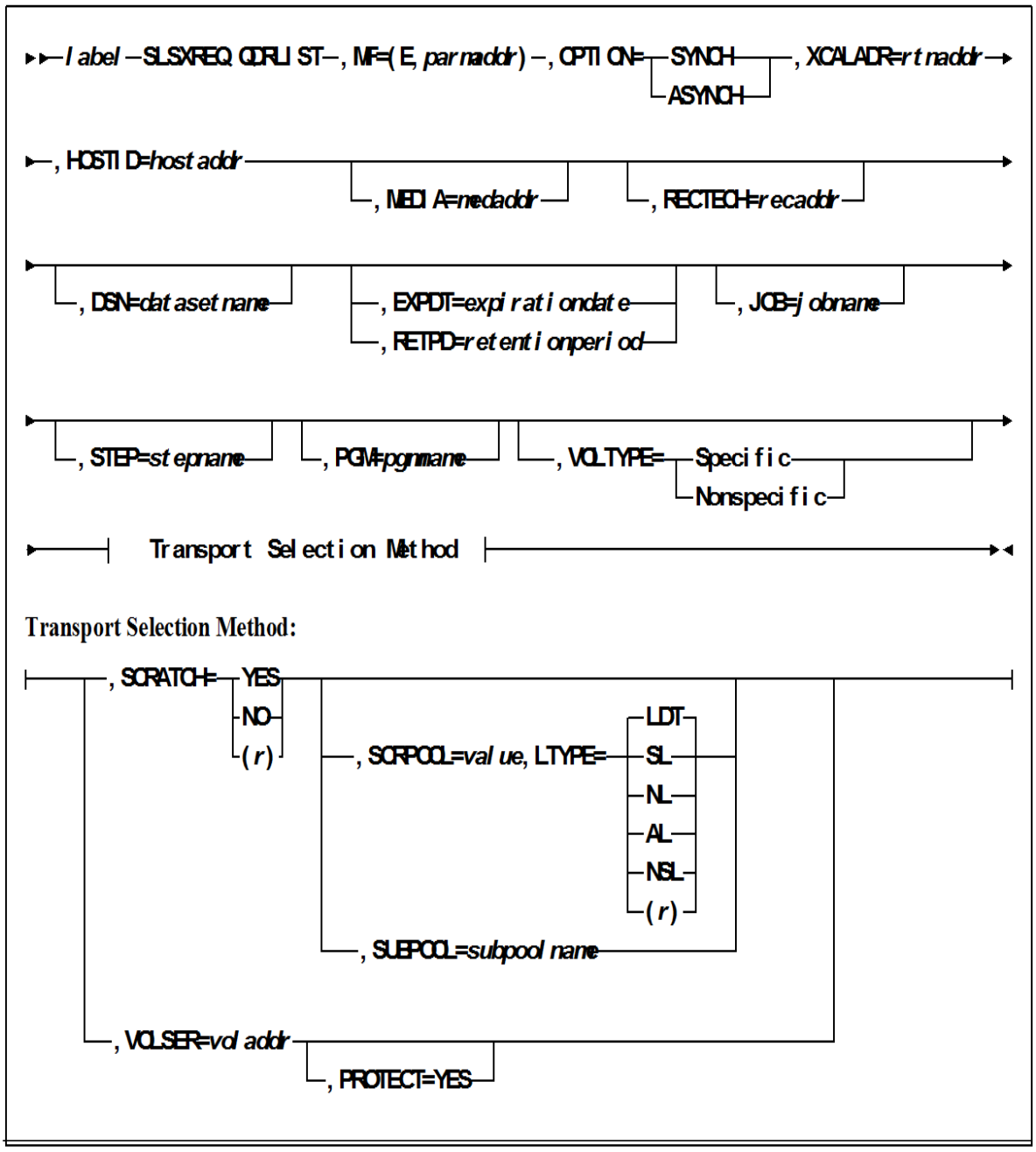
HSC makes its recommendation by returning a list of drive information elements ordered so that the first element describes the best drive to use, the second element describes the second best drive to use, etc.

If the request is for a specific volume (i.e. SCRATCH=NO), the drive information elements are arranged so that the first drive is in the LSM that is closest to (or in the same LSM as) the LSM that the cartridge is in, and the last drive is in the LSM that is farthest from the cartridge. Only the drives in the same ACS as the volume are returned. In addition, volume information for the specified volume is returned.

If the request is for a nonspecific volume (i.e., SCRATCH=YES), the drive information elements are arranged so that the first drive is in the LSM with the most scratch volumes of the specified subpool and label type, and the last drive is in the LSM that has the least scratch volumes. Drives from all ACSs are returned. A list of drives is still returned even if there are no scratch volumes, in which case, the scratch counts in the LSM elements are zeros.

HSC ignores whether a transport already has a volume mounted, is in an offline LSM, or a disconnected ACS.

Syntax


label SLSXREQ QDRLIST , MF=(E,parmaddr) , OPTION= SYNCH ASYNCH , XCALADR=rtnaddr
, HOSTID=hostaddr
, MEDIA=medaddr
, RECTECH=recaddr
, DSN=datasetname
, EXPDT=expirationdate
, RETPD=retentionperiod
, JOB=jobname
, STEP=stepname
, PGM=pgmname
, VOLTYPE= Specific Nonspecific
Transport Selection Method
Transport Selection Method:
, SCRATCH= YES NO (r)
, SCRPOOL=value, LTYPE= LDT SL NL AL NSL (r)
, SUBPOOL=subpoolname
, VOLSER=voladdr
, PROTECT=YES

Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional.

If the parameter is not specified, the host ID executing the request is used.

MEDia

specifies the address of an 8-byte character field containing the media type of the selected transport. **This parameter is optional.**

Note –

- If MEDia is not specified, transports are selected without regard to media type.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**
- LTO and SDLT transports are not supported in an MVS environment. These transports are recognized by HSC but are accessible only to open systems clients using LibraryStation.

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medaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid media types are:

LONGItud

indicates any Standard or ECART cartridge.

Standard

indicates a standard length, 3480 cartridge. It can be read on any longitudinal drives (4480, 4490, 9490, or 9490EE). Data can be written in 36-track mode on a 4490, 9490, or 9490EE transport but cannot be read on an 18-track (4480) drive. Synonyms for this type of cartridge include:

- CST
- MEDIA1
- STD
- 1
- 3480

ECART

indicates a 3490E, extended capacity cartridge. It can be used only on a 36-track drive (4490, 9490, or 9490EE). Synonyms include:

- E
- ECCST
- ETAPE
- Long
- MEDIA2
- 3490E

ZCART

indicates a 3490E, extended capacity cartridge that provides greater storage capacity than an ECART. It can be used only on a 9490EE drive.

ZCART can be abbreviated as Z.

DD3

indicates any DD3A, DD3B, or DD3C (HELical) cartridge. HELical is a synonym for DD3.

DD3A, DD3B, DD3C

indicates a helical cartridge. The media indicator in the external label is encoded with the cartridge type (A, B, or C). DD3A, DD3B, or DD3C can be abbreviated to A, B, or C, respectively.

Types of helical cartridges, along with their associated media capacities, are:

- A — 10GB
- B — 25GB
- C — 50GB.

Data capacity differences between DD3A, DD3B, and DD3C cartridges are related to the length of the tape in the cartridge, not to the recording density of the data.

STK1

indicates any T9840 cartridge.

STK1R

indicates a T9840 cartridge. The media indicator in the external label is encoded with the cartridge type (R). STK1R can be abbreviated to R.

T9840 cartridge media capacities are 20GB (T9840A and T9840B) or 40GB (T9840C).

STK2

indicates any T9940 cartridge.

STK2P

indicates a T9940 data cartridge. The media indicator in the external label is encoded with the cartridge type (P). STK2P can be abbreviated to P.

T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).

LTO-10G

indicates an LTO 10GB capacity cartridge.

LTO-35G

indicates an LTO 35GB capacity cartridge.

LTO-50G

indicates an LTO 50GB capacity cartridge.

LTO-100G

indicates an LTO 100GB capacity cartridge.

LTO-200G

indicates an LTO 200GB capacity cartridge.

LTO-400G

indicates an LTO 400GB capacity cartridge.

LTO-400W

indicates an LTO Generation 3 WORM cartridge.

SDLT

indicates an SDLT 160GB cartridge.

SDLT-2

indicates an SDLT 125GB cartridge.

SDLT-S1

indicates an SDLT Generation S1 cartridge.

SDLT-S2

indicates an SDLT Generation S2 cartridge.

SDLT-S3

indicates an SDLT Generation S3 cartridge.

SDLT-S4

indicates an SDLT Generation S4 cartridge.

SDLT-4

indicates an SDLT Generation S4 cartridge.

T10000T1 or T1

indicates a full-capacity 500GB T10000 cartridge. **T10000T1** can be abbreviated as **T1**.

T10000TS or TS

indicates a smaller-capacity 120GB T10000 cartridge. **T10000TS** can be abbreviated as **TS**.

RECtech

specifies the address of an 8-byte field containing the recording technique used to record data tracks on the tape surface. **This parameter is optional.**

Note –

- If **RECtech** is not specified, transports are selected depending on the MEDia type that has been specified.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**

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recaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid recording techniques are:

LONGItud

indicates any device that uses longitudinal recording.

18track

indicates a 4480 transport.

36track

indicates a 4490, 9490, or 9490EE transport (any device that records in 36-track mode).

36Atrack

indicates a 4490 (Silverton) transport.

36Btrack

indicates a 9490 (Timberline) transport.

36Ctrack

indicates a 9490EE transport.

HELical

indicates a device using helical recording.

DD3

indicates a device using helical recording.

STK1R

indicates any 9840 transport.

STK1R34

indicates any 3490E-image 9840 transport.

STK1R35

indicates any 3590-image 9840 transport.

STK1RA

indicates a 3490E or 3590-image T9840A transport.

STK1RA34

indicates a 3490E-image T9840A transport.

STK1RA35

indicates a 3590-image T9840A transport.

STK1RB

indicates a 3490E or 3590-image T9840B transport.

STK1RB34

indicates a 3490E-image T9840B transport.

STK1RB35

indicates a 3590-image T9840B transport.

STK1RAB

indicates a 3490E or 3590-image T9840A or T9840B transport.

STK1RAB4

indicates a 3490E-image T9840A or T9840B transport.

STK1RAB5

indicates a 3590E-image T9840A or T9840B transport.

STK1RC

indicates a 3490E or 3590-image T9840C transport.

STK1RC34

indicates a 3490-image T9840C transport.

STK1RC35

indicates a 3590-image T9840C transport.

STK2P

indicates any 9940 transport.

STK2P34

indicates any 3490E-image 9940 transport.

STK2P35

indicates any 3590-image 9940 transport.

STK2PA

indicates a T9940A transport.

STK2PA34

indicates a 3490E-image T9940A transport.

STK2PA35

indicates a 3590-image T9940A transport.

STK2PB

indicates a T9940B transport.

STK2PB34

indicates a 3490E-image T9940B transport.

STK2PB35

indicates a 3590-image T9940B transport.

T1A

indicates any T10000 transport.

T1AN

indicates a non-encryption enabled 3490E- or 3590-image T10000 transport.

T1A34

indicates a non-encryption enabled 3490E-image T10000 transport.

T1A35

indicates a non-encryption enabled 3590-image T10000 transport.

T1AE

indicates an encryption-enabled 3490E- or 3590-image T10000 transport.

T1AE34

indicates an encryption-enabled 3490E-image T10000 transport.

T1AE35

indicates an encryption-enabled 3590-image T10000 transport.

Note – The following parameters are ignored if Media, RECtech, or both are specified.

DSN

datasetname specifies the data set name.

This parameter is optional.

EXPDT

expirationdate specifies the expiration date of the data set in *yyddd* or *yyy/ddd* format.

This parameter is optional.

RETPD

retentionperiod specifies the retention period for the data set in days. Specify the number of days as a one- to four-digit decimal number.

This parameter is optional.

JOB

jobname specifies the job name.

This parameter is optional.

STEP

stepname specifies the step name. This parameter is optional. PGM pgmname specifies the step name.

This parameter is optional.

VOLTYPE

indicates whether or not a nonspecific volume was requested.

Specific

requests a specific volume to be mounted.

Nonspecific

requests a nonspecific volume to be mounted.

This parameter is optional.

SCRATCH

specifies that the request is for a nonspecific (scratch) volume. If SCRATCH=YES is specified, VOLSER is optional and is used only in messages to the operator.

SCRATCH=(*r*) - Specifies a register (2) - (12) containing the scratch request flag in byte 1 of the register. If bit SLSXSCR is on, the request is a scratch request.

If SCRATCH=NO is specified or the SCRATCH parameter is omitted, the VOLSER parameter is required.

A VOLSER is selected at this time.

This parameter is required if VOLSER is not specified. Either SCRATCH or VOLSER must be specified.

SCRPOOL

specifies the scratch subpool index for each request. The index ranges from 0 to 255. A value of zero indicates no special subpool request and any available scratch volume is usable. These subpools are defined by the user in the PARMLIB data set.

value specifies either an RX-type address of the one-byte subpool or the register (2) - (12) containing the subpool in byte 3 (rightmost).

This parameter is optional and defaults to 0 (any scratch volume).

When SCRPOOL is specified, an LTYPE value is also required.

SCRPOOL only has meaning for a scratch request and is disregarded when a SUBPOOL value is issued.

LTYPE

specifies the label type for scratch processing. This parameter causes scratch processing to be restricted to the set of scratch volumes associated with the label type specified. These label types are defined in a user defined PARMLIB data set.

LDT

specifies the library default label type.

SL

specifies the standard-labeled pool.

NL

specifies the nonlabeled pool.

AL

specifies the ANSI-labeled pool.

NSL

specifies the nonstandard-labeled pool.

(*r*)

specifies a register (2) - (12) containing the label type in the left-most byte of the register. That value is either SLSXLLDT (library default), SLSXLSL (standard label), SLSXLAL (ANSI label), SLSXLNL (nonlabeled) or SLSXLNS (nonstandard label).

This parameter defaults to library default type (LDT). If the default value is accepted for LTYPE, then SCRPOOL defaults to zero (0). If the label type is not the library default type, a nonzero subpool (SCRPOOL) must be specified.

When SCRPOOL is specified, an LTYPE parameter must also be specified. LTYPE has meaning for a SCRATCH=YES request only. When SUBPOOL is specified, SCRPOOL and LTYPE have no meaning.

SUBPOOL

specifies the address of a 13-character field containing the scratch subpool name for the scratch subpool.

If *subpoolname* is not provided, the subpool index is converted into three EBCDIC decimal digits and placed in the leftmost three positions of the subpool name.

Specify either an RX-type address of the data or the number of the register containing the address of the data. When SUBPOOL is specified, SCRPOOL and LTYPE have no meaning.

This parameter is optional.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required if SCRATCH is not specified. Either VOLSER **or.** SCRATCH must be specified.

PROTECT

PROTECT=YES - Specifies the volume is disabled for writing. It causes a volume write enabled by the physical thumbwheel to be write disabled for this mount. There is no way to write-enable a cartridge whose thumbwheel indicates the volume is write disabled.

This parameter is optional. If omitted, the write enablement is determined by the thumbwheel on the cartridge.

Response to QDRLIST Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

If the request specifies SCRATCH=NO and the volume is not in the library, a code of SLXRWARN is placed in SLXCMDRC, a reason code of 700C is set, and only a Volume Information Section is returned.

The QDRLIST response consists of a Reply Header (mapped by SLX), and a Drive Information Section (mapped by SLXSDRV). If the request specifies SCRATCH=YES, an LSM Information Section (mapped by SLXSLSM) is included, sorted by scratch counts. The Drive Information Section is also sorted by scratch counts (most scratch volumes first). If the request specifies SCRATCH=NO, a Volume Information Section (mapped by SLXSVOL) is returned for the specified volume. The Drive Information Section is sorted by proximity to that volume.

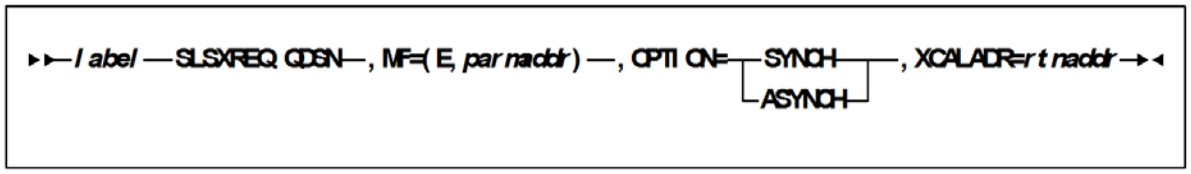
QDSN

This request is provided to enable the requestor to get information about the current data sets in use by HSC.

QDSN Considerations

There are no special considerations associated with the QDSN request.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QDSN Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC

When querying data set information use the new QDSN Information Element Block (QDS) that is mapped by the SLXDSNIM. The response created is in contiguous storage and is composed of the SLX header and the QDSN information elements for a single QDSN request which are pointed to by the QDSN/QCONFIG directory.

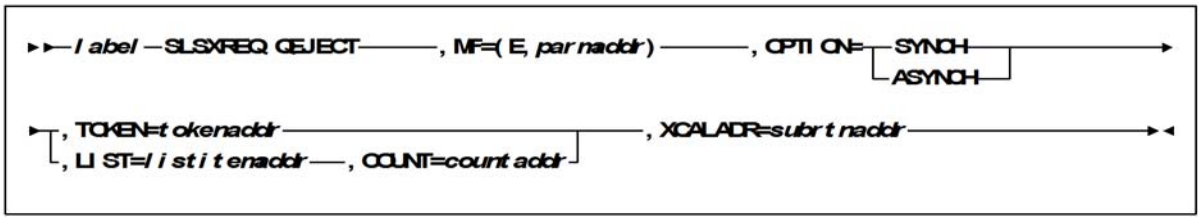
QEJECT

This request is used to determine the status of individual volser within an eject task.

QEJECT Considerations

There are no special considerations associated with the QEJECT request.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

TOKEN

specifies the address of the token originally returned in R0 when the request was initiated.

tokenaddr specifies either an RX-type address of the token or the register (2) - (12) containing the address of the token.

This parameter is required if LIST is not specified.

LIST

tokenlist specifies the address of a list of tokens for STOP processing. The parameter list address may be specified as an RX-type address or in register form. Valid register values are (2) - (12).

A special form of this parameter, LIST=*, indicates that the list immediately follows the parameter list control block.

This parameter is required if TOKEN is not specified.

COUNT

countaddr specifies the address of a two-byte count value. For QEJECT, COUNT specifies the number of VOLSERS in the list designated by the corequisite LIST parameter.

This parameter is required when LIST is specified.

XCALADR

subrtnaddr specifies a location containing the address of the SLSXCAL routine. Specify either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QEJECT Request

A return code indicates the success of the QEJECT operation. When successful, QEJECT returns the status of each VOLSER in an EJECT request.

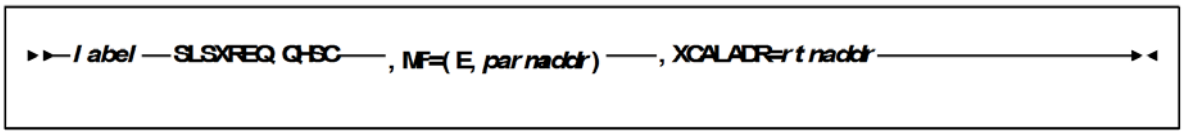
QHSC

This request may be used to determine if HSC is active or not. This permits programs to poll periodically to determine when HSC becomes active.

QHSC Considerations

The QHSC request is synchronous only.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QHSC Request

A return code in R15 indicates if HSC is active (SLXROK) or not (SLXRNHSC). The response length (R0) and response address (R1) are zero.

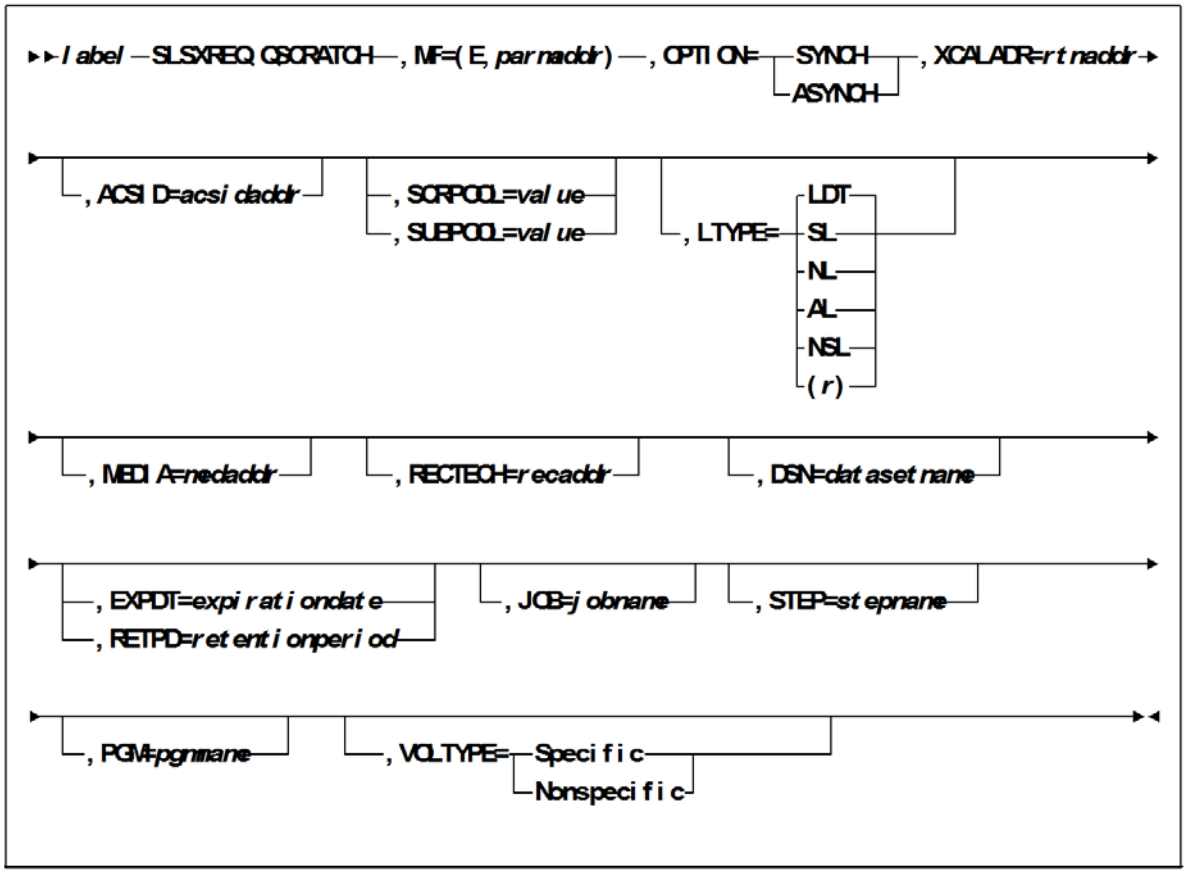
QSCRATCH

The QSCRATCH request is used to obtain detailed information about the number of scratch volumes in each LSM and ACS.

QSCRATCH Considerations

When the library and its associated control data sets are shared by more than one HSC, then the reported totals may differ from the true totals because they may not account for recent scratch volume activity on other processors. However, each HSC refreshes its scratch volume totals every 4 minutes (or the time interval specified in the OPTion command), so the variance should be slight. The LSM Information Elements are returned in highest scratch-count to lowest scratch-count order.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

ACSID

acsidaddr specifies the address of the ACS used to satisfy the request. The format of acsidaddr is *AA*, where *AA* is the ACS number (00-FF hexadecimal). For example, 01, designates ACS 01. Specify either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional.

SCRPOOL

specifies the scratch subpool index for each request. The index ranges from 0 to 255. A value of zero indicates no special subpool request and any available scratch volume is usable. These subpools are defined by the user in the PARMLIB data set.

value specifies either an RX-type address of the one-byte subpool or the register (2) - (12) containing the subpool in byte 3.

This parameter is optional and defaults to 0 (any scratch volume).

SUBPOOL

specifies the address of a 13-character field containing the scratch subpool name for the scratch subpool.

subpoolname specifies either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional.

LTYPE

specifies the label type for scratch processing. This parameter causes scratch processing to be restricted to the set of scratch volumes associated with the label type specified. These label types are defined in a user defined PARMLIB data set.

LDT

specifies the library default label type.

SL

specifies the standard-labeled pool.

NL

specifies the nonlabeled pool.

AL

specifies the ANSI-labeled pool.

NSL

specifies the nonstandard-labeled pool.

(*r*)

specifies a register (2) - (12) containing the label type in the left-most byte of the register. That value is either SLSXLLDT (library default), SLSXLSL (standard label), SLSXLAL (ANSI label), SLSXLNL (nonlabeled) or SLSXLNS (nonstandard label).

This parameter defaults to library default type (LDT). If the default value is accepted for LTYPE, then SCRPOOL defaults to zero (0). If the label type is not the library default type, a nonzero subpool (SCRPOOL) must be specified.

This parameter is optional.

MEDia

specifies the address of an 8-byte character field containing the media type of the requested scratch cartridge. **This parameter is optional.**

Note –

- If MEDia is not specified, scratch cartridges are selected without regard to media type.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**
- LTO and SDLT transports are not supported in an MVS environment. These transports are recognized by HSC but are accessible only to open systems clients using LibraryStation.

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medaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid media types are:

LONGItud

indicates any Standard or ECART cartridge.

Standard

indicates a standard length, 3480 cartridge. It can be read on any longitudinal drives (4480, 4490, 9490, or 9490EE). Data can be written in 36-track mode on a 4490, 9490, or 9490EE transport but cannot be read on an 18-track (4480) drive. Synonyms for this type of cartridge include:

- CST
- MEDIA1
- STD
- 1
- 3480

ECART

indicates a 3490E, extended capacity cartridge. It can be used only on a 36-track drive (4490, 9490, or 9490EE). Synonyms include:

- E
- ECCST
- ETAPE
- Long
- MEDIA2
- 3490E

ZCART

indicates a 3490E, extended capacity cartridge that provides greater storage capacity than an ECART. It can be used only on a 9490EE drive.

ZCART can be abbreviated as Z.

DD3

indicates any DD3A, DD3B, or DD3C (HELical) cartridge. HELical is a synonym for DD3.

DD3A, DD3B, DD3C

indicates a helical cartridge. The media indicator in the external label is encoded with the cartridge type (A, B, or C). DD3A, DD3B, or DD3C can be abbreviated to A, B, or C, respectively.

Types of helical cartridges, along with their associated media capacities, are:

- A — 10GB
- B — 25GB
- C — 50GB.

Data capacity differences between DD3A, DD3B, and DD3C cartridges are related to the length of the tape in the cartridge, not to the recording density of the data.

STK1

indicates any T9840 cartridge.

STK1R

indicates a T9840 cartridge. The media indicator in the external label is encoded with the cartridge type (R). STK1R can be abbreviated to R.

T9840 cartridge media capacities are 20GB (T9840A and T9840B) or 40GB (T9840C).

STK2

indicates any T9940 cartridge.

STK2P

indicates a T9940 data cartridge. The media indicator in the external label is encoded with the cartridge type (P). STK2P can be abbreviated to P.

T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).

LTO-10G

indicates an LTO 10GB capacity cartridge.

LTO-35G

indicates an LTO 35GB capacity cartridge.

LTO-50G

indicates an LTO 50GB capacity cartridge.

LTO-100G

indicates an LTO 100GB capacity cartridge.

LTO-200G

indicates an LTO 200GB capacity cartridge.

LTO-400G

indicates an LTO 400GB capacity cartridge.

LTO-400W

indicates an LTO Generation 3 WORM cartridge.

SDLT

indicates an SDLT 160GB cartridge.

SDLT-2

indicates an SDLT 125GB cartridge.

SDLT-S1

indicates an SDLT Generation S1 cartridge.

SDLT-S2

indicates an SDLT Generation S2 cartridge.

SDLT-S3

indicates an SDLT Generation S3 cartridge.

SDLT-S4

indicates an SDLT Generation S4 cartridge.

SDLT-4

indicates an SDLT Generation 4 cartridge.

T10000T1 or T1

indicates a full-capacity 500GB T10000 cartridge. **T10000T1** can be abbreviated as **T1**.

T10000TS or TS

indicates a smaller-capacity 120GB T10000 cartridge. **T10000TS** can be abbreviated as **TS**.

RECtech

specifies the address of an 8-byte field containing the recording technique used to record data tracks on the tape surface. **This parameter is optional.**

Note –

- If **RECtech** is not specified, scratch cartridges are selected depending on the MEDia type that has been specified.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**

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recaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid recording techniques are:

LONGItud

indicates any device that uses longitudinal recording.

18track

indicates a 4480 transport.

36track

indicates a 4490, 9490, or 9490EE transport (any device that records in 36-track mode).

36Atrack

indicates a 4490 (Silverton) transport.

36Btrack

indicates a 9490 (Timberline) transport.

36Ctrack

indicates a 9490EE transport.

HELical

indicates a device using helical recording.

DD3

indicates a device using helical recording.

STK1R

indicates any 9840 transport.

STK1R34

indicates any 3490E-image 9840 transport.

STK1R35

indicates any 3590-image 9840 transport.

STK1RA

indicates a 3490E or 3590-image T9840A transport.

STK1RA34

indicates a 3490E-image T9840A transport.

STK1RA35

indicates a 3590-image T9840A transport.

STK1RB

indicates a 3490E or 3590-image T9840B transport.

STK1RB34

indicates a 3490E-image T9840B transport.

STK1RB35

indicates a 3590-image T9840B transport.

STK1RAB

indicates a 3490E or 3590-image T9840A or T9840B transport.

STK1RAB4

indicates a 3490E-image T9840A or T9840B transport.

STK1RAB5

indicates a 3590E-image T9840A or T9840B transport.

STK1RC

indicates a 3490E or 3590-image T9840C transport.

STK1RC34

indicates a 3490-image T9840C transport.

STK1RC35

indicates a 3590-image T9840C transport.

STK2P

indicates any 9940 transport.

STK2P34

indicates any 3490E-image 9940 transport.

STK2P35

indicates any 3590-image 9940 transport.

STK2PA

indicates a T9940A transport.

STK2PA34

indicates a 3490E-image T9940A transport.

STK2PA35

indicates a 3590-image T9940A transport.

STK2PB

indicates a T9940B transport.

STK2PB34

indicates a 3490E-image T9940B transport.

STK2PB35

indicates a 3590-image T9940B transport.

T1A

indicates any T10000 transport.

T1AN

indicates a non-encryption enabled 3490E- or 3590-image T10000 transport.

T1A34

indicates a non-encryption enabled 3490E-image T10000 transport.

T1A35

indicates a non-encryption enabled 3590-image T10000 transport.

T1AE

indicates an encryption-enabled 3490E- or 3590-image T10000 transport.

T1AE34

indicates an encryption-enabled 3490E-image T10000 transport.

T1AE35

indicates an encryption-enabled 3590-image T10000 transport.

Note – The following parameters are ignored if Media, RECtech, or both are specified.

DSN

datasetname specifies the data set name.

This parameter is optional.

EXPDT

expirationdate specifies the expiration date of the data set in *yyddd* or *yyy/ddd* format.

RETPD

retentionperiod specifies the retention period for the data set in days. Specify the number of days as a one- to four-digit decimal number.

This parameter is optional.

JOB

jobname specifies the job name. This parameter is optional. STEP stepname specifies the step name. This parameter is optional. PGM pgmname specifies the step name.

This parameter is optional.

VOLTYPE

indicates whether or not a nonspecific volume was requested.

Specific

requests a specific volume to be mounted.

Nonspecific

requests a nonspecific volume to be mounted.

This parameter is optional.

Response to QSCRATCH Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

In addition to the Reply Header, an LSM information element for each LSM (mapped by SLXSLSM) is returned.

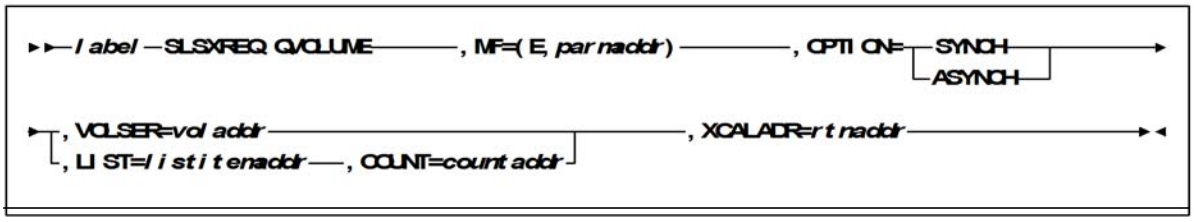
QVOLUME

The QVOLUME request is used to obtain the library status of a cartridge.

QVOLUME Considerations

There are no considerations for this PGMI function.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required.

LIST

specifies the address of a list of elements. *listitemaddr* specifies either an RX-type address of the data or the number of a register containing the address of the data. LIST designates a list of 6-byte VOLSERs.

This parameter is required if VOLSER is not specified.

COUNT

specifies the address of a two-byte count value.

countaddr specifies either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is required when LIST is specified.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to QVOLUME Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

In addition to the Reply Header, the Volume Information Section (mapped by SLXSVOL) is returned.

If the volume is not in the library, a code of SLXRWARN is placed in SLXCMDRC, a reason code of 700C is set.

READ

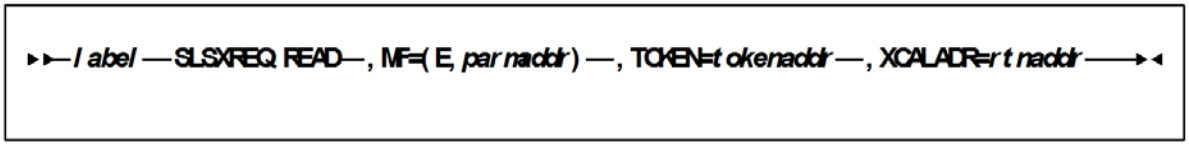
The READ request directs HSC to return the response(s) associated with a previously initiated request, which has completed as indicated by a posted ECB.

READ Considerations

This request is used to read a response associated with a particular token. The requestor specifies the token returned on the original request.

The READ request is synchronous only.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

TOKEN

specifies the address of the token originally returned in R0 when the request was initiated.

tokenaddr specifies either an RX-type address of the token or the register (2) - (12) containing the address of the token.

This parameter is required.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to READ Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If zero, R1 contains the address of the response, and R0 contains the length. The area and length are valid until the next SLSXREQ macro. The response area is in HSC key, non-fetch protected, so the user should not attempt to modify the response area.

If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes* PGMI reason codes are described in "Reason Codes" on page 12. Valid reason codes depend on the original request.

RESET

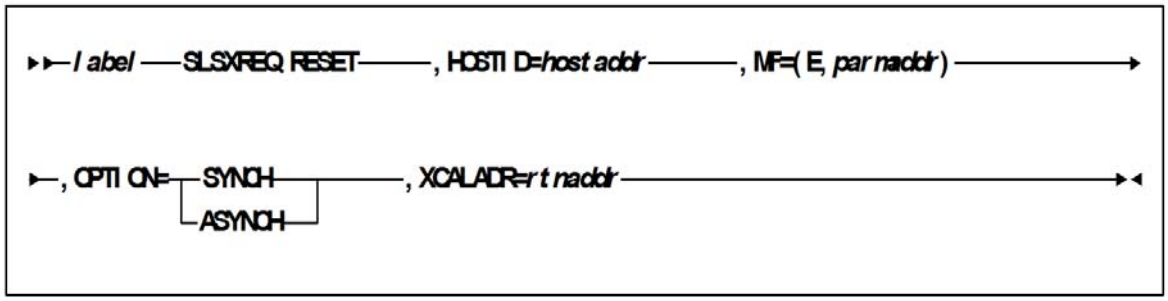
The RESET request caused prior versions of HSC to attempt to dismount all volumes that were mounted on behalf of a specific host.

RESET Considerations

Volumes mounted on a drive can be dismounted by any host connected to the library. This removes the restriction that the host that mounted a volume must be the host to dismount the volume.

When a mounted volume is rewound and the drive is unloaded, the next mount request for that drive causes the volume to be dismounted. Because of this fact, the RESET request no longer physically dismounts a volume.

Syntax



Parameters

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks.

hostaddr specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is required.

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address parmaddr may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to RESET Request

A return code of SLXROK is placed in SLXCMDRC.

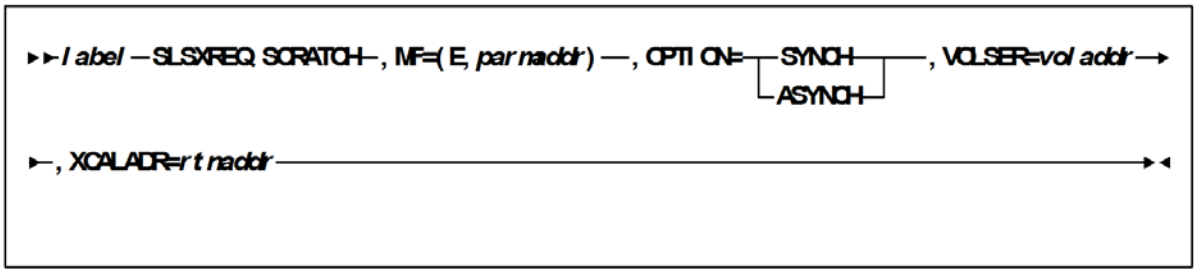
SCRATCH

The SCRATCH request causes a volume to be placed in scratch status in the library control data set.

SCRATCH Considerations

The volume must be in the library. No volume movement takes place. However, SCRATCH processing must select the cartridge in order to change its status. This means that the scratch request fails if the cartridge is in use.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to SCRATCH Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the scratch was successful, a return code of SLXROK is placed in SLXCMDRC. If the scratch failed, a return code of SLXRFAIL is placed there. If the code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in "Reason Codes" on page 12.

The response is returned at the completion of the request.

SELSCR

The SELSCR causes HSC to choose a library scratch volume and remove it from scratch status in the library control data sets.

SELSCR Considerations

No volume movement occurs.

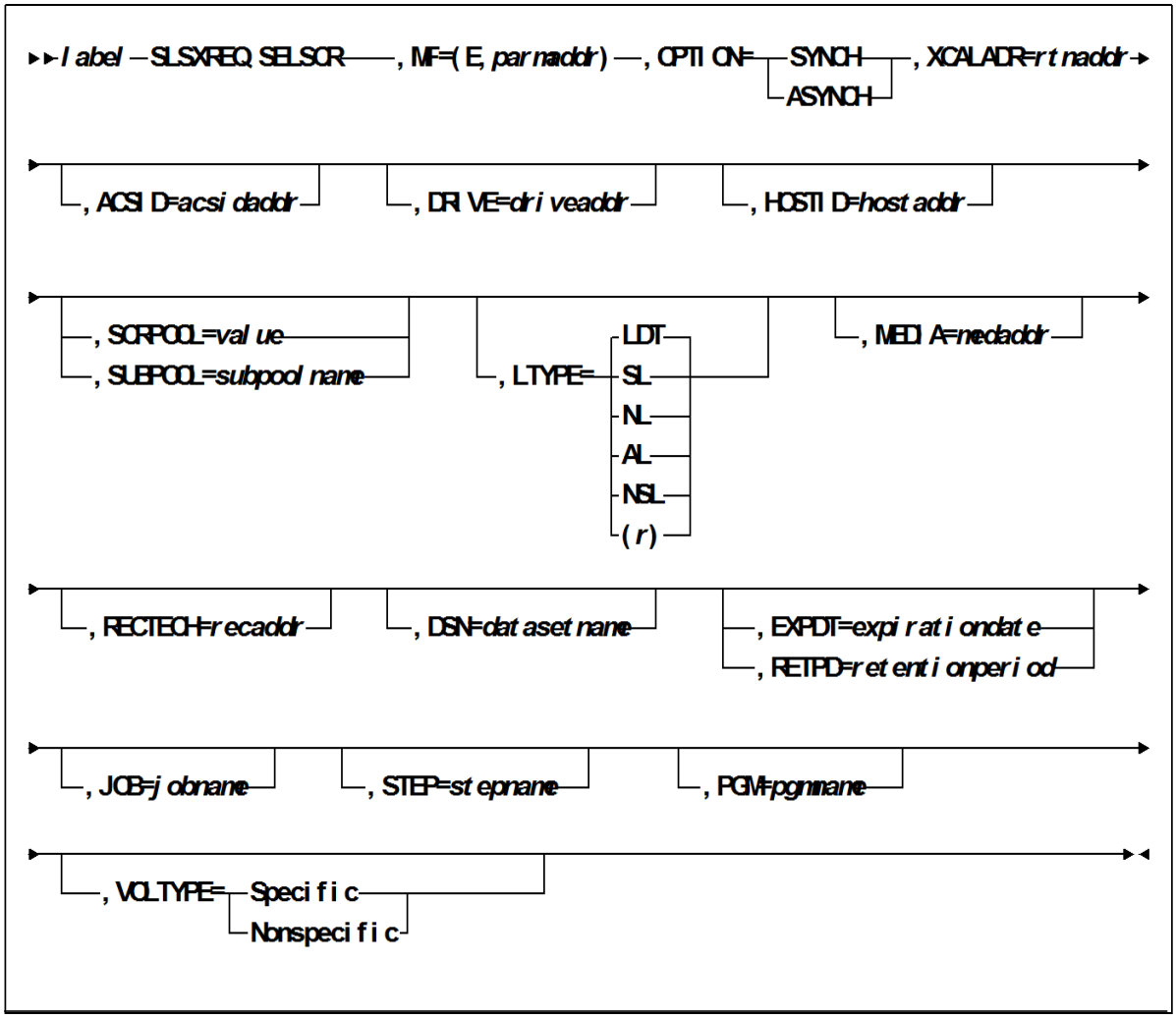
When neither ACSID nor DRIVE is specified, HSC searches through all library LSMs and chooses a scratch volume from the LSM containing the most scratch volumes. When ACSID is specified, HSC chooses a scratch volume from the LSM in the specified ACS that holds the most cartridges. When DRIVE is specified HSC chooses a scratch volume from the closest LSM, if the drive is in an automatic mode LSM. If the drive is in a manual mode LSM, a scratch volume is picked from a manual mode LSM before it is picked from an automatic mode LSM.

Caution – StorageTek strongly recommends that you do not place SL8500 libraries in manual mode. To use manual mode, all LSMs in the SL8500 must be offline, and that means all CAPs and drives are unavailable for automated operations.

Additionally, SL8500s have been designed for high cartridge density, so there is limited room for manually mounting and dismounting cartridges.

Refer to the "Precautions" topic in the *SL8500 Modular Library System User's Guide* for safety requirements and physical restrictions if you decide that you must enter the library.

Syntax


label SLSXREQ SELSCR , MF=(E,parmaddr) , OPTION= SYNCH ASYNCH , XCALADR=rtnaddr
, ACSID=acsidaddr , DRIVE=driveaddr , HOSTID=hostaddr
, SCRPOOL=value , SUBPOOL=subpool name , LTYPE= LDT SL NL AL NSL (r) , MEDIA=medaddr
, RECTECH=recaddr , DSN=dataset name , EXPDT=expirationdate , RETPD=retentionperiod
, JOB=jobname , STEP=stepname , PGM=pgmname
, VOLTYPE= Specific Nonspecific

Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

ACSID

acsidaddr specifies the address of the ACS used to satisfy the request. The format of *acsidaddr* is *AA*, where *AA* is the ACS number (00-FF hexadecimal). For example, 01, designates ACS 01. Specify either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional.

DRIVE

driveaddr specifies the address of the 2-byte drive specification (0cua) from which a volume needs dismounting.

Specify either an RX-type address of the data or the register (2) - (12) containing the address of the data.

This parameter is optional.

HOSTID

specifies the address of an eight character host ID, left justified and padded with blanks. *hostaddr* specifies either an RX-type address of the host ID or the register (2) - (12) containing the address of the host ID.

This parameter is optional. If the parameter is not specified, the host ID executing the request is used.

SCRPOOL

specifies the scratch subpool index for each request. The index ranges from 0 to 255. A value of zero indicates no special subpool request and any available scratch volume is usable. These subpools are defined by the user in the PARMLIB data set.

value specifies either an RX-type address of the one-byte subpool or the register (2) - (12) containing the subpool in byte 3.

This parameter is optional and defaults to 0 (any scratch volume).

SUBPOOL

specifies the address of a 13-character field containing the scratch subpool name for the scratch subpool.

subpoolname specifies either an RX-type address of the data or the number of the register containing the address of the data.

This parameter is optional.

LTYPE

specifies the label type for scratch processing. This parameter causes scratch processing to be restricted to the set of scratch volumes associated with the label type specified. These label types are defined in a user defined PARMLIB data set.

LDT

specifies the library default label type.

SL

specifies the standard-labeled pool.

NL

specifies the nonlabeled pool.

AL

specifies the ANSI-labeled pool.

NSL

specifies the nonstandard-labeled pool.

(*r*)

specifies a register (2) - (12) containing the label type in the left-most byte of the register. That value is either SLSXLLDT (library default), SLSXLSL (standard label),

SLSXLAL (ANSI label), SLSXLNL (nonlabeled) or SLSXLNS (nonstandard label).

This parameter defaults to library default type (LDT). If the default value is accepted for LTYPE, then SCRPOOL defaults to zero (0). If the label type is not the library default type, a nonzero subpool (SCRPOOL) must be specified

This parameter is optional.

MEDia

specifies the address of an 8-byte character field containing the media type of the selected scratch cartridge. This parameter is optional.

Note –

- If **MEDia** is not specified, scratch cartridges are selected without regard to media type.

- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**
- LTO and SDLT transports are not supported in an MVS environment. These transports are recognized by HSC but are accessible only to open systems clients using LibraryStation.

---

medaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid media types are:

LONGItud

indicates any Standard or ECART cartridge.

Standard

indicates a standard length, 3480 cartridge. It can be read on any longitudinal drives (4480, 4490, 9490, or 9490EE). Data can be written in 36-track mode on a 4490, 9490, or 9490EE transport but cannot be read on an 18-track (4480) drive. Synonyms for this type of cartridge include:

- CST
- MEDIA1
- STD
- 1
- 3480

ECART

indicates a 3490E, extended capacity cartridge. It can be used only on a 36-track drive (4490, 9490, or 9490EE). Synonyms include:

- E
- ECCST
- ETAPE
- Long
- MEDIA2
- 3490E

ZCART

indicates a 3490E, extended capacity cartridge that provides greater storage capacity than an ECART. It can be used only on a 9490EE drive.

ZCART can be abbreviated as Z.

DD3

indicates any DD3A, DD3B, or DD3C (HELical) cartridge. HELical is a synonym for DD3.

DD3A, DD3B, DD3C

indicates a helical cartridge. The media indicator in the external label is encoded with the cartridge type (A, B, or C). DD3A, DD3B, or DD3C can be abbreviated to A, B, or C, respectively.

Types of helical cartridges, along with their associated media capacities, are:

- A — 10GB

- B — 25GB
- C — 50GB.

Data capacity differences between DD3A, DD3B, and DD3C cartridges are related to the length of the tape in the cartridge, not to the recording density of the data.

STK1

indicates any T9840 cartridge.

STK1R

indicates a T9840 cartridge. The media indicator in the external label is encoded with the cartridge type (R). STK1R can be abbreviated to R.

T9840 cartridge media capacities are 20GB (T9840A and T9840B) or 40GB (T9840C).

STK2

indicates any T9940 cartridge.

STK2P

indicates a T9940 data cartridge. The media indicator in the external label is encoded with the cartridge type (P). STK2P can be abbreviated to P.

T9940 cartridge media capacities are 60GB (T9940A) or 200GB (T9940B).

LTO-10G

indicates an LTO 10GB capacity cartridge.

LTO-35G

indicates an LTO 35GB capacity cartridge.

LTO-50G

indicates an LTO 50GB capacity cartridge.

LTO-100G

indicates an LTO 100GB capacity cartridge.

LTO-200G

indicates an LTO 200GB capacity cartridge.

LTO-400G

indicates an LTO 400GB capacity cartridge.

LTO-400W

indicates an LTO Generation 3 WORM cartridge.

SDLT

indicates an SDLT 160GB cartridge.

SDLT-2

indicates an SDLT 125GB cartridge.

SDLT-S1

indicates an SDLT Generation S1 cartridge.

SDLT-S2

indicates an SDLT Generation S2 cartridge.

SDLT-S3

indicates an SDLT Generation S3 cartridge.

SDLT-S4

indicates an SDLT Generation S4 cartridge.

SDLT-4

indicates an SDLT Generation 4 cartridge.

T10000T1 or T1

indicates a full-capacity 500GB T10000 cartridge. **T10000T1** can be abbreviated as **T1**.

T10000TS or TS

indicates a smaller-capacity 120GB T10000 cartridge. **T10000TS** can be abbreviated as **TS**.

RECtech

specifies the address of an 8-byte field containing the recording technique used to record data tracks on the tape surface. **This parameter is optional**.

Note –

- If **RECtech** is not specified, scratch cartridges are selected depending on the MEDia type that has been specified.
- **The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.**

---

recaddr

specifies either an RX-type address of the data or the register (2) - (12) containing the address of the data. Valid recording techniques are:

LONGItud

indicates any device that uses longitudinal recording.

18track

indicates a 4480 transport.

36track

indicates a 4490, 9490, or 9490EE transport (any device that records in 36-track mode).

36Atrack

indicates a 4490 (Silverton) transport.

36Btrack

indicates a 9490 (Timberline) transport.

36Ctrack

indicates a 9490EE transport.

HELical

indicates a device using helical recording.

DD3

indicates a device using helical recording.

STK1R

indicates any 9840 transport.

STK1R34

indicates any 3490E-image 9840 transport.

STK1R35

indicates any 3590-image 9840 transport.

STK1RA

indicates a 3490E or 3590-image T9840A transport.

STK1RA34

indicates a 3490E-image T9840A transport.

STK1RA35

indicates a 3590-image T9840A transport.

STK1RB

indicates a 3490E or 3590-image T9840B transport.

STK1RB34

indicates a 3490E-image T9840B transport.

STK1RB35

indicates a 3590-image T9840B transport.

STK1RAB

indicates a 3490E or 3590-image T9840A or T9840B transport.

STK1RAB4

indicates a 3490E-image T9840A or T9840B transport.

STK1RAB5

indicates a 3590E-image T9840A or T9840B transport.

STK1RC

indicates a 3490E or 3590-image T9840C transport.

STK1RC34

indicates a 3490-image T9840C transport.

STK1RC35

indicates a 3590-image T9840C transport.

STK2P

indicates any 9940 transport.

STK2P34

indicates any 3490E-image 9940 transport.

STK2P35

indicates any 3590-image 9940 transport.

STK2PA

indicates a T9940A transport.

STK2PA34

indicates a 3490E-image T9940A transport.

STK2PA35

indicates a 3590-image T9940A transport.

STK2PB

indicates a T9940B transport.

STK2PB34

indicates a 3490E-image T9940B transport.

STK2PB35

indicates a 3590-image T9940B transport.

T1A

indicates any T10000 transport.

T1AN

indicates a non-encryption enabled 3490E- or 3590-image T10000 transport.

T1A34

indicates a non-encryption enabled 3490E-image T10000 transport.

T1A35

indicates a non-encryption enabled 3590-image T10000 transport.

T1AE

indicates an encryption-enabled 3490E- or 3590-image T10000 transport.

T1AE34

indicates an encryption-enabled 3490E-image T10000 transport.

T1AE35

indicates an encryption-enabled 3590-image T10000 transport.

Note – The following parameters are ignored if Media, RECtech, or both are specified.

DSN

datasetname specifies the data set name.

This parameter is optional.

EXPDT

expirationdate specifies the expiration date of the data set in *yyddd* or *yyy/ddd* format.

This parameter is optional.

RETPD

retentionperiod specifies the retention period for the data set in days. Specify the number of days as a one- to four-digit decimal number.

This parameter is optional.

JOB

jobname specifies the job name.

This parameter is optional.

STEP

stepname specifies the step name.

This parameter is optional.

PGM

pgmname specifies the step name.

This parameter is optional.

VOLTYPE

indicates whether or not a nonspecific volume was requested.

Specific

requests a specific volume to be mounted.

Nonspecific

requests a nonspecific volume to be mounted.

This parameter is optional.

Response to SELSCR Request

A return code (SLXCMDRC in the SLSXREQM macro) indicates the success of the operation. If the return code is SLXROK, a volume information element will be returned describing the volume picked.

If the return code is SLXRWARN, there is no scratch volume that met the specifications. A reason code of X'4011' will be set in SLXSRC.

If the return code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes*. PGMI reason codes are described in "Reason Codes" on page 12.

STOP

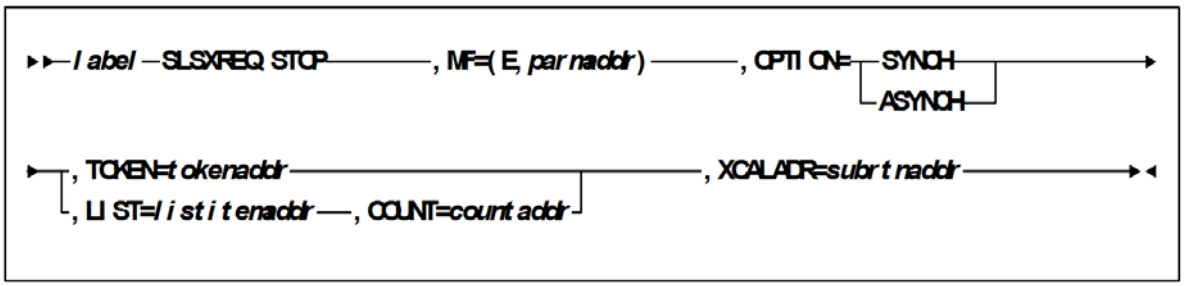
The STOP request causes a specific PGMI request to be terminated.

STOP Considerations

Each PGMI request is assigned a token number. This token number is available to the operator when submitting a request for tracking or conversational purposes. HSC's allow for a variable number of EJECT requests. The STOP request provides the ability to interrupt those requests. Through the use of tokens, a STOP request can be issued to terminate any specific request.

The STOP request allows a forced, orderly termination of a given unit or units of work.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

TOKEN

Specifies the address of the token originally returned in R0 when the request was initiated.

tokenaddr specifies either an RX-type address of the token or the register (2) - (12) containing the address of the token.

This parameter is required if LIST is not specified.

LIST

tokenlist specifies the address of a list of tokens for STOP processing. The parameter list address may be specified as an RX-type address or in register form. Valid register values are (2) - (12).

A special form of this parameter, LIST=*, indicates that the list immediately follows the parameter list control block.

This parameter is required if TOKEN is not specified.

COUNT

countaddr specifies the RX or register form address of a two-byte binary field containing the number of entries specified in **LIST**. Valid register values for RX addressing are (2) - (12). The maximum number of tokens specified is 500. If COUNT is specified without LIST, an error results.

This parameter is required when LIST is specified.

XCALADR

subrtnaddr specifies a location containing the address of the SLSXCAL routine. Specify either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to STOP Request

A return code indicates the success of the STOP operation.

UNSCRATCH

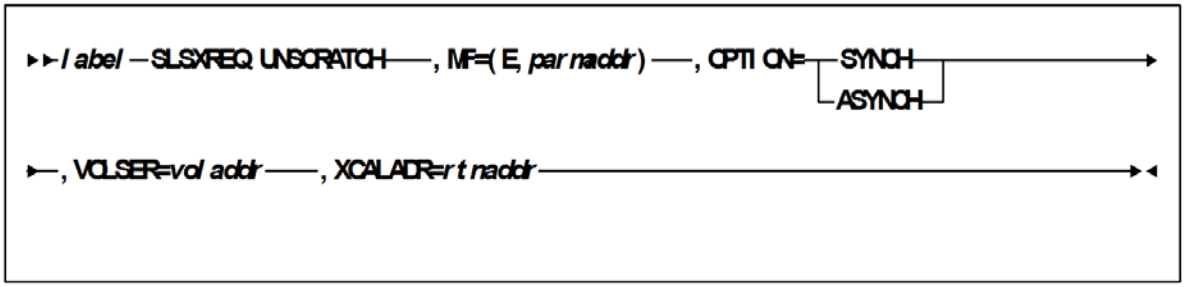
The UNSCRATCH request causes a volume to be removed from scratch status in HSC control data set.

UNSCRATCH Considerations

This request removes a volume from scratch status within the library.

No volume movement occurs. However, UNSCRATCH processing must select the cartridge in order to change its status. This means that the UNSCRATCH request will fail if the cartridge is mounted on a drive.

Syntax



Parameters

MF=(E,*parmaddr*)

specifies the execute form of the SLSXREQ macro using a remote parameter list. The parameter list address *parmaddr* may be specified as an RX-type address or in the register form. Valid register values are (1) - (12).

This parameter is required.

OPTION

specifies whether the requestor is to wait until the request is complete or continue processing while the request is active.

This parameter is required.

SYNCH

specifies that the requestor wait until the request is complete.

ASYNCH

specifies that the requestor continue processing while the request is active. After return from the original request, R1 contains the address of an ECB POSTed when the response completed. R0 contains the token used by SLSXREQ READ to read the response.

VOLSER

voladdr specifies the address of a six-character volume label. Acceptable characters for a VOLSER are A-Z, 0-9, #, $, ¥, and trailing blanks.

Specify either an RX-type address of the VOLSER or the register (2) - (12) containing the address of the VOLSER.

This parameter is required.

XCALADR

specifies a location containing the address of the SLSXCAL routine.

rtnaddr specifies either an RX-type address of the routine, register (15), or register (2) - (12) containing the routine's address.

This parameter is required.

Response to UNSCRATCH Request

A return code (SLXCMDRC in SLSXREQM macro) indicates the success of the operation. If the unscratch was successful, a return code of SLXROK is placed in SLXCMDRC. If the unscratch failed, a return code of SLXRFAIL is placed there. If the return code is SLXRFAIL, a reason code or message is placed in SLXSRC. HSC messages and non-PGMI reason codes are described in *ELS Messages and Codes.* PGMI reason codes are described in "Reason Codes" on page 12.

The response is returned at the completion of the request.

Sample Requests

Sample Set Up

The following code fragment sets up for the SLSXREQ environment, and then issues QHSC to see if HSC is available.

```
*
* Get HSC call routine
*
     LOAD EP=SLSXCAL,        LOAD SLSXCAL.                +
           ERRET=NOHSC      ASSUME NOT UP IF LOAD FAILS
     ST     0,WXCALADR       SAVE ADDR FOR LATER.
*
* See if HSC is up
*
     SLSXREQ QHSC,           QUERY HSC STATUS.            +
          XCALADR=WXCALADR,                              +
          MF=(E,WSLSXREQ)
     LTR   15,15             RETURN CODE ZERO
     BNZ   NOHSC             NO - HSC NOT UP.
```

FIGURE 1-1 Sample 1 - SLSXREQ Environment Set Up

Sample QVOLUME Request

The following code fragment issues a QVOLUME request to determine if a volume is in the library. If it is, that information could be used in a Display command.

Note – The response is copied so that further SLSXREQ requests can be issued without losing the volume data.

```
QVOLUME TITLE '- PROGRAMMATIC INTERFACE - QVOLUME'
*
* QVOLUME - PROGRAMMATIC INTERFACE - QUERY THE STATUS OF A VOLUME
* FUNCTION: USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*          QVOLUME.
*
* ATTRIBUTES:
* ATTRIBUTES --
*      1. PROBLEM STATE, USER KEY
*      2. NON-APF AUTHORIZED
* EXITS
*     RETURN CODE:
*          R15 = 8 = HSC NOT AVAILABLE
*                4 = QUERY VOLUME FUNCTION FAILED
*                0 = QUERY VOLUME FUNCTION SUCCESSFUL
*
* CHANGE HISTORY:
*     01/05/95-GRC      - CORRECT CODING ERRORS
*                       - AND MISLEADING OMISSIONS.
*     11/30/90-CRTD-VB      - MODULE CREATED.    **ENDPROLOGUE**********************************************************
          TITLE '- ESTABLISH ENTRY, BASE REGISTERS AND WORK AREAS'
          PRINT GEN
          ENTRY QVOLUME
QVOLUME CSECT
QVOLUME AMODE 31
QVOLUME RMODE ANY
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
          STM R14,R12,12(R13)       SAVE REGISTERS
          LR  R12,R15               BASE REG 12
          USING QVOLUME,R12         SETUP BASE REG 12
          B     A000
MODNAME   DC    CL8'QVOLUME '
          DC    CL8'&SYSDATE'
          DC    CL5'&SYSTIME'
*
A000 DS    0H
          LA    R10,QVOLWORK        R10 IS WORKAREA BASE
          ST    R13,4(,R10)         PTR TO PREV S.A. FROM NEW
          ST    R10,8(,R13)         PTR TO NEW S.A. FROM OLD
          LR    R13,R10             ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLX RESPONSE AREA.
          USING SLX,R5
          TITLE '- LOAD SLSXCAL'
```

FIGURE 1-2 Sample 2 - QVOLUME Request (1 of 4)

```
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
      LOAD EP=SLSXCAL         LOAD SLSXCAL
      ST R0,WSCALADR          SAVE SLSXCAL ROUTINE ADR
      TITLE '- QUERY VOLUME DATA'
*
* QUERY A VOLUME
*
      SLSXREQ QVOLUME,        QUERY VOLUME.                +
          VOLSER=VOLSER,                                   +
          OPTION=SYNCH,                                    +
          XCALADR=WSCALADR,                                +
          MF=(E,WSLSXREQ)
      LTR   15,15             RETURN CODE ZERO?
      BNZ   HSCNOTAV          NO - HSC NOT UP.
      LR    R5,R1             SAVE STORAGE ADDRESS.
      CLI   SLXCMDRC,SLXROK   DID IT WORK?
      BN    FUNCFAIL          NO, TELL OPERATOR
      LR    4,1               SAVE REPLY BUFFER ADDRESS.
      LR    3,0               SAVE REPLY LENGTH.
      GETMAIN RU,LV=(3),SP=0  GET PERMANENT STORAGE.
      LR    R5,R1             SAVE THE REPLY COPY AREA ADDRESS
      LR    14,1              "TO" ADDRESS.
      LR    15,3              "TO" LENGTH.
      LR    0,4               "FROM" ADDRESS.
      LR    1,3               "FROM" LENGTH.
      MVCL  14,0              MOVE THE REPLY TO PERMANENT STORAGE.
      L     4,SLXXVOLL        LENGTH OF VOLUME SECTION.
      L     2,SLXXVOLO        GET VOLUME OFFSET.
      LA    2,SLX(2)          GET ADDR PF VOLUME SECTION.
      USING SLXSVOL,2         TELL ASSEMBLER.
*************************************************************************
*----->    CUSTOMER CODE TO PROCESS QVOLUME DATA GOES HERE          *
*************************************************************************
      WTO   'QVOLUME - SUCCESSFUL'
      FREEMAIN RU,A=(R5),LV=(R3),SP=0 FREE QVOLUME REPLY COPY AREA
      XR    R15,R15           NORMAL RETURN
      B     FUNCEXIT          EXIT
      TITLE '- ERROR ROUTINES'
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV DS    0H
      WTO   'QVOLUME - HSC NOT AVAILABLE'
      LA    R15,8             HSC NOT AVAILABLE RETURN CODE
      B     FUNCEXIT          EXIT
*
* QVOLUME REQUEST FAILED.
*
```

FIGURE 1-3 Sample 2 - QVOLUME Request (2 of 4)

```
*
FUNCFAIL DS    0H
       LA    R4,SLXCMDRC         POINT TO FAILING RETURN CODE
       LA    R5,WFCMDRC          RECEIVING AREA
       LA    R15,1               NUMBER OF BYTES TO CONVERT
       BAL   R2,CONVHTC          CONVERT
       WTO MF=(E,WTOQFAIL)       TELL OPERATOR
       LA    R15,4 QVOLUME       FUNCTION FAILED RETURN CODE
       B     FUNCEXIT            EXIT
       TITLE  '- COMMON EXIT'
*
* RETURN TO CALLER.
FUNCEXIT DS    0H
       LR    R2,R15              SAVE RETURN CODE
       DELETE EP=SLSXCAL         DELETE SLSXCAL
       L     R13,4(,R13)         POINT TO PREV REG SAVE AREA
       LR    R15,R2              BRING BACK RETURN CODE
       L     R14,12(R13)         RESTORE REG 14
       LM    R0,R12,20(R13)      RESTORE REGS 0 - 12
       BR    R14                 RETURN TO CALLER
       TITLE  '- SERVICE ROUTINES (DATA CONVERSION)'
*       CONVERT HEXADECIMAL DATA TO CHARACTER DATA.
*
CONVHTC  DS    0H
       ICM   R7,B'1000',0(R4)    GET ONE HEX BYTE
       LA    R8,2                TWO HEX CHAR IN EACH BYTE
CHTCLOOP DS  0H
       XR    R6,R6               CLEAR
       SLDL  R6,4                SHIFT HALF BYTE TO NEXT REGISTER
       STC   R6,0(R5)            SET IN RECEIVING AREA
       TR    0(1,R5),TRTAB       TRANSLATE TO CHARACTER
       LA    R5,1(,R5)           BUMP TO NEXT RECEIVING BYTE
       BCT   R8,CHTCLOOP         DO FOR BOTH HEX CHAR IN BYTE
       LA    R4,1(,R4)           BUMP TO NEXT HEX BYTE
       BCT   R15,CONVHTC         DO FOR NUMBER OF HEX BYTES
       BR    R2                  RETURN TO CALLER
*
       TITLE  '- MISCELLANEOUS CONSTANTS AND WORK AREAS'
       TRTAB  DC                 CL16'0123456789ABCDEF'
*
VOLSER   DC    C'EDU228'          VOLUME SERIAL TO QVOLUME
*
WTOQFAIL WTO   'QVOLUME - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
WFCMDRC  EQU   WTOQFAIL+41
QVOLWORK DS    0D                 LINKAGE SAVE AREA
       DS    18F                 LINKAGE SAVE AREA
*
WSCALADR DS    F                  SLSXCAL ROUTINE ADR
*
WSLSXREQ SLSXREQ MF=L             REMOTE SLSXREQ.
```

FIGURE 1-4 Sample 2 - QVOLUME Request (3 of 4)

```
QVOLWKL  EQU     *-QVOLWORK
*
        LTORG
        TITLE '- ESTABLISH REGISTER EQUATES'
        SLSREGS
        TITLE '- DSECT MACROS'
        SLSXREQM ,
*
        END QVOLUME
```

FIGURE 1-5 Sample 2 - QVOLUME Request (4 of 4)

Sample SCRATCH Request

The following code fragment issues a SCRATCH request to direct HSC to scratch a volume.

```
SCRATCH TITLE 'SCRATCH - PROGRAMMATIC INTERFACE - SCRATCH'
*
* SCRATCH - PROGRAMMATIC INTERFACE - DIRECT HSC TO SCRATCH A VOLUME
*
* FUNCTION:  USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*                    SCRATCH.
*
* ATTRIBUTES:
* ATTRIBUTES  --
*    1.  PROBLEM STATE, USER KEY
*    2.  NON-APF AUTHORIZED
*
* EXITS
*    RETURN CODE:
*       R15 =
*
* CHANGE HISTORY:
*    11/30/90-CRTD-VB - MODULE CREATED.
**ENDPROLOGUE************************************************************
       TITLE 'SCRATCH - ESTABLISH BASE REGISTER'
       PRINT GEN
       ENTRY SCRATCH
SCRATCH CSECT
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
       LR     R12,R15             LOAD EPA AND ESTABLISH
       USING  SCRATCH,R12           ADDRESSABILITY TO THE CSECT
       STM    R14,R12,12(R13)      SAVE REGS
       LA     R10,MAINSAVE         POINT TO OUR SAVE AREA
       ST     R13,4(,R10)          PTR TO PREV S.A. FROM NEW
       ST     R10,8(,R13)          PTR TO NEW S.A. FROM OLD
       LR     R13,R10              ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLSX RESPONSE AREA.
*
       USING  SLX,R3
*
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
       LOAD   EP=SLSXCAL           LOAD SLSXCAL
       ST     R0,WSCALADR          SAVE SLSXCAL ROUTINE ADR
```

FIGURE 1-6 Sample 3 - PGMI SCRATCH Request

```
* USE SLSXREQ MACRO TO INVOKE SCRATCH OPTION.
*
      SLSXREQ SCRATCH,                              +
         OPTION=SYNCH,                             +
         XCALADR=WSCALADR,                          +
         VOLSER=VOLSER,                             +
         MF=(E,WSLSXREQ)
      LTR R15,R15              HSC AVAILABLE?
      BNZ HSCNOTAV               NO, TELL OPERATOR
      LR  R3,R1                POINT TO START OF REPLY HEADER
      CLI SLXCMDRC,SLXROK        SCRATCH SUCCESSFUL?
      BNE FUNCFAIL               NO, TELL OPERATOR WHY
      B   FUNCEXIT               EXIT
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV DS  0H
                                         WTO 'SCRATCH - HSC NOT AVAILABLE'
                                         B   FUNCEXIT             EXIT
*
* SCRATCH REQUEST FAILED.
*
FUNCFAIL DS  0H
                                         LA  R4,SLXCMDRC          POINT TO FAILING RETURN
CODE
                                         LA  R5,WFCMDRC           RECEIVING AREA
                                         LA  R15,1                NUMBER OF BYTES TO CONVERT
                                         BAL R2,CONVHTC           CONVERT
                                         WTO MF=(E,WTOQFAIL)      TELL OPERATOR
                                         B   FUNCEXIT             EXIT
*
* RETURN TO CALLER.
*
FUNCEXIT DS  0H
                                         DELETE EP=SLSXCAL        DELETE SLSXCAL
                                         L   R13,4(,R13)          POINT TO PREV REG SAVE AREA
                                         L   R14,12(R13)          RESTORE REG 14
                                         LM  R0,R12,20(R13)       RESTORE REGS 0 - 12
                                         BR  R14                  RETURN TO CALLER
*       TITLE 'SCRATCH - SERVICE ROUTINES (DATA CONVERSION)'
*       CONVERT HEXADECIMAL DATA TO CHARACTER DATA.
*
CONVHTC                                  DS  0H
                                         ICM R7,B'1000',0(R4)     GET ONE HEX BYTE
                                         LA  R8,2                 TWO HEX CHAR IN EACH BYTE
```

FIGURE 1-7 Sample 3 - PGMI SCRATCH Request (2 of 3)

```
CHTCLOOP   DS   0H
         XR   R6,R6              CLEAR
         SLDL R6,4               SHIFT HALF BYTE TO NEXT REGISTER
         STC  R6,0(R5)           SET IN RECEIVING AREA
         TR   0(1,R5),TRTAB      TRANSLATE TO CHARACTER
         LA   R5,1(,R5)          BUMP TO NEXT RECEIVING BYTE
         BCT  R8,CHTCLOOP        DO FOR BOTH HEX CHAR IN BYTE
         LA   R4,1(,R4)          BUMP TO NEXT HEX BYTE
         BCT  R15,CONVHTC        DO FOR NUMBER OF HEX BYTES
         BR   R2                 RETURN TO CALLER
 TRTAB     DC   CL16'0123456789ABCDEF'
*
         TITLE 'SCRATCH - MISCELLANEOUS CONSTANTS AND EQUATES'
         LTORG
*
 MAINSAVE  DS   9D               LINKAGE SAVE AREA
 DWORD     DS   D                DOUBLEWORD WORK AREA
*
 WSCALADR  DS   F                SLSXCAL ROUTINE ADR
*
 VOLSER    DC   C'EDU228'        VOLUME SERIAL TO SCRATCH
*
 WTOQFAIL  WTO  'SCRATCH - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
 WFCMDRC   EQU  WTOQFAIL+41
*
        TITLE 'SCRATCH - SLSXREQ DSECT MACRO'
        SLSXREQM ,
*
         END  SCRATCH
```

FIGURE 1-8 Sample 3 - PGMI SCRATCH Request (3 of 3)

Sample UNSCRATCH Request

The following code fragment issues a UNSCRATCH request to direct HSC to remove a volume from scratch status.

```
UNSCRTCH TITLE 'UNSCRATCH - PROGRAMMATIC INTERFACE - UNSCRATCH'
*
* UNSCRATCH - PROGRAMMATIC INTERFACE-DIRECT HSC TO UNSCRATCH A VOLUME
*
* FUNCTION:  USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*                    UNSCRATCH.
*
* ATTRIBUTES:
* ATTRIBUTES  --
*    1.  PROBLEM STATE, USER KEY
*    2.  NON-APF AUTHORIZED
*
* EXITS
*    RETURN CODE:
*       R15 =
*
* CHANGE HISTORY:
*    11/30/90-CRTD-VB - MODULE CREATED.
**ENDPROLOGUE*************************************************************
         TITLE 'UNSCRTCH - ESTABLISH BASE REGISTER'
         PRINT GEN
         ENTRY UNSCRTCH
UNSCRTCH CSECT
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
         LR    R12,R15         LOAD EPA AND ESTABLISH
         USING UNSCRTCH,R12    ADDRESSABILITY TO THE CSECT
         STM   R14,R12,12(R13)  SAVE REGS
         LA    R10,MAINSAVE    POINT TO OUR SAVE AREA
         ST    R13,4(,R10)     PTR TO PREV S.A. FROM NEW
         ST    R10,8(,R13)     PTR TO NEW S.A. FROM OLD
         LR    R13,R10         ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLSX RESPONSE AREA.
*
         USING SLX,R3
*
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
         LOAD  EP=SLSXCAL      LOAD SLSXCAL
         ST    R0,WSCALADR     SAVE SLSXCAL ROUTINE ADR
```

FIGURE 1-9 PGMI UNSCRATCH Request

```
*
* USE SLSXREQ MACRO TO INVOKE UNSCRATCH OPTION.
*
      SLSXREQ UNSCRATCH,                              +
          OPTION=SYNCH,                             +
          XCALADR=WSCALADR,                          +
          VOLSER=VOLSER,                             +
          MF=(E,WSLSXREQ)
      LTR   R15,R15             HSC AVAILABLE?
      BNZ   HSCNOTAV            NO, TELL OPERATOR
      LR    R3,R1               POINT TO START OF REPLY HEADER
      CLI   SLXCMDRC,SLXROK     UNSCRATCH SUCCESSFUL?
      BNE   FUNCFAIL            NO, TELL OPERATOR WHY
      B     FUNCEXIT            EXIT
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV DS    0H
      WTO   'UNSCRATCH - HSC NOT AVAILABLE'
      B     FUNCEXIT            EXIT
*
* UNSCRATCH REQUEST FAILED.
*
FUNCFAIL DS    0H
      LA    R4,SLXCMDRC         POINT TO FAILING RETURN CODE
      LA    R5,WFCMDRC          RECEIVING AREA
      LA    R15,1               NUMBER OF BYTES TO CONVERT
      BAL   R2,CONVHTC          CONVERT
      WTO   MF=(E,WTOQFAIL)     TELL OPERATOR
      B     FUNCEXIT            EXIT
*
* RETURN TO CALLER.
*
FUNCEXIT DS    0H
      DELETE EP=SLSXCAL         DELETE SLSXCAL
      L     R13,4(,R13)         POINT TO PREV REG SAVE AREA
      L     R14,12(R13)         RESTORE REG 14
      LM    R0,R12,20(R13)      RESTORE REGS 0 - 12
      BR    R14                 RETURN TO CALLER
*
TITLE 'UNSCRATCH - SERVICE ROUTINES (DATA CONVERSION)'
```

FIGURE 1-10 Sample 4 - PGMI UNSCRATCH Request (2 of 3)

```
*
* CONVERT HEXADECIMAL DATA TO CHARACTER DATA.
*
CONVHTC   DS    0H
          ICM   R7,B'1000',0(R4)   GET ONE HEX BYTE
          LA    R8,2               TWO HEX CHAR IN EACH BYTE
CHTCLOOP  DS    0H
          XR    R6,R6              CLEAR
          SLDL  R6,4               SHIFT HALF BYTE TO NEXT REGISTER
          STC   R6,0(R5)           SET IN RECEIVING AREA
          TR    0(1,R5),TRTAB      TRANSLATE TO CHARACTER
          LA    R5,1(,R5)          BUMP TO NEXT RECEIVING BYTE
          BCT   R8,CHTCLOOP        DO FOR BOTH HEX CHAR IN BYTE
          LA    R4,1(,R4)          BUMP TO NEXT HEX BYTE
          BCT   R15,CONVHTC        DO FOR NUMBER OF HEX BYTES
          BR    R2                 RETURN TO CALLER
TRTAB     DC    CL16'0123456789ABCDEF'
*
          TITLE 'UNSCRATCH - MISCELLANEOUS CONSTANTS AND EQUATES'
          LTORG
*
MAINSAVE  DS    9D                 LINKAGE SAVE AREA
DWORD     DS    D                  DOUBLEWORD WORK AREA
*
WSCALADR  DS    F                  SLSXCAL ROUTINE ADR
*
VOLSER    DC    C'EDU228'          VOLUME SERIAL TO UNSCRATCH
*
WTOQFAIL  WTO   'UNSCRATCH - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
WFCMDRC   EQU   WTOQFAIL+41
*
          TITLE 'UNSCRATCH - SLSXREQ DSECT MACRO'
          SLSXREQM ,
*
           END   UNSCRTCH
```

FIGURE 1-11 Sample 4 - PGMI UNSCRATCH Request (3 of 3

Sample DISMOUNT Request

The following code fragment issues a DISMOUNT request to direct HSC to dismount a volume.

```
DISMOUNT TITLE 'DISMOUNT - PROGRAMMATIC INTERFACE - DISMOUNT'
*
* DISMOUNT - PROGRAMMATIC INTERFACE - DIRECT HSC TO DISMOUNT A VOLUME
*
* FUNCTION:  USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*                    DISMOUNT.
*
* ATTRIBUTES:
* ATTRIBUTES  --
*    1.  PROBLEM STATE, USER KEY
*    2.  NON-APF AUTHORIZED
*
* EXITS
*    RETURN CODE:
*       R15 =
*
* CHANGE HISTORY:
*    12/04/90-CRTD-VB - MODULE CREATED.
**ENDPROLOGUE*************************************************************
       TITLE 'DISMOUNT - ESTABLISH BASE REGISTER'
       PRINT GEN
       ENTRY DISMOUNT
DISMOUNT CSECT
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
       LR     R12,R15          LOAD EPA AND ESTABLISH
       USING  DISMOUNT,R12     ADDRESSABILITY TO THE CSECT
       STM    R14,R12,12(R13)  SAVE REGS
       LA     R10,MAINSAVE     POINT TO OUR SAVE AREA
       ST     R13,4(,R10)      PTR TO PREV S.A. FROM NEW
       ST     R10,8(,R13)      PTR TO NEW S.A. FROM OLD
       LR     R13,R10          ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLSX RESPONSE AREA.
*
       USING  SLX,R3
*
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
       LOAD   EP=SLSXCAL       LOAD SLSXCAL
       ST     R0,WSCALADR      SAVE SLSXCAL ROUTINE ADR
```

FIGURE 1-12 Sample 5 - PGMI DISMOUNT Request

```
*
* USE SLSXREQ MACRO TO INVOKE DISMOUNT OPTION.
*
      SLSXREQ DISMOUNT,                              +
          OPTION=SYNCH,                             +
          XCALADR=WSCALADR,                          +
          DRIVE=DRIVEADR,                           +
          VOLSER=VOLSER,                            +
          MF=(E,WSLSXREQ)
      LTR   R15,R15         HSC AVAILABLE?
      BNZ   HSCNOTAV        NO, TELL OPERATOR
      LR    R3,R1           POINT TO START OF REPLY HEADER
      CLI   SLXCMDRC,SLXROK   DISMOUNT SUCCESSFUL?
      BNE   FUNCFAIL        NO, TELL OPERATOR WHY
      B     FUNCEXIT        EXIT
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV DS    0H
      WTO   'DISMOUNT - HSC NOT AVAILABLE'
      B     FUNCEXIT        EXIT
*
* DISMOUNT REQUEST FAILED.
*
FUNCFAIL DS    0H
      LA    R4,SLXCMDRC     POINT TO FAILING RETURN CODE
      LA    R5,WFCMDRC      RECEIVING AREA
      LA    R15,1           NUMBER OF BYTES TO CONVERT
      BAL   R2,CONVHTC      CONVERT
      WTO   MF=(E,WTOQFAIL)   TELL OPERATOR
      B     FUNCEXIT        EXIT
*
* RETURN TO CALLER.
*
FUNCEXIT DS    0H
      DELETE EP=SLSXCAL     DELETE SLSXCAL
      L     R13,4(,R13)     POINT TO PREV REG SAVE AREA
      L     R14,12(R13)     RESTORE REG 14
      LM    R0,R12,20(R13)  RESTORE REGS 0 - 12
      BR    R14             RETURN TO CALLER
*
      TITLE 'DISMOUNT - SERVICE ROUTINES (DATA CONVERSION)'
```

FIGURE 1-13 Sample 5 - PGMI DISMOUNT Request (2 of 3)

```
*
*CONVERT HEXADECIMAL DATA TO CHARACTER DATA
*
CONVHTC  DS     0H
         ICM    R7,B'1000',0(R4)  GET ONE HEX BYTE
         LA     R8,2              TWO HEX CHAR IN EACH BYTE
CHTCLOOP DS     0H
         XR     R6,R6             CLEAR
         SLDL   R6,4              SHIFT HALF BYTE TO NEXT REGISTER
         STC    R6,0(R5)          SET IN RECEIVING AREA
         TR     0(1,R5),TRTAB     TRANSLATE TO CHARACTER
         LA     R5,1(,R5)         BUMP TO NEXT RECEIVING BYTE
         BCT    R8,CHTCLOOP       DO FOR BOTH HEX CHAR IN BYTE
         LA     R4,1(,R4)         BUMP TO NEXT HEX BYTE
         BCT    R15,CONVHTC       DO FOR NUMBER OF HEX BYTES
         BR     R2                RETURN TO CALLER
TRTAB    DC     CL16'0123456789ABCDEF'
*
         TITLE 'DISMOUNT - MISCELLANEOUS CONSTANTS AND EQUATES'
         LTORG
*
MAINSAVE DS     9D                LINKAGE SAVE AREA
DWORD    DS     D                 DOUBLEWORD WORK AREA
*
WSCALADR DS     F                 SLSXCAL ROUTINE ADR
*
DRIVEADR DC     X'0380'           DRIVE ADDRESS
*
VOLSER   DC     CL6'EDU228'       VOLUME SERIAL NUMBER
*
WTOQFAIL WTO    'DISMOUNT - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
WFCMDRC  EQU    WTOQFAIL+42
*
         TITLE 'DISMOUNT - SLSXREQ DSECT MACRO'
         SLSXREQM ,
*
         END   DISMOUNT
```

FIGURE 1-14 Sample 5 - PGMI DISMOUNT Request (3 of 3)

Sample MOUNT Request

The following code fragment issues a MOUNT request to direct HSC to mount a volume.

```
MOUNT TITLE 'MOUNT - PROGRAMMATIC INTERFACE - MOUNT'
*
* MOUNT - PROGRAMMATIC INTERFACE - DIRECT HSC TO MOUNT A VOLUME
*
* FUNCTION:  USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*          MOUNT.
*
* ATTRIBUTES:
* ATTRIBUTES  --
*    1.  PROBLEM STATE, USER KEY
*    2.  NON-APF AUTHORIZED
*
* EXITS
*    RETURN CODE:
*        R15 =
*
* CHANGE HISTORY:
*    11/30/90-CRTD-VB - MODULE CREATED.
**ENDPROLOGUE*************************************************************
       TITLE  'MOUNT - ESTABLISH BASE REGISTER'
       PRINT  GEN
       ENTRY  MOUNT
MOUNT CSECT
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
       LR     R12,R15          LOAD EPA AND ESTABLISH
       USING  MOUNT,R12         ADDRESSABILITY TO THE CSECT
       STM    R14,R12,12(R13)   SAVE REGS
       LA     R10,MAINSAVE      POINT TO OUR SAVE AREA
       ST     R13,4(,R10)       PTR TO PREV S.A. FROM NEW
       ST     R10,8(,R13)       PTR TO NEW S.A. FROM OLD
       LR     R13,R10          ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLSX RESPONSE AREA.
*
       USING  SLX,R3
*
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
       LOAD   EP=SLSXCAL        LOAD SLSXCAL
       ST     R0,WSCALADR       SAVE SLSXCAL ROUTINE ADR
```

FIGURE 1-15 Sample 6 - PGMI MOUNT Request

```
*
* USE SLSXREQ MACRO TO INVOKE MOUNT OPTION.
*
     SLSXREQ MOUNT,                                  +
          OPTION=SYNCH,                             +
          XCALADR=WSCALADR,                              +
          DRIVE=DRIVEADR,                           +
          SCRATCH=YES,                              +
          SCRPOOL=SCRPOOL,                               +
          MF=(E,WSLSXREQ)
       LTR  R15,R15            HSC AVAILABLE?
       BNZ  HSCNOTAV           NO, TELL OPERATOR
       LR   R3,R1              POINT TO START OF REPLY HEADER
       CLI  SLXCMDRC,SLXROK    MOUNT SUCCESSFUL?
       BNE  FUNCFAIL           NO, TELL OPERATOR WHY
       B    FUNCEXIT           EXIT
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV DS   0H
       WTO  'MOUNT - HSC NOT AVAILABLE'
       B    FUNCEXIT           EXIT
*
* MOUNT REQUEST FAILED.
*
FUNCFAIL DS   0H
       LA   R4,SLXCMDRC        POINT TO FAILING RETURN CODE
       LA   R5,WFCMDRC         RECEIVING AREA
       LA   R15,1              NUMBER OF BYTES TO CONVERT
       BAL  R2,CONVHTC         CONVERT
       WTO  MF=(E,WTOQFAIL)    TELL OPERATOR
       B    FUNCEXIT           EXIT
*
* RETURN TO CALLER.
*
FUNCEXIT DS   0H
       DELETE EP=SLSXCAL       DELETE SLSXCAL
       L    R13,4(,R13)        POINT TO PREV REG SAVE AREA
       L    R14,12(R13)        RESTORE REG 14
       LM   R0,R12,20(R13)     RESTORE REGS 0 - 12
       BR   R14                RETURN TO CALLER
*
       TITLE 'MOUNT - SERVICE ROUTINES (DATA CONVERSION)'
```

FIGURE 1-16 Sample 6 - PGMI MOUNT Request (2 of 3)

```
*
* CONVERT HEXADECIMAL DATA TO CHARACTER DATA.
*
CONVHTC  DS     0H
         ICM    R7,B'1000',0(R4)     GET ONE HEX BYTE
         LA     R8,2                 TWO HEX CHAR IN EACH BYTE
CHTCLOOP DS     0H
         XR     R6,R6                CLEAR
         SLDL   R6,4                 SHIFT HALF BYTE TO NEXT REGISTER
         STC    R6,0(R5)             SET IN RECEIVING AREA
         TR     0(1,R5),TRTAB        TRANSLATE TO CHARACTER
         LA     R5,1(,R5)            BUMP TO NEXT RECEIVING BYTE
         BCT    R8,CHTCLOOP          DO FOR BOTH HEX CHAR IN BYTE
         LA     R4,1(,R4)            BUMP TO NEXT HEX BYTE
         BCT    R15,CONVHTC          DO FOR NUMBER OF HEX BYTES
         BR     R2                   RETURN TO CALLER
TRTAB    DC     CL16'0123456789ABCDEF'
*
         TITLE  'MOUNT - MISCELLANEOUS CONSTANTS AND EQUATES'
         LTORG
*
MAINSAVE DS     9D                   LINKAGE SAVE AREA
DWORD    DS     D                    DOUBLEWORD WORK AREA
*
WSCALADR DS     F                    SLSXCAL ROUTINE ADR
*
DRIVEADR DC     X'0380'              DRIVE ADDRESS
*
SCRPOOL  DC     X'01'                SCRATCH SUBPOOL ID
*
WTOQFAIL WTO    'MOUNT - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
WFCMDRC  EQU    WTOQFAIL+39
*
              TITLE 'MOUNT - SLSXREQ DSECT MACRO'
              SLSXREQM ,
*
              END   MOUNT
```

FIGURE 1-17 Sample 6 - PGMI MOUNT Request (3 of 3)

Sample EJECT Request

The following code fragment issues a EJECT request to direct HSC to eject a volume.

```
EJECT TITLE 'EJECT - PROGRAMMATIC INTERFACE - EJECT'
*
* EJECT - PROGRAMMATIC INTERFACE - DIRECT HSC TO EJECT A VOLUME
*
* FUNCTION:  USE PROGRAMMATIC INTERFACE SLSXREQ MACRO FUNCTION
*          EJECT.
*
* ATTRIBUTES:
* ATTRIBUTES  --
*    1.  PROBLEM STATE, USER KEY
*    2.  NON-APF AUTHORIZED
*
* EXITS
*    RETURN CODE:
*        R15 =
*
* CHANGE HISTORY:
*    11/30/90-CRTD-VB - MODULE CREATED.
**ENDPROLOGUE************************************************************
        TITLE 'EJECT - ESTABLISH BASE REGISTER'
        PRINT GEN
        ENTRY EJECT
EJECT CSECT
*
* ESTABLISH CSECT ADDRESSABILITY.
* IF NEEDED, R11 HAS BEEN RESERVED FOR A SECOND BASE REGISTER.
*
        LR    R12,R15           LOAD EPA AND ESTABLISH
        USING EJECT,R12          ADDRESSABILITY TO THE CSECT
        STM   R14,R12,12(R13)    SAVE REGS
        LA    R10,MAINSAVE       POINT TO OUR SAVE AREA
        ST    R13,4(,R10)        PTR TO PREV S.A. FROM NEW
        ST    R10,8(,R13)        PTR TO NEW S.A. FROM OLD
        LR    R13,R10           ESTABLISH NEW SAVE AREA
*
* ESTABLISH MAP TO SLSX RESPONSE AREA.
*
        USING SLX,R3
*
* LOAD HSC INTERFACE MODULE SLSXCAL.
*
        LOAD  EP=SLSXCAL         LOAD SLSXCAL
        ST    R0,WSCALADR        SAVE SLSXCAL ROUTINE ADR
```

FIGURE 1-18 Sample 7 - PGMI EJECT Request

```
*
* USE SLSXREQ MACRO TO INVOKE EJECT OPTION.
*
       SLSXREQ EJECT,                                +
           OPTION=SYNCH,                             +
           XCALADR=WSCALADR,                             +
           VOLSER=VOLSER,                             +
           MF=(E,WSLSXREQ)
       LTR   R15,R15            HSC AVAILABLE?
       BNZ   HSCNOTAV           NO, TELL OPERATOR
       LR    R3,R1              POINT TO START OF REPLY HEADER
       CLI   SLXCMDRC,SLXROK    EJECT SUCCESSFUL?
       BNE   FUNCFAIL           NO, TELL OPERATOR WHY
       B     FUNCEXIT           EXIT
*
* HSC IS NOT AVAILABLE.
*
HSCNOTAV  DS    0H
       WTO   'EJECT - HSC NOT AVAILABLE'
       B     FUNCEXIT           EXIT
*
* EJECT REQUEST FAILED.
*
FUNCFAIL  DS    0H
       LA    R4,SLXCMDRC        POINT TO FAILING RETURN CODE
       LA    R5,WFCMDRC         RECEIVING AREA
       LA    R15,1              NUMBER OF BYTES TO CONVERT
       BAL   R2,CONVHTC         CONVERT
       WTO   MF=(E,WTOQFAIL)    TELL OPERATOR
       B     FUNCEXIT           EXIT
*
* RETURN TO CALLER.
*
FUNCEXIT  DS    0H
       DELETE EP=SLSXCAL        DELETE SLSXCAL
       L     R13,4(,R13)        POINT TO PREV REG SAVE AREA
       L     R14,12(R13)        RESTORE REG 14
       LM    R0,R12,20(R13)     RESTORE REGS 0 - 12
       BR    R14                RETURN TO CALLER
*
       TITLE 'EJECT - SERVICE ROUTINES (DATA CONVERSION)'
*
* CONVERT HEXADECIMAL DATA TO CHARACTER DATA.
*
CONVHTC   DS    0H
       ICM   R7,B'1000',0(R4)   GET ONE HEX BYTE
       LA    R8,2               TWO HEX CHAR IN EACH BYTE
```

FIGURE 1-19 Sample 7 - PGMI EJECT Request (2 of 3)

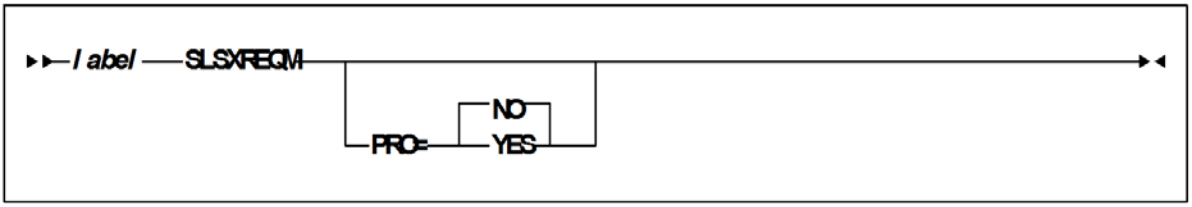
```
CHTCLOOP    DS    0H
            XR    R6,R6           CLEAR
            SLDL  R6,4            SHIFT HALF BYTE TO NEXT REGISTER
            STC   R6,0(R5)        SET IN RECEIVING AREA
            TR    0(1,R5),TRTAB   TRANSLATE TO CHARACTER
            LA    R5,1(,R5)       BUMP TO NEXT RECEIVING BYTE
            BCT   R8,CHTCLOOP     DO FOR BOTH HEX CHAR IN BYTE
            LA    R4,1(,R4)       BUMP TO NEXT HEX BYTE
            BCT   R15,CONVHTC     DO FOR NUMBER OF HEX BYTES
            BR    R2              RETURN TO CALLER
TRTAB       DC    CL16'0123456789ABCDEF'
*
            TITLE 'EJECT - MISCELLANEOUS CONSTANTS AND EQUATES'
            LTORG
*
MAINSAVE    DS    9D              LINKAGE SAVE AREA
DWORD       DS    D               DOUBLEWORD WORK AREA
*
WSCALADR    DS    F               SLSXCAL ROUTINE ADR
*
VOLSER      DC    C'EDU228'       VOLUME SERIAL TO EJECT
*
WTOQFAIL    WTO   'EJECT - SLSXREQ FAILED, SLXCMDRC = XX',MF=L
WFCMDRC     EQU   WTOQFAIL+39
*
            TITLE 'EJECT - SLSXREQ DSECT MACRO'
            SLSXREQM ,
*
            END   EJECT
```

FIGURE 1-20 Sample 7 - PGMI EJECT Request (3 of 3)

SLSXREQM Macro

The macro SLSXREQM must be specified in any assembly that uses the SLSXREQ macro. It generates symbols used by the SLSXREQ macro as well as providing mapping DSECTs of the response areas

Syntax



Parameters

PRO={NO | YES}

Specifies whether the prologue should be generated (YES) or not (NO). **The default is NO.**

Programmatic Interface Mapping (SLSXREQM) Macro

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
0	(0)	STRUCTURE		SLSXREQM	USER INTERFACE
0	(0)	CHARACTER	4	SLSXHDR	EYECATCHER
'SLSX'	(E2D3E2E7)	CHAR CONST		SLSXID	IS AN SLSXREQ
4	(4)	SIGNED-FWORD	4	SLSXLEN	LENGTH OF CONTROL BLOCK
8	(8)	A-ADDR	1	SLSXVER	VERSION OF SLSXREQ
9	(09)	CONST		SLSXVN	CURRENT VERSION
'W'	(E6)	CHAR CONST		SLSXSP	SUB-POOL NUMBER
THE FOLLOWING FLAGS DEFINE THE TYPE OF PROCESSING REQUESTED					
9	(9)	A-ADDR	1	SLSXRT	REQUEST TYPE
0	(00)	CONST		SLSXNOOP	NOOP - NO OPERATION
1	(01)	CONST		SLSXQHSC	QHSC - IS HSC UP?
2	(02)	CONST		SLSXREST	RESET - DISMOUNT ALL VOL
3	(03)	CONST		SLSXREAD	READ - READ A RESPONSE
4	(04)	CONST		SLSXSTOP	STOP - STOP A PROCESS
5	(05)	CONST		SLSXRS05	RESERVED - VM ONLY
20	(14)	CONST		SLSXQCNF	QCONFIG - QUERY CONFIG
21	(15)	CONST		SLSXQDRV	QDRIVES - QUERY DRIVES
22	(16)	CONST		SLSXQDRL	QDRLIST - QUERY DRIVES
23	(17)	CONST		SLSXQSCR	QSCRATCH - QUERY SCRATCH
24	(18)	CONST		SLSXQVOL	QVOLUME - QUERY VOLUME

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
25	(19)	CONST		SLSXQEJT	QEJECT - QUERY EJECT TASK
26	(1A)	CONST		SLSXQCAP	QCAP - QUERY CAP CONFIG
27	(1B)	CONST		SLSXRS17	RESERVED - VM ONLY
28	(1C)	CONST		SLSXQRQS	QREQUEST QUERY REQUEST
29	(1D)	CONST		SLSXQDSN	QDSN - QUERY DATASET
40	(28)	CONST		SLSXMNT	MOUNT - MOUNT A VOLUME
41	(29)	CONST		SLSXMOVE	MOVE - MOVE A CARTRIDGE
42	(2A)	CONST		SLSXDSM	DISMOUNT - DISMOUNT A VOLUME
43	(2B)	CONST		SLSXEJCT	EJECT - EJECT A VOLUME
60	(3C)	CONST		SLSXSSCR	SELSCR - SELECT SCRATCH
61	(3D)	CONST		SLSXSCRA	SCRATCH - SCRATCH A VOLUME
62	(3E)	CONST		SLSXUNSC	UNSCRATCH - UNSCRATCH A VOL
63	(3F)	CONST		SLSXRS63	RESERVED - VM ONLY
64	(40)	CONST		SLSXRS64	RESERVED - VM ONLY
70	(46)	CONST		SLSXVCI	VCI REQUEST
71	(47)	CONST		SLSXVCIR	READ VCI REQUEST
10	(A)	BITSTRING	1	SLSXFLG1	FLAG BYTE 1 (PGMI CONTROL1)
		1... .... X'80'		SLSXSYNC	OPTION=SYNC SPECIFIED
		.1.. .... X'40'		SLSXF140	RESERVED VM USER= OPTION
		..1. .... X'20'		SLSXF120	RESERVEDVM DIALOG OFF

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
		...1 .... X'10'		SLSXF110	RESERVED VM DIALOG ON
		.... 1... X'08'		SLSXF108	RESERVED VM NOTIFY= INSEDL
		.... .1.. X'04'		SLSXF104	RESERVED VM NOTIFY= NOINSDEL
		.... ..1. X'02'		SLSXF102	RESERVED VM ACCT2
		....1 X'01'		SLSXF101	RESERVEDVM ACCT1
11	(B)	HEXSTRING	1	SLSXFLG2	FLAG BYTE 2 (PGMI CONTROL 2)
12	(C)	BITSTRING	1	SLSXFLG3	FLAG BYTE3 (MOVEMENT CONTROL 1)
		1... .... X'80'		SLSXVHST	SLSXHOST CONTAINS A HOSTID
		.1.. .... X'40'		SLSXVACS	SLSXACS CONTAINS AN ACSID
		..1. .... X'20'		SLSXVLSM	SLSXLSMI CONTAINS THE LSMID
		...1 .... X'10'		SLSXVCAP	SLSXCAP CONTAINS CAP
		.... 1... X'08'		SLSXF308	RESERVED FUTURE USE
		.... .1.. X'04'		SLSXVVOL	SLSXVOLS CONTAINS A VOLSER
		.... ..1. X'02'		SLSXVLST	SLSXLSTA CONTAINS A LIST ADR
		....1 X'01'		SLSXVCNT	SLSXCNT CONTAINS LIST COUNT
13	(D)	BITSTRING	1	SLSXFLG4	FLAG BYTE 4 (MOVEMENT CONTROL 2)
		1... .... X'80'		SLSXVTLM	SLSXTLSM CONTAINS TOLSM
		.1.. .... X'40'		SLSXVTPN	SLSXTPAN CONTAINS TOPANEL

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
		..1. .... X′20′		SLSXF420	RESERVED FUTURE USE
		...1 .... X′10′		SLSXF410	RESERVED FUTURE USE
		.... 1... X′08′		SLSXVPAN	SLSXPAN CONTAINS PANEL #
		.... .1.. X′04′		SLSXVROW	SLSXROW CONTAINS ROW #
		.... ..1. X′02′		SLSXVCOL	SLSXCOL CONTAINS COLUMN #
		....1 X′01′		SLSXVDRV	SLSXDRIV CONTAINS DEVICE NUMBER
14	(E)	HEXSTRING	1	SLSXFLG5	FLAG BYTE 5 (MOVEMENT CONTROL 3)
15	(F)	BITSTRING	1	SLSXFLG6	FLAG BYTE 6 (MISCELLANEOUS CONTROL 1)
		1... .... X′80′		SLSXPROT	PROTECT=YES SPECIFIED
		.1.. .... X′40′		SLSXSCR	SCRATCH=YES SPECIFIED
		..1. .... X′20′		SLSXVSCP	SLSXPOOL HAS A SCRATCH POOL NUM
		...1 .... X′10′		SLSXSUBN	SLSXSUBP CONTAINS TEXT
		.... 1... X′08′		SLSXVTKN	SLSXTKNO CONTAINS TOKEN NUM
		.... .1.. X′04′		SLSXVTXT	SLSXTEXT CONTAINS TEXT
		.... ..1. X′02′		SLSXF602	RESERVED FUTURE USE
		....1 X′01′		SLSXF601	RESERVED FUTURE USE
16	(10)	HEXSTRING	1	SLSXFLG7	FLAG BYTE 7 (MISCELLANEOUS CONTROL 2)
17	(11)	BITSTRING	1	SLSXLABT	LABEL TYPE

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
0	(00)	CONST		SLSXLLDT	LDT (LIBRARY DEFAULT TYPE)
1	(01)	CONST		SLSXLSL	SL (STANDARD LABEL)
2	(02)	CONST		SLSXLAL	AL (ANSI LABEL)
3	(03)	CONST		SLSXLNL	NL (NON-LABELED)
4	(04)	CONST		SLSXLNS	NSL (NON-STANDARD LABEL)
18	(12)	CHARACTER	8	-RESERVED-	RESERVED VM USER
26	(1A)	CHARACTER	8	-RESERVED-	RESERVED VM ACCT1
34	(22)	CHARACTER	8	-RESERVED-	RESERVED VM ACCT2
42	(2A)	HEXSTRING	2	-RESERVED-	
44	(2C)	SIGNED-FWORD	4	SLSXRLEN	RESPONSE LENGTH
48	(30)	SIGNED-FWORD	4	SLSXTKNO	PGMI PASS THRU TOKEN NUMBER
52	(34)	A-ADDR	4	SLSXLSTA	ADDRESS OF LIST
56	(38)	SIGNED-HWORD	2	SLSXCNT	COUNT OF ELEMENTS IN LIST
58	(3A)	SIGNED-HWORD	2	SLSXLOFF	OFFSET, FROM START OF PARAMETER LIST TO START OF THE ELEMENT LIST AREA
60	(3C)	CHARACTER	6	SLSXVOLS	VOLSER FROM VOLSER= PARAMETER
66	(42)	CHARACTER	8	SLSXHOST	ASSOCIATED HOSTID
74	(4A)	AREA	4	SLSXALC	ACS / LSM / CAP IDENTIFICATION
74	(4A)	HEXSTRING	1	SLSXACS	ACS ID NUMBER
74	(4A)	HEXSTRING	2	SLSXLSMI	LSM ID NUMBER
74	(4A)	HEXSTRING	4	SLSXCAP	CAP-ID
74	(4A)	HEXSTRING	3	-RESERVED-	

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
77	(4D)	HEXSTRING	1	-RESERVED-	NOT IMPLEMENTED (ALWAYS X'00')
78	(4E)	HEXSTRING	1	SLSXPAN	CELL- PANEL
79	(4F)	HEXSTRING	1	SLSXROW	CELL- ROW
80	(50)	HEXSTRING	1	SLSXCOL	CELL- COLUMN
81	(51)	HEXSTRING	2	SLSXTLSM	TOLSM ID FOR MOVE FUNCTION
83	(53)	HEXSTRING	1	SLSXTPAN	"TO" PANEL FOR MOVE FUNCTION
84	(54)	A-ADDR	2	SLSXDRIV	DRIVE DEVICE NUMBER
86	(56)	A-ADDR	1	SLSXPOOL	SCRATCH POOL NUMBER
87	(57)	CHARACTER	32	SLSXTEXT	TEXT ASSOCIATED WITH REQUEST
119	(77)	CHARACTER	13	SLSXSUBP	SCRATCH SUBPOOL NAME
TAPEREQ INPUT KEY VALUES. THE FOLLOWING VALUES ARE USED AS THE KEY IN SEARCHING THE CURRENT TAPEREQ PARAMETER FILE.					
132	(84)	BITSTRING	1	SLSXFLG8	FLAG BYTE 8: (TAPEREQ CONTROL 1)
		1... .... X'80'		SLSXFJOB	SLSXJOBN PRESENT
		.1.. .... X'40'		SLSXFSTP	SLSXSTEP PRESENT
		..1. .... X'20'		SLSXFPGM	SLSXPGMN PRESENT
		...1 .... X'10'		SLSXFDSN	SLSXDSN PRESENT
		.... 1... X'08'		SLSXFEXP	SLSXEXPD PRESENT
		.... .1.. X'04'		SLSXFRET	SLSXRETP PRESENT
		.... ..1. X'02'		SLSXFVOL	SLSXVOLT PRESENT
133	(85)	OFFSET		SLSXTRI	TAPEREQ INPUT VALUES
133	(85)	CHARACTER	8	SLSXJOBN	STRING TO MATCH TAPEREQ JOBNAME VALUE

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
141	(8D)	CHARACTER	8	SLSXSTEP	STRING TO MATCH TAPEREQ STEPNAME VALUE
149	(95)	CHARACTER	8	SLSXPGMN	STRING TO MATCH TAPEREQ PROGNAME VALUE
157	(9D)	CHARACTER	44	SLSXDSN	STRING TO MATCH TAPEREQ DSN VALUE
201	(C9)	HEXSTRING	3	SLSXEXPD	VALUE TO MATCH TAPEREQ EXPDT VALUE
204	(CC)	HEXSTRING	2	SLSXRETP	VALUE TO MATCH TAPEREQ RETPD VALUE
206	(CE)	CHARACTER	1	SLSXVOLT	STRING TO MATCH TAPEREQ VOLTYPE VALUE
74	(4A)	LENGTH		SLSXTRIL	
TAPEREQ OUTPUT VALUES. THE FOLLOWING VALUES ARE USED AS OVERRIDE (OR SPECIFIC) VALUES TO THE VALUES FOUND IN THE CURRENT TAPEREQ PARAMETER FILE.					
207	(CF)	BITSTRING	1	SLSXFLG9	FLAG BYTE 9: (TAPEREQ CONTROL 2)
		1... .... X'80'		SLSXFREC	SLSXRECT PRESENT
		.1.. .... X'40'		SLSXFMED	SLSXMED PRESENT
		..1. .... X'20'		SLSXFMGT	SLSXMGMT PRESENT
208	(D0)	CHARACTER	8	SLSXRECT	RECORDING TECHNIQUE
216	(D8)	CHARACTER	8	SLSXMED	MEDIA
224	(E0)	SIGNED-FWORD	4	SLSXVCIP	POINTER TO VCI TEXT
228	(E4)	SIGNED-FWORD	2	SLSXVCIL	LENGTH OF VCI TEST
224	(E0)	SIGNED-FWORD	4	SLSXVCIT	VCI RESPONSE TOKEN
230	(E6)	CHARACTER	8	SLSXMGMT	MANAGEMENT CLASS

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
238	(EE)	HEXSTRING	242	-RESERVED-	RESERVED FOR FUTURE PARM EXPANSION
480	(1E0)	AREA	8	-RESERVED-	ALIGNMENT
480	(1E0)	LENGTH		SLSXLN	LENGTH OF FIXED AREA OF SLSXREQ
480	(1E0)	AREA	1	SLSXLIST	ELEMENT LIST DESIGNATED BY LIST= PARAMETER BEGINS HERE (FIELD SLSXCNT CONTAINS NUMBER OF ELEMENTS IN THIS LIST).
6	(06)	CONST		SLSXLVSL	LENGTH OF EACH ELEMENT (VOLSER) IN THE LIST USED BY THE EJECT FUNCTION.
500	(1F4)	CONST		SLSXMVSL	MAXIMUM NUMBER OF ELEMENTS ALLOWED IN THE LIST USED BY THE EJECT, QCAP AND QEJECT FUNCTIONS.
4	(04)	CONST		SLSXLCAP	LENGTH OF EACH ELEMENT (CAP IDENTIFIER) IN THE LIST USED BY THE QCAP FUNCTION.
500	(1F4)	CONST		SLSXMCAP	MAXIMUM NUMBER OF ELEMENTS ALLOWED IN THE LIST USED BY THE QCAP FUNCTION.
4	(04)	CONST		SLSXLTOK	LENGTH OF EACH ELEMENT (UNIQUE TOKEN) IN THE LIST USED BY THE QCAP FUNCTION.
500	(1F4)	CONST		SLSXMTOK	MAXIMUM NUMBER OF ELEMENTS ALLOWED IN THE LIST USED BY THE QEJECT/STOP FUNCTIONS.
REPLY HEADER					
0	(0)	STRUCTURE		SLX	

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
0	(0)	AREA	1	SLXRPLY	
0	(0)	CHARACTER	3	SLXHID	HEADER IDENTIFIER
'W'	(E6)	CHAR CONST		SLXSP	SUB-POOL NUMBER
3	(3)	A-ADDR	1	SLXCMDRC	RETURN CODE
0	(00)	CONST		SLXROK	REQUEST SUCCESSFUL
4	(04)	CONST		SLXRWARN	WITH WARNING SLXSRC WILL PROVIDE THE SPECIFIC REASON FOR THE WARNING
8	(08)	CONST		SLXRBADP	REQUEST FAILED - THE PARAMETER LIST (SLSXREQM) CONTAINED INVALID DATA (E.G. INCOMPATIBLE OPTIONS) SLXPEOFF (PARM ERROR OFFSET) WILL PROVIDE AN OFFSET OF THE SLSXREQM FIELD FOUND IN ERROR
12	(C)	CONST		SLXRIERR	REQUEST FAILED - AN UNRECOVERABLE INTERNAL ERROR INTERNAL EROR OCCURRED WHILE PROCESSING THE REQUEST
16	(10)	CONST		SLXRFAIL	REQUEST FAILED - SLXSRC WILL PROVIDE THE SPECIFIC REASON FOR THE FAILURE
20	(14)	CONST		SLXRNHSC	REQUEST FAILED - HSC NOT AVAILABLE (MVS ONLY)
24	(18)	CONST		SLXRNAUT	REQUEST FAILED - USER NOT AUTHORIZED. THE REQUEST WAS FAILED BY SLSUX05 OR HSC DEFAULT AUTHORIZATION (MVS ONLY)

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
28	(1C)	CONST		SLXNTCB	REQUEST FAILED - THE CALLER WAS NOT IN TASK MODE (MVS ONLY)
32	(20)	CONST		SLXLOCKD	REQUEST FAILED - THE CALLER HELD AT LEAST ONE LOCK (MVS ONLY)
36	(24)	CONST		SLXTPROT	REQUEST FAILED - THE CALLER DID NOT HAVE FETCH/STORE AUTHORITY TO THE SLSXREQM PARAMETER LIST (MVS ONLY)
40	(28)	CONST		SLXNORSP	REQUEST FAILED - NO RESPONSE ELEMENT WITH THE SPECIFIED TOKEN EXISTED. (MVS ONLY)
44	(2C)	CONST		SLXRBADL	REQUEST FAILED; REPLY AREA PROVIDED BY REQUESTOR WAS TOO SMALL TO CONTAIN ALL REPLY DATA ASSOCIATED WITH THE REQUEST. IF FIELD SLXCRLN IS NON-ZERO, IT CONTAINS THE LENGTH VALUE THAT SHOULD BE SPECIFIED FOR THE REPLY AREA FOR THIS REQUEST. (VM ONLY)
48	(30)	CONST		SLXRNVCI	VCIRQST AND VCIRESP NOT SUPPORTED. EITHER VTCS IS NOT INSTALLED - OR - IS NOT AT THE REQUIRED LEVEL TO SUPPORT THE PGMI VCI REQUEST.
52	(34)	CONST		SLXREOV	END OF VCI RESPONSES.
56	(38)	CONST		SLXRVNV	VCI REQUEST NOT VALID. THE VCI COMMAND SUPPLIED ON THE VCIRQST STATEMENT IS NOT VALID.

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
60	(3C)	CONST		SLXRBTOK	THE VCI TOKEN BEING USED TO OBTAIN VCI RESPONSES IS INVALID
4	(4)	A-ADDR	1	SLXVERS	REPLY VERSION CODE
9	(09)	CONST		SLXVCODE	VERSION 9 OF THE REPLY AREA
5	(5)	BITSTRING	1	SLXRFLG1	'RESPONSE FLAGS
		1... .... X'80'		SLXROKM	MORE RESPONSES CAN BE READ
6	(6)	HEXSTRING	2	-RESERVED-	RESERVED
8	(8)	SIGNED-FWORD	4	SLXSRC	FAILURE REASON CODE THESE REASON CODES ARE THE ACTUAL RETURN CODES FOR A GIVEN FUNCTION. THEY ARE DOCUMENTED IN ELS MESSAGES AND CODES.
32772	(8004)	CONST		SLXNOALS	HSC IS NOT ACTIVE
32788	(8014)	CONST		SLXQNOA	ASCOMM IS NOT ACTIVE
32792	(8018)	CONST		SLXINVOP	INVALID QUAB OPTION INTERNAL ERROR - CONTACT STK
32780	(800C)	CONST		SLXINVFC	INVALID FUNCTION CODE INTERNAL ERROR - CONTACT STK.
32784	(8010)	CONST		SLXNOLVT	NO LVT INTERNAL ERROR - CONTACT STK.
32804	(8024)	CONST		SLXTABND	ASCOMM SERVER TASK ABENDED
32818	(8032)	CONST		SLXTINTR	CURRENT TASK INTERRUPTED
32822	(8036)	CONST		SLXSANF	SEARCH ARGUMENT NOT FOUND
32826	(803A)	CONST		SLXMSTT	MIS-MATCHED TOKEN TYPES

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
32832	(8040)	CONST		SLXTRNF	TOKEN REQUEST AREA NOT FOUND
32848	(8050)	CONST		SLXSFUL	REPLY AREA SPACE FULL
32849	(8051)	CONST		SLXDVMM	DRIVE/MEDIA MISMATCH THE REQUESTED MEDIA (EITHER DIRECTLY VIA PGMI MEDIA/RECTECH OR INDIRECTLY VIA TAPEREQ) IS NOT COMPATIBLE WITH THE DRIVE SPECIFIED IN THE PGMI CALL
12	(C)	A-ADDR	4	SLXLEN	TOTAL RESPONSE LENGTH.
16	(10)	SIGNED-FWORD	4	SLXPEOFF	PARAMETER ERROR OFFSET
20	(14)	LENGTH		SLXHL	SLX HEADER LENGTH
CONFIGURATION SUMMARY SECTION DIRECTORY					
20	(14)	SIGNED-FWORD	4	SLXXCFGN	NUMBER OF CONFIGURATION ELEMENTS PRESENT IN THIS REPLY
24	(18)	SIGNED-FWORD	4	SLXXCFGO	OFFSET TO CONFIGURATION SECTION FROM START OF REPLY, OR 0 IF REPLY DOESN'T CONTAIN ANY CONFIGURATION ELEMENTS
28	(1C)	SIGNED-FWORD	4	SLXXCFGL	LENGTH OF A CONFIGURATION ELEMENT, OR 0 IF REPLY DOESN'T CONTAIN ANY CONFIGURATION ELEMENTS
VOLUME INFORMATION SECTION DIRECTORY					
32	(20)	SIGNED-FWORD	4	SLXXVOLN	NUMBER OF VOLUME ELEMENTS PRESENT THIS REPLY

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
36	(24)	SIGNED-FWORD	4	SLXXVOLO	OFFSET TO VOLUME SECTION FROM START OF REPLY, OR 0 IF REPLY DOESN'T CONTAIN ANY VOLUME ELEMENTS
40	(28)	SIGNED-FWORD	4	SLXXVOLL	LENGTH OF A VOLUME ELEMENT, OR 0 IF REPLY DOESN'T CONTAIN ANY VOLUME ELEMENTS
DRIVE INFORMATION SECTION DIRECTORY					
44	(2C)	SIGNED-FWORD	4	SLXXDRVN	NUMBER OF DRIVE ELEMENTS PRESENT IN THIS REPLY
48	(30)	SIGNED-FWORD	4	SLXXDRVO	OFFSET TO DRIVE SECTION FROM START OF REPLY, OR 0 IF REPLY DOESN'T CONTAIN A DRIVE SECTION
52	(34)	SIGNED-FWORD	4	SLXXDRVL	LENGTH OF A DRIVE ELEMENTS OR 0 IF REPLY DOESN'T CONTAIN A DRIVE SECTION
LSM INFORMATION SECTION DIRECTORY					
56	(38)	SIGNED-FWORD	4	SLXXLSMN	NUMBER OF LSM ELEMENTS PRESENT IN THIS REPLY
60	(3C)	SIGNED-FWORD	4	SLXXLSMO	OFFSET TO LSM SECTION FROM START OF REPLY, OR 0 IF REPLY DOESN'T CONTAIN A LSM SECTION
64	(40)	SIGNED-FWORD	4	SLXXLSML	LENGTH OF AN LSM ELEMENT, OR 0 IF REPL DOESN'T CONTAIN AN LSM SECTION
MESSAGE TEXT SECTION DIRECTORY					
68	(44)	SIGNED-FWORD	4	SLXXMSGN	NUMBER OF MESSAGE ELEMENTS PRESENT IN THIS REPLY

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
72	(48)	SIGNED-FWORD	4	SLXXMSGO	OFFSET TO MESSAGE SECTION, FROM START OF REPLY, OR 0 IF REPLY DOESN'T CONTAIN ANY MESSAGE ELEMENTS
76	(4C)	SIGNED-FWORD	4	SLXXMSGL	LENGTH OF A MESSAGE ELEMENT
QCAP INFORMATION SECTION DIRECTORY					
80	(50)	SIGNED-FWORD	4	SLXXCAPN	NUMBER OF CAP ELEMENTS PRESENT IN THIS REPLY
84	(54)	SIGNED-FWORD	4	SLXXCAPO	OFFSET TO CAP SECTION FROM START OF REPLY
88	(58)	SIGNED-FWORD	4	SLXXCAPL	LENGTH OF A CAP ELEMENT
QEJECT INFORMATION SECTION DIRECTORY					
92	(5C)	SIGNED-FWORD	4	SLXXQJTN	NUMBER OF QEJECT ELEMENTS PRESENT THIS REPLY
96	(60)	SIGNED-FWORD	4	SLXXQJTO	OFFSET TO QEJECT SECTION FROM START OF REPLY
100	(64)	SIGNED-FWORD	4	SLXXQJTL	LENGTH OF A QEJECT ELEMENT
STOP INFORMATION SECTION DIRECTORY					
104	(68)	SIGNED-FWORD	4	SLXXSTPN	NUMBER OF STOP ELEMENTS PRESENT IN THIS REPLY
108	(6C)	SIGNED-FWORD	4	SLXXSTPO	OFFSET TO STOP SECTION FROM START OF REPLY
112	(70)	SIGNED-FWORD	4	SLXXSTPL	LENGTH OF A STOP ELEMENT
QDSN INFORMATION SECTION DIRECTORY					
116	(74)	SIGNED-FWORD	4	SLXXQDSN	NUMBER OF QDSN ELEMENTS PRESENT IN THIS REPLY

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
120	(78)	SIGNED-FWORD	4	SLXXQDSO	OFFSET TO QDSN SECTION FROM START OF REPLY
124	(7C)	SIGNED-FWORD	4	SLXXQDSL	LENGTH OF A QDSN ELEMENT
VCI INFORMATION SECTION DIRECTORY					
128	(80)	SIGNED-FWORD	4	SLXXVCIN	NUMBER OF VCI ELEMENTS PRESENT IN THIS REPLY
132	(84)	SIGNED-FWORD	4	SLXXVCIO	OFFSET TO VCI SECTION FROM START OF REPLY
136	(88)	SIGNED-FWORD	4	SLXXVCIL	LENGTH OF A VCI ELEMENT
140	(8C)	A-ADDR	4	-RESERVED-(9)	RESERVED FOR FUTURE ENTRIES
176	(B0)	AREA	8	SLXEND	LABEL FOR ADDRESSING NEXT AREA.
176	(B0)	LENGTH		SLXL	SLXLENGTH
CONFIGURATION SUMMARY ELEMENT THIS ELEMENT APPEARS IN THE REPLY TO A QCONFIG REQUEST AND SUPPLIES SUMMARY INFORMATION ABOUT THE LIBRARY AND ABOUT REPLY LENGTHS NECESSARY FOR OTHER TYPES OF REQUESTS.					
0	(0)	STRUCTURE		SLXSCFG	STANDARD
0	(0)	CHARACTER	3	SLXLID	ELEMENT IDENTIFIER
3	(3)	HEXSTRING	1	-RESERVED-	RESERVED
4	(4)	CHARACTER	8	SLXLHNAM	HOST ID
12	(C)	SIGNED-FWORD	4	SLXLHHBT	HOST PULSE VALUE
16	(10)	SIGNED-FWORD	4	SLXLRSTM	RESERVE TIMEOUT LIMIT
20	(14)	CHARACTER	8	SLXLQNAM	ENQ MAJOR NAME
28	(1C)	CHARACTER	8	-RESERVED-	RESERVED
36	(24)	CHARACTER	1	SLXLCMPF	COMMAND PREFIX CHARACTER

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
37	(25)	BITSTRING	1	SLXLSCLB	SCRATCH LABEL TYPE:
0	(00)	CONST		SLXLLBSL	
1	(01)	CONST		SLXLLBAL	ASCII
2	(02)	CONST		SLXLLBNL	NON-LABELED
3	(03)	CONST		SLXLLBNS	NON-STANDARD LABEL
		11.. ..1. X'C2'		SLXLLBBL	BYPASS LABEL (CHARACTER = B)
		11.1 .1.1 X'D5'		SLXLLBNA	LABEL INFO NA (CHARACTER = N)
38	(26)	A-ADDR	1	SLXLSMF	SMF RECORD TYPE
39	(27)	HEXSTRING	1	-RESERVED-	RESERVED
40	(28)	SIGNED-FWORD	4	SLXQMDR	LARGEST NUMBER OF DRIVES IN ANY ACS
44	(2C)	SIGNED-FWORD	4	SLXQDRCT	NUMBER OF DRIVES IN THE LIBRARY
48	(30)	SIGNED-FWORD	4	SLXQACNT	NUMBER OF ACSS IN THE LIBRARY
52	(34)	SIGNED-FWORD	4	SLXQLCNT	NUMBER OF LSMS IN THE LIBRARY
56	(38)	SIGNED-FWORD	4	-RESERVED-(15)	RESERVED - VM LENGTHS
WARNING. THE FOLLOWING FIELD DOES NOT EXIST UNLESS THE VERSION IN SLXVERS IS GREATER THAN 2.					
116	(74)	A-ADDR	4	SLXQUCSA	ADDRESS OF SLSUXCSA.
120	(78)	A-ADDR	4	-RESERVED-	RESERVED VM
124	(7C)	SIGNED-FWORD	4	SLXQLCAP	NUMBER OF CAPS IN THE LIBRARY
128	(80)	SIGNED-FWORD	4	SLXEXLM0	ExLM R15
132	(84)	SIGNED-FWORD	4	SLXEXML1	ExLM R1
136	(88)	SIGNED-FWORD	4	SLXEXLM2	ExLM R2

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
140	(8C)	SIGNED-FWORD	4	-RESERVED-(5)	RESERVED - VM Z-FIELDS
160	(A0)	SIGNED-HWORD	2	SLXHSCV	HSC VERSION NUMBER
162	(A2)	HEXSTRING	6	-RESERVED-	ALIGN TO DOUBLE WORD
168	(A8)	LENGTH		SLXSCFGL	LENGTH
QDSN INFORMATION ELEMENT THIS ELEMENT APPEARS IN THE REPLY TO A QDSN REQUEST AND SUPPLIES SUMMARY INFORMATION ABOUT THE CURRENT REFERENCED DATASETS USED BY HSC.					
0	(0)	STRUCTURE		SLXDSNIM	DATASET INFORMATION MAP
0	(0)	CHARACTER	3	SLXQDID	SECTION IDENTIFIER
3	(3)	BITSTRING	1	SLXDSFLG	DATASET TYPE
1	(01)	CONST		SLXDSPRM	CDS PRIMARY
2	(02)	CONST		SLXDSSEC	CDS SECONDARY
3	(03)	CONST		SLXDSSBY	CDS STANDBY
4	(04)	CONST		SLXDSVAT	VOLUME ATTRIBUTES
5	(05)	CONST		SLXDSUAT	UNIT ATTRIBUTES
6	(06)	CONST		SLXDSTRQ	TAPEREQS
7	(07)	CONST		SLXDSPLB	PARMLIB
8	(08)	CONST		SLXDSJNP	PRIMARY JOURNAL
9	(09)	CONST		SLXDSJNA	ALTERNATE JOURNAL
9	(09)	CONST		SLXDSMAX	MAX NUMBER OF QDS RETURNED
4	(4)	CHARACTER	44	SLXDSNAM	DATASET NAME
48	(30)	CHARACTER	8	SLXDSMBR	MEMBER NAME
56	(38)	CHARACTER	6	SLXDSVOL	VOLUME NAME
62	(3E)	CHARACTER	8	SLXDSUNT	UNIT NAME
70	(46)	CHARACTER	2	-RESERVED-	RESERVED

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
72	(48)	CHARACTER	96	-RESERVED-	RESERVED
168	(A8)	AREA	8	-RESERVED-	ALIGN
168	(A8)	LENGTH		SLXDSNEL	LENGTH OF ONE DATASET ENTRY
CAP INFORMATION ELEMENT THIS ELEMENT SUPPLIES INFORMATION ABOUT A SINGLE LIBRARY CAP					
0	(0)	STRUCTURE		SLXSCAP	
0	(0)	CHARACTER	4	SLXCID	SECTION IDENTIFIER
4	(4)	HEXSTRING	1	SLXCACS	ACS ADDRESS
5	(5)	HEXSTRING	1	SLXCLSM	LSM ADDRESS
6	(6)	HEXSTRING	1	SLXCCAP	CAP NUMBER
7	(7)	HEXSTRING	1	-RESERVED-	RESERVED
8	(8)	AREA	2	SLXCSTAT	CAP STATUS
8	8	BITSTRING	1	SLXCSTB1	CAP STATUS
		1... .... X'80'		SLXCSTCA	CAP IS ACTIVE
		.1.. .... X'40'		SLXCSTNR	CAP NEEDS RECOVERY
		..1. .... X'20'		SLXCSTAM	CAP IS IN AUTOMATIC MODE
		...1 .... X'10'		SLXCSTCL	CAP IS LINKED
		.... 1... X'08'		SLXCSTCO	CAP IS ONLINE
9	(9)	BITSTRING	1	SLXCSTB2	CAP MODE
		1... .... X'80'		SLXCSTIE	CAP IS ENTERING
		.1.. .... X'40'		SLXCSTID	CAP IS DRAINING
		..1. .... X'20'		SLXCSTIJ	CAP IS EJECTING
		...1 .... X'10'		SLXCSTIC	CAP IS CLEANING
		.... 1... X'08'		SLXCSTII	CAP IS IDLE
10	(A)	BITSTRING	1	SLXCTYPE	TYPE OF CAP
		1... .... X'80'		SLXCTPC	PRIORITY CAP
		....1 X'01'		SLXCTCIM	CIMARRON

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
		.... ..1. X'02'		SLXCTCLP	CLIPPER
		.... ..11 X'03'		SLXCTTWS	STANDARD CLIPPER
		.... .1.. X'04'		SLXCTTWO	OPTIONAL CLIPPER
		.... .1.1 X'05'		SLXCTTIM	(9740/TIMBERWOLF)
12	(C)	SIGNED-HWORD	2	SLXCCELL	CELLS IN CAP
14	(E)	HEXSTRING	1	SLXCNROW	ROWS
15	(F)	HEXSTRING	1	SLXCNCOL	COLUMNS
16	(10)	HEXSTRING	1	SLXCCMAG	MAGAZINES
17	11	HEXSTRING	1	SLXCCMGC	CELLS IN MAGAZINE
18	(12)	CHARACTER	8	SLXCJOB	JOBNAME OF OWNER
26	(1A)	HEXSTRING	6	-RESERVED-	ALIGN TO DOUBLE WORD
32	(20)	LENGTH		SLXSCAPL	LENGTH
QEJECT INFORMATION ELEMENT THIS ELEMENT SUPPLIES INFORMATION ABOUT A SINGLE EJECT VOLUME AND IS REPEATED FOR EACH VOLUME WITHIN AN EJECT LIST					
0	(0)	STRUCTURE		SLXQJT	
0	(0)	CHARACTER	4	SLXQID	SECTION IDENTIFIER
4	(4)	HEXSTRING	4	SLXQJTT	TOKEN OF EJECT TASK
8	(8)	HEXSTRING	4	SLXQJTC	EJECT (ACS / LSM / CAP 00)
12	(C)	HEXSTRING	2	SLXQJTS	TARGETED VOLUME EJECT STATUS
65535	(FFFF)	CONST		SLXQJTN	VOLUME NOT PROCESSED YET
0	(00)	CONST		SLXQJTD	VOLUME HAS BEEN EJECTED
14	(E)	HEXSTRING	6	SLXQJTV	VOLUME NUMBER
20	(14)	HEXSTRING	4	-RESERVED-	ALIGN TO DOUBLE WORD
24	(18)	LENGTH		SLXQJTL	LENGTH

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
STOP INFORMATION ELEMENT THIS ELEMENT SUPPLIES STATUS FOR A TOKEN OF A PGMI TASK REQUESTED TO BE STOPPED. THIS DEFINITION WILL BE REPEATED FOR EACH ELEMENT WITHIN A TASK STOP LIST					
0	(0)	STRUCTURE		SLXSTP	
0	(0)	CHARACTER	4	SLXSID	SECTION IDENTIFIER
4	(4)	HEXSTRING	4	SLXSTPT	TOKEN NUMBER
8	(8)	HEXSTRING	1	SLXSTPY	TARGET PROCESS TYPE X'FF' PROCESS TYPE UNKNOWN
9	(9)	BITSTRING	1	SLXSTPS	TARGET PROCESS STOP STATUS
		.... X'00'		SLXSTPK	PROCESS MARKED TO STOP
		111. 111. X'EE'		SLXSTPE	PROCESS DOES NOT SUPPORT STOP
		1111 1111 X'FF'		SLXSTPN	SLXSTPN PROCESS TOKEN NOT FOUND
10	(A)	HEXSTRING	6	-RESERVED-	ALIGN TO DOUBLE WORD
16	(10)	LENGTH		SLXSTPL	LENGTH
VOLUME INFORMATION ELEMENT THIS ELEMENT SUPPLIES INFORMATION ABOUT A SINGLE VOLUME AND IS REPEATED FOR EACH VOLUME ASSOCIATED WITH A REQUEST. THIS ELEMENT MAY APPEAR IN REPLIES TO THE FOLLOWING REQUESTS: QDRLIST - RETURN DRIVE INFORMATION, ORDERED BY PREFERENCE QVOLUME - RETURN VOLUME INFORMATION SELSCR - SELECT A SCRATCH VOLUME EJECT - EJECT VOLUMES					
0	(0)	STRUCTURE		SLXSVOL	
0	(0)	CHARACTER	3	SLXVID	SECTION IDENTIFIER
3	(3)	BITSTRING	1	SLXVSTA	VOLUME STATUS:
		1... .... X'80'		SLXVILB	VOLUME IS IN LIBRARY
		.1.. .... X'40'		SLXVOHST	VOLUME IS IN USE BY ANOTHER HOST

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
		..1. .... X'20'		SLXVSCR	VOLUME IS CONSIDERED SCRATCH
		...1 .... X'10'		SLXVMAL	VOLUME IS IN MANUAL-MODE LSM
		.... 1... X'08'		SLXVDSC	VOLUME IS IN DISCONNECTED ACS
		.... .1.. X'04'		SLXVMNT	VOLUME IS MOUNTED ON A DRIVE
		.... ..1. X'02'		SLXVERR	VOLUME IS 'ERRANT' (I.E. ITS LOCATION WITHIN THE LIBRARY IS UNCERTAIN) EQU X'01' RESERVED
		....1 X'01'		SLXVTV	VOLUME IS A VTCS VIRTUAL VOLUME
4	(4)	CHARACTER	6	SLXVSER	VOLUME SERIAL
10	(A)	A-ADDR	1	SLXVLC	VOLUME LOCATION CODE:
0	(00)	CONST		SLXVUNK	LOCATION DATA UNAVAILABLE (SLXVLOC IS
1	(01)	CONST		SLXVCEL	LOCATION DATA IS A CELL ADDRESS
2	(02)	CONST		SLXVDRV	LOCATION DATA IS A DRIVE ADDRESS
11	(B)	AREA	5	SLXVLOC	VOLUME LOCATION DATA:
11	(B)	HEXSTRING	1	SLXVACS	ACS ADDRESS
12	(C)	HEXSTRING	1	SLXVLSM	LSM ADDRESS
13	(D)	HEXSTRING	3	SLXVPNL	PANEL, ROW, COL
13	(D)	HEXSTRING	2	SLXVDRIV	DRIVE ADDRESS (0CUU)
15	(F)	BITSTRING	1	SLXVSTA2	MORE VOLUME STATUS: EQU X'E0' RESERVED
		....1 .... X'10'		SLXVMLMU	VOLUME MEDIA TYPE CAME FROM LMU. EQU X'08' RESERVED.

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
		.... .1.. X'04'		SLXVMUNR	VOLUME MEDIA TYPE UNREADABLE.
		.... ..1. X'02'		SLXVMVLA	VOLUME MEDIA TYPE CAME FROM VOLATTR
		....1 X'01'		SLXVMDFL	VOLUME MEDIA TYPE DEFAULT ASSIGNED.
16	(10)	AREA	8	SLXVTSSN	VTSS NAME
16	(10)	SIGNED-FWORD	4	SLXVDATI	HI-WORD OF TOD AT INSERTION
20	(14)	SIGNED-FWORD	4	SLXVDATL	HI-WORD OF TOD LAST SELECTION
24	(18)	SIGNED-FWORD	4	SLXVSCNT	SELECTION COUNT
28	(1C)	SIGNED-FWORD	4	SLXVDATD	HI-WORD OF TOD LAST MOUNT/DISMOUNT
32	(20)	CHARACTER	8	SLXVMED	TYPE OF MEDIA
40	(28)	AREA	8	-RESERVED-	ALIGN
40	(28)	LENGTH		SLXSVOLL	LENGTH OF SLXSVOL
DRIVE INFORMATION ELEMENT THIS ELEMENT SUPPLIES INFORMATION ABOUT A SINGLE LIBRARY TAPE DRIVE AND IS REPEATED FOR EACH DRIVE ASSOCIATED WITH A REQUEST. THIS ELEMENT MAY APPEAR IN REPLIES TO THE FOLLOWING REQUESTS: QDRIVES - RETURN DRIVE AND LSM INFORMATION QDRLIST - RETURN DRIVE INFORMATION, ORDERED BY PREFERENCE					
0	(0)	STRUCTURE		SLXSDRV	
0	(0)	CHARACTER	3	SLXDID	SECTION IDENTIFIER
3	(3)	BITSTRING	1	SLXDSTA	LIBRARY STATUS
		...1 .... X'10'		SLXDMANU	LSM IS IN MANUAL MODE
		.... 1... X'08'		SLXDDISC	ACS IS DISCONNECTED
		....1 X'01'		SLXDVIRT	DRIVE IS VIRTUAL
4	(4)	HEXSTRING	1	SLXQDEAC	ACS ADDRESS
5	(5)	HEXSTRING	1	SLXQDELS	LSM ADDRESS

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
6	(6)	HEXSTRING	2	SLXQDECU	DRIVE ADDRESS (0CUA)
8	(8)	CHARACTER	8	SLXQDRT	RECORDING TECHNIQUE OF DRIVE
16	(10)	AREA	8	-RESERVED-	ALIGN
16	(10)	LENGTH		SLXSDRVL	LENGTH OF SLSXDRV
LSM INFORMATION ELEMENT THIS ELEMENT SUPPLIES INFORMATION ABOUT A SINGLE LSM (LIBRARY STORAGE MODULE) AND IS REPEATED FOR EACH LSM ASSOCIATED WITH A REQUEST. THIS ELEMENT MAY APPEAR IN REPLIES TO THE FOLLOWING REQUESTS: QDRIVES - RETURN DRIVE AND LSM INFORMATION QDRLIST - RETURN LSM INFORMATION FOR SCRATCH=YES QSCRATCH - RETURN LSM INFORMATION, ORDERED BY PREFERENCE					
0	(0)	STRUCTURE		SLXSLSM	
0	(0)	CHARACTER	3	SLXMID	SECTION IDENTIFIER
3	(3)	BITSTRING	1	SLXMSTAT	LSM STATUS FLAGS:
		...1 .... X'10'		SLXMANUL	LSM IS IN MANUAL MODE
		.... 1... X'08'		SLXMDISC	LSM'S ACS IS DISCONNECTED
4	(4)	HEXSTRING	1	SLXMACS	ACS ADDRESS
5	(5)	HEXSTRING	1	SLXMLSM	LSM ADDRESS
6	(6)	A-ADDR	1	SLXMADJN	NUMBER OF ADJACENT LSMS
7	(7)	A-ADDR	1	SLXMADJI(4)	ADJACENT LSM INDICES (ONLY THE FIRST N IDS ARE VALID, WHERE N IS THE VALUE IN SLXMADJN)
11	(B)	HEXSTRING	1	-RESERVED-	RESERVED
12	(C)	SIGNED-FWORD	4	SLXMNSCR	SCRATCH COUNT FOR LSM
16	(10)	SIGNED-FWORD	4	SLXMTCEL	TOTAL CELLS IN LSM
20	(14)	SIGNED-FWORD	4	SLXMFCEL	LSM FREE CELL COUNT

TABLE 1-1 SLSXREQM Record Format

Dec	Hex	Type	Length	Label	Description
24	(18)	LENGTH		SLXSLSML	LENGTH
MESSAGE TEXT ELEMENT THIS ELEMENT SUPPLIES THE COMPLETE TEXT OF THE MESSAGE WHOSE BINARY MESSAGE ID NUMBER IS REPORTED IN HEADER FIELD SLXSRC. THIS ELEMENT MAY APPEAR IN REPLIES TO THE FOLLOWING REQUESTS: DISMOUNT - DISMOUNT A VOLUME MOUNT - MOUNT A VOLUME EJECT - EJECT VOLUMES					
0	(0)	STRUCTURE		SLXSMSG	MESSAGE TEXT ELEMENT
0	(0)	CHARACTER	3	SLXGID	ELEMENT IDENTIFIER
3	(3)	CHARACTER	125	SLXGTEXT	TEXT OF A MESSAGE. FOR MOUNT AND DISMOUNT, THE MESSAGE NUMBER IS IN FIELD SLXSRC OF THE REPLY HEADER
128	(80)	AREA	8	-RESERVED-	ALIGN
128	(80)	LENGTH		SLXSMSGL	LENGTH

Cross Reference

Name	Len	Offset Value
SLSXACS	000001	4A
SLSXALC	000004	4A
SLSXCAP	000004	4A
SLSXCNT	000002	38
SLSXCOL	000001	50
SLSXDRIV	000002	54
SLSXDSM	-	2A
SLSXDSN	000044	9D
SLSXEJCT	-	2B
SLSXEXPD	000003	C9

Name	Len	Offset Value
SLSXFDSN	-	10
SLSXFEXP	-	08
SLSXFJOB	-	80
SLSXFLG1	000001	0A
SLSXFLG2	000001	0B
SLSXFLG3	000001	0C
SLSXFLG4	000001	0D
SLSXFLG5	000001	0E
SLSXFLG6	000001	0F
SLSXFLG7	000001	10
SLSXFLG8	000001	84
SLSXFLG9	000001	CF
SLSXFMED	-	40
SLSXFMGT	-	20
SLSXFPGM	-	20
SLSXFREC	-	80
SLSXFRET	-	04
SLSXFSTP	-	40
SLSXFVOL	-	02
SLSXF101	-	01
SLSXF102	-	02
SLSXF104	-	04
SLSXF108	-	08
SLSXF110	-	10
SLSXF120	-	20
SLSXF140	-	40
SLSXF308	-	08
SLSXF410	-	10
SLSXF420	-	20
SLSXF601	-	01
SLSXF602	-	02

Name	Len	Offset Value
SLSXHDR	000004	00
SLSXHOST	000008	42
SLSXID	-	‘CVAL’
SLSXJOBN	000008	85
SLSXLABT	000001	11
SLSXLAL	-	02
SLSXLCAP	-	04
SLSXLEN	000004	04
SLSXLIST	000001	1E0
SLSXLLDT	-	00
SLSXLN	-	1E0
SLSXLNL	-	03
SLSXLNS	-	04
SLSXLOFF	000002	3A
SLSXLSL	-	01
SLSXLSMI	000002	4A
SLSXLSTA	000004	34
SLSXLTOK	-	04
SLSXLVSL	-	06
SLSXMCAP	-	1F4
SLSXMED	000008	D8
SLSXMGMT	000008	E6
SLSXMNT	-	28
SLSXMOVE	-	29
SLSXMTOK	-	1F4
SLSXMVSL	-	1F4
SLSXNOOP	-	00
SLSXPAN	000001	4E
SLSXPGMN	000008	95
SLSXPOOL	000001	56
SLSXPROT	-	80

Name	Len	Offset Value
SLSXQCAP	-	1A
SLSXQCNF	-	14
SLSXQDRL	-	16
SLSXQDRV	-	15
SLSXQDSN	-	1D
SLSXQEJT	-	19
SLSXQHSC	-	01
SLSXQRQS	-	1C
SLSXQSCR	-	17
SLSXQVOL	-	18
SLSXREAD	-	03
SLSXRECT	000008	D0
SLSXREST	-	02
SLSXRETP	000002	CC
SLSXRLEN	000004	2C
SLSXROW	000001	4F
SLSXRS05	-	05
SLSXRS17	-	1B
SLSXRS63	-	3F
SLSXRS64	-	40
SLSXRT	000001	09
SLSXSCR	-	40
SLSXSCRA	-	3D
SLSXSP	-	‘W’
SLSXSSCR	-	3C
SLSXSTEP	000008	8D
SLSXSTOP	-	04
SLSXSUBN	-	10
SLSXSUBP	000013	77
SLSXSYNC	-	80
SLSXTEXT	000032	57

Name	Len	Offset Value
SLSXTKNO	000004	30
SLSXTLSM	000002	51
SLSXTPAN	000001	53
SLSXTRI	-	85
SLSXTRIL	-	4A
SLSXUNSC	-	3E
SLSXVACS	-	40
SLSXVCAP	-	10
SLSXVCI	-	46
SLSXVCIL	000002	E4
SLSXVCIP	000004	E0
SLSXVCIR	-	47
SLSXVCIT	000004	E0
SLSXVCNT	-	01
SLSXVCOL	-	02
SLSXVDRV	-	01
SLSXVER	000001	08
SLSXVHST	-	80
SLSXVLSM	-	20
SLSXVLST	-	02
SLSXVN	-	09
SLSXVOLS	000006	3C
SLSXVOLT	000001	CE
SLSXVPAN	-	08
SLSXVROW	-	04
SLSXVSCP	-	20
SLSXVTKN	-	08
SLSXVTLM	-	80
SLSXVTPN	-	40
SLSXVTXT	-	04
SLSXVVOL	-	04

Name	Len	Offset Value
SLXCACS	000001	04
SLXCCAP	000001	06
SLXCCELL	000002	0C
SLXCCMAG	000001	10
SLXCCMGC	000001	11
SLXCID	000004	00
SLXCJOB	000008	12
SLXCLSM	000001	05
SLXCMDRC	000001	03
SLXCNCOL	000001	0F
SLXCNROW	000001	0E
SLXCSTAM	-	20
SLXCSTAT	000002	08
SLXCSTB1	000001	08
SLXCSTB2	000001	09
SLXCSTCA	-	80
SLXCSTCL	-	10
SLXCSTCO	-	08
SLXCSTIC	-	10
SLXCSTID	-	40
SLXCSTIE	-	80
SLXCSTII	-	08
SLXCSTIJ	-	20
SLXCSTNR	-	40
SLXCTCIM	-	01
SLXCTCLP	-	02
SLXCTPC	-	80
SLXCTTIM	-	05
SLXCTTWO	-	04
SLXCTTWS	-	03
SLXCTYPE	000001	0A

Name	Len	Offset Value
SLXDDISC	-	08
SLXDID	000003	00
SLXDMANU	-	10
SLXDSFLG	000001	03
SLXDSJNA	-	09
SLXDSJNP	-	08
SLXDSMAX	-	09
SLXDSMBR	000008	30
SLXDSNAM	000044	04
SLXDSNEL	-	A8
SLXDSPLB	-	07
SLXDSPRM	-	01
SLXDSSBY	-	03
SLXDSSEC	-	02
SLXDSTA	000001	03
SLXDSTRQ	-	06
SLXDSUAT	-	05
SLXDSUNT	000008	3E
SLXDSVAT	-	04
SLXDSVOL	000006	38
SLXDVIRT	-	01
SLXDVMM	-	8051
SLXEND	000008	B0
SLXEXLM0	000004	80
SLXEXLM1	000004	84
SLXEXLM2	000004	88
SLXGID	000003	00
SLXGTEXT	000125	03
SLXHID	000003	00
SLXHL	-	14
SLXHSCV	000002	A0

Name	Len	Offset Value
SLXINVFC	-	800C
SLXINVOP	-	8018
SLXL	-	B0
SLXLCMPF	000001	24
SLXLEN	000004	0C
SLXLHHBT	000004	0C
SLXLHNAM	000008	04
SLXLID	000003	00
SLXLLBAL	-	01
SLXLLBBL	-	C2
SLXLLBNA	-	D5
SLXLLBNL	-	02
SLXLLBNS	-	03
SLXLLBSL	-	00
SLXLOCKD	-	20
SLXLQNAM	000008	14
SLXLRSTM	000004	10
SLXLSCLB	000001	25
SLXLSMF	000001	26
SLXMACS	000001	04
SLXMADJI	000001	07
SLXMADJN	000001	06
SLXMANUL	-	10
SLXMDISC	-	08
SLXMFCEL	000004	14
SLXMID	000003	00
SLXMLSM	000001	05
SLXMNSCR	000004	0C
SLXMSTAT	000001	03
SLXMSTT	-	803A
SLXMTCEL	000004	10

Name	Len	Offset Value
SLXNOALS	-	8004
SLXNOLVT	-	8010
SLXNORSP	-	28
SLXNTCB	-	1C
SLXPEOFF	000004	10
SLXQACNT	000004	30
SLXQDEAC	000001	04
SLXQDECU	000002	06
SLXQDELS	000001	05
SLXQDID	000003	00
SLXQDRCT	000004	2C
SLXQDRT	000008	08
SLXQID	000004	00
SLXQJTC	000004	08
SLXQJTD	-	00
SLXQJTL	-	18
SLXQJTN	-	FFFF
SLXQJTS	000002	0C
SLXQJTT	000004	04
SLXQJTV	000006	0E
SLXQLCAP	000004	7C
SLXQLCNT	000004	34
SLXQMDR	000004	28
SLXQNOA	-	8014
SLXQUCSA	000004	74
SLXRBADL	-	2C
SLXRBADP	-	08
SLXRBTOK	-	3C
SLXREOV	-	34
SLXRFAIL	-	10
SLXRFLG1	000001	05

Name	Len	Offset Value
SLXRIERR	-	0C
SLXRNAUT	-	18
SLXRNHSC	-	14
SLXRNVCI	-	30
SLXROK	-	00
SLXROKM	-	80
SLXRPLY	000001	00
SLXRVNV	-	38
SLXRWARN	-	04
SLXSANF	-	8036
SLXSCAPL	-	20
SLXSCFGL	-	A8
SLXSDRVL	-	10
SLXSFUL	-	8050
SLXSID	000004	00
SLXSLSML	-	18
SLXSMSGL	-	80
SLXSP	-	‘W’
SLXSRC	000004	08
SLXSTPE	-	EE
SLXSTPK	-	00
SLXSTPL	-	10
SLXSTPN	-	FF
SLXSTPS	000001	09
SLXSTPT	000004	04
SLXSTPY	000001	08
SLXSVOLL	-	28
SLXTABND	-	8024
SLXTINTR	-	8032
SLXTPROT	-	24
SLXTRNF	-	8040

Name	Len	Offset Value
SLXVACS	000001	0B
SLXVCEL	-	01
SLXVCODE	-	09
SLXVDATD	000004	1C
SLXVDATI	000004	10
SLXVDATL	000004	14
SLXVDRIV	000002	0D
SLXVDRV	-	02
SLXVDSC	-	08
SLXVERR	-	02
SLXVERS	000001	04
SLXVID	000003	00
SLXVILB	-	80
SLXVLC	000001	0A
SLXVLOC	000005	0B
SLXVLSM	000001	0C
SLXVMAL	-	10
SLXVMDFL	-	01
SLXVMED	000008	20
SLXVMLMU	-	10
SLXVMNT	-	04
SLXVMUNR	-	04
SLXVMVLA	-	02
SLXVOHST	-	40
SLXVPNL	000003	0D
SLXVSCNT	000004	18
SLXVSCR	-	20
SLXVSER	000006	04
SLXVSTA	000001	03
SLXVSTA2	000001	0F
SLXVTSSN	000008	10

Name	Len	Offset Value
SLXVTV	-	01
SLXVUNK	-	00
SLXXCAPL	000004	58
SLXXCAPN	000004	50
SLXXCAPO	000004	54
SLXXCFGL	000004	1C
SLXXCFGN	000004	14
SLXXCFGO	000004	18
SLXXDRVL	000004	34
SLXXDRVN	000004	2C
SLXXDRVO	000004	30
SLXXLSML	000004	40
SLXXLSMN	000004	38
SLXXLSMO	000004	3C
SLXXMSGL	000004	4C
SLXXMSGN	000004	44
SLXXMSGO	000004	48
SLXXQDSL	000004	7C
SLXXQDSN	000004	74
SLXXQDSO	000004	78
SLXXQJTL	000004	64
SLXXQJTN	000004	5C
SLXXQJTO	000004	60
SLXXSTPL	000004	70
SLXXSTPN	000004	68
SLXXSTPO	000004	6C
SLXXVCIL	000004	88
SLXXVCIN	000004	80
SLXXVCIO	000004	84
SLXXVOLL	000004	28
SLXXVOLN	000004	20

Name	Len	Offset Value
SLXXVOLO	000004	24

CHAPTER 2

Batch Application Program Interface (API)

Overview

The Batch API allows you to retrieve CDS information in batch mode. The CDS specified as input to the request does not have to be active nor does it have to be currently referenced by HSC address space (the request can execute entirely in the user address space). In addition, HSC does not have to be active to submit the request.

Note – The Batch API has been superseded by the UUI CDSDATA, VOLRPT and MVCRPT functions. For more information, see the *ELS Programming Reference* and *ELS Command, Control Statement, and Utility Reference*.

QCDS Request

The QCDS request reads records from the input CDS and provides information about various library elements (e.g., CAPs, drives, volumes, and so forth). QCDS requests are synchronous, meaning that multiple requests cannot be active at the same time.

QCDS does not interact with HSC address space except when the request specifies automatic allocation of the CDS. In this case, HSC executes a single query operation to obtain data set information for CDS dynamic allocation. All other request processing occurs in the user address space. QCDS requests are limited to a single task within the current job step.

How QCDS Functions

QCDS automatically creates a DCB and opens and closes an input CDS as required. The request opens the CDS only if no other library element record areas are currently open for that CDS. Conversely, QCDS closes the CDS only if all other record areas for that CDS are closed.

Note – Do not issue MVS I/O macros or instructions for an input CDS whenever any associated record area is open.

Invoking QCDS (SLSUREQ Macro)

QCDS requests are issued by the SLSUREQ macro. Results from the request are returned in a response area that contains a reply header describing the results and a set of library element records. The response area must be long enough to contain the reply header and at least one library element record of the requested type. A read request transfers as many whole records as possible without exceeding the response area capacity.

Note – To retrieve individual records from the response area, deblock those records using the record length constant settings provided in the SLUV*x*DAT record formats.

The SLSUREQM macro maps the SLSUREQ reply header, parameter list, and return code values. Refer to "SLSUREQM Macro" on page 167 to see the record layout.

Reply header length is defined in SLSUREQM, and library element record lengths are defined in the SLUV*x*DAT macros. Return codes for each request (see "Return Codes" on page 156) are stored in register 15.

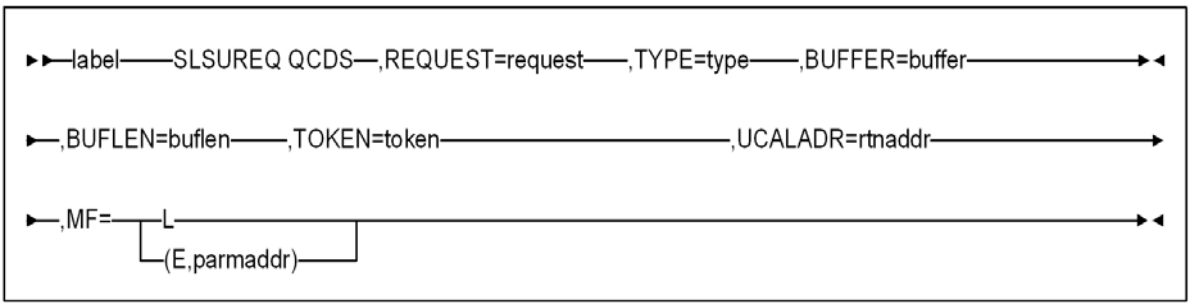
Addresses and Registers

- RX-type address: specifies an address that is valid in an RX-type instruction.

- Register (2) - (12): indicates that one of the general registers, 2 through 12, should be specified, enclosed in parentheses. The register must have been previously loaded with the value required by the parameter. Unused bits must be zeroed.
- Register (13) must point to a 72-byte MVS register save area when a QCDS request is issued.
- Register (15): stores QCDS request return codes.

Syntax

The syntax for the QCDS request is:



Parameters

label

label indicates a user-defined assembler label.

REQUEST

request indicates to access a library element record area.

OPEN

specifies to open a library element area and move to the first record of the area.

READ

specifies to retrieve the next group of library element records.

CLOSE

specifies to close a library element area.

This parameter is required.

TYPE

type indicates a library element record area type.

ACS

specifies the ACS/LSM record area

CAP

specifies the CAP record area

CDS

specifies the CDS information record area

CFG

specifies the configuration record area

DRV

specifies the drive record area

HST

specifies the host information record area

MVC

specifies the Multi-Volume Cartridge record area

STA

specifies the station record area

VOL

specifies the volume record area

VTV

specifies the Virtual Tape Volume record area

This parameter is required.

BUFFER

buffer indicates an RX-type fullword location or a register (2) - (12) containing the response area address for this READ request.

This parameter is required for the READ request but is ignored for OPEN and CLOSE requests.

BUFLEN

buflen indicates an RX-type fullword location or a register (2) - (12) containing the response area length for this READ request.

This parameter is required for the READ request but is ignored for OPEN and CLOSE requests.

TOKEN

token indicates an RX-type fullword location or a register (2) - (12) containing a fullword address that maintains QCDS state information for an input CDS.

The token value for an OPEN request must be zero when no associated CDS record areas are open. In this case, OPEN assigns a value to token that must be presented with all other QCDS requests for that CDS.

When all record areas of the CDS are closed, the token is no longer valid.

UCALADR

rtnaddr indicates an RX-type fullword location, register (15), or a register (2) - (12) containing the address of the SLSUCAL routine.

This parameter is required. You must load the SLSUCAL module into storage before issuing a QCDS request.

MF

indicates either the list or execute form of the macro.

L

specifies the list form of the macro. This parameter generates a remote parameter list that can be referenced by the execute form of the macro.

Note – When **L** is specified, all other parameters are ignored.

E,*parmaddr*

specifies the execute form of the macro. parmaddr is an RX-type address or a register (1) - (12) containing the address of the remote parameter list.

This parameter is required.

QCDS Programming Considerations

- Only one instance of each library element record area can be open for each invocation.
- QCDS does not account for CDS switches for any open input CDS.
- The job step or task should define DDname SYSMDUMP to capture diagnostic information if an internal QCDS error occurs.
- Record order within a library element record area is unpredictable.

Note –

1. A CDS can be allocated to ddname SLSCNTL in the JCL or in a SVC 99 dynamic allocation request before issuing QCDS requests. If neither of these allocation methods has been used, QCDS tries to open an active HSC CDS. In this case, the HSC address space must be active or the OPEN fails.
2. The input CDS does not need to be active or referenced by HSC address space.

Return Codes

Invalid SLSUREQ requests and QCDS access requests provide return codes in register 15. TABLE 2-1 shows the list of return codes.

TABLE 2-1 Batch API Return Codes

Return Field Name:	Decimal Value and Description:
Invalid SLSUREQ Requests:	
SLURRQPL	1000 - SLSUREQ request failed: Invalid SLSUREQ parameter list.
SLURRQRT	1001 - SLSUREQ request failed: Invalid SLSUREQ request type.
SLURQCRT	1002 - SLSUREQ request failed: Invalid QCDS access request type.
OPEN Return Codes:	
SLUROPOK	0 - Record area was opened successfully.

TABLE 2-1 Batch API Return Codes (Continued)

Return Field Name:	Decimal Value and Description:
SLUROPAO	4 - Open failed: Attempt to open a record area that is already open.
SLUROPIT	8 - Open failed: Invalid token value.
SLUROPRA	12 - Open failed: Invalid record area type.
SLUROPIO	16 - Open failed: I/O error while accessing the associated CDS.
SLUROPDD	20 - Open failed: An input CDS is not allocated to the designated DDname.
SLUROPNA	24 - Open failed: HSC address space not operational during automatic CDS allocation attempt.
SLUROPDA	28 - Open failed: Error during automatic CDS dynamic allocation operation.
READ Return Codes:	
SLURRDOK	0 - Successful read. One or more records were transferred to the response area and one or more additional records can be obtained by a subsequent READ request.
SLURRDEA	4 - Successful read. One or more records were transferred to the response area and no additional records can be read from the associated record area.
SLURRDIT	8 - Read failed: Invalid token value.
SLURRDRA	12 - Read failed: Invalid record area type.
SLURRDIO	16 - Read failed: I/O error while accessing the associated CDS.
SLURRDNO	20 - Read failed: Attempt to read a record area that is not currently open.
SLURRDBA	24 - Read failed: Attempt to read beyond the end of the record area.
SLURRDIB	28 - Read failed: Invalid response area buffer address.
SLURRDIL	32 - Read failed: Response area buffer length too short to contain both the reply header and at least one library element record.
CLOSE Return Codes:	
SLURCLOK	0 - Record area was closed successfully.
SLURCLAC	4 - Close failed: Attempt to close a record area that is already closed.
SLURCLIT	8 - Close failed: Invalid token value.
SLURCLRA	12 - Close failed: Invalid record area type.
SLURCLIO	16 - Close failed: I/O error while accessing the associated CDS.

Sample QCDS Requests

The following QCDS program samples detail two different scenarios:

- a request to open the current primary CDS
- a request to process two library element record area types.

Both of these examples can be found in the SAMPLIB data set distributed to customers. Error processing code has been omitted in the examples.

Sample 1 - Reading the Volume Record Area of the Current Primary CDS

This sample QCDS request uses automatic CDS allocation to open the current primary CDS. Automatic CDS allocation does not require JCL to identify the input CDS but does require an operational HSC address space.

After opening the CDS volume record area, the program reads groups of volume records into a 64KB response area buffer.

```
QCDSVTV  TITLE 'QCDS Read current primary CDS VTV record area'
*
*
* Function: Use QCDS to automatically allocate and Open the
*               current primary CDS. Issue SLSUREQ QCDS requests to
*               read all the VTV records.
*
* Attributes:
*       1. Problem state, user key.
*       2. Non-APF authorized.
*       3. AMODE 24, RMODE 24 (for below-the-line QSAM), reentrant.
*
* Notes:
*       The caller must have read access for the current primary
*       CDS.
*
**ENDPROLOGUE*************************************************
         PRINT GEN
         ENTRY QCDSVTV
QCDSVTV  CSECT
QCDSVTV  AMODE 24         Below the line for QSAM (PUT macro).
QCDSVTV  RMODE 24
*
* Save the caller's registers, establish CSECT addressability
* and create the module work area:
*
         STM   R14,R12,12(R13)  Save registers
         LR    R12,R15          Load base register R12
         USING QCDSVTV,R12      Declare CSECT base register R12
         GETMAIN R,LV=WKAREAL   Allocate module work area
         ST    R13,WKSAVE-WKAREA+4(,R1) Link new save area to old one
         ST    R1,8(,R13)       Link old save area to new one
         LR    R13,R1           Pointer to module work area
         USING WKAREA,R13       Addressability to module work area
*
* Load module SLSUCAL:
*
         LOAD  EP=SLSUCAL       Load SLSUCAL into storage
         ST    R0,WKUCAL        Save SLSUCAL routine address
*
* Initialize the QCDS token and the SLSUREQ plist:
*
         XC    WKTOK,WKTOK      QCDS token initially zero
         LA    R0,WKQCDS        Pointer to SLSUREQ plist storage
         LA    R1,QCDSMLEN      Length of SLSUREQ plist
         LA    R14,QCDSMODL     Pointer to SLSUREQ plist model
         LR    R15,R1           Length of SLSUREQ plist model
         MVCL  R0,R14           Initialize SLSUREQ plist storage
*
```

FIGURE 2-1 Sample 1 - Query CDS Read - 1 of 4

```
         MVC   WKFLATDD(KFLATDDL),KFLATDD Initialize the working
         LA    R4,WKFLATDD     storage version of the DCB from the
         OPEN  ((R4),(OUTPUT)) copy in the constants area.
*
* Use QCDS OPEN to automatically allocate the current primary CDS
* and open the VTV record area:
*
OPENVOL  DS    0H              Open CDS VTV record area:
         SLSUREQ QCDS,                                          +
               REQUEST=OPEN,                                    +
               TYPE=VTV,                                        +
               TOKEN=WKTOK,                                     +
               UCALADR=WKUCAL,                                  +
               MF=(E,WKQCDS)
         C     R15,=A(SLUROPOK) Check for OPEN failure
         BNE   OPENERR          Handle OPEN error
*
* Allocate response area buffer and map the response area:
*
         L     R0,QCDSBLEN      Load response area buffer length
         GETMAIN R,LV=(0)       Request storage
         ST    R1,WKBUFP        Store pointer to response area
         LR    R10,R1           Load pointer to response area
         USING SLUR,R10         Map QCDS READ response area
*
* Outer loop - read CDS VTV record area in blocks:
*
READVOL  DS    0H              Read block of VTV records:
         SLSUREQ QCDS,                                          +
               REQUEST=READ,                                    +
               TYPE=VTV,                                        +
               BUFFER=WKBUFP,                                   +
               BUFLEN=QCDSBLEN,                                 +
               TOKEN=WKTOK,                                     +
               UCALADR=WKUCAL,                                  +
               MF=(E,WKQCDS)
         ST    R15,WKRDRC       Save READ return code
         C     R15,=A(SLURRDEA) Check for READ failure
         BH    READERR          Handle READ error
         L     R9,SLURQCDN      Get number of VTV records
*                               present in this reply
         L     R7,SLURQCDO      Offset to first VTV record
         LA    R8,SLURRPLY(R7)  Pointer to first VTV record
         USING SLUVTDAT,R8      Map VTV record
*
```

FIGURE 2-2 Sample 1 - Query CDS Read - 2 of 4

```
* Inner loop - process each VTV record in the response area:
*
VOLPROC  DS    0H               Over all VTV records in reply:
*          ... process VTV record here ...
         PUT   WKFLATDD,((R8))
         LA    R8,VDRECLEN(,R8) Pointer to next VTV record
         BCT   R9,VOLPROC       Process next VTV record
CHECKEOA DS    0H               Check for more VTV records
         CLC   WKRDRC,=A(SLURRDEA) VTV end-of-area?
         BNE   READVOL          No, read more VTV records
*
* Close the CDS VTV record area:
*
CLOSEVOL DS    0H               Close VTV record area:
         LA    R4,WKFLATDD
         CLOSE ((R4))
         SLSUREQ QCDS,                                          +
               REQUEST=CLOSE,                                   +
               TYPE=VTV,                                        +
               TOKEN=WKTOK,                                     +
               UCALADR=WKUCAL,                                  +
               MF=(E,WKQCDS)
         LTR   R15,R15          Check for CLOSE failure
         BNZ   CLOSEERR         Handle CLOSE error
         B     EXIT
READERR  WTO   'READ ERROR'
         B     EXIT
CLOSEERR WTO   'CLOSE ERROR'
         B     EXIT
*
* Clean up and return to caller:
*
OPENERR  WTO   'OPEN ERROR'
EXIT     DS    0H               Clean up and return to caller:
         DELETE EP=SLSUCAL      Unload SLSUCAL routine
         L     R0,QCDSBLEN      Load response area length
         L     R1,WKBUFP        Pointer to response area
         FREEMAIN R,A=(R1),LV=(R0) Release response area buffer
         LR    R1,R13           Pointer to module work area
         L     R13,4(,R13)      Restore caller's save area pointer
         FREEMAIN R,A=(R1),LV=WKAREAL Release module work area
         L     R14,12(,R13)     Restore return address
         LM    R0,R12,20(R13)   Restore caller's registers 0-12
         XR    R15,R15          Set return code zero
         BR    R14              Return to caller
*
```

FIGURE 2-3 Sample 1 - Query CDS Read - 3 of 4

```
* Constants:
*
QCDSMODL SLSUREQ MF=L           SLSUREQ plist model
QCDSMLEN EQU   *-QCDSMODL       Length of SLSUREQ plist model
QCDSBLEN DC    F'655360'        QCDS READ response area buffer length
KFLATDD  DCB   DDNAME=VDRECDAT,DSORG=PS,MACRF=(PM),                 +
               LRECL=VDRECLEN,                                      +
               BLKSIZE=VDRECLEN*100,RECFM=FB
KFLATDDL EQU   *-KFLATDD
*
* Module work area map:
*
WKAREA   DSECT                  Module work area
WKSAVE   DS    18F              MVS register save area
WKUCAL   DS    A                SLSUCAL routine address
WKTOK    DS    F                QCDS request token
WKRDRC   DS    F                QCDS READ return code
WKBUFP   DS    A                QCDS READ response area buffer addr
WKQCDS   DS    XL(QCDSMLEN)     SLSUREQ plist storage
WKFLATDD DS    XL(KFLATDDL)
WKAREAL  EQU   *-WKAREA         Length of module work area
*
* Mapping macros:
*
         SLSREGS  ,             Register equates
         SLSUREQM ,             SLSUREQ mapping macro
         SLUVTDAT ,             VTV record mapping macro
         END   QCDSVTV
```

FIGURE 2-4 Sample 1 - Query CDS Read - 4 of 4

Sample 2 - Reading the ACS and DRV Record Areas Together

This sample QCDS request reads two different CDS record areas (ACS and DRV), alternating between the two. The job step JCL must include a DDNAME statement for the input CDS ddname (MVS1CDS in this example).

```
QACSDRV TITLE 'QCDS READ ACS AND DRIVE RECORD AREAS TOGETHER'
*
* QACSDRV - QCDS READ ACS AND DRIVE RECORD AREAS TOGETHER.
*
* FUNCTION: USE SEPARATE RESPONSE AREAS TO READ THE ACS AND DRV
*         RECORD AREAS IN AN ALTERNATING FASHION.
*         EACH RESPONSE AREA IS A 1KB BUFFER.
*
* ATTRIBUTES:
*      1. PROBLEM STATE, USER KEY.
*      2. NON-APF AUTHORIZED.
*      3. AMODE 31, RMODE ANY, REENTRANT.
*
* NOTES:
*      THE CALLER MUST HAVE READ ACCESS FOR THE INPUT CDS.
*
**ENDPROLOGUE*******************************************************
       PRINT GEN
       ENTRY QACSDRV
QACSDRV  CSECT
QACSDRV  AMODE 31
QACSDRV  RMODE ANY
*
* SAVE THE CALLER'S REGISTERS, ESTABLISH CSECT ADDRESSABILITY
* AND ESTABLISH NEW REGISTER SAVE AREA:
*
       STM   R14,R12,12(R13)    SAVE REGISTERS
       LR    R12,R15            LOAD BASE REGISTER R12
       USING QACSDRV,R12        DECLARE CSECT BASE REGISTER R12
       GETMAIN R,LV=WKAREAL     ALLOCATE MODULE WORK AREA
       ST    R13,WKSAVE-WKAREA+4(,R1) LINK NEW SAVE AREA TO OLD ONE
       ST    R1,8(,R13)         LINK OLD SAVE AREA TO NEW ONE
       LR    R13,R1             POINTER TO MODULE WORK AREA
       USING WKAREA,R13         ADDRESSABILITY TO MODULE WORK AREA
*
* LOAD MODULE SLSUCAL:
*
       LOAD  EP=SLSUCAL         LOAD SLSUCAL INTO STORAGE
       ST    R0,WKUCAL          SAVE SLSUCAL ROUTINE ADDRESS
*
* INITIALIZE THE QCDS TOKEN AND THE SLSUREQ PLIST:
*
       XC    WKTOK,WKTOK        QCDS TOKEN INITIALLY ZERO
       LA    R0,WKQCDS          POINTER TO SLSUREQ PLIST STORAGE
       LA    R1,QCDSMLEN        LENGTH OF SLSUREQ PLIST
       LA    R14,QCDSMODL       POINTER TO SLSUREQ PLIST MODEL
       LR    R15,R1             LENGTH OF SLSUREQ PLIST MODEL
       MVCL  R0,R14             INITIALIZE SLSUREQ PLIST STORAGE
```

FIGURE 2-5 Sample 2 - Reading ACS and DRV Together (1 of 4)

```
*
* OPEN ACS AND DRIVE RECORD AREAS AND MAP THE RESPONSE AREAS:
*
OPEN        DS   0H             OPEN ACS AND DRIVE RECORD AREAS:
          SLSUREQ QCDS,        OPEN ACS RECORD AREA
              REQUEST=OPEN,
              TYPE=ACS,
              TOKEN=WKTOK,
              UCALADR=WKUCAL,
              MF=(E,WKQCDS)
          SLSUREQ QCDS,        OPEN DRIVE RECORD AREA
              REQUEST=OPEN,
              TYPE=DRV,
              TOKEN=WKTOK,
              UCALADR=WKUCAL,
              MF=(E,WKQCDS)
          USING SLUR,R9        MAP QCDS READ RESPONSE AREA
*
* MAIN PROCESSING LOOP - INTERLEAVED PROCESSING OF ACS AND
* DRIVE RECORDS:
*
PROCESS     DS   0H             MAIN PROCESSING LOOP:
          LA   R9,WKACSBUF     POINTER TO ACS RESPONSE AREA
          SLSUREQ QCDS,        READ ACS RECORD AREA
              REQUEST=READ,
              TYPE=ACS,
              BUFFER=(R9),
              BUFLEN=QCDSBLEN,
              TOKEN=WKTOK,
              UCALADR=WKUCAL,
              MF=(E,WKQCDS)
          L    R7,SLURQCDO     OFFSET TO FIRST ACS RECORD
          LA   R11,SLURRPLY(R7) POINTER TO FIRST ACS RECORD
          USING SLUVADAT,R11    MAP ACS RECORD FORMAT
*
*          ... PROCESS ACS RECORDS ...
*
          LA   R9,WKDRVBUF     POINTER TO DRIVE RESPONSE AREA
          SLSUREQ QCDS,        READ DRIVE RECORD AREA
              REQUEST=READ,
              TYPE=DRV,
              BUFFER=(R9),
              BUFLEN=QCDSBLEN,
              TOKEN=WKTOK,
              UCALADR=WKUCAL,
              MF=(E,WKQCDS)
          L    R7,SLURQCDO     OFFSET TO FIRST DRIVE RECORD
          LA   R10,SLURRPLY(R7) POINTER TO FIRST DRIVE RECORD
          USING SLUVDDAT,R10    MAP DRIVE RECORD FORMAT
*
*          ... PROCESS DRIVE RECORDS ...
```

FIGURE 2-6 Reading ACS and DRV Together (2 of 4)

```
*
* CONDITIONALLY BRANCH TO CLOSE LABEL WHEN AN APPROPRIATE
* LOOP TERMINATION CONDITION HAS BEEN SATISFIED (NOT SHOWN).
*
       B    PROCESS         REPEAT MAIN PROCESSING LOOP
*
* CLOSE THE ACS AND DRIVE RECORD AREAS:
*
CLOSE    DS   0H             CLOSE ACS AND DRIVE RECORD AREAS:
       SLSUREQ QCDS,         CLOSE THE ACS RECORD AREA
          REQUEST=CLOSE,
          TYPE=ACS,
          TOKEN=WKTOK,
          UCALADR=WKUCAL,
          MF=(E,WKQCDS)
       SLSUREQ QCDS,         CLOSE THE DRIVE RECORD AREA
          REQUEST=CLOSE,
          TYPE=DRV,
          TOKEN=WKTOK,
          UCALADR=WKUCAL,
          MF=(E,WKQCDS)
*
* CLEAN UP AND RETURN TO CALLER:
*
EXIT     DS   0H             CLEAN UP AND RETURN TO CALLER:
       DELETE EP=SLSUCAL     UNLOAD SLSUCAL ROUTINE
       LR   R1,R13           POINTER TO MODULE WORK AREA
       L    R13,4(,R13)      RESTORE CALLER'S SAVE AREA
       FREEMAIN R,A=(R1),LV=WKAREAL RELEASE MODULE WORK AREA
       L    R14,12(,R13)     RESTORE RETURN ADDRESS
       LM   R0,R12,20(R13)   RESTORE CALLER'S REGISTERS 0-12
       XR   R15,R15          SET ZERO RETURN CODE
       BR   R14              RETURN TO CALLER
*
* CONSTANTS:
*
QCDSMODL  SLSUREQ MF=L         SLSUREQ PLIST MODEL
QCDSMLEN  EQU  *-QCDSMODL      LENGTH OF SLSUREQ PLIST MODEL
QCDSBLEN  DC   F'1024'         QCDS READ RESPONSE AREA BUFFER LENGTH
*
* MODULE WORK AREA MAP:
*
WKAREA    DSECT               MODULE WORK AREA
WKSAVE    DS   18F            MVS REGISTER SAVE AREA
WKUCAL    DS   A              SLSUCAL ROUTINE ADDRESS
WKTOK     DS   F              QCDS REQUEST TOKEN
WKQCDS    DS   XL(QCDSMLEN)   SLSUREQ PLIST STORAGE
WKACSBUF  DS   XL1024         ACS RESPONSE AREA BUFFER
WKDRVBUF  DS   XL1024         DRV RESPONSE AREA BUFFER
WKAREAL   EQU  *-WKAREA       LENGTH OF MODULE WORK AREA
```

FIGURE 2-7 Reading ACS and DRV Together (3 of 4)

```
*
* MAPPING MACROS:
*
      SLSREGS              REGISTER EQUATES
      SLSUREQM ,            SLSUREQ MAPPING MACRO
      SLUVADAT ,           ACS RECORD MAPPING MACRO
      SLUVDDAT ,           DRV RECORD MAPPING MACRO
      END   QACSDRV
```

FIGURE 2-8 Sample 2 - Reading ACS and DRV Together (4 of 4)

Output Description

Each successful OPEN request returns the name of the input CDS in the SLSUREQ parameter list (SLSUREQM field SLSUQDSN).

Each successful READ request returns one or more library element records in the user-designated response area. Use the SLUR DSECT in the SLSUREQM macro to map the response area reply header. This header contains the number of library element records present within the response area.

Library element records are mapped by the SLUV*x*DAT macros. These macros are SMP/E-distributed.

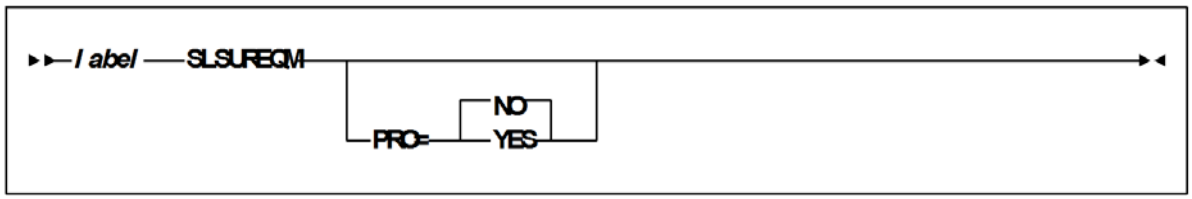
TABLE 2-2 Library Element Record Mapping

Request Entered:	**Records Returned:**
READ ACS	ACS/LSM records mapped by SLUVADAT macro.
READ CAP	CAP records mapped by SLUVPDAT macro.
READ CDS	CDS information records mapped by SLUVIDAT macro.
READ CFG	Configuration information records mapped by SLUVCDAT macro.
READ DRV	Drive records mapped by the SLUVDDAT macro.
READ HST	Host information records mapped by the SLUVHDAT macro.
READ STA	Station records mapped by the SLUVSDAT macro.
READ VOL	Volume records mapped by the SLUVVDAT macro.

SLSUREQM Macro

The SLSUREQM mapping macro must be specified in any assembly that uses the SLSUREQ macro.

Syntax



Parameters

PRO={NO | YES}

Specifies whether the prologue should be generated (YES) or not (NO). **The default is NO.**

Batch API Mapping (SLSUREQM) Macro

TABLE 2-3 SLSUREQM Record Format

Dec	Hex	Type	Length	Label	Description
MACRO: SLSUREQM - BATCH API USER INTERFACE MAPPING MACRO FUNCTION: THIS MACRO MAPS THE SLSUCAL PARAMETER LIST, REPLY HEADER, AND RETURN CODES.					
0	(0)	STRUCTURE		SLSUREQM	PARAMETER LIST
0	(0)	CHARACTER	4	SLSUHDR	EYE-CATCHER FIELD:
'SLSU'	(E2D3E2E4)	CHAR CONST		SLSUID	EYE-CATCHER VALUE
4	(4)	A-ADDR	1	SLSUVER	VERSION OF SLSUREQ:
4	(04)	CONST		SLSUVN	CURRENT VERSION
5	(5)	A-ADDR	1	SLSURT	REQUEST TYPE:
1	(01)	CONST		SLSUQCDS	QCDS REQUEST
6	(6)	A-ADDR	1	SLSUQCDT	QCDS REQUEST TYPE:
0	(00)	CONST		SLSUQCDO	OPEN REQUEST
1	(01)	CONST		SLSUQCDR	READ REQUEST
2	(02)	CONST		SLSUQCDC	CLOSE REQUEST
7	(7)	A-ADDR	1	SLSUQCDA	QCDS RECORD AREA:
0	(00)	CONST		SLSUACSA	ACS RECORD AREA
1	(01)	CONST		SLSUCAPA	CAP RECORD AREA
2	(02)	CONST		SLSUCDSA	CDS RECORD AREA
3	(03)	CONST		SLSUCFGA	CONFIGURATION RECORD AREA
4	(04)	CONST		SLSUDRVA	DRIVE RECORD AREA
5	(05)	CONST		SLSUHSTA	HOST RECORD AREA
6	(06)	CONST		SLSUSTAA	STATION RECORD AREA
7	(07)	CONST		SLSUVOLA	VOLUME RECORD AREA
8	(08)	CONST		SLSUMVCA	MVC RECORD AREA
9	(09)	CONST		SLSUVTVA	VTV RECORD AREA
10	(0A)	CONST		SLSUARAN	ABSOLUTE RECORD AREA NUMBER USED WHEN ALLOCATING STORAGE.
8	(8)	A-ADDR	4	SLSUQCDK	QCDS TOKEN POINTER

TABLE 2-3 SLSUREQM Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
12	(C)	A-ADDR	4	SLSUQCDB	QCDS RESPONSE AREA BUFFER ADDRESS
16	(10)	SIGNED-FWORD	4	SLSUQCDL	QCDS RESPONSE AREA BUFFER LENGTH
20	(14)	A-ADDR	4	SLSUQCDD	QCDS INPUT CDS DDNAME POINTER
24	(18)	CHARACTER	44	SLSUQDSN	QCDS INPUT CDS DATA SET NAME
68	(44)	CHARACTER	256	-RESERVED-	RESERVED FOR FUTURE PARM EXPANSION
328	(148)	AREA	8	-RESERVED-	ALIGNMENT
328	(148)	LENGTH		SLSULN	LENGTH OF FIXED AREA OF SLSUREQM
SLSUREQ INVOCATION FAILURE RETURN CODES:					
1000	(3E8)	CONST		SLURRQPL	SLSUREQ REQUEST FAILED: INVALID SLSUREQ PARAMETER LIST.
1001	(3E9)	CONST		SLURRQRT	SLSUREQ REQUEST FAILED: INVALID SLSUREQ UTILITY REQUEST TYPE.
1002	(3EA)	CONST		SLURQCRT	SLSUREQ REQUEST FAILED: INVALID QCDS ACCESS REQUEST TYPE.
SLSUREQ RESPONSE AREA:					
0	(0)	STRUCTURE		SLUR	RESPONSE AREA
0	(0)	AREA	1	SLURRPLY	START OF REPLY HEADER
0	(0)	CHARACTER	4	SLURHDR	EYE-CATCHER FIELD:
'SLUR'	(E2D3E4D9)	CHAR CONST		SLURID	EYE-CATCHER VALUE
4	(4)	SIGNED-HWORD	2	SLURHSCV	HSC VERSION NUMBER
6	(6)	HEXSTRING	1	SLURVER	VERSION NUMBER OF SLSUREQM
7	(7)	HEXSTRING	1	-RESERVED-	****** RESERVED *******

TABLE 2-3 SLSUREQM Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
8	(8)	SIGNED-FWORD	4	SLURQCDN	NUMBER OF QCDS LIBRARY ELEMENT RECORDS PRESENT IN THIS REPLY.
12	(C)	SIGNED-FWORD	4	SLURQCDO	OFFSET TO QCDS LIBRARY ELEMENT RECORD SECTION FROM START OF REPLY HEADER. QCDS OPEN RETURN CODES:
0	(00)	CONST		SLUROPOK	RECORD AREA WAS OPENED SUCCESSFULLY.
4	(04)	CONST		SLUROPAO	OPEN FAILED - ATTEMPT TO OPEN A RECORD AREA THAT IS ALREADY OPEN.
8	(08)	CONST		SLUROPIT	OPEN FAILED - INVALID TOKEN VALUE.
12	(0C)	CONST		SLUROPRA	OPEN FAILED - INVALID RECORD AREA TYPE.
16	(10)	CONST		SLUROPIO	OPEN FAILED - I/O ERROR WHILE ACCESSING THE ASSOCIATED CDS.
20	(14)	CONST		SLUROPDD	OPEN FAILED - AN INPUT CDS IS NOT ALLOCATED TO THE DESIGNATED DDNAME.
24	(18)	CONST		SLUROPNA	OPEN FAILED - HSC ADDRESS SPACE NOT OPERATIONAL DURING AUTOMATIC CDS ALLOCATION ATTEMPT.
28	(1C)	CONST		SLUROPDA	OPEN FAILED - ERROR DURING AUTOMATIC CDS DYNAMIC ALLOCATION OPERATION.
32	(20)	CONST		SLUROPDM	OPEN FAILED - DD PARAMETER MISSING
QCDS READ RETURN CODES:					

TABLE 2-3 SLSUREQM Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
0	(00)	CONST		SLURRDOK	READ SUCCEEDED - ONE OR MORE RECORDS WERE TRANSFERRED TO THE RESPONSE AREA AND ONE OR MORE ADDITIONAL RECORDS CAN BE OBTAINED BY A SUBSEQUENT READ REQUEST.
4	(04)	CONST		SLURRDEA	READ SUCCEEDED - ONE OR MORE RECORDS WERE TRANSFERRED TO THE RESPONSE AREA AND NO ADDITIONAL RECORDS CAN BE READ FROM THE ASSOCIATED RECORD AREA.
8	(08)	CONST		SLURRDIT	READ FAILED - INVALID TOKEN VALUE.
12	(0C)	CONST		SLURRDRA	READ FAILED - INVALID RECORD AREA TYPE.
16	(10)	CONST		SLURRDIO	READ FAILED - I/O ERROR WHILE ACCESSING THE ASSOCIATED CDS.
20	(14)	CONST		SLURRDNO	READ FAILED - ATTEMPT TO READ A RECORD AREA THAT IS NOT CURRENTLY OPEN.
24	(18)	CONST		SLURRDBA	READ FAILED - ATTEMPT TO READ BEYOND THE END OF THE RECORD AREA.
28	(1C)	CONST		SLURRDIB	READ FAILED - INVALID RESPONSE AREA BUFFER ADDRESS.
32	(20)	CONST		SLURRDIL	READ FAILED - RESPONSE AREA BUFFER LENGTH TOO SHORT TO CONTAIN BOTH THE REPLY HEADER AND AT LEAST ONE LIBRARY ELEMENT RECORD.
QCDS CLOSE RETURN CODES:					

TABLE 2-3 SLSUREQM Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
0	(00)	CONST		SLURCLOK	RECORD AREA WAS CLOSED SUCCESSFULLY.
4	(04)	CONST		SLURCLAC	CLOSE FAILED - ATTEMPT TO CLOSE A RECORD AREA THAT IS ALREADY CLOSED.
8	(08)	CONST		SLURCLIT	CLOSE FAILED - INVALID TOKEN VALUE.
12	(0C)	CONST		SLURCLRA	CLOSE FAILED - INVALID RECORD AREA TYPE.
16	(10)	CONST		SLURCLIO	CLOSE FAILED - I/O ERROR WHILE ACCESSING THE ASSOCIATED CDS.
16	(10)	LENGTH		SLURRHLN	LENGTH OF REPLY HEADER.
16	(10)	AREA	4	SLURFRS	START OF VARIABLE-LENGTH FORMATTED RECORD SEGMENT.

Cross Reference

Name	Len	Offset Value
SLSUACSA	-	00
SLSUARAN	-	0A
SLSUCAPA	-	01
SLSUCDSA	-	02
SLSUCFGA	-	03
SLSUDRVA	-	04
SLSUHDR	000004	00
SLSUHSTA	-	05
SLSUID	-	'CVAL'
SLSULN	-	148
SLSUMVCA	-	08
SLSUQCDA	000001	07
SLSUQCDB	000004	0C
SLSUQCDC	-	02
SLSUQCDD	000004	14
SLSUQCDK	000004	08
SLSUQCDL	000004	10
SLSUQCDO	-	00
SLSUQCDR	-	01
SLSUQCDS	-	01
SLSUQCDT	000001	06
SLSUQDSN	000044	18
SLSURT	000001	05
SLSUSTAA	-	06
SLSUVER	000001	04
SLSUVN	-	04
SLSUVOLA	-	07
SLSUVTVA	-	09
SLURCLAC	-	04
SLURCLIO	-	10

Name	Len	Offset Value
SLURCLIT	-	08
SLURCLOK	-	00
SLURCLRA	-	0C
SLURFRS	000004	10
SLURHDR	000004	00
SLURHSCV	000002	04
SLURID	-	'CVAL'
SLUROPAO	-	04
SLUROPDA	-	1C
SLUROPDD	-	14
SLUROPDM	-	20
SLUROPIO	-	10
SLUROPIT	-	08
SLUROPNA	-	18
SLUROPOK	-	00
SLUROPRA	-	0C
SLURQCDN	000004	08
SLURQCDO	000004	0C
SLURQCRT	-	3EA
SLURRDBA	-	18
SLURRDEA	-	04
SLURRDIB	-	1C
SLURRDIL	-	20
SLURRDIO	-	10
SLURRDIT	-	08
SLURRDNO	-	14
SLURRDOK	-	00
SLURRDRA	-	0C
SLURRHLN	-	10
SLURRPLY	000001	00
SLURRQPL	-	3E8

Name	Len	Offset Value
SLURRQRT	-	3E9
SLURVER	000001	06

Batch API Records

Batch API Mapping Macros

These SMP/E-distributed macros map only Batch API records. Refer to "Volume Report and Batch API Records" on page 183 to see the records that map both Volume Report and Batch API.

TABLE 2-4 Mapping macros for Batch API Records

Macro	Description
SLUVDDAT	Batch API Drive Information DSECT
SLUVPDAT	Batch API CAP Information DSECT

Batch API Record Formats

SLUVDDAT

This record is produced only by the Batch API QCDS request.

TABLE 2-5 SLUVDDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVDDAT - QCDS DRIVE INFORMATION DSECT FUNCTION: MAPS THE DRIVE DATA PRODUCED BY THE QCDS READ REQUEST FOR THE CDS DRV RECORD AREA.					
0	(0)	STRUCTURE		SLUVDDAT	
0	(0)	CHARACTER	1	UVDRT	RECORD TYPE
1	(1)	BITSTRING	1	UVDFLAG1	STATUS FLAG:
		1... .... X'80'		UVDDCLN	DRIVE NEEDS CLEANING
2	(2)	BITSTRING	1	UVDFLAG2	MOUNT ERROR FLAG:
		1... .... X'80'		UVDBMNT	MOUNT ERROR
		.1.. .... X'40'		UVDOPRQ	OPER INTERV REQD BY UX01
		..1. .... X'20'		UVDV5310	IAT5310 ERROR MESSAGE ISSUED
3	(3)	BITSTRING	1	UVDFLAG3	SCRATCH MOUNT FLAG:
		1... .... X'80'		UVDSCR	SCRATCH MOUNT
		.1.. .... X'40'		UVDNSCR	NON-SCRATCH MOUNT
		..1. .... X'20'		UVD501E	IEC501E MSG PREVIOUSLY PROCESSED
		...1 .... X'10'		UVDRACF	RACF READ OPTION WAS SET
		.... 1... X'08'		UVDTMS7	MESSAGE IECTMS7 BEING PROCESSED
4	(4)	CHARACTER	2	UVDTYPE	DRIVE TYPE FROM LMU:
'64'	(F6F4)	CHAR CONST		UVD4480	4480 DRIVE
'32'	(F3F2)	CHAR CONST		UVDTIMB	TIMBERLINE DRIVE
'33'	(F3F3)	CHAR CONST		UVD9491	9490EE DRIVE

TABLE 2-5 SLUVDDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
‘16’	(F1F6)	CHAR CONST		UVDREDW	REDWOOD
‘08’	(F0F8)	CHAR CONST		UVDSILV	SILVERTON
‘06’	(F0F6)	CHAR CONST		UVD3590	T9940A ACTING AS A 3590
‘05’	(F0F5)	CHAR CONST		UVD3490E	T9940A ACTING AS A 3490E
‘01’	(F0F1)	CHAR CONST		UVD984B4	T9840B ACTING AS A 3490E
‘07’	(F0F7)	CHAR CONST		UVD984B5	T9840B ACTING AS A 3590
‘09’	(F0F9)	CHAR CONST		UVD994B4	T9940B ACTING AS A 3490E
‘10’	(F1F0)	CHAR CONST		UVD994B5	T9940B ACTING AS A 3590
‘02’	(F0F2)	CHAR CONST		UVD9840	9840 DRIVE
‘03’	(F0F3)	CHAR CONST		UVD98405	9840 DRIVE ACTING AS A 3590
65535	(FFFF)	CONST		UVDNOLMU	LMU DRIVE TYPE NOT YET SET
6	(6)	AREA	4	UVDDRVID	DRIVEID:
6	(6)	HEXSTRING	1	UVDIDACS	DRIVEID ACS
7	(7)	HEXSTRING	1	UVDIDLSM	DRIVEID LSM
8	(8)	HEXSTRING	1	UVDIDPNL	DRIVEID PANEL
9	(9)	HEXSTRING	1	UVDIDNUM	DRIVEID NUMBER WITHIN PANEL
12	(C)	SIGNED-FWORD	4	UVDDEFIN	DRIVE IS DEFINED TO A HOST - BIT-MAP REPRESENTING EACH HOST THAT HAS THIS DRIVE DEFINED, READING FROM LEFT TO RIGHT IN HOST INDEX ORDER
16	(10)	SIGNED-HWORD	2	UVDNUNIT	NUMBER OF DRIVE UNITS (FOR UVDUNITN)
18	(12)	SIGNED-HWORD	2	UVDLUNIT	LENGTH OF DRIVE UNITS (FOR UVDUNITN)
20	(14)	SIGNED-HWORD	2	UVDUNITN(16)	MVS UNIT NUMBERS INDEXED BY HOST.
52	(34)	LENGTH		UVDLEN	RECORD LENGTH

Cross Reference

Name	Len	Offset Value
UVDBMNT	-	80
UVDDCLN	-	80
UVDDEFIN	000004	0C
UVDDRVID	000004	06
UVDFLAG1	000001	01
UVDFLAG2	000001	02
UVDFLAG3	000001	03
UVDIDACS	000001	06
UVDIDLSM	000001	07
UVDIDNUM	000001	09
UVDIDPNL	000001	08
UVDLEN	-	34
UVDLUNIT	000002	12
UVDNOLMU	-	FFFF
UVDNSCR	-	40
UVDNUNIT	000002	10
UVDOPRQ	-	40
UVDRACF	-	10
UVDREDW	-	‘CVAL’
UVDRT	000001	00
UVDSCR	-	80
UVDSILV	-	‘CVAL’
UVDTIMB	-	‘CVAL’
UVDTMS7	-	08
UVDTYPE	000002	04
UVDUNITN	000002	14
UVDV5310	-	20
UVD3490E	-	‘CVAL’
UVD3590	-	‘CVAL’
UVD4480	-	‘CVAL’

Name	Len	Offset Value
UVD501E	-	20
UVD9491	-	‘CVAL’
UVD984B4	-	‘CVAL’
UVD984B5	-	‘CVAL’
UVD9840	-	‘CVAL’
UVD98405	-	‘CVAL’
UVD994B4	-	‘CVAL’
UVD994B5	-	‘CVAL’

SLUVPDAT

This record is produced only by the Batch API QCDS request.

TABLE 2-6 SLUVPDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVPDAT - QCDS CAP INFORMATION DSECT FUNCTION: MAPS THE CAP DATA PRODUCED BY THE QCDS READ REQUEST FOR THE CDS CAP RECORD AREA.					
0	(0)	STRUCTURE		SLUVPDAT	
0	(0)	CHARACTER	1	UVPRT	RECORD TYPE
1	(1)	BITSTRING	1	UVPFLAG1	CAP STATUS:
		1... .... X'80'		UVPF1ACT	CAP IS ACTIVE
		.1.. .... X'40'		UVPF1REC	CAP NEEDS RECOVERY
		..1. .... X'20'		UVPF1AUT	CAP IS IN AUTOMATIC MODE
		...1 .... X'10'		UVPF1LNK	CAP IS LINKED
		.... 1... X'08'		UVPF1ONL	CAP IS ONLINE
2	(2)	BITSTRING	1	UVPFLAG2	CAP MODE:
		1... .... X'80'		UVPF2ENT	CAP IS ENTERING
		.1.. .... X'40'		UVPF2DRA	CAP IS DRAINING
		..1. .... X'20'		UVPF2EJT	CAP IS EJECTING
		...1 .... X'10'		UVPF2CLN	CAP IS CLEANING
		.... 1... X'08'		UVPF2IDL	CAP IS IDLE
3	(3)	HEXSTRING	3	UVPID	CAP ID
6	(6)	CHARACTER	8	UVPJOBN	JOBNAME OF OWNER
14	(E)	CHARACTER	8	UVPHOST	HOSTID IF CAP IS ACTIVE
22	(16)	HEXSTRING	1	UVPHOSTI	HOST INDEX FOR CAPHOST
24	(18)	SIGNED-HWORD	2	UVPNCELL	NUMBER OF CELLS IN CAP
26	(1A)	HEXSTRING	1	UVPNROWS	NUMBER OF ROWS IN THIS CAP
27	(1B)	HEXSTRING	1	UVPNCOLS	NUMBER OF COLUMNS IN THIS CAP
28	(1C)	HEXSTRING	1	UVPNMAGS	NUMBER OF MAGAZINES IN THIS CAP

TABLE 2-6 SLUVPDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
29	(1D)	HEXSTRING	1	UVPNMAGC	NUMBER OF CELLS PER MAGAZINE
30	(1E)	SIGNED-HWORD	2	UVPNPRIO	NUMBER OF CAP PRIORITY ELEMENTS
32	(20)	SIGNED-HWORD	2	UVPLPRIO	LENGTH OF CAP PRIORITY ELEMENTS
34	(22)	HEXSTRING	1	UVPPRITY(16)	CAP PRIORITY ELEMENTS, BY HOST INDEX
50	(32)	HEXSTRING	1	UVPPANEL	PANEL NUMBER OF CAP
51	(33)	BITSTRING	1	UVPTYPE	TYPE OF CAP:
		1... .... X'80'		UVPPCAP	PRIORITY CAP
		....1 X'01'		UVPCIM	CIMARRON
		.... ..1. X'02'		UVPCLIP	CLIPPER
		.... ..11 X'03'		UVPTWSTD	STANDARD WOLF CLIPPER
		.... .1.. X'04'		UVPTWOPT	OPTIONAL WOLF CLIPPER
		.... .1.1 X'05'		UVP9740	9740 CAP (CELLS SET AT VARY LSM)
52	(34)	LENGTH		UVPLEN	RECORD LENGTH

Volume Report and Batch API Records

Volume Report and Batch API Mapping Macros

These SMP/E-distributed macros map both Volume Report and Batch API records.

Refer to “Batch API Records” on page 176 to see SLUVDDAT and SLUVPDAT, which are used only by the Batch API.

TABLE 2-7 Mapping Macros for Volume Report and Batch API Records

Macro	Description
SLUVADAT	Flat File ACS/LSM Information DSECT
SLUVCDAT	Flat File Static Configuration Data DSECT
SLUVHDAT	Flat File Host Information DSECT
SLUVIDAT	Flat File CDS Information DSECT
SLUVSDAT	Flat File ACS Station Address DSECT
SLUVVDAT	Flat File Volume Data DSECT

Volume Report and Batch API Record Formats

SLUVADAT

TABLE 2-8 SLUVADAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVADAT - FLAT FILE ACS/LSM INFORMATION DSECT FUNCTION: DESCRIBES THE ACS/LSM INFORMATION WHICH MAY BE GENERATED TO THE FLAT FILE BY THE VOLUME REPORT UTILITY					
0	(0)	STRUCTURE		SLUVADAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'A')
1	(1)	HEXSTRING	1	ACSNUMBR	ACS NUMBER
2	(2)	BITSTRING	1	ACSSTAT	STATUS FLAG
		1... .... X'80'		ACSDUALL	1... .... - DUAL LMU
3	(3)	HEXSTRING	1	-RESERVED-	***** RESERVED *****
4	(4)	SIGNED-FWORD	4	ACSHCNMP	HOST CONNECT MAP (REPRESENTS EACH HOST CONNECTED FROM LEFT TO RIGHT IN HOST INDEX ORDER)
8	(8)	CHARACTER	2	ACSL1CLV	LMU 1 COMPATIBILITY LEVEL (FUTURE)W90
10	(A)	HEXSTRING	2	-RESERVED-	
12	(C)	CHARACTER	2	ACSL2CLV	LMU 2 COMPATIBILITY LEVEL (FUTURE)W90
14	(E)	HEXSTRING	2	-RESERVED-	
16	(10)	HEXSTRING	24	ACSLTYPS	LSM TYPES IN THIS ACS (1 BYTE FOR EACH TYPE - MAY BE MAPPED WITH EQUATES FOUND IN THE LSMMAP DSECT BELOW)
40	(28)	SIGNED-HWORD	2	ACSNMLSM	NUMBER OF LSMS IN THIS ACS
42	(2A)	LENGTH		ACSFXLEN	LENGTH OF FIXED PORTION
42	(2A)	OFFSET		ACSLSMBG	BEGINNING OF LSM ENTRIES

TABLE 2-8 SLUVADAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
ACSLSMS CONSISTS OF 1 ENTRY PER EACH LSM GENNED TO THIS ACS, EACH OF WHICH MAY BE MAPPED BY THE FOLLOWING DSECT:					
0	(0)	STRUCTURE		LSMMAP	
0	(0)	HEXSTRING	1	LSMNUMBR	LSM NUMBER
1	(1)	BITSTRING	1	LSMSTAT	LSM STATUS BYTE
		1... .... X'80'		LSMAUTO	1... .... - ON: AUTOMATIC MODE OFF: MANUAL MODE
		.1.. .... X'40'		LSMOFFPN	.1.. .... - OFFLINE PENDING
		.... 1... X'08'		LSMPTPRO	.... 1... - PTPS REORDERED
		1111 1111 X'FF'		LSMNONEX	1111 1111 - NON-EXISTENT LSM
2	(2)	BITSTRING	1	LSMVCAMF	FLAG BYTE
		1... .... X'80'		LSMAUDIP	1... .... - AUDIT IN PROCESS
		.1.. .... X'40'		LSMVCAMR	.1.. .... - VCAM REFORMATTED
3	(3)	CHARACTER	8	LSMHSTID	HOST ID IF LSM LOCKED
12	(C)	SIGNED-HWORD	2	LSMMAXCL	MAX CELL COUNT IN THIS LSM
14	(E)	BITSTRING	1	LSMHWTYP	LSM HARDWARE TYPE
		....1 X'01'		LSMCIM	....1 - CIMARRON (4400)
		.... ..11 X'03'		LSMWOLF	.... ..11 - WOLFCREEK (9360)
		.... .1.. X'04'		LSMPOWDR	.... .1.. - POWDERHORN (9310)
		.... .11. X'06'		LSMTWLF	.... .11. - 9740/TIMBERWOLF
		.... .111 X'07'		LSMELIB	.... .111 - E-LIB
15	(F)	HEXSTRING	1	LSMPNTOT	TOTAL NUMBER OF PANELS
16	(10)	HEXSTRING	1	LSMCAPNO	NUMBER OF CAPS
17	(11)	HEXSTRING	1	LSMPTPNO	MAX. # PTPS THIS LSM
18	(12)	HEXSTRING	1	LSMNPGCS	NUMBER OF PLAYGROUND CELLS
19	(13)	HEXSTRING	1	LSMLIPNO	LAST INSIDE PANEL NUMBER
20	(14)	HEXSTRING	1	LSMLOPNO	LAST OUTSIDE PANEL NUMBER
21	(15)	HEXSTRING	1	LSMNDPPN	NUMBER OF DRIVES PER PANEL
22	(16)	HEXSTRING	1	LSMNXPRT	NUMBER OF TRANSPORTS IN THIS LSM

TABLE 2-8 SLUVADAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
23	(17)	HEXSTRING	1	LSMIDPNO	INSIDE DOOR PANEL NUMBER
24	(18)	HEXSTRING	1	LSMODPNO	OUTSIDE DOOR PANEL NUMBER
25	(19)	HEXSTRING	1	LSMLCUPN	LCU PANEL NUMBER
26	(1A)	HEXSTRING	1	LSMNROPN	NUMBER OF ROWS PER OUTSIDE PANEL
27	(1B)	HEXSTRING	1	LSMNCOPN	NUMBER OF COLUMNS PER OUTSIDE PANEL
28	(1C)	HEXSTRING	1	LSMNRIPN	NUMBER OF ROWS PER INSIDE PANEL
29	(1D)	HEXSTRING	1	LSMNCIPN	NUMBER OF COLUMES PER INSIDE PANEL
30	(1E)	HEXSTRING	1	LSMDPNUM	NUMBER OF DRIVE PANELS
31	(1F)	HEXSTRING	1	LSMNADLS	NUMBER OF ADJACENT LSMS
32	(20)	HEXSTRING	4	LSMADLSM	ADJACENT LSM NUMBERS (1 BYTE/LSM)
36	(24)	SIGNED-HWORD	2	LSMFRECL	NUMBER OF FREE CELLS
38	(26)	SIGNED-HWORD	2	LSMCLNNM	NUMBER OF CLEANER CARTRIDGES
40	(28)	SIGNED-HWORD	2	LSMNCLSL	NUMBER OF CLEANER CARTRIDGES SELECTED
42	(2A)	CHARACTER	6	LSMLCLVL	LOW CLEANER VOLSER
48	(30)	CHARACTER	6	LSMHCLVL	HIGH CLEANER VOLSER
54	(36)	CHARACTER	6	LSMLCLSL	LAST CLEANER SELECTED
60	(3C)	SIGNED-HWORD	2	LSMSCRCT	NUMBER OF SCRATCHES IN THIS LSM
62	(3E)	HEXSTRING	6	LSMPANLS(44)	LSM PANEL ARRAY
326	(146)	LENGTH		LSMENTLN	LENGTH OF LSM ENTRY
LSMPANLS CONTAINS AN ENTRY FOR EACH PANEL IN AN LSM (MAXIMUM 20), AND MAY BE MAPPED WITH THE FOLLOWING DSECT:					
0	(0)	STRUCTURE		LSMPNLE	
0	(0)	BITSTRING	1	LSMPNLTY	PANEL TYPE
		....1 X'01'		LSMCCPNL	....1 - CIMARRON CELL PANEL
		.... ..1. X'02'		LSMCCL10	.... ..1. - CIMARRON PANEL 10

TABLE 2-8 SLUVADAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		.... ..11 X'03'		LSMCDPNL	.... ..11 - CIMARRON DOOR PANEL
		.... .1.. X'04'		LSMCPTMP	.... .1.. - CIM PTP RIGHT (USUALLY MSTR)
		.... .1.1 X'05'		LSMCSTMP	.... .1.1 - CIM PTP LEFT (SLAVE) PNL
		.... .11. X'06'		LSMCDRVP	.... .11. - CIMARRON DRIVE PANEL
		.... .111 X'07'		LSMCDR10	.... .111 - CIMARRON DRIVE PNL 10
		.... 1... X'08'		LSMCLCUP	.... 1... - CIMARRON LCU PANEL
		.... 1..1 X'09'		LSMCNOCL	.... 1..1 - CIM. NO CELLS ON PANEL
		...1 .... X'10'		LSMCINPN	...1 .... - CIMARRON INSIDE PANEL
		...1 ...1 X'11'		LSMCIN19	...1 ...1 - CIMARRON PANEL 19
		...1 ..1. X'12'		LSMCISDR	...1 ..1. - CIMARRON INSIDE DOOR
		...1 ..11 X'13'		LSMCWIDN	...1 ..11 - CIMARRON 20-DRIVE PANEL
		...1 .1.. X'14'		LSMCWIDD	...1 .1.. CIMARRON 20-DRIVE PANEL ADJACENT TO DOOR
		..1. .... X'20'		LSMWPNL0	..1. .... - WOLF PANEL 0
		..1. ...1 X'21'		LSMW2PSL	..1. ...1 - WC PANEL 2 WITH PTP (SLAVE)
		..1. ..1. X'22'		LSMWP0PT	..1. ..1. - WOLF PANEL 0 W/PTP
		..1. ..11 X'23'		LSMW1NOD	..1. ..11 - WC PANEL WITHOUT DRIVE
		..1. .1.. X'24'		LSMWP1DR	..1. .1.. - WOLF PANEL 1 W/DRIVE
		..1. .1.1 X'25'		LSMWPNL2	..1. .1.1 - WOLF PANEL 2
		..1. .11. X'26'		LSMWP2PT	..1. .11. - WOLF PANEL 2 W/PTP
		..1. .111 X'27'		LSMWPNL3	..1. .111 - WOLF PANEL 3
		..1. 1... X'28'		LSMWP3DR	..1. 1... - WOLF PANEL 3 W/DRIVE
		..1. 1..1 X'29'		LSMWP41C	..1. 1..1 - WOLF PANEL 4 W/1 CAP
		..11 .... X'30'		LSMWP42C	..11 .... - WOLF PANEL 4 W/2 CAPS
		..11 ...1 X'31'		LSMW3NOC	..11 ...1 - WC PANEL 3 WITHOUT CELLS
		..11 ..1. X'32'		LSMW3DNC	..11 ..1. - WC PANEL 3 WITH DRIVES, WITHOUT CELLS

TABLE 2-8 SLUVADAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		..11 ..11 X'33'		LSMW3WIN	..11 ..11 - WC PANEL 3 WITH WINDOW
		..11 .1.1 X'35'		LSMW4CNC	..11 .1.1 - WC PANEL 4, 1 CAP WITHOUT CELLS
		..11 .11. X'36'		LSMW4CCN	..11 .11. - WC PANEL 4, 2 CAPS WITHOUT CELLS
		.1.. .... X'40'		LSMTPNLW	.1.. .... - 9740 WINDOW
		.1.. ...1 X'41'		LSMTPPNL	.1.. ...1 - 9740 CELL PANEL
		.1.. .1.1 X'45'		LSMTPCAP	.1.. .1.1 - 9740 CAP
		.1.. .11. X'46'		LSMTPDRV	.1.. .11. - 9740 DRIVE PANEL
		.1.. .111 X'47'		LSMTP0PT	.1.. .111 - 9740 PANEL 0 PTP
		.1.. 1... X'48'		LSMTP2PT	.1.. 1... - 9740 PANEL 2 PTP 2 CAPS W/O CELLS
		1... .... X'80'		LSMELDRV	1... .... - ELIB DRIVE
		1... ...1 X'81'		LSMELCAP	1... ...1 - ELIB CAP
		1... ..1. X'82'		LSMELCEL	1... ..1. - ELIB STORAGE
		1... ..11 X'83'		LSMELCE3	1... ..11 - ELIB STORAGE
		1... .1.. X'84'		LSMELCE4	1... .1.. - ELIB STORAGE
1	(1)	HEXSTRING	2	LSMPCCNT	COUNT OF CELLS FOR THIS PANEL
3	(3)	BITSTRING	1	LSMPFLG	FLAG BYTE FOR PANEL STATUS
		1... .... X'80'		LSMPFRZ	PANEL IS FROZEN
4	(4)	HEXSTRING	2	-RESERVED-	****** RESERVED *********
3	(03)	LENGTH		LSMPFRZL	LENGTH OF FREEZE PANEL BYTES
6	(06)	LENGTH		LSMPNLEL	LENGTH OF PANEL ENTRY

Cross Reference

Name	Len	Offset Value
ACSDUALL	-	80
ACSFXLEN	-	2A
ACSHCNMP	000004	04

Name	Len	Offset Value
ACSLSMBG	-	2A
ACSLTYPS	000024	10
ACSL1CLV	000002	08
ACSL2CLV	000002	0C
ACSNMLSM	000002	28
ACSNUMBR	000001	01
ACSSTAT	000001	02
LSMADLSM	000004	20
LSMAUDIP	-	80
LSMAUTO	-	80
LSMCAPNO	000001	10
LSMCCL10	-	02
LSMCCPNL	-	01
LSMCDPNL	-	03
LSMCDRVP	-	06
LSMCDR10	-	07
LSMCIM	-	01
LSMCINPN	-	10
LSMCIN19	-	11
LSMCISDR	-	12
LSMCLCUP	-	08
LSMCLNNM	000002	26
LSMCNOCL	-	09
LSMCPTMP	-	04
LSMCSTMP	-	05
LSMCWIDD	-	14
LSMCWIDN	-	13
LSMDPNUM	000001	1E
LSMELCAP	-	81
LSMELCEL	-	82
LSMELCE3	-	83

Name	Len	Offset Value
LSMELCE4	-	84
LSMELDRV	-	80
LSMELIB	-	07
LSMENTLN	-	B8
LSMFRECL	000002	24
LSMHCLVL	000006	30
LSMHSTID	000008	03
LSMHWTYP	000001	0E
LSMIDPNO	000001	17
LSMLCLSL	000006	36
LSMLCLVL	000006	2A
LSMLCUPN	000001	19
LSMLIPNO	000001	13
LSMLOPNO	000001	14
LSMMAXCL	000002	0C
LSMNADLS	000001	1F
LSMNCIPN	000001	1D
LSMNCLSL	000002	28
LSMNCOPN	000001	1B
LSMNDPPN	000001	15
LSMNONEX	-	FF
LSMNPGCS	000001	12
LSMNRIPN	000001	1C
LSMNROPN	000001	1A
LSMNUMBR	000001	00
LSMNXPRT	000001	16
LSMODPNO	000001	18
LSMOFFPN	-	40
LSMPANLS	000006	3E
LSMPCCNT	000002	01
LSMPFLG	000001	03

Name	Len	Offset Value
LSMPFRZ	-	80
LSMPFRZL	-	03
LSMPNLEL	-	06
LSMPNLTY	000001	00
LSMPNTOT	000001	0F
LSMPOWDR	-	04
LSMPTPNO	000001	11
LSMPTPRO	-	08
LSMSCRCT	000002	3C
LSMSTAT	000001	01
LSMTPCAP	-	45
LSMTPDRV	-	46
LSMTPNLW	-	40
LSMTPPNL		41
LSMTP0PT	-	47
LSMTP2PT	-	48
LSMTWLF	-	06
LSMVCAMF	000001	02
LSMVCAMR	-	40
LSMWOLF	-	03
LSMWPNL0	-	20
LSMWPNL2	-	25
LSMWPNL3	-	27
LSMWP0PT	-	22
LSMWP1DR	-	24
LSMWP2PT	-	26
LSMWP3DR	-	28
LSMWP41C	-	29
LSMWP42C	-	30
LSMW3NOC	-	31
LSMW1NOD	-	23

Name	Len	Offset Value
LSMW2PSL	-	21
LSMW3DNC	-	32
LSMW3WIN	-	33
LSMW4CCN	-	36
LSMW4CNC	-	35

SLUVCDAT

TABLE 2-9 SLUVCDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVCDAT - FLAT FILE STATIC CONFIGURATION DATA DSECT FUNCTION: DESCRIBES THE STATIC CONFIGURATION INFORMATION WHICH MAY BE GENERATED TO THE FLAT FILE BY THE VOLUME REPORT UTILITY					
0	(0)	STRUCTURE		SLUVCDAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'C')
1	(1)	CHARACTER	3	CFGCCPFX	CLEANING CARTRIDGE PREFIX
4	(4)	SIGNED-FWORD	4	CFGTOTXP	TOTAL TRANSPORTS ALL LSMS (FUTURE)
8	(8)	CHARACTER	2	-RESERVED-	***RESERVED***
10	(A)	CHARACTER	2	-RESERVED-	***RESERVED***
12	(C)	SIGNED-HWORD	2	CFGNMACS	TOTAL DEFINED ACSS
14	(E)	SIGNED-HWORD	2	CFGTOTLS	TOTAL DEFINED LSMS
16	(10)	SIGNED-HWORD	2	CFGTOTCA	TOTAL CAPS FOR ALL LSMS
18	(12)	SIGNED-HWORD	2	CFGTOTDR	TOTAL DRIVES IN ALL LSMS
20	(14)	HEXSTRING	1	CFGSMFTY	SMF RECORD TYPE
21	(15)	CHARACTER	1	CFGCMDPF	COMMAND PREFIX CHARACTER
22	(16)	BITSTRING	1	CFGDDISP	DELETE DISPOSITION
		1... .... X'80'		CFGDDSCR	1... .... - SCRATCH
		.1.. .... X'40'		CFGDDNSC	.1.. .... - NON-SCRATCH
23	(17)	BITSTRING	1	CFGFLAG1	FLAGS
		1... .... X'80'		CFGLIBFX	1... .... - LIB. IS FIXED LOC.
		.1.. .... X'40'		CFGDISVF	.1.. .... - DISMOUNT VOL. FLOAT
		..1. .... X'20'		CFGCHKEP	..1. .... - CHECK EJECT PASSWORD
24	(18)	BITSTRING	1	CFGLANG	LANGUAGE TYPE
		1... .... X'80'		CFGENGLS	1... .... - ENGLISH
		.1.. .... X'40'		CFGITALN	.1.. .... - ITALIAN

TABLE 2-9 SLUVCDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		..1. .... X'20'		CFGGERMN	..1. .... - GERMAN
		...1 .... X'10'		CFGFRNCH	...1 .... - FRENCH
25	(19)	BITSTRING	1	CFGSCRLB	SCRATCH LABEL TYPE
		.... X'00'		CFGSCRSL	.... - SL (STANDARD)
		....1 X'01'		CFGSCRAL	....1 - AL (ANSI)
		.... ..1. X'02'		CFGSCRNL	.... ..1. - NL (NONLABELLED)
		.... ..11 X'03'		CFGSCRNS	.... ..11 - NSL (NON-STANDARD)
		.... .1.. X'04'		CFGSCRBL	.... .1.. - BLP (BYPASS LBL PROC)
		.... .1.1 X'05'		CFGSCRNA	.... .1.1 - LBL TYPE NOT AVAIL.
26	(1A)	LENGTH		CFGLNGTH	LENGTH OF RECORD
256	(100)	CONST		CFGMXLSM	MAXIMUM NUMBER OF ACSS

Cross Reference

Name	Len	Offset Value
CFGCCPFX	000003	01
CFGCHKEP	-	20
CFGCMDPF	000001	15
CFGDDISP	000001	16
CFGDDNSC	-	40
CFGDDSCR	-	80
CFGDISVF	-	40
CFGENGLS	-	80
CFGFLAG1	000001	17
CFGFRNCH	-	10
CFGGERMN	-	20
CFGITALN	-	40
CFGLANG	000001	18

Name	Len	Offset Value
CFGLIBFX	-	80
CFGLNGTH	-	1A
CFGMXLSM	-	100
CFGNMACS	000002	0C
CFGSCRAL	-	01
CFGSCRBL	-	04
CFGSCRLB	000001	19
CFGSCRNA	-	05
CFGSCRNL	-	02
CFGSCRNS	-	03
CFGSCRSL	-	00
CFGSMFTY	000001	14
CFGTOTCA	000002	10
CFGTOTDR	000002	12
CFGTOTLS	000002	0E
CFGTOTXP	000004	04

SLUVHDAT

Note – Field HSTLIBEN contains only the first 16 ACS esoterics.

TABLE 2-10 SLUVHDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVHDAT - FLAT FILE HOST INFORMATION DSECT FUNCTION: DESCRIBES THE HOST INFORMATION WHICH MAY BE WRITTEN TO THE FLAT FILE BY THE VOLUME REPORT UTILITY					
0	(0)	STRUCTURE		SLUVHDAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'H')
1	(1)	HEXSTRING	2	HSTNHOST	NUMBER OF HOSTS GENNED
3	(03)	LENGTH		HSTFXLEN	FIXED PORTION LENGTH
3	(03)	OFFSET		HSTHOSTS	BEGINNING OF HOST DESCRIPTORS SECTION
HSTHOSTS CONSISTS OF 1 ENTRY PER GENNED HOST, EACH OF WHICH MAY BE MAPPED BY THE FOLLOWING DSECT:					
0	(0)	STRUCTURE		HSTHDMAP	
0	(0)	CHARACTER	8	HSTHNAME	HOST NAME
8	(8)	HEXSTRING	1	HSTINDEX	HOST INDEX NUMBER
9	(9)	BITSTRING	1	HSTFLAG1	HOST FLAG 1 - CDS OPERATING FLGS
		1... .... X'80'		HSTPRIAC	1... .... - PRIMARY ACTIVE
		.1.. .... X'40'		HSTSHDAC	.1.. .... - SHADOW ACTIVE
		..1. .... X'20'		HSTHSTAC	..1. .... - HOST ACTIVE
		...1 .... X'10'		HSTSBYAC	...1 .... - STANDBY ACTIVE
10	(A)	BITSTRING	1	HSTFLAG2	HOST FLAG 2 - OTHER OPER. FLGS
		1... .... X'80'		HSTRCVRR	1... .... - 'RECOVER' Q RESPONSE TO SLS0739
		.1.. .... X'40'		HSTRCVRH	.1.. .... - RECOVER ISSUED FOR THIS HOST
		..1. .... X'20'		HSTDELAY	..1. .... - DELAY ISSUED FOR THIS HOST
		...1 .... X'10'		HSTDEAD	...1 .... - THIS HOST ASSUMED DEAD

TABLE 2-10 SLUVHDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
11	(B)	BITSTRING	1	HSTFLAG3	HOST FLAG 3 - HSC SOFTWARE RLSE
		..1. .... X'20'		HSTR110	..1. .... - HSC 1.1.0
		1... .... X'80'		HSTR120	1... .... - HSC 1.2.0
		.1.. .... X'40'		HSTR200	.1.. .... - HSC 2.0.0
		...1 .... X'10'		HSTR201	...1 .... - HSC 2.0.1
		.... 1... X'08'		HSTR210	.... 1... - HSC 2.1.0
		.... .1.. X'04'		HSTR400	.... .1.. - HSC 4.0.0
		.... ..1. X'02'		HSTR410	.... ..1. - HSC 4.1.0
12	(C)	CHARACTER	8	HSTNONEN	NON-LIBRARY ESOTERIC NAMES
20	(14)	CHARACTER	8	HSTLIBEN(16)	LIBRARY ESOTERIC NAMES (BY ACS)
148	(94)	LENGTH		HSTHOSLN	LENGTH OF HOST ENTRY

Cross Reference

Name	Len	Offset Value
HSTDEAD	-	10
HSTDELAY	-	20
HSTFLAG1	000001	09
HSTFLAG2	000001	0A
HSTFLAG3	000001	0B
HSTFXLEN	-	03
HSTHNAME	000008	00
HSTHOSLN	-	94
HSTHOSTS	-	03
HSTHSTAC	-	20
HSTINDEX	000001	08
HSTLIBEN	000008	14
HSTNHOST	000002	01
HSTNONEN	000008	0C
HSTPRIAC	-	80
HSTRCVRH	-	40
HSTRCVRR	-	80
HSTR110	-	20
HSTR120	-	80
HSTR200	-	40
HSTR201	-	10
HSTR210	-	08
HSTR400	-	04
HSTR410	-	02
HSTSBYAC	-	10
HSTSHDAC	-	40

SLUVIDAT

TABLE 2-11 SLUVIDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVIDAT - FLAT FILE CDS INFORMATION DSECT FUNCTION: DESCRIBES THE CDS INFORMATION WHICH MAY BE GENERATED TO THE FLAT FILE BY THE VOLUME REPORT UTILITY.					
0	(0)	STRUCTURE		SLUVIDAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'I')
1	(1)	BITSTRING	1	CDSRCVRY	CDS RECOVERY OPTIONS
		1... .... X'80'		CDSSECND	1... .... - SECONDARY
		.1.. .... X'40'		CDSSTDBY	.1.. .... - STANDBY
		..1. .... X'20'		CDSJOURN	..1. .... - JOURNAL
		111. .... X'E0'		CDSALL	111. .... - ALL
		1.1. .... X'A0'		CDSBOTH	1.1. .... - JOURNAL & SECONDARY
		.... X'00'		CDSNONE	.... - NONE
4	(4)	SIGNED-FWORD	4	CDSRSVD1	*** RESERVED ***
8	(8)	CHARACTER	8	CDSENQNM	CDS MAJOR ENQUEUE NAME
16	(10)	CHARACTER	8	CDSLEVEL	CDS LEVEL - VERSION/RELEASE/MOD LEVEL ('VV.RR.MM')
24	(18)	CHARACTER	8	CDSCDATE	DATE CDS CREATED (MM/DD/YY) NOTE: SINGLE DIGIT MONTH WILL HAVE A BLANK AS THE FIRST CHARACTER, E.G. ' 3/16/92'
32	(20)	CHARACTER	8	CDSCTIME	TIME CDS CREATED (HH:MM:SS)
40	(28)	CHARACTER	8	CDSBTIME	TIME LAST BACKED UP (HH:MM:SS)
48	(30)	CHARACTER	8	CDSBDATE	DATE LAST BACKED UP (MM/DD/YY)
56	(38)	CHARACTER	8	CDSRTIME	TIME WHEN RESTORED (HH:MM:SS)
64	(40)	CHARACTER	8	CDSRDATE	DATE WHEN RESTORED (MM/DD/YY)
72	(48)	CHARACTER	240	CDSNAMES	CDS DATASET INFORMATION

TABLE 2-11 SLUVIDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
312	(138)	LENGTH		CDSLNGTH	LENGTH OF RECORD
CDSNAMES CONTAINS ONE ENTRY PER PRIMARY, SHADOW, AND STANDBY CDSS. EACH ENTRY MAY BE MAPPED BY THE FOLLOWING DSECT:					
0	(0)	STRUCTURE		CDSINFO	FOR CDSNAMES ENTRIES
0	(0)	CHARACTER	44	CDSDSN	CDS DATASET NAME
44	(2C)	CHARACTER	6	CDSVOL	CDS VOLSER
50	(32)	HEXSTRING	2	-RESERVED-	*** RESERVED ***
52	(34)	CHARACTER	8	CDSUNIT	CDS UNIT NAME
60	(3C)	HEXSTRING	2	CDSSWCNT	CDS SWITCH COUNT
62	(3E)	HEXSTRING	2	-RESERVED-	*** RESERVED ***
64	(40)	HEXSTRING	4	-RESERVED-(4)	*** RESERVED ***
80	(50)	LENGTH		CDSINFOL	LENGTH OF CDS ENTRY

Cross Reference

Name	Len	Offset Value
CDSALL	-	E0
CDSBDATE	000008	30
CDSBOTH	-	A0
CDSBTIME	000008	28
CDSCDATE	000008	18
CDSCTIME	000008	20
CDSDSN	000044	00
CDSENQNM	000008	08
CDSINFOL	-	50
CDSJOURN	-	20
CDSLEVEL	000008	10
CDSLNGTH	-	138
CDSNAMES	000240	48
CDSNONE	-	00
CDSRCVRY	000001	01
CDSRDATE	000008	40
CDSRSVD1	000004	04
CDSRTIME	000008	38
CDSSECND	-	80
CDSSTDBY	-	40
CDSSWCNT	000002	3C
CDSUNIT	000008	34
CDSVOL	000006	2C

SLUVSDAT

TABLE 2-12 SLUVSDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVSDAT - FLAT FILE ACS STATION ADDRESS DSECT FUNCTION: MAP THE STATION ADDRESS INFORMATION BY HOST WITHIN ACS WHICH MAY BE WRITTEN TO THE FLAT FILE BY THE VOLUME REPORT UTILITY.					
0	(0)	STRUCTURE		SLUVSDAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'S')
1	(1)	BITSTRING	1	STNACS	ACS NUMBER
2	(02)	LENGTH		STNFXLEN	LENGTH OF FIXED SECTION
2	(02)	OFFSET		STNSTNS	START OF ACS HOST/STATION ARRAY STNSTNS CONSISTS OF 1 ENTRY PER GENNED HOST, EACH OF WHICH MAY BE MAPPD BY THE FOLLOWING DSECT:
0	(0)	STRUCTURE		STNENTRY	
0	(0)	HEXSTRING	1	STNHINDX	HOST INDEX NUMBER
1	(1)	HEXSTRING	3	STNADDRS(16)	STATION ADDRESS ARRAY
49	(31)	LENGTH		STNENTLN	LENGTH OF HOST/STATION ENTRY STNADDRS CONSISTS OF 1 ENTRY FOR EACH OF 16 POSSIBLE STATION AD- DRESSES WHICH COULD BE ASSIGNED TO A GIVEN ACS:
0	(0)	STRUCTURE		STNADENT	
0	(0)	BITSTRING	1	STNFLAG	STATION FLAGS
		1... .... X'80'		STNONLIN	1... .... - STATION ONLINE
1	(1)	HEXSTRING	2	STNCUA	STATION CUA
3	(03)	LENGTH		STNADENL	LENGTH OF STATION ADDR ENTRY

Cross Reference

Name	Len	Offset Value
STNACS	000001	01
STNADDRS	000003	01
STNADENL	-	03
STNCUA	000002	01
STNENTLN	-	31
STNFLAG	000001	00
STNFXLEN	-	02
STNHINDX	000001	00
STNONLIN	-	80
STNSTNS	-	02

SLUVVDAT

To determine the HSC release that produced a volume report flat file, use the CDSDATA parameter to create flat file records with non-volume information.

Interrogate the CDSLEVEL field in the SLUVIDAT (CDS Information) record. A CDS at level 02.00.00 is reported by an HSC VOLRpt at release level 2.0.1 and earlier. CDS level 02.01.00 is reported by an HSC 6.0, 6.1, or 6.2 VOLRpt.

The CDSDATA records are appended to the VOLDATA records. To interrogate the CDS level before processing the volume records, extract the CDSDATA and VOLDATA in different steps to create separate files.

Note –

- The Batch API request formats the date fields VOLDTINS, VOLDTSEL, and VOLTMNT as ''*yyyymmdd*.''
- The Batch API request does not report volume subpool labels or IDs. Fields VOLSPLBL and VOLSPID are blank-filled.
- When a volume has been mounted, the VOLERMNT and VOLERACT bit values are **both** set in VOLFLAG2. If the volume is errant, the VOLERMNT bit value **is not** set in VOLFLAG2, but the VOLERACT bit value is set.

TABLE 2-13 SLUVVDAT Record Format

Dec	Hex	Type	Length	Label	Description
SLUVVDAT - FLAT FILE VOLUME DATA DSECT FUNCTION: DESCRIBES THE VOLUME DATA WHICH MAY BE GENERATED TO THE FLAT FILE BY THE VOLUME REPORT UTILITY					
0	(0)	STRUCTURE		SLUVVDAT	
0	(0)	CHARACTER	1	-RESERVED-	RECORD TYPE (C'V')
1	(1)	BITSTRING	1	VOLMEDIA	VOLUME MEDIA TYPE
' '	(40)	CHAR CONST		VOLMEDLO	LONGITUDINAL MEDIA
'1'	(F1)	CHAR CONST		VOLMEDST	STANDARD MEDIA
'1'	(F1)	CHAR CONST		VOLMEDT1	(X'F1') STANDARD MEDIA
'A'	(C1)	CHAR CONST		VOLMEDTA	(X'C1') HELICAL MEDIA "A"
'B'	(C2)	CHAR CONST		VOLMEDTB	(X'C2') HELICAL MEDIA "B"
'C'	(C3)	CHAR CONST		VOLMEDTC	(X'C3') HELICAL MEDIA "C"
'D'	(C4)	CHAR CONST		VOLMEDTD	(X'C4') HELICAL CLEANING CARTRIDGE
'E'	(C5)	CHAR CONST		VOLMEDTE	(X'C5') ECART MEDIA
'J'	(D1)	CHAR CONST		VOLMEDTJ	(X'D1') JCART MEDIA
'P'	(D7)	CHAR CONST		VOLMEDTP	(X'D7') STK2P MEDIA

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
'R'	(D9)	CHAR CONST		VOLMEDTR	(X'D9') STK1R MEDIA
'U'	(E4)	CHAR CONST		VOLMEDTU	(X'E4') STK1U CLEANING CARTRIDGE "U"
'W'	(E7)	CHAR CONST		VOLMEDTW	(X'E7') STK2W CLEANING CARTRIDGE "W"
'Z'	(E9)	CHAR CONST		VOLMEDTZ	(X'E9') ZCART MEDIA
'C'		CHAR CONST		VOLL10M	LTO10G MEDIA
'B'		CHAR CONST		VOLL35M	LTO35G MEDIA
'A'		CHAR CONST		VOLL50M	LTO50G MEDIA
'1'		CHAR CONST		VOLL100M	LTO100G MEDIA
'2'		CHAR CONST		VOLL200M	LTO200G MEDIA
'3'		CHAR CONST		VOLL400M	LTO400G MEDIA
'4'		CHAR CONST		VOLL400M	LTO400G MEDIA
'T'		CHAR CONST		VOLL400W	LTO400W MEDIA
'U'		CHAR CONST		VOLL800W	LTO800W MEDIA
'5'		CHAR CONST		VOLL15T	LTO1.5T MEDIA
'V'		CHAR CONST		VOLL15W	LTO1.5W MEDIA
'6'		CHAR CONST		VOLL25T	LTO2.5T MEDIA
'W'		CHAR CONST		VOLL25W	LTO2.5W MEDIA
'1'		CHAR CONST		VOLLCL1M	LTOCLN1 MEDIA
'2'		CHAR CONST		VOLLCL2M	LTOCLN2 MEDIA
'U'		CHAR CONST		VOLLCLUM	LTOCLNU MEDIA
'S'		CHAR CONST		VOLSDLTM	SDLT MEDIA
'2'		CHAR CONST		VOLSDL2M	SDLT2 MEDIA
'3'		CHAR CONST		VOLSDL3M	SDLT3 MEDIA
'4'		CHAR CONST		VOLSDL4M	SDLT 4MEDIA
'1'		CHAR CONST		VOLSDS1M	SDLT-S1 MEDIA
'2'		CHAR CONST		VOLSDS2M	SDLT-S2 MEDIA
'3'		CHAR CONST		VOLSDS3M	SDLT-S3 MEDIA
'4'		CHAR CONST		VOLSDS4M	SDLT-S4 MEDIA
'1'		CHAR CONST		VOLT10K1	T10000 STANDARD MEDIA
'S'		CHAR CONST		VOLT10KS	T10000 SPORT MEDIA

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
'T'		CHAR CONST		VOLT10KT	T10000 CLEANING CARTRIDGE
'2'		CHAR CONST		VOLT10K2	T10000C STANDARD MEDIA
'P'		CHAR CONST		VOLT10KP	T10000C SPORT CARTRIDGE
'C'		CHAR CONST		VOLT10KC	T10000 UNIVERSAL CLEANING CARTRIDGE
'L'		CHAR CONST		VOLT10KL	T10000 STANDARD MEDIA
2	(2)	BITSTRING	1	VOLFLAG1	VOLUME FLAG BYTE 1
		1... .... X'80'		VOLSCR	1... .... - VOLUME IS SCRATCH
		.1.. .... X'40'		VOLSEL	.1.. .... - VOLUME IS SELECTED
		..1. .... X'20'		VOLEXLBL	..1. .... - VOLUME HAS EXTERNAL LABEL
		...1 .... X'10'		VOLEXRD	...1 .... - EXTERNAL LABEL IS OCR READABLE
		.... 1... X'08'		VOLINUSE	.... 1... - THIS RECORD IS IN USE
		....1 X'01'		VOLNILIB	....1 - VOLUME NOT IN LIB.
3	(3)	HEXSTRING	1	VOLOHID	OWNING HOST ID
4	(4)	SIGNED-FWORD	4	VOLSELCT	VOLUME SELECTION COUNT
8	(8)	CHARACTER	6	VOLSER	VOLUME SERIAL NUMBER, LEFT JUSTIFIED AND BLANK FILLED.
14	(E)	CHARACTER	14	VOLHMLOC	HOME LOCATION
14	(E)	CHARACTER	2	VOLHMACS	READABLE HEXADECIMAL ACS NUMBER WHERE THE VOLUME RESIDES.
16	(10)	CHARACTER	1	-RESERVED-	':'
17	(11)	CHARACTER	2	VOLHMLSM	READABLE HEXADECIMAL LSM # IN VOLHMACS WHERE THE VOLUME RESIDES
19	(13)	CHARACTER	1	-RESERVED-	':'
20	(14)	CHARACTER	2	VOLHMPNL	DECIMAL NUMBER OF THE PANEL WITHIN VOLHMLSM WHERE THE VOLUME RESIDES.

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
22	(16)	CHARACTER	1	-RESERVED-	':'
23	(17)	CHARACTER	2	VOLHMROW	DECIMAL NUMBER OF THE ROW WITHIN VOLHMPNL WHERE THE VOLUME RESIDES.
25	(19)	CHARACTER	1	-RESERVED-	':'
26	(1A)	CHARACTER	2	VOLHMCEL	DECIMAL NUMBER OF THE COLUMN WITHIN VOLHMROW WHERE THE VOLUME RESIDES.
28	(1C)	CHARACTER	3	VOLSPLBL	VOLUME SUBPOOL LABEL TYPE
'SL'	(E2D3)	CHAR CONST		VOLSPSL	STANDARD LABEL
'NL'	(D5D3)	CHAR CONST		VOLSPNL	NON-LABELLED
'AL'	(C1D3)	CHAR CONST		VOLSPAL	ANSI LABEL
'NSL'	(D5E2D3)	CHAR CONST		VOLSPNSL	NON-STANDARD LABEL
' '	(404040)	CHAR CONST		VOLSPNON	' SUBPOOL INFO NOT REQUESTED OR NOT AVAILABLE
31	(1F)	CHARACTER	13	VOLSPID	VOLUME SUBPOOL ID (13-BYTE NAME OF POOL IF USING SCRPOOL STATEMENTS; 3- BYTE SUBPOOL INDEX NUMBER IF USING SLSUX03)
44	(2C)	SIGNED-HWORD	2	VOLMXCLN	VOLUME MAXCLEAN VALUE
45	(2D)	BITSTRING	1	VOLDOM	VOLUME MEDIA DOMAIN
'L'		CHAR CONST		VOLL10D	LTO10G MEDIA
'L'		CHAR CONST		VOLL35D	LTO35G MEDIA
'L'		CHAR CONST		VOLL50D	LTO50G MEDIA
'L'		CHAR CONST		VOLL100D	LTO100G MEDIA
'L'		CHAR CONST		VOLL200D	LTO200G MEDIA
'L'		CHAR CONST		VOLL400D	LTO400G MEDIA
'L'		CHAR CONST		VOLL800D	LTO800G MEDIA
'C'		CHAR CONST		VOLLCL1D	LTOCLN1 MEDIA
'C'		CHAR CONST		VOLLCL2D	LTOCLN2 MEDIA

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
'C'		CHAR CONST		VOLLCLUD	LTOCLNU MEDIA
'1'		CHAR CONST		VOLSDLTD	SDLT MEDIA
'1'		CHAR CONST		VOLSDL2D	SDLT2 MEDIA
'1'		CHAR CONST		VOLSDL3D	SDLT3 MEDIA
'1'		CHAR CONST		VOLSDL4D	SDLT4 MEDIA
'S'		CHAR CONST		VOLSDS1D	SDLT-S1 MEDIA DOMAIN
'S'		CHAR CONST		VOLSDS2D	SDLT-S2 MEDIA DOMAIN
'S'		CHAR CONST		VOLSDS3D	SDLT-S3 MEDIA DOMAIN
'S'		CHAR CONST		VOLSDS4D	SDLT-S4 MEDIA DOMAIN
'T'		CHAR CONST		VOLD10KT	T10000 MEDIA
'C'		CHAR CONST		VOLD10KC	T10000 CLEANING MEDIA
' '		CHAR CONST		VOLDLONG	LONGITUDINAL MEDIA DOMAIN
46	(2E)	BITSTRING	1	VOLDEN	VOLUME DENSITY INFORMATION
		X'00'		VOLDENU	Density not available
		X'01'		VOLDEN1	Lowest density (9840A/B,9940A)
		X'02'		VOLDEN2	Higher density (9840C,9940B)
		X'03'		VOLDEN3	Triple density (9840D)
		X'04'		VOLDEN4	Quad density
		X'08'		VOLDEN8	Density unknown
48	(30)	SIGNED-FWORD	4	-RESERVED-(2)	* RESERVED *

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
THE FOLLOWING FIELDS: VOLTDINS, VOLTDSEL, VOLTDMNT CONTAIN THE HIGH-ORDER FULLWORD OF THE CPU TOD CLOCK VALUE WHEN THE VOLUME WAS (RESPECTIVELY) ENTERED INTO THE LIBRARY, LAST SELECTED, AND LAST MOUNTED. FOR EACH OF THESE FIELDS, THE LOW-ORDER BIT (BIT 31) HAS A VALUE EQUAL TO 2-TO-THE-20TH-POWER MICROSECONDS, OR 1.048576 SECONDS SINCE MIDNIGHT, JANUARY 1, 1900. THIS TIME IS UNCORRECTED FOR ANY LOCAL TIME ZONE OFFSET FROM GMT. THIS IS THE SAME FORMAT WHICH IS USED BY THE HSC TO SAVE THIS INFORMATION. THE VALUES IN FIELDS: VOLDTINS, VOLTMINS, VOLDTSEL, VOLTMSEL, VOLDTMNT, VOLTMMNT HAVE BEEN CORRECTED FOR LOCAL TIME OFFSET FROM GMT. THESE TIMES (AND POSSIBLY THE DATES) MAY THEREFORE BE DIFFERENT FROM VALUES CALCULATED USING THE TOD CONTENTS IN VOLTDINS, VOLTDSEL, AND VOLTDMNT.					
56	(38)	SIGNED-FWORD	4	VOLTDINS	TOD CLOCK VALUE WHEN VOLUME WAS INSERTED INTO THE LIBRARY
60	(3C)	SIGNED-FWORD	4	VOLTDSEL	TOD CLOCK VALUE WHEN VOLUME WAS LAST SELECTED
64	(40)	SIGNED-FWORD	4	VOLTDMNT	TOD CLOCK VALUE WHEN VOLUME WAS LAST MOUNTEDD
68	(44)	CHARACTER	8	VOLDTINS	DATE VOLUME INSERTED INTO THE LIBRARY FORMAT DETERMINED BY VOLD4YR
76	(4C)	CHARACTER	8	VOLTMINS	TIME VOLUME INSERTED INTO THE LIBRARY (HH:MM:SS)
84	(54)	CHARACTER	8	VOLDTSEL	DATE VOLUME LAST SELECTED FORMAT DETERMINED BY VOLD4YR
92	(5C)	CHARACTER	8	VOLTMSEL	TIME VOLUME LAST SELECTED (HH:MM::SS)
100	(64)	CHARACTER	8	VOLDTMNT	DATE VOLUME LAST MOUNTED FORMAT DETERMINED BY VOLD4YR
108	(6C)	CHARACTER	8	VOLTMMNT	TIME VOLUME LAST MOUNTED (HH:MM:SS)
116	(74)	BITSTRING	1	VOLFLAG3	VOLUME FLAG BYTE 3

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		1... .... X'80'		VOLD4YR	INDICATES DATE FORMAT ON - YYYYMMDD FORMAT OFF - MM/DD/YY FORMAT
		..1. .... X'20'		VOLMNDSM	AFFECTS VOLDTMNT/VOLTMMNT FLDS ON - TIME/DATE LAST MOUNTED@02 OFF - TIME/DATE DISMOUNTED
		.... ..1. X'02'		VOLNOUSE	VOLUME NOT USABLE
117	(75)	BITSTRING	1	VOLCRYPT	VOLUME ENCRYPTION FLAG
		1... .... X'80'		VOLNCRPY	VOLUME IS ENCRYPTED
		.1.. .... X'40'		VOLNCRPU	VOLUME ENCRYPTION UNKNOWN
118	(76)	BITSTRING	1	VOLMWL	VOLUME MEDIA WARRANTY LIFE
				00	value not available
				1-254	0-253%
				255	254% or greater
119	(77)	HEXSTRING	1	-RESERVED-	RESERVED
120	(78)	LENGTH		VOLLNGTH	
THE FOLLOWING SECTION IS FILLED IN ONLY IF THE VOLUME WAS FOUND TO BE EITHER IN TRANSIT OR ERRANT.					
120	(78)	BITSTRING	1	VOLFLAG2	VOLUME FLAG BYTE 2
********** FOR IN-TRANSIT VOLUMES: **********					
		1... .... X'80'		VOLITUSE	1... .... - RECORD IN USE
		.1.. .... X'40'		VOLITACQ	.1.. .... - RECORD HAS BEEN ACQUIRED
********** FOR ERRANT VOLUMES: **********					
		1... .... X'80'		VOLERACT	1... .... - RECORD IS ACTIVE
		.1.. .... X'40'		VOLERLIL	.1.. .... - LOST IN LSM POSSIBLE
		..1. .... X'20'		VOLERSSC	..1. .... - SOURCE LOC. SCANNED
		...1 .... X'10'		VOLERDSC	...1 .... - DEST. LOC. SCANNED

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		.... 1... X'08'		VOLERLSC	.... 1... - LOST IN LSM SCANNED
		.... .1.. X'04'		VOLERHSC	.... .1.. - HOME LSM SCANNED
		.... ..1.X'02'		VOLERMNT	.... ..1.- VOLUME IS MOUNTED
121	(79)	BITSTRING	1	VOLITTAG	IN-TRANSIT TAG TYPE
		.... X'00'		VOLITOTH	.... - OTHER (OR NOT IN TRAN)
		....1 X'01'		VOLITCAP	....1 - CAP
		.... ..1. X'02'		VOLITCEL	.... ..1. - CELL
		.... .1.. X'04'		VOLITLSM	.... .1.. - LSM ID
		.... 1... X'08'		VOLITVOL	.... 1... - VOLUME
		.... 1.1. X'0A'		VOLITLOC	.... 1.1. - LIBRARY LOCATION (VOLITVOL+VOLITCEL)
122	(7A)	BITSTRING	1	VOLITRTN	RECOVERY ROUTINE FLAG (IN TRAN. ON)
		.... .1.. X'04'		VOLRRAUS	.... .1.. - AUDIT START
		.... 1... X'08'		VOLRRALD	.... 1... - AUDIT LOGICAL DELETE
		...1 .... X'10'		VOLRRMNT	...1 .... - MOUNT
		...1 .1.. X'14'		VOLRRDEJ	...1 .1.. - DISMOUNT EJECT
		...1 1... X'18'		VOLRRCLU	...1 1... - CLEANER UPDATE
		...1 11.. X'1C'		VOLRRCLS	...1 11.. - CLEANER SELECT
		..1. .... X'20'		VOLRRSCA	..1. .... - SCRATCH ADD
		..1. .1.. X'24'		VOLRRSCD	..1. .1.. - SCRATCH DELETE
		..1. 1... X'28'		VOLRRVDL	..1. 1... - VOLUME DELETE
		..1. 11.. X'2C'		VOLRRERR	..1. 11.. - ERRANT PROCESSING
		..11 .... X'30'		VOLRRCAP	..11 .... - CAP
		..11 .1.. X'34'		VOLRRCNL	..11 .1.. - CONFIG LSM
		..11 1... X'38'		VOLRRSUA	..11 1... - SCRATCH UPDATE ADD
		..11 11.. X'3C'		VOLRRSLV	..11 11.. - SELECTED VOLUME
		.1.. .... X'40'		VOLRRSRE	.1.. .... - SCRATCH REDISTRIBUTION

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
		.1.. .1.. X'44'		VOLRRMCT	.1.. .1.. - MOVE CARTRIDGE
123	(7B)	HEXSTRING	3	-RESERVED-	* RESERVED
126	(7E)	HEXSTRING	6	VOLSRCE	SOURCE LOCATION
132	(84)	HEXSTRING	6	VOLDEST	DESTINATION LOCATION
138	(8A)	CHARACTER	2	VOLLILSM	"LOST IN" LSM
140	(8C)	CHARACTER	8	VOLRECC	RECTECH CHAR FORM
148	(94)	CHARACTER	8	VOLMEDC	MEDIA CHAR FORM
156	(9C)	LENGTH		VOLIELEN	LENGTH OF MAIN VOLUME SECTION PLUS IN-TRANSIT/ERRANT INFORMATION
THE VOLSRCE AND VOLDEST FIELDS MAY BE MAPPED BY THE FOLLOWING DSECT.					
0	(0)	STRUCTURE		VOLLOC	
0	(0)	CHARACTER	1	VOLSTYPE	SOURCE TYPE
'1'	(F1)	CHAR CONST		VOLSCELL	CELL
'2'	(F2)	CHAR CONST		VOLSCAP	CAP
'3'	(F3)	CHAR CONST		VOLSDRIV	DRIVE
'4'	(F4)	CHAR CONST		VOLSOTHR	OTHER
1	(1)	HEXSTRING	1	VOLSACSN	ACS NUMBER
2	(2)	HEXSTRING	1	VOLSLSMN	LSM NUMBER
********** FOR "CELL" TYPES **********					
3	(3)	HEXSTRING	1	VOLSPNLN	PANEL NUMBER
4	(4)	HEXSTRING	1	VOLSROWN	ROW NUMBER
5	(5)	HEXSTRING	1	VOLSCOLN	COLUMN (CELL) NUMBER
********** FOR "CAP" TYPES **********					
3	(3)	HEXSTRING	2	VOLSCLOC	CAP LOCATION
5	(5)	HEXSTRING	1	-RESERVED-	RESERVED
********** FOR "DRIVE" TYPES **********					
3	(3)	HEXSTRING	1	VOLSDPNL	DRIVE PANEL NUMBER

TABLE 2-13 SLUVVDAT Record Format (Continued)

Dec	Hex	Type	Length	Label	Description
4	(4)	HEXSTRING	1	VOLSDNUM	DRIVE NUMBER
5	(5)	HEXSTRING	1	-RESERVED-	RESERVED
3	(3)	HEXSTRING	1	VOLSDIDX	DRIVE INDEX NUMBER
4	(4)	HEXSTRING	1	-RESERVED-	RESERVED
5	(5)	BITSTRING	1	VOLSDFLG	DRIVE FORMAT FLAG
		1111 1111 X'FF'		VOLSDFIX	DRIVE IS DRIVE INDEX FORMAT
6	(6)	HEXSTRING	2	-RESERVED-	RESERVED
FOR "OTHER" TYPES, THIS RECORD IS TREATED AS IF THE VOLUME WERE ERRANT.					

Cross Reference

Name	Len	Offset Value
VOLDEST	000006	84
VOLDTINS	000008	44
VOLDTMNT	000008	64
VOLDTSEL	000008	54
VOLD4YR	-	80
VOLERACT	-	80
VOLERDSC	-	10
VOLERHSC	-	04
VOLERLIL	-	40
VOLERLSC	-	08
VOLERMNT	-	02
VOLERSSC	-	20
VOLEXLBL	-	20
VOLEXRD	-	10
VOLFLAG1	000001	02
VOLFLAG2	000001	78
VOLFLAG3	000001	74
VOLHMACS	000002	0E
VOLHMCEL	000002	1A
VOLHMLOC	000014	0E
VOLHMLSM	000002	11
VOLHMPNL	000002	14
VOLHMROW	000002	17
VOLIELEN	-	9C
VOLINUSE	-	08
VOLITACQ	-	40
VOLITCAP	-	01
VOLITCEL	-	02
VOLITLOC	-	0A
VOLITLSM	-	04

Name	Len	Offset Value
VOLITOTH	-	00
VOLITRTN	000001	7A
VOLITTAG	000001	79
VOLITUSE	-	80
VOLITVOL	-	08
VOLLILSM	000002	8A
VOLLNGTH	-	78
VOLMEDC	000008	94
VOLMEDIA	000001	01
VOLMEDST	-	'CVAL'
VOLMEDTA	-	'CVAL'
VOLMEDTB	-	'CVAL'
VOLMEDTC	-	'CVAL'
VOLMEDTD	-	'CVAL'
VOLMEDTE	-	'CVAL'
VOLMEDTJ	-	'CVAL'
VOLMEDTP	-	'CVAL'
VOLMEDTR	-	'CVAL'
VOLMEDTU	-	'CVAL'
VOLMEDTW	-	'CVAL'
VOLMEDTZ	-	'CVAL'
VOLMEDT1	-	'CVAL'
VOLMNDSM	-	20
VOLMXCLN	000002	2C
VOLNILIB	-	01
VOLNOUSE	-	02
VOLOHID	000001	03
VOLRECC	000008	8C
VOLRRALD	-	08
VOLRRAUS	-	04
VOLRRCAP	-	30

Name	Len	Offset Value
VOLRRCLS	-	1C
VOLRRCLU	-	18
VOLRRCNL	-	34
VOLRRDEJ	-	14
VOLRRERR	-	2C
VOLRRMCT	-	44
VOLRRMNT	-	10
VOLRRSCA	-	20
VOLRRSCD	-	24
VOLRRSLV	-	3C
VOLRRSRE	-	40
VOLRRSUA	-	38
VOLRRVDL	-	28
VOLSACSN	000001	01
VOLSCAP	-	‘CVAL’
VOLSCELL	-	‘CVAL’
VOLSCLOC	000002	03
VOLSCOLN	000001	05
VOLSCR	-	80
VOLSDFIX	-	FF
VOLSDFLG	000001	05
VOLSDIDS	000001	03
VOLSDNUM	000001	04
VOLSDPNL	000001	03
VOLSDRIV	-	‘CVAL’
VOLSEL	-	40
VOLSELCT	000004	04
VOLSER	000006	08
VOLSLSMN	000001	02
VOLSOTHR	-	‘CVAL’
VOLSPAL	-	‘CVAL’

Name	Len	Offset Value
VOLSPID	000013	1F
VOLSPLBL	000003	1C
VOLSPNL	-	‘CVAL’
VOLSPNLN	000001	03
VOLSPNON	-	‘CVAL’
VOLSPNSL	-	‘CVAL’
VOLSPSL	-	‘CVAL’
VOLSRCE	000006	7E
VOLSROWN	000001	04
VOLSTYPE	000001	00
VOLTDINS	000004	38
VOLTDMNT	000004	40
VOLTDSEL	000004	3C
VOLTMINS	000008	4C
VOLTMMNT	000008	6C
VOLTMSEL	000008	5C

Cross Reference

Name	Len	Offset Value
UVPCIM	-	01
UVPCLIP	-	02
UVPFLAG1	000001	01
UVPFLAG2	000001	02
UVPF1ACT	-	80
UVPF1AUT	-	20
UVPF1LNK	-	10
UVPF1ONL	-	08
UVPF1REC	-	40
UVPF2CLN	-	10
UVPF2DRA	-	40
UVPF2EJT	-	20
UVPF2ENT	-	80
UVPF2IDL	-	08
UVPHOST	000008	0E
UVPHOSTI	000001	16
UVPID	000003	03
UVPJOBN	000008	06
UVPLEN	-	34
UVPLPRIO	000002	20
UVPNCELL	000002	18
UVPNCOLS	000001	1B
UVPNMAGC	000001	1D
UVPNMAGS	000001	1C
UVPNPRIO	000002	1E
UVPNROWS	000001	1A

Name	Len	Offset Value
UVPPANEL	000001	32
UVPPCAP	-	80
UVPPRITY	000001	22
UVPRT	000001	00
UVPTWOPT	-	04
UVPTWSTD	-	03
UVPTYPE	000001	33
UVP9740	-	05

CHAPTER 3

Old Format of the DFSMS Interface

This chapter describes the old format of the DFSMS interface.

Note – The old format of the DFSMS interface has been superseded by the SMC POLICY command. For more information, see *ELS Command, Control Statement, and Utility Reference* and *Configuring and Managing SMC* .

SMC DFSMS Processing

The SMC interface to DFSMS provides the following capabilities:

- esoteric substitution during MVS JCL interpretation
- at device allocation time, the DFSMS DATACLAS value can request a specific recording technique and/or media.
- at device allocation time, the DFSMS MGMTCLAS value can be used for VTV allocations.
- at volume mount, the DFSMS MGMTCLAS value can be assigned to a VTV.
- at volume mount, the DFSMS DATACLAS value can request a media for a scratch request.

Enabling/Disabling the SMC DFSMS Interface

To enable the SMC DFSMS interface, specify the SMS parameter of the ALLOCDef command as follows:

```
ALLOCDEF SMS=ON
```

To disable the SMC DFSMS interface, specify the SMS parameter of the ALLOCDef command as follows:

```
ALLOCDEF SMS=OFF
```

The SMC DFSMS interface can be selectively enabled or disabled by job or job step by specifying the SMS parameter of the ALLOCJob command.

Tailoring the SMC DFSMS Interface

The SMSDef command can be used to tailor the default SMC DFSMS support for your installation's requirements. This command provides the ability to include or bypass certain SMC DFSMS functions.

DATACLAS, STORCLAS, and MGMTCLAS Specification

DFSMS DATACLAS can be specified by using the DATACLAS parameter on the DD JCL statement or by executing an Automatic Class Selection (ACS) routine. STORCLAS and MGMTCLAS can only be specified by ACS routines.

Note – STORCLAS and MGMTCLAS JCL parameters are not supported by the SMC DFSMS interface due to conflicts with IBM MVS DFSMS. Using the STORCLAS JCL parameter causes a data set to become DFSMS-managed, and the MGMTCLAS JCL parameter requires a DFSMS-managed data set. The data sets assigned STORCLAS and MGMTCLAS values in the STKTAP1 environment are not actually DFSMS-managed.

Invoking ACS Routines

IBM DFSMS invokes ACS routines with the variable &ACSENVIR set to ALLOC before the SMC invokes the ACS routines with variable &ACSENVIR set to STKTAP1.

The SMC invokes the ACS routines at the following points in processing:

- SSI55 Interpreter/Dynamic Allocation Exit (IDAX)
- SSI24 common allocation
- mount message interception.

The ACS routines are invoked in the following order:

1. data class
2. storage class
3. management class
4. storage group.

Management class and storage group ACS routines are called only if a storage class is assigned.

DFSMS Automatic Class Selection (ACS) Routine Environment for SMC

The following list of read-only variables is passed by SMC to DFSMS when the information is available to the SMC. Not all variables are available for every call to the ACS routines. See the descriptions of each DFSMS interface for exceptions.

- &ACSENVIR (equals STKTAP1 for the SMC interface)
- &ALLVOL
- &ANYVOL
- &DATACLAS
- &DD
- &DSORG
- &DSN
- &DSTYPE
- &EXPDT
- &FILENUM
- &JOB
- &LABEL
- &NVOL
- &PGM
- &RETPD
- &SYSNAME
- &SYSPLEX
- &UNIT.

In the STKTAP1 environment, the &ANYVOL variable is used only to match a specific VOLSER and does not contain the "REF=*xx*" values for VOL=REF allocations.

The &DATACLAS field is set when the JCL DD statement specifies this parameter.

If your installation uses the IGDACSXT routine to modify the read-only variables before the DFSMS ACS routine calls, be aware that the following variables, even if initialized, are not passed to the DFSMS ACS routines when &ACSENVIR is set to STKTAP1.

- &ACCT_JOB
- &ACCT_STEP
- &GROUP
- &MSGVP
- &USER
- &XMODE

Refer to the IBM manual *DFSMSdfp Storage Administration Reference* for more information about constraints when using read-only variables.

Esoteric Substitution During IDAX

When a job is in the JCL interpretation phase, the unit name (esoteric) can be changed indiscriminately (for example, you could substitute disk for tape). Considerations:

- SMC performs esoteric substitution for all DISP=NEW data sets.
- By default, the SMC treats a DISP=MOD data set as pre-existing and does not perform esoteric substitution. SMC performs esoteric substitution for DISP=MOD data sets **only** if the SMSDEF command MOD(ON) parameter is specified **and** the first reference to the data set in the job's JCL specifies either DISP=MOD or DISP=NEW.
- Unit affinity chains are always separated if ACS routines return different esoterics for different members of the chain.
- VOL=REF chains within a job are validated and updated with the head-of-chain esoteric if necessary to ensure that volume references are honored.

When the SMC locates a new allocation that is not DFSMS-managed, the SMC calls the DFSMS ACS routines with the environment variable &ACSENVIR set to STKTAP1. When the ACS routines return a pair of storage group names with the first name being STK1, the second storage group name replaces the original value of the UNIT parameter of the DD statement. For example, the following DD statement allocates a 3490 nonlibrary tape drive (esoteric TNLIB):

```
//DD1  DD DSN=&TEMP.DSN,UNIT=TNLIB,DISP=NEW
```

Assume that your installation wants to move all new tape allocations into a tape library. You can code the DFSMS ACS routines to return storage groups STK1 and a library esoteric such as TACS0, where TACS0 contains all drives in library location ACS0. After esoteric replacement, the only drives considered for the allocation are contained within the TACS0 esoteric. The nonlibrary drives are no longer considered eligible for the allocation.

Defining Storage Groups and Storage Classes

To enable esoteric substitution during IDAX, complete the following steps:

1. Define a storage group of type POOL named STK1.
2. Define a storage group of type POOL for each possible esoteric returned, giving it the same name as the esoteric name.
3. Define at least one volume to each storage group. StorageTek recommends that you use a nonexistent volume for this definition.
4. Create a storage class ACS routine that, when it is invoked by the SMC (i.e., when the environmental variable is &ACSENVIR=STKTAP1), returns a storage class to be passed to the storage group ACS routine. Refer to FIGURE 3-1 on page 226.
5. Create a storage group ACS routine that, when the environmental variable is &ACSENVIR=STKTAP1, returns two storage groups (e.g., &STORGRP='STK1','CART'). In this case, "STK1" is the first storage group returned, and "CART," the replacement esoteric, is the second. Refer to FIGURE 3-1 on page 226.
6. Test for the &ACSENVIR=STKTAP1 read-only variable in the storage class and storage group ACS routines. This enables you to prevent the storage class being assigned when MVS invokes the ACS routines. If MVS invokes the SMC version of the ACS routines, the data set becomes DFSMS-managed and all SMC allocation functions are bypassed.

7. Return both a storage class and a storage group during the SMC invocation of the DFSMS ACS routines. If a storage class is returned but a storage group is not, DFSMS issues a message stating that allocation has failed, but in reality that may not be the case.

```
PROC STORCLAS

FILTLIST LOCALDSN INCLUDE (BACKUP*.**,
                    PROD.BKP*.**)

FILTLIST RMTDSN INCLUDE (PROD.OFFSITE.**)

 IF &ACSENVIR = 'STKTAP1' THEN
            SELECT
            WHEN &DSN = &LOCALDSN
                  SET &STORCLAS = 'CART'
            WHEN &DSN = &RMTDSN
                  SET &STORCLAS = 'RMTCART'
            END
 END

================================================================
==

PROC STORGRP

 IF &ACSENVIR = 'STKTAP1' THEN
            SELECT
            WHEN &STORCLAS = 'CART'
                  SET &STORGRP = 'STK1','CART'
            WHEN &STORCLAS = 'RMTCART'
                  SET &STORGRP = 'STK1','RMTCART'
            END
 END
```

FIGURE 3-1 Sample Storage Class/Storage Group Routine

Availability of Read-only Variables

During DFSMS STORCLAS/STORGRP ACS routine processing, all of the read-only variables listed in "DFSMS Automatic Class Selection (ACS) Routine Environment for SMC" on page 223, except &DSORG, are available to the IDAX interface for esoteric substitution. The &DATACLAS field is set when the DD statement in the JCL specifies this parameter.

Validating DFSMS STORCLAS/STORGRP ACS Routine Execution

DFSMS provides the following ways to validate correct ACS routine execution:

- DFSMS WRITE statement in the ACS routines
- DFSMS ISMF test function.

When the SMC invokes the DFSMS ACS routines, all messages issued by DFSMS WRITE statements are routed to the GTF trace file if SMC tracing is active.

Refer to the publication *DFSMS/MVS DFSMSdfp Storage Administration Reference* for further information about writing and testing DFSMS ACS routines.

Retrieving DFSMS Values During Allocation and Volume Mount

Requesting Recording Technique/Media using DFSMS DATACLAS

During allocation processing, the media and/or recording technique can be specified for a DD allocation by coding:

- TAPEREQ statement
- DATACLAS parameter on the DD statement
- DATACLAS ACS routines.

During scratch volume mount processing, only the volume media can be specified.

Note – DATACLAS media and recording technique values override TAPEREQ values.

Media/Rectech Support

The following media and recording techniques are supported:

Media:	
MEDIA1	Standard capacity for both 18-track and 36-track media types (this is the default)
MEDIA2	Enhanced capacity 36-track media
Recording Techniques:	
18TRACK	18-track recording technique
36TRACK	36-track recording technique

Defining Data Classes

To use DATACLAS, customers must define their own data class and specify the recording technique and media. If the recording technique is left blank, the SMC defaults to allowing both 18TRACK and 36TRACK to remain eligible for the allocation request, unlike MVS, which defaults to 36TRACK.

As an example, a customer can define a DATACLAS named STD18 that specifies a recording technique of 18TRACK and standard media.

When using an ACS routine to supply a DATACLAS to set recording technique and media, do not specify &ACSENVIR='STKTAP1'. The DATACLAS ACS routine is invoked both by the SMC and MVS, and the resulting recording technique and media should be consistent.

The following figure provides a sample data class routine.

```
PROC DATACLAS

FILTLIST RMTDSN INCLUDE(PROD.OFFSITE.**)

 SELECT
 WHEN &DSN = &RMTDSN
        SET &DATACLAS = 'ECART36'
 END
```

FIGURE 3-2 Sample Data Class Routine

In the example above, assume DATACLAS ECART36 is defined with a recording technique of 36-track and a media type of MEDIA2. This data class routine example assigns ECART36 to data sets with names that start with "PROD.OFFSITE."

By default, any DATACLAS value specified by the DFSMS ACS routine overrides the DATACLAS parameter specified on the JCL statement. Your installation can change this behavior by adding the following statements to your DFSMS DATACLAS ACS routine.

```
WHEN (&DATACLAS NE '')
DO
  SET &DATACLAS = &DATACLAS
EXIT
END
```

Requesting Management Class Using DFSMS ACS Routines

During allocation and mount processing, a management class name can be specified for a virtual allocation by coding any of the following:

- TAPEREQ statement
- MGMTCLAS ACS routine.

The MGMTCLAS JCL parameter is not supported by the SMC DFSMS interface.

Note – The MGMTCLAS management class name overrides a TAPEREQ management class name.

When writing a management class routine, keep in mind:

- The management class routine is invoked only when a storage class is assigned.
- The management class routine must test for the &ACSENVIR='STKTAP1' read-only variable value.
- During volume mount message IEC501A interception, the &UNIT read-only variable contains the generic unit type, such as 3490. Therefore, careful consideration should be taken when coding ACS routines that use the &UNIT read-only variable.

FIGURE 3-3 on page 231 provides a sample management class routine.

```
PROC STORCLAS

FILTLIST CART INCLUDE ('CART')

 IF &ACSENVIR = 'STKTAP1' THEN
          SELECT
          WHEN (&UNIT EQ &CART)
               SET &STORCLAS = 'VIRTAPE'
          WHEN (&UNIT NE &CART)
               SET &STORCLAS = 'STKDFLT'
          END
 END

================================================================
=====

PROC STORGRP

 IF &ACSENVIR = 'STKTAP1' THEN
          SELECT
          WHEN (&STORCLAS = 'VIRTAPE')
               SET &STORGRP = 'STK1', 'VDRIVES'
          END
 END

================================================================
=====

PROC MGMTCLAS

FILTLIST LOCAL INCLUDE(BACKUP*.**.,
                 PROD.BKP*.**)

FILTLIST REMOTE INCLUDE(PROD.OFFSITE.**)

 IF &ACSENVIR = 'STKTAP1' THEN
          SELECT
          WHEN (&DSN = &LOCAL)
               SET &MGMTCLAS = 'INVTAPE'
          WHEN (&DSN = &REMOTE)
               SET &MGMTCLAS = 'OFFVTAPE'
          END
 END
```

FIGURE 3-3 Sample Management Class Routine

Note – In this example, the STORCLAS ACS routine assigns a storage class to every call. This ensures that the MGMTCLAS routine is also driven at mount time. Only the VTCS component of NCS currently uses the management class value.

Availability of Read-only Variables

- At allocation time and at mount time processing of message IEF233A, the &UNIT read-only variable is set by the SMC to the value specified by the UNIT= parameter of the DD statement. At mount time processing of message IEC501A, the SMC sets the &UNIT read-only variable to the generic unit type, such as 3490.
- During dynamic allocation, the &DATACLAS value can be specified by coding the DADACL text unit. However, this value is not available to the SMC when processing mount message IEF233A.

Validating DFSMS ACS Routine Execution

DFSMS provides the following ways to validate correct ACS routine execution:

- DFSMS WRITE statement in the ACS routines
    - DFSMS ISMF test function.

When the SMC invokes the DFSMS ACS routines, all messages issued by DFSMS WRITE statements or by DFSMS processing are routed to the SYSMSG data set of the job and are also routed to the GTF trace file if SMC tracing is active.

Note –

- DFSMS WRITE statements are **only** sent to the SYSMSG data set for the SSI55 Interpreter/Dynamic Allocation Exit (IDAX) esoteric substitution phase.
- Refer to the publication *DFSMS/MVS DFSMSdfp Storage Administration Reference* for further information about writing and testing DFSMS ACS routines.

CHAPTER 4

Old Format of the TAPEREQ Statement

This chapter describes the old format of the TAPEREQ statement and describes the TAPEREQ conversion script.

Note – The old format of the TAPEREQ statement has been superseded by the SMC POLICY command. For more information, see *ELS Command, Control Statement, and Utility Reference* and *Configuring and Managing SMC* .

TAPEREQ

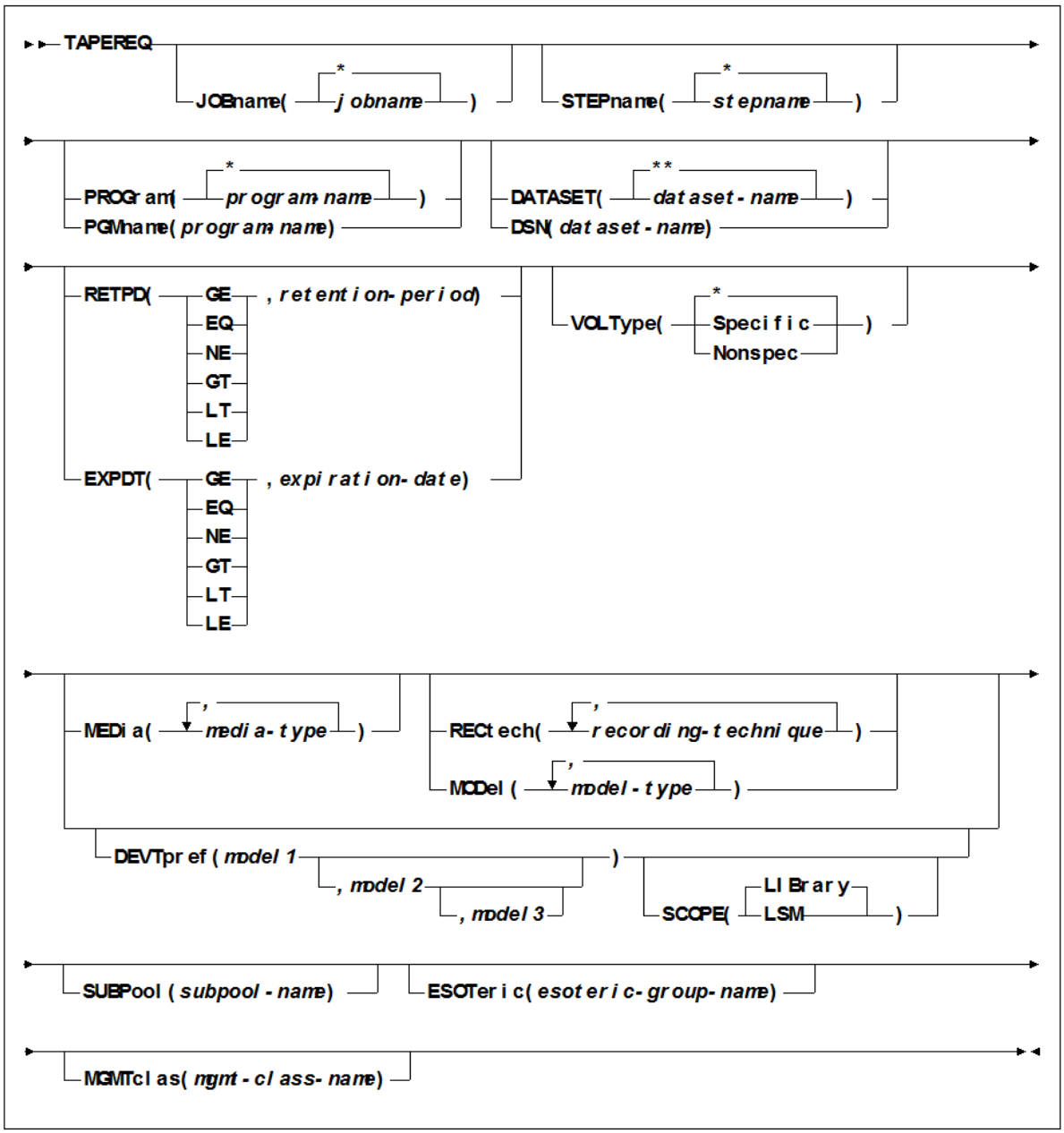
The SMC TAPEREQ statement specifies tape request attributes. These attributes define the media type and recording technique or model number used for a particular data set or group of data sets.

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

Note –

- See *ELS Command, Control Statement, and Utility Reference* for information about the TREQDEF Command.
- Specifications for recording technique and media type are ignored on TAPEREQ control statements if the SMC/DFSMS interface is enabled and data class specifications for media type and recording technique exist.
- Parameters from TAPEREQ lookup, including SUBPool and ESOTeric, always take precedence over values derived from a user exit.

Syntax



Note – See *ELS Command, Control Statement, and Utility Reference* for valid media types, recording techniques, and model types.

Control Statement Name

TAPEREQ

initiates the TAPEREQ control statement

If any of the following conditions exist:

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

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

Parameters

The TAPEREQ control statement is in essence an IF-THEN statement. **IF** the Input (selection criteria) parameters match the current tape request variables, **THEN** the Output (media and format) parameters may apply.

TAPEREQ input and output parameters are described in the following sections.

Input Parameters

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

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

The TAPEREQ input (selection criteria) parameters include:

JOBname

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

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

---

jobname

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

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

STEPname

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

stepname

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

PROGram or **PGMname**

optionally, specifies the program name

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

program-name

the program name for which the TAPEREQ control statement is processed

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

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

DATASET or **DSN**

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

dataset.name

the data set name for which the TAPEREQ control statement is processed

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

Note –

- If you are coding a TAPEREQ statement for DFHSM, you must specify JOBname as a selection criterion. Using DATASET (DSN) can cause unpredictable results.
- The name you specify on this parameter might be different from the value coded in the DSN parameter on a DD statement. For example,

  ```
  DSN=&&ABC
  ```

  may be coded on a DD statement if a data set is temporary. However, the actual data set name is not &&ABC. Similarly, if the DSN parameter refers back to a previous DD statement, the data set name is resolved to the referred-to data set. Thus, the data set name referred to must be coded on the DATASET parameter in order for the TAPEREQ control statement to be processed.

RETPD

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

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

retention-period

the retention period in days for the data set

Specify the number of days as a 1- to 4-digit decimal number.

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

EXPDT

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

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

expiration-date

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

---

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

VOLType

optionally, specifies whether or not a nonspecific volume is being requested. If VOLType is omitted, the default value is * (either specific or nonspecific matches).

Specific

specifies that the request is for a specific volume

Note – The TAPEREQ parameter never overrides the actual media type of the specific volume returned by the LCS.

Nonspec

specifies that the request is for a nonspecific (scratch) volume

Output Parameters

The TAPEREQ output (media and format) parameters include:

MEDia

optionally, specifies the desired type of media for a data set being created. You can enter a list of media types, but they must be separated by commas.

media-type

the media type

See *ELS Command, Control Statement, and Utility Reference* for a list of valid *media-type* values.

Note –

- A list specifies a generic pool from which a selection is made. There is no implied priority.
- This parameter is ignored for an existing data set if the media characteristics are determined by the volume information contained in the LCS's control data set (CDS).
- If this parameter is not specified, a default is chosen based on the value of the RECtech parameter. See *ELS Command, Control Statement, and Utility Reference* for default values used if the MEDia parameter is omitted.
- To avoid problems, all TAPEREQ statements must specify MEDia and RECtech consistently. Be sure to include one or both parameters on each statement. If both media type and recording technique are omitted, all available devices are eligible for allocation.

RECtech

optionally, specifies the method used to record data tracks on the tape surface for the desired data set. You can enter a list of recording techniques, but they must be separated by commas.

Note – A list specifies a generic pool from which a selection is made. There is no implied priority.

---

recording-technique

the recording technique

See *ELS Command, Control Statement, and Utility Reference* for a list of valid *recording-technique* values.

Note –

- RECtech and MODel are mutually exclusive.
- If this parameter is not specified on any matching TAPEREQ, a default is chosen based on the value of the MEDia parameter. See *ELS Command, Control Statement, and Utility Reference* for default values used if the MEDia parameter is omitted.
- It is recommended that all TAPEREQ statements specify MEDia and RECtech consistently. Be sure to include one or both parameters on each statement. If both media type and recording technique are omitted, all available devices are eligible for allocation.

MODel

optionally, specifies the model number of a transport. You can enter a list of models, but they must be separated by commas. MODel provides the same type of information as RECtech, but a user may find it more convenient to specify a transport model rather than a recording technique.

model-type

the model type. See *ELS Command, Control Statement, and Utility Reference* for a list of valid *model-type* values.

Note –

- MODel and RECtech are mutually exclusive.
- A list specifies a generic pool from which a selection is made. There is no implied priority.

DEVTpref

requests device preferencing for a particular allocation request. The use of device preferencing is restricted to StorageTek 36-track class transport models: 4490, 9490, and 9490EE.

Note – The following rules apply when using the MEDia, MODel, and RECtech parameters in conjunction with DEVTpref:

- The MODel parameter must include the models specified in the DEVTpref parameter.
- The RECtech parameter must include valid values for each model specified in the DEVTpref parameter.
- The MEDia parameter must include valid values for each model specified in the DEVTpref parameter.

model1

specifies the transport model number of the preferred device. These transports are given a higher selection probability than the alternate transport model.

model2

optionally, specifies the transport model number of the first alternate device. It must be separated from the *model1* by either a comma or a blank.

model3

optionally, specifies the transport model number of the second alternate device. It must be separated from *model2* by either a comma or a blank.

If *model3* is omitted, the transport model number not specified by *model1* or *model2* is assumed to be the second alternate device.

The following table shows the alternate device order if only *model1* is entered:

TABLE 4-1 Alternate Device Default Value

Preferred Device **(*model1*):**	***First Alternate Device*** **(*model2*):**	***Second Alternate Device*** **(*model3*):**
4490	9490	9490EE
9490	4490	9490EE
9490EE	4490	9490

Note – Entering DEVTpref(9490,4490) is functionally equivalent to DEVTpref(9490,4490,9490EE).

SCOPE

specifies whether device preferencing should be performed across the entire library complex (single or multiple-ACS), or at the individual LSM level. The SCOPE parameter may be used in an attempt to reduce pass-thru events. SCOPE is valid only when the DEVTpref parameter is specified on the same TAPEREQ statement.

LIBrary

All of the preferred models in the ACS are given a higher selection probability than all of the alternate models, while maintaining the ability to automate tape mounts. LIBrary is the default value.

In a multiple-ACS configuration, the way that the SMC processes SCOPE(LIBrary) depends on the following:

- The ability to automate the mount
- The type of request; specific versus scratch

A specific volume request is confined to the ACS where the volume resides so that the mount can be automated. The transports in all other ACSs, and all nonlibrary transports are marked ineligible for selection. The SMC then applies SCOPE(LIBrary) to one ACS, giving all of the preferred models in that ACS a higher selection probability.

A scratch request can be directed to any ACS, whether or not it contains scratch volumes. In this case, the SMC applies SCOPE(LIBrary) to all ACSs, giving all of the preferred models in all ACSs a higher selection probability.

Note – To prevent a scratch request from being directed to an ACS with no scratch volumes, use ALLOCDef Zeroscr (ON).

LSM

All of the preferred models within an LSM are given a higher selection probability than all of the alternate models within that same LSM, while maintaining the ability to automate tape mounts.

Each LSM is processed individually without regard to the models attached to other LSMs in the ACS. This means that if the preferred model is not available in the LSM where the volume resides, an alternate transport in the same LSM is allocated preventing a pass-thru of the volume to a different LSM.

SCOPE(LSM) should be requested if reducing pass-thru events is more important than allocating a preferred transport in a different LSM.

SCOPE applies only when DEVTpref is specified. LIBrary is the default value for the SCOPE parameter.

SUBPool

optionally, specifies the subpool used to satisfy a scratch request

subpool-name

the subpool name

ESOTeric

optionally, specifies the esoteric defining the list of eligible transports to be used to satisfy a tape request

esoteric-group-name

the esoteric group name

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

Note – If the esoteric contains devices not currently in the Eligible Device List, SMC allocation **cannot** add devices to the list, but can exclude devices not in the specified esoteric.

MGMTclas

optionally, specifies a Management Class you defined on the MGMTclas control statement. Refer to *ELS Command, Control Statement, and Utility Reference* for more information.

mgmt-class-name

the Management Class name

Caution – The Management Class applies **only** to virtual allocations and mounts.

Disabling a TAPEREQ Definition

Use the following procedure to disable a TAPEREQ definition.

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

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

Note – If any individual TAPEREQ control statement is in error, the entire set is discarded.

TAPEREQ Conversion Script (POLCVT02)

Overview

POLCVT02 is a REXX script designed to assist in converting existing TAPEREQ statements to use the new SMC POLicy method. This script is included in the SMC SAMPLIB. Use the sample JCL file POLCVT01 to execute the script.

The script reads existing TAPEREQ statements and produces the following output:

- TAPEREQ statements with existing policy parameters (MEDIA, RECTECH, etc.) replaced by a new POLicy name parameter
- POLicy definitions derived from the original TAPEREQ definitions. Policy names are created using the format POL*nnnnn*, where *nnnnn* is a decimal number from 00001 to 99999.

Note –

- The conversion script assumes that each TAPEREQ definition identifies a unique set of policy definitions. If multiple TAPEREQ definitions are used to identify policy, do not rely on the output of this conversion script to replace TAPEREQ processing. The output POLicy data set may require additional modifications.
- The TAPEREQ default VOLTYPE value is * (all volume types), your generated POLicy output file may contain policies with a VOLTYPE of SPECIFIC when the policy should reference scratch only.

  If this occurs, remove the VOLTYPE(SPECIFIC) POLICY statements from the output file. Note that in normal circumstances it is not necessary to provide any policies for specific allocations, since the SMC obtains information from the TapePlex about media and location that is used by default.

Executing the Script

Perform the following steps to execute the TAPEREQ conversion script:

1. Copy the SAMPLIB member POLCVT01 to your JCL library.

   POLCVT01 contains sample JCL to execute the POLCVT02 REXX script as follows:

```
//POLCVT01 JOB  (ACCTINFO),'CONVERT TAPEREQS TO USE POLICY'
//*------------------------------------------------------------- */
//* Modify this JCL to convert TAPEREQ definitions to use      */
//* policy definitions provided through the POLICY command.    */
//* This JCL executes a REXX samplib program called POLCVT02.  */
//* Change the following DD statements to identify the         */
//*   - dataset that contains the POLCVT02 REXX program        */
//*   - dataset that contains the TAPEREQ input statements     */
//*   - dataset that will contain the TAPEREQ output           */
//*   - dataset that will contain the POLICY output            */
//*------------------------------------------------------------- */
//STEP1    EXEC PGM=IKJEFT01
//SYSEXEC  DD DISP=SHR,DSN=rexx.dataset
//INTAPREQ DD DISP=SHR,DSN=tapereq.input(member)
//OTTAPREQ DD DISP=OLD,DSN=tapereq.output(member)
//OTPOLICY DD DISP=OLD,DSN=policy.output(member)
//*NPOLICY DD DISP=SHR,DSN=policy.input(member)
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
  %POLCVT02 INTAPREQ OTTAPREQ OTPOLICY ( TRACE 0 )
/*
```

2. Change the JOB card to reflect your environment.
3. Change the SYSEXEC DD to point to the REXX data set program, POLCVT02.
4. Change the INTAPREQ DD statement to identify the data set containing your input TAPEREQ definitions.
5. Change the OTTAPREQ DD statement to identify the destination data set for the output TAPEREQ definitions.
6. Change the OTPOLICY DD statement to identify the destination data set for the output POLicy definitions.
7. Optionally, uncomment and change the INPOLICY DD statement to identify the data set containing input POLicy definitions. This data set contains previously defined POLicy statements, or those that exist from a previous execution of the conversion script.
8. Review the generated output to ensure that each output POLicy statement contains all policies, and delete any unnecessary policies with VOLTYPE (SPECIFIC). Optionally, edit both the OTTAPEREQ and output POLICY files to assign meaningful names to the policies.

CHAPTER 5

HSC-Managed User Exits

Note – HSC managed user exits dummy exit source (SLSUX*nn*) and samples (UX*nn*SAM*n*) are distributed in ELS SAMPLIB.

Scratch Subpool User Exit (SLSUX03)

Note – This user exit is superseded by VOLPARM/POOLPARM. For more information, see *Managing HSC and VTCS* and *ELS Command, Control Statement, and Utility Reference*.

Functional Description

The Scratch Subpool User Exit allows you to define multiple scratch subpools, or scratch subpools of different label types.

Note –

- The preferred method for defining scratch subpools involves using POOLPARM/VOLPARM statement. For more information on using the Scratch Subpool control statement, refer to the *Configuring HSC and VTCS*.
- If scratch subpools are defined in both PARMLIB and SLSUX03, the PARMLIB definitions are used.

SLSUX03 is usually used with SLSUX01 and SLSUX02/SLSUX04 to implement scratch subpooling. Each user exit's roles are as follows:

- SLSUX03 defines the scratch subpools — it associates a particular group or range of VOLSERs as members in a particular subpool. The subpool is identified by either a name or a number.
- SLSUX01 is invoked for each Mount request and is used to inform the HSC which subpool to choose the scratch volume from for the request. SLSUX01 influences the choice of an appropriate scratch volume.
- SLSUX02/SLSUX04 is invoked as part of the process of allocating a drive to satisfy each mount request for a scratch volume. When a subpool is returned by SLSUX02/SLSUX04, the SMC preferences allocation of drives attached to LSMs that contain the most scratch volumes of the designated scratch subpool.

The combination of the user exit functionality described permits mounting of scratch tapes from specified scratch subpools in response to scratch mount requests and minimizes the number of pass-thrus required to satisfy the request.

Programming Considerations

Message Resulting From User Exit Failures

Any errors or inconsistencies in returns from the user exit, such as attempting to return more entries than initially specified or subpool entry definitions being returned out of order (by subpool index) cause display of a console error message and terminate HSC initialization. The following message is displayed if an error is detected:

SLS*xxxx*I - Module SLSVINIT return code 40Fx40Fx

The return code, 40Fx40Fx, in the message can have any of the following possible values:

40F540F5	Incorrect number of subpool entries/indices returned.
40F640F6	Subpool entries returned out of subpool index order.
40F740F7	Invalid volume serial number range.
40F840F8	Invalid label type.
40F940F9	Subpool already defined.

Special Considerations

Different hosts in a multi-host complex may have different subpool definitions; separate initializations of the tape management system may change subpool definitions. Each time a tape management system's scratch subpool definitions change, the HSC should also be reinitialized, perhaps with a new Scratch Subpool User Exit.

Restrictions and Limitations

It is permissible to READ and/or WRITE files in this user exit. Users may want to include DD statements in the HSC startup procedure for any tape management system data sets that may need to be referenced.

User Exit 03 Parameter List

The parameter list is passed to the scratch subpool user exit to obtain the scratch subpool definitions for the installation. If an installation's user exit is going to return scratch subpool definitions, the fields defining the number of subpools and number of subpool entries must be supplied along with the first subpool entry definition. After that, each subsequent call to the user exit returns a single subpool entry. Entries must be returned in subpool index order starting with 1 to a maximum of 255.

SLSUX03 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	48	SLSUX03P	User Exit 03 Parameter List
0	(0)	CHARACTER	4	UX03HDR	Eyecatcher
4	(4)	ADDRESS	4	UX03USER	Customer field; initially zero; preserved across calls
8	(8)	BITSTRING	1	UX03STAT	User exit call status
		....		UX03INIT	Initial call to user exit
		1		UX03SECD	Secondary call to user exit
9	(9)	BITSTRING	1	UX03SUBN	Number of subpools
10	(A)	HALFWORD	2	UX03ENTN	Number of subpool entries
12	(C)	HEXSTRING	1	UX03SUBP	Subpool index
13	(D)	CHARACTER	6	UX03LOVS	Low VOLSER
19	(13)	CHARACTER	6	UX03HIVS	High VOLSER
25	(19)	BITSTRING	1	UX03LABL	Label type
		....		UX03LBDF	Library default label
		1		UX03LBSL	Standard label (SL)
		.... ..1.		UX03LBAL	ANSI label (AL)
		11		UX03LBNL	Nonlabeled (NL)
		.... .1..		UX03LBNS	Nonstandard label (NSL)
26	(1A)	HEXSTRING	1	*	Reserved
27	(1B)	CHARACTER	13	UX03SNAM	Subpool name
40	(28)	CHARACTER	8	UX03OWNR	Subpool owner
48	(30)			UX03LSTL	Length of SLSUX03P

SLSUX03 Cross Reference

Name	Hex Offset	Hex Value
SLSUX03P	0	
UX03ENTN	A	
UX03HDR	0	
UX03HIVS	13	
UX03INIT		00
UX03LABL	19	
UX03LBAL		02
UX03LBDF		00
UX03LBNL		03
UX03LBNS		04
UX03LBSL		01
UX03LOVS	D	
UX03LSTL		30
UX03OWNR	28	
UX03SNAM	1B	01
UX03STAT	8	
UX03SUBN	9	
UX03SUBP	C	
UX03USER	4	

PGMI Authorization User Exit (SLSUX05)

Note – This user exit is superseded by the UUI, and security for the UUI is managed by User Exit 15. For more information, see *ELS Programming Reference*.

Functional Description

The Programmatic Interface Authorization User Exit performs authorization checking for PGMI functions. If the user exit disables itself (setting return code UX05NOPR) or abends, HSC allows all users to issue the QUERY and READ requests. The remaining requests can only be issued by APF-authorized, key 0-7, or supervisor state requestors.

If desired, an installation can use RACF or similar product within the SLSUX05 to perform the authorization.

Environment

This user exit is applicable in both JES2 and JES3 environments. It is invoked by HSC, and executes in HSC's address space.

This user exit is invoked by HSC for all requests received from the programmatic interface. This does not include HSC internal requests (e.g., job processing, utilities). The user exit should evaluate the request and set a return code to indicate if HSC should permit the request to be executed. The exit is called from a non-space switch PC in the requestor's address space, under the requestor's RB.

Note – This user exit must reside in a library defined in the IEAAPF*xx* member of the SYS1.PARMLIB.

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX05, 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 SLSUX05P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX05, register contents are as follows:

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

Return Codes

TABLE 5-1 SLSUX05 Return Codes

Return Code	Name	Description
0	UX05ALOW	Allow the request
4	UX05DENY	Deny the request
64	UX05NOPR	The user exit is inactive

Programming Considerations

A user word is provided in the parameter list. The contents of the word are passed from invocation to invocation of the user exit, and the user exit may change the contents. After an IPL or HSC COLD start, it is initially zero; otherwise it survives across HSC startups. If this user word is used as a pointer, the area pointed to should be in common storage.

The user exit is called once during HSC initialization. In that case the pointer to SLSXREQM (UX05REQA) is zero. This permits the user exit to initialize the user word, if not already initialized.

Note – The user word may not be zero if this is not the first HSC initialization after an IPL or HSC COLD start.

There is no serialization provided. The user exit could be executing simultaneously under two TCBs. The user exit may want to serialize updates to any work area the user word may point to.

User Exit 05 Parameter List

The parameter list is built by user interface routines. The exit routine should examine the parameter list.

- If the user should be allowed to issue the request, register 15 should be set to UX05ALOW.
- If the request is to be denied, UX05DENY should be set.
- If the exit is not to be called again, UX05NOPR should be set.

SLSUX05 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	24	SLSUX05P	User Exit 05 Parameter List
0	(0)	CHARACTER	4	UX05HDR	Eyecatcher
		'UX05'		UX05ID	Eyecatcher constant
4	(4)	FULLWORD	4	UX05LEN	Length of UX05 parameter list
8	(8)	ADDRESS	4	UX05REQA	SLSXREQM parameter list address
12	(C)	FULLWORD	4	UX05USER	Customer field; initially zero; preserved across calls
16	(10)	HEXSTRING	8	*	Reserved
24	(18)			UX05LSTL	Length of SLSUX05P

SLSUX05 Cross Reference

Name	Hex Offset	Hex Value
SLSUX05P	0	
UX05ALOW		00
UX05DENY		04
UX05HDR	0	
UX05ID		'UX05'
UX05LEN	4	
UX05LSTL		18
UX05NOPR		40
UX05REQA	8	
UX05USER	C	

CHAPTER 6

SMC-Managed User Exits

Note – These user exits have been superseded by the SMC POLICY command. For more information, see *ELS Command, Control Statement, and Utility Reference* and *Configuring and Managing SMC* .

Routing Data Sets to VSM with User Exits

To route data sets to VSM with HSC User Exits, do one of the following:

- Use return code UX02VIRT (32) in register 15 in HSC User Exit SLSUX02 (JES2) or for SLSUX04 (JES3) use UX04VIRT (24), which you use to control transport allocation for scratch mounts. To satisfy a scratch mount request, return code UX0xVIRT causes VSM to select an available VTD in your system and routes the job to a VTV mounted on that VTD.
- Use esoteric substitution in any of the User Exits that support esoteric substitution. For example, to direct scratch allocation requests to a VTD, specify an esoteric that represents VTDs in the UX02ESO field of SLSUX02 or the UX04ESOT field of SLSUX04.

  For VSM, esoteric definition and substitution is different in JES2 and JES3. For more information on defining and using VSM esoterics for HSC User Exits, see *Configuring and Managing SMC* .

HSC Format Exits

The following table lists HSC format user exits provided with NCS and describes the primary function of each exit.

TABLE 6-2 HSC Format User Exits

Exit	Name	Description	Function
1	SLSUX01	Message Handling User Exit	Facilitates the interface to tape management systems. It is also used to implement scratch subpooling.
2	SLSUX02	JES2 Scratch Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a nonspecific volume request under JES2.
4	SLSUX04	JES3 Scratch Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a nonspecific volume request under JES3.
8	SLSUX08	JES2 Specific Volume Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a specific volume request under JES2.
9	SLSUX09	Deferred Mount User Exit	Allows you to override the default setting and MVS defer the mount of a cartridge on a library drive.
10	SLSUX10	JES2 Unit Affinity Separation User Exit	Allows you to override the default setting, and control GDG or unit affinity separation for a specific GDG ALL or unit affinity chain.
11	SLSUX11	JES3 Deferred Mount User Exit	Allows you to override the default setting and JES3 defer the mount of a cartridge on a library drive.
12	SLSUX12	JES3 Unit Affinity Separation User Exit	Allows you to override the default setting, and control GDG or unit affinity separation for a specific GDG ALL or unit affinity chain.
13	SLSUX13	JES3 Specific Volume Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a specific volume request under JES3.

Note –

- When migrating to a new release of ELS, 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 StorageTeks-supplied programs be based on the source code shipped in the current release.
- Sample user exits are distributed as follows:
  - SMC managed JES2 user exits and the message handling user exit are distributed in the ELS SAMPLIB (UX*nn*HSC*n*).

- SMC managed JES3 user exits are distributed in the SMC JES3 SAMPLIB (UX*nn*HSC*n*).

HSC Format User Exits in JES Environments

The following table provides a reference for determining the applicability of any HSC format user exit function within a JES environment.

TABLE 6-3 HSC Format User Exits in JES Environments

User Exit Function	JES2	JES3
Deferred Mount	SLSUX09	SLSUX09 SLSUX11
Influence Device Allocation for Scratch Volume Requests	SLSUX02	SLSUX04
Influence Device Allocation for Specific Volume Requests	SLSUX08	SLSUX13
Esoteric Substitution or Unit Affinity Separation for Affinity Chains	SLSUX10	SLSUX12

Note – All other user exits are applicable regardless of the JES running.

Message Handling User Exit (SLSUX01)

Functional Description

The SMC requests HSC library actions by receiving and analyzing system console messages. If the message is of use to the SMC, for example, an MVS mount message, the SMC extracts the necessary information from the message, such as the VOLSER and drive address, and sends this information to HSC to direct the library hardware to perform the requested action.

User Exit 01 provides the facility the customer can use to change or enhance actions taken on intercepted messages. UX01 operates only on intercepted messages, either those defined by default (Refer to *Configuring and Managing SMC*), or those defined by the SMC USERMsg command. The user exit requests a specific SMC action by returning appropriate values to the SMC in the form of a parameter list.

There are two principal applications for User Exit 01:

- Request the SMC to take action for messages other than those automatically intercepted by the SMC. You may have a tape management system that issues special messages requiring the SMC to take a certain action. User Exit 01 intercepts console messages requiring action, and uses the User Exit 01 parameter list to instruct the SMC to perform the required action.

Note – Several messages for tape management systems are automatically intercepted. Refer to *Configuring and Managing SMC* for information about the USERMsg command, which adds messages to the list sent to SLSUX01.

- Support scratch subpooling in response to a Mount message requesting a scratch tape.

  A subpool requested via TAPEREQ overrides a subpool requested via UX01. If neither TAPEREQ nor UX01 is specified, the SMC uses the subpool name in the TMS mount message for scratch processing. If no subpool is available through TAPEREQ, UX01, or the mount message, HSC mounts any compatible scratch tape available.

  Using User Exit 01, you can examine the Mount message and according to the exit code defined criteria (jobname, etc.), specify through the User Exit 01 parameter list that the scratch tape selected to satisfy the request must be chosen from a specified subpool of available scratch tapes. The VOLSERs contained in a particular scratch pool are defined using User Exit 03 or HSC PARMLIB SCRPOol control statement.

Environment

This user exit is applicable in both JES2 and JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked for every WTO or WTOR intercepted by the SMC. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SLSUX01P.

Entry Specifications

Upon entry to SLSUX01, 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

Conditions on Return to HSC From User Exit

Return Specifications

On return from SLSUX01, register contents are as follows:

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

Return Codes

TABLE 6-4 SLSUX01 Return Codes

Return Code	Name	Description
0	UX01HSC	SMC to interpret the message
4	UX01ACTN	Message interpreted by the user exit. SMC acts per user exit direction.
64	UX01NOPR	The user exit is inactive

TABLE 6-5 SLSUX01 Return Data in Parameter List

Name	Description
UX01FUNC	Function code if return code UX01ACTN is issued.
UX01FUNT	Mount/dismount/swap FROM unit address if return code UX01ACTN is issued.
UX01LABT	Label type if return code UX01ACTN is issued.
UX01OPIN	Operator intervention flag if return code UX01ACTN is issued.
UX01SNAM	Scratch subpool name if return code UX01ACTN is issued.
UX01SSUB	Scratch subpool index if return code UX01ACTN is issued.
UX01TUNT	TO unit address if return code UX01ACTN is issued.
UX01VOLS	Volume serial number of cartridge if return code UX01ACTN is issued.
Note: If you define scratch subpools by using SCRPOOL statements in SLSSYS*xx* PARMLIB member (the preferred method), specify UX01SNAM. If you define scratch subpools by using SLSUX03, specify UX01SSUB.	

Programming Considerations

This exit is invoked in both JES2 and JES3 environments. In these environments, field UX01WQE in the parameter list mapped by SLSUX01P contains the pointer to the MVS WQE.

The exit routine should examine each message and set the operation to be performed in UX01FUNC, and then fill in the appropriate fields which apply to the function.

StorageTek samples include UX01HSC.

Examples

Mount Nonspecific Volume

In the following example, the user exit is set to mount a nonspecific volume of the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB to zero.
set UX01LABT to UX01DFLT.
```

Mount Nonspecific Volume from Scratch Subpool

In the following example, the user exit is set to mount a nonspecific volume from a scratch subpool of the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB to subpool index.
set UX01LABT to UX01DFLT.
```

Mount Nonspecific Volume from Scratch Subpool

In the following examples, the user exit is set to mount a nonspecific volume from a scratch subpool with a label type different than the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SNAM to subpool name.
```

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB to subpool index.
set UX01LABT to label type.
```

Mount Specific Volume

In the following example, the user exit is set to mount a specific volume.

```
set UX01FUNC to C'1'.
set UX01VOLS to appropriate VOLSER for specific request.
set UX01FUNT to drive address.
set UX01LABT to label type.
```

Dismount Volume

In the following example, the user exit is set to dismount a volume.

```
set UX01FUNC to C'2'.
set UX01FUNT to drive address.
set UX01DISP to disposition.
```

Swap Volume

In the following example, the user exit is set to swap a volume.

```
set UX01FUNC to C'3'.
set UX01FUNT to FROM drive address.
set UX01TUNT to TO drive address.
```

Operator Intervention on a mount

In the following example, the user exit is set to allow operator intervention on a mount.

```
set UX01FUNC to C'1'.
set UX01OPIN to UX01ON.
set UX01VOLS to volume serial number.
set UX01FUNT to FROM drive address.
set UX01TUNT to TO drive address.
set UX01LABT to label type.
```

No Operation

In the following example, the user exit is set to bypass all processing of and for this message.

```
set UX01FUNC to C'5'.
```

Special Considerations

Operator intervention is only supported on mount requests. It is not supported for dismount requests or for subsequent messages.

Setting the function code (UX01FUNC) to NOP (no operation) results in all SMC processing of the message being bypassed.

If you wish to pass back a null volser for a dismount request, specify '??????' (i.e., 6 question marks) for the volser (UX01VOLS). This causes HSC to dismount whatever volume is on the drive.

The user exit parameter list SLSUX01P and the MVS WQE, which are pointed to by UX01WQE, reside above the 16M line. The storage is not accessible to programs that are running with AMODE=24.

Restrictions and Limitations

The exit should take care not to issue any messages intercepted by the SMC. Otherwise, a loop in message processing may occur. Additionally, I/O services including: OPEN, CLOSE, READ, WRITE, etc. should be avoided.

Note – MVS/ESA 5.2 and above requires 4-digit UCBs. If your version of SLSUX01 contains 3-digit UCBs, you must recode this exit using 4-digit UCBs.

User Exit 01 Parameter List

The parameter list is built by the NCS message intercept program prior to invoking the user exit. It contains the address of the WQE (the MVS Write Queue Element) containing a message. The user exit can inspect the message and request specific actions by setting the appropriate values and the return code to UX01ACTN.

SLSUX01 Map

Offsets					
Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	60	SLSUX01P	User Exit 01 Parameter List
0	(0)	ADDRESS	4	UX01WQE	Address of MVS WQE
4	(4)	CHARACTER	1	UX01FUNC	Function code
		'F1'		UX01MNT	Mount a cartridge.
		'F2'		UX01DMNT	Dismount a cartridge.
		'F3'		UX01SWAP	Swap a cartridge from XXX to YYY.
		'F5'		UX01NOP	No operation to be performed.
5	(5)	BITSTRING	1	UX01OPIN	Operator intervention flag
		. . .1		UX01ON	Operator intervention requested.
6	(6)	CHARACTER	6	UX01VOLS	Volume serial number of cartridge
12	(C)	HEXSTRING	10	*	Reserved
22	(16)	CHARACTER	1	UX01DISP	Disposition of volume
		'K'		UX01KEEP	Keep volume.
		'D'		UX01DELT	Delete volume.
23	(17)	BITSTRING	1	UX01LABT	Label type
		. . . .		UX01DFLT	Library default label type
		1		UX01SL	Standard label
		. . . . . .1 .		UX01AL	ANSI label
		11		UX01NL	Nonlabeled
		. . . . .1 . .		UX01NSL	Nonstandard label
24	(18)	CHARACTER	4	UX01FUNT	Mount/Dismount/Swap "from" unit address
28	(1C)	CHARACTER	4	UX01TUNT	"To" unit address
32	(20)	HEXSTRING	1	UX01SSUB	Scratch subpool number
33	(21)	HEXSTRING	7	*	Reserved
40	(28)	CHARACTER	13	UX01SNAM	Scratch subpool name
56	(38)	FULLWORD	4	UX01WORD	Customer field; initially zero; preserved across calls
60	(3C)			UX01L	Length of SLSUX01P

SLSUX01 Cross Reference

Name	Hex Offset	Hex Value
SLSUX01P	0	
UX01ACTN		04
UX01AL		02
UX01CSC		00
UX01DELT		C4
UX01DFLT		00
UX01DISP	16	
UX01DMNT		F2
UX01FUNC	4	
UX01FUNT	18	
UX01HSC		00
UX01KEEP		D2
UX01L		3C
UX01LABT	17	
UX01MNT		F1
UX01NL		03
UX01NOP		F5
UX01NOPR		40
UX01NSL		04
UX01ON		16
UX01OPIN	5	
UX01SL		01
UX01SNAM	28	
UX01SSUB	20	
UX01SWAP		F3
UX01TUNT	1C	
UX01VOLS	6	
UX01WORD	38	
UX01WQE	0	

JES2 Scratch Allocation User Exit (SLSUX02)

Functional Description

The JES2 Scratch Allocation User Exit enables you to request the modification of actions taken by the SMC during allocation of a nonspecific (scratch) volume DD statement which references cartridge tape devices on a JES2 system. This exit can be used to:

- request allocation to a particular library subsystem as defined by the SMC LIBrary command.
- request allocation of library drives
- request allocation of nonlibrary drives
- request allocation to prefer library drives over nonlibrary drives, but not exclude nonlibrary drives
- change esoteric (unit name) used for device allocation
- request allocation of a particular ACS
- request allocation to preference LSMs based on LSM type (LSMPREF)
- request allocation to use LSM preferencing when scratch volumes available reach a defined level (LOWSCR)
- supply scratch subpool information for allocation.

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every allocation request for a nonspecific volume on a cartridge tape device. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX02, 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 SLSUX02P.

Execution Attributes

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

Conditions on Return From User Exit

Return Specifications

On return from SLSUX02, register contents are as follows:

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

Return Codes

TABLE 6-6 SLSUX02 Return Codes

Return Code	Name	Description
0	UX02HSC	Perform default HSC allocation action
4	UX02LIB	Use library drives
8	UX02NLIB	Use nonlibrary drives
12	UX02LIBP	Prefer library drives
16	UX02ESUB	Change the esoteric (unit name) to be used for the allocation
20	UX02ASUB	Request the allocation to the specified ACS
24	UX02LS	Change the LSMPREF parameter value
28	UX02LO	Change the LOWSCR parameter value
32	UX02VIRT	Select a virtual drive
64	UX02IACT	The user exit is inactive

Programming Considerations

- Because the exit executes as an extension to the common allocation SSREQ, it cannot issue dynamic allocation requests.
- If your SMC accesses multiple TapePlexes, you must code the UX02LIBN library name if you also code an ACS ID. The return code “Use Library Drives” is interpreted to mean use drives in any library. The return code “Use Nonlibrary Drives” is interpreted to mean use only drives not defined in any library.
- Do not attempt to use return code 12 (UX02LIBP) if you have nonlibrary transports with cartridge scratch loaders (CSLs) installed. If MVS allocation detects the presence of CSL transports, it ignores the effects of SMC device preferencing, and the CSL transports are preferred for scratch mounts. If all CSL transports are in use, then the preference established by the SMC is honored.

User Exit 02 Parameter List

The parameter list is built for a nonspecific allocation request. The return code from the user exit indicates the technique which SMC allocation should use for the unit selection(s). When the allocation technique indicates a library drive, the user exit can qualify the selection by a scratch subpool, or a scratch subpool and label type.

SLSUX02 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	152	SLSUX02P	User Exit 02 Parameter List
0	(0)	CHARACTER	4	UX02UX02	Eyecatcher 'UX02'
4	(4)	FULLWORD	4	UX02LEN	Length of UX02 parameter list
8	(8)	HEXSTRING	1	UX02SUBP	Storage subpool number
		'E6'		UX02SPID	Subpool 230
9	(9)	HEXSTRING	1	UX02KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX02JOBN	Job name
20	(14)	CHARACTER	8	UX02STPN	Step name
28	(1C)	CHARACTER	8	UX02PRSN	Procedure step name
36	(24)	CHARACTER	8	UX02DDN	DD name
44	(2C)	ADDRESS	4	UX02JACC	Address of job accounting information
48	(30)	ADDRESS	4	UX02SACC	Address of step accounting information
52	(34)	CHARACTER	44	UX02DSN	Dataset name
96	(60)	HEXSTRING	1	UX02SSUB	Scratch subpool
97	(61)	BITSTRING	1	UX02LABT	Label type
		....		UX02LBDF	Library default label type
		1		UX02LBSL	Standard label
		.... ..1.		UX02LBAL	ANSI label
		11		UX02LBNL	Nonlabeled
		.... .1..		UX02LBNS	Nonstandard label
98	(62)	CHARACTER	3	UX02XPDT	Dataset expiration date from JFCB
101	(65)	HEXSTRING	3	*	Reserved
104	(68)	FULLWORD	4	UX02USER	Customer field; initially zero; preserved across calls
108	(6C)	CHARACTER	8	UX02ESO	Area to return an esoteric name
116	(74)	HEXSTRING	1	UX02ACS	Area to return an ACS ID
117	(75)	CHARACTER	13	UX02SNAM	Scratch subpool name

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
132	(84)	ADDRESS	4	UX02JFCB	Address of the JFCB
136	(88)	BITSTRING	1	UX02LSMP	LSMPREF override
		....		UX02LSNO	None
		1		UX024410	4410 = CIMARRON
		11		UX029360	9360 = WOLFCREEK
		.... .1..		UX029310	9310 = POWDERHORN
137	(89)	BITSTRING	1	UX02LOWS	LOWSCR override
		....		UX02LONO	None
		1111 1111		UX02LOAN	Any
138	(8A)	HEXSTRING	6	*	Reserved
144	(90)	CHARACTER	8	UX02LIBN	Override library name
152	(98)			UX02LSTL	Length of SLSUX02P

SLSUX02 Cross Reference

Name	Hex Offset	Hex Value
SLSUX02P	0	
UX02ACS	74	
UX02ASUB		14
UX02DDN	24	
UX02DSN	34	
UX02ESO	6C	
UX02ESUB		10
UX02HSC		00
UX02IACT		40
UX02JACC	2C	
UX02JFCB	84	
UX02JOBN	C	
UX02KEY	9	
UX02LABT	61	
UX02LBAL		02
UX02LBDF		00
UX02LBNL		03
UX02LBNS		04
UX02LBSL		01
UX02LEN	4	
UX02LIB		04
UX02LIBN	90	
UX02LIBP		0C
UX02LO		1C
UX02LOAN		FF
UX02LONO		00
UX02LOWS	89	
UX02LS		18
UX02LSMP	88	
UX02LSNO		00
UX02NLIB		08
UX02PRSN	1C	
UX02SACC	30	
UX02SNAM	75	
UX02SPID		E6
UX02SSUB	60	
UX02STPN	14	
UX02SUBP	8	
UX02USER	68	
UX02UX02	0	
UX02VIRT		20
UX02XPDT	62	

Name	Hex Offset	Hex Value
UX024410		01
UX029310		04
UX029360		03

JES3 Scratch Allocation User Exit (SLSUX04)

Functional Description

The JES3 Scratch Allocation User Exit enables you to request modification of the actions the SMC takes during allocation of a nonspecific (scratch) volume DD statement which references cartridge tape devices on a JES3 system. This exit can be used to:

- request allocation to a particular library subsystem as defined by the SMC LIBrary command.
- request allocation of library drives
- request allocation of nonlibrary drives
- request allocation to prefer certain LSM types over others (LSMpref)
- supply scratch subpool information for allocation (when using library drives)
- change esoteric (unit name) used for device allocation
- request allocation of a particular ACS.

Environment

This user exit is applicable during both drive exclusion and drive prioritization. It is invoked by SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every nonspecific (scratch) volume requested on a cartridge tape device. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX04, 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 SLSUX04P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX04, register contents are as follows:

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

Return Codes

TABLE 6-7 SLSUX04 Return Codes

Return Code	Name	Description
0	UX04HSC	Take default HSC allocation action
4	UX04LIB	Use library drives
8	UX04NLIB	Use nonlibrary drives
12	UX04REPL	Change the esoteric (unit name) to be used for the allocation
16	UX04SACS	Request the allocation of the specified ACS
20	UX04LS	Change the LSMPREF parameter value
24	UX04VIRT	Select a virtual drive
64	UX041ACT	The user exit is inactive

TABLE 6-8 SLSUX04 Return Data in Parameter List

Name	Description
UX04ACS	ACS to allocate in if return code UX04SACS is issued.
UX04ESOT	Esoteric to substitute if return code UX04REPL is issued.
UX04LABT	Label type if return code UX04HSC or UX04LIB is issued.
UX04SNAM	Scratch subpool name if return code UX04HSC or UX04LIB is issued.
UX04SSUB	Scratch subpool index if return code UX04HSC or UX04LIB is issued.
Note: If you define scratch subpools by using SCRPOOL statements in SLSSYSxx PARMLIB member (the preferred method), specify UX04SNAM. If you define scratch subpools using SLSUX03, specify UX04SSUB.	

Programming Considerations

- Because the exit executes as an extension to the common allocation SSREQ, it cannot issue dynamic allocation requests.
- If your SMC accesses multiple libraries, you must code the UX04LIBN library name if you also code an ACS ID. The return code “Use Library Drives” is interpreted to mean use drives in any library. The return code “Use Nonlibrary Drives” is interpreted to mean use only drives not defined in any library.

User Exit 04 Parameter List

The parameter list is built during drive exclusion and during drive prioritization. The user exit is called when a nonspecific allocation request occurs during drive exclusion for normal or dynamic allocation (UX04CFLG = 0). The user exit is also called when a nonspecific allocation request occurs during drive prioritization processing (UX04CFLG = UX04DIRA).

SLSUX04 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	168	SLSUX04P	User Exit 04 Parameter List
0	(0)	CHARACTER	4	UX04UX04	Eyecatcher 'UX04'
4	(4)	FULLWORD	4	UX04LEN	Length of UX04 parameter list
8	(8)	HEXSTRING	1	UX04SUBP	Storage subpool number
		'E6'		UX04SPID	Subpool 230
9	(9)	HEXSTRING	1	UX04KEY	Storage key.
10	(A)	HEXSTRING	1	UX04CFLG	UX04 call flag
		1.		UX04DIRA	Called during JES3 directed allocation
		. . . . .		UX04CI	Called during JES3 converter/interpreter
11	(B)	HEXSTRING	1	UX04FLAG	UX04 general flag used only when called from converter/interpreter
		1.		UX04UAFF	Element is member of unit affinity chain
		. 1.		UX04GAFF	Element is member of a GDGALL group
12	(C)	CHARACTER	8	UX04JOBN	Job name
20	(14)	CHARACTER	8	UX04STPN	Step name
28	(1C)	CHARACTER	8	UX04PRSN	Procedure step name
36	(24)	CHARACTER	8	UX04DDN	DD name
44	(2C)	CHARACTER	44	UX04DSN	Dataset name
88	(58)	HEXSTRING	1	UX04SSUB	Scratch subpool
89	(59)	BITSTRING	1	UX04LABT	Label type
		. . . . .		UX04LBDF	Library default label type
		 1		UX04LBSL	Standard label
		. . . . . 1 .		UX04LBAL	ANSI label
		 11		UX04LBNL	Nonlabeled
		. . . . . 1 . .		UX04LBNS	Nonstandard label
92	(5C)	FULLWORD	4	UX04USER	Customer field; initially zero; preserved across calls
96	(60)	CHARACTER	8	UX04MAIN	JES3 setup processor
104	(68)	CHARACTER	8	UX04UNIT	JCL unit name

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
112	(70)	CHARACTER	8	UX04ESOT	Area to return an esoteric name
120	(78)	FULLWORD	4	UX04ACS	Area to return an ACS ID; format: 000000AA, where AA is the ACS number
124	(7C)	CHARACTER	13	UX04SNAM	Scratch subpool name
137	(89)	BITSTRING	1	UX04LSMP	LSMPREF override
		....		UX04LSNO	None
		1		UX044410	4410 = CIMARRON
		11		UX049360	9360 = WOLFCREEK
		.... .1..		UX049310	9310 = POWDERHORN
138	(8A)	HEXSTRING	2	*	Reserved
140	(8C)	CHARACTER	8	UX04LIBN	Override library name
148	(94)	HEXSTRING	20	*	Reserved
168	(A8)			UX04LSTL	Length of SLSUX04P

SLSUX04 Cross Reference

Name	Hex Offset	Hex Value
SLSUX04P	0	
UX04ACS	78	
UX04CFLG	A	
UX04CI		00
UX04DIRA		80
UX04DDN	24	
UX04DSN	2C	
UX04ESOT	70	
UX04FLAG	B	
UX04GAFF		40
UX04HSC		00
UX04IACT		40
UX04JOBN	C	
UX04KEY	9	
UX04LABT	59	
UX04LBAL		02
UX04LBDF		00
UX04LBNL		03
UX04LBNS		04
UX04LBSL		01
UX04LEN	4	
UX04LIB		04
UX04LIBN	8C	
UX04LS		14
UX04LSMP	89	
UX04LSNO		00
UX04MAIN	60	
UX04NLIB		08
UX04PRSN	1C	
UX04REPL		0C
UX04SACS		10
UX04SNAM	7C	
UX04SPID		E6
UX04SSUB	58	
UX04STPN	14	
UX04SUBP	8	
UX04UAFF		80
UX04UNIT	68	
UX04USER	5C	
UX04UX04	0	
UX04VIRT		18

Name	Hex Offset	Hex Value
UX044410		01
UX049310		04
UX049360		03

JES2 Specific Volume Allocation User Exit (SLSUX08)

Functional Description

The JES2 Specific Volume Allocation User Exit enables you to request modification of the actions the SMC takes during allocation of a specific volume DD statement which references cartridge tape devices on a JES2 system. This exit can be used to:

- request allocation to a particular library subsystem as defined by the SMC LIBrary command
- change esoteric (unit name) used for device allocation
- request allocation of a particular ACS
- request allocation of nonlibrary drives
- request allocation of library drives
- bypass drive exclusion logic.

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every allocation request for a specific volume on a cartridge tape device on a JES2 system. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX08, 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 SLSUX08P.

Execution Attributes

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

Conditions on Return From User Exit

Return Specifications

On return from SLSUX08, register contents are as follows:

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

Return Codes

TABLE 6-9 SLSUX08 Return Codes

Return Code	Name	Description
0	UX08HJCL	Honor unit information in JCL
4	UX08ESUB	Change the esoteric (unit name) to be used for the allocation
8	UX08SVOL	Request the allocation to use library drives indicated by the SPECVOL parameter of the ALLOC command
12	UX08NLIB	Request allocation to use nonlibrary drives
16	UX08ASUB	Request the allocation of the specified ACS
20	UX08BSEP	Bypass drive exclusion
64	UX08IACT	User exit is not operational

TABLE 6-10 SLSUX08 Return Data in Parameter List

Name	Description
UX08ACS	ACS to allocate in if return code UX08ASUB is issued.
UX08ESO	Esoteric to substitute if return code UX08ESUB is issued.

Programming Considerations

- Because the exit executes as an extension to the common allocation SSREQ, it cannot issue dynamic allocation requests.
- If your SMC accesses multiple libraries, you must code the UX08LIBN library name if you also code an ACS ID. The return code “Use Library Drives” is interpreted to mean use drives in any library. The return code “Use Nonlibrary Drives” is interpreted to mean use only drives not defined in any library.

User Exit 08 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for a specific allocation request. The user exit provides the ability to provide allocation criteria for a given DD statement.

SLSUX08 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	136	SLSUX08P	User Exit 08 Parameter List
0	(0)	CHARACTER	4	UX08UX08	Eyecatcher 'UX08'
4	(4)	FULLWORD	4	UX08LEN	Length of UX08 parameter list
8	(8)	HEXSTRING	1	UX08SUBP	Storage subpool number
		'E6'		UX08SPID	Subpool 230
9	(9)	HEXSTRING	1	UX08KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX08JOBN	Job name
20	(14)	CHARACTER	8	UX08STPN	Step name
28	(1C)	CHARACTER	8	UX08PRSN	Procedure step name
36	(24)	CHARACTER	8	UX08DDN	DD name
44	(2C)	ADDRESS	4	UX08USER	Customer field; initially zero; preserved across calls
48	(30)	ADDRESS	4	UX08JACC	Address of job accounting information
52	(34)	ADDRESS	4	UX08SACC	Address of step accounting information
56	(38)	CHARACTER	44	UX08DSN	Dataset name
100	(64)	ADDRESS	4	UX08VOLP	Address of volume information
104	(68)	FULLWORD	4	UX08NUMV	Number of volumes in dataset
108	(6C)	CHARACTER	8	UX08ESO	Area to return esoteric name
116	(74)	HEXSTRING	1	UX08ACS	Area to return an ACS ID
117	(75)	CHARACTER	3	UX08XPDT	Dataset expiration date
120	(78)	BITSTRING	1	UX08LABT	Label type
		.1..		UX08LBAL	Standard label
		.... .1..		UX08LBNS	ANSI label
		.... ..1.		UX08LBSL	Nonlabeled
		1		UX08LBNL	Nonstandard label
121	(79)	HEXSTRING	7	*	Reserved

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
128	(80)	CHARACTER	8	UX08LIBN	Override library name
136	(88)	CHARACTER	8	UX08LIBL	Library name where volume was found
144	(90)			UX08FIXL	Length of SLSUX08P

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	16	SLSUX08V	User Exit 08 Volume Parm List
0	(0)	CHARACTER	6	UX08VLSR	Volume serial
6	(6)	BITSTRING	1	UX08VLOC	Volume location
		1...		UX08VLIB	Volume resides in library
		.1..		UX08VNLB	Volume resides outside library
7	(7)	HEXSTRING	2	UX08LSM	If volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
9	(9)	HEXSTRING	7	*	Reserved
16	(10)			UX08VOLL	Length of volume entry

SLSUX08 Cross Reference

Name	Hex Offset	Hex Value
SLSUX08P	0	
UX08ACS	74	
UX08ASUB		10
UX08BSEP		14
UX08DDN	24	
UX08DSN	38	
UX08ESO	6C	
UX08ESUB		04
UX08FIXL		80
UX08HJCL		00
UX08IACT		40
UX08JACC	30	
UX08JOBN	C	
UX08KEY	9	
UX08LABT	78	
UX08LBAL		40
UX08LBNL		01
UX08LBNS		04
UX08LBSL		02
UX08LEN	4	
UX08LIBN	80	
UX08LSM	07	
UX08NLIB		0C
UX08NUMV	68	
UX08PRSN	1C	
UX08SACC	34	
UX08SPID		E6
UX08STPN	14	
UX08SUBP	8	
UX08SVOL		08
UX08USER	2C	
UX08UX08	0	
UX08VLIB		80
UX08VLOC	6	
UX08VLSR	0	
UX08VNLB		40
UX08VOLL		10
UX08VOLP	64	
UX08XPDT	75	

Deferred Mount User Exit (SLSUX09)

Functional Description

The Deferred Mount User Exit is invoked during MVS allocation processing to allow the user to determine whether a mount should be deferred. The exit is only invoked during static allocation. Dynamic allocation requests are always deferred. Checkpoint/restart data sets used for restart are never deferred.

Note – For information on JES3 deferral, refer to "JES3 Deferred Mount User Exit (SLSUX11)" on page 306.

If you request defer in the JCL, the mount of the cartridge is deferred until the data set is opened. If you do not request defer in your JCL, the cartridge is mounted at step allocation time. If the data set is not opened, the cartridge is mounted and dismounted without actually being used.

The SMC ALLOCDef command provides a DEFer option to enable or disable MVS deferred mount processing for library mounts. Refer to *Configuring and Managing SMC* for more information.

- Setting DEFer(ON) allows you to override the JCL and always request deferred mount processing.
- Setting DEFer(OFf) does not override your JCL or JECL statements requesting MVS or JES3 deferred processing.
- Setting DEFer(JEs3) allows you to delay the volume mount until step execution begins (JES3 only).

When deferred mount processing is in effect, a cartridge is only mounted when the data set on the cartridge is opened. If the data set is not opened, the cartridge is not mounted. The LSM robot is then free to perform other necessary tasks. If the volume is required, it is mounted at open time and the job waits until the cartridge is mounted before proceeding.

Cartridges that are mounted are selected by HSC. Without deferred mounting, scratch volumes that are never used, are mounted and removed from the scratch list. This causes the scratch list to be depleted more quickly than if HSC did not mount and select these volumes.

Deferred mounting can reduce the number of mounts and dismounts the robot must perform, but may increase the time required to run a job. SLSUX09 provides you with the flexibility to allow or disallow the Defer option on an individual mount request.

If you require some data sets be mounted prior to open time for performance reasons and your data center normally operates in deferred mode, SLSUX09 allows you to override deferred mounting for an individual mount request.

Environment

This user exit is applicable in both JES2 and JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX09, 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 the parameter list is mapped by macro SLSUX09P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX09, register contents are as follows:

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

Return Codes

TABLE 6-11 SLSUX09 Return Codes

Return Code	Name	Description
0	UX09HSC	Process normally; exit does not influence defer status
4	UX09DFR	Defer the mount
8	UX09NDFR	Honor the JCL defer status
12	UX09NVIR	Do not defer the virtual mount.
64	UX09IACT	The user exit is inactive

Caution – Use return code 12 with care. Due to timing issues, if a VTV is mounted in a non-deferred situation but is never opened by the program, the VTV remains mounted. This may compromise other processes because the VTV is not allowed to be processed while it is mounted. As there is no VTCS facility to perform a forced or manual dismount, use the MVS Unload command to 'free' the drive.

User Exit 09 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for a library volume allocation request. The return code from the user exit indicates the MVS defer status of the request.

SLSUX09 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	120	SLSUX09P	User Exit 09 Parameter List
0	(0)	CHARACTER	4	UX09UX09	Eyecatcher 'UX09'
4	(4)	FULLWORD	4	UX09LEN	Length of UX09 parameter list
8	(8)	HEXSTRING	1	UX09SUBP	Storage subpool number
		'E6'		UX09SPID	Subpool 230
9	(9)	HEXSTRING	1	UX09KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	FULLWORD	4	UX09USER	Customer field; initially zero; preserved across calls
16	(10)	CHARACTER	8	UX09JOBN	Job name
24	(18)	CHARACTER	8	UX09STPN	Step name
32	(20)	CHARACTER	8	UX09PRSN	Procedure step name
40	(28)	CHARACTER	8	UX09PGMN	EXEC=program name
48	(30)	CHARACTER	8	UX09DDN	DD name
56	(38)	CHARACTER	44	UX09DSN	Dataset name
100	(64)	HEXSTRING	16	*	Reserved
116	(74)	BITSTRING	1	UX09DDCH	Dataset characteristics
		1...		UX09SPEC	Specific volume request
		.1..		UX09NSPC	Nonspecific volume request
117	(75)	HEXSTRING	3	*	Reserved
120	(78)			UX09LSTL	Length of SLSUX09P

SLSUX09 Cross Reference

Name	Hex Offset	Hex Value
SLSUX09P	0	
UX09DDCH	74	
UX09DDN	30	
UX09DFR		04
UX09DSN	38	
UX09HSC		00
UX09IACT		40
UX09JOBN	10	
UX09KEY	9	
UX09LEN	4	
UX09LSTL		78
UX09NDFR		08
UX09NSPC		40
UX09NVIR		0C
UX09PGMN	28	
UX09PRSN	20	
UX09SPEC		80
UX09SPID		E6
UX09STPN	18	
UX09SUBP	8	
UX09USER	C	
UX09UX09	0	

JES2 Unit Affinity Separation User Exit (SLSUX10)

Functional Description

The JES2 Unit Affinity Separation User Exit enables you to request modification of the actions the SMC takes during allocation of a unit affinity chain or GDG ALL chain which references cartridge tape devices on a JES2 system. This exit can be used to

- override the setting of the SMC ALLOCDef command SEPLvl parameter
- request allocation of library drives for the chain
- request allocation of nonlibrary drives for the chain
- change the esoteric (unit name) used to allocate the chain
- request allocation of a particular ACS for the chain.

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every unit affinity chain or GDG ALL chain that requires allocation.It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX10, 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 SLSUX10P.

Execution Attributes

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

Condition on Return From User Exit

Return Specifications

On return from SLSUX10, register contents are as follows:

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

Return Codes

TABLE 6-12 SLSUX10 Return Codes

Return Code	Name	Description
0	UX10PLIB	Perform separation according to the SEPLvl parameter of the ALLOCDef or ALLOCJob commands
4	UX10NSEP	Do not separate the chain
8	UX10SEP	Separate the chain
12	UX10LDRV	Allocate library drives, but do not separate the chain
16	UX10NDRV	Allocate nonlibrary drives, but do not separate the chain
20	UX10ESUB	Perform esoteric substitution using the specified esoteric name, but do not separate the chain
24	UX10ASUB	Direct allocation to a specific ACS or MVS/CSC subsystem name, but do not separate the chain
64	UX10IACT	The user exit is inactive

TABLE 6-13 SLSUX10 Return Data in Parameter List

Name	Description
UX10ACS	ACS to allocate in if return code UX10ASUB is issued.
UX10ESO	Esoteric to substitute if return code UX10ESUB is issued.

Programming Considerations

- Because the exit executes as an extension to the common allocation SSREQ, it cannot issue dynamic allocation requests.
- This exit can request esoteric substitution (or ACS specification) or separation, but not both. The two requests are mutually exclusive.

Performance Considerations

Unit affinity separation results in more tape devices being allocated to job steps requesting unit affinity between library and nonlibrary volumes, or volumes in different ACSs. Increased resource allocation may affect the overall performance for the entire job mix of an MVS environment.

User Exit 10 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for each unit affinity chain or unqualified GDG specified in the invoking JCL. SLSUX10 provides the ability to request unit affinity separation for data sets which belong to a single affinity chain or an unqualified GDG and the required volumes reside in different physical locations (e.g., inside and outside an ACS).

SLSUX10 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	64	SLSUX10P	User Exit 10 Parameter List
0	(0)	CHARACTER	4	UX10UX10	Eyecatcher 'UX10'
4	(4)	FULLWORD	4	UX10LEN	Length of UX10 parameter list
8	(8)	HEXSTRING	1	UX10SUBP	Storage subpool number
		'E6'		UX10SPID	Subpool 230
9	(9)	HEXSTRING	1	UX10KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX10JOBN	Job name
20	(14)	CHARACTER	8	UX10STPN	Step name
28	(1C)	CHARACTER	8	UX10PRSN	Procedure step name
36	(24)	ADDRESS	4	UX10USER	Customer field; initially zero; preserved across calls
40	(28)	ADDRESS	4	UX10JACC	Address of job accounting information
44	(2C)	ADDRESS	4	UX10SACC	Address of step accounting information
48	(30)	FULLWORD	4	UX10DCNT	Number of DDs in affinity chain
52	(34)	CHARACTER	8	UX10ESO	Area to return esoteric name
60	(3C)	HEXSTRING	1	UX10ACS	Area to return an ACS ID
61	(3D)	HEXSTRING	3	*	Reserved
64	(40)			UX10FIXL	Length of fixed portion of parameter list

The following area immediately follows the SLSUX10P fixed data area. This area repeats once for each DD statement in the affinity chain. The number of DD statements in the affinity chain is stored in field UX10DCNT.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	80	SLSUX10D	User Exit 10 Dataset Parm List
0	(0)	CHARACTER	8	UX10DDN	DD name
8	(8)	CHARACTER	44	UX10DSN	Dataset name
52	(34)	ADDRESS	4	UX10VOLP	Pointer to volume information
56	(38)	FULLWORD	4	UX10VCNT	Number of volumes in dataset
60	(3C)	CHARACTER	3	UX10XPDT	Dataset expiration date from JFCB
63	(3F)	BITSTRING	1	UX10LABT	Label type from JFCB
		.1		UX10LBAL	ANSI label
		. . . . .1 . .		UX10LBNS	Nonstandard label
		. . . . . .1 .		UX10LBSL	Standard label
		1		UX10LBNL	Nonlabeled
64	(40)	BITSTRING	1	UX10GDGI	GDG information
		1		UX10GDG	Dataset is part of GDGALL
		.1		UX10NGDG	Dataset is GDG single
65	(41)	HEXSTRING	15	*	Reserved
80	(50)			UX10DSNL	Length of dataset entry

The following area is pointed to by UX10VOLP. For a specific request, UX10VSER contains the volume serial. For a nonspecific request, UX10VSER contains "SCRTCH". If the specific volume resides in the library, UX10LSM will contain its library location. For all other requests UX10LSM will contain zeros.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	16	SLSUX10V	User Exit 10 Volume Parm List
0	(0)	CHARACTER	6	UX10VLSR	Volume serial
6	(6)	BITSTRING	1	UX10VLOC	Volume location
		1.		UX10VLIB	Specific volume resides in library
		. 1.		UX10VNLB	Specific volume resides outside library
		. . 1.		UX10VSCR	Nonspecific volume request
7	(7)	HEXSTRING	2	UX10LSM	If specific volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
9	(9)	HEXSTRING	7	*	Reserved
16	(10)			UX10VOLL	Length of volume entry

SLSUX10 Cross Reference

Name	Hex Offset	Hex Value
SLSUX10D	0	
SLSUX10P	0	
SLSUX10V	0	
UX10ACS	36	
UX10ASUB		18
UX10DCNT	30	
UX10DDN	0	
UX10DSN	8	
UX10DSNL		50
UX10ESO	34	
UX10ESUB		14
UX10FIXL		40
UX10GDG		80
UX10GDGI	40	
UX10IACT		40
UX10JACC	28	
UX10JOBN	C	
UX10KEY	9	
UX10LABT	3F	
UX10LBAL		40
UX10LBNL		01
UX10LBNS		04
UX10LBSL		02
UX10LDRV		0C
UX10LEN	4	
UX10LSM	07	
UX10NDRV		10
UX10NGDG		40
UX10NSEP		04
UX10PLIB		00
UX10PRSN	1C	
UX10SACC	2C	
UX10SEP		08
UX10SPID		E6
UX10STPN	14	
UX10SUBP	8	
UX10USER	24	
UX10UX10	0	
UX10VCNT	38	
UX10VLIB		80
UX10VLOC	6	
UX10VLSR	0	
UX10VNLB		40

Name	Hex Offset	Hex Value
UX10VOLL		10
UX10VOLP	34	
UX10VSCR		20
UX10XPDT	3C	

JES3 Deferred Mount User Exit (SLSUX11)

Functional Description

The JES3 Deferred Mount User Exit is invoked during JES3 Converter/Interpreter (C/I) processing to allow the user to determine whether a mount should be JES3 deferred. The exit is only invoked during static allocation. Dynamic allocation requests are deferred. Checkpoint/restart data sets used for restart are not deferred.

Note – For information on MVS deferral, refer to "Deferred Mount User Exit (SLSUX09)" on page 292.

JES3 deferral means that the volume is not mounted before step execution begins. Any mount set up by JES3 must be JES3 deferred before it can be MVS deferred.

Note – MVS deferred allocation implies JES3 deferred allocation in the JES3 environment. JES3 deferral, however, does not imply MVS deferral.

The SMC ALLOCDef command provides a DEFer option to allow or disallow JES3 deferral and take full advantage of JES3 pre-execution setup. Refer to *Configuring and Managing SMC* for more information.

- Setting DEFer(ON) or DEFer(JEs3) automates JES3 defer processing.
    - DEFer(ON) enables deferred mount processing which overrides the JCL and defers all library mounts until the data set on the cartridge is opened. If the data set is not opened, the cartridge is not mounted. The robot is then free to perform other necessary tasks. When a volume is required, it is mounted at open time and the job waits until the cartridge is mounted before proceeding.
    - DEFer(JEs3) allows you to delay the volume mount until step execution begins.

Note – Running with DEFer(OFf) is not recommended.

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX11, 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 SLSUX11P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX11, register contents are as follows:

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

Return Codes

TABLE 6-14 SLSUX11 Return Codes

Return Code	Name	Description
0	UX11HSC	Process normally; exit does not influence JES3 defer status
4	UX11DFR	JES3 defer the mount
8	UX11NDFR	Honor the JCL defer status
64	UX11IACT	The user exit is inactive

The Main Device Scheduler (MDS) verify process is bypassed for this request.

User Exit 11 Parameter List

The parameter list is built during JES3 device separation processing. The user exit is called for a library volume allocation request. The return code from the user exit indicates the JES3 defer status of the request.

SLSUX11 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	112	SLSUX11P	User Exit 11 Parameter List
0	(0)	CHARACTER	4	UX11UX11	Eyecatcher 'UX11'
4	(4)	FULLWORD	4	UX11LEN	Length of UX11 parameter list
8	(8)	HEXSTRING	1	UX11SUBP	Storage subpool number
		'E6'		UX11SPID	Subpool 230
9	(9)	HEXSTRING	1	UX11KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	FULLWORD	4	UX11USER	Customer field; initially zero; preserved across calls
16	(10)	CHARACTER	8	UX11JOBN	Job name
24	(18)	CHARACTER	8	UX11STPN	Step name
32	(20)	CHARACTER	8	UX11PRSN	Procedure step name
40	(28)	CHARACTER	8	UX11DDN	DD name
48	(30)	CHARACTER	44	UX11DSN	Dataset name
92	(5C)	HEXSTRING	16	*	Reserved
108	(6C)	BITSTRING	1	UX11DDCH	Dataset characteristics
		1.		UX11SPEC	Specific volume request
		. 1.		UX11NSPC	Nonspecific volume request
109	(6D)	HEXSTRING	3	*	Reserved
112	(70)			UX11LSTL	Length of SLSUX11P

SLSUX11 Cross Reference

Name	Hex Offset	Hex Value
SLSUX11P	0	
UX11DDCH	6C	
UX11DDN	28	
UX11DFR		04
UX11DSN	30	
UX11HSC		00
UX11IACT		40
UX11JOBN	10	
UX11KEY	9	
UX11LEN	4	
UX11LSTL		70
UX11NDFR		08
UX11NSPC		40
UX11PRSN	20	
UX11SPEC		80
UX11SPID		E6
UX11STPN	18	
UX11SUBP	8	
UX11USER	C	
UX11UX11	0	

JES3 Unit Affinity Separation User Exit (SLSUX12)

Functional Description

The JES3 Unit Affinity Separation User Exit enables you to request modification of the actions the SMC takes during allocation of a unit affinity chain or GDG ALL chain which references cartridge tape devices on a JES3 system using setup. (JES3 systems not using setup must use exit 10 to perform this function.) This exit can be used to:

- override the setting of the SMC ALLOCDef command SEPLvl parameter.
- request allocation of library drives for the chain
- request allocation of nonlibrary drives for the chain
- change the esoteric (unit name) used to allocate the chain
- request allocation of a particular ACS for the chain.

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every unit affinity chain or GDG ALL chain.It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions When Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX12, 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 SLSUX12P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX12, register contents are as follows:

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

Return Codes

TABLE 6-15 SLSUX12 Return Codes

Return Code	Name	Description
0	UX12HSC	Perform separation according to the SEPLvl parameter of the ALLOCDef or ALLOCJob commands
4	UX12LIB	Do not separate the chain
8	UX12NLIB	Separate the chain
12	UX12REPL	Do not separate the chain and substitute the returned esoteric
16	UX12SACS	Do not separate the chain and allocate in the specified ACS
20	UX12SEP	Separate the chain
64	UX12IACT	The user exit is inactive

TABLE 6-16 SLSUX12 Return Codes

Name	Description
UX12ACS	ACS to allocate in if return code UX12SACS is issued.
UX12ESOT	Esoteric to substitute if return code UX12REPL is issued.

Programming Considerations

Unit affinity separation may cause the number of units which the requester needs to allocate to increase. Separation may prevent successful allocation processing if the number of units required exceeds the number available.

User Exit 12 Parameter List

The parameter list is built during device separation. The user exit is called t allow the customer to determine whether an affinity chain of DD statements should share the same unit as specified, or whether the chain should be broken. This break allows allocation of drives in the same physical location as the tape volumes required.

SLSUX12 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	76	SLSUX12P	User Exit 12 Parameter List
0	(0)	CHARACTER	4	UX12UX12	Eyecatcher 'UX12'
4	(4)	FULLWORD	4	UX12LEN	Length of UX12 parameter list
8	(8)	HEXSTRING	1	UX12SUBP	Storage subpool number
		'E6'		UX12SPID	Subpool 230
9	(9)	HEXSTRING	1	UX12KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX12JOBN	Job name
20	(14)	CHARACTER	8	UX12STPN	Step name
28	(1C)	CHARACTER	8	UX12PRSN	Procedure step name
36	(24)	FULLWORD	4	UX12DCNT	Number of DDs in affinity chain
40	(28)	CHARACTER	8	UX12UNIT	JCL unit name
48	(30)	CHARACTER	8	UX12ESOT	Area to return an esoteric name
56	(38)	FULLWORD	4	UX12ACS	Area to return an ACS ID; format: 000000AA, where AA = ACS number
60	(3C)	FULLWORD	4	UX12USER	Customer field; initially zero; preserved across calls
64	(40)	CHARACTER	8	UX12MAIN	JES3 setup processor
72	(48)	BITSTRING	1	UX12AFF	Type of affinity
		1.		UX12GDG	GDG affinity
		.1		UX12UAFF	Unit affinity
73	(49)	HEXSTRING	3	*	Reserved
76	(4C)			UX12FIXL	Length of fixed portion of parameter list

The following area immediately follows the SLSUX12P fixed data area. This area repeats once for each DD statement in the affinity chain. The number of DD statements in the affinity chain is stored in field UX12DCNT.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	76	SLSUX12D	User Exit 12 Dataset Parm List
0	(0)	CHARACTER	8	UX12DDN	DD name
8	(8)	CHARACTER	44	UX12DSN	Dataset name
52	(34)	FULLWORD	4	UX12NUMV	Number of volumes in dataset
56	(38)	BITSTRING	1	UX12LABT	Label type
		....		UX12LBDF	Library default label type
		1		UX12LBSL	Standard label
		.... ..1.		UX12LBAL	ANSI label
		11		UX12LBNL	Nonlabeled
		.... .1..		UX12LBNS	Nonstandard label
57	(39)	HEXSTRING	1	UX12SSUB	Scratch subpool number
58	(3A)	CHARACTER	13	UX12SNAM	Scratch subpool name
71	(47)	HEXSTRING	1	*	Reserved
72	(48)	ADDRESS	4	UX12VOLP	Pointer to volume information
76	(4C)			UX12VARL	Length of dataset entry

The following area is pointed to by UX12VOLP. It consists of the volume serial and location of each volume in the data set. The number of volume entries in the list is provided by UX12NUMV.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	12	SLSUX12V	User Exit 12 Volume Parm List
0	(0)	CHARACTER	6	UX12VLSR	Volume serial
6	(6)	BITSTRING	1	UX12VREQ	Volume requested
		1...		UX12SPEC	Specific volume requested
		.1..		UX12NSPC	Nonspecific volume request
7	(7)	BITSTRING	1	UX12VLOC	Volume location
		1...		UX12VLIB	Volume resides in library
		.1..		UX12VNLB	Volume resides outside library
8	(8)	HEXSTRING	2	UX12AALL	If volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
10	(A)	HEXSTRING	2	*	Reserved
12	(C)			UX12VLTL	Length of volume entry

SLSUX12 Cross Reference

Name	Hex Offset	Hex Value
SLSUX12D	0	
SLSUX12P	0	
SLSUX10V	0	
UX12AALL	8	
UX12ACS	38	
UX12AFF	48	
UX12DCNT	24	
UX12DDN	0	
UX12DSN	8	
UX12ESOT	30	
UX12FIXL		4C
UX12GDG		80
UX12HSC		00
UX12IACT		40
UX12JOBN	C	
UX12KEY	9	
UX12LABT	38	
UX12LBAL		02
UX12LBDF		00
UX12LBNL		03
UX12LBNS		04
UX12LBSL		01
UX12LEN	4	
UX12LIB		04
UX12MAIN	40	
UX12NLIB		08
UX12NSPC		40
UX12NUMV	34	
UX12PRSN	1C	
UX12REPL		0C
UX12SACS		10
UX12SEP		14
UX12SNAM	3A	
UX12SPEC		80
UX12SPID		E6
UX12SSUB	39	
UX12STPN	14	
UX12SUBP	8	
UX12USER	3C	
UX12UAFF		40
UX12UNIT	28	
UX12UX12	0	
UX12VARL		4C

Name	Hex Offset	Hex Value
UX12VLIB		80
UX12VLOC	7	
UX12VLSR	0	
UX12VLTL		0C
UX12VNLB		40
UX12VOLP	48	
UX12VREQ	6	

JES3 Specific Volume Allocation User Exit (SLSUX13)

Functional Description

The JES3 Specific Volume Allocation User Exit enables the user to request modification of the actions the SMC takes during allocation of a specific volume DD statement which references cartridge tape devices on a JES3 system using setup. This exit can be used to:

- request allocation to a particular library subsystem as defined by the SMC LIBrary command
- change esoteric (unit name) used for device allocation
- request allocation of a particular ACS
- request allocation of nonlibrary drives
- request allocation of library drives.

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every DD statement that requests a specific (nonscratch) volume. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when Exit Routine is Executed

Entry Specifications

Upon entry to SLSUX13, 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 SLSUX13P.

Conditions on Return From User Exit

Return Specifications

On return from SLSUX13, register contents are as follows:

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

Return Codes

TABLE 6-17 SLSUX13 Return Codes

Return Code	Name	Description
0	UX13HSC	Perform normal SMC allocation
4	UX13LIB	Select library drives
8	UX13NLIB	Select nonlibrary drives
12	UX13REPL	Replace unit name with different esoteric
16	UX13SACS	Request the allocation in the specified ACS
64	UX13IACT	The user exit is inactive

TABLE 6-18 SLSUX13 Return Data in Parameter List

Name	Description
UX13ACS	ACS to allocate in if return code UX13ASUB is issued.
UX13ESOT	Esoteric to substitute if return code UX13REPL is issued.

Programming Considerations

- Because the exit executes as an extension to the common allocation SSREQ, it cannot issue dynamic allocation requests.
- If your SMC accesses multiple libraries, you must code the UX13LIBN library name if you also code an ACS ID. The return code “Use Library Drives” is interpreted to mean use drives in any library. The return code “Use Nonlibrary Drives” is interpreted to mean use only drives not defined in any library.

User Exit 13 Parameter List

The parameter list is built by SMC during JES3 device separation. The user exit is called for a specific allocation request. The user exit provides the ability to provide allocation criteria for a given DD statement.

SLSUX13 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	168	SLSUX13P	User Exit 13 Parameter List
0	(0)	CHARACTER	4	UX13UX13	Eyecatcher 'UX13'
4	(4)	FULLWORD	4	UX13LEN	Length of UX13 parameter list
8	(8)	HEXSTRING	1	UX13SUBP	Storage subpool number
		'E6'		UX13SPID	Subpool 230
9	(9)	HEXSTRING	1	UX13KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX13JOBN	Job name
20	(14)	CHARACTER	8	UX13STPN	Step name
28	(1C)	CHARACTER	8	UX13PRSN	Procedure step name
36	(24)	CHARACTER	8	UX13DDN	DD name
44	(2C)	ADDRESS	8	UX13UNIT	JCL unit name
52	(34)	CHARACTER	8	UX13ESOT	Area to return an esoteric name
60	(3C)	FULLWORD	4	UX13ACS	Area to return an ACS ID: format: 000000AA, where AA is the ACS number
64	(40)	CHARACTER	44	UX13DSN	Dataset name
108	(6C)	BITSTRING	1	UX13LABT	Label type
		. . . .		UX13LBDF	Library default label type
		 1		UX13LBSL	Standard label
		. . . . . . 1 .		UX13LBAL	ANSI label
		. . . . . . 1 1		UX13LBNL	Nonlabeled
		. . . . . 1 . .		UX13LBNS	Nonstandard label
109	(6D)	HEXSTRING	3	*	Reserved
112	(70)	FULLWORD	4	UX13USER	Customer field; initially zero; preserved across calls
116	(74)	CHARACTER	8	UX13MAIN	JES3 setup processor
124	(7C)	FULLWORD	4	UX13NUMV	Number of volumes in dataset
128	(80)	ADDRESS	4	UX13VOLP	Address of volume information
132	(84)	BITSTRING	1	UX13FLG1	User Exit 13 flag

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
		1.		UX13UAFF	Element is member of unit affinity chain
		. 1.		UX13GAFF	Element is member of GDGALL chain
132	(85)	HEXSTRING	3	*	Reserved
136	(88)	CHARACTER	8	UX13LIBN	Override library name
144	(90)	CHARACTER	8	UX13LIBL	Library name where volume was found
152	(98)	HEXSTRING	16	*	Reserved
168	(A8)			UX13LSTL	Length of SLSUX13P

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	9	SLSUX13V	User Exit 13 Volume Parm List
0	(0)	OFFSET	0	UX13VLST	Volume list
0	(0)	CHARACTER	6	UX13VLSR	Volume serial
6	(6)	BITSTRING	1	UX13VLOC	Volume location
		1.		UX13VLIB	Volume resides in library
		. 1.		UX13VNLB	Volume resides outside library
7	(7)	HEXSTRING	2	UX13AALL	If volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
9	(9)			UX13VLTL	Length of volume entry

SLSUX13 Cross Reference

Name	Hex Offset	Hex Value
SLSUX13P	0	
SLSUX13V	0	
UX13AALL	7	
UX13ACS	3C	
UX13DDN	24	
UX13DSN	40	
UX13ESOT	34	
UX13FLG1	84	
UX13GAFF		40
UX13HSC		00
UX13IACT		40
UX13JOBN	C	
UX13KEY	9	
UX13LABT	6C	
UX13LBAL		02
UX13LBDF		00
UX13LBNL		03
UX13LBNS		04
UX13LBSL		01
UX13LEN	4	
UX13LIB		04
UX13LIBN	88	
UX13LSTL		A8
UX13MAIN	74	
UX13NLIB		08
UX13NUMV	7C	
UX13PRSN	1C	
UX13REPL		0C
UX13SACS		10
UX13SPID		E6
UX13STPN	14	
UX13SUBP	8	
UX13UAFF		80
UX13UNIT	2C	
UX13USER	6D	
UX13UX13	0	
UX13VLIB		80
UX13VLOC	6	
UX13VLSR	0	
UX13VLST	0	
UX13VLTL		9
UX13VNLB		40
UX13VOLP	80	

MVS/CSC Format User Exits

Note – These user exits have been superseded by the SMC POLICY command. For more information, see *ELS Command, Control Statement, and Utility Reference* and *Configuring and Managing SMC* .

CSC-Format User Exits

The following table lists the MVS/CSC format user exits included with ELS and describes the primary function of each exit.

TABLE 6-19 MVS/CSC Format User Exits

Exit	Name	Description	Function
1	SCSUX01	Message Handling User Exit	Facilitates interface of the MVS/CSC to tape management systems. It is also used to implement scratch subpooling.
2	SCSUX02	JES2 Scratch Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a nonspecific volume request under JES2.
4	SCSUX04	JES3 Scratch Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a nonspecific volume request under JES3.
8	SCSUX08	JES2 Specific Volume Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a specific volume request under JES2.
9	SCSUX09	Deferred Mount User Exit	Allows you to override the default setting and MVS defer the mount of a cartridge on a library drive.
10	SCSUX10	JES2 Unit Affinity Separation User Exit	Allows you to override the default setting, and control GDG or unit affinity separation for a specific GDG ALL or unit affinity chain.
11	SCSUX11	JES3 Deferred Mount User Exit	Allows you to override the default setting and JES3 defer the mount of a cartridge on a library drive.
12	SCSUX12	JES3 Unit Affinity Separation User Exit	Allows you to override the default setting, and control GDG or unit affinity separation for a specific GDG ALL or unit affinity chain.
13	SCSUX13	JES3 Specific Volume Allocation User Exit	Used to influence allocation and selection of tape drives to satisfy a specific volume request under JES3.

Sample user exits are distributed as follows:

- SMC managed JES2 user exits and the message handling user exit are distributed in the SMC JES2 SAMPLIB (UX*nn*HSC*n*).
- SMC managed JES3 user exits are distributed in the SMC JES3 SAMPLIB (UX*nn*HSC*n*).
- MVS/CSC managed user exit samples (UX*nn*CSC*n*) are distributed in the MVS/CSC SAMPLIB.

MVS/CSC Format User Exits in JES Environments

The following table provides a reference for determining the applicability of any user exit function within a JES environment.

TABLE 6-20 MVS/CSC Format User Exits in JES Environments

User Exit Function	JES2	JES3
Deferred Mount	SCSUX09	SCSUX09 SCSUX11
Influence Device Allocation for Scratch Volume Requests	SCSUX02	SCSUX04
Influence Device Allocation for Specific Volume Requests	SCSUX08	SCSUX13
Esoteric Substitution or Unit Affinity Separation for Affinity Chains	SCSUX10	SCSUX12

Note – All other user exits are applicable regardless of the JES running.

Message Handling User Exit (SCSUX01)

Functional Description

This exit is provided to allow installations with tape management systems other than CA-1 (TMS), CA-DYNAM/TLMS, DFSMSrmm, or Zara to interface with the SMC. Each installation should examine all WTOs and WTORs issued by their tape management system and, if action is required, direct the subsystem to perform the necessary operation by setting values in the parameter list passed to it.

Use this exit to perform automated mounts of scratch cartridges from different scratch subpools or of label types other than the library scratch label type. You can also use this exit to automate responses to WTOR-type messages.

This exit is invoked for every WTO or WTOR issued in the MVS host system. The exit should evaluate the message and, if owned by the exit, fill in the appropriate fields in the parameter list.

Environment

This user exit is applicable in both JES2 and JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every WTO or WTOR intercepted by the SMC. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX01P.

Entry Specifications

Upon entry to SCSUX01, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined

Register	Contents
13	Pointer to register save area
14	Return address
15	Entry point address

Conditions on Return from User Exit

Return Specifications

On return from SCSUX01, register contents are as follows:

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

Return Codes

TABLE 6-21 SCSUX01 Return Codes

Return Code	Name	Description
0	UX01CSC	The SMC interprets the message
4	UX01ACTN	The message is interpreted by the user exit. The SMC follows user exit direction.
64	UX01NOPR	The user exit is inactive. The message is interpreted by the SMC.

Programming Considerations

- The exit routine should examine each message, set the operation to be performed in UX01FUNC, and fill in the appropriate fields that apply to the function.
- In a multiple library environment, only one copy of SCSUX01 is invoked.

Examples

Mount Nonspecific Volume

In the following example, the user exit is set to mount a nonspecific volume of the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB TO ZERO
set UX01LABT to UX01DFLT.
```

Mount Nonspecific Volume from Scratch Subpool

In the following example, the user exit is set to mount a nonspecific scratch volume from a scratch subpool of the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB to subpool index.
set UX01LABT to UX01DFLT.
```

Mount Nonspecific Volume from Scratch Subpool

In the following example, the user exit is set to mount a nonspecific scratch volume from the scratch subpool of a label type different than the library label type.

```
set UX01FUNC to C'1'.
set UX01VOLS to 'SCRTCH' or 'PRIVAT'.
set UX01FUNT to drive address.
set UX01SSUB to subpool index.
set UX01LABT to label type.
```

Mount Specific Volume

In the following example, the user exit is set to mount a specific volume.

```
set UX01FUNC to C'1'.
set UX01VOLS to appropriate VOLSER for specific request.
set UX01FUNT to drive address.
set UX01LABT to label type.
```

Dismount Volume

In the following example, the user exit is set to dismount a volume.

```
set UX01FUNC to C'2'.
set UX01FUNT to drive address.
set UX01DISP to disposition.
```

Swap Volume

In the following example, the user exit is set to swap a volume. Swap processing occurs only in JES2 environments.

```
set UX01FUNC to C'3'.
set UX01FUNT to FROM drive address.
set UX01TUNT to TO drive address.
```

Operator Intervention

In the following example, the user exit is set to allow for operator intervention.

```
set UX01FUNC to C'5'.
set UX01OPIN to UX01ON.
set UX01VOLS to cartridge serial number.
set UX01FUNT to FROM drive address.
set UX01TUNT to TO drive address.
set UX01LABT to label type.
```

User Exit 01 Parameter List

The parameter list is built by the NCS message intercept program prior to invoking the user exit. It contains the address of the WQE (the MVS Write Queue Element) containing a message. The user exit can inspect the message and request specific actions by setting the appropriate values and the return code to UX01ACTN.

Note – If you wish to pass back a null volser for a dismount request, specify '??????' (i.e., 6 question marks) for the volser (UX01VOLS). This causes MVS/CSC to dismount whatever volume is on the drive.

SCSUX01 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	48	SCSUX01P	User Exit 01 Parameter List
0	(0)	ADDRESS	4	UX01WQE	Address of MVS WQE
4	(4)	ADDRESS	4	UX01USER	Address of USERDATA parameter value
8	(8)	FULLWORD	4	UX01ULEN	Length of USERDATA parameter value
12	(C)	CHARACTER	1	UX01FUNC	Function code
		'1'		UX01MNT	Mount a cartridge.
		'2'		UX01DMNT	Dismount a cartridge.
		'3'		UX01SWAP	Swap a cartridge from XXX to YYY.
		'5'		UX01NOP	No operation to be performed.
13	(D)	BITSTRING	1	UX01OPIN	Operator intervention flag
		. . .1		UX01ON	Operator intervention requested.
14	(E)	CHARACTER	6	UX01VOLS	Volume serial number of cartridge
20	(14)	HEXSTRING	10	*	Reserved
30	(1E)	CHARACTER	1	UX01DISP	Disposition of volume
		'K'		UX01KEEP	Keep volume.
		'D'		UX01DELT	Delete volume.
31	(1F)	BITSTRING	1	UX01LABT	Label type
		. . . .		UX01DFLT	Library default label type
		1		UX01SL	Standard label
		. . . . . . .1 .		UX01AL	ANSI label
		11		UX01NL	Nonlabeled
		. . . . . .1 . .		UX01NSL	Nonstandard label
32	(20)	CHARACTER	4	UX01FUNT	Mount/Dismount/Swap "from" unit address
36	(24)	CHARACTER	4	UX01TUNT	"To" unit address
40	(28)	HEXSTRING	1	UX01SSUB	Scratch subpool number
41	(29)	HEXSTRING	7	*	Reserved
48	(30)			UX01L	Length of SCSUX01P

SCSUX01 Cross Reference

Name	Hex Offset	Hex Value
SCSUX01P	0	
UX01ACTN		04
UX01AL		02
UX01CSC		00
UX01DELT		C4
UX01DFLT		00
UX01DISP	1E	
UX01DMNT		F2
UX01FUNC	C	
UX01FUNT	20	
UX01HSC		00
UX01KEEP		D2
UX01L		3C
UX01LABT	1F	
UX01MNT		F1
UX01NL		03
UX01NOP		F5
UX01NOPR		40
UX01NSL		04
UX01ON		16
UX01OPIN	D	
UX01SL		01
UX01SSUB	28	
UX01SWAP		F3
UX01TUNT	24	
UX01USER	4	
UX01ULEN	8	
UX01VOLS	E	
UX01WQE	0	

JES2 Scratch Allocation User Exit (SCSUX02)

Functional Description

The scratch allocation user exit (SCSUX02) allows you to specify values that influence device allocation based on installation-dependent criteria. SMC allocation invokes SCSUX02 providing it with the job name, data set name, DD name, step name, procedure step name, address of job accounting information, address of step accounting information, and the text specified in the USERdata startup parameter. In a multiple library environment, SCSUX02 is invoked only one time.

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every unit affinity chain or GDG ALL chain that requires allocation. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX02P.

Entry Specifications

Upon entry to SCSUX02, 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

Conditions on Return from User Exit

Return Specifications

On return from SCSUX02, register contents are as follows:

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

Return Codes

TABLE 6-22 SCSUX02 Return Codes

Return Code	Name	Description
0	UX02CSC	No user technique specified
4	UX02LIB	Request eligible drives based on the server device list returned during drive exclusion
8	UX02NLIB	Request nonlibrary drives to satisfy allocation request
12	UX02LIBP	Either library or nonlibrary drives can be used to satisfy allocation request; library transports are preferred
16	UX02ESUB	Request esoteric substitution
20	UX02NSUB	Direct allocation of drives to a specific ACS or MVS/CSC subsystem
32	UX02VIRT	Select a virtual drive.
64	UX02IACT	The user exit is inactive

When the user specifies the first or third scratch technique (return code 4 or 12), a scratch subpool index and label type or a specified MVS/CSC subsystem name (for multiple MVS/CSC subsystems) may also be returned to permit drive prioritization to prefer the drives in the LSM with the greatest number of scratch volumes of that subpool and label type and of a particular MVS/CSC.

When the user specifies the fifth scratch technique (return code 20), a specific MVS/CSC subsystem name must be supplied and an ACS ID might optionally be returned. If a nonzero ACS ID is not returned, ACS0 is assumed.

Programming Considerations

A scratch subpool (UX02SSUB) value of X'00' is designated to be the "default" subpool. If SCSUX02 returns a UX02SSUB value of X'00', it **must** also return the "default" label type (UX02LBDF=X'00'). Likewise, the default label type is UX02LBDF and it must return the default subpool (UX02SSUB=X'00').

Examples

In the following example, the user exit instructs the SMC to direct the allocation for a scratch request to nonlibrary devices.

```
set Register 15 to 8.
```

In the following example, the user exit instructs the SMC to direct the allocation to the library drives controlled by MVS/CSC subsystem CSC1. The devices in the LSM with the most standard-labeled scratch volumes of subpool 2 should be preferred.

```
set Register 15 to 20.
set UX02CSCN to 'CSC1'.
set UX02ACS to 1.
set UX02SSUB to 2.
set UX02LABT to UX02LBSL.
```

User Exit 02 Parameter List

The parameter list is built for a nonspecific allocation request. The return code from the user exit indicates the technique which SMC allocation should use for the unit selection(s). When the allocation technique indicates a library drive, the user exit can qualify the selection by a scratch subpool, or a scratch subpool and label type.

SCSUX02 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	144	SCSUX02P	User Exit 02 Parameter List
0	(0)	CHARACTER	4	UX02UX02	Eyecatcher 'UX02'
4	(4)	FULLWORD	4	UX02LEN	Length of UX02 parameter list
8	(8)	HEXSTRING	1	UX02SUBP	Storage subpool number
		'E6'		UX02SPID	Subpool 230
9	(9)	HEXSTRING	1	UX02KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX02JOBN	Job name
20	(14)	CHARACTER	8	UX02STPN	Step name
28	(1C)	CHARACTER	8	UX02PRSN	Procedure step name
36	(24)	CHARACTER	8	UX02DDN	DD name
44	(2C)	ADDRESS	4	UX02USER	Address of USERDATA parameter value
48	(30)	FULLWORD	4	UX02ULEN	Length of USERDATA parameter value
52	(34)	ADDRESS	4	UX02JACC	Address of job accounting information
56	(38)	ADDRESS	4	UX02SACC	Address of step accounting information
60	(3C)	CHARACTER	44	UX02DSN	Dataset name
104	(68)	HEXSTRING	1	UX02SSUB	Scratch subpool
105	(69)	BITSTRING	1	UX02LABT	Label type
		....		UX02LBDF	Library default label type
		1		UX02LBSL	Standard label
		.... ..1.		UX02LBAL	ANSI label
		11		UX02LBNL	Nonlabeled
		.... .1..		UX02LBNS	Nonstandard label
106	(6A)	CHARACTER	3	UX02XPDT	Dataset expiration date from JFCB
109	(6D)	HEXSTRING	3	*	Reserved
112	(70)	CHARACTER	8	UX02ESO	Area to return an esoteric name
120	(78)	CHARACTER	4	UX02CSCN	MVS/CSC subsystem to process request
124	(7C)	HEXSTRING	1	UX02ACS	Area to return an ACS ID

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
125	(7D)	CHARACTER	13	UX02SNAM	Scratch subpool name
140	(8C)	ADDRESS	4	UX02JFCB	Address of the JFCB
144	(90)			UX02LSTL	Length of SCSUX02P

SCSUX02 Cross Reference

Name	Hex Offset	Hex Value
SCSUX02P	0	
UX02ACS	7C	
UX02CSC		00
UX02CSCN	78	
UX02DDN	24	
UX02DSN	3C	
UX02ESO	70	
UX02ESUB		10
UX02IACT		40
UX02JACC	34	
UX02JFCB	8C	
UX02JOBN	C	
UX02KEY	9	
UX02LABT	69	
UX02LBAL		02
UX02LBDF		00
UX02LBNL		03
UX02LBNS		04
UX02LBSL		01
UX02LEN	4	
UX02LIB		04
UX02LIBP		0C
UX02LSMP	88	
UX02LSNO		00
UX02NLIB		08
UX02NSUB		14
UX02PRSN	1C	
UX02SACC	34	
UX02SNAM	7D	
UX02SPID		E6
UX02SSUB	68	
UX02STPN	14	
UX02SUBP	8	
UX02ULEN	30	
UX02USER	2C	
UX02UX02	0	
UX02VIRT		20
UX02XPDT	6A	

JES3 Scratch Allocation User Exit (SCSUX04)

Functional Description

The scratch allocation user exit (SCSUX04) allows you to specify values that influence device allocation based on installation-dependent criteria. SMC allocation invokes SCSUX04 providing it with the job name, data set name, DD name, step name, procedure step name, and the text specified in the USERdata startup parameter.

In a multiple MVS/CSC subsystem environment, SCSUX04 is invoked only one time. SCSUX04 is applicable in JES3 during the POSTSCAN phase of the converter/interpreter scheduling element, the JES3 main device scheduler (MDS) function, and dynamic allocation.

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX04P.

Entry Specifications

Upon entry to SCSUX04, 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

Conditions on Return from User Exit

Return Specifications

On return from SCSUX04, register contents are as follows:

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

Return Codes

TABLE 6-23 SCSUX04 Return Codes

Return Code	Name	Description
0	UX04CSC	No user technique specified
4	UX04LIB	MVS/CSC influences JES3 device allocation to select eligible library drives based on the server device list returned during drive exclusion.
8	UX04NLIB	Request nonlibrary drives to satisfy allocation request
12	UX04REPL	Request esoteric substitution
16	UX04NSUB	Direct allocation of drives to a specific ACS or MVS/CSC subsystem
24	UX04VIRT	Select a virtual drive.
64	UX04IACT	The user exit is inactive

Programming Considerations

A scratch subpool (UX04SSUB) value of X'00' is designated to be the "default" subpool. If SCSUX04 returns a UX04SSUB value of X'00', it **must** also return the "default" label type (UX04LBDF=X'00'). Likewise, the default label type is UX04LBDF and it must return the default subpool (UX04SSUB=X'00').

Examples

In the following example, the user exit instructs the SMC to direct the allocation for a scratch request to nonlibrary devices.

```
set Register 15 to 8.
```

In the following example, the user exit instructs the SMC to direct the allocation to the library drives controlled by MVS/CSC subsystem CSC1. The devices in the LSM with the most standard-labeled scratch volumes of subpool 2 should be preferred.

```
set Register 15 to 16.
set UX04CSCN to 'CSC1'.
set UX04ACS to 1.
set UX04SSUB to 2.
set UX04LABT to UX04LBSL.
```

User Exit 04 Parameter List

The parameter list is built during drive exclusion and during drive prioritization. The user exit is called when a nonspecific allocation request occurs during drive exclusion for normal or dynamic allocation (UX04CFLG = 0). The user exit is also called when a nonspecific allocation request occurs during drive prioritization processing (UX04CFLG = UX04DIRA).

SCSUX04 Map

Offset Dec	Offset Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	168	SCSUX04P	User Exit 04 Parameter List
0	(0)	CHARACTER	4	UX04UX04	Eyecatcher 'UX04'
4	(4)	FULLWORD	4	UX04LEN	Length of UX04 parameter list
8	(8)	HEXSTRING	1	UX04SUBP	Storage subpool number
		'E6'		UX04SPID	Subpool 230
9	(9)	HEXSTRING	1	UX04KEY	Storage key.
10	(A)	HEXSTRING	1	UX04CFLG	UX04 call flag
		1.		UX04DIRA	Called during JES3 directed allocation
		. . . . .		UX04CI	Called during JES3 converter/interpreter
11	(B)	HEXSTRING	1	UX04FLAG	UX04 general flag used only when called from converter/interpreter
		1.		UX04UAFF	Element is member of unit affinity chain
		. 1.		UX04GAFF	Element is member of a GDGALL group
12	(C)	CHARACTER	8	UX04JOBN	Job name
20	(14)	CHARACTER	8	UX04STPN	Step name
28	(1C)	CHARACTER	8	UX04PRSN	Procedure step name
36	(24)	CHARACTER	8	UX04DDN	DD name
44	(2C)	ADDRESS	4	UX04USER	Address of USERDATA parameter value
48	(30)	FULLWORD	4	UX04ULEN	Length of USERDATA parameter value
52	(34)	CHARACTER	44	UX04DSN	Dataset name
96	(60)	HEXSTRING	1	UX04SSUB	Scratch subpool
97	(61)	BITSTRING	1	UX04LABT	Label type
		. . . . .		UX04LBDF	Library default label type
		1		UX04LBSL	Standard label
		. . . . . .1 .		UX04LBAL	ANSI label
		11		UX04LBNL	Nonlabeled
		. . . . .1 . .		UX04LBNS	Nonstandard label
98	(62)	CHARACTER	8	UX04MAIN	JES3 setup processor
106	(6A)	CHARACTER	8	UX04UNIT	JCL unit name
114	(72)	CHARACTER	8	UX04ESOT	Area to return an esoteric name
122	(7A)	CHARACTER	4	UX04CSCN	MVS/CSC subsystem to process request

Offset					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
128	(80)	FULLWORD	4	UX04ACS	Area to return an ACS ID; format: 000000AA, where AA is the ACS number
132	(84)	HEXSTRING	36	*	Reserved
168	(A8)			UX04LSTL	Length of SCSUX04P

SCSUX04 Cross Reference

Name	Hex Offset	Hex Value
SCSUX04P	0	
UX04ACS	80	
UX04CFLG	A	
UX04CI		00
UX04CSC		00
UX04CSCN	7A	
UX04DIRA		80
UX04DDN	24	
UX04DSN	34	
UX04ESOT	72	
UX04FLAG	B	
UX04GAFF		40
UX04IACT		40
UX04JOBN	C	
UX04KEY	9	
UX04LABT	61	
UX04LBAL		02
UX04LBDF		00
UX04LBNL		03
UX04LBNS		04
UX04LBSL		01
UX04LEN	4	
UX04LIB		04
UX04LIBN	8C	
UX04LS		14
UX04MAIN	62	
UX04NLIB		08
UX04NSUB		10
UX04PRSN	1C	
UX04REPL		0C
UX04SPID		E6
UX04SSUB	60	
UX04STPN	14	
UX04SUBP	8	
UX04UAFF		80
UX04ULEN	30	
UX04UNIT	6A	
UX04USER	2C	
UX04UX04	0	
UX04VIRT		18

JES2 Specific Volume Allocation User Exit (SCSUX08)

Functional Description

The specific volume allocation user exit (SCSUX08) allows modification of the actions the SMC takes during the allocation of a specific volume DD statement that references cartridge drives. Use this exit to:

- Change the esoteric name (unit name) used for device allocation
- Request allocation of nonlibrary drives
- Request allocation of library drives
- Indicate a specific MVS/CSC subsystem name to use for allocation
- Bypass drive exclusion logic

User exit SCSUX08 is called for every allocation request for a specific volume to be mounted on a cartridge drive.

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every allocation request for a specific volume on a cartridge tape device on a JES2 system. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX08P.

Entry Specifications

Upon entry to SCSUX08, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined

Register	Contents
13	Pointer to register save area
14	Return address
15	Entry point address

Conditions on Return from User Exit

Return Specifications

On return from SCSUX08, register contents are as follows:

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

Return Codes

TABLE 6-24 SCSUX08 Return Codes

Return Code	Name	Description
0	UX08HJCL	Honor unit information in JCL
4	UX08ESUB	Request esoteric substitution; change esoteric name (unit name) defined in JCL
12	UX08NLIB	Request nonlibrary drives to satisfy allocation request
16	UX08NSUB	Direct allocation of drives to a specific ACS or MVS/CSC subsystem
20	UX08BSEP	Bypass drive exclusion
64	UX08IACT	The user exit is inactive

Programming Considerations

- Information regarding bypassing drive exclusion UX08BSEP:

  The use of UX08BSEP (return code 20) should be carefully considered. There are several factors that will affect the final device that is allocated for a request that does not have drive exclusion performed on its behalf. These include:

- UNITNAME used in JCL (or SVC 99 request)
- DEVPREF setting
- Volume location (library vs. nonlibrary)
- TAPEREQ control statements
- DFSMS data class definitions
- Addresses of library and nonlibrary drives
- Presence of Cartridge Stacker Loaders (CSL) drives
- SELTAPE specification in IEAOPT member of PARMLIB
- Increased passthru events and ENTER/EJECT sequences requiring operator intervention will be experienced if this return code is used.

- A job should not go into allocation recovery if a device is available in the supplied UNITNAME if UX08BSEP is requested.

Examples

In the following example, the user exit instructs the SMC to direct the allocation for a specific volume request to nonlibrary devices.

```
set Register 15 to 12.
```

In the following example, the user exit requests esoteric substitution (LIBVOL), and instructs the SMC to direct the allocation to the library drives controlled by MVS/CSC subsystem CSC1

```
set Register 15 to 16.
set UX08ESO to 'LIBVOL'.
set UX08ESO to 'CSC1'.
set UX08ACS to 1.
```

User Exit 08 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for a specific allocation request. The user exit provides the ability to provide allocation criteria for a given DD statement.

SCSUX08 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	136	SCSUX08P	User Exit 08 Parameter List
0	(0)	CHARACTER	4	UX08UX08	Eyecatcher 'UX08'
4	(4)	FULLWORD	4	UX08LEN	Length of UX08 parameter list
8	(8)	HEXSTRING	1	UX08SUBP	Storage subpool number
		'E6'		UX08SPID	Subpool 230
9	(9)	HEXSTRING	1	UX08KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX08JOBN	Job name
20	(14)	CHARACTER	8	UX08STPN	Step name
28	(1C)	CHARACTER	8	UX08PRSN	Procedure step name
36	(24)	CHARACTER	8	UX08DDN	DD name
44	(2C)	ADDRESS	4	UX08USER	Address of USERDATA parameter value
48	(30)	FULLWORD	4	UX08ULEN	Length of USERDATA parameter value
52	(34)	ADDRESS	4	UX08JACC	Address of job accounting information
55	(38)	ADDRESS	4	UX08SACC	Address of step accounting information
60	(3C)	CHARACTER	44	UX08DSN	Dataset name
104	(68)	HEXSTRING	4	*	Reserved
108	(6C)	FULLWORD	4	UX08NUMV	Number of volumes in dataset
112	(70)	CHARACTER	8	UX08ESO	Area to return esoteric name
120	(78)	CHARACTER	4	UX08CSCN	MVS/CSC subsystem to process request
124	(7C)	HEXSTRING	1	UX08ACS	Area to return an ACS ID
125	(7D)	CHARACTER	3	UX08XPDT	Dataset expiration date
128	(80)	BITSTRING	1	UX08LABT	Label type
		. 1.		UX08LBAL	Standard label
		. . . . .1 . .		UX08LBNS	ANSI label
		. . . . . . 1.		UX08LBSL	Nonlabeled

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
		1		UX08LBNL	Nonstandard label
129	(81)	HEXSTRING	7	*	Reserved
136	(88)			UX08LSTL	Length of SCSUX08P

SCSUX08 Cross Reference

Name	Hex Offset	Hex Value
SCSUX08P	0	
UX08ACS	7C	
UX08BSEP		14
UX08CSCN	78	
UX08DDN	24	
UX08DSN	3C	
UX08ESO	70	
UX08ESUB		04
UX08HJCL		00
UX08IACT		40
UX08JACC	34	
UX08JOBN	C	
UX08KEY	9	
UX08LABT	80	
UX08LBAL		40
UX08LBNL		01
UX08LBNS		04
UX08LBSL		02
UX08LEN	4	
UX08LSTL		88
UX08NLIB		0C
UX08NSUB		10
UX08NUMV	6C	
UX08PRSN	1C	
UX08SACC	38	
UX08SPID		E6
UX08STPN	14	
UX08SUBP	8	
UX08ULEN	30	
UX08USER	2C	
UX08UX08	0	
UX08XPDT	7D	

Deferred Mount User Exit (SCSUX09)

Functional Description

The deferred mount user exit allows you to determine whether or not a mount is MVS deferred.

By default, the MVS/CSC honors the specifications in your JCL, or the specification on the SMC ALLOCDef DEFer parameter. For example, if you do not request that a mount is deferred in your JCL or set DEFer(NO), the cartridge is mounted at step allocation time. If the mount request is for a specific volume and the data set is never opened, the cartridge is mounted and dismounted without being used. If the mount request is for a scratch volume and the data set is never opened, the cartridge is not dismounted.

If you request that a mount is deferred in your JCL or set DEFer(YES), the cartridge is not mounted until the data set is opened, thus leaving the LSM robot free to perform other tasks. While deferred mounting can reduce the number of mounts the LSM robot must perform, it might increase the time required to run a job. This occurs because the job waits until the cartridge is mounted before proceeding.

SCSUX09 provides you with the flexibility to allow or disallow the DEFer setting on an individual mount request. For example, if certain data sets need to be mounted prior to open time for performance reasons and your data center normally operates in deferred mode, SCSUX09 lets you override deferred mounting for the mount request. This exit is only invoked during common allocation; dynamic allocation requests are not deferred.

For JES3 environments running TAPE SETUP processing, you can set user exit SCSUX09 in conjunction with SCSUX11 to override the DEFer(NO) and DEFer(JES3) settings and defer a mount until data set open time. JES3 user exit SCSUX11 is called first to defer a mount until step allocation processing, and then SCSUX09 is called to defer the mount until data set open time. See "JES3 Deferred Mount User Exit (SCSUX11)" on page 364 for more information about user exit SCSUX11.

Environment

This user exit is applicable in both JES2 and JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX09P.

Entry Specifications

Upon entry to SCSUX09, 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

Conditions on Return from User Exit

Return Specifications

On return from SCSUX09, register contents are as follows:

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

Return Codes

TABLE 6-25 SCSUX09 Return Codes

Return Code	Name	Description
0	UX09CSC	Process normally; exit does not influence MVS defer status
4	UX09DFR	Defer the mount until the data set is opened
8	UX09NDFR	Honor the JCL defer status
12	UX09NVIR	Do not defer the virtual mount
64	UX09IACT	The user exit is inactive

Caution – Use return code 12 with care. Due to timing issues, if a VTV is mounted in a non-deferred situation but is never opened by the program, the VTV remains mounted. This may compromise other processes because the VTV is not allowed to be processed while it is mounted. As there is no VTCS facility to perform a forced or manual dismount, use the MVS Unload command to 'free' the drive.

Programming Considerations

Examples

In the following example, the user exit directs the SMC to defer the mount of a cartridge until the data set is opened.

```
set Register 15 to 4.
```

In the following example, the user exit directs the SMC to honor the defer status in the JCL.

```
set Register 15 to 8.
```

User Exit 09 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for a library volume allocation request. The return code from the user exit indicates the MVS defer status of the request.

SCSUX09 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	128	SCSUX09P	User Exit 09 Parameter List
0	(0)	CHARACTER	4	UX09UX09	Eyecatcher 'UX09'
4	(4)	FULLWORD	4	UX09LEN	Length of UX09 parameter list
8	(8)	HEXSTRING	1	UX09SUBP	Storage subpool number
		'E6'		UX09SPID	Subpool 230
9	(9)	HEXSTRING	1	UX09KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX09JOBN	Job name
20	(14)	CHARACTER	8	UX09STPN	Step name
28	(1C)	CHARACTER	8	UX09PRSN	Procedure step name
36	(24)	CHARACTER	8	UX09PGMN	EXEC=program name
44	(2C)	CHARACTER	8	UX09DDN	DD name
52	(34)	ADDRESS	4	UX09USER	Address of USERDATA parameter value
56	(38)	FULLWORD	4	UX09ULEN	Length of USERDATA parameter value
60	(3C)	CHARACTER	44	UX09DSN	Dataset name
104	(68)	HEXSTRING	16	*	Reserved
120	(78)	BITSTRING	1	UX09DDCH	Dataset characteristics
		1.		UX09SPEC	Specific volume request
		. 1.		UX09NSPC	Nonspecific volume request
121	(79)	HEXSTRING	7	*	Reserved
128	(80)			UX09LSTL	Length of SCSUX09P

SCSUX09 Cross Reference

Name	Hex Offset	Hex Value
SCSUX09P	0	
UX09CSC		00
UX09DDCH	78	
UX09DDN	2C	
UX09DFR		04
UX09DSN	3C	
UX09IACT		40
UX09JOBN	C	
UX09KEY	9	
UX09LEN	4	
UX09LSTL		80
UX09NDFR		08
UX09NSPC		40
UX09NVIR		0C
UX09PGMN	24	
UX09PRSN	1C	
UX09SPEC		80
UX09SPID		E6
UX09STPN	14	
UX09SUBP	8	
UX09ULEN	38	
UX09USER	34	
UX09UX09	0	

JES2 Unit Affinity Separation User Exit (SCSUX10)

Functional Description

This user exit allows you to request modification of the actions taken by the SMC during allocation of a unit affinity chain or GDG ALL chain that references cartridge drives.

You can use this user exit to:

- override the current settings on the SMC ALLOCDef command SEPLvl parameter
- change the esoteric name (unit name) used to allocate the chain
- request allocation of library drives for the chain
- request allocation of nonlibrary drives for the chain
- indicate a specific ACS or MVS/CSC subsystem to use for allocation

Environment

This user exit is applicable in JES2 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every unit affinity chain or GDG ALL chain that requires allocation. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX10P.

Entry Specifications

Upon entry to SCSUX10, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined

Register	Contents
13	Pointer to register save area
14	Return address
15	Entry point address

Conditions on Return from User Exit

Return Specifications

On return from SCSUX10, register contents are as follows:

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

Return Codes

TABLE 6-26 SCSUX10 Return Codes

Return Code	Name	Description
0	UX10PLIB	Perform separation according to the SEPLvl parameter of the ALLOCDef or ALLOCJob commands
4	UX10NSEP	Do not separate the chain
8	UX10SEP	Separate the chain
12	UX10LDRV	Allocate library drives, but do not separate the chain
16	UX10NDRV	Allocate nonlibrary drives, but do not separate the chain
20	UX10ESUB	Perform esoteric substitution using the specified esoteric name, but do not separate the chain
24	UX10NSUB	Direct allocation to a specific ACS or MVS/CSC subsystem name, but do not separate the chain
64	UX10IACT	The user exit is inactive

Programming Considerations

This exit can request esoteric substitution (or ACS specification) or separation, but not both. These requests are mutually exclusive.

Example

In the following example, the user exit directs the SMC to perform separation according to the current setting of the SEPLvl parameter of the ALLOCDef or ALLOCJob command.

```
set Register 15 to 0.
```

User Exit 10 Parameter List

The parameter list is built by SMC Common Allocation SSREQ processing. The user exit is called for each unit affinity chain or unqualified GDG specified in the invoking JCL. SCSUX10 provides the ability to request unit affinity separation for datasets which belong to a single affinity chain or an unqualified GDG and the required volumes reside in different physical locations (e.g., inside and outside an ACS).

SCSUX10 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	72	SCSUX10P	User Exit 10 Parameter List
0	(0)	CHARACTER	4	UX10UX10	Eyecatcher 'UX10'
4	(4)	FULLWORD	4	UX10LEN	Length of UX10 parameter list
8	(8)	HEXSTRING	1	UX10SUBP	Storage subpool number
		'E6'		UX10SPID	Subpool 230
9	(9)	HEXSTRING	1	UX10KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX10JOBN	Job name
20	(14)	CHARACTER	8	UX10STPN	Step name
28	(1C)	CHARACTER	8	UX10PRSN	Procedure step name
36	(24)	ADDRESS	4	UX10USER	Address of USERDATA parameter value
40	(28)	FULLWORD	4	UX10ULEN	Length of USERDATA parameter value
44	(2C)	ADDRESS	4	UX10JACC	Address of job accounting information
48	(30)	ADDRESS	4	UX10SACC	Address of step accounting information
52	(34)	FULLWORD	4	UX10DCNT	Number of DDs in affinity chain
56	(38)	CHARACTER	8	UX10ESO	Area to return an esoteric name
64	(40)	CHARACTER	4	UX10CSCN	MVS/CSC subsystem to process request
68	(44)	HEXSTRING	1	UX10ACS	Area to return an ACS ID
69	(45)	HEXSTRING	3	*	Reserved
72	(48)			UX10FIXL	Length of fixed portion of parameter list

The following area immediately follows the SLSUX10P fixed data area. This area repeats once for each DD statement in the affinity chain. The number of DD statements in the affinity chain is stored in field UX10DCNT.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	80	SCSUX10D	User Exit 10 Dataset Parm List
0	(0)	CHARACTER	8	UX10DDN	DD name
8	(8)	CHARACTER	44	UX10DSN	Dataset name
52	(34)	ADDRESS	4	UX10VOLP	Pointer to volume information
56	(38)	FULLWORD	4	UX10VCNT	Number of volumes in dataset
60	(3C)	CHARACTER	3	UX10XPDT	Dataset expiration date from JFCB
63	(3F)	BITSTRING	1	UX10LABT	Label type from JFCB
		.1		UX10LBAL	ANSI label
		. . . . .1 . .		UX10LBNS	Nonstandard label
		. . . . . .1 .		UX10LBSL	Standard label
		1		UX10LBNL	Nonlabeled
64	(40)	BITSTRING	1	UX10GDGI	GDG information
		1		UX10GDG	Dataset is part of GDGALL
		.1		UX10NGDG	Dataset is GDG single
65	(41)	HEXSTRING	15	*	Reserved
80	(50)			UX10DSNL	Length of dataset entry

The following area is pointed to by UX10VOLP. For a specific request, UX10VSER contains the volume serial. For a nonspecific request, UX10VSER contains "SCRTCH". If the specific volume resides in the library, UX10LSM will contain its library location. For all other requests UX10LSM will contain zeros.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	16	SCSUX10V	User Exit 10 Volume Parm List
0	(0)	CHARACTER	6	UX10VLSR	Volume serial
6	(6)	BITSTRING	1	UX10VLOC	Volume location
		1.		UX10VLIB	Specific volume resides in library
		. 1.		UX10VNLB	Specific volume resides outside library
		. . 1.		UX10VSCR	Nonspecific volume request
7	(7)	HEXSTRING	2	UX10LSM	If specific volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
9	(9)	HEXSTRING	7	*	Reserved
16	(10)			UX10VOLL	Length of volume entry

SCSUX10 Cross Reference

Name	Hex Offset	Hex Value
SCSUX10D	0	
SCSUX10P	0	
SCSUX10V	0	
UX10ACS	44	
UX10CSCN	40	
UX10DCNT	34	
UX10DDN	0	
UX10DSN	8	
UX10DSNL		50
UX10ESO	38	
UX10ESUB		14
UX10FIXL		48
UX10GDG		80
UX10GDGI	40	
UX10IACT		40
UX10JACC	2C	
UX10JOBN	C	
UX10KEY	9	
UX10LABT	3F	
UX10LBAL		40
UX10LBNL		01
UX10LBNS		04
UX10LBSL		02
UX10LDRV		0C
UX10LEN	4	
UX10LSM	07	
UX10NDRV		10
UX10NGDG		40
UX10NSEP		04
UX10NSUB		18
UX10PLIB		00
UX10PRSN	1C	
UX10SACC	30	
UX10SEP		08
UX10SPID		E6
UX10STPN	14	
UX10SUBP	8	
UX10ULEN	28	
UX10USER	24	
UX10UX10	0	

Name	Hex Offset	Hex Value
UX10VCNT	38	
UX10VLIB		80
UX10VLOC	6	
UX10VLSR	0	
UX10VNLB		40
UX10VOLL		10
UX10VOLP	34	
UX10VSCR		20
UX10XPDT	3C	

JES3 Deferred Mount User Exit (SCSUX11)

Functional Description

The deferred mount user exit is invoked during JES3 converter/interpreter (CI) processing. This user exit allows you to determine whether or not a mount is deferred until step allocation processing.

By default, the MVS/CSC honors the specifications in your JCL, or the specification from the SMC ALLOCDef DEFer parameter. You can use SCSUX11 to override the settings on the DEFer parameter.

When user exit SCSUX11 is set to defer a mount until step allocation processing, user exit SCSUX09 is also called during step allocation processing. You can use user exit SCSUX09 to override the DEFer(NO) and DEFer(JES3) settings and defer a mount until data set open time.

See "Deferred Mount User Exit (SCSUX09)" on page 352 for more information about user exit SCSUX09.

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX11P.

Entry Specifications

Upon entry to SCSUX11, 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

Conditions on Return from User Exit

Return Specifications

On return from SCSUX11, register contents are as follows:

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

Return Codes

TABLE 6-27 SCSUX11 Return Codes

Return Code	Name	Description
0	UX11CSC	Process normally; exit does not influence JES3 defer status
4	UX11DFR	Defer the mount until a system initiator begins the step allocation process
8	UX11NDFR	Honor the JCL's JES3 defer status
64	UX11IACT	The user exit is inactive

Example

In the following example, the user exit directs the SMC to defer the mount of a cartridge until step allocation.

```
set Register 15 to 4.
```

User Exit 11 Parameter List

The parameter list is built during JES3 device separation processing. The user exit is called for a library volume allocation request. The return code from the user exit indicates the JES3 defer status of the request.

SCSUX11 Map

Offsets Dec	Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	120	SCSUX11P	User Exit 11 Parameter List
0	(0)	CHARACTER	4	UX11UX11	Eyecatcher 'UX11'
4	(4)	FULLWORD	4	UX11LEN	Length of UX11 parameter list
8	(8)	HEXSTRING	1	UX11SUBP	Storage subpool number
		'E6'		UX11SPID	Subpool 230
9	(9)	HEXSTRING	1	UX11KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX11JOBN	Job name
20	(14)	CHARACTER	8	UX11STPN	Step name
28	(1C)	CHARACTER	8	UX11PRSN	Procedure step name
36	(24)	CHARACTER	8	UX11DDN	DD name
44	(2C)	CHARACTER	44	UX11DSN	Dataset name
88	(58)	ADDRESS	4	UX11USER	Address of USERDATA parameter value
92	(5C)	FULLWORD	4	UX11ULEN	Length of USERDATA parameter value
96	(60)	HEXSTRING	16	*	Reserved
112	(70)	BITSTRING	1	UX11DDCH	Dataset characteristics
		1.		UX11SPEC	Specific volume request
		. 1.		UX11NSPC	Nonspecific volume request
113	(71)	HEXSTRING	7	*	Reserved
120	(78)			UX11LSTL	Length of SCSUX11P

SCSUX11 Cross Reference

Name	Hex Offset	Hex Value
SCSUX11P	0	
UX11CSC		00
UX11DDCH	70	
UX11DDN	24	
UX11DFR		04
UX11DSN	2C	
UX11IACT		40

Name	Hex Offset	Hex Value
UX11JOBN	C	
UX11KEY	9	
UX11LEN	4	
UX11LSTL		78
UX11NDFR		08
UX11NSPC		40
UX11PRSN	1C	
UX11SPEC		80
UX11SPID		E6
UX11STPN	14	
UX11SUBP	8	
UX11ULEN	5C	
UX11USER	58	
UX11UX11	0	

JES3 Unit Affinity Separation User Exit (SCSUX12)

Functional Description

This user exit allows you to request modification of the actions taken by the SMC during allocation of a unit affinity chain or GDG ALL chain that references cartridge drives.

You can use this user exit to:

- override the current settings on the SMC ALLOCDef command SEPLvl parameter
- change the esoteric name (unit name) used to allocate the chain
- request allocation of library drives for the chain
- request allocation of nonlibrary drives for the chain
- indicate a specific ACS or MVS/CSC subsystem to use for allocation

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every unit affinity chain or GDG ALL chain that requires allocation. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX12P.

Entry Specifications

Upon entry to SCSUX12, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined

Register	Contents
13	Pointer to register save area
14	Return address
15	Entry point address

Conditions on Return from User Exit

Return Specifications

On return from SCSUX12, register contents are as follows:

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

Return Codes

TABLE 6-28 SCSUX12 Return Codes

Return Code	Name	Description
0	UX12CSC	Perform separation according to the SEPLvl parameter of the ALLOCDef or ALLOCJob commands
4	UX12LIB	Do not separate the chain
8	UX12NLIB	Separate the chain
12	UX12REPL	Allocate library drives, but do not separate the chain
16	UX12NSUB	Allocate nonlibrary drives, but do not separate the chain
20	UX12SEP	Perform esoteric substitution using the specified esoteric name, but do not separate the chain
64	UX12IACT	The user exit is inactive

Programming Considerations

Unit affinity separation might cause the number of units, in which the requester needs to allocate, to increase. Separation will not be performed if this increase causes the job to fail.

Example

In the following example, the user exit directs the SMC to perform separation according to the current setting of the SEPLvl parameter of the ALLOCDef or ALLOCJob command.

```
set Register 15 to 0.
```

The parameter list is built during device separation. The user exit is called t allow the customer to determine whether an affinity chain of DD statements should share the same unit as specified, or whether the chain should be broken. This break allows allocation of drives in the same physical location as the tape volumes required.

User Exit 12 Parameter List

The parameter list is built during device separation. The user exit is called to allow the customer to determine whether an affinity chain of DD statements should share the same unit as specified, or whether the chain should be broken. This break allows allocation of drives in the same physical location as the tape volumes required.

SCSUX12 Map

Offset Dec	Offset Hex	Type/Value	Len	Name	Description
0	(0)	STRUCTURE	84	SCSUX12P	User Exit 12 Parameter List
0	(0)	CHARACTER	4	UX12UX12	Eyecatcher 'UX12'
4	(4)	FULLWORD	4	UX12LEN	Length of UX12 parameter list
8	(8)	HEXSTRING	1	UX12SUBP	Storage subpool number
		'E6'		UX12SPID	Subpool 230
9	(9)	HEXSTRING	1	UX12KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX12JOBN	Job name
20	(14)	CHARACTER	8	UX12STPN	Step name
28	(1C)	CHARACTER	8	UX12PRSN	Procedure step name
36	(24)	ADDRESS	4	UX12USER	Address of USERDATA parameter value
40	(28)	FULLWORD	4	UX12ULEN	Length of USERDATA parameter value
44	(2C)	FULLWORD	4	UX12DCNT	Number of DDs in affinity chain
48	(30)	CHARACTER	8	UX12UNIT	JCL unit name
56	(38)	CHARACTER	8	UX12ESOT	Area to return an esoteric name
64	(40)	CHARACTER	4	UX12CSCN	MVS/CSC subsystem to process request
68	(44)	FULLWORD	4	UX12ACS	Area to return an ACS ID; format: 000000AA, where AA = ACS number
72	(48)	CHARACTER	8	UX12MAIN	JES3 setup processor
80	(50)	BITSTRING	1	UX12AFF	Type of affinity
		1...		UX12GDG	GDG affinity
		.1..		UX12UAFF	Unit affinity
81	(51)	HEXSTRING	3	*	Reserved
84	(54)			UX12FIXL	Length of fixed portion of parameter list

The following area immediately follows the SCSUX12P fixed data area. This area repeats once for each DD statement in the affinity chain. The number of DD statements in the affinity chain is stored in field UX12DCNT.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	64	SCSUX12D	User Exit 12 Dataset Parm List
0	(0)	CHARACTER	8	UX12DDN	DD name
8	(8)	CHARACTER	44	UX12DSN	Dataset name
52	(34)	FULLWORD	4	UX12NUMV	Number of volumes in dataset
56	(38)	BITSTRING	1	UX12LABT	Label type
		....		UX12LBDF	Library default label type
		1		UX12LBSL	Standard label
		.... ..1.		UX12LBAL	ANSI label
		11		UX12LBNL	Nonlabeled
		.... .1..		UX12LBNS	Nonstandard label
57	(39)	HEXSTRING	1	UX12SSUB	Scratch subpool number
58	(3A)	HEXSTRING	2	*	Reserved
60	(3C)	ADDRESS	4	UX12VOLP	Pointer to volume information
64	(40)			UX12VARL	Length of dataset entry

The following area is pointed to by UX12VOLP. It consists of the volume serial and location of each volume in the data set. The number of volume entries in the list is provided by UX12NUMV.

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	12	SCSUX12V	User Exit 12 Volume Parm List
0	(0)	CHARACTER	6	UX12VLSR	Volume serial
6	(6)	BITSTRING	1	UX12VREQ	Volume requested
		1...		UX12SPEC	Specific volume requested
		.1..		UX12NSPC	Nonspecific volume request
7	(7)	BITSTRING	1	UX12VLOC	Volume location
		1...		UX12VLIB	Volume resides in library
		.1..		UX12VNLB	Volume resides outside library

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
8	(8)	HEXSTRING	2	UX12AALL	If volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
10	(A)	HEXSTRING	2	*	Reserved
12	(C)			UX12VLTL	Length of volume entry

SCSUX12 Cross Reference

Name	Hex Offset	Hex Value
SCSUX12D	0	
SCSUX12P	0	
SCSUX10V	0	
UX12AALL	8	
UX12ACS	44	
UX12AFF	50	
UX12CSC		00
UX12CSCN	40	
UX12DCNT	2C	
UX12DDN	0	
UX12DSN	8	
UX12ESOT	38	
UX12FIXL		54
UX12GDG		80
UX12IACT		40
UX12JOBN	C	
UX12KEY	9	
UX12LABT	38	
UX12LBAL		02
UX12LBDF		00
UX12LBNL		03
UX12LBNS		04
UX12LBSL		01
UX12LEN	4	
UX12LIB		04
UX12MAIN	48	
UX12NLIB		08
UX12NSPC		40
UX12NSUB		10
UX12NUMV	34	
UX12PRSN	1C	
UX12REPL		0C
UX12SEP		14
UX12SPEC		80
UX12SPID		E6
UX12SSUB	39	
UX12STPN	14	
UX12SUBP	8	
UX12ULEN	28	
UX12USER	24	
UX12UAFF		40
UX12UNIT	30	
UX12UX12	0	

Name	Hex Offset	Hex Value
UX12VARL		40
UX12VLIB		80
UX12VLOC	7	
UX12VLSR	0	
UX12VLTL		0C
UX12VNLB		40
UX12VOLP	3C	
UX12VREQ	6	

JES3 Specific Volume Allocation User Exit (SCSUX13)

Functional Description

The specific volume allocation user exit (SCSUX13) allows modification of the actions the SMC takes during the allocation of a specific volume DD statement that references cartridge drives. Use this exit to:

- Change the esoteric name (unit name) used for device allocation
- Request allocation of nonlibrary drives
- Request allocation of library drives
- Indicate a specific MVS/CSC subsystem name to use for allocation
- Bypass drive exclusion logic

Environment

This user exit is applicable in JES3 environments. It is invoked by the SMC, and executes on the host where the SMC resides.

This user exit is invoked by the SMC for every allocation request for a specific volume to be mounted on a cartridge drive. It is loaded using the SMC UEXit operator command. For more information, see "UEXIT" on page 472.

Note – This user exit must reside in a library accessible to the subsystem (SMC STEPLIB, JOBLIB, or your system's LINKLIB concatenation).

Conditions when User Exit Routine is Executed

Parameter List

The parameter list is mapped by macro SCSUX13P.

Entry Specifications

Upon entry to SCSUX13, register contents are as follows:

Register	Contents
0	Undefined
1	Pointer to parameter list
2-12	Undefined

Register	Contents
13	Pointer to register save area
14	Return address
15	Entry point address

Conditions on Return from User Exit

Return Specifications

On return from SCSUX13, register contents are as follows:

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

Return Codes

TABLE 6-29 SCSUX13 Return Codes

Return Code	Name	Description
0	UX13CSC	Process normally; exit does not influence JES3 defer status
4	UX13LIB	Defer the mount until a system initiator begins the step allocation process
8	UX13NLIB	Honor the JCL's JES3 defer status
12	UX13REPL	Replace unit name with a different esoteric
16	UX13NSUB	Direct allocation of drives to a specific ACS or MVS/CSC subsystem
64	UX13IACT	The user exit is inactive

Programming Considerations

Examples

In the following example, the user exit instructs the SMC to direct the allocation for a specific volume request to nonlibrary drives.

```
set Register 15 to 8.
```

In the following example, the user exit requests esoteric substitution (LIBVOL), and instructs the SMC to direct the allocation to the library drives controlled by MVS/CSC subsystem CSC1.

```
set Register 15 to 16.
set UX13ESOT to 'LIBVOL'.
set UX13CSCN to 'CSC1'.
set UX13ACS to 1.
```

User Exit 13 Parameter List

The parameter list is built by SMC during JES3 device separation. The user exit is called for a specific allocation request. The user exit provides the ability to provide allocation criteria for a given DD statement.

SCSUX13 Map

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	176	SCSUX13P	User Exit 13 Parameter List
0	(0)	CHARACTER	4	UX13UX13	Eyecatcher 'UX13'
4	(4)	FULLWORD	4	UX13LEN	Length of UX13 parameter list
8	(8)	HEXSTRING	1	UX13SUBP	Storage subpool number
		'E6'		UX13SPID	Subpool 230
9	(9)	HEXSTRING	1	UX13KEY	Storage key.
10	(A)	HEXSTRING	2	*	Reserved
12	(C)	CHARACTER	8	UX13JOBN	Job name
20	(14)	CHARACTER	8	UX13STPN	Step name
28	(1C)	CHARACTER	8	UX13PRSN	Procedure step name
36	(24)	CHARACTER	8	UX13DDN	DD name
44	(2C)	ADDRESS	4	UX13USER	Address of USERDATA parameter value
48	(30)	FULLWORD	4	UX13ULEN	Length of USERDATA parameter value
52	(34)	ADDRESS	8	UX13UNIT	JCL unit name
60	(3C)	CHARACTER	8	UX13ESOT	Area to return an esoteric name
68	(44)	CHARACTER	4	UX13CSCN	MVS/CSC subsystem to process request
72	(48)	FULLWORD	4	UX13ACS	Area to return an ACS ID; format: 000000AA, where AA is the ACS number
76	(4C)	CHARACTER	44	UX13DSN	Dataset name
120	(78)	BITSTRING	1	UX13LABT	Label type
		....		UX13LBDF	Library default label type
		1		UX13LBSL	Standard label
		.... ..1.		UX13LBAL	ANSI label
		11		UX13LBNL	Nonlabeled
		.... .1..		UX13LBNS	Nonstandard label
121	(79)	CHARACTER	8	UX13MAIN	JES3 setup processor

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
129	(81)	HEXSTRING	3	*	Reserved
132	(84)	FULLWORD	4	UX13NUMV	Number of volumes in dataset
136	(88)	ADDRESS	4	UX13VOLP	Address of volume information
140	(8C)	BITSTRING	1	UX13FLG1	User exit 13 flag
		1.		UX13UAFF	Element is member of unit affinity chain
		. 1.		UX13GAFF	Element is member of GDGALL chain
141	(8D)	HEXSTRING	35	*	Reserved
176	(B0)			UX13LSTL	Length of SCSUX13P

Offsets					
Dec	**Hex**	**Type/Value**	**Len**	**Name**	**Description**
0	(0)	STRUCTURE	9	SCSUX13V	User Exit 13 Volume Parm List
0	(0)	OFFSET	0	UX13VLST	Volume list
0	(0)	CHARACTER	6	UX13VLSR	Volume serial
6	(6)	BITSTRING	1	UX13VLOC	Volume location
		1.		UX13VLIB	Volume resides in library
		. 1.		UX13VNLB	Volume resides outside library
7	(7)	HEXSTRING	2	UX13AALL	If volume in library, the library location in ACS/LSM format 'AALL' (hexadecimal)
9	(9)			UX13VLTL	Length of volume entry

CHAPTER 7

Flat Files

Flat file output for MVC, VTV and VOLRPT is no longer supported, and has been replaced by using the CSV interface of UUI. See *ELS Programming Reference* for more information.

CHAPTER 8

Commands, Control Statements, and Utilities

This chapter describes the legacy ELS commands, control statements, and utilities.

ALLOC

The ALLOC command defines HSC allocation options. These options allow you to customize device allocation to fit your environment, reduce the need for operator intervention, and improve overall library performance.

The ALLOC command sets or changes HSC allocation options relating to LSM scratch preferencing and selection.

Note –

- All other allocation options are controlled by the Storage Management Component (SMC). Refer to the SMC ALLOCDEF command for SMC allocation options.
- The specified ALLOC options remain in effect for a designated host until they are changed again by another ALLOC command, or until the HSC is shutdown and restarted. Specify the ALLOC command in PARMLIB to ensure the specified HSC ALLOC options remain in effect when the HSC is restarted.
- Use the HSC Display ALLOC command to list the HSC ALLOC options that are currently in effect.

Interfaces:	Console or PARMLIB only
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

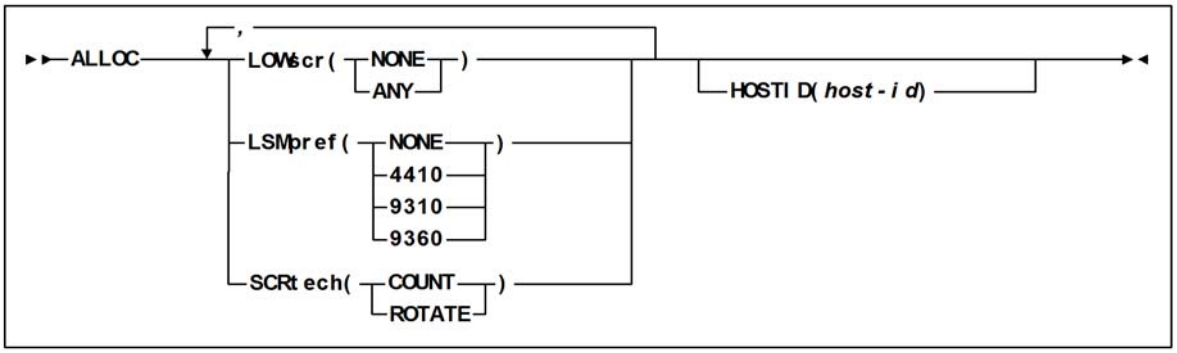


FIGURE 8-1 ALLOC syntax

Parameters

LOWscr

optionally, specifies whether LSMs with low or zero scratch counts are to be least-preferenced.

Caution – Using different settings of LOWscr from host to host is not recommended. **If a difference exists, unusually fast depletion of scratch volumes from certain LSMs may result, leading to increased pass-thru activity, reduced robotics utilization, and reduced library throughput.**

HSC User Exit 02 can be used to override the LOWscr parameter on a case by case basis; however, it cannot be used to override the LOWscr and LSMpref parameters simultaneously.

NONE

specifies that least-preferencing is not in effect. If the current scratch count for an LSM is below the scratch threshold level defined, or if no scratch threshold exists and the current scratch count is zero, the LSM continues to be preferenced according to the LSMpref and SCRtech values in effect. NONE is the initial value for the HSC.

ANY

specifies that any LSM can be least-preferenced if either of the following conditions is met:

- A scratch threshold level is defined for the LSM and its scratch count is below this threshold.
- No scratch threshold exists for the LSM and its scratch count is zero.

A least-preferenced LSM does not participate in the rotation algorithm and may be any LSM type, including the type specified in the LSMpref parameter. Online and unallocated transports in least-preferenced LSMs are still eligible to satisfy allocation requests.

Note – If least-preferencing is desired for an LSM with a low but nonzero scratch count, the Warn command must be used to set a scratch threshold for the LSM. It is not necessary to set a scratch threshold of zero. Scratch thresholds for ACSs are not relevant and have no effect on least-preferencing LSMs.

LSMpref

optionally, indicates if a particular type of LSM is preferenced over all other LSM types to satisfy scratch requests. Only one type of LSM can be preferenced at a time.

9740 LSMs and SL8500 libraries do not participate in LSM preferencing.

Caution – Using different settings of LSMpref from host to host is not recommended. **If a difference exists, unusually fast depletion of scratch volumes from certain LSMs may result, leading to increased pass-thru activity, reduced robotics utilization, and reduced library throughput.**

When a particular type of LSM is preferenced over all other LSM types, two logical groupings of LSMs are created: one composed of all LSMs of the preferenced type, and one composed of all other LSMs of non-preferenced types. LSMs within the non-preferenced group are treated as though they are the same type.

SMC User Exits 02 and 04 can be used to override the LSMpref parameter on a case by case basis.

NONE

All LSMs are logically grouped together and treated as though they are the same type. No preferencing by LSM type is performed. NONE is the initial value for the HSC.

4410

4410 LSMs are to be preferred over all non-4410 LSMs.

9310

9310 LSMs are to be preferred over all non-9310 LSMs.

9360

9360 LSMs are to be preferred over all non-9360 LSMs.

SCRtech

optionally, specifies how LSMs are individually preferenced to satisfy scratch requests.

Caution – Using different settings of SCRtech from host to host is not recommended. **If a difference exists, unusually fast depletion of scratch volumes from certain LSMs may result, leading to increased pass-thru activity, reduced robotics utilization, and reduced library throughput.**

COUNT

LSMs are individually preferenced in descending scratch count order. COUNT is the initial value for the HSC.

ROTATE

LSMs are individually preferenced using a rotation algorithm. Each successive scratch request is preferenced to the next LSM. Once all LSMs have been preferenced, the rotation starts over. The starting sequence of LSMs is in descending scratch count order.

HOSTID

optionally, specifies the host associated with the allocation options being specified in the command. If this parameter is not specified, the changes affect the host from which the command is issued.

host-id

the host ID (the SMF system identifier for **both** JES2 and JES3).

ALLOC for LSM and Scratch Preferencing

TABLE 8-1 HSC ALLOC for LSM and Scratch Preferencing

This command or utility...	...does the following...	Valid values are...	Usage considerations are...
ALLOC LOWSCR	Specifies whether LSMs with low scratch counts are least-preferenced.	■ NONE - No LSM preferencing. LSMs are preferenced according to the LSMpref and SCRtech values. ■ ANY - specifies that any LSM can be least-preferenced if either of the following is true: ■A scratch threshold level is defined for the LSM and its scratch count is below this threshold. ■No scratch threshold exists for the LSM and its scratch count is zero.	In general, use ALLOC LOWSCR(ANY)
ALLOC LSMPREF	Specifies whether specific LSM types are preferenced over other models.	■ NONE - Least preferencing not in effect. ■ 4410, 9310, 9360- The specified LSM type is preferenced.	In general, preference higher-performing LSM types.

TABLE 8-1 HSC ALLOC for LSM and Scratch Preferencing

ALLOC SCRTECH	Specifies how LSMs are preferenced for scratch mounts.	■ COUNT - LSMs are individually preferenced in descending scratch count order. ■ ROTATE - LSMs are individually preferenced using a rotation algorithm. Each successive scratch request is preferenced to the next LSM. Once all LSMs have been preferenced, the rotation starts over.	Your choice, depending on your site's needs.
MNTD Scratch	Determines how a scratch volume is selected to satisfy a scratch mount request for a manual mode LSM.	■ Manual- specifies that the operator must select a scratch volume when a scratch mount is requested for a manual mode LSM. Manual is the initial value for the HSC. ■ Auto - directs the HSC to select a scratch volume when a scratch mount is requested for a manual mode LSM. If Scratch is set to Auto, the HSC manual mount message indicates the cartridge VOLSER and cell location as if it were a request for a specific volume.	Your choice, depending on your site's needs.

TABLE 8-1 HSC ALLOC for LSM and Scratch Preferencing

MNTD SCRDISM	Specifies whether a scratch volume that is mounted in a 9740 LSM is to be moved to another LSM when it is dismounted.	■ CURRENT - indicates that scratch volumes mounted in a 9310 or 9360 LSM are to be dismounted according to the MNTD Float parameter setting. CURRENT is the initial value for the HSC. ■ ARCHIVE - indicates that scratch volumes mounted in a 9310 or 9360 LSM are to be archived into a larger or slower storage device. Archival occurs only if the number of pass-thrus does not exceed PASSTHRU. Archival of a cartridge can occur from a 9360 to either a 9310 or a 4410 from a 9310 to a 4410. **Note:** ■ 9740 LSMs cannot attach to any other type of LSM. Thus, SCRDISM does not affect mounts in ACSs containing 9740s. ■ SCRDISM(ARCHIVE) overrides the MNTD Float parameter setting. ■ The ARCHIVE parameter does not affect dismounts in ACSs containing 9740 LSMs.	Your choice, depending on your site's needs.

Examples of LSM Scratch Preferencing

The effects of different settings of the LSMpref, SCRtech, and LOWscr keyword parameters of the ALLOC operator command are described in the following examples.

LSMPREF=NONE, SCRTECH=COUNT, LOWSCR=NONE

Result: All LSMs are ordered by descending scratch count.

LSMPREF=NONE, SCRTECH=COUNT, LOWSCR=ANY

Result: All LSMs are ordered by descending scratch count.

LOWscr=ANY will defer LSMs with zero scratch counts, or scratch counts below their defined scratch thresholds, from first consideration to satisfy a scratch request. These least-preferenced LSMs are still eligible for scratch allocations in case MVS cannot allocate a transport in any other LSM.

LSMPREF=NONE, SCRTECH=ROTATE, LOWSCR=NONE

Result:

- Each successive scratch request is preferenced to a different LSM to distribute the scratch workload.
- At some point, an LSM with a very low or zero scratch count can become the most preferenced LSM.

LSMPREF=NONE, SCRTECH=ROTATE, LOWSCR=ANY

Result:

- Each successive scratch request is preferenced to a different LSM to distribute the scratch workload.
- Least-preferenced LSMs do not participate in the rotation algorithm.

  LOWscr=ANY will defer LSMs with zero scratch counts or scratch counts below their defined scratch thresholds from first consideration to satisfy a scratch request. These least-preferenced LSMs are still eligible for scratch allocations in case MVS cannot allocate a transport in any other LSM.

LSMPREF=9310, SCRTECH=COUNT, LOWSCR=NONE

Result:

- 9310 LSMs are preferenced over all other LSMs and are ordered by descending scratch count.
- All other LSMs are separately ordered by descending scratch count.
- 9310 LSMs with very low or zero scratch counts are preferenced over non-9310 LSMs with possibly higher scratch counts.

Note – Manual entry of cartridges may be required if all 9310 LSMs run out of scratches. To avoid this situation, use LOWscr=ANY as in the next example.

LSMPREF=9310, SCRTECH=COUNT, LOWSCR=ANY

Result:

- 9310 LSMs are preferenced over all other LSMs and are ordered by descending scratch count.
- All other LSMs are separately ordered by descending scratch count.

  LOWscr=ANY will defer LSMs with zero scratch counts or scratch counts below their defined scratch thresholds from first consideration to satisfy a scratch request. These least-preferenced LSMs are still eligible for scratch allocations in case MVS cannot allocate a transport in any other LSM.

Note – Even though 9310 LSMs are explicitly preferenced, LOWscr=ANY ignores LSM type and will least-preference any LSM with zero scratch counts or scratch counts below their defined scratch thresholds.

LSMPREF=9310, SCRTECH=ROTATE, LOWSCR=NONE

Result:

- 9310 LSMs are preferenced over all other LSMs.
- Each successive scratch request is preferenced to a different 9310 LSM first, then all other LSMs as necessary.

  In the event that all transports in all 9310 LSMs are offline, already allocated, or incompatible, each successive scratch request is preferenced to a different non-9310 LSM to distribute the scratch workload.

Note – Manual entry of cartridges may be required if all 9310 LSMs run out of scratches. To avoid this situation, use LOWscr=ANY as in the next example.

LSMPREF=9310, SCRTECH=ROTATE, LOWSCR=ANY

Result:

- 9310 LSMs are preferenced over all other LSMs.
- Each successive scratch request is preferenced to a different 9310 LSM first, then all other LSMs as necessary.
- Least-preferenced LSMs do not participate in the rotation algorithm.

  In the event that all transports in all 9310 LSMs are offline, already allocated, or incompatible, each successive scratch request is preferenced to a different non-9310 LSM to distribute the scratch workload.

  LOWscr=ANY will defer LSMs with zero scratch counts or scratch counts below their defined scratch thresholds from first consideration to satisfy a scratch request. These least-preferenced LSMs are still eligible for scratch allocations in case MVS cannot allocate a transport in any other LSM.

Note – Even though 9310 LSMs are explicitly preferenced, LOWscr=ANY ignores LSM type and will least-preference any LSM with zero scratch counts or scratch counts below their defined scratch thresholds.

ALLOCDEF Command

The VTVMAXVOL parameter is no longer accepted on the ALLOCDEF command. Instead, code the IDAXVOLCNT parameter on the POLICY command. See *Configuring and Managing SMC* for more information on selecting IDAX policies.

Note – If POLICY IDAXVOLCNT is specified, IDAX VTVMAXVOL is ignored.

BACKUP and RESTORE Commands

The BACKUP and RESTORE commands themselves are **not** legacy interfaces, but **all** of the BACKUP OPTION keywords are and restoring with journaling is considered a legacy technique; for more information, see "Journaling" on page 509.

BACKup

The BACKup command produces a backup of the library control data set. If journaling is enabled, all journals are reset when the backup is complete.

Interfaces:	SLUADMIN utility only
Subsystem Requirements:	Active HSC not required

Syntax

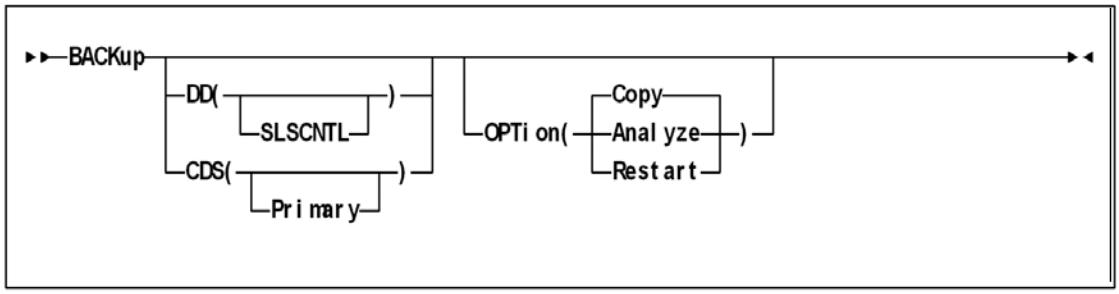


FIGURE 8-2 BACKup syntax

Parameters

DD

optionally, specifies a backup is to be run on a selected CDS. If **DD** is not specified, the BACKup utility backs up the CDS containing the most updates.

For regularly scheduled backups of HSC CDSs, do not specify the **DD** keyword unless each CDS copy has been backed up individually in the same time frame. The reason for not specifying the **DD** keyword is that a CDS switch(es) may have taken place.

(SLSCNTL)

specifies that the CDS defined by the SLSCNTL DD statement is to be copied to the SLSBKUP data set.

CDS

optionally, specifies a backup is to be run on a CDS. If CDS is not specified, the BACKup utility backs up the CDS containing the most updates.

For regularly scheduled backups of HSC control data sets, do **not** specify the **CDS** keyword unless each CDS copy has been backed up individually in the same time frame. The reason for not specifying the **CDS** keyword is that a CDS switch(es) may have taken place.

(Primary)

specifies that the control data set defined by the SLSCNTL DD statement is to be copied to the SLSBKUP data set.

Note –

- The CDS parameter and DD parameter are still accepted by the BACKup utility, but neither parameter has any effect.
- To back up a selected CDS data set, make sure that the SLSCNTL DD statement names the CDS you wish to back up, AND do not specify ANY OTHER CDS DD statements.

  This technique is especially useful for libraries operating through a remote link such as channel extenders.

  If the link drops and the primary and secondary CDSs complete processing separately, you can bypass the programmatic algorithm that normally determines the CDS to be back up. If you know which data set (primary and secondary) had the most cartridge processing, then you can select that data set to be processed by the utility by specifying it as SLSCNTL in the JCL, and not specifying other CDS DD statements.
- The **Secondary** and **Standby** parameters are no longer supported by the **CDS** parameter. To back up a selected CDS data set, make sure that the SLSCNTL DD statement names the CDS you wish to backup.

OPTION

The value of the OPTion parameter determines which function is performed:

- OPTion(Copy) creates a backup without a detailed block analysis.
- OPTion(Restart) performs a restart of the utility.
- OPTion(Analyze) performs a detailed block analysis.

  For OPTion(Analyze), the following considerations apply:

1.If both copies of the data set are available and an I/O error occurs during the analysis phase of backup, the utility attempts to continue backup on the other copy unless the CDS keyword specifies the CDS that contains the error. If the CDS keyword specifies the control data set containing the error, the utility terminates.

2. Copy data sets (SLSCOPY1 and SLSCOPY2) are used as analysis data sets to limit the hardware reserve placed on the control data set to an absolute minimum. Depending upon options selected, analysis of data blocks can be performed and block information modified before the data is written to the backup data set (SLSBKUP).

3. If a detailed block analysis is performed, discrepancy blocks are created in the CDS during the backup; the RESTore utility works in conjunction with BACKup by formatting these discrepancy blocks into control card statements and outputting them to the SLSAUDIT data set. When the HSC is reactivated after a backup and restore, the discrepancy control statements are input to the SLUADMIN program and AUDIt, UNSCratch, and UNSElect are performed to resolve discrepancies.

The following procedure describes steps for performing a backup with a detailed block analysis.

1.Allocate the SLSCOPY1 and SLSCOPY2 data sets. These data sets must be the size of the current control data set.

2. Allocate the SLSBKUP data set. It should be slightly larger than the control data sets. The size depends upon the number of discrepancies found. However, a recommended size is five percent larger than the current control data set.

3. Run the BACKup utility.

JCL Requirements

The following definitions apply to the BACKup utility JCL:

SLSPRINT

the message output data set.

SLSCNTL

the primary control data set. This statement must be provided.

SLSCNTL2

the secondary control data set. If a secondary CDS exists, it should be specified so that if a switch occurs and the secondary data set is now active, the CDSs can be reordered to maintain database integrity.

Note – The logical record length of the backup data set may be LRECL=0. This is not an indication of a problem. In this case, the LRECL for the backup data set defaults to BLKSIZE=4096.

SLSBKUP

the created backup data set.

SLSSTBY

the standby data set. If a standby exists, it should be specified so that if a switch occurs and the standby data set is now active, the CDSs can be reordered to maintain database integrity.

Note – NO CDS DD names are needed if HSC is active. If HSC is not active, then either provide a single CDS DD name (SLSCNTL) of the CDS that you want to back up (if it is not the current primary), or provide CDS DD statements for all defined CDS DD names. For example, if you have defined 3 CDS copies, you can either specify all three names, or a single name with SLSCNTL as the DD name and the dataset name of the CDS you wish to back up. If you have three CDS files defined, you cannot specify only two CDS DD statements. If you specify all three DD statements, then the backup utility always selects the primary CDS to back up.

SLSCOPY1

the data set to which the primary control data set (specified by the DD SLSCNTL statement) is copied. This statement is not required when you specify OPTion(Copy).

SLSCOPY2

the data set to which the secondary control data set (specified by the DD SLSCNTL2 statement) is copied. This statement is not required when you specify OPTion(Copy).

SLSJRN*nn*

if journaling is enabled, these statements define the library journal data sets (two per host, up to 16 hosts). All journals must be specified. Up to 99 journals can be specified. **Allowable values for *nn* are decimal 01 to 99, but numbers cannot be skipped.**

SLSIN

input to the utility in the form of control statement card images.

JCL for Running an OPTion(Analyze) BACKup

This example shows the JCL required for an OPTion(Analyze) backup using the primary, secondary, and standby control data sets, copy data sets (SLSCOPY1 and SLSCOPY2), and journals:

```
//JOBBKUP    job (account),programmer
//S2         EXEC PGM=SLUADMIN,PARM=MIXED,REGION=2000K
//SLSCNTL    DD DSN=primary.dataset.name,DISP=SHR
//SLSCNTL2   DD DSN=secondary.dataset.name,DISP=SHR
//SLSSTBY    DD DSN=standby.dataset.name,DISP=SHR
//SLSBKUP    DD DSN=backup.dataset.name,DISP=(NEW,CATLG),
//             UNIT=dasd-name,SPACE=
//SLSJRN01   DD DSN=journal1.dataset.name,DISP=SHR
//SLSJRN02   DD DSN=journal2.dataset.name,DISP=SHR
//SLSCOPY1   DD DSN=copy1.dataset.name,DISP=(NEW,CATLG),UNIT=,SPACE=
//SLSCOPY2   DD DSN=copy2.dataset.name,DISP=(NEW,CATLG),UNIT=,SPACE=
//SLSPRINT   DD SYSOUT=*
//SLSIN      DD *
  Backup OPTion(Analyze) DD(SLSCNTL)
/*
//
```

The control data set is placed in a reserve state only long enough for the data to be copied to the SLSCOPYn data sets. The SLSCOPYn data sets are processed using unreserved READs. The host cannot access control data sets except for backup processing.

The control data set is backed-up to the user-specified DASD data set. If journaling is enabled, all specified journals are reset when the backup is completed.

Finally, the control data set is returned to a state where it can support normal library processing and the utility ends.

If SLSCOPYn data sets are used and a return code of less than RC=8 (i.e., backup successful) is achieved, these data sets may be deleted or reused when the backup is restarted due to a failure.

How to Restart Backup

If a system failure or any other circumstance occurs that causes a return code of eight (RC=8) for a BACKup OPTion(Analyze) run, the BACKup utility may be able to be restarted with OPTion(Restart).

OPTion(Restart) bypasses the initial copy of the control data sets to the SLSCOPY data sets. This option can be used when a system outage or job failure has occurred after the control data sets have been successfully copied to the SLSCOPY data sets for a BACKup OPTion(Analyze) run. Analysis of the BACKup OPTion(Analyze) runtime report indicates if the control data sets were successfully copied to the SLSCOPY data sets; if not successful, a restart cannot be performed.

If you have journals, the BACKup OPTion(Analyze) runtime report should be inspected to determine if the journals were successfully reset. If not reset, a backup should be taken again to obtain the most current control data sets prior to doing the journal reset. If the journals have been reset, OPTion(Restart) should be used to obtain the information from the SLSCOPY data sets.

If GENerate (YES, Only, or Short) is specified in the RESTore JCL, output of the discrepancies encountered is stored in the SLSAUDIT data set.

The RESTore utility does not reset the journals. It is recommended that a backup be performed following the completion of the restore to reset the journals and reflect the newly restored control data set.

RESTore

The RESTore command restores, or re-creates the library Control Data Set (CDS) from a previous CDS backup copy. If multiple CDS DD statements are specified, then multiple CDS copies are created in the RESTore process.

Note – See "Journaling" on page 509 for information about using RESTore when journaling is enabled.

The RESTore command restores, or re-creates the library Control Data Set (CDS) from a previous CDS copy.

You also have the option to apply all journals (maximum of 99 files per run) since the last backup, if journaling is enabled.

Caution – It is critical that you restore all data sets referenced by the HSC (primary, secondary, standby). Failing to restore all data sets can cause CDS mismatches.

Refer to the publication *Managing and Operating HSC and VTCS* for detailed information about when to use this utility and how it functions.

Interfaces:	SLUADMIN utility only
Subsystem Requirements:	HSC must be down (inactive)

Syntax

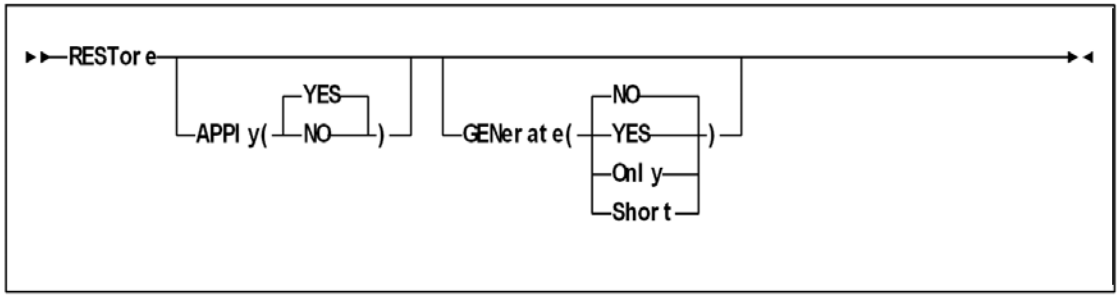


FIGURE 8-3 RESTore syntax

Parameters

APPly

optionally, specifies whether or not the journals are to be applied to the restore operation.

YES

specifies that journals are to be applied. This is the default.

NO

specifies that journals are not to be applied.

GENerate

optionally, specifies what statements are output to the SLSAUDIT data set and whether or not control data sets are restored.

NO

specifies that NO statements are sent to the SLSAUDIT data set. The control data sets are also restored. This is the default.

YES

specifies that statements are sent to the SLSAUDIT data set. The control data sets are also restored.

Note – If OPTion(Analyze) was specified for backup, this parameter should be specified for the restore.

Only

specifies that all statements are sent to the SLSAUDIT data set. The CDS and Journal DD statements need not be present. The control data sets are not restored.

Short

specifies that Audit statements only are sent to the SLSAUDIT data set. The control data sets are restored.

JCL Requirements

The following definitions apply to RESTore utility JCL:

SLSPRINT

output messages from the utility program.

SLSCNTL

the primary control data set.

SLSCNTL2

the secondary copy of the CDS (optional).

Note –

- If this is a new data set (e.g., DISP=(NEW,...)), DCB=(DSORG=PS) must be coded to make sure that the data set organization of the control data set is defined correctly.
- The logical record length of the restored data set may be LRECL=0. This is not an indication of a problem. In this case, the LRECL for the restored data set defaults to BLKSIZE=4096.

SLSBKUP

the backup data set.

SLSSTBY

a standby copy of the control data set having only the heartbeat block updated (optional).

SLSJRN*nn*

if journaling is enabled, statements that define all journals since the last backup. There are two journals per host and up to 16 hosts. The possibility exists that the journals could have been off-loaded since the last control data set backup. If so, all archived journals must also be specified here.

It is the user's responsibility to specify the archived journals, since there are no means of checking for missing archived journals. There is also no provision for specifying more than 99 journals. **Allowable values for *nn* are 01 to 99, but numbers cannot be skipped.**

SLSAUDIT

identifies where the UNSCratch, UNSElect, and AUDIt statements are to be placed. SLSAUDIT has a logical record length (LRECL) of 80 and a block size (BLKSIZE) of 80. These statements are in the optimal order and can be directly input to an execution of SLUADMIN. The data set name specified in SLSAUDIT can be used as SLSIN input to SLUADMIN.

SYSOUT

sort message output. Required if APPly(YES) is specified.

SLSIN

input to the utility in the form of control cards.

SLSDELTA

work data set created by the restore. The DD statement naming a temporary data set for the sorted deltas. The space allocation should be at least as large as the sum of all the SLSJRN*nn* data sets. This statement is only required when APPly(YES) is specified.

SORTWK*nn*

sort work data sets. Required if APPly(YES) is specified.

CONFIG Utility VTVVOL Statement

The CONFIG utility VTVVOL statement defines a range of VTVs. This statement is required.

Note – StorageTek recommends using SET VOLPARM to define VTV and MVC ranges in the VTCS CONFIG. Refer to the *ELS Command, Control Statement, and Utility Reference* for more information about the SET VOLPARM statement.

A range can consist of a single volume. You can add ranges and you can delete all or part of an existing range as follows:

- To delete an entire range, delete the entire range from the CONFIG deck (or from the DECOM output).
- To delete part of an existing range, respecify the range to include only the volsers you want to retain.

Note –

- You can only delete VTV volsers if there are no VTSS-resident or MVC copies of the VTV and the VTVs are not in use (locked) by an HSC/VTCS system.
- If you delete a range of VTVs using CONFIG, you should also modify and reload any HSC scratch pool definitions that reference these volumes to delete the VTVs. Otherwise, HSC issues message SLS6671E, which cannot be suppressed.
- You can logically delete volumes only if the CDS level is G or above.
- VOLPARM is the preferred method to remove VTV volume ranges.

CONFIG compares the ranges specified on the current run with those specified previously (that is. those stored in the CDS) as follows:

- When a range of volumes is specified for the first time (explicitly/implicitly), CONFIG adds the range definition to the CDS and creates MVC/VTV records appropriately.
- When a range of volumes is deleted (and the volumes are not in use/locked), CONFIG marks each record as “logically deleted.”
- When the range specified includes volumes that are currently logically deleted, CONFIG removes the “logically deleted” attribute from each volume record.

Syntax

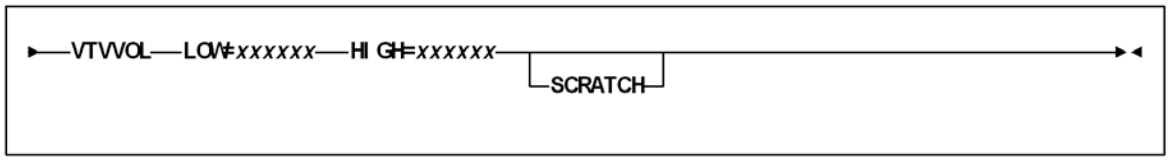


FIGURE 8-4 VTVVOL statement syntax

Parameters

LOW=*xxxxxx*

specifies the start of a range of VTVs.

HIGH=*xxxxxx*

specifies the end of a range of VTVs.

Note – The incremental part of a range cannot exceed 5 characters for numeric and 4 characters for alpha ranges.

SCRATCH

specifies that the VTVs added to the CDS are placed in scratch status, which is not the default for the VTVVOL parameter.

Note – If you are using the LCM SYNCVTV function for VTV scratch synchronization, StorageTek recommends that you define VTV ranges in scratch status. If you do not, you must use the HSC SLUADMIN utility to scratch these volumes.

CONFIG Utility MVCVOL Statement

The MVCVOL statement defines a range of MVCs available to VTCS. This statement is required.

Note – StorageTek recommends using SET VOLPARM to define VTV and MVC ranges in the VTCS CONFIG. Refer to the *ELS Command, Control Statement, and Utility Reference* for more information about the SET VOLPARM statement.

A range can consist of a single volume. You can add ranges and you can delete all or part of an existing range as follows:

- To delete an entire range, delete the entire range from the CONFIG deck (or from the DECOM output).
- To delete part of an existing range, respecify the range to include only the volsers you want to retain.

Note –

- You can only delete MVC volsers if MVC contains no VTVs.
- You can logically delete volumes only if the CDS level is G or above.
- VOLPARM is the preferred method to remove MVC volume ranges.
- If you delete MVCs or VTVs from the configuration as a result of either SET VOLPARM or CONFIG MVCVOL processing:
  - For MVCs, you cannot re-enter the volsers into the configuration as VTVs.
  - For VTVs, you cannot re-enter the volsers into the configuration as MVCs.
  - For either MVCs or VTVs, do not use the volsers for native HSC tapes.

  Message SLS6944I indicates the number of MVCs or VTVs that have been deleted.

CONFIG compares the ranges specified on the current run with those specified previously (that is. those stored in the CDS) as follows:

- When a range of volumes is specified for the first time (explicitly/implicitly), CONFIG adds the range definition to the CDS and creates MVC/VTV records appropriately.
- When a range of volumes is deleted (and the volumes are not in use/locked), CONFIG marks each record as “logically deleted.”
- When the range specified includes volumes that are currently logically deleted, CONFIG removes the “logically deleted” attribute from each volume record.

Syntax

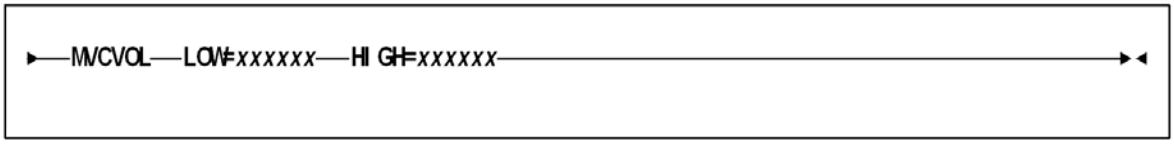


FIGURE 8-5 MVCVOL statement syntax

Parameters

LOW=*xxxxxx*

specifies the start of a range of MVCs.

HIGH=*xxxxxx*

specifies the end of a range of MVCs.

Display MONitor

Display MONitor displays a list of the monitoring consoles.

Interfaces:	Console or PARMLIB only
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

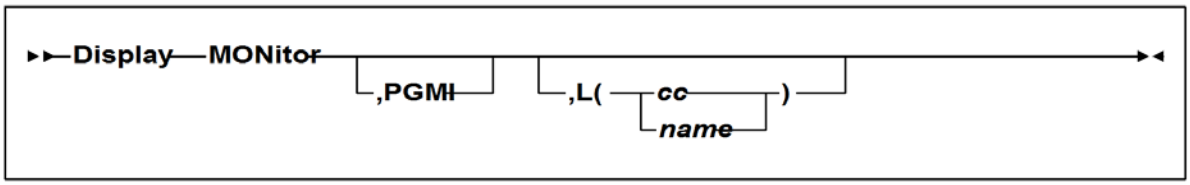


FIGURE 8-6 Display MONitor syntax

Parameters

PGMI

optionally, displays the status of the monitoring of move requests received by the programmatic interface

L

optionally, displays the type of requests being monitored by the specified console. Console IDs and console names must be two to eight characters long

cc

specifies the console ID

name

specifies the console name

If both **PGMI** and **L** are omitted, the status of all monitoring is displayed.

Display MVCDEF

Display MVCDEF displays information about active MVCPool control statements.

Interfaces:	Console or PARMLIB
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

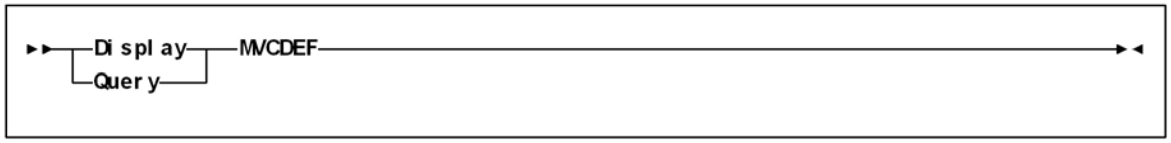


FIGURE 8-7 Display MVCDEF syntax

Parameters

None

Display SCRPDEF

Display SCRPDEF displays information about the definition data set containing SCRPOol statements, that is currently loaded.

Interfaces:	Console or PARMLIB
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

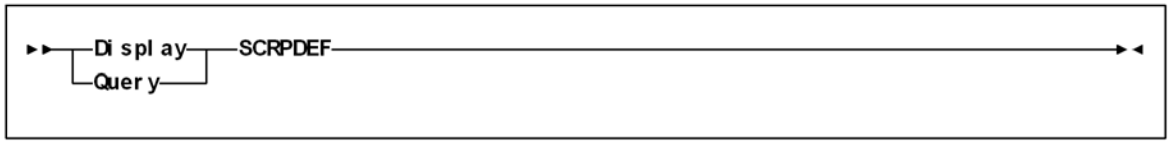


FIGURE 8-8 Display SCRPDEF syntax

Parameters

None

Display VOLDEF

Display VOLDEF displays information about the definition data set containing VOLATTR statements, that is currently loaded.

Interfaces:	Console or PARMLIB
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

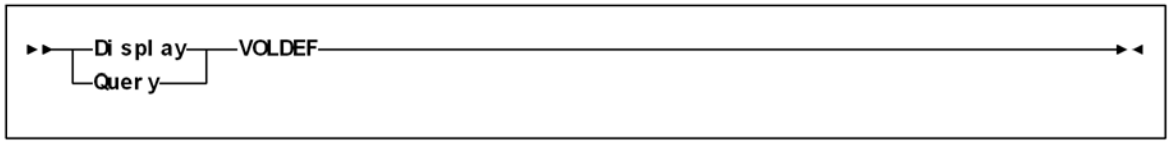


FIGURE 8-9 Display VOLDEF syntax

Parameters

None

Journal

The Journal command is no longer supported, if entered, will produce the message SLS4639I xxxxxxx COMMAND IS NO LONGER SUPPORTED.

JRNDEF

The JRNDEF command is no longer supported, if entered, will produce the message SLS4639I xxxxxxx COMMAND IS NO LONGER SUPPORTED.

LIBRARY Command and Keyword

The SMC LIBRARY command is no longer supported, and should be replaced in the startup by TAPEPLEX commands. In addition the SERVER command no longer accepts the keyword LIBRARY as a synonym for TAPEPLEX.

MERGEcds

The MERGEcds command supports the following activities:

- adding or changing a configuration to reflect new ACSs or LSMs
- consolidating multiple CDSs into one CDS. No audit is necessary
- dividing one CDS into multiple CDSs. MERGEcds copies volume information from each old CDS into the new CDS.
- merging multiple ACSs into one ACS
- dividing one ACS into multiple ACSs
- modifying an ACSid and/or LSMid and copying affected volume information from the old CDS to the new CDS. This allow renumbering of ACSs and LSMs.

Note – Before using MERGEcds, refer to the publication *Managing HSC and VTCS* for detailed procedures used to run MERGEcds.

Interfaces:	SLUADMIN utility only
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

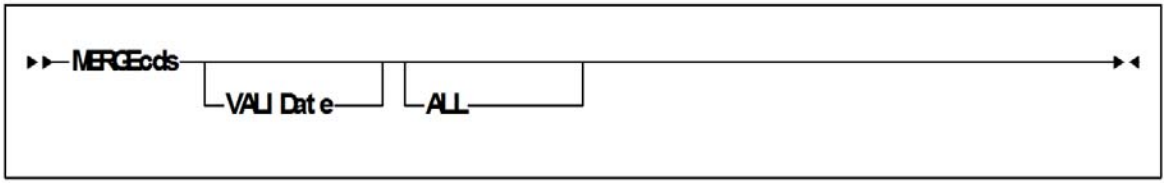


FIGURE 8-10 MERGEcds syntax

Parameters

REALonly

optionally, specifies to use only real volume records.

VIRTonly

optionally, specifies to use only VSM volume records.

VIRTonly and REALonly are mutually exclusive. See "MERGEcds Parameter Interactions" on page 421 for more information.

MERGEcds Parameter Interactions

TABLE 8-2 describes the interactions of the MERGEcds parameters.

TABLE 8-2 MERGEcds Parameter Interactions

If you specify...	The SLSMERGE DD file is...	And MERGEcds...
MERGE ALL	not read	uses both real volume records and VSM volume records but does not allow renaming the VTSS.
MERGE ALL REALonly	not read	uses only real volume records (current MERGEcds behavior).
MERGE ALL VIRTonly	not read	uses only VSM volume records but does not allow renaming the VTSS.
MERGE	read	uses both real volume records and VSM volume records and allows renaming the VTSS.
MERGE REALonly	read and MERGEcds honors the FACS/TACS and FLSM/TLSM subparameters. For more information, see "SLSMERGE Control Statement" on page 422.	uses only real volume records (current MERGEcds behavior).
MERGE VIRTonly	read and MERGEcds honors the FVTSS/TVTSS subparameters. For more information, see "SLSMERGE Control Statement" on page 422.	uses only VSM volume records and allows renaming the VTSS.
MERGE REALonly VIRTonly	not read	operation fails, REALonly and VIRTonly are mutually exclusive.

SLSMERGE Control Statement

The SLSMERGE control statement specifies the "from" and "to" ACSs, LSMs, VTSSs, or Vaults to use for a merge.

This parameter is optional and is mutually exclusive with the MERGEcds ALL parameter. See “MERGEcds Parameter Interactions” on page 421 for information about interaction between this control statement and the MERGEcds command.

Syntax

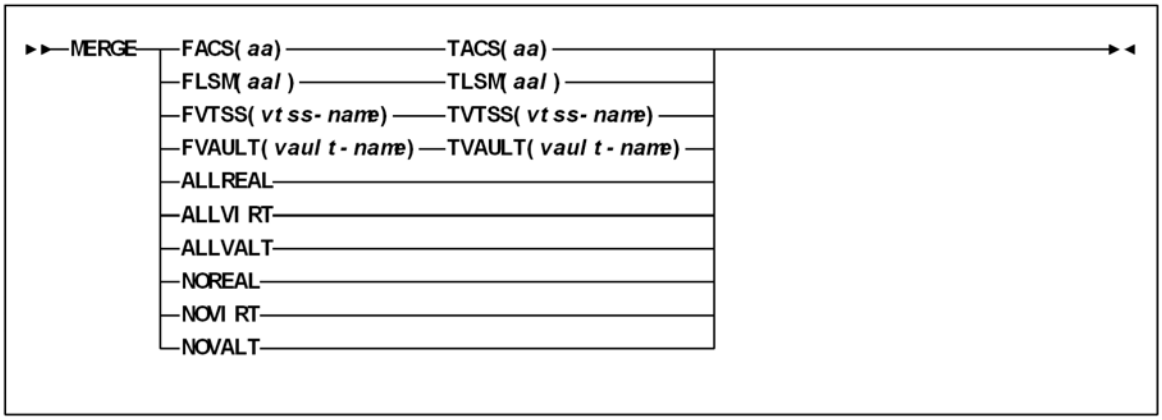


FIGURE 8-11 SLSMERGE DD Statement syntax

Parameters

FACS(*acs-id)*

specifies the “from” ACS.

TACS(*acs-id)*

specifies the “to” ACS.

FLSM(*lsm-id)*

specifies the “from” LSM.

TLSM(*lsm-id)*

specifies the “to” LSM.

FVTSS(*vtss-name)*

specifies the “from” VTSS.

TVTSS(*vtss-name)*

specifies the “to” VTSS.

FVAULT(*vault-name)*

specifies the “from” vault.

TVAULT(*vault-name)*

specifies the "to" vault.

ALLREAL

merge all real data only.

ALLVIRT

merge all virtual data only.

ALLVALT

merge all vault data only.

NOREAL

do not merge real data.

NOVIRT

do not merge virtual data.

NOVALT

do not merge vault data.

Caution –

- The "real" parameters (FACS, TACS, FLSM, TLSM) act as selection criteria, while the "virtual" parameters (FVTSS, TVTSS) do not act as selection criteria, they act only as rename criteria. For example:

  ```
  MERGE FVTSS(VTSS18) TVTSS(VTSS17)
  ```

  In this example, all VTV records are copied to the new CDS, but the Resident VTSS field is changed from VTSS18 to VTSS17.

- You cannot specify the same TOVTSS statement multiple times in a single MERGECDS job. For example, if you want to change the Resident VTSS field to VTSS17 for VTVs where the current field is set to VTSS18 and those where the current field is set to VTSS19, you must run two separate MERGECDS and the corresponding SLICREAT jobs for each rename operation. For example:

  1. Run SLICREAT to build a temporary CDS.
  2. Run MERGECDS FVTSS(VTSS18) TVTSS(VTSS17) using the old CDS as input.
  3. Run SLICREAT to build a new permanent CDS.
  4. Run MERGECDS FVTSS(VTSS19) TVTSS(VTSS17) using the temporary CDS from Step 1 as input.

MGMTCLAS Control Statement

The MGMTclas control statement defines a VSM Management Class. As shown in the following sections, the VSM feature you enable determines which MGMTclas parameters are valid.

Note – MGMTclas is not a legacy interface. However, the 6.2 IMMEDmig parameter is superseded by the IMMDELAY and DISCARD parameters.

Syntax - Basic Management Feature

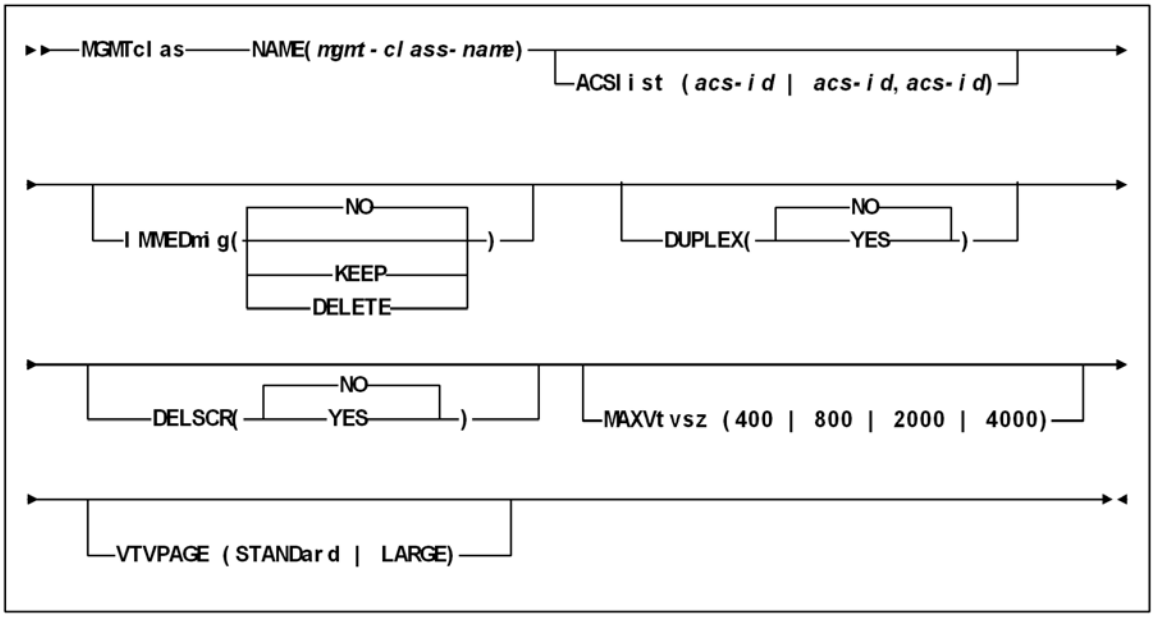


FIGURE 8-12 MGMTclas Control Statement Syntax - Basic Management Feature

Parameters - Basic Management Feature

NAME

specifies the name of the Management Class.

mgmt-class-name

the Management Class name. This name must be 1 to 8 alphanumeric characters beginning with an alpha character and must follow SMS naming conventions.

ACSlist

specifies the ACSs from which RTDs and MVCs are selected.

ACSlist is optional; if not specified, the default is the ACS specified on the CONFIG DEFLTACS parameter.

See on page 428 for information about using the DUPlex and ACSlist parameters.

acs-id | *acs-id,acs-id*

Specify either one or two ACS IDs. An ACS ID has a hexadecimal value from 00 through FF.

IMMEDmig

specifies whether VSM immediately migrates a VTV after dismounting it.

NO

specifies that VSM does not immediately migrate the VTV, but migrates it according to standard VSM migration criteria (the default).

KEEP

specifies that VSM immediately migrates a VTV and keeps a copy resident on the VTSS until the VTV become eligible for deletion.

DELETE

specifies that VSM immediately migrates the VTV and then deletes it from the VTSS.

Note – IMMEDmig KEEP and IMMEDmig DELETE are mutually exclusive with CONFIG HOST NOMIGRAT. If you specify both, the IMMEDmig value overrides NOMIGRAT, and VTCS does not issue a message about this override.

DUPlex

specifies whether VSM will migrate two copies of the VTV to two MVCs.

The DUPlex and MIGpol parameters are mutually exclusive.

See on page 428 for information about using the DUPlex and ACSlist parameters.

NO

Do not duplex the VTV (the default).

YES

Duplex the VTV.

DELSCR

specifies whether VSM deletes scratched VTVs.

This parameter is optional.

NO

do not delete scratched VTVs (the default).

YES

delete scratched VTVs.

Caution – When you scratch a VTV with DELSCR YES attribute, **VSM erases the VTV data at scratch synchronization time**, which eliminates the ability "unscratch" a VTV to recover data!

Also note that when using HSC to perform scratch synchronization, **it is possible that a volume that is scratch** in the TMC at the beginning of scratch synchronization run and also scratch in the CDS from the previous scratch update run (and thus is in the list for HSC to scratch in the CDS) is accessed by a job during the scratch update run and written to and **made non-scratch** by the TMS in the TMC. **In this case, it is still possible for HSC to scratch the volume** because it was in the originally extracted list of volumes to be scratched. Therefore, **StorageTek strongly recommends** that you **do not** run any jobs that use scratches during HSC scratch synchronization. For more information about HSC scratch synchronization with the Scratch Conversion Utility (SLUCONDB), see *HSC System Programmer's Guide for MVS.*

For more information about ExLM scratch synchronization with the SYNCVTV function, see "Using ExLM to Manage Nearline and VTCS Resources" in *ExLM System Administrator's Guide.*

MAXVtvsz

specifies the maximum size for VTVs in this Management Class. Valid values for this parameter depend on both the CDS level and the microcode levels of the applicable VTSSs.

400

400MB (the default, if not specified).

800

800MB. The CDS must be at a E level or above.

2000

2GB. The CDS must be at a G level or above.

4000

4GB. The CDS must be at a G level or above.

Note –

- The size of a VTV changes *only* after it goes through a scratch cycle. Therefore, if you change the Management Class and DISP=MOD, then it will still retain the original size.
- If you specify a VTV size that is not supported by the configuration, VTCS issues warning messages and MAXVtvsz defaults to the largest VTV size supported by the configuration.
- MAXVtvsz **does not** apply to VSM2s. The VSM3/VSM4 microcode requirements are as follows:
  - For VSM3s and 800MB support: microcode level N01.00.69.04 or microcode level N01.00.71.00 and above.
  - For VSM4s and 800MB support: microcode level D01.00.04.03 or microcode level D01.00.06.03 and above.
  - For VSM3s and 2/4GB support: microcode level TBD and above.
  - For VSM4s and 2/4GB support: microcode level TBD and above.

VTVPAGE

specifies that the page size used to store VTV data in the VTSS and on the MVCs. This setting only applies to 400 and 800 MB VTVs. If VTVPAGE is not specified on either the MGMTclas statement or the CONFIG GLOBAL statement, the default is STANDard.

STANDard

Standard page size, which is compatible with all VSM3/VSM4 models and microcode levels.

LARGE

Large page size, which can provide improved performance within the VTSS and for migrates and recalls. Large page size requires a G level CDS.

Note – For 2 and 4 GB VTVs (MAXVtvsz 2000 or 4000) a VTVPAGE setting of LARGE is always used.

Caution –

- The page size of a VTV can only be changed by a VTV scratch mount. Additional restrictions may also apply for scratch VTVs that were previously resident in a VTSS.
- VTVPAGE **does not** apply to VSM2s. The VSM3/VSM4 microcode requirements are as follows:
  - For VSM3s: microcode level TBD and above.
  - For VSM4s: microcode level TBD and above.
- If you specify LARGE and the CDS level and/or VTSS microcode **do not** support LARGE, VTCS issues warning messages and VTVPAGE defaults to STANDard.
- If you specify STANDard for 2 or 4 GB VTVs VTCS issues warning messages and VTVPAGE defaults to LARGE.
- Creating VTVs with large pages makes these VTVs **unreadable** in configurations that do not support large VTV pages.

The VTVPAGE valued specified for this Management Class overrides the global value specified on the CONFIG utility.

Using the DUPlex parameter

TABLE 8-3 describes possible scenarios using the DUPlex and ACSlist parameters.

TABLE 8-3 MGMTclas ACSlist/DUPlex Scenarios

If DUPlex is set to...	And ACSlist specifies...	Then VSM...
YES	two ACSs	migrates the VTVs to two MVCs, one in each ACS. (This scenario is the normal one for duplexing to two ACSs.)
YES	one ACS	migrates the VTVs to two MVCs in the ACS specified
NO	two ACSs	ignores the DUPlex policy and migrates the VTVs to two MVCs, one in each ACS.
NO	one ACS	migrates the VTVs to one MVC in the ACS specified

Syntax - Advanced Management Feature

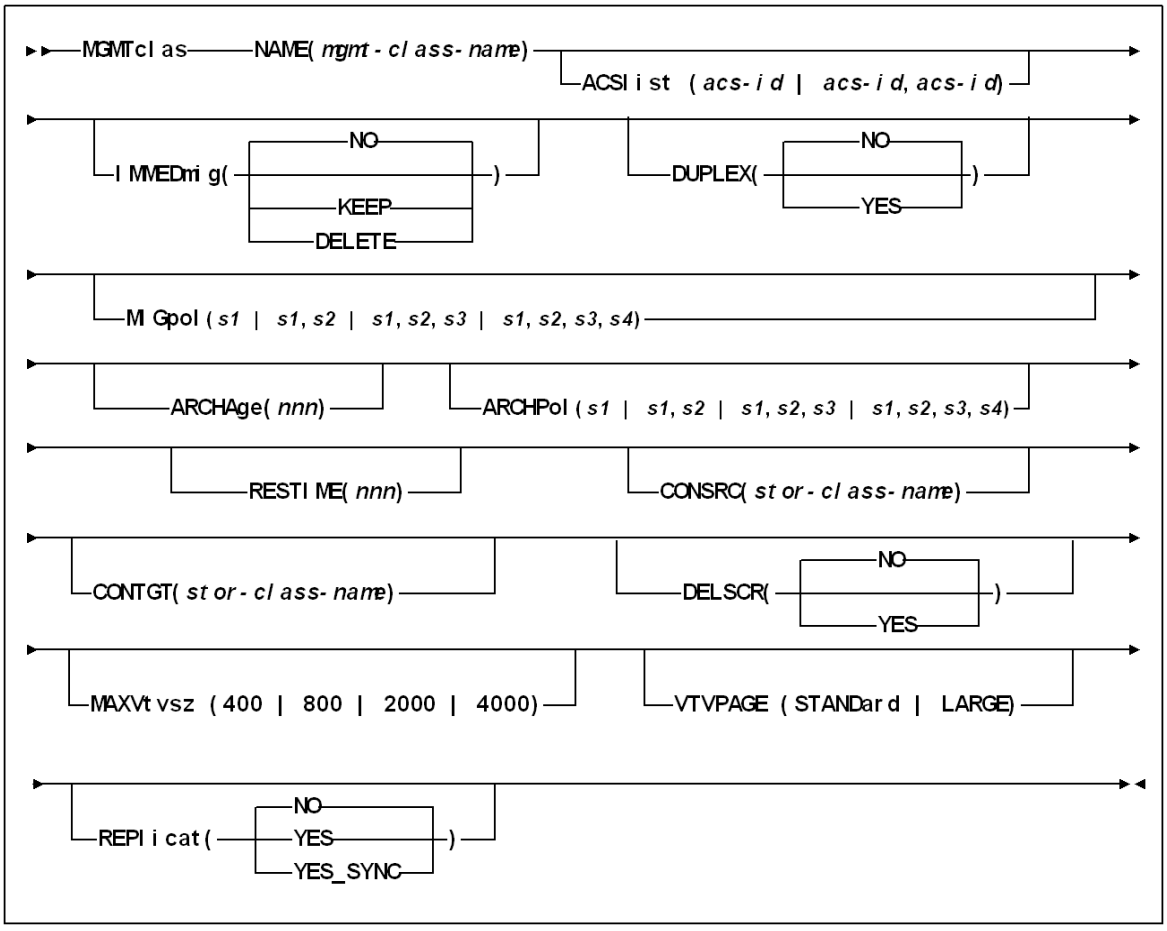


FIGURE 8-13 MGMTclas Control Statement Syntax - Advanced Management Feature

Additional Parameters - Advanced Management Feature

The following MGMTclas parameters are valid for the Advanced Management Feature in addition to the Basic Management Feature parameters described in "Parameters - Basic Management Feature" on page 425.

MIGpol

specifies up to four Storage Classes that specify the ACS and media type of migration MVCs. If you specify:

- One Storage Class, VTCS migrates one copy of a VTV.
- Multiple Storage Classes (with different ACS values, different MEDIA values, or both), VTCS makes multiple copies the VTV to different MVCs in different ACSs.
- Multiple Storage Classes with identical ACS and MEDIA values, VTCS makes multiple copies of the VTV to the same ACS and media type but to different MVCs.

Note – Multiple Storage Classes on MIGpol also affects how:

- VTV recall works.
- MVC space reclamation works.
- How VTV consolidation works

The DUPlex and MIGpol parameters are mutually exclusive.

This parameter is optional; there is no default value.

s1 | s1,s2 | s1,s2,s3 | s1,s2,s3,s4

the names of up to 4 Storage Classes that you defined on the STORclas control statement. Greater than two copies requires you to specify CDSLEVEL(V6ABOVE) or greater on the CONFIG statement.

Note – The CONFIG GLOBAL REPlicat parameter specifies when to replicate a VTV (always, or only when changed while mounted).

ARCHAge

specifies the age (in days) of a VTV before it is archived as specified by ARCHPol. If you specify ARCHAge, you must specify ARCHPol.

This parameter is optional; there is no default value. Valid values are 1 to 999.

nnn

the VTV age in days.

ARCHPol

specifies up to four Storage Classes that specify the ACS and media type of the archive MVCs. If you specify:

- One Storage Class, VTCS archives one copy of a VTV.
- Multiple Storage Classes (with different ACS values, different MEDIA values, or both), VTCS archives multiple copies of the VTV to different MVCs in different ACSs.

- Multiple Storage Classes with identical ACS and MEDIA values, VTCS archives multiple copies of the VTV to the same ACS and media type but to different MVCs.

Note – Multiple Storage Classes on ARCHPol also affects how:

- VTV recall works.
- MVC space reclamation works.
- How VTV consolidation works

This parameter is optional; there is no default value. If you specify ARCHPol, you must specify ARCHage.

*stor-clas-name*1...*stor-clas-namen*

the names of one or more Storage Classes that you defined on the STORclas control statement. Greater than two copies requires you to specify CDSLEVEL(V6ABOVE) or CDSLEVEL(V6ABOVE) on the CONFIG statement.

RESTIME

specifies how long VTCS attempts to keep a VTV as VTSS-resident before becoming a preferred automatic migration candidate.

This parameter is optional; there is no default value. Valid values are 1 to 9999. Note that 9999 specifies that the VTVs in this Management Class are resident permanently unless VTSS space management requires VTCS to automigrate the VTV and then delete it from the VTSS.

The RESTIME and IMMEDmig(DELETE) parameters are mutually exclusive.

nnnn

the residency time in hours.

CONSRC

specifies the Storage Class that species a preference for the source MVC ACS and media for consolidation of VTVs that are migrated and copied to multiple different MVC locations or media types. If the MVC in the specified Storage Class is unavailable, and the specified Storage Class is not the last (in order specified in the migration policy), VTCS will use the MVC associated with the last Storage Class. If the MVC in the specified Storage Class is unavailable and the specified Storage Class is the last (in order specified in the MIGpol parameter), VTCS will use the MVC associated with the previous Storage Class (in order specified in the MIGpol parameter).

This parameter is optional; there is no default value.

stor-class-name

the name of a Storage Class that you defined on the STORclas control statement.

CONTGT

specifies the Storage Class that determines the output MVC ACS and media for VTV consolidation. Note that the media preferencing is in the opposite order of the list of media types specified on the Storage Class.

This parameter is optional; there is no default value. If you do not specify a value for CONTGT, VTCS selects the output MVC as follows:

- For single-ACS and dual-ACS configurations, the media selection order for VTV consolidation.

- For multiple ACS systems, VTCS selects MVCs from the default ACS specified by the CONFIG DEFLTACS parameter.

stor-class-name

the name of a Storage Class that you defined on the STORclas control statement.

REPlicat

specifies whether VSM replicates the VTV.

NO

Do not replicate the VTV (the default).

YES

Asynchronously replicate the VTV.

YES_SYNC

Synchronously replicate the VTV.

Note – Synchronous replication requires enablement via the CONFIG GLOBAL SYNCHREP parameter. For more information, see *Configuring HSC and VTCS*.

MGMTCLAS IMMEDMIG

TABLE 8-4 Immediately Migrate VTVs on Dismount

This policy does the following...	Valid values are...	The default is...	To set the policy, use...
Specifies whether VSM will immediately schedule a VTV for migration after dismounting it. When the migration actually occurs depends on RTD availability, Storage Classes for immediate migration, and the total number of immediate migrates scheduled.	■ NO - do not immediately migrate ■ KEEP - immediately migrate and keep a VTSS resident copy of the VTV ■ DELETE - immediately migrate and delete VTVs from the VTSS after migration.	NO	MGMTCLAS IMMEDMIG

Usage Notes

The following are guidelines for setting IMMEDmig:

- Specify NO (the default) if you do not want immediately migration and you do want other migration policies to determine your migration strategy.
- Specify KEEP if you want immediate migration and want to keep copies of the migrated VTVs resident on the VTSS until they become eligible for deletion.

Caution – IMMEDmig KEEP ensures that VTVs are immediately migrated and kept VTSS-resident; however, it does not free up VTSS space, may increase I/O to the RTDs, uses up MVC space more quickly, and may also increase the need for MVC space reclamation.

- Specify DELETE if you want immediate migration and want to delete VTVs from the VTSS after migration.

Caution – IMMEDmig DELETE ensures that VTVs are immediately migrated and frees VTSS space; however, it preferences migration processing, may increase I/O to the RTDs, uses up MVC space more quickly, and may also increase the need for MVC space reclamation and VTV recalls.

- The RESTIME and IMMEDmig(DELETE) parameters are mutually exclusive.
- IMMEDmig KEEP and IMMEDmig DELETE are mutually exclusive with CONFIG HOST NOMIGRAT. If you specify both, the IMMEDmig value overrides NOMIGRAT (for only those VTVs with the IMMEDmig value), and VTCS does not issue a message about this override.
- If VTCS stops with pending immediate migrations, these migrations will resume when VTCS restarts.

MONITOR

The MONITOR command starts monitoring of cartridge move requests received from the programmatic interface. Requests that can be monitored include the following:

- MOUNT
- DISMOUNT
- MOVE
- EJECT

Output messages can be recorded in the hardcopy log, or displayed on a designated console, or both.

Interfaces:	Console or PARMLIB only
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

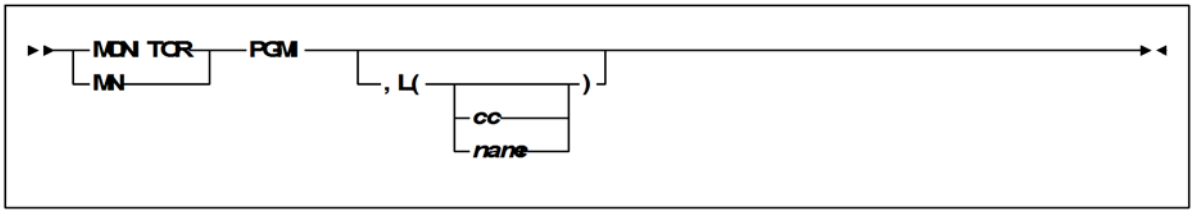


FIGURE 8-14 MONITOR syntax

Parameters

PGMI

specifies that cartridge move requests from the programmatic interface are to be monitored.

L

optionally, identifies the console where the monitoring information is to be displayed. If this parameter is omitted, or is specified without a console ID or console name, the information is displayed on the console that issued the command.

cc

specifies the console ID. Allowable values are decimal in the range from 00 through 99.

If you specify 00, the information is sent only to the hardcopy log. This may cause duplicated entries in the hardcopy log.

name

specifies the console name.

•

MVCDef

The MVCDef command loads MVCPool statements from a specified definition data set.

Note – ELS 7.0 introduces a new method for specifying volume and pool definitions using the SET VOLPARM utility command. Existing MVCDef commands are disabled once the SET VOLPARM utility is run. Refer to the *ELS Command, Control Statement, and Utility Reference* for more information.

Interfaces:	Console or Utility
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

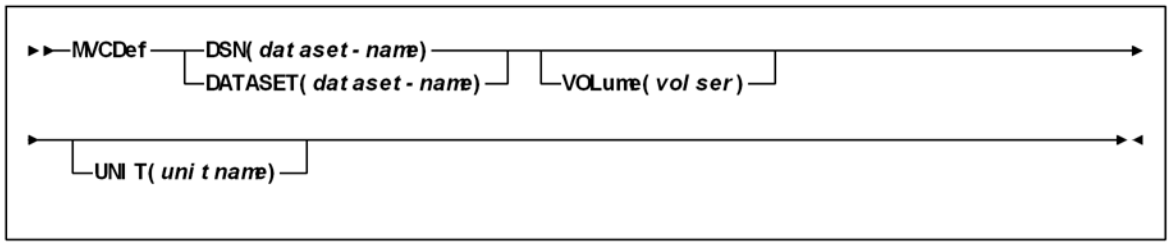


FIGURE 8-15 MVCDef syntax

Parameters

DSN or **DATASET**

specifies the definition data set that contains the MVCPool statements to load.

dataset.name

the data set name. If the data set name includes a member name, enclose the data set name in quotes.

VOLume

optionally, specifies the DASD volume where the definition data set resides. This parameter is optional, unless the data set is not cataloged, or the data set resides on a volume other than the volume indicated by the catalog.

volser

the DASD volser.

UNIT

optionally, specifies the DASD device where the definition data set resides.

unitname

the DASD unit name. If the definition data set is not cataloged and this parameter is omitted, the unit name defaults to SYSALLDA.

MVCPool Control Statement

The MVCPool control statement defines your system's MVC pool and, optionally, named MVC Pools within that pool. It is loaded by the MVCDef command.

Syntax

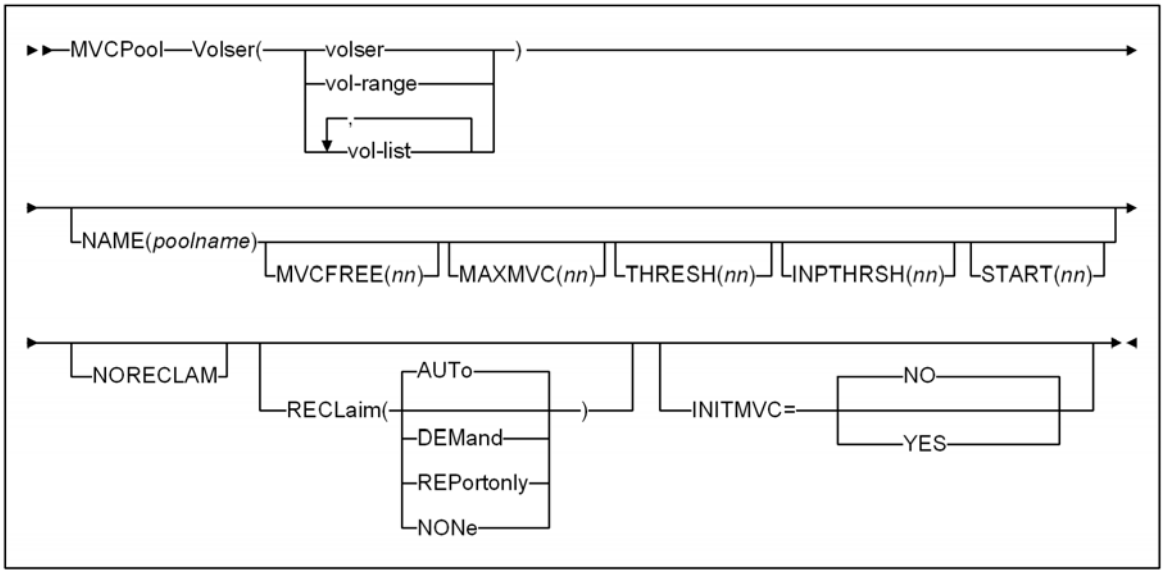


FIGURE 8-16 MVCPool syntax

Parameters

Volser

defines the MVCs.

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

the volsers of one or more MVCs. If you specify multiple volume ranges, do not overlap them.

NAME

optionally, defines a Named MVC Pool. If you do not specify the MVCPOOL NAME parameter, VTCS does not create a Named MVC Subpool and assigns the specified volumes to the default pool (DEFAULTPOOL). You cannot create Named MVC Pools with the reserved names DEFAULTPOOL and ALL.

poolname

the MVC Pool name (up to 13 characters).

Note – You can use the optional MVCFREE, MAXMVC, THRESH, and START parameters to specify values for the Named MVC Pool that override the global values specified on CONFIG.

MVCFREE(*nnn*)

optionally, specifies the minimum number of free MVCs in the MVC pool. A free MVC has 100% usable space and does not contain any migrated VTVs. Valid values are 0 to 255. If not specified, the CONFIG GLOBAL value (or default) is used.

If free MVCs is equal or less than this value, VTCS issues message SLS6616I and starts an automatic space reclamation.

MAXMVC(*nn*)

optionally, specifies the maximum number of MVCs that will be processed in a single space reclamation run. Valid values are 1 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

For automatic space reclamation to start, the number of eligible MVCs (determined by the THRESH parameter) must also exceed the MAXMVC value.

THRESH(*nn*)

optionally, specifies the percentage of fragmented space that makes an MVC eligible for demand or automatic reclamation. Valid values are 4 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

INPTHRSH(*nn*)

optionally, specifies the percentage of fragmented space that makes an MVC in partitioned format eligible for dynamic reclamation processing. Valid values are 3 to 97.

If not specified, the smaller of the CONFIg RECLAIM INPTHRSH value (or default) and the THRESH value is used.

Note – If INPTHRSH is specified, NAME and THRESH must also be specified. The INPTHRSH value must be less than the THRESH value. Both INPTHRSH and THRESH play roles when space reclamation processes MVCs in partitioned format. Refer to *Configuring HSC and VTCS* for more information.

START(*nn)*

optionally, specifies the level at which automatic space reclamation starts for each ACS (not globally for all ACSs) or, if specified, for a Named MVC Pool. Specify a percentage value, which is equal to:

(*MVCs eligible for reclamation/Total available MVCs*) * 100

Where:

MVCs eligible for reclamation

is the number of eligible MVCs determined by the THRESHLD parameter.

Total available MVCs

equals the number of eligible MVCs *plus* the number of free MVCs. A free MVC has 100% usable space and does not contain any migrated VTVs.

Valid values are 1 to 98. There is no default; if not specified, the CONFIG RECLAIM value (or default) is used.

NORECLAM

Do not do space reclamation against MVCs in this pool.

Note –

- A typical use for NORECLAM is to prevent VTCS from attempting reclaims on an MVCPOOL that contains VOLSAFE media. **Note that** although VOLSAFE and non-VOLSAFE media can coexist in the same MVCPOOL, **no** space reclamation is performed on **any** volume defined in the MVCPOOL.
- NORECLAM is mutually exclusive with MVCFREE, MAXMVC, THRESH and START.
- The NORECLAM keyword must be used with a named MVCPOOL.
- For VOLSAFE media:
  - Drains are allowed (for example, for drain with eject for media replacement).
  - Recalls are allowed.
  - ARCHIVE and RECONCIL processing allow recalling VTVs from VOLSAFE media.
  - The RTV utility can convert VTVs on VOLSAFE media to real tape volumes.
  - If VOLSAFE cartridges exist for a particular media type, all drives that can mount that media type must have the VOLSAFE feature enabled.

- Failed migrations caused by a drive error will not attempt to swap to another RTD.
- Any write operation failures to a VOLSAFE cartridge are assumed to leave a partially written VTV, which renders that MVC invalid for further write operations. Accordingly, failed migrations caused any write error on VOLSAFE cartridges will not attempt to swap to another RTD. However VTCS, to the best of its ability, will switch to a new VOLSAFE cartridge and re-drive the migration request.

RECLaim

Optionally, controls MVC reclamation in a Named MVC Pool.

AUTo

VTCS displays message SLS6699E and schedules automatic space reclamation. You can also run demand reclamations with the RECLAIM command. AUTO is the default.

DEMand

VTCS does not display message SLS6699E and does not schedule automatic space reclamation. You can run demand reclamations with the RECLAIM command.

REPortonly

VTCS displays message SLS6699E but does not schedule automatic space reclamation. You can run demand reclamations with the RECLAIM command.

NONe

VTCS does not output message SLS6699E and does schedule automatic space reclamation. You **cannot** run demand reclamations with the RECLAIM commands.

Note –

- MVCDRAIN commands are allowed against MVCs in the MVCPool regardless of the MVCPool RECLaim value.
- RECLaim(DEMand/REPortonly/NONe) can only be specified for a named MVCPool.
- MVCPool RECLaim is mutually exclusive with MVCPool NORECLAM.

- RECLaim(REPortonly) is equivalent to, and replaces, the NORECLAM parameter although NORECLAM is still tolerated if the RECLaim parameter is not specified.

TABLE 8-5 Summary of MVCPool RECLaim Options

RECLaim Value	SLS6699E messages issued for the MVCPool ?	Automatic space reclaim scheduled for the MVCPool (by VTCS) ?	Demand reclaims can be run for the MVCPool (via the RECLAIM command) ?	Mutually Exclusive Parameters
AUTo	Yes	Yes	Yes	
DEMand	No	No	Yes	MVCFREE START
REPortonly	Yes	No	No	MAXMVC START THRESH
NONe	No	No	No	MAXMVC MVCFREE START THRESH

INITMVC

specifies whether uninitialized MVCs in the named MVC Pool are initialized when first mounted on an RTD.

NO

Uninitialized MVCs are not initialized (the default).

YES

Uninitialized MVCs are initialized.

Note –

- MVCPOOL INITMVC overrides GLOBAL INITMVC. There is no default for MVCPOOL INITMVC; if not specified for a named MVC Pool the CONFIG GLOBAL value (or default) is used.
- Initialization of MVCs in the DEFAULTPOOL is controlled by the GLOBAL INITMVC specification (or default).
- MVC Initialization applies only to VSM4/5 and requires microcode level D02.05.00.00 or higher. If this level of microcode is not installed on all VTSSs in the configuration, MVC initialization will be limited to the VTSSs that have it installed.

MSGDEF Command

The LOWSCRATCH parameter is no longer accepted on the MSGDEF command. The LOWSCRATCH parameter can be entered only on the MONITOR command.

OFFload JOURnal

The OFFload JOURnal command offloads one or both journals on a given host without backing up the CDS. The journals are backed up and reset.

Interfaces:	SLUADMIN utility only
Subsystem Requirements:	Active HSC not required

Syntax

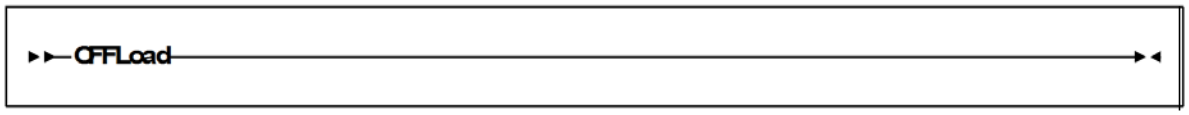


FIGURE 8-17 OFFload JOURnal syntax

Parameters

None.

Additional JCL Requirements

In addition to the general JCL definitions described in *ELS Command, Control Statement, and Utility Reference*, the following definitions apply to the OFFload JOURnal JCL:

SLSCNTL

DD statement naming the primary library control data set.

SLSCNTL2

the secondary copy of the control data set.

SLSSTBY

the standby copy of the control data set.

SLSJRN01

the first of two journals on the given host.

SLSJRN02

the second of two journals on the given host. This statement is required only if both journals are to be offloaded. If specified, the SLSOFF02 statement is also required.

SLSOFF01

the created offload data set for the first journal (SLSJRN01).

SLSOFF02

the created offload data set for the second journal (SLSJRN02).

Note – The offloaded data sets created by SLSOFF01 and SLSOFF02 must be allocated on DASD. You can then copy the offloaded data sets to tape if you desire.

Output Description

Output resulting from the execution of the Journal Offload utility includes:

- the journal(s) is copied to the offload data set(s)
- the journal(s) is reset
- messages associated with error conditions resulting from an unsuccessful attempt to execute the Journal Offload utility
- a condition code indicating successful or unsuccessful completion of the utility.

Policy Information (SMC Legacy)

SMC IDAX Command, VTVMAXVOL Parameter

The SMC IDAX command allows you to:

- Specify that data sets which may be directed to virtual volumes have their count set to 255 (VTVMAXVOL(ON)).

SMC Policy/TAPEREQ Interaction

Note –

- If a tape policy attribute is not present in the named policy object, then no additional policy is applied to that tape policy attribute and no further TAPEREQ lookups are performed.
- If a TAPEREQ statement specifying the POLicy parameter matches an allocation or mount request, **no** parameters supplied from a user exit are honored. Message SMC0197 is issued to indicate user exit supplied parameters that are ignored. For example, suppose the following POLicy is applied to an allocation or mount event:

```
POLICY NAMe(POL1) MEDIA(STK1R) TAPEPLEX(HSCPLEX)
```

  In addition, suppose that a scratch user exit (UX02/UX04) supplies a subpool name or number. The user exit subpool is **not** honored and the allocation is performed using the default subpool (subpool 0).
- Optionally, a named policy object may be referenced via DFSMS ACS routines via a matching management class name.

Interaction between SMC and SMC DFSMS MGMTCLAS

Examples

Esoteric Substitution Example

The following commands are in effect:

```
ALLOCDEF SMS(ON)
SMSDEF MGMTPOL(IDAX) ESOTSUB(ON)
POLICY NAME(POL1) IDAXESOTERIC(ABC)
```

During IDAX processing the SMC DFSMS ACS routine returns a STORGRP of 'STK1', 'XYZ' and a MGMTCLAS POL1. SMC attempts to interpret the MGMTCLAS name POL1 as a policy name. POL1 is a valid policy name, and therefore, SMC uses esoteric ABC for the allocation.

VTV Management Class Example

The following commands are in effect:

```
ALLOCDEF SMS(ON)
SMSDEF MGMTPOL(ALL) VTVMGMT(ON)
POLICY NAME(POL1) MGMTCLAS(ABC) SUBPOOL(SUB1)
```

During mount message processing, the SMC DFSMS ACS routine returns a MGMTCLAS POL1. The SMC attempts to interpret the MGMTCLAS name POL1 as a policy name. POL1 is a valid policy name, and therefore, SMC uses MGMTCLAS(ABC) and SUBPOOL(SUB1) for the mount processing.

Defining Storage Groups and Storage Classes

There are two methods used to enable esoteric substitution during IDAX processing.

Method 1 (Recommended)

Perform the following steps:

1. Specify the MGMTPol(ON) parameter on the SMSDef command to specify that the ACS routine management class name is used to reference a named policy.
2. Specify the IDAXESOTeric parameter on the POLicy to specify a "true" esoteric name to be substituted during IDAX processing.

Method 2

Perform the following steps:

1. Define a storage group of type POOL named STK1.
2. Define a storage group of type POOL for each possible esoteric returned, giving it the same name as the esoteric name.
3. Define at least one volume to each storage group. It is recommended that you use a nonexistent volume for this definition.
4. Create a storage class ACS routine that, when it is invoked by the SMC (i.e., when the environmental variable is &ACSENVIR=STKTAP1), returns a storage class to be passed to the storage group ACS routine. See FIGURE 8-18 on page 448.
5. Create a storage group ACS routine that, when the environmental variable is &ACSENVIR=STKTAP1, returns two storage groups (e.g., &STORGRP='STK1','CART'). In this case, "STK1" is the first storage group returned, and "CART," the replacement esoteric, is the second. See FIGURE 8-18 on page 448.
6. Test for the &ACSENVIR=STKTAP1 read-only variable in the storage class and storage group ACS routines. This enables you to prevent the storage class being assigned when MVS invokes the ACS routines. If MVS invokes the SMC version of the ACS routines, the data set becomes DFSMS-managed and all SMC allocation functions are bypassed.
7. Return both a storage class and a storage group during the SMC invocation of the DFSMS ACS routines. If a storage class is returned but a storage group is not, DFSMS issues a message stating that allocation has failed, but in reality that may not be the case.

FIGURE 8-18 on page 448 provides sample storage class and storage group routines.

```
PROC STORCLAS

FILTLIST LOCALDSN INCLUDE (BACKUP*.**,
                    PROD.BKP*.**)

FILTLIST RMTDSN INCLUDE (PROD.OFFSITE.**)

  IF &ACSENVIR = 'STKTAP1' THEN
        SELECT
        WHEN &DSN = &LOCALDSN
          SET &STORCLAS = 'CART'
        WHEN &DSN = &RMTDSN
          SET &STORCLAS = 'RMTCART'
        END
  END

=====================================================================

PROC STORGRP

  IF &ACSENVIR = 'STKTAP1' THEN
        SELECT
        WHEN &STORCLAS = 'CART'
          SET &STORGRP = 'STK1','CART'
        WHEN &STORCLAS = 'RMTCART'
          SET &STORGRP = 'STK1','RMTCART'
        END
  END
```

FIGURE 8-18 Sample Storage Class/Storage Group Routines

Availability of Read-only Variables

During DFSMS STORCLAS/STORGRP ACS routine processing, all read-only variables listed in *Configuring and Managing SMC* , except &DSORG, are available to the IDAX interface for esoteric substitution. The &DATACLAS field is set when the DD statement in the JCL specifies this parameter.

Retrieving DFSMS Values During Allocation and Volume Mount

Requesting Policy or VTCS Management Class Using DFSMS ACS Routines

It is recommended that the VTCS management class be specified on SMC POLicy commands, selected using either DFSMS routines returning MGMTCLAS names or via TAPEREQ statements.

During allocation and mount processing, a management class name can be specified for a virtual allocation by coding any of the following:

- SMC POLicy command
- TAPEREQ statement
- MGMTCLAS ACS routine to specify VTCS management class name directly (MGMTPol(OFF))
- MGMTCLAS ACS routine to specify SMC policy name (MGMTPol(ON))

The MGMTCLAS JCL parameter is not supported by the SMC DFSMS interface.

Note – You must specify SMSDef TEMPdsn(ON) before a management class can be assigned to a temporary virtual data set.

RECDEF

The RECDEF command, in conjunction with the CDSDEF control statement, defines which CDS copies are used when running the Reconfiguration utility. CDSDEF specifies the old input copies of the CDS; RECDEF the new copies.

Interfaces:	PARMLIB only
Subsystem Requirements:	N/A

Syntax

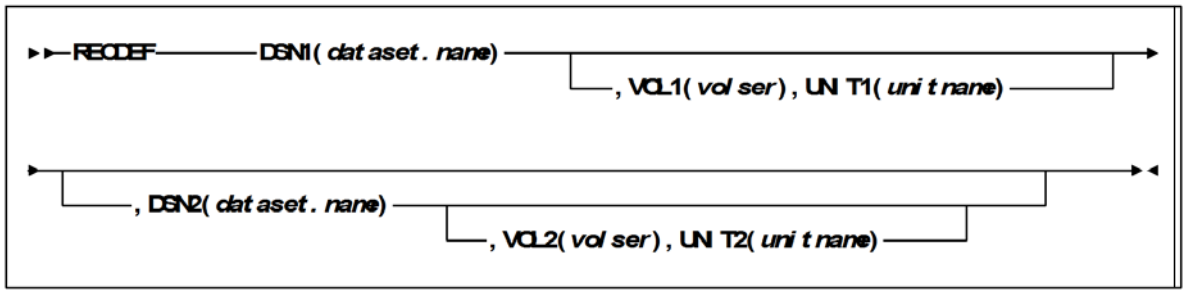


FIGURE 8-19 RECDEF syntax

Parameters

DSN*x*

dataset.name is the name of a newly created HSC CDS. At least one DSN parameter must be specified; as many as two can be specified. The first DSN becomes the primary CDS. If specified, the next DSN is created as an identical copy of the primary CDS.

RECDEF DSNs are input for the first HSC initialization as CDSDEF control statements. DSNs can be entered in any order whether or not this is the first initialization. Order is not important, since all copies are identical after the reconfiguration and controlling information is kept in each CDS for subsequent runs.

VOL*x*

optionally, *volser* is the volume serial number of the DASD volume where the specified CDS resides.

UNIT*x*

optionally, *unitname* is used to specify the unit parameter in the SVC99 dynamic allocation parameter list.

RESYNChronize Command

The RESTART parameter is no longer accepted on the RESYNC command. Whether or not a RESYNC switches back to a server defined earlier in the server list is controlled by the MONITOR command PREFPRIMARY parameter.

SERVER

This SMC SERVER command includes additional parameters, WAit and REtry, whose functionality has been superseded by the SMC Client Communication Monitor Subtask. Refer to the *ELS Legacy Interfaces Reference* for information about these legacy parameters.

Syntax

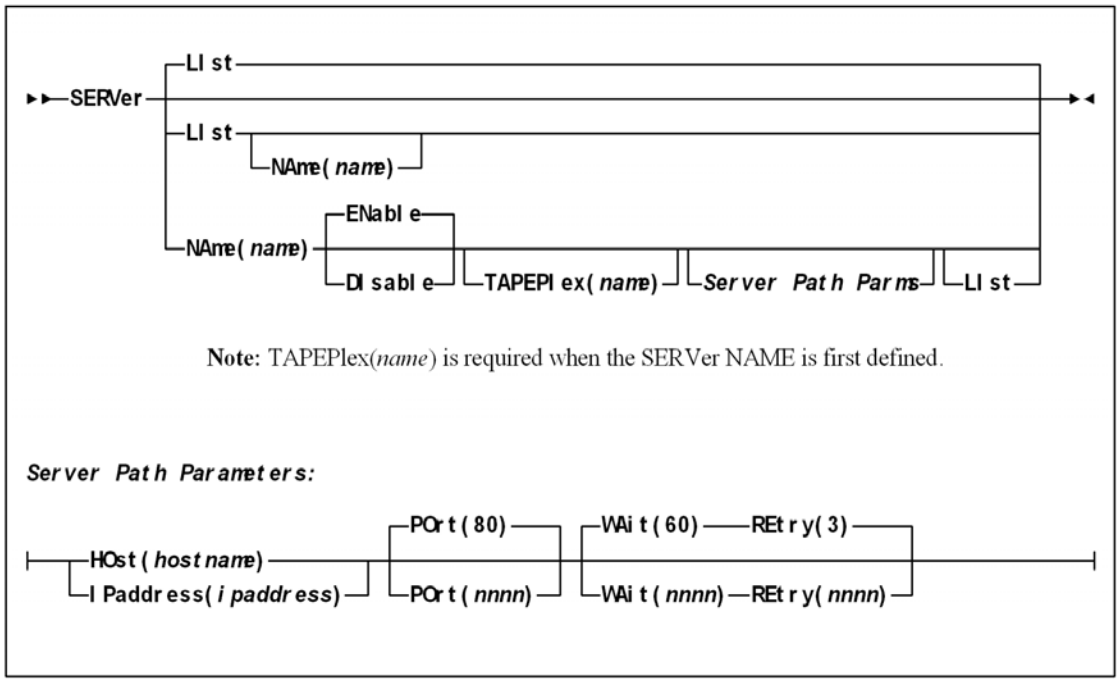


FIGURE 8-20 SERVER syntax

Parameters

WAit

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

nnnn

the wait time in seconds. The default is 60.

Note –

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

REtry

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

nnnn

the number of retries. The default is 3.

SCRPDEF

The SCRPDEF command loads SCRPOOL statements.

Note – ELS 7.0 introduces a new method for specifying volume and pool definitions using the SET VOLPARM utility command. Existing SCRPDEF commands are disabled once the SET VOLPARM utility is run. Refer to the *ELS Command, Control Statement, and Utility Reference* for more information.

Interfaces:	Console or PARMLIB
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

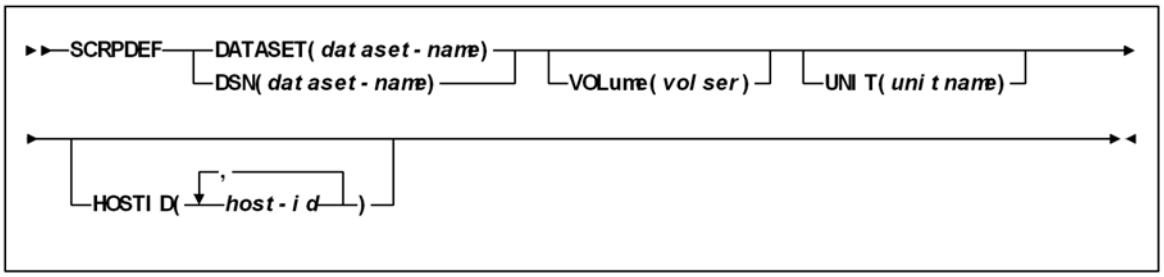


FIGURE 8-21 SCRPDEF syntax

Parameters

DATASET or **DSN**

specifies the name of the data set containing the SCRPOol statements to be processed and, optionally, an OPTion TITLE statement. (Refer to "SCRPOol Control Statement" on page 456 and OPTION TITLE" in *ELS Command, Control Statement, and Utility Reference* for details on syntax and parameters).

Note – The definition data set may contain SCRPOol, TAPEREQ, UNITATTR, VOLATTR, and OPTion TITLE statements. Only OPTion TITLE and SCRPOol statements are processed. If any other statement is encountered, an error message is issued and the statement is ignored.

---

dataset.name

specifies the name of the data set containing scratch subpool parameters. If the data set name includes a member name, *dataset.name* must be enclosed in quotes. For example,

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

VOLume

optionally, specifies the serial number of the DASD volume on which the data set resides. This parameter is optional. Specify the VOLume parameter if the data set is not cataloged, or if a data set on a volume other than the volume indicated by the catalog is to be used.

Note – The volume specified must be a DASD volume.

---

volser

specifies the volume serial number for the definition data set.

UNIT

optionally, specifies the unit where the definition data set is located.

unitname

specifies the unit name. If the definition data set is not cataloged and this parameter is omitted, a unit name of SYSALLDA is the default.

HOSTID

(This parameter is valid only for use in PARMLIB, so that multiple systems can share a PARMLIB member containing SCRPOol, TAPEREQ, VOLATTR, or UNITATTR statements for different releases of HSC. If entered from the console, message SLS0018I is issued.)

Optionally, the HOSTid parameter limits the execution of this control statement to the specified hosts. If one of the specified hostids matches the host executing this control statement, the control statement is executed for that host. Otherwise, it is ignored. If this parameter is omitted, the control statement is executed on all hosts.

host-id

specifies the name of one or more hosts from which to execute this control statement. Multiple hosts must be separated by commas.

SCRPOol Control Statement

The SCRPOol control statement is used to define HSC scratch pools. It is loaded by the SCRPDEF command.

Syntax

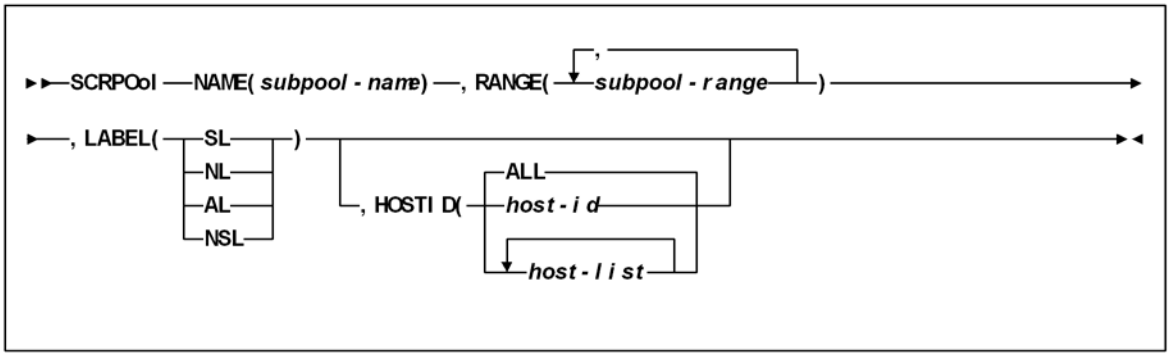


FIGURE 8-22 SCRPOol syntax

Parameters

Subpool information is defined in PARMLIB as individual control statements using the following parameters.

NAME

specifies the name of the subpool. A maximum of 13 characters is allowed; blank spaces are not permitted.

Note –

- If scratch subpools are defined using User Exit 03 (see the *NCS User Exit Guide*), the scratch subpool name may be omitted. If the subpool name is not provided by User Exit 03, the subpool index (subpool 0) is used as the name.
- The subpool index is converted to three EBCDIC decimal digits and placed in the left most three positions of the subpool name. Subpool 0 contains all scratch tapes in the ACS including scratch tapes in named subpools.
- A SCRPOol statement containing a duplicate subpool name is ignored unless it immediately follows the first statement that specifies the same subpool name. In this case, the second statement is considered to be a continuation of the first. The following example shows a valid combination:

```
SCRPOOL NAME=POOL1,RANGE=(P10000-P10199),LABEL=SL
SCRPOOL NAME=POOL1,RANGE=(P90000-P20199),LABEL=SL
SCRPOOL NAME=POOL2,RANGE=(P20000-P20199),LABEL=SL
```

  In the next example, the second POOL1 statement is not valid and causes an error message to be generated.

```
SCRPOOL NAME=POOL1,RANGE=(P10000-P10199),LABEL=SL
SCRPOOL NAME=POOL2,RANGE=(P20000-P20199),LABEL=SL
SCRPOOL NAME=POOL1,RANGE=(P90000-P90199),LABEL=SL
```

RANGE

subpool-range

specifies the volume serial numbers which the subpool represents. Range start and end values are separated by a single dash (-). Multiple ranges may be specified separating each range by commas.

Note –

- The range of volume serial numbers must be unique for each subpool; that is, a volume serial number cannot be used in more than one subpool range.
- Make sure when you are coding multiple ranges of tapes that you do not specify the **RANGE** parameter on different SCRPOol control statements. If more than one SCRPOol statement has been specified, the HSC reads only the **last** RANGE setting it encounters and loads only that range. All other ranges are ignored.

  It is recommended that you specify multiple ranges, separated by commas, on one SCRPOol control statement, if possible.

LABEL

type specifies the label type associated with the applicable subpool. Types include:

SL

standard label

NL

no label

AL

ANSI label

NSL

nonstandard label

HOSTID

optionally, defines the hosts that are valid for this subpool. Multiple *host-lists* may be specified, separating each *host-list* value with a comma. Default HOSTID is ALL.

If you need to define the same subpool name on some but not all hosts, you may duplicate the SCRPOol statement changing the HOSTID parameter as necessary (see examples). Optionally, you may use separate PARMLIB data sets for each host, but this is not recommended.

SLSBINIT (Reconfiguration Utility)

The Reconfiguration utility is used as part of a four stage process to create a new copy of the control data set when library hardware configurations change, such as the addition of drives or LSMs, but when information regarding the location of cartridges in the library must be retained from the original control data set.

The four stages include:

- performing a LIBGEN to create the new hardware configuration
- executing the SLICREAT procedure to format the new CDS that will hold the information transferred from the old CDS during the execution of the Reconfiguration utility
- executing the Reconfiguration utility to transfer current cartridge information from the old CDS to the new CDS taking into account the hardware configuration changes made
- possibly executing a partial audit that may be necessary to make final corrections to the CDS contents for panels that may have changed as a result of hardware configurations, such as the addition of drive panels.

The Reconfiguration utility, called via an MVS START command parameter, runs as a special invocation of the HSC. The Reconfiguration utility uses as input the CDSDEF control statement (points to the old CDS) as its information source and the RECDEF control statement (points to the newly formatted CDS) as the target where the updated information is stored.

Note –

- Before you execute this utility, run the Volume Report utility (refer to *ELS Command, Control Statement, and Utility Reference*) and resolve all errant volumes.
- StorageTek recommends that the MERGEcds utility be used instead of this utility. Support for Reconfiguration will end in a future release.

Reasons for Running the Reconfiguration Utility

The Reconfiguration utility minimizes the amount of time that the library is unavailable for your use due to library modifications. Some typical examples of library modifications are:

- an LSM panel is reconfigured (possibly by adding a drive panel to the LSM)
- an LSM is added to the existing configuration. Usually, this causes a change to the configuration of some of the existing LSMs since PTP panels replace panels that are currently full wall panels.
- an ACS is added to the library
- an LSM, or an entire ACS, is removed from the library.

Since the LIBGEN macros define the various physical aspects of a library, most changes or modifications affecting the physical configuration of the library require that corresponding LIBGEN macro(s) be updated. Any update to the LIBGEN (except changes made via the SET utility) requires that a new library control data set be created.

To do this, run your LIBGEN through the SLICREAT program (see *Configuring HSC and VTCS*) and use that output file along with your old CDS as input to the Reconfiguration utility.

Note – The SET utility allows many changes to be made without executing the Reconfiguration utility to accomplish a desired functional change. Refer to *ELS Command, Control Statement, and Utility Reference* for a description of the SET utility.

How the Reconfiguration Utility Functions

During a reconfiguration, volume information is copied from the old CDS to the new CDS. If the same LSMid exists on both the old and new CDS, volume information is copied for all panels as long as the panel type did not change.

Note –

- LSM types must be the same, or no volumes in those LSMs are copied. 4410 and 9310 LSMs are considered to be the same LSM type.
- An example of a ''changed'' panel type is if a drive panel replaces a cell panel. In this case, volume information on that panel is not copied.

When panels are frozen by the SET FREEZE utility, the resulting panel status in the new CDS is determined by these conditions:

- If the panel types match on the old and new CDS, the panel is frozen only if the panel on the old CDS is frozen.
- If the panel types **do not** match on the old and new CDS, the panel is frozen only if the panel on the new CDS is frozen.

The console operator can execute the Reconfiguration utility via a PROC (refer to "Reconfiguration PROC" on page 463) using the MVS START command to transfer data from the old control data sets to the new control data sets.

Note – Reconfiguration executes under the Base service level only.

Before executing the Reconfiguration utility, it is highly recommended that you run the Volume Report utility, which specifies the ACS and/or ACS and LSM options.

The volume report detects any errant and/or selected volume plus cell-allocated, but empty, conditions. If any of these conditions exist, it is recommended that each condition be cleared before running the Reconfiguration utility. If not cleared, the condition is copied to the newly created control data set.

An exception exists for selected volumes that are copied and marked unselected in the new control data set. If duplicate VOLSERs exist, run the AUDIt utility before running the Reconfiguration utility.

The net result of executing the Reconfiguration utility (process) is the creation of new control data sets that must be used for HSC execution from this point.

Note – ALL new control data sets (primary, secondary, and standby) must conform to the library hardware.

Caution – Following a reconfiguration, all LSMs are in offline, manual mode and must be brought online. Commands that are dependent on the LSMs being online (including all commands used when automated mounts or dismounts are necessary) need to be issued after the LSMs are brought online.

I/O Considerations

The Reconfiguration utility supports creating data spaces to store CDS records subject to multiple I/O updates. Data space size is approximately 500K (.5M) for each LSM in the new configuration.

If the necessary data space cannot be acquired by the utility, CDS I/O will require significant additional time.

Note – Reconfiguration to real DASD with many scratch volumes has been known to take hours of wall clock time.

Running a Successful Reconfiguration

While the Reconfiguration utility is in process, the library is unavailable to the user. The steps necessary to achieve a successful reconfiguration are as follows:

1. Run the Database Decompile utility to create a new LIBGEN.

Caution – Do not rely on old LIBGENs for accuracy. If you do not perform this step, modifications made to the CDS (e.g., changes entered from the SET utility) will not be added to the LIBGEN. Thus, you may encounter a mismatch between your CDS and LIBGEN.

2. Identify any proposed changes to the host system's Configuration Plan. Update your Hardware Configuration Definition (HCD) and LIBGEN to reflect these changes.

   If you want to insert new ACSs into the middle of an existing library, or LSMs into an existing ACS, use the MERGEcds utility instead of Reconfiguration.

Caution –

- If new ACSs are inserted into the middle of an existing library, all volume information will be lost for ACSs after the inserted ACS(s). In this case, audits may need to be run on the affected ACSs.

  When you add a new ACS(s), add it as the last ACS defined in LIBGEN; specifically, add it as the last assembler label specified on the SLIALIST macro and add all other affected macros. Refer to the ''SLIALIST Macro'' in the *Configuring HSC and VTCS* for a description of the macros.

- If new LSMs are inserted in the middle of an existing ACS LSM string, all volume information will be lost for LSMs after the inserted LSM(s). In this case, audits may need to be run on the affected LSMs.

  When you add new LSMs to an ACS, add them as the last LSMs in that ACS; that is, add them as the last SLILSM macros specified on the highest-numbered LSM parameter (LSM, LSM2, LSM3, or LSM4) of the SLIACS macro and include all other affected macros. Refer to the ''SLIACS Macro'' in the *Configuring HSC and VTCS* for a description of the macros.

  Assuming you specify additional LSM parameters (LSM2, LSM3, LSM4) in ascending order to enhance maintainability, note these syntax requirements:

  - If the number of LSMs in an ACS does not exceed the 255-character limit on the LSM parameter, add the new LSMs as the last SLILSM macros on the LSM parameter.
  - If the number of LSMs in an ACS exceeds the 255-character limit on the LSM parameter, add the new LSMs as the last SLILSM macros on the LSM2 parameter.
  - If the number of LSMs in an ACS exceeds the 255-character limit on the LSM2 parameter, add the new LSMs as the last SLILSM macros on the LSM3 parameter.
  - If the number of LSMs in an ACS exceeds the 255-character limit on the LSM3 parameter, add the new LSMs as the last SLILSM macros on the LSM4 parameter.

Note – If the number of LSMs in an ACS exceeds the 255-character limit on the LSM4 parameter, you have surpassed the architectural limit of 256 LSMs for each ACS. In this case, you must add the new LSMs to another ACS.

---

3. Assemble a LIBGEN that contains the required macro changes.
4. Optionally, run the SLIVERFY program to verify the HCD and LIBGEN.
5. Create the data set initialization JCL and execute SLICREAT to format the new control data set(s) (refer to ''Initializing the Control Data Sets'' in the *HSC Configuration Guide*).

Note – SLICREAT must create **all** control data sets (primary, secondary, and standby) referenced by the HSC.

---

6. Update the RECDEF PARMLIB statement to specify the new HSC data set to be created.
7. Make sure that the current primary CDS copy (as shown by the Display CDS command) is the primary copy of the old CDS input to RECONFIG.

   If the CDS copies need to be rotated into a different sequence, use the procedure described in *Managing HSC and VTCS*.
8. Update the CDSDEF PARMLIB control statement to include **only** the primary CDS.

Caution – You must specify **only** the primary CDS copy that was last active. If you do not, unpredictable and undesirable operational results, including operating system hangs, can occur.

---

9. Stop execution of the HSC on all hosts.

10. Use the MVS START Command to invoke the Reconfiguration PROC. Refer to "Reconfiguration PROC" on page 463.
11. When the RECONFIG is complete, if necessary, make hardware/LMU microcode changes.
12. Back up the new control data set.
    a. Update the CDSDEF PARMLIB statement to specify the new HSC data set(s). Change the existing utility JCL to reflect the new CDS names.

       or

    b. Rename the CDSs. To see how to retain the CDS names, refer to *Managing HSC and VTCS*.

Note – The HSC startup after reconfiguration must point to the new primary, secondary, and standby CDS copies.

---

13. Remove the RECDEF PARMLIB statement.
14. Start the new production procedure (see *Managing HSC and VTCS* for more information).
15. Modify all LSMs online.
16. The reconfiguration sets all CAP preference values to MANUAL. If necessary, reassign CAP preference values.
17. Audit any panels that changed while reconfiguring the library.

Caution – When an LSM panel is replaced, the contents of the original panel are not retained in the CDS. The entire new panel must be audited to update the CDS.

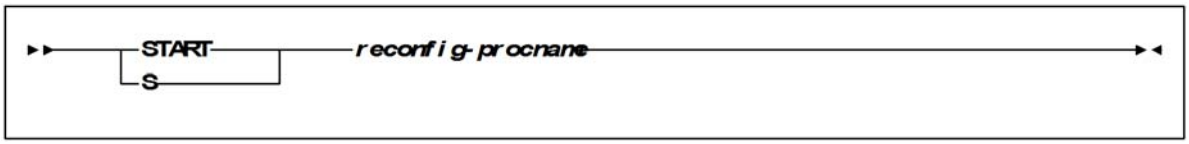
Reconfiguration PROC

Create a reconfiguration procedure that includes the new control data sets produced by the reconfiguration data set initialization JCL. This PROC may be identical to the startup PROC with the following modifications:

- Add RECONFIG to the PARM information passed from the EXEC statement.
- Enter the new control data set name specified in the RECDEF PARMLIB statement (refer to "RECDEF" on page 450) in your SLSSYS DD statement.

Refer to ''JCL Example'' for an example of a Reconfiguration PROC.

Syntax



Note – The Reconfiguration utility is invoked by using the MVS START command that includes the RECONFIG parameter in the PROC. This PROC executes program SLSBINIT.

MVS Command Name

START or S

initiates the MVS START command.

Parameters

reconfig-procname

is the name of the Reconfiguration PROC.

JCL Requirements

Refer to "RECDEF" on page 450 for information required for the Reconfiguration utility.

JCL Example

Sample Reconfiguration PROC

```
//newprocname   PROC
//IEFPROC      EXEC PGM=SLSBINIT,
//             TIME=1440,
//             REGION=2000K,
//             DPRTY=(7,5),
//             PARM='E(E086) F(23) M(02) SSYS(HSC0) RECONFIG'
//*
//SLSSYS02     DD   DSN=your.parmlib.(member),DISP=SHR
//STEPLIB      DD   DSN=sys1.your.linklib,DISP=SHR
```

PARMLIB Example

The following JCL example represents the reconfiguration procedure using CDSDEF and RECDEF statements in the PARMLIB.

PARMLIB Example of RECDEF Control Statement

```
/*                                                    */
CDSDEF   DSN1=SLS.DBASEPRM
RECDEF   DSN1=SLS.NEW.DBASEPRM,+
       DSN2=SLS.NEW.DBASESEC
```

Output Description

Output resulting from the execution of the Reconfiguration utility includes a message stating whether or not the utility ran successfully.

SMSDef DCrecmed and ESOTsub Parameters

The SMC SMSDef command is used to tailor default SMC DFSMS support.

Note – This command takes effect when SMC DFSMS support is activated by setting the ALLOCDef or ALLOCJob SMS parameter value to ON.

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

DFSMS data class constructs specify a limited set of recording techniques and media supported by StorageTek. Conversely, TAPEREQ statements or Policy commands can specify all recording techniques and media supported by StorageTek. By default, DFSMS data class construct recording technique and media values override the TAPEREQ (but not POLicy values). However, by setting the SMSDef DCRecmed parameter to OFF, the TAPEREQ/Policy recording technique and media values are always used.

Optional Legacy Parameters

DCrecmed

optionally, specifies whether the data class construct is returned when a data class is assigned either during DFSMS ACS data class routine invocation or by using the DATACLAS parameter on the DD statement. The data class construct contains the recording technique and media value of the associated data class.

ON

The data class construct is returned. The recording technique and media, if defined to the data class, are retrieved during allocation and mount processing.

OFF

The data class construct is not returned.

Note –

- If DCrecmed is ON, the SMC DFSMS ACS data class routine is still invoked, and any returned information overrides media/rectech information specified in the policy.
- If DCrecmed is set to OFF, the DFSMS ACS data class routine is still retrieved from the DFSMS ACS data class routine or from the DATACLAS JCL parameter if the ESOTsub parameter or VTVmgmt parameter is set to ON, and either the MGMTPol parameter is set to OFF or the MGMTPol parameter is set to ON but there is no matching SMC policy name.

ESOTsub

optionally, specifies whether DFSMS ACS routines are invoked during IDAX (MVS Interpreter/Dynamic Allocation Exit) processing. The IDAX DFSMS interface can be used to provide a different unit name for new allocations.

ON

All four (data class, storage class, management class and storage group) DFSMS ACS routines are invoked during IDAX processing.

OFF

DFSMS ACS routines are not invoked during IDAX processing.

SMSDEF Command Mod Parameter

The MOD parameter is no longer accepted by the SMSDEF command. The MOD parameter can be entered only on the IDAX command.

TCPIP Command

The parameters MONITOR and PREFPRIMARY are no longer accepted on the TCPIP command. All monitoring functions are now controlled only by the MONITOR command, including the PREFPRIMARY parameter.

VOLDEF

The VOLDEF command loads VOLATTR statements.

Note – ELS 7.0 introduces a new method for specifying volume and pool definitions using the SET VOLPARM utility command. Existing VOLDEF commands are disabled once the SET VOLPARM utility is run. Refer to the *ELS Command, Control Statement, and Utility Reference* for more information.

Interfaces:	Console or PARMLIB
UUI Support:	No
Subsystem Requirements:	Active HSC at BASE or FULL service level

Syntax

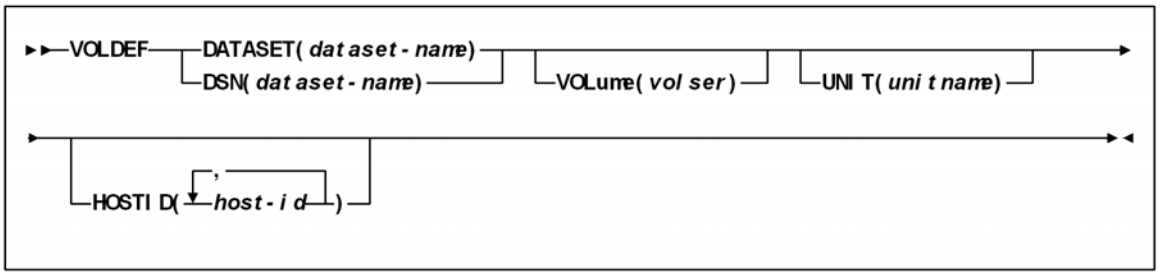


FIGURE 8-23 VOLDEF syntax

Parameters

DATASET or **DSN**

specifies the name of the data set containing the VOLATTR statements to be processed and, optionally, an OPTion TITLE statement. (Refer to "VOLATTR Control Statement" on page 474 and OPTION TITLE in *ELS Command, Control Statement, and Utility Reference*for details on syntax and parameters).

Note – The definition data set may contain SCRPOol, VOLATTR, UNITATTR, TAPEREQ, and OPTion TITLE statements.

- Only OPTion TITLE and VOLATTR statements are processed.
- If any other statement is encountered, an error message is issued and the statement is ignored.

dataset-name

is the name of the data set containing volume attribute parameters. If the data set name includes a member name, *dataset.name* must be enclosed in quotes. For example,

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

VOLume

optionally, specifies the serial number of the DASD volume on which the data set resides. This parameter is optional. Specify the VOLume parameter if the data set is not cataloged, or if a data set on a volume other than the volume indicated by the catalog is to be used.

Note – The volume specified must be a DASD volume.

---

volser

specifies the volume serial number for the definition data set.

UNIT

optionally, specifies the unit where the definition data set is located.

unitname

specifies the unit name. If the definition data set is not cataloged and this parameter is omitted, a unit name of SYSALLDA is the default.

HOSTID

(This parameter is valid only for use in PARMLIB, so that multiple systems can share a PARMLIB member containing SCRPOol, TAPEREQ, VOLATTR, or UNITATTR statements for different releases of HSC. If entered from the console, message SLS0018I is issued.)

Optionally, limits the execution of this control statement to the specified hosts. If one of the specified hostids matches the host executing this control statement, the control statement is executed for that host. Otherwise, it is ignored. If this parameter is omitted, the control statement is executed on all hosts.

host-id

specifies the name of one or more hosts from which to execute this control statement. Multiple hosts must be separated by commas.

UEXIT

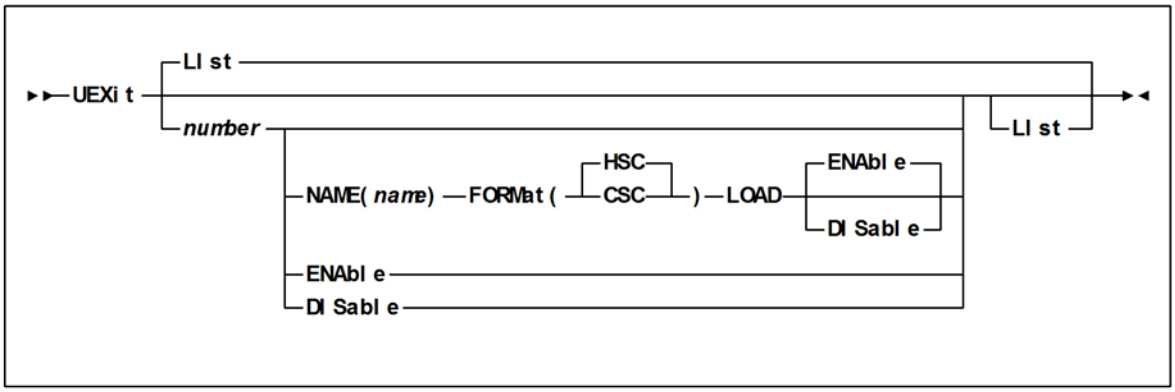
User exits 1, 2, 4, 8, 9, 10, 11, 12, and 13 are invoked and managed by SMC. The UEXit command defines which load module is invoked for a specific user exit, and whether the user exit is enabled or disabled. Both HSC and MVS/CSC user exit formats are supported. The UEXit command specifies the user exit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

Note –

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

Note – It is recommended that you use HSC user exit formats, as MVS/CSC user exit formats will **not** be supported in the next SMC release.

Syntax



Parameters

LIst

optionally, displays status information for all user exits

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

number

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

NAME

optionally, specifies the user exit's load module name

name

the load module name (e.g., SLSUX01)

FORMat

optionally, specifies the format of user exit to be enabled or disabled

Query CDS Read

the Query CDS Read user exit format

CSC

the MVS/CSC user exit format

LOAD

optionally, loads the specified user exit, making it available for use

---

Note –

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

ENable

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

DISable

optionally, disables a user exit to allow for problem resolution

VOLATTR Control Statement

The VOLATTR control statement specifies volume attributes.

Syntax

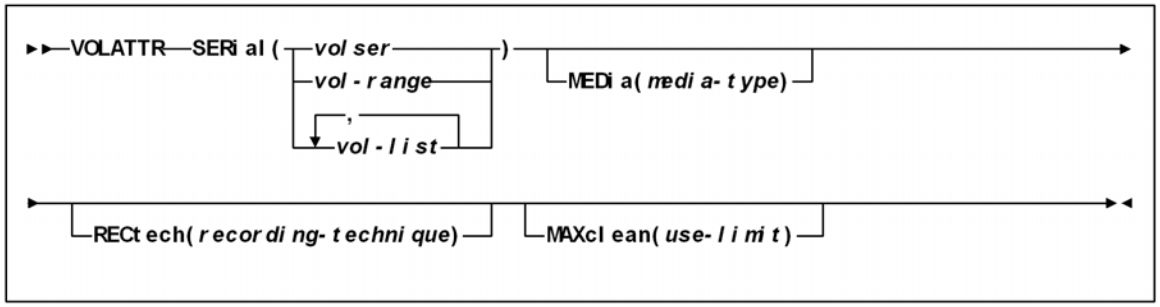


FIGURE 8-24 VOLATTR syntax

Parameters

SERial

specifies one or more volume serial numbers (VOLSERs) to which this definition applies.

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

identifies a single VOLSER, a VOLSER range, or a list of VOLSERs and/or VOLSER ranges in any combination. This parameter may include the following wildcard characters:

% or **?**	any single non-blank character
*	any character string (length 0 to 6).

The wildcard characters shown above may not be used in a range.

Note –

- On a single VOLATTR statement, all volumes specified in a list or range must be the same media type (e.g., a Standard cartridge cannot be included in a range of VOLSERs that also contains an ECART or DD3A cartridge).
- If a given VOLSER is not included in any VOLATTR statement, the MEDia value defaults to Standard; thus, RECtech defaults to LONGitud.

Caution – When you create VOLATTR statements for VTVs, you use the SERial parameter to specify the VTV volsers.
On VOLATTR statements for VTVs, do *not* specify duplicate volsers or overlapping volser ranges.
In addition, after you define an initial set of VTV volsers, you can add more volsers but you should not change your initial set of VTV volsers, which wastes HSC CDS space. For example, if you initially define VTVs V00000 - V99999, you can later add VTVs W00000 - W99999 by specifying both volser ranges when you update the VOLATTR statement that specifies your system's VTVs. If you update the VOLATTR statement to change the volser range from V00000 - V99999 to W00000 - W99999, hosts can still access the original range (V00000 - V99999). If a host scratches a VTV in the original range, however, the VTV cannot be reused, but continues to take up space in the CDS.

MEDia

optionally, specifies the type of media (cartridge) for the VOLSER designated in the SERial parameter.

Note –

- The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.
- **LTO and SDLT transports are not supported in an MVS environment.** These transports are recognized by the HSC but are accessible only to open systems clients using LibraryStation.
- Only specific media types can be entered. Generic media types, that is, LONGItud and HELical cannot be specified. Refer to the syntax for this control statement to see the parameters available to you.
- If this parameter is not specified by any matching VOLATTR statement, a default is chosen based on the value of the RECtech parameter. TABLE 8-6 shows default values used if MEDia is omitted.
- If both media type and recording technique are omitted, all media types and recording techniques are assumed to be eligible. It is recommended that MEDia always be specified on all VOLATTR statements.

TABLE 8-6 VOLATTR MEDia Default Values

RECtech Entered:	MEDia Default:
18track	Standard
36track, 36Atrack, 36Btrack	Standard
36Ctrack	ZCART
LONGItud	Standard
DD3, HELical	DD3A
STK1R, STK1R34, STK1R35, STK1RA, STK1RA34, STK1R35, STK1RB, STK1RB34, STK1RB35, STK1RAB, STK1RAB4, STK1RAB5, STK1RC, STK1RC34, STK1RC35	STK1R
STK2P, STK2P34, STK2P35, STK2PA, STK2PA34, STK2PA35, STK2PB, STK2PB34, STK2PB35	STK2P
T1A, T1AN, T1A34, T1A35, T1AE, T1AE34, T1AE35	T10000T1

media-type

identifies the media type. Virtual specifies that VSM will route data sets to a VTV mounted on a VTD. Virtual specifies that VSM will route data sets to a VTV mounted on a VTD. To define a volume as virtual, you must specify the Virtual keyword for either the MEDia or RECtech. You can also specify both MEDia or RECtech; the keyword must be Virtual for both parameters to define the volume as virtual.

RECtech

optionally, specifies the method used to record data tracks on the tape surface for the VOLSER designated in the SERial parameter.

Note – The SL8500 library supports only the T9840A, T9840B, T9840C, T9940B, LTO, SDLT, and T10000 media types and recording techniques.

If this parameter is not specified on any matching VOLATTR statement, a default is chosen based on the value of the MEDia parameter. TABLE 8-7 shows default values used if RECtech is omitted.

TABLE 8-7 VOLATTR RECtech Default Values

MEDia Entered:	RECtech Default:
Standard	LONGItud
ECART	36track
ZCART	36Ctrack
DD3A, DD3B, DD3C, DD3D	DD3
STK1, STK1R, STK1U	STK1R
STK2, STK2P, STK2W	STK2P
T10000T1, T10000TS, T10000CT	T1A

recording-technique

identifies the recording technique. Virtual specifies that VSM will route data sets to a VTV mounted on a VTD. To define a volume as virtual, you must specify the Virtual keyword for either the MEDia or RECtech. You can also specify both MEDia or RECtech; the keyword must be Virtual for both parameters to define the volume as virtual.

MAXclean

optionally, specifies a maximum cleaning cartridge usage for the VOLSER or range of VOLSERs (1 to 32767) associated with the SERial parameter. Do not specify values that exceed the manufacturer's recommendation for usage. MAXclean applies to all types of cleaning cartridges.

If this parameter is specified, the VOLSER(s) indicated in the SERial parameter must begin with the cleaning cartridge prefix established in the LIBGEN.

use-limit

indicates the maximum number of times a cleaning cartridge should be used. Refer to tape transport cleaning for additional details.

Note –

- If MAXclean is not specified in the VOLATTR statement, the value or default of the MAXclean parameter in the MNTD operator command is used for all cleaning cartridge counts.
- If MAXclean is specified, the MEDia setting must be Standard, DD3D, or STK1U.

VOLRPT Legacy DD Statements

SLSCDATA

statement required if VOLDATA and/or CDSDATA parameters are specified to request CDS data. The data set defined by SLSCDATA must be sequential and have a variable record format. Optionally, DCB parameters LRECL and BLKSIZE may be specified by the user. The minimum LRECL should be 2376 if CDSDATA is specified or 136 if VOLDATA is specified. It is recommended that the LRECL be set larger than the minimum LRECL to accommodate any future changes.

BLKSIZE can be any valid block size and must be at least LRECL + 4. If individual DCB parameters are not specified at execution time, the following defaults are provided:

- RECFM=VB
- LRECL=2376 or 136
- BLKSIZE=LRECL + 4

If any DCB parameters are specified which conflict with any of the requirements described above, the defaults are used.

CDSDATA

optionally, specifies that the Volume Report utility is to produce non-volume CDS data for the data set defined by the SLSCDATA DD statement. CDSDATA is independent of VOLDATA and does not keep a volume report from being produced.

SLSSCRPL

specifies a data set containing HSC PARMLIB statements. The SCRPOol scratch subpools and MNTD MAXclean values are defined in these control statements.

If this statement is omitted, the data set used by the active HSC on the host is accessed. If the HSC on the host is inactive, SLSSCRPL is required to produce a SUMMary(SUBpool) report.

SLSVA

specifies the data set containing the VOLATTR statements for the CDS being reported on.

If SLSVA or VOLATTRs are omitted, several different scenarios can occur depending on the HSC state. Table 8-8 describes these situations.

TABLE 8-8 SLSVA Effect on Volume Report

HSC State:	SLSVA Specified:	SLSVA Not Specified:
Active	Use VOLATTRs pointed to by SLSVA. If VOLATTRs have been defined, media prefix characters are displayed before the ''Media'' field if the media types reported by the LMU and the VOLATTR statements do not agree. If VOLATTRs are not present, media prefix characters are not displayed.	Use VOLATTRs used by HSC.
Inactive	Use VOLATTRs pointed to by SLSVA.	HSC generates an error message saying that SLSVA is missing and incorrect data may be reported. In addition, no prefix characters appear before the ''Media'' field on the report to identify media type discrepancies.

CHAPTER 9

Managing Non-Streamline LSMs

This chapter, which tells how to manage non-Streamline LSMs, which include the 4410, 9310, 9740, and 9360, provides the following information:

- "Managing LMUs" on page 482
- "Managing an LSM in Manual Mode" on page 485
- "Managing CAPs" on page 498

Managing LMUs

The LMU responds to mount and dismount requests from the host through the HSC and passes each request to the appropriate LSM, which performs the physical action requested.

Note –

- When you IPL an LMU, error messages appearing before the following message can be ignored. **Do not** ignore error messages that are displayed after the message.

... ACS *AA* LSM *LL* ready; ...

- Refer to the appropriate StorageTek hardware operator's guide for a description of the LMU control panel and information on how to power on/off and IPL an LMU in both stand-alone LMU and dual LMU configurations.
- Use the DISPLAY ACS command to display the status of the ACS, including LMU status.

Varying Stations On or Offline

A *station* is a connection between the host CPU and an LMU. A station appears to the host CPU as a 3278-2 device and is physically connected to a port on a supported 3174, 3274 or compatible terminal controller. Each LMU supports a maximum of 16 stations. Depending on the number of host CPUs connected to the ACS, each host CPU can have either one or several stations to each LMU. You use the VARY STATION OR VARY ACS command to vary ACSs or stations to the following states:

ONLINE

Varies online the specified ACS(s) or station(s).

Note – After varying ACSs or stations, if you execute the SET SLISTATN utility and cycle HSC, the new configuration takes effect.

STANDBY

Varies to standby the specified ACS(s) or station(s). The ACS(s) or station(s) is available only for limited communication with the standby LMU and are not available for robotics, cartridge movement, or library status requests.

OFFLINE

Varies offline the specified ACS(s) or station(s). When an ACS is varied offline, the HSC purges all outstanding requests.

Note –

- You can use VARY OFFLINE FORCE to force the offline state immediately. When the last station between the host and the ACS is forced offline, all outstanding requests are purged. The ACS-to-HSC is now in disconnected mode.
- Use the MVS VARY *device* ONLINE/OFFLINE command to vary a station or ACS online or offline to MVS.

Managing a Dual LMU Configuration

Dual LMU configurations provide a standby LMU that can take over if the active (master) LMU fails. Both LMUs are capable of being the master but only one can be the master at a given moment. Each LMU regularly checks the status of the other LMU over the LAN. HSC directs all I/O to the master LMU.

When an LMU is powered on in a dual LMU environment, it places itself in a standby status and then checks for an active master LMU. If an active master LMU exists, the second LMU remains available as the standby LMU. If an active master LMU does not exist, the first LMU to be fully initialized becomes the master LMU.

If both LMUs power on successfully, the following HSC message is displayed:

... ACS *AA*: Dual LMU is configured; Master is *y*, Standby is ready

where *y* is the configured LMU identifier; ''A'' or ''B.''

Note – If both LMUs respond as Master or as Standby, see "Dual LMU Recovery" on page 484.

LMU Switching

The Master LMU can switch to the Standby as follows:

- An automatic switch due to a self-detected failure or power supply problem in the master LMU.
- A manual switch (using the SWitch command). If you need to manually switch LMUs, if possible, wait for processing to complete before making the switch. If you manually switch LMUs while processing is active, cartridges may be in-transit in various LSMs. In this case, HSC does recovery as in an automatic switch.
- An IPL or power off on the master LMU.

When an LMU switch occurs, console messages display the changing status of the master and standby LMUs. The following message is displayed when status changes and the standby LMU is ready:

... ACS *AA*: Dual LMU is configured; Master is *y*, Standby is ready

The following message is displayed if there is a status change and an LMU error occurs:

... ACS *AA*: Dual LMU Is Not configured; Master Is *y*, Standby is not ready

The following message is displayed if there is a status change and the standby LMU is not ready:

... ACS *AA*: Dual LMU Is configured; Master Is *y*, Standby is not ready

In the messages above, *y* is the configured LMU identifier, ''A'' or ''B.''

Note – If both LMUs respond as Master or as Standby, see "Dual LMU Recovery" on page 484.

When an LMU switch occurs, HSC interrogates the LMUs to determine the current status of each station. The status of each station is maintained as online, offline, standby, pending online, pending offline, or pending force offline. Use the Display Acs command to determine the status of each station, as well as the status of each LMU.

Auto-mode CAPs are locked during an LMU switch until the LSM completes initialization. Enter and eject operations may have to be restarted after an LMU switch.

Dual LMU Recovery

If both LMUs respond as Master, power off one LMU and vary it offline (forced). This allows the remaining LMU to become the Master. Restore power to the LMU that you powered off, and vary the stations online.

If both LMUs respond as Standby, you must IPL one or both of the LMUs since the HSC only sends work requests to the master LMU.

Managing an LSM in Manual Mode

If an LSM cannot operate in automatic mode, you have two choices: (1) wait for it to get repaired and go back into automatic mode or (2) operate it in manual mode. Unless you absolutely have to, do not choose #2 because you're not only giving up all the advantages of automated tape, manual mode entails more difficult operations than simply mounting manual tapes. **Also note** the following:

Caution – StorageTek strongly recommends that you do not place SL8500 libraries in manual mode. To use manual mode, all LSMs in the SL8500 must be offline, and that means all CAPs and drives are unavailable for automated operations.

Additionally, SL8500s have been designed for high volume density, so there is **limited room** for manually mounting and dismounting volumes.

Refer to the "Precautions" topic in the *SL8500 Modular Library System User's Guide* for safety requirements and physical restrictions if you decide that you must enter the SL8500.

FIGURE 9-1 on page 486, FIGURE 9-2 on page 487, and FIGURE 9-3 on page 488 show manual mode operations.

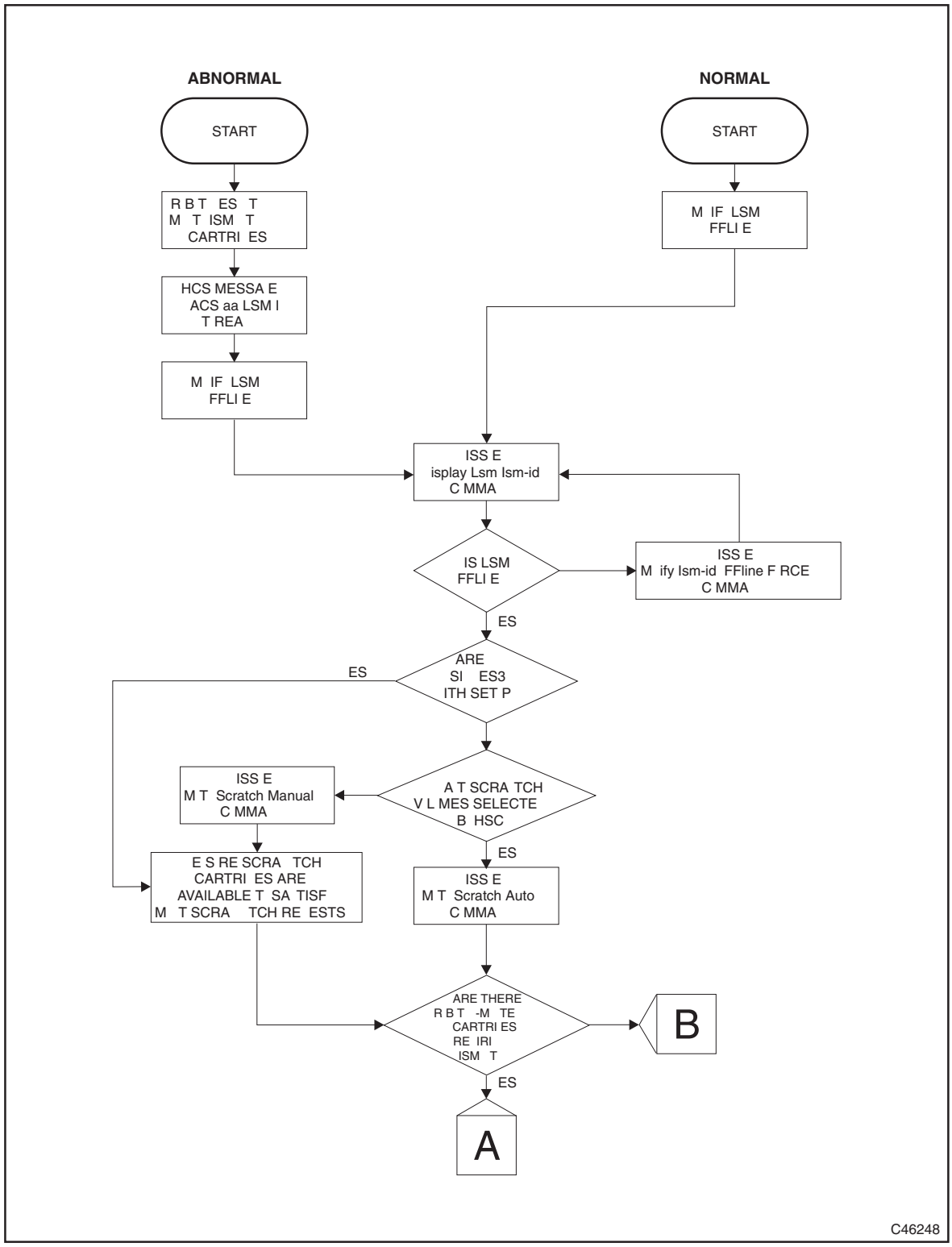


FIGURE 9-1 Manual Mode Flow Chart - Entering Manual Mode

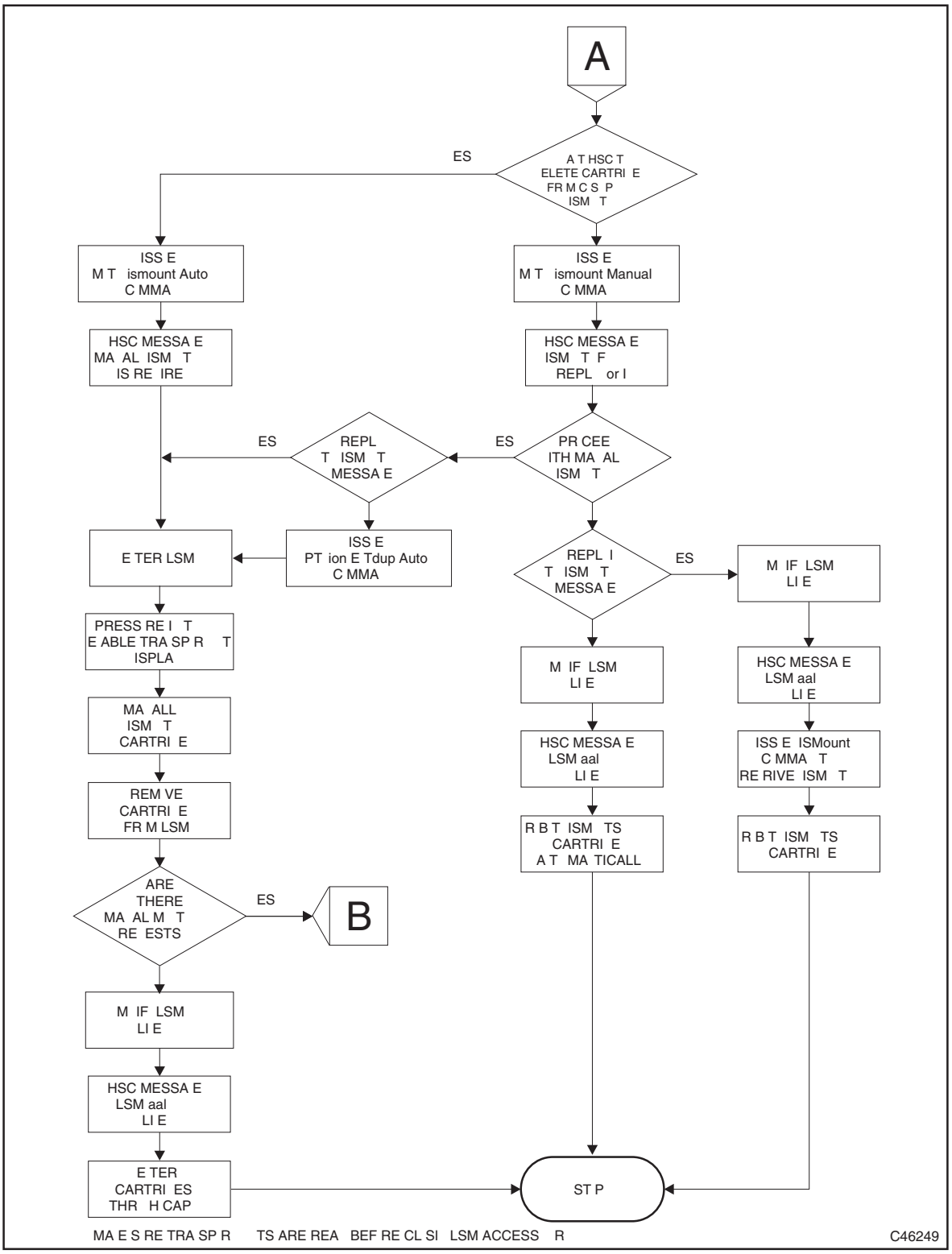


FIGURE 9-2 Manual Mode Flow Chart - Manual Dismount After Automatic Mount

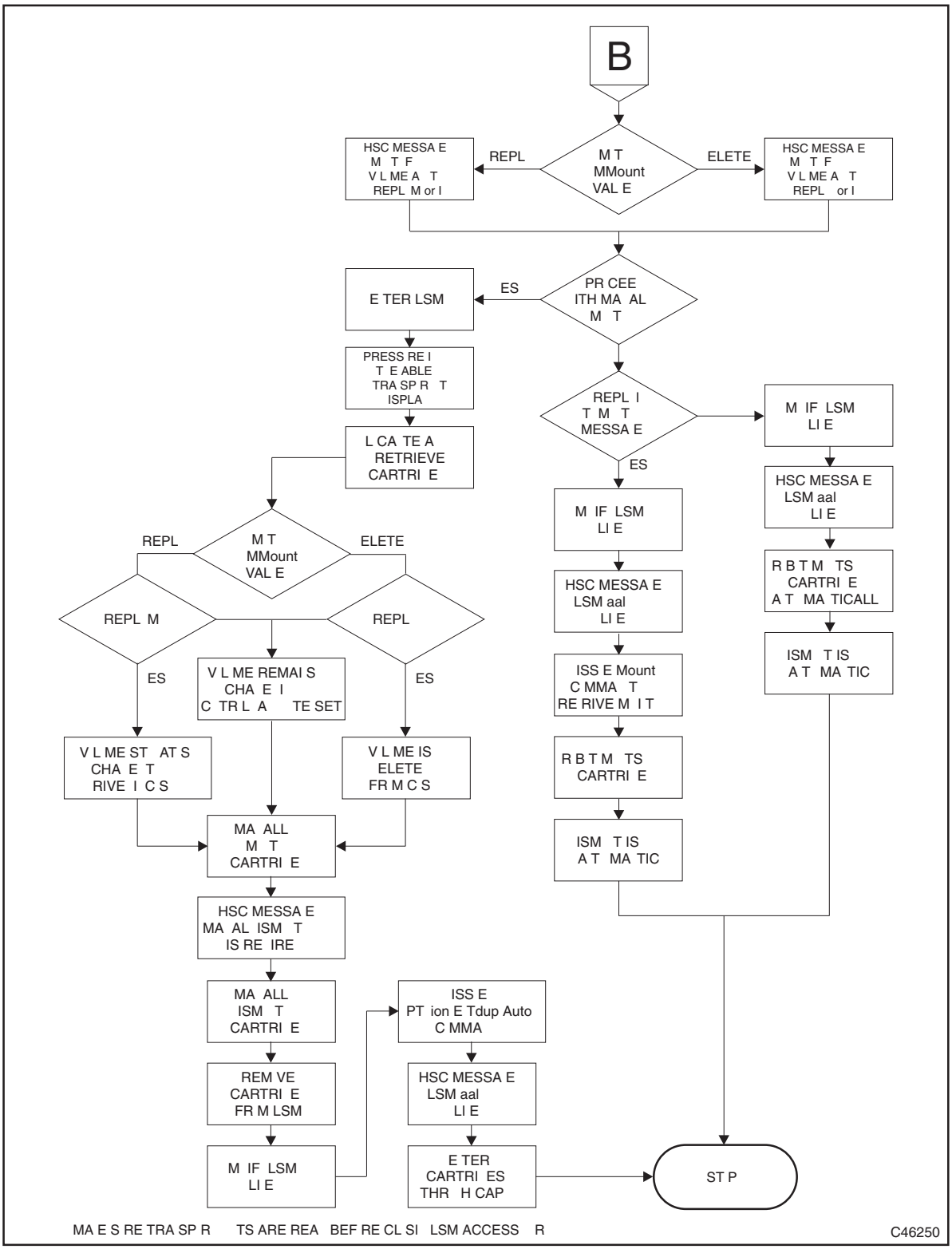


FIGURE 9-3 Manual Mode Flow Chart - Manual Mount/Dismount

Operating an LSM in Manual Mode

Caution – Manual mount messages are not displayed when HSC is at the base service level, so manual mode operations are not recommended.

To operate an LSM in manual mode:

1. **Determine that the LSM is not in automatic mode:**

   The following are signs that an LSM is not in automatic mode:
   - The LSM access door is open.
   - The robot does not automatically mount and dismount volumes.
   - HSC issues a console message informing the operator that an LSM is ''not ready.''

   If you see any of these signs, enter a DISPLAY LSM command to view the status. If the status is not automatic mode, continue with to Step 2. Otherwise, go to Step 3.

2. **Is the LSM in a dual-LMU environment?**

   If the master LMU is offline, use the HSC SWitch command to switch to the standby LMU.

3. **Vary the LSM offline:**

   MODify LSM ***lsm-id*** OFFline

4. **Verify the LSM is offline:**

   Display Lsm ***lsm-id***

5. **Set Manual Mode Attributes...**

   ...via the HSC MNTD command:
   - **Manual mode dismount processing**:

   MNTD Dismount(Manual)

   In manual dismount mode, you have the following choices:
   - Manually dismount the volume and reply ''D'' to the dismount message. The volume is deleted from the CDS and must be removed from the LSM.
   - Reply ''I'' to the message to ignore the dismount. The dismount can be re-driven after the LSM is modified online by issuing the HSC DISMount command. Make no response to the dismount message, which leaves the dismount request outstanding. The HSC automatically re-drives the dismount request when the LSM is modified online.

   ■ **Message processing for a manual mode mount**:

   MNTD MMount(Reply)

   Whenever a manual mount is requested, you have the following choices:
   - Reply ''M'' to the mount message and manually mount the volume. The volume is retained in the CDS and its status is changed to ''on drive.''
   - Reply ''I'' to the message to ignore the mount. The mount can be re-driven after the LSM is modified online by issuing the HSC Mount command.
   - Make no response to the mount message, which leaves the mount request outstanding. The HSC automatically re-drives the mount request when the LSM is modified online.

In an MVS environment, if the operator mounts the volume without responding to the message, and the volume is recognized as mounted by the HSC, then the volume status is changed in the CDS to ''on drive.'' If a dismount message occurs, then the manual mount message is DOMed.

- **Selection of scratch volumes during manual mode**.

  In both JES2 and JES3 environments, normal manual mode processing requires the operator to select a scratch volume to satisfy a mount scratch request. This may require you to obtain a volume report or issue several Display commands to locate scratch volumes in the LSM.

  In JES2 or JES3 without SETUP, you can direct the HSC to select scratch volumes for you by issuing the following command:

```
MNTD Scratch(Auto)
```

  The volume must still be mounted manually, but now the HSC selects the volume and issues a message which provides the VOLSER and cell location of the volume.

Note –

- If scratch processing is set to Auto but there are no scratch volumes contained in the LSM, you must select a scratch volume from outside the manual mode LSM.
- Use the WARN Command to make sure that adequate scratch volumes are maintained in LSMs.

- **Using the deferred mount option in manual mode**.

  The HSC deferred mount option may reduce the number of manual mounts/dismounts that are required to process a job. This can increase operator productivity during manual mode operations by eliminating needless mounts.

6. **Reset the transport display.**

   When manual mode begins, each transport is in a Hold Off Load condition, which must be cleared before you can manually mount volumes. See the transport operator's guide for details.

7. **To mount a volume, first locate the volume you want to mount...**

   ...via the HSC console message. After you reply to the message, the transport display panel alternately displays the volser and cell location of the volume.

8. **Mount the volume by responding to the message as described in** Step 5**.**

   Your response affects the CDS as follows:

   - A response of ''D'' (delete) logically ejects the volume from the CDS. Logical ejection is done to maintain the integrity of the CDS.
   - A response of ''M'' (reply) allows the operator to manually mount the volume. The volume is retained in the CDS and its status is changed to ''on drive.''
   - A response of ''I'' leaves the volume in the CDS.
   - No response to the message leaves the volume in the CDS.

9. **To dismount a volume, reply to the operator message as described in** Step 5**.**

   Manual dismounts affect the CDS as follows:

   - **Manual Dismount After Robot Mount With MNTD Dismount(Auto)**.

     HSC deletes the volume from the CDS.
   - **Manual Dismount After Robot Mount With MNTD Dismount(Manual)**.

     Respond to the console message as follows:
     - A response of ''D'' deletes the volume from the CDS.
     - A response of ''I'' leaves the volume in the CDS.
     - No response to the message leaves the volume in the CDS.
   - **Manual Dismount After Manual Mount With MNTD MMount(Delete)**.

     Respond to the console message as follows:
     - If the operator replied ''D'' to the manual mount message, the volume was logically ejected from the CDS at mount time.
     - If the operator made no reply to the message, the volume remains in the CDS.

Operating LSMs in Mixed (Automatic and Manual) Mode

If you are working in an automated LSM environment where one or more of the LSMs are offline, you may need to remove a volume from a manual LSM and enter it into an automatic LSM, or to eject a volume from an automatic LSM and mount it on a drive that is attached to a manual LSM. When two automatic LSMs are separated by an offline LSM (in a linear configuration), you may also have to handle a mount between the two automatic LSMs manually.

Mounting a Volume from a Manual LSM to an Automatic LSM with MNTD MMount(Delete)

To mount from manual to automatic LSm with MNTD MMount(Delete):

1. **HSC issues a console message...**

   ...that shows the volume volser, the address of the drive on which it is to be mounted, and the volume's location in the manual mode LSM.

2. **Remove the volume from the manual LSM...**

   ...per the LSM Operator's Guide and respond "D" to the manual mount message to delete the volume from the CDS.

3. **Enter the volume in the automatic LSM and use the** MOUNT **command to mount it.**

Mounting a Volume from a Manual LSM to an Automatic LSM with MNTD MMount(Reply)

To mount from manual to automatic LSM with MNTD MMount(Reply):

1. **HSC issues a console message...**

   ...reply "I" to the mount message.

2. **Change the MNTD MMount setting to Delete.**

1. **HSC issues a console message...**

   ...that shows the volume volser, the address of the drive on which it is to be mounted, and the volume's location in the manual mode LSM.

2. **Remove the volume from the manual LSM...**

   ...per the LSM Operator's Guide and respond "D" to the manual mount message to delete the volume from the CDS.

3. **Enter the volume in the automatic LSM and use the** MOUNT **command to mount it.**

Mounting a Volume from an Automatic LSM to a Manual LSM

To mount from automatic to manual LSM:

1. **HSC issues a manual mount message...**
   ...with the volser and transport address.
2. **Eject the volume from the automatic LSM.**
3. **Mount the volume in the manual LSM...**
   ...per the LSM Operator's Guide.

Mounting a Volume from One Automatic LSM to Another

FIGURE 9-4 shows a scenario where HSC requests a mount from one LSM in automatic mode to another in automatic mode where the LSMs are separated by an offline LSM.

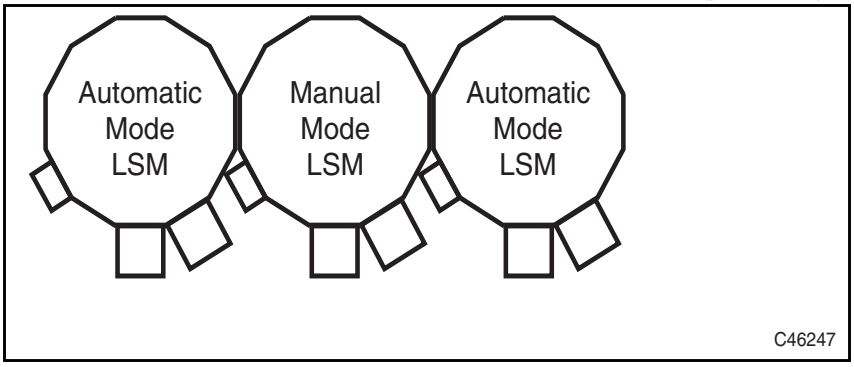


FIGURE 9-4 ***Two Automatic LSMs Separated by an Offline LSM***

To mount from automatic to automatic LSM:

1. **HSC issues a manual mount message...**

   ...with the volser and transport address.

2. **Eject the volume from the first automatic LSM.**

3. **Enter the volume into the second automatic LSM and use the** MOUNT **command to mount it.**

Returning an LSM to Automatic Mode

This section tells how to return an LSM to from manual to automatic mode.

To return an LSM to from manual to automatic mode:

1. **Make the transports ready...**

   ...per the transport Operator's Guide.

2. **Exit the LSM and place it in Automatic Mode:**

   MODify LSM ***lsm-id*** ONline

   HSC issues the message:

   ... LSM ***AA:LL*** now ONLINE

3. **Handle outstanding requests for manual mounts.**

   There may be outstanding manual mounts if you replied "I" to the HSC manual mount message, or made no response to the message and did not mount the volume. In both cases, the mounts can be automated after modifying the LSM online.

   - If you replied "I" to the manual mount message, you can re-drive the mount after the LSM is placed in automatic mode by issuing the HSC Mount command.
   - If you have not responded to the manual mount message, the mount is performed automatically after the LSM is placed in automatic mode.

4. **Handle manual mounts requiring automated dismounts.**

   - If a manual dismount is requested before the LSM is online, you can ignore the request and modify the LSM online, leaving the volume mounted on the transport. When the LSM is in automatic mode, the dismount can be semi-automated in one of two ways:
     - Issue the HSC command:

   DISMount ,***devaddr***

   Reply "E" to the HSC message.

   ... Dismount of...; reply I, U,VOLSER, R, or E

   The volume is dismounted and ejected from the LSM.

     - Wait for the next mount request for the transport containing the volume to be dismounted. When the robot discovers the volume mounted in the transport, HSC issues the message:

   ... Dismount of...; reply I, U,VOLSER, R, or E

   Reply "E" to dismount the volume and eject it from the LSM.

   - Dismounts requested after the LSM is online cause HSC to issue the message:

   ... Dismount of...; reply I, U,VOLSER, R, or E

   Reply "E" to dismount the volume and eject it from the LSM.

5. **Enter volumes logically ejected during Manual Mode.**

   Reenter the volumes through the CAP.

Managing CAPs

In non-Streamline LSMs:

- You must fill CAPs from top down with no gaps.
- Missing magazines are not allowed.

CHAPTER 10

Managing Remote-linked Libraries

This chapter contains diagrams of configurations for remote-linked libraries and programming and operational considerations for these configurations.

Note –

- Managing remote-linked libraries via split CDS is still supported, but deprecated, because it is superseded by SMC client/server, which provides the ability to manage multiple sites by configuring a TapePlex for each site, which eliminates the need for a split CDS. For more information on SMC client/server, see*Configuring and Managing SMC* .
- Configurations 3, 4, and 5, are **not valid** for VSM systems

Configuration 1

This configuration consists of one ACS remote-linked to one CPU. The primary, secondary, and standby CDSs all run on the one CPU.

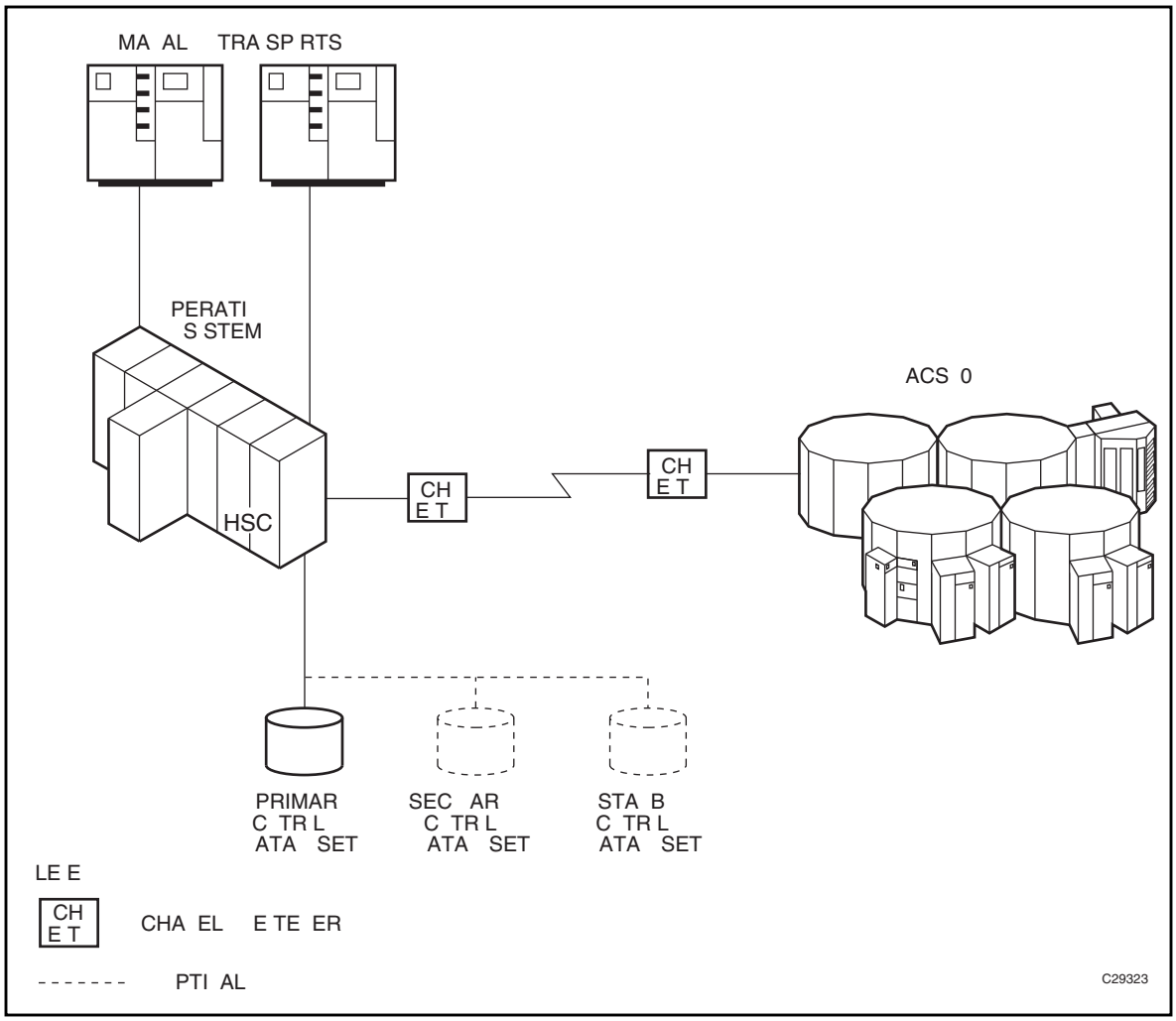


FIGURE 10-1 Configuration 1

Configuration 2

This configuration consists of one ACS remote-linked to one CPU. The primary, secondary, and standby CDSs all run on the one CPU.

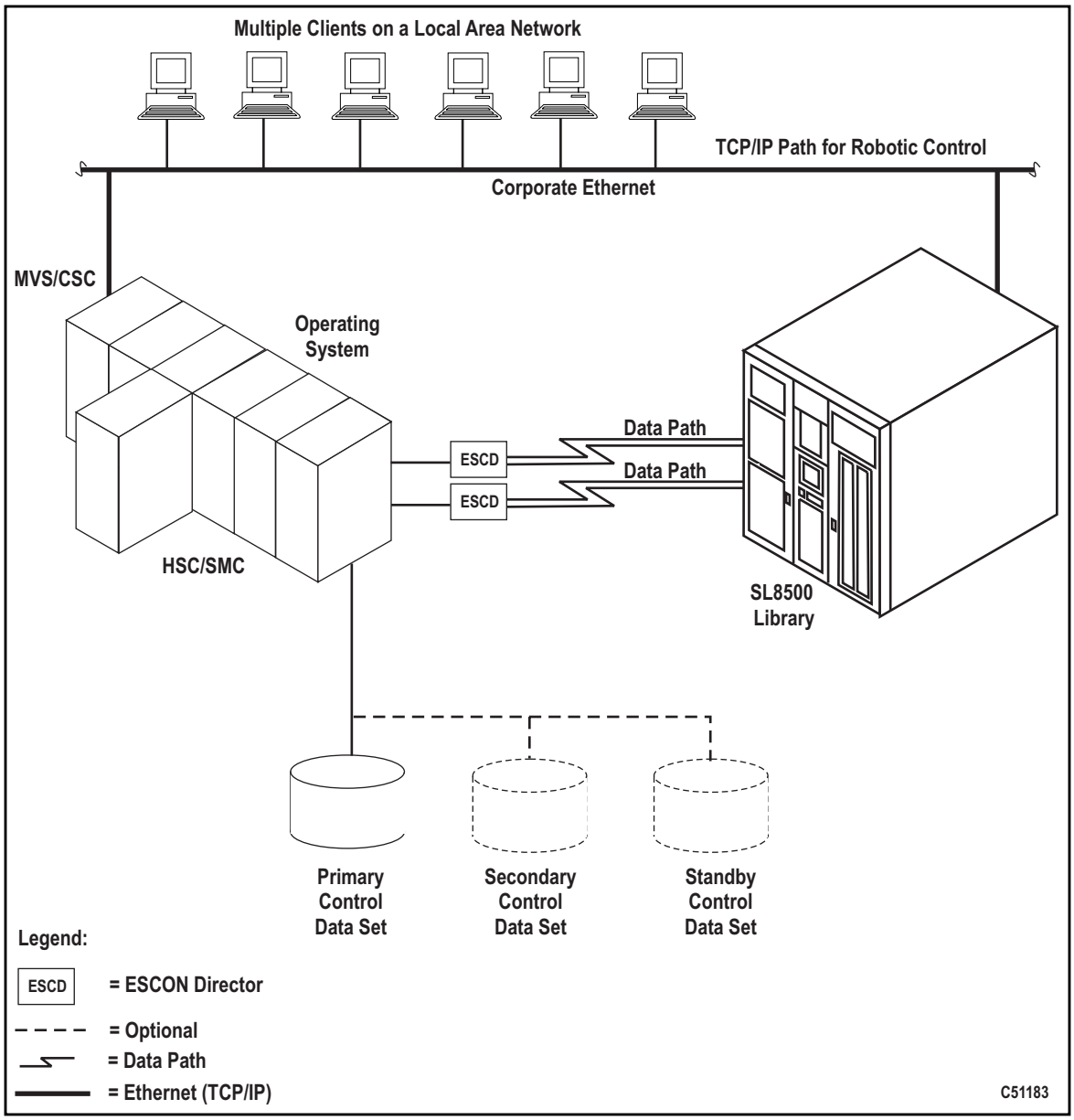


FIGURE 10-2 Configuration 2

Configuration 3

This configuration consists of one ACS local to one CPU that is remote-linked to another CPU with one ACS local to it. The primary and secondary CDSs run on separate SSDs each attached to separate CPUs. The standby CDS can be attached to either SSD.

Note – You cannot deploy this configuration in a VSM environment and ensure data integrity.

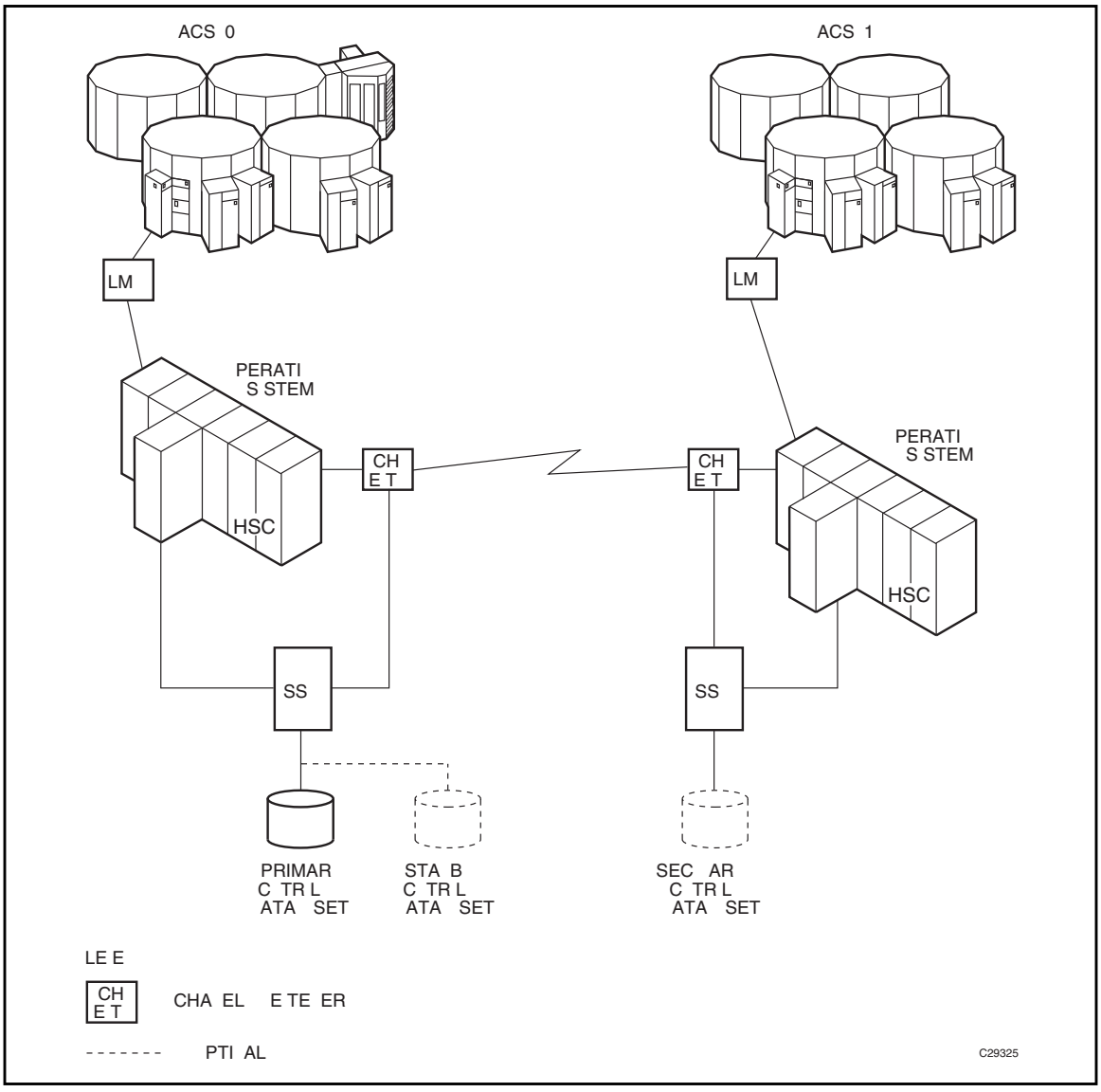


FIGURE 10-3 Configuration 3

Configuration 4

This configuration consists of one ACS local to one CPU that is remote-linked to another CPU with one ACS local to it. The primary and secondary CDSs run on separate SSDs each attached to separate CPUs.

Note – You cannot deploy this configuration in a VSM environment and ensure data integrity.

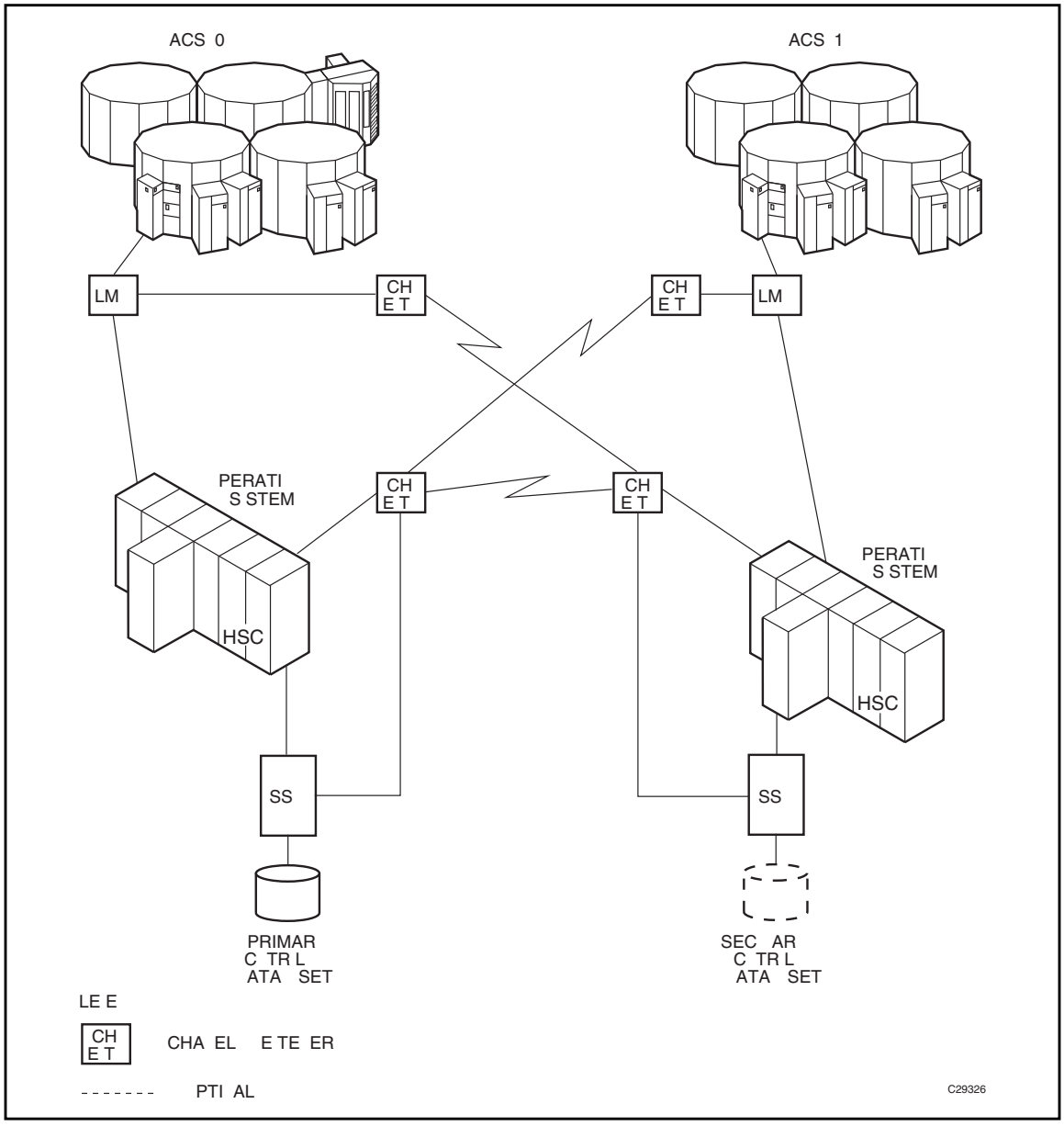


FIGURE 10-4 Configuration 4

Configuration 5

This configuration consists of one ACS local to one CPU that is remote-linked to another CPU with one ACS local to it. In addition, a third ACS is remote-linked to both CPUs. The primary and secondary CDSs run on separate SSDs each attached to separate CPUs.

Note – You cannot deploy this configuration in a VSM environment and ensure data integrity.

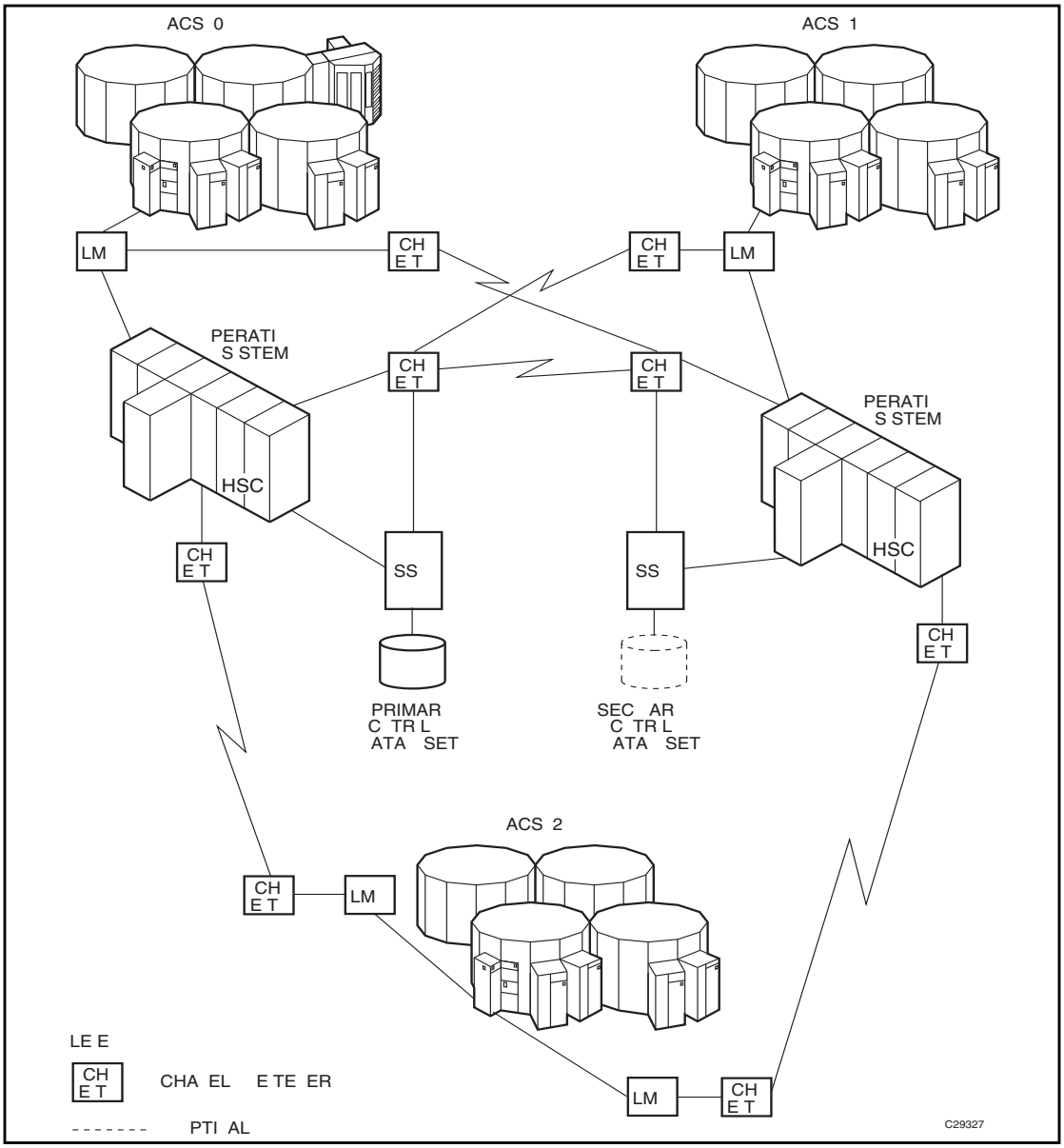


FIGURE 10-5 Configuration 5

Programming and Operational Considerations

The following are programming and operational considerations for remote-linked libraries.

TABLE 10-1 Programming and Operation Precautions for Remote-linked Libraries

Area of Concern	Applicable Configuration(s)
Ability to deploy VSM	1 and 2. 3, 4, and 5 **are not valid** for VSM systems.
Ability to use remote transports	1 - 5
Resolving CDS issues after a remote-link failure	3 - 5
Restore involving journals from channel extended hosts	3 - 5
CDS integrity	3 - 5

Allocation

See*Configuring and Managing SMC* for information about allocation.

Resolving CDS Issues After a Remote-Link Failure

In configurations 3, 4, and 5, if there is a failure in the remote link while ACS1 has a hardware reserve issued against the primary CDS, ACS 0 is locked out and is not able to perform any automated tape services until the reserve is released. This problem can happen even if the two ACSs are not remote-linked.

The reserve can be released by disabling the remote-link interface. Operator intervention is required to disable the link.

Restore Involving Journals from Channel-Extended Hosts

In configurations 3, 4, and 5, if a restore of the CDS is needed, and the journaling option is invoked, all journal files must be obtained from every host that was included in the library LIBGEN. If all of the journals are not applied when the RESTore utility is executed, an accurate CDS may not be constructed during the restore operation.

Obtaining all journals from remote-linked hosts can be a problem if the link is down. Consequently, not all journals can be obtained to fully satisfy a successful restore of the CDS.

Careful planning must be done before executing the RESTore utility to make sure that journals are available from each host and that the remote link is fully operational when the restore operation is performed.

CDS Integrity

In configurations 3, 4, and 5, the primary CDS and the secondary CDS are separated across a remote link. If the link is interrupted, the secondary data set becomes the primary CDS for ACS1.

The original primary CDS continues to operate for ACS 0 only. As the library operates, any updates occurring to either CDS after the link was severed causes the data sets to be unsynchronized. It is a difficult task to resynchronize the data for both data sets.

Possible solutions to resynchronize the data sets include:

- Execute the AUDIt utility and reconcile the differences between the primary CDS and the secondary data set. This solution is not recommended because of the time required to perform a full audit operation.
- Execute the BACKup utility, specifying OPTion(Analyze), immediately followed by the RESTore utility, specifying GENerate(YES). The BACKup utility performs error and comparison checking of records for the data sets and enables you to reconcile the differences. With this utility, you can make sure that the two data sets are properly synchronized. Library operation can be resumed at a high confidence level.
- Prior to reestablishing the link:

1. Bring the HSC down.
2. Reestablish the link.
3. Run BACKup OPTion(Analyze) and RESTore GENerate(YES).
4. Bring the HSC up.
5. Use the discrepancy report produced by the backup to determine discrepancies between copies of the CDS.

CDS Synchronization Between Local/Remote-linked Libraries

Special precautions should be taken for running BACKup and RESTore when local/remote-linked libraries run control data sets independent of each other. In this situation, the primary and secondary control data sets are being updated by the HSC on their respective sides of the link. If remote communication is lost, the two control data sets become unsynchronized.

Precautions also should be followed when the link connecting the local and remote libraries is disrupted.

Special considerations while the link is down include:

- Keep enters and ejects of cartridges to a minimum. This practice reduces the number of AUDIT statements produced.
- Enter MNTD Float(OFf). This generates more pass-thrus, but less AUDIT statements.
- Enter MNTD SCRDISM(CURRENT) to avoid cartridge movement.
- Avoid running the SET utility.
- Avoid running the Scratch Update and Scratch Redistribution functions during this time.
- Take all HSCs down prior to the link being restored.

Special considerations after the link is restored include:

- Avoid restoring CDS copies from backups taken while the link is down. If a restore of the CDS(s) is necessary only on one side of the link, make sure that only the CDS(s) on that side is restored.
- Do this by including **only** DD statements for the data sets on the side of the link to be restored. Do **not** restore **all** CDS copies from a backup taken while the link is down.
- After the link is restored, **all** HSCs should remain down for backup/restore.
- Run BACKup. OPTion(Analyze) must be used.
- If you know which CDS has had the most processing occur after the link was disrupted, use the CDS keyword to select that CDS for backup.
- Once backup is completed, restore the control data sets. Do not apply journals.
- Reinitialize the HSCs.
- When the ACSs are available, start the SLUADMIN program using the SLSAUDIT data set from the restore as input.

CHAPTER 11

Journaling

Journaling is no longer supported. Instead, use the CDS Logging facility. Dropping support for journaling includes the following:

- The ommands JRNDEF and JOURNAL are no longer supported. These commands, if entered, will result in the message SLS4639I xxxxxxx COMMAND IS NO LONGER SUPPORTED.
- Assembly of LIBGEN macros no longer accepts a recovery macro that includes journaling. The only valid values for the TCHNIQE parameter are NONE, SHADOW, and STANDBY. These are also the only values accepted by the SET TCHNIQE utility. If the current CDS value includes journaling, then any output of the technique ignores the jounaling specification, including Display CDS, CDSDATA utility, and LIBGEN database decompile function.
- If SLICREAT is run with an existing LIBGEN load module that specifies a journaling recovery technique, the resulting CDS will not contain a reference to journaling.
- The DRTEST CREATE function no longer creates journals for the DR CDS, regardless of the specification in the production CDS.
- In addition to modifying parameters in the BACKUP and RESTORE utilities that reference journals, the ELS 7.2 versions of these utilities no longer support other special parameters, including BACKUP ANALYZE. Both BACKUP and RESTORE utilities accept only their respective base commands (except that BACKUP tolerates OPTION(COPY) as an input parameter).

CHAPTER 12

Testing the Installation

Testing the installation consists of executing the Installation Verification Process (IVP). The process consists of performing a set of recommended test procedures for testing of the Automated Cartridge System before introducing the library into the production environment. Individual procedures contain steps to test the basic functions of the HSC, the Automated Cartridge System (library), and the attached tape transports. The procedures also contain functional tests to exercise the main functions of the HSC components.

Each program is contained in the HSC SAMPLIB on the HSC Base tape.

Scope of Installation Verification

Installation verification consists of the execution of planned tests to verify proper functioning of basic HSC operations. FIGURE 12-1 on page 512 illustrates the flow of a recommended verification process.

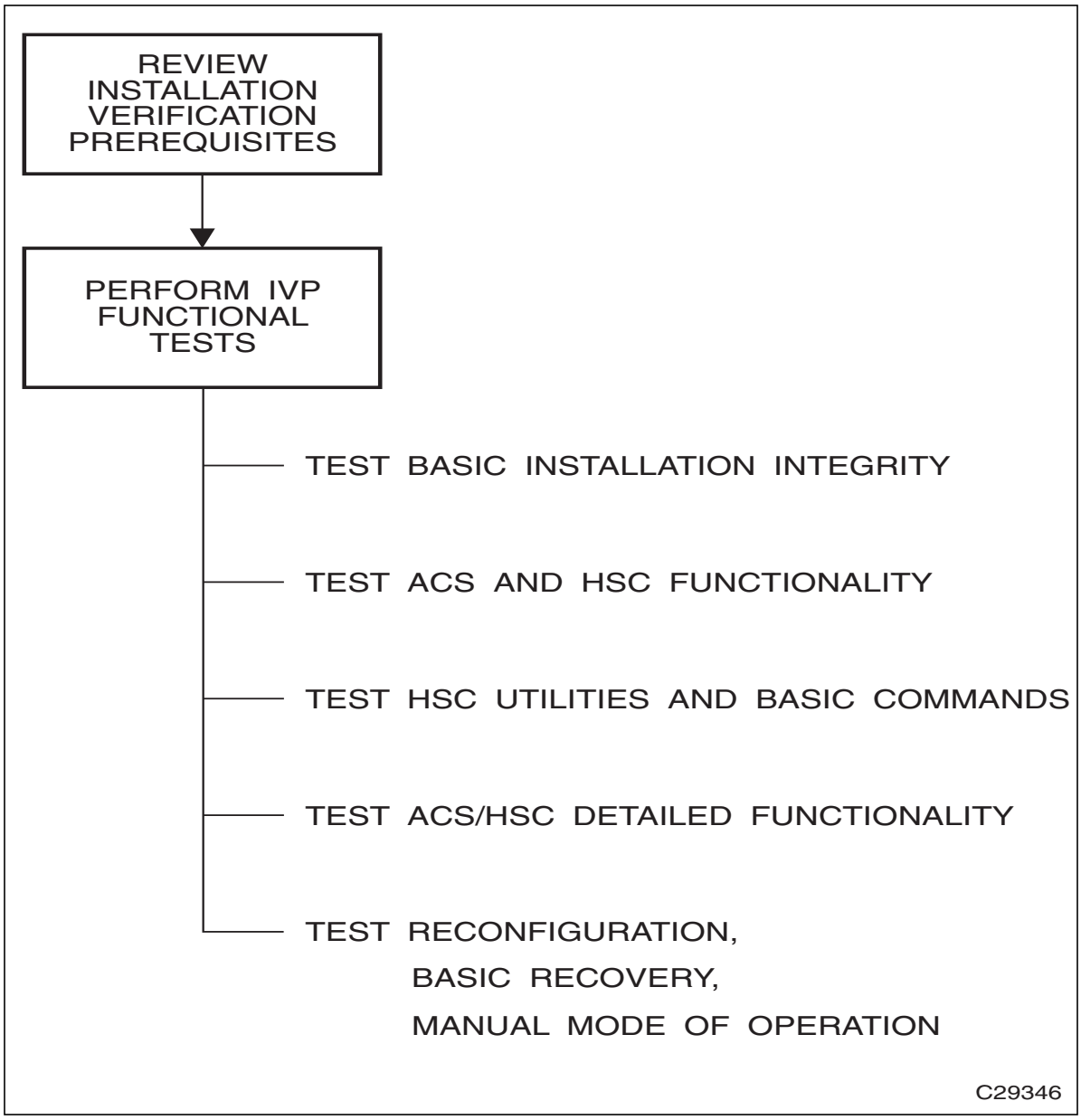


FIGURE 12-1 Installation Verification Flow Diagram

The following tables provide a summary of recommended IVP tests.

TABLE 12-1 Utilities Tested During Installation Verification

Utility	Description of Required Function
ACTIvities Report	Produces a report presenting library activity.
AUDIt	Causes the robot to scan all library cells and to update the control data sets with cartridge location information.
BACKup	Creates a backup copy of the HSC control data sets and analyzes data.
EJECt	Ejects tape cartridges from the library.
INITialize cartridge	Initializes tape cartridges through the CAP.
MOVe	Directs the robot to move cartridges to specified designations.
RESTore	Restores the HSC control data sets and generates control statements.
Scratch Conversion	Reads the TMS database and produces input of scratch VOLSERs to be used by the Scratch Update utility.
Scratch Update	Updates the scratch list contained in the control data sets.
Volume Report (VOLRpt)	Produces a volume report by VOLSER and LOCATION sequence.
SLIVERFY and SLIEXERS are two additional utility-type testing programs used specifically during Installation Verification. Refer to *ELS Programming Reference*and for more information about these programs.	

Refer to *ELS Command, Control Statement, and Utility Reference* for detailed information on each HSC utility.

TABLE 12-2 Commands Tested During Installation Verification

Command	Description of Required Function
CAP	Pref Sets and resets CAP selection parameters.
COMMPath	Establishes or changes the communication method for a host.
DISMount	Performs an operator requested dismount for a specific volume and for any volume.
Display	Display CDS displays control data set information. Other Display commands display status of an ACS, an LSM, a volume in the library, a detailed status of a volume in the library, a message, a command, a drive request, the status of a CAP, and so forth.
DRAin	Terminates an ENter or EJect command and releases the CAP from the enter mode.
EJect	Ejects the labeled volumes (previously entered) from the library. Ejects one unlabeled volume from the library.
ENter	Enters a number of labeled volumes into the library. Enters one unlabeled volume into the library.
MODify	Changes status of an LSM or CAP from online to offline.
Mount	Performs an operator requested mount.

TABLE 12-2 Commands Tested During Installation Verification

Command	Description of Required Function
MOVe	Directs the robot to move cartridges to specified designations.
Vary	Varies a station online and offline.
VIew	If video monitors are attached to the LSM, permits visual inspection of the interior of the LSM.
Warn	Sets the scratch warning threshold values.

TABLE 12-3 Job Processing Functions Tested During Installation Verification

Job Processing Function	Description of Required Function
Initialization	Performs the following: ■ Successful initializations of the HSC ■ Displays the ACS from all hosts ■ Verifies that all station addresses indicate online.
Drive Exclusion	Verifies that library tape transports are selected for library volumes and that nonlibrary transports are selected for nonlibrary volumes.
Drive Prioritization	Verifies that tape transports allocated are attached to LSMs containing the requested volumes.
Multi-unit DD statements	Verifies successful execution of a job that contains multi-unit DD statements in the JCL.
Multi-volume file	Verifies successful execution of a job that reads from and writes to a multi-volume file.

Installation Verification Prerequisites

There are certain initial requirements and considerations of which you should be aware before performing the verification. These include:

- Make sure that you have the complete set of StorageTek documentation. Refer to the HSC publications shown in the Preface for a complete list.
- Verify that you have all pertinent IBM documentation.
- Prepare/setup JCL in advance for those HSC utilities being tested.
- Store the test JCL in a permanent library for future use.

IVP Functional Test Phases

Installation Verification consists of several phases. Each phase is dependent on the previous phase; therefore, testing is executed in a required order. Some portions of the tests consist of simply verifying that all of the necessary installation tasks were completed. Other portions of the tests require that you run jobs or issue commands to make sure that the HSC and the library function as intended.

It is highly recommended that every procedure in the IVP be performed and completed to allow absolute system functionality.

Use the tables contained in following sections as reference for running each testing step and as a check list to validate completion of each testing phase.

IVP programs used for testing are described in "Description of Test Programs" on page 523. Refer to this section for a description of each test used in the IVP.

Basic Installation Integrity Test

The HSC must be installed but not started to perform the following recommended tests.

Recommended Test Procedure

Perform the steps listed in the following table to test the HSC and library basic functions.

When you have completed this test phase, go to "ACS and HSC Functionality Test" on page 518 to continue the installation verification process.

TABLE 12-4 Basic Installation Test Procedure

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
1	Verify that the HSC software was installed as specified in the *Installing ELS*		
2	Verify that all PUT tapes to date were received and applied as specified in the *Installing ELS*.		
3	Verify that LIBGEN modules are coded, assembled, and link-edited. The EJECt password will be changed in another testing phase.		
4	Verify that the SLIVERFY utility was executed to confirm a valid LIBGEN with the existing hardware configuration.		
5	Verify that the SLICREAT utility was executed to initialize the library control data sets.		

ACS and HSC Functionality Test

The HSC must be installed and running to perform the following recommended tests.

Recommended Test Procedure

Perform the steps listed in Table 12-6 to test ACS and HSC functionality.

When you have completed this test phase, go to "HSC Utilities and Basic Commands Test" on page 520 to continue the installation verification process.

TABLE 12-5 ACS and HSC Functionality Test Procedure

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
1	Verify that the HSC was initialized on each host. The MVS START command (S hscprocname) was used.		
2	Issue the Display CDS command to display database information.		
3	Display the ACS from all attached hosts. Verify that all configured station addresses are online.		
4	Display each LSM from each host.		
5	Vary all LSMs online.		
6	Display the CAP status.		
7	Display the help text for any message (Display Message *msg-id*).		
8	Issue the ENter command for a CAP.		
9	Issue the DRAin command for a CAP.		
10	Display, modify, and restore CAPPref parameters.		
11	Display (Display THReshld), modify, and restore Warn parameters.		
12	Modify an LSM offline, display the LSM, modify the LSM back online. Display LSM status.		
13	Vary a station address offline. Vary the station back online.		
14	Use the VOLDEF command to load/reload the definition data sets. Then display information about the VOLDEF data set.		

TABLE 12-5 ACS and HSC Functionality Test Procedure (Continued)

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
15	Display the drive status (Display DRives).		
16	Display, modify, and restore COMMPath settings.		
17	Use the OPTion command to change output to uppercase and back to mixed case.		

HSC Utilities and Basic Commands Test

The HSC must be installed and running to perform the following recommended tests.

Recommended Test Procedure

Perform the steps listed in TABLE 12-6 to test the functionality of HSC utilities and basic operator commands.

When you have completed this test phase, go to "Manual Mode Test" on page 522 to continue the installation verification process.

TABLE 12-6 HSC Utilities and Basic Commands Test Procedure

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
1	Execute the BACKup utility. Verify that the backup of the control data sets was successful.		
2	Execute the RESTore utility. Verify that the restore of the control data sets was successful.		
3	Open the door to an LSM and place cartridges into a panel and row of the LSM. Close the LSM door. **Note:** If you enter an SL8500, all LSM activity for the library ceases. Execute the AUDIt utility for the LSM, panel, and row where the cartridges were placed. Specify APPly(YES).		
4	Use the Initialize Cartridge utility to initialize several volumes through the CAP.		
5	Execute the EJect command to eject half of the volumes that were entered in the previous step.		
6	Execute the EJect utility to eject the remainder of the volumes that were entered through the CAP.		
7	Use the ENter command to place volumes ejected in the previous two steps back into the LSM.		
8	Use the DRAin command to terminate the ENter function.		

TABLE 12-6 HSC Utilities and Basic Commands Test Procedure (Continued)

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
9	Make sure that there is at least one initialized volume in the ACS for each type of drive attached to the ACS (specifically, an STK1 volume for 9840, T9840B, and T9840C drives; an STK2 volume for T9940A or T9940B drives; a helical volume for SD-3s; an 18-track volume for 4480s; and a 36-track volume for 4490s, 9490s, and 9490EEs; an LTO volume; an SDLT volume; and a T10000 volume). These volumes are needed for the SLIEXERS program (see below). If necessary, use the ENter command to enter the required volumes.		
10	Use the SLIEXERS program to automatically exercise each available transport in an ACS. Refer to "SLIEXERS Program" on page 523 for more information.		
11	Execute the VOLRpt utility to produce a volume report.		
12	If your tape management system is CA-1, CA-DYNAM/TLMS, or DFSMSrmm, use the Scratch Conversion utility to generate transactions for the Scratch Update utility.		
13	Execute the SCRAtch utility to scratch designate the cartridges entered in Step 7 as scratch volumes.		
14	Use the Mount, MVS UNLOAD, and DISMount commands to mount and dismount a selected volume.		
15	Use the SET utility to change the EJect password. Use the EJect command to eject a volume. Use the SET utility to change the password back to its original setting.		
16	Use the MOVe command to move some cartridges to a new location.		
17	Use the MOVe utility to move other cartridges to a different panel.		
18	Execute the VOLRpt utility to produce a volume report (again). Examine the entries for the scratch cartridges in the volume report.		
19	If video monitors are attached to an LSM, use the VIew command to display a cartridge in its cell and in cells in a CAP.		

Manual Mode Test

The HSC must be installed and running to perform the following recommended tests.

Recommended Test Procedure

Perform the steps listed in TABLE 12-7 to test manual mode operation.

When you have completed this test phase, the installation verification process is completed.

TABLE 12-7 Manual Mode Functionality Test Procedure

Step	Description of Action	Checkmark to Verify Completion	Person Responsible for Test / Verification
1	Modify an LSM from automatic to manual mode. Verify that the LSM switched to the manual mode successfully.		
2	Restore automatic mode from manual mode. Verify that the LSM switched to the Automatic mode successfully.		

Description of Test Programs

Various test programs are provided to verify performance of the HSC as installed on your system. These programs include:

- SLIVERFY (refer to *ELS Programming Reference*)
- SLIEXERS
- hardware test programs
- allocation test programs.

The following paragraphs describe the purpose for each program and the functions that the program tests.

SLIEXERS Program

The SLIEXERS program automatically exercises each available transport in an ACS. The ACS is defined by the PARM parameter of the EXEC statement. It is recommended that SLIEXERS be executed on each host and each ACS combination to verify library installation.

Note –

- SLIEXERS requires that scratch volumes of the correct media/recording technique be defined in scratch subpool zero.
- This program must be executed from an APF-authorized library. SLIEXERS dynamically allocates each library transport defined to the executing host. A compatible scratch cartridge is then retrieved from the ACS, mounted on the transport, opened, written to, read from, and closed.

  This process is repeated for each transport in the specified ACS. If no scratch tapes of the required media type are available, a WTOR is issued to the operator requesting a scratch cartridge VOLSER.

Caution – Make sure your TMC is configured to allow a scratch mount by VOLSER.

For SLIEXERS to execute properly, the HSC subsystem must be started.

SLIEXERS DD Parameters

SLIEXERS JCL consists of the following statements:

EXEC statement

Specify PGM=SLIEXERS.

The PARM parameter specifies one operand: the ID (range 00 to FF) of the ACS to be exercised.

STEPLIB

The partitioned data set name where the SLIEXERS program resides. This data set must be APF-authorized.

SYSPRINT

Diagnostic messages.

Example JCL for SLIEXERS Program

```
//SLIEXERS job (account),'programmer',CLASS=A
//*
//EXERS    EXEC PGM=SLIEXERS,PARM='00'
//STEPLIB  DD DSN=your.hsc.linklib,DISP=SHR
//SYSPRINT DD SYSOUT=*
//*
```

CHAPTER 13

Legacy SL8500 Partitioning

Overview

There are many businesses uses for partitioning your Streamline libraries, for example:

- Enabling service centers to keep a client from accessing another client's tapes,
- Keeping various departments within the same company separate, and
- Dividing a library between production and test environments.

SL8500 Library partitioning supports from one to four partitions established along LSM boundaries.

The following procedures describe how to configure HSC partitioning on the SL8500 library.

- starting from scratch – LIBGEN, SLICREAT
- converting a non-partitioned ACS to a partitioned ACS
- converting a partitioned ACS to a non-partitioned ACS
- removing a partition from the library
- adding a partition to the library
- removing an LSM from a partition
- adding an LSM to a partition
- removing the **last** LSM from an ACS partition
- moving the **last** allocated LSM to another ACS partition
- moving an allocated LSM to another ACS partition.

In addition, these related topics are discussed:

- error recovery
- message changes
- LMUPATH control statement parameter update to connect to a specific partition
- SET FREEZE utility update to freeze an entire LSM
- Display command output changes.

Partitioning Requirements and Prerequisites

- Read the *SL8500 Best Practices Guide*.
- Call StorageTek Software Support to schedule a CSE to configure the Streamline Library. **This is required**.
- **For base SL8500 partitioning support**, ensure that you have the following prerequisites:
  - SL8500 firmware Compatibility 20 level –Release 3.7x.
  - SLC release level 3.25

Note – Customers MUST be current on maintenance.

- HSC 6.2 (MSP) – L1H16EN and subsequent PTFs

Restrictions

- Hosts prior to HSC 6.1, or hosts without the partitioning PTF, cannot bring the partitioned ACS online.
- If the Library being partitioned is not part of the CDS (either as a real or future library), it cannot be dynamically added to the CDS. A LIBGEN/SLICREAT/MergeCDS process must be performed. For more information, see "Creating the HSC CDS" on page 86.
- Volumes remaining in a partition being removed from one host group will be deleted from that CDS when the ACS is deleted using the HSC command Modify Config Delete acs-id.
- Volumes located in a partition that is added to a host group will be available to that CDS after an AUDIt or MERGEcds.
- Volume history will only be preserved if MERGEcds is run.
- When converting a partitioned library to non-partitioned library, a MERGEcds is possible to retain volume history from previously defined partitions.
- If a volume is mounted on a drive in a partition that is removed before the drive goes OFFLINE, the volume will be deleted from the CDS, and any future MOUNT activity to that drive will end in an error.
- When moving volumes from one partition to another, neither the HSC CDS nor the library support duplicate volumes.
- Prior to backing up the CDS described in the procedures below, NCS and VTCS systems must be in an idle state. This means draining all batch tape initiators, varying all automated MSP tape devices offline (real and virtual) and varying all RTDs defined in the VTCS configuration offline to VTCS.
- When a VTCS CONFIG RESET is required, all host systems must be down.
- If an HSC group owns multiple partitions within a Streamline library, anything done to that partition is considered disruptive and will affect all partitions connected to an HSC group. For any changes that involve adding or removing partitions or adding or removing partition resources, all activity (i.e., drive(s), cap(s), etc.) must be stopped for all ACSs connected to the library. All ACSs connected to the library must be varied offline. Perform the specific activity and then vary the ACSs online. Activity can now be started for all ACSs.

CAP Considerations

Partitioning affects CAP usage. Consider two situations that can be a common occurrence:

- AUTO CAP – In partitioning mode, AUTO CAP is disabled. If you are using AUTO CAP prior to partitioning the library, change it to manual. If it is not changed, HSC changes it.
- Release CAP – A CAP can only be released from the owning host.
- Overriding a CAP Reservation – See the *SL8500 Best Practices Guide*.

LibraryStation Considerations

LibraryStation must be recycled to pick up the new drive configuration.

Caution – LibraryStation does not support Near Continuous Operation (NCO). If LibraryStation is running during NCO, results will be unpredictable.

LibraryStation should not be running when NCO is started or is anticipated to start, for example, when you are varying a newly reconfigured library online. This includes changes to drives that are configured to LibraryStation.

Definitions

Host Group

A set of hosts connected to an ACS and sharing one CDS. For HSC, there can be up to 16 hosts in a host group.

SL8500 Partition

A partition is a segment of one SL8500 unit consisting of one or more LSMs for a maximum of four partitions (one LSM per partition). A partition gives exclusive control of cell and drives. When you define a partition, the LSMs (Rails) must be adjacent.

FIGURE 13-1 shows a partition and host group configuration.

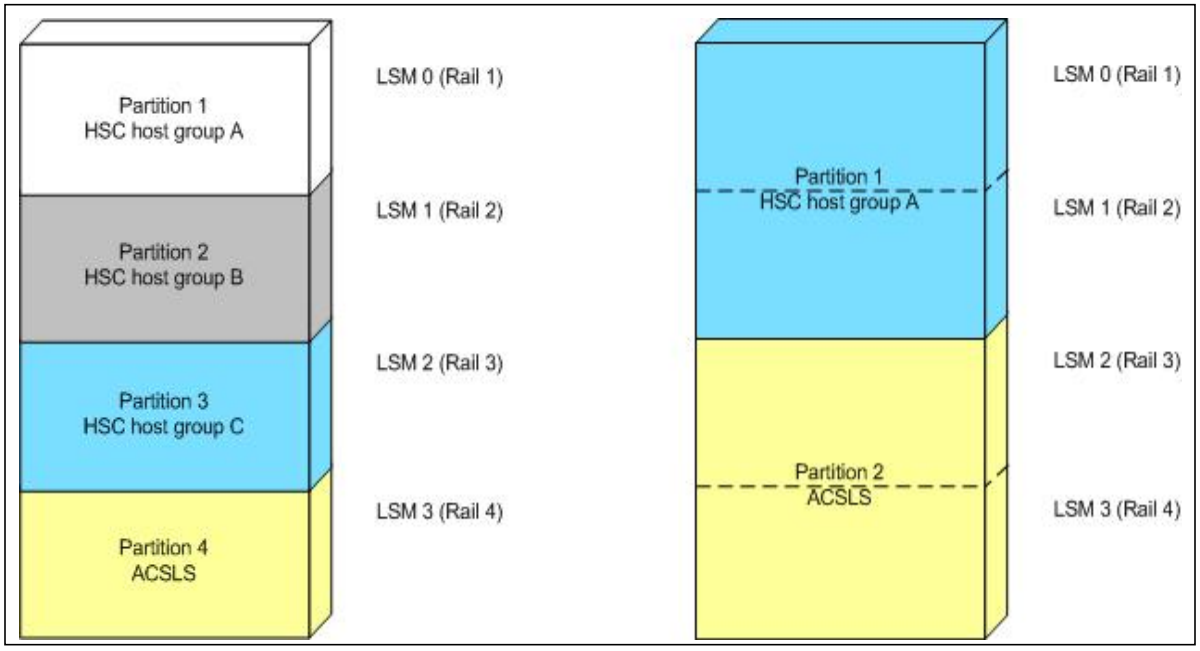


FIGURE 13-1 SL8500 Partition and Host Group Example

Allocated LSM

An LSM assigned to a HSC partition from the Library Console.

Unallocated LSM

An LSM that is either assigned to another partition or unassigned.

Partitioning Procedures

Start from Scratch – LIBGEN, SLICREAT

This procedure creates a partitioned Streamline library from scratch. No LIBGEN changes are required.

Note – It is important that all SL8500 LSMs are online even if they are not defined/allocated to the partition. If the LSMs are not online, CAPs may not be operational.

---

1. **Run an HSC 6.1 or later LIBGEN assemble and the SLICREAT program.**

   Create a new CDS. HSC must use HSC 6.1 or later SMP libraries. After running the SLICREAT program, a standard CDS is created.

Note – If virtual tape is being implemented, VTCS CONFIG must be run to define the configuration to VTCS.

---

2. **Run the** "Convert a Non-partitioned Library to a Partitioned Library" on page 533 **to partition the library.**

Note – After the HSC starts for the first time for a newly added SL8500 library, modify all LSMs online even though a partition may not have all the LSMs allocated/defined. For example:

MODIFY LSM *lsm-id* ONLINE

The Streamline library is now partitioned and is available for use. Start HSC as usual.

Convert a Non-partitioned Library to a Partitioned Library

This procedure converts an existing non-partitioned Library to a partitioned Library. For SL8500s, the ACS must contain only one SL8500.

After completing the following steps, you will create a partitioned Streamline library. At a later time, to remove any LSMs from this partition, use the "Remove an LSM from a Partition" on page 547.

1. **Stop activity for the ACS connected to the library.**

   In preparation for reconfiguring the partition, stop all CAP and tape activity (both real and virtual) from all active hosts in that library, including RTD tape processing. **Failure to do this will result in lost cartridges and errors on dismount.**

   Vary drives offline to ALL MSP hosts that will no longer have access to the drives. From the MSP console, issue the following command to see if the drives in the affected LSM are offline to MSP:

   D U,,,*xxx-yyy*

   where *xxx-yyy* is the drive ID or UCB range. If the drives are not offline to MSP, vary the drives offline with the MSP command:

   VARY *xxx-yyy* OFFLINE

   Additionally, any RTDs that reside on the affected LSM will need to be varied offline. To do this, issue the VTCS command:

   V RTD(*rtd_id*) OFF

2. **Issue the Display Cap command.**

   Issue the Display Cap command to verify the CAP is in manual status since this procedure does not go through the NCO process. If the CAP status is AUTOMATIC, issue the CAP Preference command to change the CAP to MANUAL:

   CAPP ***prefval cap-id*** MANUAL

3. **Vary the affected ACS offline to all hosts.**

   The ACS to be partitioned must be offline to **all** hosts. Issue the HSC command:

   VARY ACS ***acs-id*** OFFLINE

4. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKup utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

5. **Change the Streamline library configuration file to partition the ACS.**

   The internal configuration file in the Streamline library must be changed must be changed to partition the LSM, assign cell, drive, and CAP resources to that partition. This change is made through the SLConsole.

6. **Run the SET SLIDRIVS utility on the host group (optional).**

   If not all the drives need to be configured to the partitioned ACS, modify drives to the LSM of the ACS by running the SLUADMIN utility for SET SLIDRIVS.

   SET SLIDRIVS(*drv1*,*drv2*,*drv3*,,,,,,,,,,,,) + FORLSMID(*lsm-id*),FORPANEL(12)

7. **Modify the HSC LMUPATH parameter in PARMLIB.**

   Add the PARTID(00*n*) keyword to the LMUPATH HSC parameter in PARMLIB. The ID(*n*) is obtained from the SLConsole.

   Example:

   LMUPATH ACS(acs-id) LMUADDR(ip-address) PARTID(00n)

8. **Issue the HSC LMUPDEF command on all hosts.**

   To activate the modified LMUPATH statement, issue the HSC command:

   LMUPDEF DATASET(***dataset.name***)

9. **Vary the affected ACS online to all Hosts.**

   Issue the HSC command:

   VARY ACS ***acs-id*** ONLINE

   HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

   MODIFY LSM ***lsm-id*** ONLINE

   No additional mounts occur to the ACS until the ACS is varied online.

Note – Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.

---

10. **Vary drives ONLINE to MSP (if necessary).**

    From the MSP console, issue

    D U,,*xxx-yyy*

    where *xxx-yyy* is the drive ID range (both real and virtual), to see if the new drives are online to MSP. If they are not, bring the real drives online with the MSP command:

    VARY *xxx-yyy* ONLINE

11. **Vary RTDs ONLINE to VTCS (if necessary).**

    From the MSP console, issue

    V RTD(*rtd_id*) ON

    for the RTDs that reside on the LSMs being allocated.

12. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

    The ACS is now partitioned and available for use with all four LSMs in a single partition. If you are running multiple HSC hosts, the new configuration is propagated automatically to all hosts.

Convert a Partitioned Library to a Non-partitioned Library

This procedure converts an existing partitioned Library to a non-partitioned Library. For SL8500s, the ACS must contain only one SL8500, and all four LSMs are converted from partitioned to non-partitioned.

1. **Stop activity for the ACS connected to the library.**

   In preparation for reconfiguring the partition, stop all CAP and tape activity (both real and virtual) from all active hosts in that library, including RTD tape processing. **Failure to do this will result in lost cartridges and errors on dismount.**

   Vary drives offline to ALL MSP hosts that will no longer have access to the drives. From the MSP console, issue the following command to see if the drives in the affected LSM are offline to MSP:

   D U,,,*xxx-yyy*

   where *xxx-yyy* is the drive ID or UCB range. If the drives are not offline to MSP, vary the drives offline with the MSP command:

   VARY *xxx-yyy* OFFLINE

   Additionally, any RTDs that reside on the affected LSM will need to be varied offline. To do this, issue the VTCS command:

   V RTD(*rtd_id*) OFF

   Caution – Failure to perform this step may result in the devices being removed becoming allocated. This may cause severe operational consequences including loss of access for any cartridge mounted at the time of the non-partitioning.

   Note – If VTCS is involved, any RTDs moving out of the CDS of the host groups affected will require a VTCS CONFIG RESET to be run to remove the specific RTDs from the VTCS configuration.

   ---

2. **Run the Volume Report utility.**

   Run a volume report on the affected ACS(s) and keep the output. This data can be used later to verify where volumes were in the ACS(s) before it was removed.

   Note – Systems with VTCS should run an MVC report for cross reference purposes.

   ---

3. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKUP utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid the possibility of data loss.

4. **Vary all ACSs connected to the library OFFLINE to all host groups.**

   The ACS(s) to be un-partitioned must be offline to all hosts. Issue the HSC command:

   VARY ACS *acs-id* OFFLINE

5. **Change the Streamline library configuration file to unpartition the ACS.**

   The internal configuration file in must be changed to delete all partitions. This change is made through the SLConsole.

6. **Issue the HSC F CONFIG DELete ACS command.**

   To delete an ACS from an HSC host group, issue the HSC command as in the examples below:

   F CONFIG DELETE ACS(03)
   F CONFIG DELETE ACS(04)
   F CONFIG DELETE ACS(05)

Note –

- If running multiple HSC hosts, the new configuration will be propagated automatically to all hosts.
- Deleting an ACS deletes its volumes from the CDS.
- If this is the last ACS in the HSC host group, the following steps may apply. At this time, the HSC can be stopped.
  - Run a volume report on the affected ACS and keep the output. This data can be used later to verify where volumes were in the ACS before it was removed.
  - Eject all cartridges from the affected ACS.

7. **Run the SET SLIDRIVS utility on the remaining host group.**

   Add drives to the new LSM of the ACS by running the SLUADMIN utility or command for SET SLIDRIVS.

   SET SLIDRIVS(*drv1,drv2,drv3,,,,,,,,,,,,*) + FORLSMID(*lsm-id*),FORPANEL(12)

8. **Modify LMUPDEF in PARMLIB for all host groups.**

   Remove all the LMUPATH statements referencing the ACSs previously defined to all LMUPDEF HSC parameter files of all affected host groups. If a particular host group will have ownership of the library after it becomes un-partitioned, add or change the LMUPATH statement using the following example:

   LMUPATH ACS(03) LMUADDR(*ip-address*)

9. **Issue the HSC LMUPDEF command on all host groups.**

   To activate the modified HSC LMUPATH statement, issue the HSC command:

   LMUPDEF DATASET(*dataset.name*)

10. **Vary the ACS ONLINE to the remaining host group.**

    Issue the HSC command for the host group taking ownership of library:

    VARY ACS *acs-id* ONLINE

    The HSC retains the online/offline status of each pre-existing LSM. If the LSM does not modify online when the ACS is varied online, issue the HSC command:

    MODIFY LSM *lsm-id* ONLINE

    No additional mounts will occur to the ACS until the ACS is varied online. All other hosts will complete their configuration process when the ACS is varied online.

    Note – When an ACS is varied online, the panels are discovered to complete the configuration process. During this time, if any cartridges are discovered, an SLS4416E message will be displayed. It is important to follow the user response section of this message before proceeding to the next step. This section will instruct the user to perform the following step in the order listed:

    - Run the HSC SLUADMIN Audit utility with APPLY(NO) for the panels indicated to discover and resolve issues.
    - Run the HSC SLUADMIN Volume Report utility if necessary to gather volume information.
    - Run the HSC SLUADMIN Audit utility with APPLY(YES) to apply updates to the CDS.
    - Run the HSC SLUADMIN SET Utility specifying FREEZE OFF for any panels in the frozen state.

    Note – Virtual tape environments will be required to vary any RTDs online to VTCS.

    ---

11. **Vary drives ONLINE to MSP (if necessary).**

    From the MSP console, issue the following command to see if the new drives are online to MSP:

    D U,,,*xxx-yyy*

    where *xxx-yyy* is the drive ID range (both real and virtual). If they are not, bring the real drives online with the MSP command:

    VARY *xxx-yyy* ONLINE

12. **Vary RTDs ONLINE to VTCS (if necessary).**

    From the MSP console, issue

    V RTD(*rtd_id*) ON

    for the RTDs that reside on the LSMs being allocated.

13. **Run the HSC Scratch Update utility (if necessary).**

    Run the HSC Scratch Update utility.

This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been added to the configuration.

14. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

The ACS is now unpartitioned and available for use. If you are running multiple HSC hosts, the new configuration is propagated automatically to all hosts.

Removing a Partition (ACS) from the Library

Note – If this is the last ACS in the HSC host group, only Step 1 through Step 6 may apply. At this time, the HSC can be stopped.

This procedure removes a partition from an existing library.

1. **Stop activity for all ACSs connected to the library.**

   In preparation for removing a partition from the library, stop all CAP and tape activity (both real and virtual) from all active hosts, including RTD tape processing, in that ACS. **Failure to do so will result in lost cartridges and errors on dismount.**

   Vary drives (both real and virtual) offline to all MSP hosts that will no longer have access to the drives. From the MSP console, issue the following command to see if the drives in the affected ACS are offline to MSP:

   D U,,,*xxx-yyy*

   where *xxx-yyy* is the drive ID or UCB range. If not, vary the drives offline with the MSP command:

   VARY xxx-yyy OFFLINE

   Additionally, any RTDs that reside on the affected ACS will need to be varied offline. To do this, issue the VTCS command:

   V RTD(*rtd_id*) OFF

   Caution – Failure to perform this step may result in the devices being removed **becoming allocated.** This may cause severe operational consequences including loss of access for any cartridge mounted at the time of the partitioning.

   Note – Note: If VTCS is involved, any RTDs moving out of the CDS will require a VTCS CONFIG RESET to be run to remove the specific RTDs from the VTCS configuration.

   ---

2. **Run the** SET Freeze **utility to freeze affected LSMs.**

   To stop cartridges from migrating to the LSMs of the partition being removed, run the HSC SLUADMIN SET FREEZE utility for each LSM:

   SET FREEZE(ON) FORLSMID(*lsm-id*)

   Note – When an LSM is frozen, no new cell allocations will occur, however, any cartridge from the LSM that is currently mounted on a drive will return to its home cell.

   ---

3. **Run the Volume Report utility.**

   Run a volume report on the affected ACS and keep the output. This data can be used later to verify where volumes were in the ACS before it was removed.

Note – Systems with VTCS should run an MVC report for cross reference purposes.

---

4. **Eject cartridges out of the affected ACS (optional).**

   Eject all cartridges from the affected ACS.

5. **Vary the affected ACS OFFLINE to all hosts.**

   The ACS must be offline to all hosts within the groups using the ACS. Issue the HSC command:

   VARY ACS *acs-id* OFFLINE

6. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored if problems are encountered to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKUP utility to create the backup CDS copy.

Note – If VTCS is involved, ALL tape activity (real and virtual) must be stopped. All virtual tape drives must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and virtual tape drive processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

7. **Issue the HSC** F CONFIG DELete ACS **command.**

   To delete a partition(s) in an HSC Host Group, issue the HSC command as the examples below show:

   F CONFIG DELETE ACS(03)
   F CONFIG DELETE ACS(04)
   F CONFIG DELETE ACS(05)

Note –

- If running multiple HSC hosts, the new configuration will be propagated automatically to all hosts.
- **Deleting an ACS deletes its volumes from the CDS.**
- If the last allocated ACS is deleted, the HSC no longer has connections to any library and can be stopped. Step 8 through Step 10 can be ignored.

---

8. **Remove the** HSC LMUPATH **parameter in** PARMLIB**.**

   Remove the LMUPATH statements referencing the ACS previously defined to the LMUPDEF HSC parameter file of the affected host group.

9. **Issue the HSC** LMUPDEF **command on all hosts.**

   To refresh the modified HSC LMUPDEF parameter file within a host group, issue the HSC command to all hosts:

   LMUPDEF DATASET(dataset.name)

10. **Change the SL8500 configuration to remove the affected partition from the library (optional).**

    The internal configuration file in the SL8500 may be changed to remove the partition. This change happens through the SLConsole.

11. **Vary all ACSs connected to the library ONLINE to all hosts.**

    Issue the HSC command:

    VARY ACS *acs-id* ONLINE

    The HSC retains the online/offline status of each pre-existing LSM. If the LSM is not modified online when the ACS is varied online, issue the HSC command:

    MODIFY LSM *lsm-id* ONLINE

    No additional mounts will occur to the ACS until the ACS is varied online. All other hosts will complete their configuration process when the ACS is varied online.

12. **Vary drives ONLINE to MSP (if necessary).**

    From the MSP console, issue the following command to see if the new drives are online to MSP:

    D U,,,*xxx-yyy*

    where *xxx-yyy* is the drive ID range (both real and virtual). If they are not, bring the real drives online with the MSP command:

    VARY *xxx-yyy* ONLINE

13. **Vary RTDs ONLINE to VTCS (if necessary).**

    From the MSP console, issue:

    V RTD(*rtd_id*) ON

    for the RTDs that reside on the LSMs being allocated.

    Note – Virtual tape environments will be required to vary any RTDs online to VTCS. Additionally, any virtual tape drives varied offline will need to be varied online to MSP.

    ---

14. **Re-synchronize the SMC.**

    Issue the SMC RESYNCHRONIZE command.

    The partition is removed from the library, and the remaining library resources are available for use.

Adding a Partition (ACS) to the Library

This procedure adds a partition to the library for either an existing or new configuration.

After completing the following steps, a partitioned SL8500 with up to four partitions may be created. At a later time, remove any partitions from this library using "Removing a Partition (ACS) from the Library" on page 540.

If you are adding more partitions as ACSs than what currently exist, the FUTRACS parameter in the SLILIBRY macro must be coded in the LIBGEN with enough ACSs to accommodate the total number of partitions being accessed within a SL8500 library.

1. **Stop activity for all ACSs connected to the library.**

   In preparation for adding a partition to the library, stop all CAP and tape activity (both real and virtual) from all active hosts, including RTD tape processing, in that **ACS. Failure to do so will result in lost cartridges and errors on dismount.**

   Vary drives (both real and virtual) offline to all MSP hosts that will no longer have access to the drives. From the MSP console, issue:

   D U,,*xxx-yyy*

   where *xxx-yyy* is the drive ID or UCB range. If not, vary the drives offline with the MSP command:

   VARY xxx-yyy OFFLINE

   Additionally, any RTDs that reside on the affected ACS will need to be varied offline. To do this, issue the VTCS command:

   V RTD(*rtd_id*) OFF

   Note –

   - This step is necessary if you are adding partitions other than the first time.
   - If VTCS is involved, any RTDs moving out of the CDS will require a VTCS CONFIG RESET to be run to remove the specific RTDs from the VTCS Configuration.

   ---

2. **Vary all ACSs connected to the library OFFLINE to all hosts.**

   ALL ACSs connected to the library must be offline to all hosts. Issue the HSC command:

   VARY ACS *acs-id* OFFLINE

3. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored if problems are encountered to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKUP utility to create the backup CDS copy.

   Note –

   - This step is necessary if you are adding partitions other than the first time.
   - If VTCS is involved, ALL tape activity (real and virtual) must be stopped. All virtual tape drives must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and virtual tape drive processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

   ---

4. **Change the SL8500 configuration to add the partition and assign LSMs to the partition.**

   The internal configuration file in the SL8500 must be changed to show the newly added partition(s) to a library. This change is made through the SLConsole.

   Note – If scratch volumes exist, update and reload POOLPARM/VOLPARM **and** TAPEREQ **PARMLIB members accordingly. This must be done prior to executing** Step 5**.**

   ---

5. **Issue the HSC** F CONFIG ADD ACSType **command (optional).**

   If you are adding more partitions as ACSs to an HSC Complex than currently exist, issue the HSC command as in the example below:

   F CONFIG ADD ACST(SL8500)

6. **Change or add the HSC** LMUPATH **parameter in** PARMLIB**.**

   If an LMUPATH statement was defined for an SL8500 using "Start from Scratch – LIBGEN, SLICREAT" on page 532, change the HSC LMUPATH statement to add the PARTID keyword in LMUPDEF in PARMLIB. Verify the partition ID defined from the SLConsole is the same as the PARTID in the HSC LMUPDEF. For a new partition, add an HSC LMUPATH statement in LMUPDEF in PARMLIB.

   Example:

   LMUPATH ACS(*acs-id*) LMUADDR(*ip-address*) PARTID(*nnn*)

7. **Issue the HSC** LMUPDEF **command on all hosts.**

   To activate the modified HSC LMUPATH statement, issue the HSC command:

   LMUPDEF DATASET(dataset.name)

8. **Run the** SET SLIDRIVS **utility (match CDS drive configuration to the library).**

   Add drives to the LSM(s) of an added ACS by running the SLUADMIN utility or command for SET SLIDRIVS for each LSM assigned to the partition.

   SET SLIDRIVS(*drv1,drv2,drv3*,,,,,,,,,,,,) +

   FORLSMID(*lsm-id*),FORPANEL(01)

   Note – If VTCS is involved, any RTDs moving into the CDS will require a VTCS CONFIG RESET to be run to add the specific RTDs to the VTCS configuration.

   ---

9. **Vary all ACSs connected to the library ONLINE to all hosts.**

   Issue the HSC command:

   VARY ACS *acs-id* ONLINE

   The HSC retains the online/offline status of each pre-existing LSM. If the LSM is not modified online when the ACS is varied online, issue the HSC command:

   MODIFY LSM *lsm-id* ONLINE

   No additional mounts will occur to the ACS until the ACS is varied online. All other hosts will complete their configuration process when the ACS is varied online.

10. **Run the** SET Freeze **utility to un-freeze the affected LSMs.**

    To allow you to use all cartridge cells, run the SET FREEZE utility for each LSM:

    SET FREEZE(OFF) FORLSMID(*lsm-id*)

11. **Run the HSC** AUDIt **utility.**

    Run the HSC AUDIt utility against all LSMs in the ACS.

    This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been allocated to the configuration.

    Follow company standard procedures for any cartridges found in the newly allocated LSM.

12. **Run the HSC Scratch Update utility (if necessary).**

    Run an HSC Scratch Update utility.

    This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been added to the configuration.

13. **Vary drives ONLINE to MSP (if necessary).**

    From the MSP console, issue the following command to see if the new drives are online to MSP:

    D U,,,*xxx-yyy*

    where *xxx-yyy* is the drive ID range (both real and virtual). If they are not, bring the real drives online with the MSP command:

    VARY *xxx-yyy* ONLINE

14. **Vary RTDs ONLINE to VTCS (if necessary).**

    From the MSP console, issue:

    ```
    V RTD(rtd_id) ON
    ```

    for the RTDs that reside on the LSMs being allocated.

Note –

- Virtual tape environments will be required to vary any RTDs online to VTCS. Additionally, any virtual tape drives varied offline will need to be varied online to MSP.
- Prior to performing this step, ensure that SET SLIDRIVS (Step 8) is performed so that the CDS drive configuration matches EXACTLY to the new drive configuration on the SL8500 library.

---

15. **Re-synchronize the SMC.**

    To add drives for the SMC, issue the SMC RESYNCHRONIZE command.

    The partition is now added to the library and is available for use. If running multiple HSC hosts, the new configuration will be propagated automatically to all hosts.

Remove an LSM from a Partition

This procedure removes an LSM from an existing partition.

Note – To remove all LSMs from a partition, the ACS cannot be deleted without a LIBGEN/MergeCDS. If HSC is recycled, the ACS attempts to come online, fails, and goes into recovery. After a time-out, it remains offline. HSC continues to initialize even with this failure. To delete the last LSM in a partitioned ACS, use the "Remove the Last LSM from an ACS Partition" on page 553.

Also, to move an LSM from one partition to another and to **retain volume history** (usage counts, encryption state, etc.), use the "Move the Last Allocated LSM to Another ACS Partition" on page 557.

1. **Stop activity for drives in the affected ACS.**

   In preparation for reconfiguring the partition, stop all tape activity (both real and virtual) from all active hosts, including RTD tape processing, in that ACS. **Failure to do so results in lost cartridges and errors on dismount.**

   Vary drives (both real and virtual) offline to **all** MSP hosts that will no longer have access to the drives. From the MSP console, issue

   D U,,,***xxx-yyy***

   where *xxx-yyy* is the drive ID or UCB range, to see if the drives in the affected LSM are offline to MSP. If not, vary the drives offline with the MSP command:

   VARY ***xxx-yyy*** OFFLINE

   Additionally, any RTDs that reside on the affected LSM need to be varied offline. To do this, issue the VTCS command:

   V RTD(***rtd_id***) OFF

Caution – Failure to perform this step may result in the devices being removed becoming allocated. This may cause severe operational consequences including loss of access for any cartridge mounted at the time of the partitioning.

---

2. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKUP utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

3. **Run the SET Freeze utility to freeze affected LSM.**

   To stop cartridges from migrating to the LSM to be unallocated, run the SET FREEZE utility:

   SET FREEZE(ON) FORLSMID(***lsm-id***)

Note – When an LSM is frozen, no new cell allocations occur, however, any cartridge from the LSM that is currently mounted on a drive returns to its home cell.

---

4. **Run the Volume Report utility.**

   Run a volume report on the affected LSM and keep the output. This data can be used later to verify which volumes were in the LSM before it was unallocated.

Note – Systems with VTCS should run an MVC report for cross reference purposes.

---

5. **Move cartridges out of the affected LSM.**

   Move all cartridges from the affected LSM to other online LSMs within the same partition. Use LCM, the HSC MOVe command, or the HSC MOVe utility. If cartridges are not to remain under library control, they can be ejected.

   Do not enter the library and physically remove the cartridges; use the HSC MOVe command or utility or use LCM to clear the LSM. This ensures the CDS is properly updated.

Note – If the cartridges are not moved out of the LSM prior to removing the LSM from the configuration, the volume history in the CDS is deleted when the configuration change is completed. To retain the volume history when the LSM is moved to a different partition, use the "Move the Last Allocated LSM to Another ACS Partition" procedure shown on page 414.

---

6. **Vary the affected ACS offline to all host groups.**

   The ACS must be offline to **all** host groups. Issue the HSC command:

   VARY ACS ***acs-id*** OFFLINE

7. **Run the SET SLIDRIVS utility (match CDS drive configuration to the library).**

   Remove drives from the HSC for the affected LSM by running the SLUADMIN utility or command for SET SLIDRIVS.

   SET SLIDRIVS(,,,,,,,,,,,,,,,) +
   FORLSMID(***lsm_id***),FORPANEL(01)

Note –

- If the drives are not removed prior to removing the LSM from the ACS, the drives displays a type of "unknown."
- If VTCS is involved, any RTDs moving out of the CDS require a VTCS CONFIG RESET to be run to remove the specific RTDs out of the VTCS configuration.

---

8. **Change the Streamline library configuration file to remove the affected LSM from the partition.**

   The internal configuration file in the Streamline library must be changed to unallocate the LSM. This change is made through the SLConsole.

9. **Vary the affected ACS online to all host groups.**

   Issue the HSC command:

   VARY ACS ***acs-id*** ONLINE

   HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

   MODIFY LSM ***lsm-id*** ONLINE

   No additional mounts occur to the ACS until the ACS is varied online. All other hosts complete their configuration process when the ACS is varied online.

Note –

- Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.
- Prior to performing this step, ensure that SET SLIDRIVS (Step 7) is performed so that the CDS drive configuration matches EXACTLY to the new drive configuration on the Streamline library. Since this partitioning process involves unallocating an LSM and removing all associated drives from the configuration, the SET SLIDRIVS statement should look as follows:

SET SLIDRIVS(,,,,,,,,,,,,,,,) +
FORLSMID(***lsm_id***),FORPANEL(01)

10. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

The LSM is removed from the configuration, and the remaining LSMs are available for use. If running multiple HSC hosts, the new configuration is propagated automatically to all hosts.

Add an LSM to a Partition

This procedure adds an LSM to a partition. It assumes the SL8500 is already partitioned and an additional LSM is being added to that partition.

If the ACS is not partitioned, use the "Convert a Non-partitioned Library to a Partitioned Library" on page 533 to make it partitioned.

Note – If the SL8500 to be partitioned is not part of the CDS, it cannot be dynamically added. A LIBGEN/MERGEcds must be performed.

To retain volume history, use the"Move the Last Allocated LSM to Another ACS Partition" on page 557.

1. **Stop activity for drives in the affected ACS.**

   In preparation for reconfiguring the partition, stop all tape activity (both real and virtual) from all active hosts, including RTD tape processing, in that ACS. **Failure to do so results in lost cartridges and errors on dismount.**

   Vary drives (both real and virtual) offline to **all** MSP hosts that will no longer have access to the drives. From the MSP console, issue

   D U,,,***xxx-yyy***

   where *xxx-yyy* is the drive ID or UCB range, to see if the drives in the affected LSM are offline to MSP. If not, vary the drives offline with the MSP command:

   VARY ***xxx-yyy*** OFFLINE

   Additionally, any RTDs that reside on the affected LSM need to be varied offline. To do this, issue the VTCS command:

   V RTD(***rtd_id***) OFF

Caution – Failure to perform this step may result in the devices being removed becoming allocated. This may cause severe operational consequences including loss of access for any cartridge mounted at the time of the partitioning.

---

2. **Back up the CDS.**

   Before making changes to the CDS, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKUP utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped.** All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

3. **Ensure the new LSM is available.**

   The LSM being allocated may have been owned at one time by another host system (ACSLS, another HSC, etc.). Verify the LSM obtained has been properly cleared and processed.

   Run the"Remove an LSM from a Partition" on page 547 and remove all cartridges.

4. **Vary the affected ACS offline to all host groups.**

   The ACS must be offline to **all** host groups. Issue the HSC command:

   VARY ACS ***acs-id*** OFFLINE

5. **Change the SL8500 configuration file to add the LSM to the partition.**

   The internal configuration file in the SL8500 must be changed to show that the newly added LSM(s) is assigned to a partition ID. This change is made through the SLConsole. Verify the PARTID from the SLConsole is the same as the PARTID in the HSC LMUPDEF.

6. **Run the SET SLIDRIVS utility (match the CDS drive configuration to the library).**

   Add drives to the new LSM by running the SLUADMIN utility or command for SET SLIDRIVS.

   SET SLIDRIVS(drv1,drv2,drv3,,,,,,,,,,,,) +
   FORLSMID(***lsm_id***),FORPANEL(01)

Note – If VTCS is involved, any RTDs moving into the CDS require a VTCS CONFIG RESET to be run to add the specific RTDs to the VTCS configuration.

---

7. **Vary the affected ACS online to all host groups.**

   Issue the HSC command:

   VARY ACS ***acs-id*** ONLINE

   The HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

   MODIFY LSM ***lsm-id*** ONLINE

   No additional mounts occur to the ACS until the ACS is varied online.

   All other hosts complete their configuration process when the ACS is varied online.

Note –

- Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.
- Prior to performing this step, ensure that SET SLIDRIVS (Step 6 in this procedure) is performed so that the CDS drive configuration matches EXACTLY to the new drive configuration on the SL8500 library.

8. **Run the SET Freeze utility to un-freeze the affected LSM.**

   To allow you to use all cartridge cells, run the SET FREEZE utility:

   SET FREEZE(OFF) FORLSMID(***lsm-id***)

9. **Run the HSC AUDIt utility.**

   Run the HSC AUDIt utility against all LSMs in the ACS.

   This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been allocated to the configuration.

   Follow company standard procedures for any cartridges found in the newly allocated LSM.

10. **Run the HSC Scratch Update utility (if necessary).**

    Run the HSC Scratch Update utility.

    This step may be bypassed if no volumes have been added, deleted, or moved.

11. **Vary drives online to MSP (if necessary).**

    From the MSP console, issue

    D U,,,xxx-yyy

    where *xxx-yyy* is the drive ID range (both real and virtual), to see if the new drives are online to MSP. If they are not, bring them online with the MSP command:

    VARY xxx-yyy ONLINE

12. **Vary RTDs online to VTCS (if necessary).**

    From the MSP console, issue

    V RTD(***rtd_id***) ON

    for the RTDs that reside on the LSMs being allocated.

13. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

The LSM is now added to the configuration and is available for use. If running multiple HSC hosts, the new configuration is propagated automatically to all hosts.

Remove the Last LSM from an ACS Partition

Normally, use the "Remove an LSM from a Partition" on page 547 procedure shown on page 401 to remove an LSM from a partitioned ACS. If you are attempting to remove the last LSM from an ACS, HSC will no longer be able to communicate with that ACS. Therefore, use this procedure to remove the last LSM from the CDS.

FIGURE 13-2 on page 556 shows the procedure described below.

Note – This set of procedures is disruptive, since it requires a LIBGEN/MERGEcds and cannot be done dynamically using Near Continuous Operation (NCO). If the ACS removing its last LSM is the only ACS in that CDS, steps pertaining to a separate LIBGEN (steps 1 through 8) do not need to be performed.

---

1. **Stop activity for drives in the affected ACS.**

   In preparation for reconfiguring the partition, stop all tape activity (both real and virtual) from all active hosts in that ACS, including RTD tape processing. **Failure to do this results in lost cartridges and errors on dismount**.

   Vary drives offline to **all** MSP hosts that will no longer have access to the drives. From the MSP console, issue

   D U,,,xxx-yyy

   where *xxx-yyy* is the drive ID or UCB range, to see if the drives in the affected LSM are offline to MSP. If not, vary the drives offline with the MSP command:

   VARY ***xxx-yyy*** OFFLINE

   Additionally, any RTDs that reside on the affected LSM need to be varied offline. To do this, issue the VTCS command:

   V RTD(***rtd_id***) OFF

Caution – Failure to perform this step may result in the devices that are being removed becoming allocated. This may cause severe operational consequences including loss of access for any cartridge mounted at the time of the partitioning.

---

2. **Back up the CDS containing the LSM to be unallocated (CDS01).**

   Before running a MERGEcds utility, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKup utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped.** All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

3. **Use SLICREAT to create a new CDS (CDS03).**

   Use SLICREAT to create a new CDS identical to CDS01, except the ACS containing the last LSM to be unallocated is not in the SLICREAT.

Note – If virtual tape is being implemented, VTCS CONFIG must be run to define a virtual tape configuration to the new (CDS03).

---

4. **Stop all Active HSC(s) for hosts connected to CDS01.**

   Stop all active HSC(s) for the partition where the last LSM is being unallocated. Normal tape activity must cease until the new CDS is available.

5. **Remove the HSC LMUPATH parameter in PARMLIB.**

   Remove the HSC LMUPATH parameter in PARMLIB for the ACS being removed.

6. **Start Single HSC pointing to new CDS (CDS03) using BASE mode.**

   Start HSC for the partition where the last LSM is being unallocated. HSC must be started at the BASE service level to run MERGECDS. This can be accomplished by adding the HSC command

   ```
   START HSC,PRM='BASE'
   ```

   to the HSC start up PARMLIB member.

7. **Run MERGEcds.**

   Input is CDS01. Output is the CDS (CDS03) minus the ACS containing the last LSM. The example below shows going from three ACSs to two ACSs with ACS 01 being removed.

```
//jobcard
//STEP1 EXEC PGM=SLUADMIN,PARM='MIXED'
//STEPLIB DD DISP=SHR,DSN=dataset.name
//*
//SLSPRINT DD SYSOUT=*
//*
//SLSFCNTL DD DSN=CDS01.primary,DISP=SHR
//*
//SLSIN DD *
MERGECDS
//SLSMERGE DD *
MERGE FACS(00) TACS(00)
MERGE FACS(02) TACS(01)
/*
//
```

8. **Set the Service Level to full.**

   Set the service level to full for HSC pointing to the new CDS (CDS03). Issue the HSC command:

   ```
   SRVLEV FULL
   ```

9. **Start the remaining HSC(s) using CDS03.**

   All HSCs should successfully initialize using the updated configuration.

Note – From the HSC perspective for this host group, the procedure is complete. From a library perspective, to restore the LSM to an unallocated state, perform the remaining steps.

---

10. **Vary the affected ACS offline to all host groups.**

    The ACS containing the LSM to be unallocated must be offline to **all** host groups. Issue the HSC command:

    VARY ACS ***acs-id*** OFFLINE

11. **Change the Streamline library configuration file using CDS03 (with LSM unallocated).**

    The internal configuration file in the SL8500 must be changed to unallocate the LSM. This change is made through the SLConsole.

12. **Vary the affected ACS online to all host groups.**

    Issue the HSC command:

    VARY ACS ***acs-id*** ONLINE

    HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

    MODIFY LSM ***lsm-id*** ONLINE

    No additional mounts occur to the ACS until the ACS is varied online.

    All other hosts complete their configuration process when the ACS is varied online.

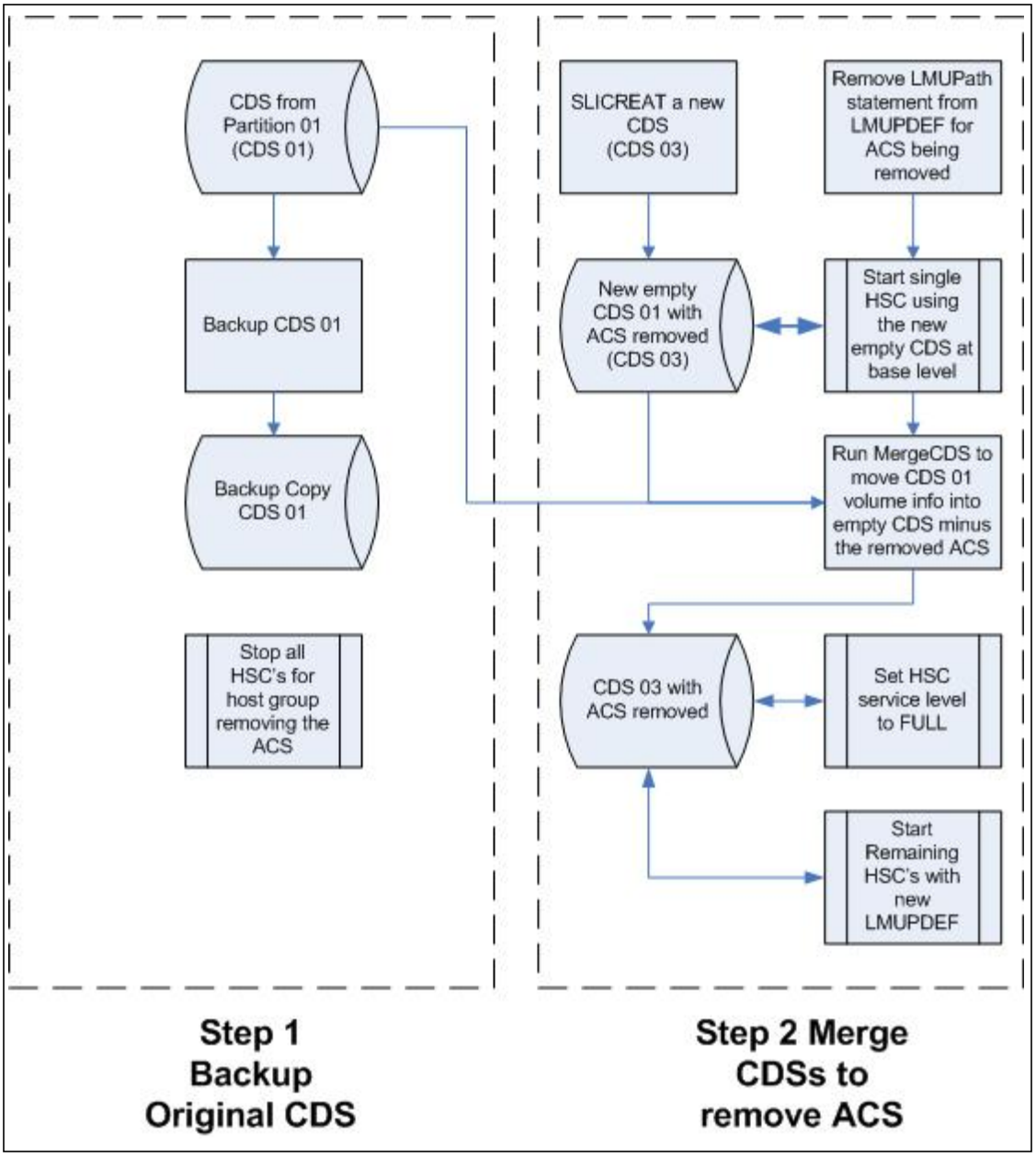
Note – Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.

---

13. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

If you are running multiple HSC hosts, the new configuration is propagated automatically to all hosts.



UNSUPPORTED PARAGRAPH FORMAT REQUIRES MANUAL MARKUP

FIGURE 13-2 Process Flow to Remove the Last LSM in an ACS

Move the Last Allocated LSM to Another ACS Partition

This procedure moves the last allocated LSM to another partitioned ACS and preserves the history of the LSM volumes being added. FIGURE 13-3 on page 560 shows the procedure described below.

Note – This set of procedures is disruptive since it requires a LIBGEN/MERGEcds and cannot be done using Near Continuous Operation (NCO).

---

1. **Complete steps 1 through 10 in the** "Remove the Last LSM from an ACS Partition" on page 553**.**

   To remove all LSMs from a partitioned ACS, including the last LSM, follow steps 1 through 10 in the same procedure.

2. **Back up the CDS that will receive the LSM (CDS02).**

   Before running a MERGEcds, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKup utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

3. **Run MERGEcds again.**

   Input is CDS01. Output is an updated CDS (CDS02). This example moves the LSM 03 volume history from ACS 00 (CDS01) to LSM 03 in ACS 01 (CDS02).

```
//jobcard
//STEP1 EXEC PGM=SLUADMIN,PARM='MIXED'
//STEPLIB DD DISP=SHR,DSN=dataset.name
//*
//SLSPRINT DD SYSOUT=*
//*
//SLSFCNTL DD DSN=CDS01.primary,DISP=SHR
//*
//SLSIN DD *
MERGECDS
//SLSMERGE DD *
MERGE FLSM(00:03) TLSM(01:03)
/*
//
```

4. **Run the SET SLIDRIVS utility (match the CDS drive configuration to the library).**

   Add drives to the new LSM by running the SLUADMIN utility or command for SET SLIDRIVS.

   SET SLIDRIVS(drv1,drv2,drv3,,,,,,,,,,,,) +
   FORLSMID(***lsm_id***),FORPANEL(01)

   Note – If VTCS is involved, any RTDs moving into the CDS require a VTCS CONFIG RESET to be run to add the specific RTDs to the VTCS configuration.

   ---

5. **Change the SL8500 Configuration file using CDS02 (with the new LSM added).**

   The internal configuration file in the SL8500 must be changed to move the LSM from one partition to another. This change is made through the SLConsole.

6. **Vary the affected ACS online to all host groups.**

   Issue the HSC command:

   VARY ACS ***acs-id*** ONLINE

   The HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

   MODIFY LSM ***lsm-id*** ONLINE

   No additional mounts occur to the ACS until the ACS is varied online. All other hosts complete their configuration process when the ACS is varied online.

   Note – Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.

   ---

7. **Run the HSC Scratch Update utility (if necessary).**

   Run a HSC Scratch Update utility.

   This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been added to the configuration.

8. **Run the SET Freeze utility to un-freeze the added LSM.**

   To allow you to use all cartridge cells, run the SET FREEZE utility:

   SET FREEZE(OFF) FORLSMID(***lsm-id***)

9. **Vary drives online to MSP (if necessary).**

   From the MSP console, issue

   D U,,,***xxx-yyy***

   where *xxx-yyy* is the drive ID range (both real and virtual), to see if the new drives are online to MSP. If they are not, bring them online with the MSP command:

   VARY ***xxx-yyy*** ONLINE

10. **Vary RTDs online to VTCS (if necessary).**

    From the MSP console, issue

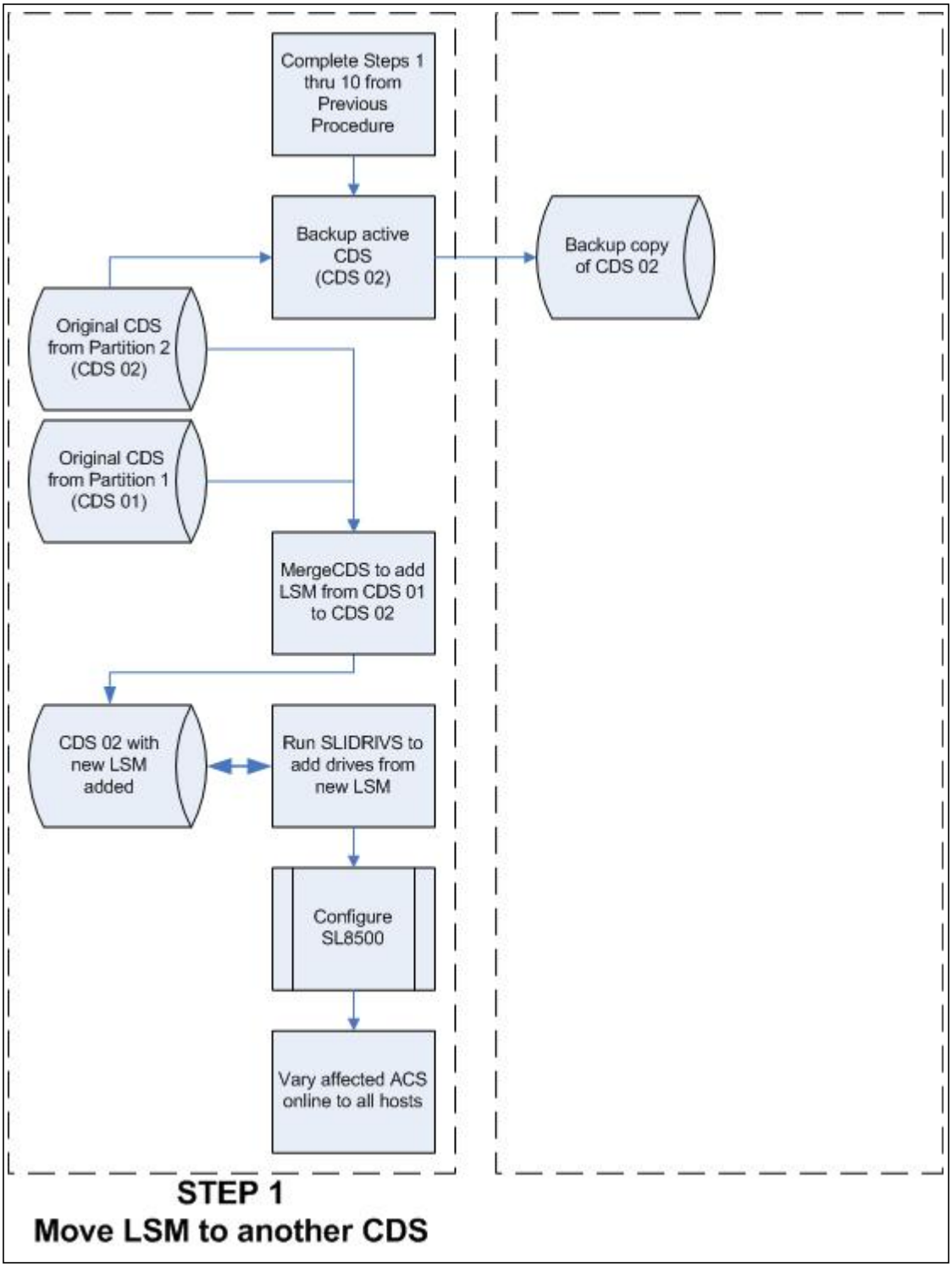
    V RTD(***rtd_id***) ON

    for the RTDs that reside on the LSMs being allocated.

11. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors, issue the SMC RESYNCHRONIZE command.

If you are running multiple HSC hosts, the new configuration is propagated automatically to all hosts.



UNSUPPORTED PARAGRAPH FORMAT REQUIRES MANUAL MARKUP

FIGURE 13-3 Process Flow to Move the Last LSM to Another ACS Partition

Move an Allocated LSM to another ACS Partition

This procedure moves an allocated LSM to another partitioned ACS and preserves the history of the LSM volumes being allocated. FIGURE 13-4 on page 564 shows the procedure described below.

Note – This set of procedures is disruptive as it requires a LIBGEN/MERGEcds and cannot be done using Near Continuous Operation (NCO).

---

1. **Stop activity for drives in the affected ACS.**

   In preparation for reconfiguring the partition, you must stop all tape activity (both real and virtual), from all active hosts, including virtual tape processing, in that ACS. **Failure to do this results in lost cartridges and errors on dismount.**

   Vary drives offline to **all** MSP hosts that will no longer have access to the drives. From the MSP console, issue

   D U,,*xxx-yyy*

   where *xxx-yyy* is the drive ID or UCB range, to see if the drives in the affected LSM are offline to MSP. If they are not, bring them offline with the MSP command:

   VARY *xxx-yyy* OFFLINE

   Additionally, any RTDs that reside on the affected LSM need to be varied offline. To do this, issue the VTCS command:

   V RTD(*rtd_id*) OFF

Note – Failure to perform this step to vary these drives offline from MSP results in these devices becoming allocated while removing the LSM from the partition. This may cause severe operational consequences including loss of access for any cartridge that was mounted at the time of the partitioning.

---

2. **Vary the affected ACS offline to all host groups.**

   The ACS must be offline to **all** host groups. Issue the HSC command:

   VARY ACS *acs-id* OFFLINE

3. **Back up the CDS containing the LSM to be unallocated (CDS01).**

   Before running a MERGEcds, it is best practice to create a backup copy for recovery purposes. This backup copy can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKup utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

4. **Backup all CDSs with partitions connected to the SL8500.**

   Before running a MERGEcds, it is best practice to create backup copies of the remaining CDSs for recovery purposes. These backup copies can be restored, if problems are encountered, to recover to a known CDS state using documented HSC recovery procedures.

   Use the HSC BACKup utility to create the backup CDS copy.

Note – If VTCS is involved, **all tape activity (real and virtual) must be stopped**. All VTDs must be varied offline to MSP. All RTDs defined in the VTCS configuration must be varied offline to VTCS. It is highly recommended that all initiators be drained that feed both real and VTD processing. NCS and VTCS must be in an idle state prior to creating the backup copy of the CDS to avoid possibility of data loss.

---

5. **Run the MERGEcds utility.**

   Input is CDS01. Output is an updated CDS (CDS02). This example moves the LSM volume history from LSM 00 in ACS 00 (CDS01) to LSM 00 in ACS 01 (CDS02).

```
//jobcard
//STEP1 EXEC PGM=SLUADMIN,PARM='MIXED'
//STEPLIB DD DISP=SHR,DSN=dataset.name
//*
//SLSPRINT DD SYSOUT=*
//*
//SLSFCNTL DD DSN=CDS01.primary,DISP=SHR
//*
//SLSIN DD *
MERGECDS
//SLSMERGE DD *
MERGE FLSM(00:00) TLSM(01:00)
/*
//
```

6. **Run the SET SLIDRIVS utility (match the CDS drive configuration to the library).**

   Add drives to the new LSM by running the SLUADMIN utility or command for SET SLIDRIVS.

```
SET SLIDRIVS(drv1,drv2,drv3,,,,,,,,,,,,) +
FORLSMID(lsm_id),FORPANEL(01)
```

Note – If VTCS is involved, any RTDs moving into the CDS require a VTCS CONFIG RESET to be run to add the specific RTDs to the VTCS configuration.

---

7. **Change the SL8500 configuration file to move the LSM.**

   The internal configuration file in the SL8500 must be changed to move the LSM from one partition to another. This change is made through the SLConsole.

8. **Vary the affected ACS online to all host groups.**

   Issue the HSC command:

   VARY ACS ***acs-id*** ONLINE

   HSC retains the online/offline status of each pre-existing LSM. If the LSMs do not modify online when the ACS is varied online, issue the HSC command:

   MODIFY LSM ***lsm-id*** ONLINE

   No additional mounts occur to the ACS until the ACS is varied online.

   All other hosts complete their configuration process when the ACS is varied online.

Note – Virtual tape environments are required to vary any RTDs online to VTCS. Additionally, any VTDs varied offline need to be varied online to MSP.

---

9. **Run the HSC Scratch Update utility (if necessary).**

   Run a HSC Scratch Update utility.

   This step may be bypassed if no volumes have been added, deleted, or moved. It must be run if new LSMs have been added to the configuration.

10. **Run the SET Freeze utility to un-freeze the added LSM.**

    To allow you to use all cartridge cells, run the SET FREEZE utility:

    SET FREEZE(OFF) FORLSMID(***lsm-id)***

11. **Vary drives online to MSP (if necessary).**

    From the MSP console, issue

    D U,,,xxx-yyy

    where *xxx-yyy* is the drive ID range (both real and virtual), to see if the new drives are online to MSP. If they are not, bring them online with the MSP command:

    VARY ***xxx-yyy*** ONLINE

12. **Vary RTDs online to VTCS (if necessary).**

    From the MSP console, issue

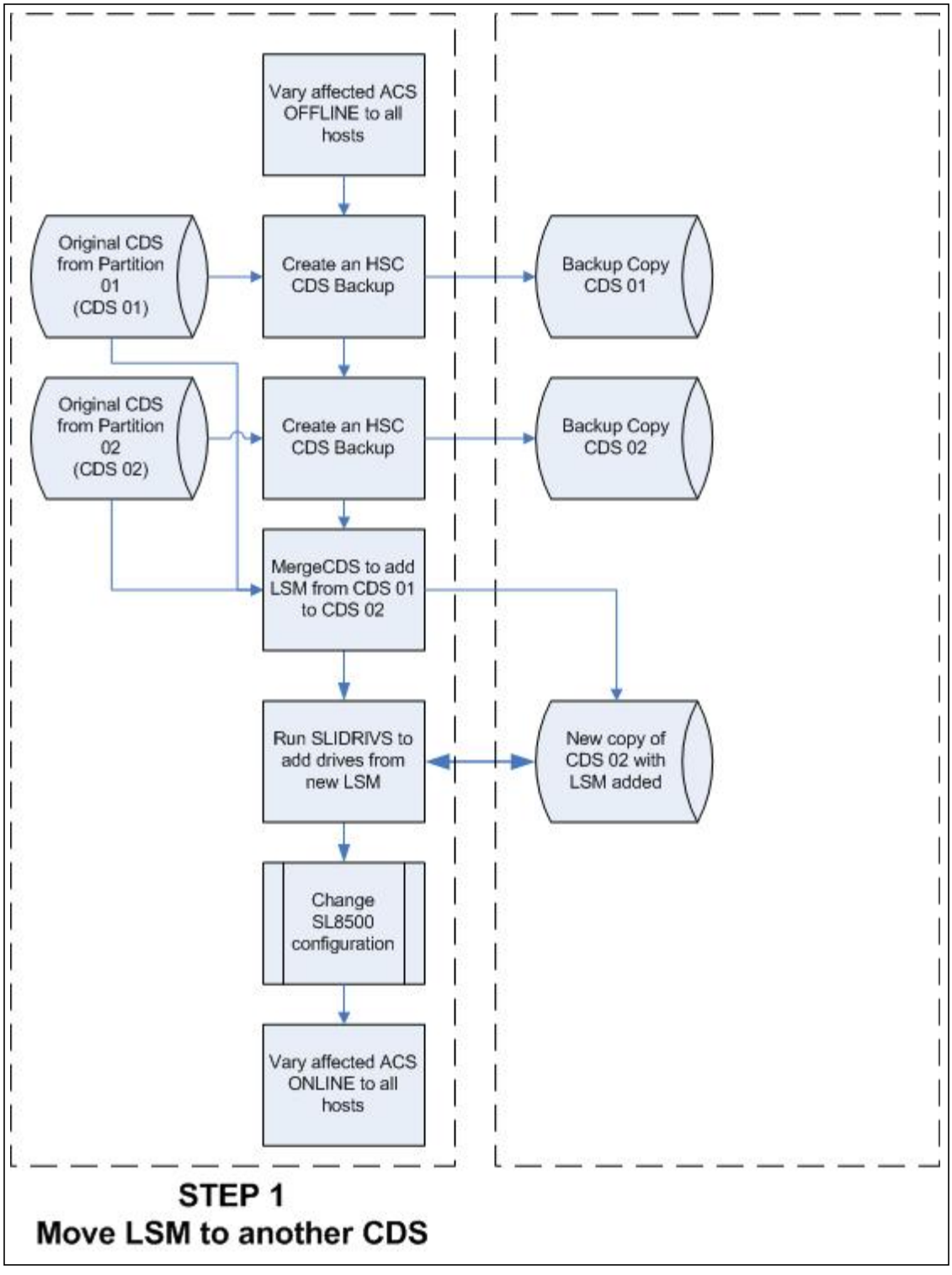
    V RTD(***rtd_id***) ON

    for the RTDs that reside on the LSMs being allocated.

13. **Re-establish connections to all defined libraries (if necessary).**

    Re-establish connections to all defined libraries to acquire drive configuration information from these libraries. To re-drive any outstanding mounts that may have been lost due to hardware or communication errors issue the SMC RESYNCHRONIZE command.

If running multiple HSC hosts, the new configuration is propagated automatically to all hosts.



UNSUPPORTED PARAGRAPH FORMAT REQUIRES MANUAL MARKUP

FIGURE 13-4 Process Flow to Move an Allocated LSM to Another ACS Partition

Error Recovery

Deviation from the preceding procedures can result in unpredictable behavior. Although the Streamline library partitioning process uses Near Continuous Operation (NCO) to minimize or eliminate down time, failure to follow these procedures may result in unplanned down time.

The recommended procedure to recover from errors and to return the configuration to what it was before the partitioning attempt is to restore the CDS using the RESTore utility and perform an audit using the AUDIt utility to ensure the CDS matches the library. Once the cause of the problem is determined and fixed, start the procedures again.

Volumes physically remaining in an LSM that is being unallocated from the CDS are logically deleted unless it is the last LSM.

Message Changes

The following new and changed error messages have been added to support partitioning. Refer to the HSC Messages and Codes Guide to see these messages.

- new messages:
  - SLS0073I
  - SLS0695I
  - SLS4232I
  - SLS4412I
  - SLS4413I
  - SLS4463I
- updated messages:
  - SLS0653I
  - SLS0663I
  - SLS1000I
  - SLS2008I
  - SLS4401I
  - SLS4407I
  - SLS4610I

LMUPATH Control Statement

The LMUPATH control statement has been updated to include the PARTID parameter, which defines a partition ID for each ACS. Refer to*ELS Command, Control Statement, and Utility Reference* for more information.

SET FREEZE Utility

The SET FREEZE utility has been modified to allow you to freeze an entire LSM at once, instead of being required to issue separate SET FREEZE statements for each panel in an LSM. Refer to*ELS Command, Control Statement, and Utility Reference* for more information

Display Command

Display command output has been updated to include partitioning for the following subcommands:

-
- Display ACS
- Display LSM
- Display CAP
- Display Exceptions

Refer to the *ELS Command, Control Statement, and Utility Reference* for detailed information.

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