StorageTek™ Nearline Control Solution (NCS)

MVS software

SMC • HSC • HTTP Server • MVS/CSC • LibraryStation™

Installation Guide

Part Number: 312596802
Revision: C
Version: 6.1

StorageTek™
Nearline Control Solution

SMC • MVS/HSC • HTTP Server • MVS/CSC • LibraryStation

Installation Guide

Release 6.1

312596802

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What's New with This Release?

NCS Release 6.1 provides support for:

- SMC Release 6.1
- HSC Release 6.1
- MVS/CSC Release 6.1
- LibraryStation Release 6.1

What's New with SMC Release 6.1?

SMC 6.1 includes the following enhancements and modifications:

Enhancement/Modification	Publication(s)/ Primary Locations
The SMC TAPEREQ control statement replaces the HSC and CSC TAPEREQ control statement.	***SMC Configuration and Administration Guide*** *Chapter 7* *Appendix B*
The SMC TREQDEF operator command replaces the HSC and MVS/CSC TREQDEF command and control statement.	***SMC Configuration and Administration Guide*** Chapters 3, 7
The SMC UNITATTR command replaces the HSC UNITDEF command and UNITATTR control statement. It is used to set the model type for nonlibrary drives, and IGNORE as the model type for drives to be excluded from allocation.	***SMC Configuration and Administration Guide*** Chapters 3, 7, 9 Appendix B
The requirement has been removed for the SMC to be initialized before the HSC and/or MVS/CSC.	***SMC Configuration and Administration Guide*** Chapter 3
The SMC DRIVEMAP command allows you to map device addresses used on the HSC server to the addresses used on the SMC client.	***SMC Configuration and Administration Guide*** Chapters 2, 7
The SMC LOG command allows logging of XML payloads sent and/or received to local and remote library subsystems and servers.	***SMC Configuration and Administration Guide*** Chapter 7
The SMC MOUNTDEF command is used to specify message handling and mount/dismount policies previously provided by the HSC and CSC.	***SMC Configuration and Administration Guide*** Chapters 3, 6, 7
The SMC ALLOCDEF command includes the following new parameters: DEFER, FETCHMSG, EXTVOLESOT, and ZEROSCR.	***SMC Configuration and Administration Guide*** Chapters 3, 7
The SMC READ command now includes a HOST parameter, used to specify that a READ command only be processed for a specific host. The READ command can be issued from a file in addition to the console.	***SMC Configuration and Administration Guide*** Chapter 7
SMC LIBRARY WTORDEST processing now applies to both local and remote servers.	***SMC Configuration and Administration Guide*** Chapter 7
SMC MSGDEF ECHOMNTERR processing now applies to both local and remote servers.	***SMC Configuration and Administration Guide*** Chapter 7
ALLOCDEF FAILNOINFO processing now applies to either specific volume allocations *only*, or to *all allocations*.	***SMC Configuration and Administration Guide*** Chapter 7

Enhancement/Modification	Publication(s)/ Primary Locations
SMC allocation logic prefers low density drives over dual density drives when the volume is known to be low density.	***SMC Configuration and Administration Guide*** Chapters 4, 5
SMC exclusion level 2 is updated for resident VTVs, excluding virtual drives only if they are in a VTSS to which the VTV cannot be migrated and recalled.	***SMC Configuration and Administration Guide*** Chapters 4, 5
SMC exclusion level 5 is updated to exclude drives based on the SMC ALLOCDEF EXTVOLESOT esoteric.	***SMC Configuration and Administration Guide*** Chapters 4, 5
SMC exclusion level 7 is updated to exclude drives based on the resident VTSS. This change allows customers with mixed density drives to set the minimum exclusion level to 3.	***SMC Configuration and Administration Guide*** Chapters 4, 5
SMC exclusion MINLVL=0 is now valid for both ALLOCJOB and ALLOCDEF commands. MINLVL=0 is used to force SMC to proceed with allocation even if none of the allocation level criteria are satisfied.	***SMC Configuration and Administration Guide*** Chapters 4, 5
Message changes, additions and deletions.	***SMC Configuration and Administration Guide*** Chapters 10, 11, Appendix C

What's New with HSC Release 6.1?

HSC 6.1 includes the following enhancements and modifications:

Enhancement/Modification	Publication(s)/ Primary Locations
Support for SL8500 Near Continuous Operation (NCO).	***HSC Operator's Guide*** Appendix C, HSC Support for Near Continuous Operation (NCO) Chapter 2, MODify command ***HSC Configuration Guide*** Chapter 4, SLIACS Macro, FUTURLSM parameter ***HSC System Programmer's Guide*** Chapter 2, Near Continuous Operation of the SL8500 Library
Support for the Significant Event Notification (SEN) facility, which allows users or an external product to request notification about specific HSC and VTCS events.	***HSC System Programmer's Guide*** Appendix D, Significant Event Notification Facility (SEN) ***HSC Operator's Guide*** Chapter 2, OPTion SEN command
The HSC Support for the SL8500 Library appendix includes these new topics: • verifying that SL8500 components are operational before configuring the HSC • HSC requirements prior to powering down an SL8500.	***HSC Operator's Guide*** Appendix B, HSC Support for the SL8500 Library
The requirement has been removed for the SMC to be initialized before the HSC.	***HSC System Programmer's Guide*** Chapter 2, Initialization/Termination Functions ***HSC Configuration Guide*** Appendix A, Library Configuration Checklist Appendix D, Procedure to Verify HSC 6.1 Functions Without Library Hardware
The SLILIBRY LIBGEN macro contains a new parameter, DRVHOST, which maps drive hosts in a client/server environment. Refer to the *SMC Configuration and Administration Guide* chapter titled "SMC and StorageTek Library Management" for client/server configuration and command information.	***HSC Configuration Guide*** Chapter 4, SLILIBRY macro
The SET utility also includes a DRVHOST parameter, which sets the SLILIBRY DRVHOST parameter without rebuilding the CDS.	***HSC System Programmer's Guide*** Chapter 4, SET DRVHOST Utility

Enhancement/Modification	Publication(s)/ Primary Locations
The Display DRives operator command has added the BYDrive and BYLoc parameters. BYDrive displays drives by host device address; BYLoc displays drives by location.	***HSC Operator's Guide*** Chapter 2, Display DRives command
The SLILIBRY macro DELDISP parameter has been replaced by the SMC MOUNTDEF command. Also, the esoteric specified in the NNLBDRV parameter is no longer used in either the HSC or SMC. Refer to the *SMC Configuration and Administration Guide* for more information.	***HSC Configuration Guide*** Chapter 4, SLILIBRY macro ***SMC Configuration and Administration Guide***
The Defer, Fetch, Specvol, and Zeroscr parameters in the HSC ALLOC command have been replaced by the SMC ALLOCDEF command. These HSC parameters are still supported when an SMC 6.0 client is communicating with an HSC 6.1 server. Refer to the *SMC Configuration and Administration Guide* for more information.	***HSC Operator's Guide*** Chapter 2, Allocation (ALLOC) command and control statement ***SMC Configuration and Administration Guide***
The MOuntmsg and VOLWatch parameters in the HSC MNTD command have been replaced by the SMC MOUNTDEF command. These HSC parameters are still supported when an SMC 6.0 client is communicating with an HSC 6.1 server. Refer to the *SMC Configuration and Administration Guide* for more information.	***HSC Operator's Guide*** Chapter 2, MNTD (Mount/Dismount Options) command and control statement ***SMC Configuration and Administration Guide***
The TAPEREQ control statement and the TREQDEF command/control statement have been removed from the HSC and are now processed by the SMC TAPEREQ and TREQDEF commands. Refer to the *SMC Configuration and Administration Guide* for more information.	***HSC System Programmer's Guide*** Chapter 3, TAPEREQ control statement, TREQDEF command/control statement ***SMC Configuration and Administration Guide***
The UNITDEF command/control statement has been removed from the HSC. The HSC now recognizes library and virtual drive characteristics from the LMU and CDS definitions.	***HSC System Programmer's Guide*** Chapter 3, UNITDEF command/control statement
The UNITATTR control statement has been removed from the HSC and is now processed by the SMC UNITATTR statement. UNITATTR is still supported to allow users to define non-library drives and to exclude drives from allocation (MODel=IGNORE) when an SMC 6.0 client is communicating with an HSC 6.1 server. Refer to the *SMC Configuration and Administration Guide* for more information.	***HSC System Programmer's Guide*** Chapter 3, UNITATTR control statement ***SMC Configuration and Administration Guide***
The Display TREQDEF and Display UNITDEF commands are still supported, however, they only apply when an SMC 6.0 client is communicating with an HSC 6.1 server.	***HSC Operator's Guide*** Chapter 2, Display TREQDEF and Display UNITDEF commands
The ENter command has added the TLSM parameter, which allows you to specify the LSM to receive entered cartridges.	***HSC Operator's Guide*** Chapter 2, ENter command
The TRace command has added component names for allocation volume lookup and XML interface.	***HSC Operator's Guide*** Chapter 2, TRace command

What's New with MVS/CSC Release 6.1?

MVS/CSC 6.1 includes the following changes and enhancements:

Enhancement/Modification	Publication(s)/ Primary Locations
The MVS/CSC TAPEREQ control statement is no longer supported, and is replaced by the SMC TAPEREQ control statement.	***MVS/CSC Configuration Guide*** Chapter 5 ***SMC Config and Admin Guide*** Chapter 7
The MVS/CSC TREQDEF operator command is no longer supported, and is replaced by the SMC TREQDEF command.	***MVS/CSC Operator's Guide*** Chapter 3 ***SMC Config and Admin Guide*** Chapter 7
The requirement has been removed for the SMC to be initialized before the MVS/CSC.	***MVS/CSC Operator's Guide*** Chapter 2 ***MVS/CSC Configuration Guide*** Chapter 10
The MVS/CSC Display operator command no longer supports the TREQDEF parameter.	***MVS/CSC Operator's Guide*** Chapter 3
All JES2 and JES3 job processing functions are now provided by the SMC.	***SMC Config and Admin Guide*** Chapter 7
The MVS/CSC AMPND and NOAMPND startup parameters are no longer supported. Automation of pending mounts is now provided by the SMC MOUNTDEF operator command.	***MVS/CSC Operator's Guide*** Chapter 2 ***MVS/CSC Configuration Guide*** Chapter 3 ***SMC Config and Admin Guide*** Chapter 7
The following MVS/CSC startup parameters (JES2 and JES3) are no longer supported: DEFER, DELDISP, FETCH, NONLIB (replaced by SMC UNITATTR), TREQDEF, WTODESC, ZEROSCR This functionality is now provided by the SMC.	***MVS/CSC Configuration Guide*** Chapter 3 ***SMC Config and Admin Guide*** Chapter 7
The MVS/CSC ALTER operator command no longer supports the following parameters: DEFER, DELDISP, FETCH, NONLIB, and ZEROSCR. This functionality is now provided by the SMC ALLOCDEF operator command.	***MVS/CSC Operator's Guide*** Chapter 3 ***SMC Config and Admin Guide*** Chapter 7
The MVS/CSC Configuration Verification Utility CONFIGV control statement no longer supports the following configuration parameters: NONLIB, DELDISP, DEFER, TREQDEF	***MVS/CSC Configuration Guide*** Chapter 9 ***MVS/CSC System Programmer's Guide*** Chapter 5
Message changes, additions and deletions.	***MVS/CSC Messages and Codes Guide*** Chapter 2, Appendix A

What's New with LibraryStation Release 6.1?

LibraryStation 6.1 includes the following enhancements and modifications:

Enhancement/Modification	Publication(s)/ Primary Locations
The LibraryStation UNITATTR LSDEF statement is no longer supported, and is ignored by LibraryStation.	***LibraryStation Configuration Guide*** Chapter 10 Appendix B
Message changes, additions and deletions.	***LibraryStation Messages and Codes Guide*** Chapter 2 Appendix B

About this Guide

This guide describes how to install the StorageTek™ Nearline Control Solution (NCS) product components for the IBM® MVS operating system. NCS product components include the following:

Storage Management Component (SMC)

SMC is the interface between IBM's OS/390 and z/OS operating systems and StorageTek real and virtual tape hardware. SMC performs the allocation processing, message handling, and SMS processing for the NCS solution. It resides on the MVS host system with HSC and/or MVS/CSC, or on a remote system using the StorageTek HTTP server to communicate with the HSC. SMC communicates with HSC or MVS/CSC to determine policies, volume locations, and drive ownership. The SMC is a **required** NCS component.

Host Software Component (HSC)

Host Software Component controls the Automated Cartridge System (ACS). It runs as a subsystem on MVS. The library database records cell status, characteristics, and disposition of all cartridges stored in the library. For the purposes of this publication, **HSC** refers to the **MVS** implementation of the StorageTek Host Software Component.

StorageTek HTTP Server for OS/390 and z/OS

The StorageTek HTTP Server for OS/390 and z/OS optionally provides the middleware to allow communication between the SMC (client) and a remote HSC subsystem (server). It executes as a separate subsystem on the MVS host where the remote HSC subsystem resides.

Client System Component (MVS/CSC)

MVS/CSC provides client functions and communications between an MVS host and the Library Control System (LCS) or server residing on a non-MVS host. When combined with the LCS, MVS/CSC allows the MVS client to perform automatic tape handling on a StorageTek library product. In addition, the library can be shared by multiple host systems (both IBM and non-IBM). The MVS/CSC can communicate with LibraryStation in an MVS-only environment, or the SMC and the StorageTek HTTP server can provide communication between MVS hosts.

LibraryStation

LibraryStation provides a communications interface between HSC and a client system running an open systems host (either MVS or open systems), allowing network clients to access the library services of a StorageTek Automated Cartridge System (ACS) through the MVS host system. LibraryStation can communicate with the MVS/CSC in an MVS-only environment, or the SMC and the StorageTek HTTP server can provide communication between MVS hosts. LibraryStation executes in the HSC address space on MVS.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.

Intended Audience

This publication is intended for those responsible for installing the NCS software products.

About the Software

NCS Release 6.1 is supported by this guide.

Conventions Used in this Guide

Typographic

In the JCL examples in this guide and the sample JCL provided on the installation tape, some fields appear in lower case. You must update these fields to match your installation requirements.

Symbols

The following symbols are used to highlight text in this guide:

Note: Information that may be of special interest to you. Notes are also used to point out exceptions to rules or procedures.

Warning: Information necessary to keep you from damaging your hardware or software.

How this Guide is Organized

This guide contains the following chapters and appendices:

- **Chapter 1, "Performing NCS Pre-installation Tasks"** describes the pre-installation tasks for the NCS product components.
- **Chapter 2, "Installing the NCS Functions and JES3 Support Functions"** describes the installation tasks used to install the SMC, HSC, MVS/CSC, and LibraryStation base functions in the same SMP/E Consolidated System Inventory (CSI) zone. It also describes the installation tasks for the SMC JES3 support function.
- **Chapter 3, "Performing JES3 Post-Installation Tasks"** describes post-installation tasks for JES3 environments running with TAPE SETUP processing.
- **Chapter 4, "Performing SMC Post-installation Tasks"** describes post-installation tasks for the SMC.
- **Chapter 5, "Performing Post-installation Tasks for the StorageTek HTTP Server"** describes post-installation tasks for the StorageTek HTTP Server for OS/390 and z/OS.
- **Chapter 6, "Performing HSC Post-installation Tasks"** describes post-installation tasks for the HSC.
- **Chapter 7, "Performing MVS/CSC Post-installation Tasks"** describes post-installation tasks for the MVS/CSC.
- **Chapter 8, "Performing LibraryStation Post-Installation Tasks"** describes post-installation tasks for the LibraryStation.
- **Appendix A, "NCS Samples, Source Code Modules, and Macros"** describes the samples, load modules, and macros included on the installation base tape.
- **Appendix B, "Installing Product Maintenance"** includes information used to install NCS maintenance.

An index is also included.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.

Related Publications

The following publications may be included in this package, depending on which NCS product components you ordered:

StorageTek™ Nearline Control Solution (NCS) Publications

- *NCS (SMC, HSC, MVS/CSC, LibraryStation) Installation Guide*
- *NCS User Exit Guide*
- *Requesting Help from Software Support*

StorageTek™ Storage Management Component (SMC) Publications

- *SMC Configuration and Administration Guide*

StorageTek™ Host Software Component (MVS/HSC) Publications

- *MVS/HSC Configuration Guide*
- *MVS/HSC Operator's Guide*
- *MVS/HSC System Programmer's Guide*
- *MVS/HSC Messages and Codes Guide*

StorageTek™ Client System Component (MVS/CSC) Publications

- *MVS/CSC Configuration Guide*
- *MVS/CSC Operator's Guide*
- *MVS/CSC System Programmer's Guide*
- *MVS/CSC Messages and Codes Guide*

StorageTek LibraryStation™ Publications

- *LibraryStation Configuration Guide*
- *LibraryStation Operator and System Programmer's Guide*
- *LibraryStation Messages and Codes Guide*

Additional Information

Sun Microsystems, Inc. (Sun) offers several methods for you to obtain additional information.

Sun's External Web Site

Sun's external Web site provides marketing, product, event, corporate, and service information. The external Web site is accessible to anyone with a Web browser and an Internet connection.

The URL for the Sun external Web site is: http://www.sun.com

The URL for Sun StorageTek™ brand-specific information is:
http://www.storagetek.com

Product Publications

The Sun Documentation Web site provides online access to Sun product publications:

http://www.docs.sun.com

To order hardcopy versions of Sun publications, contact a Sun sales or marketing representative.

Partners Site

The StorageTek Partners site is a Web site for partners with a StorageTek Partner Agreement. This site provides information about products, services, customer support, upcoming events, training programs, and sales tools to support StorageTek Partners. Access to this site, beyond the Partners Login page, is restricted. On the Partners Login page, Sun employees and current partners who do not have access can request a login ID and password and prospective partners can apply to become StorageTek resellers.

The URL for the StorageTek Partners site is:
http://members.storagetek.com

The URL for partners with a Sun Partner Agreement is:
http://www.sun.com/partners/

Customer Support

Customer support is available 24 hours a day, seven days a week, to customers with Sun or StorageTek maintenance contracts and to Sun employees. You can find additional information about customer support on the Customer Resource Center (CRC) Web site at: http://www.support.storagetek.com

Customer-initiated Maintenance

Customer-initiated maintenance begins with a telephone call from you to Sun Microsystems StorageTek Support. You receive immediate attention from qualified Sun personnel, who record problem information and respond with the appropriate level of support.

To contact Sun Microsystems StorageTek Support about a problem:

1. Use the telephone and call:

   ☎ **800.525.0369** (inside the United States)

   ☎ **303.673.4056** (outside the United States)

2. Describe the problem to the call taker. The call taker will ask several questions and will either route your call to or dispatch a support representative.

   If you have the following information when you place a service call, the process will be much easier:

Account name	
Site location number	
Contact name	
Telephone number	
Equipment model number	
Device address	
Device serial number (if known)	
Urgency of problem	
Fault Symptom Code (FSC)	
Problem description	

Sun’s Worldwide Offices

You may contact any of Sun’s worldwide offices to discuss complete storage, service, and support solutions for your organization. You can find address and telephone number information on Sun’s external Web site at:

http://www.sun.com/worldwide/

Chapter 1. Performing NCS Pre-installation Tasks

Overview

This chapter describes the tasks required to create SMP/E target and distribution zones in preparation for NCS installation.

The following topics are included:

- Pre-installation notes
- Installation base tape contents
- NCS installation checklist
- Verifying NCS software and hardware requirements
- Verifying NCS virtual storage requirements
- Reviewing the NCS FMIDs
- Unloading the SMP/E JCL library
- Setting up the SMP/E environment
- Allocating the NCS target and distribution library data sets and required DDDEF entries
- Updating the SYSLIB concatenation

NCS Pre-Installation Notes

Installation Materials

Included in this package are materials for Release 6.1 of the StorageTek Nearline Control Solution (NCS). These materials include the following:

- NCS 6.1 Installation Base Tape
- Accumulated PTF tape (if applicable), which contains all SMC, HSC, MVS/CSC, and LibraryStation PTFs since the base tape was created, or since the last Product Update Tape (PUT).
- PUT (if applicable), which contains SMC, HSC, MVS/CSC, and LibraryStation maintenance.

Notes:

- Contact Sun StorageTek Software Support for information about additional PTFs that might be required before installing the NCS product components. Refer to the *Requesting Help from Software Support* guide for information about contacting Sun Microsystems for technical support and for requesting changes to software products.
- If you are using HSC or MVS/CSC, the SMC software **must** be installed.
- If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.
- Sun Microsystems recommends that you use the MVS Program Binder when installing NCS products and maintenance. Failure to do so may result in link-editing errors.

Migration and Coexistence Considerations

If you are migrating from a previous NCS software release, study the appropriate migration and coexistence guidelines:

- For SMC, see the "Coexistence" appendix in the *SMC Configuration and Administration Guide*.
- For HSC, see the "Migration and Coexistence" appendix in the *MVS/HSC Configuration Guide*.
- For LibraryStation, see the "Migration and Coexistence" appendix in the *LibraryStation Configuration Guide*.
- For MVS/CSC, see the "Migration and Coexistence" appendix in the *MVS/CSC Configuration Guide*.

NCS Product License Keys

Once installed, the following NCS software products **require** a license key to initialize:

- HSC
- MVS/CSC
- LibraryStation

Your license key is validated during initialization and immediately after midnight each day.

To initialize the MVS/CSC and LibraryStation NCS product components, Sun Microsystems requires you to obtain a *permanent license key.* The HSC allows a trial period, but eventually requires a permanent license key as well.

A single permanent license key is used to initialize all StorageTek products you are running. **You cannot acquire different license keys for each product**.

You can acquire a license key through the Sun StorageTek Customer Resource Center (CRC) at **www.support.storagetek.com**, or by contacting your Sun StorageTek Software Manufacturing Distribution Representative, Marketing Representative, or Systems Engineer. License keys are generally issued within 48 hours of receipt of the request.

Once a license key is assigned by Sun Microsystems, you must make the license key information available to the license key validation service. This is accomplished using the LKEYDEF and LKEYINFO control statements.

- Refer to the *HSC Configuration Guide* for information about configuring the license key for the HSC and LibraryStation.
- Refer to the *MVS/CSC Configuration Guide* for information about configuring the license key for the MVS/CSC.

NCS Installation Base Tape Contents

NCS Release 6.1 (including SMC, HSC, the StorageTek HTTP Server, MVS/CSC, and LibraryStation) is distributed on a single standard label tape with a volume serial number of OS6100.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.

The following table lists the files included on this tape.

Table 1. NCS Release 6.1 Installation Tape Contents

File	Data Set Name	Description
1	SMPMCS	SMP/E control statements
2	SOS6100.F1	SOS6100 JCLIN
3	SOS6100.F2	SOS6100 samples
4	SOS6100.F3	SOS6100 source modules
5	SOS6100.F4	SOS6100 object modules
6	SCS6100.F1	SCS6100 JCLIN
7	SCS6100.F2	SCS6100 samples
8	SCS6100.F3	SCS6100 source modules
9	SCS6100.F4	SCS6100 object modules
10	SMC6100.F1	SMC6100 JCLIN
11	SMC6100.F2	SMC6100 samples
12	SMC6100.F3	SMC6100 macros
13	SMC6100.F4	SMC6100 object modules
14	SMX6100.F1	SMX6100 JCLIN
15	SMX6100.F2	SMX6100 object modules
16	SMZ6100.F1	SMZ6100 JCLIN
17	SMZ6100.F2	SMZ6100 samples
18	SMZ6100.F3	SMZ6100 macros
19	SMZ6100.F4	SMZ6100 source modules
20	SMZ6100.F5	SMZ6100 object modules
21	SOC6100.F1	SOC6100 JCLIN
22	SOC6100.F2	SOC6100 macros, samples and source modules
23	SOC6100.F3	SOC6100 object modules

Table 1. NCS Release 6.1 Installation Tape Contents (Continued)

File	Data Set Name	Description
24	SSKY500.F1	HTTP server JCLIN
25	SSKY500.F2	HTTP samples
26	SSKY500.F3	HTTP load modules
27	SSKY500.F4	HTTP load modules
28	SSCR70C.F1	SSCR70C JCLIN
29	SSCR70C.F2	SSCR70C object modules
30	SSCR70D.F1	SSCR70D JCLIN
31	SSCR70D.F2	SSCR70D object modules
32	ASAR700.F1	HTTP object modules
33	ASAR700.F2	HTTP object modules

NCS Installation Checklist

Use the following checklist to verify that you have completed all NCS installation tasks.

Notes:

- If you are using HSC or MVS/CSC, the SMC software **must** be installed.
- Sample members beginning with "NCS" contain steps for **all** NCS products. If you are **not** installing all products, edit these members as directed in the comments to install only the desired products.
- Sample members specified for steps 5-13 are included in the SMP/E JCL library (see page 15).
- Shaded steps apply **only** to JES3 environments. There are no longer specific JES3 components and installation processes for the HSC and MVS/CSC. **All** JES3 dependent processing is performed by the SMC.
- Region size in the sample NCS SMP/E JCL members is set to 5M. Verify that this region size is available on your system. If this size is not available, update the sample NCS SMP/E JCL members to change the region size to a suitable value.

Step	Description	Page	Sample Member Name	Notes
1	Verify NCS software and hardware requirements	7		
2	Verify NCS virtual storage requirements	12		
3	Review the NCS FMIDs	14		
4	Unload the SMP/E JCL Library	15		
5	Define and initialize the SMP/E CSI	17	ALLOCCSI	
6	Allocate the NCS target and distribution library data sets and their required DDDEF entries	17	NCSDDEF	
7	Update the SYSLIB concatenation	20	ALLSYSLB	
8	RECEIVE the desired NCS functions and communication functions	22	NCSRECV	
9	APPLY the desired NCS functions	22	NCSAPPLY	
10	ACCEPT the desired NCS functions	23	NCSACCPT	
11	Allocate the SMC JES3 target and distribution library data sets and their required DDDEF entries	23	NCSJ3DEF	
12	APPLY the SMC JES3 support function	24	NCSJ3APP	
13	ACCEPT the SMC JES3 support function	24	NCSJ3ACC	
14	If applicable, install product maintenance	24		
15	Proceed with the post-installation tasks described in Chapters 3-7 to complete your installation			

Verifying NCS Software and Hardware Requirements

The following sections list NCS software and hardware requirements.

NCS Software Requirements

This section lists the NCS software requirements.

Operating System Requirements

JES2 Environment	JES3 Environment
• All IBM-supported versions of OS/390 and z/OS **Note:** If using TCP/IP, OS/390 version 2.7 or later is recommended.	• JES3 (All IBM-supported versions of OS/390 and z/OS) **Note:** If using TCP/IP, OS/390 version 2.7 or later is recommended.

Software Requirements

- SMC Release 6.1
- HSC Release 6.1
- MVS/CSC Release 6.1
- LibraryStation Release 6.1

Communications Software Requirements

The following sections list the NCS communications software requirements.

Client to Server Connection (MVS/CSC and LibraryStation) Software Requirements

TCP/IP*	SNA LU 6.2*	XCF*
• IBM TCP/IP Release 3.1 or higher • CA Unicenter TCPaccess Communications Server • CA Unicenter TCPaccess X.25 Server	• IBM ACF/VTAM Version 3.4.2 or higher • IBM APPC/MVS communication services	• IBM XCF services

* Refer to your communications software documentation for specific communications hardware requirements.

Note: If you are using TCP/IP for communication between HSC/LibraryStation and the MVS/CSC, the TCP/IP Portmapper must be active on both the server and client.

HSC Server System Communications Software Requirements

- IBM ACF/VTAM 3.4.2 or higher
- LMU Microcode Release 1.5.x or higher is required for multiple-level host-to-host communications.

NCS Hardware Requirements

The following sections describe NCS hardware requirements.

Processor Requirements

- IBM or IBM-compatible processor running MVS (any IBM-supported version of OS/390 and z/OS)

Library Hardware Requirements

StorageTek ACSs

ACS	Description
SL8500 (StreamLine)	A modular library scalable from 1,500 to over 200,000 cartridges in mainframe, Windows, UNIX, and supercomputer environments. The SL8500 includes the following features: • Four internal rails on which four handbots travel. Optionally, you can upgrade to eight handbots, two per rail, for redundancy. Each rail is considered to be a separate LSM. • Internal pass-thru ports (elevators), used to transport cartridges from one rail to another within the library • Optional external pass-thru ports (two per rail), used to transport cartridges from one SL8500 library to another • Integrated Library Control Unit (LCU) and Library Management Unit (LMU) functionality • Compatible transports and associated media **Notes:** • Refer to the *HSC Operator's Guide* for more information about the SL8500 library. • Refer to the *HSC Configuration Guide* for SL8500 configuration information.
SL3000 (StorageTek Library)	A mid-range library scalable from 200 to 4500 cartridges in mainframe, Windows, UNIX, and supercomputer environments. The SL3000 includes the following features: • Single LSM for each ACS, with no passthru (PTP) ports to other libraries. • Minimum library configuration is a Base Drive Module (BDM) with one CAP and up to 24 Drives (in multiples of 8). • Optionally, one Drive Expansion module (DEM) can be added to the left of the BDM, with one CAP and up to 32 additional drives (in multiples of 8). • One to four Cartridge Expansion Modules (CEMs) can be added left and right of the BDM, with an optional CAP installed in each CEM. In all cases where the optional CAP and Drives are not installed, the panel will contain cartridge cells. • Dual Robot SL3000 libraries will have a Parking Expansion module (PEM) on each end of the library. A PEM takes the next available CEM location or replaces an existing CEM on a fully configured SL3000 Library. **Notes:** • Refer to the *HSC Operator's Guide* for more information about the SL3000 library. • Refer to the *HSC Configuration Guide* for SL3000 configuration information.

ACS	Description
4400	One or more LSMs with attached Library Control Units (LCUs) and a Library Management Unit (LMU). • LSMs - 4410 (Standard), 9310 (Powderhorn), 9360 (WolfCreek)
9360 (WolfCreek) stand-alone	• One or more 9360 LSMs • Integrated LMU
9740 (TimberWolf)	• One or more 9740 LSMs • Integrated LMU

StorageTek Tape Cartridge Subsystems

- 4480 Cartridge Subsystem (18-track)
- 4490 (Silverton) Cartridge Subsystem (36-track)
- 9490 (TimberLine) Cartridge Subsystem (36-track)
- 9490EE (TimberLine) Cartridge Subsystem (36-track)
- SD-3 (Redwood) Cartridge Subsystem (helical)
- T9840A Cartridge Subsystem
- T9840B Cartridge Subsystem
- T9840C Cartridge Subsystem
- T9840D Cartridge Subsystem
- T9940A Cartridge Subsystem
- T9940B Cartridge Subsystem
- T10000A Cartridge Subsystem
- T10000B Cartridge Subsystem

Verifying NCS Virtual Storage Requirements

The following sections describe NCS virtual storage requirements.

Verifying MVS Virtual Storage Requirements for SMC

Virtual storage requirements for the SMC are defined as follows:

- In JES2, approximately 2.8 MB of ECSA above the 16M line for load modules and data structures.
- In JES3, an additional 800K of ECSA above the 16M line.
- There are no CSA requirements below the 16M line.

Note: The actual amount of ECSA varies slightly based on the size of the library and number of transports defined to MVS.

Verifying MVS Virtual Storage Requirements for HSC

Virtual storage requirements for the HSC are defined as follows:

- Approximately 215K of ECSA above the 16M line for load modules and data structures.
- Approximately 20K of CSA below the 16M line for some load modules and data structures.
- An additional amount of ECSA above the line is dynamically acquired and released during operation of the HSC. The actual amount varies with the activity and size of the library, but would rarely, if ever, exceed an additional 10K.

Notes:

- The requirements listed above do not include storage space for Schedule Request Blocks.
- The actual amount of ECSA varies with the activity and size of the library, and the number of cartridge transports defined to MVS.
- You may also need to increase the amount of CSA when installing maintenance tapes, software enhancements, or new releases of the HSC.
- Approximately 400 bytes of the below-the-line CSA storage is located in subpool 228 (FIXED).
- To relieve the below-the-line CSA constraint and save approximately 16K of below-the-line CSA, place the following modules in an LPALIB:
  - SLSSPARS
  - SLSWMRT

Verifying MVS Virtual Storage Requirements for MVS/CSC

Virtual storage requirements for the MVS/CSC are defined as follows:

- Approximately 200K of ECSA above the 16M line for load modules and data structures.
- Approximately 34K of CSA below the 16M line for some load modules and data structures.
- An additional amount of ECSA above the line is dynamically acquired and released during operation of the MVS/CSC and HSC. The actual amount varies with the activity and size of the library, but would rarely, if ever, exceed an additional 10K.

Notes:

- The actual amount of ECSA varies with the activity and size of the library, and the number of cartridge transports defined to MVS.
- You may also need to increase the amount of CSA when installing maintenance tapes, software enhancements, or new releases of the MVS/CSC.

Reviewing the NCS FMIDs

NCS 6.1 is packaged in standard SMP/E format, and is delivered as multiple function SYStem MODifications (SYSMODs). The following SMP/E FMIDs are included:

SMC6100
The SMC6100 function contains the SMC load modules and samples.

SMZ6100
The SMZ6100 function contains the SMC JES3 support load modules, distributed macros, and samples for MVS systems running JES3 Release 5.2.1, JES3 OS/390 Release 1.1 and higher, or JES3 z/OS Release 1.0 and higher.

SMX6100
The SMX6100 function provides SMC-specific functions for the StorageTek HTTP server.

Note: This FMID is dependent on the SMC6100 FMID, and therefore must be applied **after** the SMC6100 FMID.

SSKY5000
The SSKY500 function contains the HTTP server load modules, distributed macros, and samples.

ASAR700
The ASAR700 function contains SAS/C 7.0 selected components required for the StorageTek HTTP server.

SOS6100
The SOS6100 function contains the HSC load modules, distributed macros, and samples.

SCS6100
The SCS6100 function contains the MVS/CSC load modules, distributed macros, and samples.

SOC6100
The SOC6100 function contains the LibraryStation load modules and samples.

SSCR70C
The SSCR70C function contains SAS/C 7.0 selected components required for LibraryStation and MVS/CSC.

SSCR70D
The SSCR70D function contains SAS/C 7.0 selected components required for LibraryStation, MVS/CSC, and the StorageTek HTTP server.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.

Unloading the SMP/E JCL Library

Use the JCL example below to unload the SMP/E JCL members from file 2 of the NCS installation base tape to your SMP/E JCL library. These sample JCL members contain installation and maintenance examples.

Note: In the JCL examples in this document and the sample JCL provided on the installation base tape, some fields appear in lower case. These fields must be updated to match your installation requirements.

```
//jobname  JOB your jobcard parameters
//UNLOAD   EXEC PGM=IEBCOPY
//INDD     DD DSN=SOS6100.F1,DISP=SHR,
//             UNIT=tape-unit,VOL=SER=OS6100,LABEL=(2,SL)
//OUTDD    DD DSN=your.smpe.jcllib,DISP=(NEW,CATLG),
//             UNIT=SYSALLDA,
//             SPACE=(TRK,(5,1,4)),
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
 C I=INDD,O=OUTDD
 E M=SOS6100
/*
```

Setting up the SMP/E Environment

This section describes how to set up the SMP/E environment for installation of the NCS base functions and SMC JES3 support function. If you are installing maintenance, see Appendix B, “Installing Product Maintenance” on page 85.

The NCS products are installed using SMP/E. The SMP/E installation process involves RECEIVEing, APPLYing, and ACCEPTing functions to install the NCS product components into the correct SMP/E target and distribution zones.

Note: Sun Microsystems recommends that you SMP/E ACCEPT all NCS base product components.

NCS SMP/E Requirements

SMP/E requirements for installing the NCS product components include the following:

- NCS **must** be installed with SMP/E. All installation instructions in this guide are based on SMP/E.
- Sun Microsystems recommends that you install all NCS Release 6.1 product components (SMC 6.1, HSC 6.1, MVS/CSC 6.1, and LibraryStation 6.1) together in a new SMP/E CSI.
- Products from other vendors should **not** be installed in the same SMP/E CSI as NCS.

Warning:

- If you install an NCS Release 6.1 product component in an SMP/E CSI containing a previous release of that product, the previous release is deleted from the target and distribution zones. In addition, all SYSMODS for the previous release are deleted from the SMP/E CSI.
- Do **not** install LibraryStation Release 6.1 or MVS/CSC Release 6.1 and supportive SAS/C functions in an SMP/E CSI containing other StorageTek products with SAS/C functions you wish to preserve. Doing so may cause unpredictable results.

Note: In this release of NCS 6.1, load modules for the tape management scratch interface routines (SLUDRCA1, SLUDRTLM, SLUDRRMM, and SLUDRZAR) are delivered to allow installation to a separate set of target and distribution libraries, SLULINK. In NCS 6.1, these modules are shared among HSC, MVS/CSC, and SMC.

Defining and Initializing the SMP/E CSI

You must define and initialize the SMP/E CSI. An example is provided in member ALLOCCSI of your SMP/E JCL library. Follow the instructions included in the comments of the ALLOCCSI member and run the job to define and initialize the SMP/E CSI.

Defining and initializing the SMP/E CSI includes the following steps:

1. Define the required SMP/E data sets.
2. Define the Consolidated Software Inventory (CSI) data set that contains the SMP/E global, target, and distribution zones for this release.
3. Initialize the SMP/E CSI.
4. Add zones, options, utilities, and DDDEF entries to the SMP/E CSI.

Allocating NCS Target and Distribution Library Data Sets and Required DDDEF Entries

For each product being installed, DDDEF entries are required for target and distribution libraries. You must allocate the NCS target and distribution library data sets shown in the following two tables, and add DDDEFs to the SMP/E CSI prior to installing NCS. An example is provided in member NCSDDEF of your SMP/E JCL library. The numbers listed for directory blocks and blocks are the minimum required for the product. The DDnames required for each DDDEF entry match the last qualifier of the data set name. For example, for data set ncs_610.SMCLINK, the corresponding DDname is SMCLINK.

Notes:

- The following tables include ncs_610 as the high-level qualifier for data sets. You can change the high-level qualifiers to conform to the naming conventions defined for your installation.
- The SMP/E DSSPACE parameter, which specifies the amount of space to be allocated to temporary RELFILE data sets, must be set to at least 150,100,150.

Table 2. NCS Target Library Data Sets

Data Set Name	Product(s)	DSORG	RECFM	LRECL	BLKSIZE	Blocks	Directory Blocks
ncs_610.CSLLINK	MVS/CSC LibraryStation	PO	U	-	32760	50/10	20
ncs_610.SACLINK	MVS/CSC LibraryStation HTTP Server	PO	U	-	32760	200/10	100
ncs_610.SCSLINK	MVS/CSC	PO	U	-	32760	500/100	100
ncs_610.SCSMAC	MVS/CSC	PO	FB	80	23440	30/10	5
ncs_610.SCSSAMP	MVS/CSC	PO	FB	80	23440	30/10	5
ncs_610.SKYICNS	HTTP Server	PO	VB	32754	32760	1/1	10
ncs_610.SKYLINK	HTTP Server	PO	U	-	32760	200/100	50
ncs_610.SLCLINK	LibraryStation	PO	U	-	32760	500/100	50
ncs_610.SLCSAMP	LibraryStation	PO	FB	80	23440	30/10	5
ncs_610.SLSLINK	HSC	PO	U	-	32760	300/30	100
ncs_610.SLSMAC	HSC	PO	FB	80	23440	100/50	50
ncs_610.SLSSAMP	HSC	PO	FB	80	23440	100/50	20
ncs_610.SLULINK	SMC, HSC, MVS/CSC	PO	U	-	32760	2/1	10
ncs_610.SMCLINK	SMC	PO	U	-	32760	500/50	30
ncs_610.SMCMAC	SMC	PO	FB	80	23440	20/10	5
ncs_610.SMCSAMP	SMC	PO	FB	80	23440	20/10	5
ncs_610.SMXLINK	HTTP Server	PO	U	-	32760	5/1	5
ncs_610.SSAROMOD	HTTP Server	PO	U	-	32760	200/20	300
ncs_610.SSKYRTNS	HTTP Server	PO	U	-	32760	200/100	50
ncs_610.STKSAMP	HTTP Server	PO	FB	80	23440	1/1	1

Table 3. NCS Distribution Library Data Sets

Data Set Name	Product	DSORG	RECFM	LRECL	BLKSIZE	Blocks	Directory Blocks
ncs_610.ACSLLINK	MVS/CSC LibraryStation	PO	U	-	32760	50/10	20
ncs_610.ASACLINK	MVS/CSC LibraryStation HTTP Server	PO	U	-	32760	200/10	100
ncs_610.ASAROBM	HTTP Server	PO	U	-	32760	50/10	100
ncs_610.ASAROMM	HTTP Server	PO	U	-	32760	60/10	100
ncs_610.ASAROSM	HTTP Server	PO	U	-	32760	80/10	120
ncs_610.ASCSLINK	MVS/CSC	PO	U	-	32760	500/100	100
ncs_610.ASCSMAC	MVS/CSC	PO	FB	80	23440	30/10	5
ncs_610.ASCSSAMP	MVS/CSC	PO	FB	80	23440	30/10	5
ncs_610.ASKYICNS	HTTP Server	PO	VB	32754	32760	1/1	10
ncs_610.ASKYLINK	HTTP Server	PO	U	-	32760	200/100	50
ncs_610.ASKYRTNS	HTTP Server	PO	U	-	32760	200/100	50
ncs_610.ASKYSAMP	HTTP Server	PO	FB	80	23440	1/1	1
ncs_610.ASLCLINK	LibraryStation	PO	U	-	32760	500/100	50
ncs_610.ASLCSAMP	LibraryStation	PO	FB	80	23440	30/10	5
ncs_610.ASLSLINK	HSC	PO	U	-	32760	300/30	200
ncs_610.ASLSMAC	HSC	PO	FB	80	23440	100/50	20
ncs_610.ASLSSAMP	HSC	PO	FB	80	23440	100/50	20
ncs_610.ASLULINK	SMC, HSC, MVS/CSC	PO	U	-	32760	2/1	10
ncs_610.ASMCLINK	SMC	PO	U	-	32760	500/50	30
ncs_610.ASMCMAC	SMC	PO	FB	80	23440	20/10	5
ncs_610.ASMCSAMP	SMC	PO	FB	80	23440	20/10	5
ncs_610.ASMXLINK	HTTP Server	PO	U	-	32760	2/1	5

Updating the SYSLIB Concatenation

Different versions of MVS/ESA JES3, and multiple tape management systems (for example TLMS and CA-1) are supported. Therefore, certain DDDEF entries must be added to the SMP/E CSI, and the SYSLIB concatenation must be modified to include the appropriate macro libraries.

An example for adding the required DDDEF entries to the SMP/E CSI and modifying the SYSLIB concatenation is provided in member ALLSYSLB of your SMP/E JCL library. Follow the instructions included in the prologue of ALLSYSLB and run the job to add the required DDDEF entries and modify the SYSLIB concatenation.

Chapter 2. Installing the NCS Functions and JES3 Support Functions

Overview

This chapter describes the tasks required to install the NCS base functions and JES3 support functions.

The following topics are included:

- Receiving the NCS base functions (SMP/E RECEIVE)
- Installing the NCS base functions (SMP/E APPLY and ACCEPT)
- Optionally, installing the NCS JES3 support functions (SMP/E DDDEF, APPLY and ACCEPT)
- Installing product maintenance

Before installing the NCS functions, verify that you have completed the pre-installation tasks described in Chapter 1, “Performing NCS Pre-installation Tasks” on page 1.

After completing the installation tasks described in this chapter, proceed with the post-installation tasks for each product being installed.

- **Chapter 3, “Performing JES3 Post-Installation Tasks”** describes required post-installation tasks for JES3 environments running with TAPE SETUP processing.
- **Chapter 4, “Performing SMC Post-installation Tasks”** describes post-installation tasks for the SMC.
- **Chapter 5, “Performing Post-installation Tasks for the StorageTek HTTP Server”**describes required post-installation tasks for the StorageTek HTTP server.
- **Chapter 6, “Performing HSC Post-installation Tasks”** describes required post-installation tasks for the HSC.
- **Chapter 7, “Performing MVS/CSC Post-installation Tasks”** describes required post-installation tasks for the MVS/CSC.
- **Chapter 8, “Performing LibraryStation Post-Installation Tasks”** describes post-installation tasks for the LibraryStation.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for installation and configuration considerations.

Receiving the NCS Base Functions and Communication Functions (SMP/E RECEIVE)

You must issue the SMP/E RECEIVE function to receive the functions you want to install into the target and distribution zones. You can use the NCSRECV sample member provided in your SMP/E JCL library, or the SMP/E Sysmod Management panels to receive the functions. See "Reviewing the NCS FMIDs" on page 14 for a list of NCS SMP/E FMIDs.

Follow the instructions in the prologue of the NCSRECV sample member and run the job to receive the functions you wish to install.

Note: If you install an NCS 6.1 product component in an SMP/E CSI containing a previous release of that product, the previous release is deleted from the target and distribution zones. In addition, all SYSMODS for the previous release are deleted from the SMP/E CSI. If you choose to do this, Sun Microsystems recommends that you backup the NCS SMP/E CSI prior to installing the NCS 6.1 product components.

Installing the NCS Base Functions (SMP/E APPLY and ACCEPT)

The following sections describe the procedures for installing the NCS base functions into the appropriate target and distribution zone.

Applying the NCS Base Functions (SMP/E APPLY)

You can use the NCSAPPLY sample provided in your SMP/E JCL library, or the SMP/E Sysmod Management panels to install the NCS base functions into the appropriate target zone.

Follow the instructions in the prologue of the sample member and run the steps to install the functions into the target zone. The return code must be zero (0) for all steps executed in this job. If you receive a different return code, contact Sun StorageTek Software Support.

Notes:

- The SMX6100 FMID is dependent on the SMC6100 FMID, and therefore must be applied **after** the SMC6100 FMID.
- You can use the APPLY CHECK option as often as necessary to identify SMP/E processing problems before the actual APPLY process. All SMP/E detected problems must be resolved before the base functions can be successfully installed.

Accepting the NCS Base Functions (SMP/E ACCEPT)

You can use the NCSACCPT sample provided in your SMP/E JCL library, or the SMP/E Sysmod Management panels to accept the NCS base functions into the appropriate distribution zone.

Note: You can use the ACCEPT CHECK option as often as necessary to identify SMP/E processing problems before the actual ACCEPT process. All SMP/E detected problems must be resolved before the base functions can be successfully installed.

Installing the SMC JES3 Support Function (SMP/E DDDEF, APPLY and ACCEPT)

SMC provides support for JES3 with tape setup. Before proceeding with the JES3 support steps, ensure that you have done the following:

- SMP/E RECEIVE the JES3 FMID SMZ6100 (sample NCSRECV)
- Insert the correct JES3 macro library name in the SMP/E SYSLIB DDDEF (sample ALLSYSLB)
- SMP/E ACCEPT the SMC base function
- SMP/E APPLY all maintenance to the SMC base function
- If installing the SMC JES3 support function as shown in the NCSJ3DEF sample member (with the ASSEM option), an assembly and link-edit of the SMCERSLV module is automatically performed. When SMP/E processing assembles SMCERSLV, the symbol table may run out of space. To avoid this problem, add the following option to the SMP/E global zone utility options for ASMA90:

  ```
  SIZE(MAX,ABOVE)
  ```

  This allows SMP/E to utilize storage above the 16M line for the symbol table.

Allocating NCS JES3 Target and Distribution Library Data Sets

You must allocate the NCS JES3 target and distribution library data sets shown in the following table, and add the DDDEFs to the SMP/E CSI prior to installing the NCS JES3 functions. An example is provided in member NCSJ3DEF of your SMP/E JCL library. The numbers listed for directory blocks and blocks are the minimum required for the product.

Table 4. NCS JES3 Target and Distribution Library Data Sets

Data Set Name	DSORG	RECFM	LRECL	BLKSIZE	Blocks	Directory Blocks
ncs_610.SMZLINK	PO	U	-	32760	20/10	5
ncs_610.ASMZLINK	PO	U	-	32760	20/10	5

Adding Required DDDEFs for the NCS JES3 Target and Distribution Library Data Sets

DDDEF entries are required for NCS JES3 target and distribution libraries. An example for allocating the target and distribution libraries and adding the DDDEF entries is provided in member NCSJ3DEF of your SMP/E JCL library.

The DDnames required for each DDDEF entry match the last qualifier of the data set name in Table 4, above. Thus, the DDnames needed for NCS JES3 DDDEFs are SMZLINK and ASMZLINK.

Applying the SMC JES3 Support Function (SMP/E APPLY)

You can use the NCSJ3APP sample provided in your SMP/E JCL library, or the SMP/E Sysmod Management panels to install the JES3 support function into the appropriate target zone.

Follow the instructions in the prologue of the sample member and run the jobs to install the JES3 support functions into the target zone.

Accepting the SMC JES3 Support Function (SMP/E ACCEPT)

You can use the NCSJ3ACC sample provided in your SMP/E JCL library, or the SMP/E Sysmod Management panels to accept the SMC JES3 support function into the appropriate distribution zone.

Follow the instructions in the prologue of the sample member and run the job to accept the JES3 support function into the distribution zone.

Installing NCS Product Maintenance

If you received an accumulated maintenance tape with the NCS installation base tape, install the product maintenance. Information for this task can be found in Appendix B, “Installing Product Maintenance” on page 85. After NCS product maintenance is installed, proceed with the post-installation tasks for the NCS products you have installed.

Chapter 3. Performing JES3 Post-Installation Tasks

Overview

This chapter describes required post-installation tasks for JES3 environments **with** TAPE SETUP processing. The following topics are included:

- Assembling and Link-editing the SMCERSLV module for SMC
- Authorizing the SMZ load library
- Creating and installing SMC Type 1 modifications
- Creating and installing the JES3 IATUX09 user modification for the SMC
- Creating and installing the JES3 IATUX71 user modification for the SMC

Note: This chapter does **not** apply to JES3 environments without TAPE SETUP processing.

Assembling and Link-editing the SMCERSLV module for SMC

If you installed the SMC JES3 support function with the ASSEM option, a link-edit and assembly of the SMCERSLV module was automatically performed. The SMCERSLV module obtains the correct offsets and lengths of the JES3 macro fields required by the SMC.

After the initial assembly and link-edit of the SMCERSLV module, you must manually reassemble this module each time IBM maintenance is applied to the JES3 macros. You can run member SMCJRSLV of the SMC SAMPLIB, causing a reassembly of SMCERSLV when certain JES3 macros are updated.

The SMCJRSLV library member is run against the MVS/JES3 target and distribution zones. Follow the instructions contained in the prologue of the SMCJRSLV job, make any necessary changes and run the job.

Warning: Sun Microsystems strongly recommends that you use the SMCJRSLV library member to reassemble the SMCERSLV module. Failure to reassemble the SMCERSLV module after applying maintenance to JES3 macros can result in unpredictable SMC operations.

Authorizing the SMZ Load Library

Load Module Access for SMC and JES3

All load modules in the SMZ load library must be accessible to the JES3 address space. This is accomplished using either of the following methods:

- Add the SMZLINK load library to the JES3 STEPLIB concatenation.
- Add the SMZLINK load library to the MVS LINKLIST library.

Note: A JES3 “hot start” is required to activate the modules listed above.

Module SMCERSLV must be accessible to the JES3 address space if the NOSMC parameter of the IATIIP1 Type 1 modification has been set to PROMPT. See page 28 for more information about this modification.

Module SMCERSLV must be accessible to the SMC address space. This module is automatically assembled into the SMCLINK library where the SMZ6100 FMID is installed.

Using IEAAPFzz to Authorize the SMZ Load Library

If you use the IEAAPFzz member of SYS1.PARMLIB to authorize the SMZ load library, you must add the following entry to that list:

```
your.SMZLINK volser
```

This sample is contained in member IEAAPFZZ of the SMC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with the appropriate values for your system.

Note: If the SMZ load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. If you specify the wrong volume, the library will not be authorized.

Using PROGzz to Authorize the SMZ Load Library

If you use PROGzz member of SYS1.PARMLIB to authorize the SMZ load library, you must add the following entries to that list:

```
APF ADD
    DSNAME(your.SMZLINK)
    VOLUME(volser)
```

Note: If the SMC load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. If you specify the wrong volume, the library will not be authorized.

Creating and Installing SMC Type 1 Modifications

You must create and SMP/E install Type 1 modifications to certain JES3 modules for JES3 environments **with** TAPE SETUP processing.

Note: If you plan to run the SMC on an MVS/JES3 system where HSC, MVS/CSC, or a prior release of SMC is currently running, you must remove the existing Type 1 modifications and create and install the SMC Release 6.1 Type 1 modifications.

Creating SMC Type 1 Modifications

Use the SMCEHOOK macro to create an SMC Type 1 modification for **each** of the following JES3 modules:

IATIICM (optional)

The type 1 modification to JES3 module IATIICM allows the SMC to retrieve DFSMS DATACLAS recording technique and media values when specified on the JCL DD statement. Install this modification **only** if your installation allows DATACLAS to be specified on JCL DD statements.

IATIIP1 (required)

The type 1 modification to JES3 module IATIIP1 allows the SMC to perform device exclusion. The SMCEHOOK macro provides an ACALL in the IATIIP1 module that allows the SMC to determine where a data set's volume resides, and substitutes an esoteric name based on the volume's location in the job's intermediate job summary table (IJS). JES3 then creates a job summary table (JST) for the job that is used during device preferencing and volume fetch processing. This Type 1 modification is required.

Code the NOSMC parameter of the SMCEHOOK macro to indicate the action you want JES3 C/I to take if SMC is not active when C/I processing occurs. Choose the parameter value based on whether or not you want JES3 allocation to proceed if the SMC has not initialized. Valid values and actions are listed in the following table.

NOSMC Value	Action
NOSMC=PROMPT	One C/I process prompts the operator to start SMC and waits for SMC initialization.
NOSMC=NONE	The C/I process continues with no StorageTek tape subsystem influence.

IATMDAL (required)

The type 1 modification to JES3 module IATMDAL allows the SMC to perform device preferencing. The SMCEHOOK macro provides an ACALL in the IATMDAL module that allows the SMC to direct the allocation of transports to the closest LSM containing the volume (specific requests), or to the LSM containing the largest number of scratch volumes (nonspecific requests). The JST created for the job is used during device preferencing and fetch processing. This Type 1 modification is required.

Code the TASKID parameter of the SMCEHOOK macro to indicate the task id for device preferencing. The value must be between 151 and 255 inclusive. The default is 203.

IATMDFE (optional)

The Type 1 modification to JES3 module IATMDFE allows the SMC to suppress operator fetch messages for library cartridge transports during dynamic allocation. Install this modification if you wish to suppress these fetch messages. This user modification is optional.

Installing SMC Type 1 Modifications

The prologue for the SMCEHOOK macro provides detailed instructions regarding its use. The SMCEHOOK macro resides in the SMCMAC library.

SMC sample members SMCUIICM, SMCUIIP1, SMCUMDAL, and SMCUMDFE contain examples of the SMC JES3 Type 1 modifications.

After creating the SMC Type 1 modifications to the JES3 modules, you must SMP/E install the Type 1 modifications. Use the SMC SAMPLIB member SMCJTYP1 to SMP/E install the SMC Type 1 modifications for IATIICM, IATIIP1, IATMDAL, and IATMDFE. The following figure shows the JCL included in the member SMCJTYP1.

```
//jobname  JOB  .....
//INSTTYP1 EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI   DD   DSN=your.jes3.global.csi,DISP=SHR
//SMPPTFIN DD   DSN=your.usermods,DISP=SHR
//SMPHOLD  DD   DUMMY
//SMPCNTL  DD   *
  SET BDY(GLOBAL).
  RECEIVE S(
            LUSIICM
            LUSIIP1
            LUSMDAL
            LUSMDFE
           ) .
  SET BDY(jes3-target-zone) .
  APPLY   S(
            LUSIICM
            LUSIIP1
            LUSMDAL
            LUSMDFE
           ) .
/*
```

Perform the following steps:

1. Allocate the data set ‘system.usermods’ on DASD as RECFM=FB, DSORG=PS, LRECL=80, using your own data set naming conventions.

Note: Line numbering must be OFF when editing this data set as described in steps 2-4.

2. Copy SMC SAMPLIB members SMCUIIP1 and SMCUMDAL into ‘system.usermods’. Perform the modifications documented at the top of both members.
3. Determine if the modification to IATIICM is appropriate for your system. If it is, copy the SMC SAMPLIB member SMCUIICM into ‘system.usermods’. Perform the modification documented at the top of the member.
4. Determine if the modification to IATMDFE is appropriate for your system. If it is, copy the SMC SAMPLIB member SMCUMDFE into ‘system.usermods’. Perform the modification documented at the top of the member.
5. Edit the SMC SAMPLIB member SMCJTYP1:
   - Change the JOB card to meet your local standards.
   - Change *your.jes3.global.csi* to the name of your JES3 global CSI.
   - Change *your.usermods* to the name you used for ‘system.usermods’, above.
   - Change *jes3-target-zone* to the JES3 SMP/E target zone name.
   - If you have decided not to install the modification to IATIICM, remove LUSIICM from the RECEIVE and APPLY statements.
   - If you have decided not to install the modification to IATMDFE, remove LUSMDFE from the RECEIVE and APPLY statements.
6. Submit the job.

Creating and Installing the JES3 IATUX09 User Exit Modification for SMC

You must create and SMP/E install the JES3 IATUX09 user exit modification if you want to enable deferred mounting and suppression of operator fetch messages for library volumes.

Creating the JES3 IATUX09 User Exit Modification for SMC

If you want to defer mounts and suppress fetch messages for library volumes during common allocation, you must create the JES3 IATUX09 user exit source and user modification.

The JES3 IATUX09 user exit modification allows the suppression of operator fetch messages for library cartridge transports, and enables the deferred mount processing function. The use of this user exit is optional. However, it must be installed in order to defer mounts and suppress fetch messages for library volumes during common allocation.

If your installation already utilizes JES3 user exit IATUX09, rename the existing user exit and place your new load module name in the SETC's operand field at label "&OLDUX09." See the SETC at label "&OLDUX09" in the sample user exit, SMC3UX09.

An example of the source is contained in SMC sample member SMC3UX09, and an example of the user modification is contained in SMC SAMPLIB member SMCUUX09.

Installing the JES3 IATUX09 User Exit Modification for SMC

After you create the JES3 IATUX09 user exit modification, you must SMP/E install the user exit modification. Use sample library member SMCJUX09 to SMP/E install the JES3 user exit modification.

The following figure shows the JCL included in SMCJUX09.

```
//jobname  JOB  .....
//INSTUX09 EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI   DD   DSN=your.jes3.global.csi,DISP=SHR
//SMPPTFIN DD   DSN=your.usermods,DISP=SHR
//SMPHOLD  DD   DUMMY
//SMPCNTL  DD   *
  SET BDY(GLOBAL) .
  RECEIVE S(
            LUSUX09
           ) .
  SET BDY(jes3-target-zone) .
  APPLY   S(
            LUSUX09
           ) .
/*
```

Perform the following steps:

1. Allocate the data set ‘system.usermods’ on DASD as RECFM=FB, DSORG=PS, LRECL=80, using your own data set naming conventions.
2. Copy SMC SAMPLIB members SMCUUX09 and SMC3UX09 into ‘system.usermods’. Examine the instructions documented at the top of SMCUUX09, and perform any necessary modifications

Note: If you are already using IATUX09, you **must** rename the existing user exit modification.

3. Edit the SMC SAMPLIB member SMCJUX09:
   - Change the JOB card to meet your local standards.
   - Change *your.jes3.global.csi* to the name of your JES3 global CSI.
   - Change *your.usermods* to the name you used for ‘system.usermods’, above.
   - Change *jes3-target-zone* to the JES3 SMP/E target zone name.
4. Submit the job.

Creating and Installing the JES3 IATUX71 User Exit Modification for SMC

You must create and SMP/E install the JES3 IATUX71 user exit modification if you want to enable JES3 mount message (IAT5210) processing for library volumes.

Creating the JES3 IATUX71 User Exit Modification for SMC

If you want to enable JES3 mount messaging processing for library volumes, you must create the JES3 IATUX71 user exit source and user modification.

The JES3 IATUX71 user exit modification enables the mounting of the required volume in response to JES3 mount message IAT5210. This user exit is optional. However, it must be installed in order to enable JES3 mount message processing for library volumes if the library subsystem policy requests no mount deferral. For HSC, no mount deferral is requested by setting the ALLOC command parameter DEFER to OFF. For MVS/CSC, no mount deferral is requested by setting the DEFER startup parameter to NO or by resetting its value to NO with an ALTER command.

An example of the user exit modification is contained in SMC sample member SMCUUX71.

Installing the JES3 IATUX71 User Modification for SMC

After creating the JES3 IATUX71 user exit modification, you must SMP/E install the user exit modification. Use sample library member SMCJUX71 to SMP/E install the JES3 user exit modification.

The following figure shows the JCL included in SMCJUX71.

```
//jobname  JOB  .....
//INSTUX71 EXEC PGM=GIMSMP,REGION=4Ø96K
//SMPCSI   DD   DSN=your.jes3.global.csi,DISP=SHR
//SMPPTFIN DD   DSN=your.usermods,DISP=SHR
//SMPHOLD  DD   DUMMY
//SMPCNTL  DD   *
  SET BDY(GLOBAL) .
  RECEIVE S(
            LUSUX71
           ) .
  SET BDY(jes3-target-zone) .
  APPLY   S(
            LUSUX71
           ) .
/*
```

Perform the following steps:

1. Allocate the data set ‘system.usermods’ on DASD as RECFM=FB, DSORG=PS, LRECL=80, using your own data set naming conventions.
2. Copy SMC SAMPLIB members SMCUUX71 and SMC3UX71 into ‘system.usermods’. Follow the directions in “Creating the JES3 IATUX71 User Exit Modification for SMC” on page 34, examine the instructions at the beginning of SMC3UX71, and perform any necessary modifications

Note: If you are already using IATUX71, you **must** rename the existing user exit modification.

3. Edit the SMC SAMPLIB member SMCJUX71:
   - Change the JOB card to meet your local standards.
   - Change *your.jes3.global.csi* to the name of your JES3 global CSI.
   - Change *your.usermods* to the name you used for ‘system.usermods’, above.
   - Change *jes3-target-zone* to the JES3 SMP/E target zone name.
4. Submit the job.

Chapter 4. Performing SMC Post-installation Tasks

Overview

This chapter describes post-installation tasks for the SMC. The following topics are included:

- Adding the SMC load library to the authorized program list
- Optionally, defining the SMC as an MVS Subsystem
- Copying or Moving the SMCBPREI Module to an MVS LNKLST Library
- Modifying the MVS Program Properties Table for SMC
- SMC data space considerations

Notes:

- Before proceeding, verify that you have completed the installation tasks described in Chapters 1 and 2.
- If you are using JES3 with tape setup, you **must** perform the JES3 tasks described in Chapter 3, “Performing JES3 Post-Installation Tasks” on page 25.

Adding the SMC Load Library to the Authorized Program List

The SMC must run as an authorized program. You must add the SMC load library to the authorized program list on your system. You can authorize the SMC load library by adding the load library to the IEAAPF*zz* member of SYS1. PARMLIB, or by adding the load library to the PROG*zz* member of SYS1. PARMLIB. You can also authorize the SMC load library dynamically.

Using IEAAPF*zz* to authorize the SMC Load Library

If you use the IEAAPF*zz* member of SYS1.PARMLIB to authorize the SMC load library, you must add the following entry to that list:

```
your.SMCLINK volser
```

This sample is contained in member IEAAPFZZ of the SMC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the SMC load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify nothing after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Using PROG*zz* to authorize the SMC Load Library

If you use the PROG*zz* member of SYS1.PARMLIB to authorize the SMC load library, you must add the following entries to that list:

```
APF ADD
    DSNAME(your.SMCLINK)
    VOLUME(volser) | SMS
```

This sample is contained in member PROGZZ of the SMC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the SMC load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify the literal SMS after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Defining the SMC as an MVS Subsystem

The SMC executes as an MVS dynamic subsystem. In many installations, the SMC does not need to be added to the MVS subsystem name table. However, if any of the following conditions are true, you **must** add the SMC to the MVS subsystem name table (SYS1.PARMLIB member IEFSSN*zz*) as required.

- If you are running SMC and a tape management system on the same host, and the tape management system is also executing as an MVS dynamic subsystem, Sun Microsystems recommends that you add both the tape management system and the SMC to the subsystem name table to ensure the correct order of message processing. See "Tape Management System Interaction and the Subsystem Name Table" on page 40.
- If you are running SMC and the Unicenter CA-MIA product on the same host, Sun Microsystems recommends that you add both Unicenter CA-MIA and the SMC to the subsystem name table to ensure the correct order of EDL processing. See "Unicenter CA-MIA Interaction and the Subsystem Name Table" on page 41.
- If you are running SMC, a tape management system, and the Unicenter CA-MIA product on the same host, Sun Microsystems recommends that you add all three products to the subsystem name table. See "SMC, TMS, and Unicenter CA-MIA Interaction and the Subsystem Name Table" on page 41.
- If you wish to run the SMC under the master MVS subsystem (rather than under the primary Job Entry Subsystem), Sun Microsystems recommends that you add the SMC to the subsystem name table. See "Running SMC under MSTR and the Subsystem Name Table" on page 42.

  In addition, the PROCLIB containing the SMC START procedure must be present in the PROCLIB concatenation for the master address space. This concatenation is defined in SYS1.PARMLIB(MSTJCLxx), under DD IEFPDSI.

Copying or Moving the SMCBPREI Module to an MVS LNKLST Library

The SMC subsystem pre-initialization routine module (SMCBPREI), which resides in the SMCLINK library, must also reside in an MVS LNKLST library if you are running the SMC as a secondary MVS subsystem. You can copy or move the SMCBPREI module from SMCLINK to a LNKLST library.

The SMCBPREI pre-initialization routine module is functionally compatible between SMC releases. For future compatibility, however, Sun Microsystems recommends you use the most current release of the SMCBPREI pre-initialization module.

Tape Management System Interaction and the Subsystem Name Table

If you are running a tape management system, you must ensure that it processes MVS mount messages **before** the SMC. To do this, add both the tape management system and the SMC to the subsystem name table with the (TMS) entry preceding the SMC entry. The following example shows entries for CA-1 Release 5.1 and above, and SMC.

```
SUBSYS SUBNAME(JES2) PRIMARY(YES) START(NO)
SUBSYS SUBNAME(TMS)
SUBSYS SUBNAME(SMC0) INITRTN (SMCBPREI)
```

In installations with tape management systems executing on the same host, Sun Microsystems recommends that you always add both the tape management system and the SMC to the subsystem name table.

The following table presents possible subsystem name definition scenarios for a tape management system and SMC when both are dynamic subsystems.

Is SMC defined in the subsystem name table?	Is TMS defined in the subsystem name table	Possible Issues
YES	YES	Supported and recommended. The TMS must precede the SMC in the table.
YES	NO	Not supported. The TMS cannot process MVS mount messages before the SMC.
NO	YES	Supported.
NO	NO	Supported but not recommended. You must ensure that the SMC is started after the TMS.

See “Notes on Subsystem Name Table Modifications for SMC” on page 42.

Unicenter CA-MIA Interaction and the Subsystem Name Table

If you are running the Unicenter CA-MIA product, Computer Associates recommends that you add both SMC and Unicenter CA-MIA to the subsystem name table with the SMC entry preceding the entry for Unicenter CA-MIA. The following example shows entries for SMC and Unicenter CA-MIA.

```
SUBSYS SUBNAME(JES2) PRIMARY(YES) START(NO)
SUBSYS SUBNAME(SMC0) INITRTN(SMCBPREI)
SUBSYS SUBNAME(MIA)
```

Unicenter CA-MIA compatibility also requires that the ALLOCDEF MIACOMPAT(ON) option be specified in SMC. Refer to the *SMC Configuration and Administration Guide* for information about the ALLOCDEF command.

See "Notes on Subsystem Name Table Modifications for SMC" on page 42.

SMC, TMS, and Unicenter CA-MIA Interaction and the Subsystem Name Table

If you are running SMC, a tape management system, and Unicenter CA-MIA all on the same host, Sun Microsystems recommends that you add all three products to the subsystem name table in the order indicated in the following example:

```
SUBSYS SUBNAME(JES2) PRIMARY(YES) START(NO)
SUBSYS SUBNAME(TMS)
SUBSYS SUBNAME(SMC0) INITRTN(SMCBPREI)
SUBSYS SUBNAME(MIA)
```

Unicenter CA-MIA compatibility also requires that the ALLOCDEF MIACOMPAT(ON) option be specified in SMC. Refer to the *SMC Configuration and Administration Guide* for information about the ALLOCDEF command.

See "Notes on Subsystem Name Table Modifications for SMC" on page 42.

Running SMC under MSTR and the Subsystem Name Table

If you wish to run the SMC under the MSTR subsystem rather than under the primary job entry subsystem, you must add the SMC to the subsystem name table to identify the subsystem name, as in the following example:

```
SUBSYS SUBNAME(SMC0)
```

This sample is contained in member IEFSSNZZ of the SMC sample library.

If your primary Job Entry Subsystem is JES3, then the SMC cannot run under MSTR, but must be executed under JES3.

If the SMC subsystem is to execute under MSTR, you must also include the MSTR option on the PARM parameter in the SMC START procedure. Refer to the *SMC Configuration and Administration Guide* for information about creating the SMC START procedure.

An alternative to adding the SMC to the subsystem name table in order to execute under MSTR is to start the SMC subsystem with the SUB=MSTR parameter on the MVS start command. Refer to the *SMC Configuration and Administration Guide* for information about executing the SMC start procedure.

See “Notes on Subsystem Name Table Modifications for SMC” below.

Notes on Subsystem Name Table Modifications for SMC

- The SUBNAME(name) parameter specifies a 1-4 character name that normally corresponds to the SMC START procedure name. If the SMC subsystem name you define via the SUBNAME(name) parameter does not match the SMC START procedure name, you must include the SYSS option on the PARM parameter in the START procedure. Refer to the *SMC Configuration and Administration Guide* for information about creating the SMC START procedure.
- You must use the keyword format of the SUBSYS command rather than the positional format. Refer to the *IBM MVS/ESA Initialization And Tuning Reference* or the *IBM OS/390 Initialization And Tuning Reference* for more information about defining subsystem names.
- You must perform an IPL of the MVS host system before changes to the subsystem name table take effect.
- If you have added the Unicenter CA-MIA subsystem name to the subsystem name table, one of the following must be done:
  - The started task that uses this subsystem **must** be present in the PROCLIB concatenation for the master address space. This concatenation is defined in SYS1.PARMLIB(MSTJCLxx), under DD IEFPDSI.
  - The Start command for Unicenter CA-MIA must specify the SUB=JES2 parameter, i.e., `S CAMIA,SUB=JES2`.

Modifying the MVS Program Properties Table for SMC

You must modify the MVS Program Properties Table (PPT) to include an entry for the SMC subsystem.

Note: The SMC must run in a low key (from 1-7). The examples in this section use key 3. Using keys 8-15 causes unpredictable results including SOC1 and SOC4 abends.

You must add the following entry to member SCHEDzz of SYS1.PARMLIB. This sample entry is in member SCHEDZZ of the SMC sample library included on the installation base tape. The PPT entry is defined as follows:

```
PPT PGMNAME(SMCBINT),PRIV,SYST,KEY(3)
```

Note: After modifying the SCHEDzz member, you must perform an IPL or dynamic update.

SMC Data Space Considerations

SMC uses a data space with SCOPE=COMMON to perform its inter-address space communications. Ensure that the IEASYSxx member MAXCAD parameter is set appropriately in MVS to account for the SMC. This parameter controls the number of common data spaces allowed on an MVS system.

For more information, refer to the IBM manual *z/OS MVS Initialization and Tuning Reference*.

Chapter 5. Performing Post-installation Tasks for the StorageTek HTTP Server

Overview

This chapter describes required post-installation tasks for the StorageTek HTTP Server. The following topics are included:

- Adding the HTTP Server libraries to the authorized program list
- Modifying the MVS Program Properties Table for the HTTP Server
- Customizing the HTTP Server START Procedure
- Customizing the HTTP Server Parameter File
- Starting the HTTP Server
- Stopping the HTTP Server
- Displaying HTTP Server Status
- Tracing the SMC in the HTTP Server

Note: Before proceeding, verify that you have completed the installation tasks described in Chapters 1 and 2.

The StorageTek HTTP Server for OS/390 and z/OS optionally provides the middleware to allow communication between the SMC (client) and a remote HSC subsystem (server).

The HTTP server executes as a separate subsystem on the MVS host where the remote HSC subsystem resides.

Note: The StorageTek HTTP server is also packaged with the VTCS GUI product. However, for performance reasons, Sun Microsystems recommends that you do not use the same HTTP server for both SMC server programs and VTCS GUI programs. Instead, execute one HTTP server for the SMC server, and a separate HTTP server for the VTCS GUI. To execute multiple HTTP server subsystems on a single host, they must connect to different PORT numbers.

Adding the HTTP Server Libraries to the Authorized Program List

The HTTP server, and supporting programs, must run as an authorized program. You must add the STK HTTP load library, the SMX load library, the SSKYRTNS load library, and the SAS/C support load library to the authorized program list on your system. You can authorize these libraries by adding them to the IEAAPFzz member of SYS1.PARMLIB, or by adding them to the PROGzz member of SYS1.PARMLIB. You can also authorize these libraries dynamically.

Using IEAAPFzz to Authorize the HTTP Load Libraries

If you use the IEAAPFzz member of SYS1.PARMLIB to authorize the STK HTTP load library, the SMX load library, and the SAS/C support load library, you must add the following entries to that list:

```
your.SMXLINK volser
your.STKLOAD volser
your.SACLINK volser
your.SSKYRTNS volser
```

This sample is included in member IEAAPFZZ of the SMC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If any of these libraries reside on an SMS-managed volume then you can omit the volser specification for that library. In such cases, specify nothing after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Using PROGzz to Authorize the HTTP Load Libraries

If you use the PROGzz member of SYS1.PARMLIB to authorize the STK HTTP load library, the SMX load library, and the SAS/C support load library, you must add the following entries to that list:

```
APF ADD
    DSNAME(your.SMXLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.STKLOAD)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.SACLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.SSKYRTNS)
    VOLUME(volser) | SMS
```

This sample is included in member PROGZZ of the SMC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If any of these libraries reside on an SMS-managed volume then you can omit the volser specification for that library. In such cases, specify the literal SMS after the library name to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Modifying the MVS Program Properties Table for the HTTP Server

When using IBM DIAGxx member parameter ALLOWCSAUSERKEY(NO), you must modify the MVS Program Properties Table (PPT) to include an entry for the HTTP server.

Note: The SMC must run in a low key (from 1-7). The examples in this section use key 3. Using keys 8-15 causes unpredictable results including SOC1 and SOC4 abends.

You must add the following entry to member SCHEDxx of SYS1.PARMLIB. The PPT entry is defined as follows:

```
PPT PGMNAME(SKYMAN),PRIV,SYST,KEY(3)
```

Note: After modifying the SCHEDxx member, you must perform an IPL or dynamic update.

Customizing the HTTP Server START Procedure

To create the HTTP server START procedure, modify the SRVPROC member from the SMC sample library as described in the JCL comments and add the proc to the production PROCLIB.

Figure 1 provides a sample HTTP server START procedure.

```
//yourprocname   PROC PRM=''
//*
//SERVER   EXEC PGM=SKYMAN,REGION=0M,PARM='&PRM',TIME=1440
//STEPLIB  DD DISP=SHR,DSN=your.ncs.install.smx.smxlink
//         DD DISP=SHR,DSN=your.ncs.install.ssky.stkload
//         DD DISP=SHR,DSN=your.ncs.install.sscr.saclink
//*
//SKYPRM   DD DISP=SHR,DSN=your.parmlib(SRVPARM)
//SKYSET   DD SYSOUT=*
//SKYLOG   DD SYSOUT=*
//SKYTRSN  DD SYSOUT=*
//STDOUT   DD SYSOUT=*
//STDERR   DD SYSOUT=*
//SKYDUMP  DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSTERM  DD SYSOUT=*
```

Figure 1. Sample SMC START Procedure

Customizing the HTTP Server Parameter File

The HTTP server START procedure SRVPROC uses the sample parameter file SRVPARM from the SMC sample library. Refer to the following sections for more information and modify the values in SRVPARM for your site's needs.

Note: When using the HTTP server with the SMC, do **not** specify the security *file* or authuserfile *file* HTTP server parameters. These security parameters apply only when using the HTTP server with the VSM GUI. Using these parameters with the SMC causes authentication errors.

Configuration Parameters

gmtoffset *offset*

specifies the system clock offset from GMT. This parameter is required if the system clock is not set to GMT. You can specify the offset in hours, minutes, and seconds. For example, 10 hours 30 minutes specifies ten and a half hours ahead of GMT.

loglevel *level*

specifies the logging message level. Valid values are error, warning and info. The default is warning.

If you specify info, informational, error, and warning messages are logged.
If you specify error, only error messages are logged.

Network Parameters

servername *name*

specifies the server name reported in responses. The default is the network host name.

serverdomain *domain*

specifies the server domain name reported in responses; for example, your company.com. The default is all blanks.

serverbase *hlq*

specifies the high level qualifier of the server data sets in the form *hlq*. This parameter is required.

- For the VSM GUI, this should match the hlq used during SMP/E installation.
- For SMC, Sun Microsystems recommends that a dummy hlq be supplied for this value.

port *p*

specifies the IP network port the server listens on for connections. The default is port 80, the standard HTTP port.

Caution: The effective IP network port must be accessible for use by the server and it must not be reserved for use by another jobname (that is, by the TCP/IP PORT or PORTRANGE configuration statements). Also under OS/390 or z/OS, the server started task requires SAF authority to interface with TCP/IP or initialization errors will occur. For example, use the following two-step procedure for RACF:

1. Create a RACF group with an OMVS segment and GID for the server started task:

   ```
   RDEFINE STARTED http.* STDATA(USER(userid) GROUP(groupname))
   ADDGROUP groupname OMVS(GID(groupid))
   ```

   Where:

   http
   indicates the name of the server started task procedure

   userid
   indicates the RACF userid to be associated with the started task

   groupname
   indicates the associated RACF group

2. Create a RACF userid with an OMVS segment and UID for the server started task.

   ```
   ADDUSER userid DFLTGRP(groupname) OMVS(UID(uid))
   ```

CGI Parameters

loadmodule SMCGXTR
specify the SMC CGI module to be preloaded for performance.

cgionly yes
indicates that the HTTP server instance is used only for communication from SMC to HSC and is not available for VSM GUI functions. The HTTP server's ability to retrieve files or directories is disabled.

requireapf yes
overrides the default requirement of apf authorization no (default).

Performance Considerations

The recommended MVS performance group is above batch but below TSO. If the server is extremely busy, reducing the maximum tasks for the HTTP server may improve performance. Use the following parameters to set the initial and maximum number of HTTP server tasks:

startservers 20
sets initial tasks to 20.

maxclients 20
sets the maximum number of tasks to 20.

Starting the HTTP Server

To start the HTTP server, enter the following MVS operator command:

```
START SRVPROC
```

The server is active when the following message appears:

```
SKY003I  HTTPD ready to accept requests
```

By default, when the server is started, it uses the SRVPARM member in the SMC sample library.

Stopping the HTTP Server

To stop the HTTP Server, enter either of the following MVS operator commands:

```
P SRVPROC
F SRVPROC,SHUTDOWN
```

Displaying HTTP Server Status

To display the status of the HTTP server, enter the following MVS operator command:

```
F SKYPROC,D S
```

The following shows a display status response:

```
SKY016I  HTTP Server 1.0.0 started at Fri Jan 24 06:51:35 2003

requests received 85
tasks default: 20 active: 20 limit:40
SKY053I Current active worker tasks: 0
```

This response shows an idle system with the default number of worker tasks, which handle client connections, idle waiting for work. At times of peak demand, the server can dynamically start additional tasks up to the limit.

To display the server connections, enter the following MVS command:

```
F OWCH72,D C
```

The following shows a display connections response:

```
SKY031I  Connections total: 114  max: 63/min
SKY032I  Connection rates:  0/min   0/hour
SKY026I  Task: 5 Requests: 1 Client: 199.117.186.54 : 36292
```

This response shows one client active whose IP address is 199.117.186.54 and using port 36292.

Tracing the SMC in the HTTP Server

SMC requests in the HTTP server carry their trace settings, if any, from the SMC client. If the SMC TRace JObname CGI command has been entered for a specific job on the client, the trace information for that request is written to the HTTP SKYLOG data set. Do not specify any TRace commands on the SMC client unless requested by Sun StorageTek Software Support.

Chapter 6. Performing HSC Post-installation Tasks

Overview

This chapter describes required post-installation tasks for the HSC. The following topics are included:

- Defining the HSC as an MVS subsystem
- Adding the HSC load library to the authorized program list
- Adding the HSC user exit library to the authorized program list
- Copying or moving the SLSBPREI module to an MVS LINKLIST library
- Modifying the MVS program properties table for HSC
- Adding SMF parameters for the HSC
- Re-assembling the SLUCONDB (Scratch Conversion) Modules

Notes:

- Before proceeding, verify that you have completed the installation tasks described in Chapters 1 and 2.
- Once installed, The HSC **requires** a license key in order to initialize. Refer to the *MVS/HSC Configuration Guide* for information about obtaining and configuring the HSC license key.

Defining the HSC as an MVS Subsystem

HSC can either run under the master MVS subsystem, or as a secondary MVS subsystem.

- If you run HSC under the master MVS subsystem, you must add a line to your subsystem name table (SYS1.PARMLIB member IEFSSN*xx*) to identify the subsystem name. This is a one- to four-character name that corresponds to the procedure name for the HSC started task procedure.
- If you run HSC as a secondary MVS subsystem, you must add a line to your subsystem name table (SYS1.PARMLIB member IEFSSN*xx*) to identify the following:
  - The subsystem name. This is a one- to four-character name that corresponds to the procedure name for the HSC started task procedure.
  - The HSC subsystem initialization routine name, which must be SLSBPREI.

Assuming your HSC subsystem name is SLS0, the following lines correctly add HSC to your subsystem name table when running HSC under the master MVS subsystem, or as a secondary MVS subsystem. This sample entry is contained in member IEFSSNXX of the HSC sample library on the installation base tape.

```
SUBSYS SUBNAME(SLSØ) INITRTN(SLSBPREI)   /* keyword format */
```

You can also define the HSC subsystem name dynamically using the MVS SETSSI command. For example:

```
SETSSI ADD,SUB=SLSØ  /* If running under master subsystem */

or

SETSSI ADD,SUB=SLSØ,INITRTN=SLSBPREI  /* If running as secondary subsystem */
```

where SLS0 is the HSC subsystem name, and SLSBPREI is the name of the HSC subsystem initialization routine.

Notes:

- If the HSC subsystem name you define in the subsystem name table does not match the HSC started task procedure name, you must include the SYSS option on the PARM parameter in the started task procedure. Refer to the *MVS/HSC Configuration Guide* for information about creating an HSC startup procedure.
- If you are not defining the HSC subsystem name dynamically, you must perform an IPL of the MVS host system before the HSC subsystem name entry takes effect.
- HSC no longer interacts with tape management systems in processing MVS messages. Therefore, the order of definition of the HSC subsystem and a tape

management subsystem is irrelevant. However, the SMC subsystem definition, if specified, must follow the tape management system entry.

- Refer to the *IBM MVS/ESA Initialization and Tuning Reference* or the *IBM OS/390 Initialization and Tuning Reference* for more information about defining subsystem names.

Adding the HSC Load Library to the Authorized Program List

The HSC must run as an authorized program. You must add the HSC load library to the authorized program list on your system. You can authorize the HSC load library by adding the load library to the IEAAPF*xx* member of SYS1. PARMLIB, or by adding the load library to the PROG*xx* member of SYS1. PARMLIB. You can also authorize the HSC load library dynamically.

The following sections describe each of these methods.

Using IEAAPF*xx* to authorize the HSC Load Library

If you use the IEAAPF*xx* member of SYS1.PARMLIB to authorize the HSC load library, you must add the following entry to that list:

```
your.SLSLINK volser
```

This sample is contained in member IEAAPFXX of the HSC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the HSC load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify nothing after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Using PROG*xx* to authorize the HSC Load Library

If you use the PROG*xx* member of SYS1.PARMLIB to authorize the HSC load library, you must add the following entries to that list:

```
APF ADD
    DSNAME(your.SLSLINK)
    VOLUME(volser) | SMS
```

This sample is contained in member PROGXX of the HSC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the HSC load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify the literal SMS after the library name to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.

Adding the HSC User Exit Library to the Authorized Program List

The HSC user exit library can either be the same as the HSC load library, or a separate library. If the HSC user exit library is a separate library, you must add the library to the authorized program list. For example:

```
SLS.SLSLINK    volser,
SLS.USEREXIT.LOAD    volser
```

Before adding the library to the authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the HSC user exit library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. If you specify the wrong volume, the library will not be authorized.

Copying or Moving the SLSBPREI Module to an MVS LINKLIST Library

The HSC subsystem pre-initialization routine module (SLSBPREI), which resides in the SLSLINK library, must also reside in an MVS LINKLIST library if you are running the HSC as a secondary MVS subsystem. You can copy or move the SLSBPREI module from SLSLINK to a LINKLIST library.

The SLSBPREI pre-initialization routine module is functionally compatible between HSC releases. For future compatibility, however, Sun Microsystems recommends you use the most current release of the SLSBPREI pre-initialization module.

Modifying the MVS Program Properties Table for HSC

You must modify the MVS Program Properties Table (PPT) to include an entry for the HSC subsystem.

Note: The HSC must run in a low key (from 1-7). The examples in this section use key 3. Using keys 8-15 causes unpredictable results including SOC1 and SOC4 abends.

You must add the following entry to member SCHED*xx* of SYS1.PARMLIB. This sample entry is in member SCHEDXX of the HSC sample library on the installation base tape. The PPT entry is defined as follows:

```
PPT PGMNAME(SLSBINIT),PRIV,SYST,KEY(3)
```

Adding SMF Parameters for the HSC

You must add two lines to your System Management Facility (SMF) parameters in SYS1.PARMLIB member SMFPRM*xx* to identify the following:

- HSC subsystem name
- HSC recording interval (the smaller the number, the more often data is recorded)
- HSC SMF record type
- HSC SMF record subtypes to be recorded (See "HSC SMF Record Subtypes" for a list of record subtypes that HSC can generate.) These record subtypes may be specified as a list (n,m,...z) or range (n-m), or as a combination (n,m-p,t,z). A range **must** be specified with a dash. A colon is invalid.

Assuming your HSC subsystem name is SLS0, the following example shows the lines that add HSC to your SMF parameters.

```
SUBSYS(SLS0,INTERVAL(000100),TYPE(255))
SUBPARM(SLS0(SUBTYPE(1,2,3,4,5,6,7,8)))
```

This sample is contained in member SMFPRMXX of the HSC sample library on the installation base tape.

HSC SMF Record Subtypes

The following table lists the SMF record subtypes that HSC can generate.

Subtype	Description
1	LSM operations statistics
2	Vary Station command
3	MODify LSM command
4	LMU read statistics
5	Cartridge eject
6	Cartridge enter
7	Cartridge move
8	VIew command

If you do not specify the SUBTYPE parameter in your SMF options, HSC generates subtypes 1 through 6. You must code a SUBPARM parameter and include subtypes 7 and 8 to generate cartridge move and view records.

For more information about the SMF records, refer to the *MVS/HSC System Programmer's Guide*.

Re-assembling the SLUCONDB (Scratch Conversion) Modules

Depending on your tape management system (TMS) and associated release level, you may need to re-assemble the SLUCONDB (Scratch Conversion) modules. This is also necessary if local modifications are made to certain modules.

Refer to the *MVS/HSC System Programmer's Guide* for more information about the Scratch Conversion (SLUCONDB) Utility and re-assembly requirements.

Chapter 7. Performing MVS/CSC Post-installation Tasks

Overview

This chapter describes required post-installation tasks for the MVS/CSC. The following topics are included:

- Defining the MVS/CSC as an MVS subsystem
- Adding MVS/CSC libraries to the authorized program list
- Adding the MVS/CSC user exit library to the authorized program list
- Copying or moving the SCSBPREI module to an MVS LINKLIST library
- Modifying the MVS program properties table for MVS/CSC
- Allocating MVS/CSC event-log and trace data sets

Notes:

- Before proceeding, verify that you have completed the installation tasks described in Chapters 1 and 2.
- Once installed, The MVS/CSC **requires** a license key in order to initialize. Refer to the *MVS/CSC Configuration Guide* for information about obtaining and configuring the MVS/CSC license key.

Defining the MVS/CSC as an MVS Subsystem

MVS/CSC runs as a secondary MVS subsystem. You must add a line to your subsystem name table (SYS1.PARMLIB member IEFSSN*yy*) to identify the following:

- The MVS/CSC subsystem name. This is a one- to four-character name that corresponds to the procedure name for the MVS/CSC started task procedure.
- The MVS/CSC subsystem initialization routine name, which must be SCSBPREI.

Assuming your MVS/CSC subsystem name is CSC0, the following line correctly adds MVS/CSC to your subsystem name table. This sample entry is contained in member IEFSSNYY of the MVS/CSC sample library on the installation base tape.

```
SUBSYS SUBNAME(CSC0) INITRTN(SCSBPREI)   /* keyword format */
```

You can also define the MVS/CSC subsystem name dynamically using the MVS SETSSI command. For example:

```
SETSSI ADD,SUB=CSC0,INITRTN=SCSBPREI
```

where CSC0 is the MVS/CSC subsystem name, and SCSBPREI is the name of the MVS/CSC subsystem initialization routine.

Notes:

- If you are not defining the MVS/CSC subsystem name dynamically, you must perform an IPL of the MVS host system before the MVS/CSC subsystem name entry takes effect.
- MVS/CSC no longer interacts with tape management systems in processing MVS messages. Therefore, the order of definition of the HSC subsystem and a tape management subsystem is irrelevant. However, the SMC subsystem definition, if specified, must follow the tape management system entry.
- Refer to the *IBM MVS/ESA Initialization and Tuning Reference* or the *IBM OS/390 Initialization and Tuning Reference* for more information about defining subsystem names.

Defining Multiple MVS/CSC Subsystems Running on the Same MVS Host System

Multiple MVS/CSC subsystems can run on the same MVS host system. Each MVS/CSC must be defined as a separate MVS subsystem. Multiple MVS/CSC subsystems only require additional disk space for the multiple JCL startup procedures, additional startup parameter files, and optional event-log, trace, and TAPEREQ definition data sets.

If you intend to run multiple MVS/CSCs, each connected to a separate server, the following operating requirements and restrictions must be considered:

- All MVS/CSC subsystems may run from a single copy of executable modules.
- Each MVS/CSC requires its own MVS subsystem definition, cataloged procedure, startup parameters, virtual storage, and optional event-log, trace, and TAPEREQ definition data sets.
- MVS/CSC user exits should be the same version running for each MVS/CSC subsystem.
- Operator command prefix characters can be the same or different depending on local operating preferences.

- The SMC interrogates MVS/CSC subsystems using volume and policy information to determine which subsystem owns the allocation request. The order of interrogation is determined by the order of the SMC LIBRARY commands (if specified). If LIBRARY commands are not specified, the order of the MVS/CSCs in the SSCVT table is used.

The following must be defined for each subsystem:

- Server attachment
- Startup parameter file
- Communications links
- MVS/CSC startup procedure

In addition, you can optionally define event-log and trace data sets for each subsystem.

The text from the USERDATA parameter specified in the startup parameter file is passed to these user exits. This text and the parameter list (containing job name, data set name, and other information) can be used to specify to the SMC which active MVS/CSC subsystem is considered the owner of the allocation request.

Refer to the following publications for more information:

- Refer to the *NCS User Exit Guide* for more information about MVS/CSC user exits.
- Refer to the *MVS/CSC Configuration Guide* for information about MVS/CSC configuration tasks.
- Refer to the *MVS/CSC Operator's Guide* for information about MVS/CSC operating procedures.

Adding MVS/CSC Libraries to the Authorized Program List

The MVS/CSC must run as an authorized program. You must add the MVS/CSC load libraries to the authorized program list on your system. The MVS/CSC load libraries must exist in authorized program list (APF) authorized libraries SCSLINK and SACLINK.

You can authorize the MVS/CSC load libraries by adding the load libraries to the IEAAPF*yy* member of SYS1. PARMLIB, or by adding the load libraries to the PROG*yy* member of SYS1. PARMLIB. You can also authorize the MVS/CSC load libraries dynamically.

The following sections describe each of these methods.

Using IEAAPF*yy* to authorize the MVS/CSC Load Libraries

If you use the IEAAPF*yy* member of SYS1.PARMLIB to authorize the MVS/CSC load libraries, you must add the following entries to that list.

```
your.SCSLINK volser,
your.TCPLINK volser,
your.SACLINK volser,
your.CSLLINK volser
```

This sample is contained in member IEAAPFYY of the MVS/CSC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Notes:

- If the MVS/CSC load libraries resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify nothing after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.
- The TCPLINK load library is required if you are using CA Unicenter TCPaccess Communications Server or CISCO IOS. Refer to the CA documentation for more information. If you are using IBM TCP/IP, this load library is not needed.

Using PROG*yy* to authorize the MVS/CSC Load Libraries

If you use the PROG*yy* member of SYS1.PARMLIB to authorize the MVS/CSC load libraries, you must add the following entries to that list.

```
APF ADD
    DSNAME(your.SCSLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.TCPLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.SACLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.CSLLINK)
    VOLUME(volser) | SMS
```

This sample is contained in member PROGYY of the MVS/CSC sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Notes:

- If the MVS/CSC load libraries resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify the literal SMS after the library name to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.
- The TCPLINK load library is required if you are using CA Unicenter TCPaccess Communications Server or CISCO IOS. Refer to your CA documentation for more information. If you are using IBM TCP/IP, this load library is not needed.

Adding the MVS/CSC User Exit Library to the Authorized Program List

The MVS/CSC user exit library can either be the same as the MVS/CSC load library, or a separate library. If the MVS/CSC user exit library is a separate library, you must add the library to the authorized program list. For example:

```
ncs_610.SCSLINK   volser,
ncs_610.USEREXIT.LOAD   volser
```

Before adding the library to the authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Note: If the MVS/CSC user exit library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. If you specify the wrong volume, the library will not be authorized.

Copying or Moving the SCSBPREI Module to an MVS LINKLIST Library

The MVS/CSC subsystem pre-initialization routine module (SCSBPREI), which resides in the SCSLINK library, must also reside in an MVS LINKLIST library. You can copy or move the SCSBPREI module from SCSLINK to a LINKLIST library.

The SCSBPREI pre-initialization routine module is functionally compatible between MVS/CSC releases. For future compatibility, however, Sun Microsystems recommends you use the most current release of the SCSBPREI pre-initialization module.

Modifying the MVS Program Properties Table for MVS/CSC

You must modify the MVS Program Properties Table (PPT) to include an entry for the MVS/CSC subsystem.

Note: The MVS/CSC must run in a low key (from 1-7). The examples in this section use key 3. Using keys 8-15 causes unpredictable results including SOC1 and SOC4 abends.

You must add the following entry to member SCHED*yy* of SYS1.PARMLIB. This sample entry is in member SCHEDYY of the MVS/CSC sample library on the installation base tape. The PPT entry is defined as follows:

```
PPT PGMNAME(SCSBINIT),PRIV,SYST,KEY(3)
```

Allocating MVS/CSC Event-Log and Trace Data Sets

The event-log data set is used to record events logged by MVS/CSC's Event Log facility. The trace data set is used to record trace output produced by MVS/CSC's Trace facility. If you plan to use MVS/CSC's Event Log and Trace facilities, you must allocate event-log and trace data sets to record the output that is produced by these facilities. The following table gives recommendations for size definitions. The numbers given for blocks are the minimum required for the data sets.

Refer to the *MVS/CSC Configuration Guide* and *MVS/CSC System Programmer's Guide* for more information about MVS/CSC's Event Log and Trace facilities.

Table 5. Trace and Event-Log Data Sets

Data Set	DSORG	RECFM	LRECL	BLKSIZE	3380 Tracks	Directory Blocks
TRACE	PS	VB	3076	10000	200	-
EVENT LOG	PS	VB	3076	10000	200	-

Chapter 8. Performing LibraryStation Post-Installation Tasks

Overview

This chapter describes post-installation tasks for LibraryStation. The following topics are included:

- Adding LibraryStation libraries to the authorized program list
- Optionally defining the Persistent Data File (PDF)

Notes:

- Before proceeding, verify that you have completed the installation tasks described in Chapters 1 and 2.
- Once installed, The LibraryStation **requires** a license key in order to initialize. Refer to the *MVS/HSC Configuration Guide* for information about obtaining and configuring the LibraryStation license key.

Adding LibraryStation Libraries to the Authorized Program List

The LibraryStation must run as an authorized program. You must add the LibraryStation load libraries to the authorized program list on your system. The LibraryStation load libraries must exist in authorized program list (APF) authorized libraries SLCLINK and SACLINK.

You can authorize the LibraryStation load libraries by adding the load libraries to the IEAAPF*xx* member of SYS1. PARMLIB, or by adding the load libraries to the PROG*xx* member of SYS1. PARMLIB. You can also authorize the LibraryStation load libraries dynamically.

The following sections describe each of these methods.

Using IEAAPF*xx* to authorize the LibraryStation Load Libraries

If you use the IEAAPF*xx* member of SYS1.PARMLIB to authorize the LibraryStation load libraries, you must add the following entries to that list:

```
your.SLCLINK volser,
your.TCPLINK volser,
your.SACLINK volser,
your.CSLLINK volser
```

This sample is contained in member SLGAPFXX of the LibraryStation sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Notes:

- If the LibraryStation load library resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify nothing after the library name, to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.
- The TCPLINK load library is required if you are using CA Unicenter TCPaccess Communications Server or CISCO IOS TCP/IP communications. Refer to your CA documentation for more information. If you are using IBM TCP/IP, this load library is not needed.

Using PROG*xx* to authorize the LibraryStation Load Libraries

If you use the PROG*xx* member of SYS1.PARMLIB to authorize the LibraryStation load libraries, you must add the following entries to that list.

```
APF ADD
    DSNAME(your.SLCLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.TCPLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.SACLINK)
    VOLUME(volser) | SMS
APF ADD
    DSNAME(your.CSLLINK)
    VOLUME(volser) | SMS
```

This sample is contained in member SLGPRGXX of the LibraryStation sample library. Before adding this sample to your authorized program list, edit the high level qualifier and volser with appropriate values for your system.

Notes:

- If the LibraryStation load libraries resides on an SMS-managed volume, you do not need to specify a volume in the authorized library entry. In this case, specify the literal SMS after the library name to indicate that SMS is managing the library. If you specify the wrong volume, the library will not be authorized.
- The TCPLINK load library is required if you are using CA Unicenter TCPaccess Communications Server or CISCO IOS. Refer to your CA documentation for more information. If you are using IBM TCP/IP, this load library is not needed.

Defining the Persistent Data File (Optional)

Warning:

- If you are migrating from a previous release of LibraryStation, you must delete the existing PDF and define a new PDF for the new release.
- You must define a Persistent Data File (PDF) if LibraryStation is servicing heterogeneous clients (i.e., non-MVS clients). If LibraryStation is servicing MVS clients in a sysplex environment, **do not** define the PDF. The PDF is not supported for sysplex environments. Refer to the *LibraryStation Configuration Guide* for more information about the PDF.
- If you are running multiple LibraryStations, Refer to the *LibraryStation Configuration Guide* for special information regarding the PDF.

LibraryStation software includes a Database Manager (DBM) that is initialized during LibraryStation initialization. The DBM manages several persistent data objects that are not maintained by the HSC, including resource locks and drive status. Data objects

managed by the DBM are stored in one or more VSAM files. These files are collectively referred to as the PDF. The PDF contains volume records, drive records, and lockid records. You must define the PDF when LibraryStation is servicing heterogeneous clients. Use IDCAMS to define data sets for the PDF. The following figure shows the IDCAMS statements used to define the PDF. The JCL to define data sets for the PDF is contained in member SLGDBCR of the LibraryStation sample library.

```
//SLGDBCR JOB  job card info
//*
//* NOTE: A minimum of 1 Meg of virtual storage is needed
//*       for this job (i.e., use REGION=1M on the job card)
//*
//CREATEDB EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//INPUT    DD *
000000000000 DB INITIALIZATION RECORD
//SYSIN    DD *
   DELETE (cluster_name) CLUSTER
   DEFINE CLUSTER (                          _
       NAME(cluster_name)                    _
       VOLUMES(volser)                       _
       RECORDS(nr,2*nr)                      _
       RECORDSIZE(30 100)                    _
       KEYS(12 0)                            _
       UNIQUE )
   REPRO INFILE(INPUT)                       _
         OUTDATASET(cluster_name)
   DEFINE ALTERNATEINDEX (                   _
       NAME(alternate_index_name)            _
       RELATE(cluster_name)                  _
       KEYS(10 2)                            _
       RECORDS(nr,2*nr)                      _
       RECORDSIZE(27 27)                     _
       VOLUMES(volser)                       _
       UNIQUEKEY                             _
       UNIQUE                                _
       UPGRADE )                             _
   DEFINE PATH (
       NAME(path_name)                       _
       PATHENTRY(alternate_index_name))      _
   BLDINDEX                                  _
       INDATASET (cluster_name)              _
       OUTDATASET (alternate_index_name)
   LISTCAT ENTRIES (                         _
       cluster_name                          _
       alternate_index_name                  _
       path_name) ALL
//*
```

You must supply or modify the following information:

- PDF Data set names
- Volume location of the PDF
- Record keyword values

PDF Data Set Names

You must supply names for the data sets listed in the following table:

Table 6. PDF Data Set Names

NAME Keyword	Description
CLUSTER	The name for the SLSPDF base cluster (*cluster_name*), such as LSTAT.PDF.
ALTERNATEINDEX	The name for the SLSPDFX alternate index (*alternate_index_name*), such as LSTAT.PDFAIX.
PATH	The name for the path to SLSPDFX (*path_name*), such as LSTAT.PDFPATH.

Note: There is no predefined naming convention for data set names. You can use the same prefix for all three data sets and provide a unique file type for each name.

Volume Location

A single PDF is defined for LibraryStation, and the host system where LibraryStation is initialized must have access to the DASD volume where the PDF is located. Therefore, in a multiple host environment where more than one host is capable of initializing LibraryStation, the PDF must be located on shared DASD that is accessible to each initializing host.

The volume where the PDF is to be allocated can be any available DASD. You identify the DASD by its volser (*volser*).

Values for Record Keywords

The PDF record space calculation (***nr***) (shown below) is based on the maximum number of volumes (***nv***) that all client systems can have locked at one time, and the total number of tape cartridge drives that will be used by the network clients (***nd***).

number of records (*nr*) = (*nv* + *nd*) * 1.1

The secondary PDF space allocation is calculated as twice the number of records (***2*nr)***.

Setting primary records to 2000 and secondary records to 4000 should be adequate for most LibraryStation installations. However, if you want to verify the records for your specific installation, use the allocation formula with your site's number of volumes and network client data.

Appendix A. NCS Samples, Source Code Modules, and Macros

Overview

This appendix lists the sample installation JCL members used to install the NCS product components. It also lists the samples, load modules, and macros included with SMC, HSC, MVS/CSC, and LibraryStation.

Note: If you are using the StorageTek Virtual Storage Manager (VSM) system in your NCS environment, refer to the *VTCS Installation and Configuration Guide* for VTCS samples.

Sample Installation JCL

The following table lists the sample installation JCL members included in File 2 of the NCS installation base tape:

Table 7. Sample Installation JCL Members

Member Name	Description
ALLOCCSI	Sample JCL for defining and initializing the SMP/E CSI
ALLSYSLB	Sample JCL for adding required DDDEF entries and modifying the SYSLIB concatenation
MAINTACF	Sample JCL for SMP/E ACCEPT of maintenance in a mass mode for specific NCS FMIDs
MAINTACS	Sample JCL for SMP/E ACCEPT of maintenance for specific SYSMODs
MAINTAPF	Sample JCL for SMP/E APPLY of maintenance in mass mode for specific NCS FMIDs
MAINTAPS	Sample JCL for SMP/E APPLY of maintenance for specific SYSMODs
MAINTRCF	Sample JCL for SMP/E RECEIVE of maintenance for a specific NCS FMID
MAINTRCP	Sample JCL for SMP/E RECEIVE of maintenance for an NCS Product Update Tape (PUT)
MAINTRCS	Sample JCL for SMP/E RECEIVE of maintenance for specific SYSMODs
NCSACCPT	Sample JCL for SMP/E ACCEPT of the SMC, HSC, MVS/CSC, LibraryStation, and VTCS functions
NCSAPPLY	Sample JCL for SMP/E APPLY of the SMC, HSC, MVS/CSC, LibraryStation, and VTCS functions
NCSDDEF	Sample JCL for adding required DDDEF entries for all NCS product components
NCSJ3ACC	Sample JCL for SMP/E ACCEPT of the SMC JES3 function
NCSJ3APP	Sample JCL for SMP/E APPLY of the SMC JES3 function
NCSJ3DEF	Sample JCL for adding required DDDEF entries for the SMC JES3 function
NCSRECV	Sample JCL for SMP/E RECEIVE of the SMC, HSC, MVS/CSC, LibraryStation, and VTCS functions

SMC Base and JES3 Samples, Source Code Modules, and Macros

The following tables list the SMC samples, source code modules and macros contained on the NCS installation tape:

Table 8. SMC Samples

Member Name	Description
GTFEXTR	Sample extract for SMC trace of a single job
GTFPARMS	Sample GTF parameters for SMC trace
GTFPROC	Sample GTF startup JCL
IEAAPFZZ	Sample SMC APF list entries
IEFSSNZZ	Sample SMC subsystem name table entry
PROGZZ	Sample SMC APF list entries
SCHEDZZ	Sample MVS Program Properties Table (PPT) entry for SMC
SMC3UX09	Sample SMC JES3 IATUX09 user exit source
SMC3UX71	Sample SMC JES3 IATUX71 user exit source
SMCCMDS	Sample command file for the SMCCMDS DD statement
SMCJRSLA	Sample JCL for assembling SMCERSLV
SMCJRSLV	Sample JCL for running UCLIN for SMCERSLV
SMCJTYP1	Sample JCL to SMP/E install the SMC Type 1 modifications
SMCJUX09	Sample JCL to SMP/E install the SMC IATUX09 user modification
SMCJUX71	Sample JCL to SMP/E install the SMC IATUX71 user modification
SMCPARMS	Sample parameter file for SMCPARMS DD statement
SMCPROC	Sample startup JCL
SMCUIICM	Sample IATIICM Type 1 modification
SMCUIIP1	Sample IATIIP1 Type 1 modification
SMCUMDAL	Sample IATMDAL Type 1 modification
SMCUMDFE	Sample IATMDFE Type 1 modification
SMCUUX09	Sample SMC JES3 IATUX09 user modification
SMCUUX71	Sample SMC JES3 IATUX71 user modification
SRVPARMS	Sample StorageTek HTTP server parms
SRVPROC	Sample StorageTek HTTP server PROC
UX01HSC1	Sample HSC format message intercept user exit
UX02HSC1	Sample HSC format JES2 scratch allocation user exit

Table 8. SMC Samples (Continued)

Member Name	Description
UX04HSC1	Sample HSC format JES3 scratch allocation user exit
UX08HSC1	Sample HSC format JES2 specific allocation esoteric subs user exit
UX09HSC1	Sample HSC format JES2 defer allocation user exit
UX10HSC1	Sample HSC format JES2 GDG/UNITAFF separation user exit
UX11HSC1	Sample HSC format JES3 defer allocation user exit
UX12HSC1	Sample HSC format JES3 GDG/UNITAFF separation user exit
UX13HSC1	Sample HSC format JES3 specific allocation user exit
UX01CSC1	Sample MVS/CSC format message intercept user exit
UX02CSC1	Sample MVS/CSC format JES2 scratch allocation user exit
UX04CSC1	Sample MVS/CSC format JES3 scratch allocation user exit
UX08CSC1	Sample MVS/CSC format JES2 specific allocation esoteric subs user exit
UX09CSC1	Sample MVS/CSC format JES2 defer allocation user exit
UX10CSC1	Sample MVS/CSC format JES2 GDG/UNITAFF separation user exit
UX11CSC1	Sample MVS/CSC format JES3 defer allocation user exit
UX12CSC1	Sample MVS/CSC format JES3 GDG/UNITAFF separation user exit
UX13CSC1	Sample MVS/CSC format JES3 specific allocation user exit

Table 9. SMC Source Code Modules

Member Name	Description
SMCERSLV	Source code for JES3 macro field resolution routine

Table 10. SMC Macros

Member Name	Description
SMCEHOOK	SMC Type 1 modification macro
SMCEMFLD	JES3 macro field resolution block (used by SMCERSLV)
SLSUX01P	HSC format User Exit 01 parameter list
SLSUX02P	HSC format User Exit 02 parameter list
SLSUX04P	HSC format User Exit 04 parameter list
SLSUX08P	HSC format User Exit 08 parameter list
SLSUX09P	HSC format User Exit 09 parameter list
SLSUX10P	HSC format User Exit 10 parameter list
SLSUX11P	HSC format User Exit 11 parameter list
SLSUX12P	HSC format User Exit 12 parameter list
SLSUX13P	HSC format User Exit 13 parameter list
SCSUX01P	MVS/CSC format User Exit 01 parameter list
SCSUX02P	MVS/CSC format User Exit 02 parameter list
SCSUX04P	MVS/CSC format User Exit 04 parameter list
SCSUX08P	MVS/CSC format User Exit 08 parameter list
SCSUX09P	MVS/CSC format User Exit 09 parameter list
SCSUX10P	MVS/CSC format User Exit 10 parameter list
SCSUX11P	MVS/CSC format User Exit 11 parameter list
SCSUX12P	MVS/CSC format User Exit 12 parameter list
SCSUX13P	MVS/CSC format User Exit 13 parameter list

HSC Samples, Source Code Modules, and Macros

The following tables list the HSC samples, source code modules, and macros contained on the NCS installation tape:

Table 11. HSC Samples

Member Name	Description
CVRLTR	Sample JCL to print the PUT cover letter from a PUT tape
GTFLMU	Sample MVS 2.X PARMLIB member to trace LMU requests
HSCAPPL	Sample APPL statement for HSC VTAM communications (LU 6.2)
IEAAPFXX	Sample HSC APF list entries
IEFSSNXX	Sample HSC subsystem name table entry
JCLACTV	Sample JCL to report on library performance
JCLARSLV	Sample JCL to reassemble/relink module SLSERSLV (JES3 only)
JCLAUDT	Sample JCL to audit library hardware
JCLBKUP	Sample JCL to backup the control data set
JCLCRT	Sample JCL to create the control data set
JCLEJCT	Sample JCL to eject cartridges from an ACS
JCLEXRS	Sample JCL to exercise an installation
JCLINIT	Sample JCL to initialize cartridges via the ACS
JCLOFLD	Sample JCL to offload control data set journals
JCLPROC	Sample HSC startup JCL
JCLRSTR	Sample to restore the control data set
JCLSCRD	Sample JCL for Scratch Redistribution Utility
JCLSCUP	Sample JCL for Scratch Update Utility
JCLTINIT	Sample JCL to initialize ACS cartridges using TMSTPNIT
JCLVOLR	Sample JCL to report on the volumes in the library
JCLVRFY	Sample JCL to verify an installation's LIBGEN
LIBGENnn	Sample LIBGEN source for INSTALL GUIDE examples
LIBGNJCL	Sample JCL to assemble and link a LIBGEN source file
MPFUSERX	Sample MPF user exit to retain TMS007 messages on MVS console
PROGXX	Sample PROGxx statement
SASTYPEx	Sample SAS source for SMF subtypes 1, 4, and 7
SCHEDXX	Sample MVS Program Properties Table (PPT) entry for HSC

Table 11. HSC Samples (Continued)

Member Name	Description
SENDEL	Sample SEN macro interface program
SENDISA	Sample SEN macro interface program
SENENA	Sample SEN macro interface program
SENRQST	Sample SEN macro interface program
SLS0	Sample HSC startup procedure
SLSSYS00	Sample HSC startup parameter file
SLSSYS12	Sample HSC PARMLIB member (release 1.2)
SLSSYS20	Sample HSC PARMLIB member (release 2.0)
SLSUX05	Default programmatic interface (PGMI) user exit
SLSUX06	Default database insert/delete user exit
SLSUX14	Default volume access user exit
SLSUX15	Default command authority user exit
SMFPRMxx	Sample PARMLIB definitions for HSC SMF record subtypes
SPGxxxxx	Sample JCL from the System Programmer's Guide
STKINDEX	Index of HSC samples
STKTSTxx	Sample IVP programs
SWSJCRDB	Sample to configure VTCS information in a CDS
SWSJMVCR	Sample to generate an MVC report
SWSJVTVR	Sample to generate a VTV report
UX01SAM1	Sample HSC User Exit 01 to process mount messages
UX03SAM2	Sample HSC User Exit 03 to define scratch subpools with names
UX06SAM1	Sample HSC User Exit 06 interface to a tape management system
UX15SAM1	Sample HSC User Exit 15 to ensure command security

Table 12. HSC Source Code Modules

Member Name	Description
SLUCONDB	Source code for Scratch Conversion Utility
SLUDRCA1	Source code for Scratch Conversion Utility CA-1 (TMS) database READ routine
SLUDRTLM	Source code for Scratch Conversion Utility CA-TLMS (TLMS) database READ routine
SLUDRRMM	Source code for Scratch Conversion Utility DFSMSrmm database READ routine

Table 13. HSC Macros

Member Name	Description
ACSRQ	format a parameter list for an ACS request
SLIACS	LIBGEN SLIACS macro
SLIALIST	LIBGEN SLIALIST macro
SLICOV	Global configuration constants & variables
SLIDLIST	LIBGEN SLIDLIST macro
SLIDRIVS	LIBGEN SLIDRIVS macro
SLIENDGN	LIBGEN SLIENDGN macro
SLIERMSG	LIBGEN error message macro
SLILBACS	LIBGEN ACS area
SLILBALS	LIBGEN ACLIST area
SLILBDLS	LIBGEN DRIVELST area
SLILBDRV	LIBGEN DRIVES area
SLILBEND	LIBGEN ENDGEN area
SLILBLIB	LIBGEN LIBRARY area
SLILBLSM	LIBGEN LSM area
SLILBREC	LIBGEN RECOVERY area
SLILBSTA	LIBGEN STATION area
SLILCV	Installation LCT constants - variables
SLILIBRY	LIBGEN LIBRARY macro
SLILSM	LIBGEN LSM macro
SLIPTPCK	LIBGEN SLIPTPCK macro
SLIRCVRY	LIBGEN RECOVERY macro
SLISTATN	LIBGEN STATION macro
SLSDILLT	LIBGEN LOCATION type
SLSDVAR	Distributed volume attribute record length
SLSSBLOG	INIT/TERM LOGREC record
SLSSBLOS	LSM operations statistics data area
SLSSCAPJ	CAP SMF EJECT record
SLSSCAPN	CAP SMF ENTER record
SLSSDJLR	Database journalling LOGREC map

Table 13. HSC Macros (Continued)

Member Name	Description
SLSSFHDR	SMF record header
SLSSHLG1	Host communications LOGREC format 1
SLSSLHDR	LOGREC record header map
SLSSLLG1	LMU driver LOGREC format ONE
SLSSLLG2	LMU driver LOGREC format two
SLSSLLG3	LMU driver LOGREC format three
SLSSLLG4	LMU driver LOGREC format four
SLSSLLG5	LMU driver LOGREC format five
SLSSLLG6	LMU driver LOGREC format six
SLSSLSB	LMU ATHS statistics buffer
SLSSMF07	HSC format 7 SMF record
SLSSMF08	HSC format 8 SMF record
SLSSMF09	HSC format 9 SMF record
SLSSMF10	HSC format 10 SMF record
SLSSMF11	HSC format 11 SMF record
SLSSMF12	HSC format 12 SMF record
SLSSMF13	HSC format 13 SMF record
SLSSMF14	HSC format 14 SMF record
SLSSMF15	HSC format 15 SMF record
SLSSMF16	HSC format 16 SMF record
SLSSMF17	HSC format 17 SMF record
SLSSMF18	HSC format 18 SMF record
SLSSMF19	HSC format 19 SMF record
SLSSMF20	HSC format 20 SMF record
SLSSMF21	HSC format 21 SMF record
SLSSMF22	HSC format 22 SMF record
SLSSMF23	HSC format 23 SMF record
SLSSMF24	HSC format 24 SMF record
SLSSMF25	HSC format 25 SMF record
SLSSMF26	HSC format 26 SMF record

Table 13. HSC Macros (Continued)

Member Name	Description
SLSSMF27	HSC format 27 SMF record
SLSSMF28	HSC format 28 SMF record
SLSSMF29	HSC format 29 SMF record
SLSSMF30	HSC FORMAT 30 SMF record
SLSSMLSM	Modify LSM SMF record subtype map
SLSSPSWI	Primary/shadow switch LOGREC record
SLSSRL00	Recovery ERDS record 0
SLSSRL01	Recovery ERDS record 1
SLSSVLG1	VOL/CELL force unselect record
SLSSVSTA	VARY station SMF record subtype map
SLSUREQ	Batch API request processor
SLSSUREQM	Batch API interface mapping macro
SLSUX03P	HSC User Exit 03 parameter list
SLSUX05P	HSC User Exit 05 parameter list
SLSUX06P	HSC User Exit 06 parameter list
SLSUX14P	HSC User Exit 14 parameter list
SLSUX15P	HSC User Exit 15 parameter list
SLSXB2X	Translate 8 bits to a hex byte
SLSXREQ	Issue an ACS request
SLSXREQM	ACS user interface mapping macro
SLSXSEN	HSC Significant Event Notification (SEN) request
SLSXSENM	Significant Event Notification (SEN) request parm list map
SLUVADAT	Flat file ACS/LSM information DSECT
SLUVCDAT	Flat file static configuration data DSECT
SLUVDDAT	QCDS drive information DSECT
SLUVHDAT	Flat file host information DSECT
SLUVIDAT	Flat file CDS information DSECT
SLUVMDAT	Flat file MVC data DSECT
SLUVPDAT	QCDS CAP information DSECT
SLUVSDAT	Flat file ACS station address DSECT

Table 13. HSC Macros (Continued)

Member Name	Description
SLUVTDAT	Flat file VTV data DSECT
SLUVVDAT	Flat file volume data DSECT
SLX	HSC external interface reply
SWSPGMIA	VTCS PGMI interface area
SWSUIO	VTCS UIO I/O request

MVS/CSC Samples and Macros

The following tables list the MVS/CSC samples and macros contained on the NCS installation tape:

Table 14. MVS/CSC Samples

Member Name	Description
APPCPMyy	Sample definition of a system base LU for APPC/MVS
CSCPARM0	Sample MVS/CSC startup parameter file that is an example of an attachment to a VM-based (CLS) server using VTAM communications
CSCPARM1	Sample MVS/CSC startup parameter file that is an example of an attachment to VM-based (CLS) dual servers using TCP/IP communications
CSCPARM2	Sample MVS/CSC startup parameter file that is an example of an attachment to a UNIX-based (ACSLS) server using TCP/IP communications
CSCPARM3	Sample MVS/CSC startup parameter file that is an example of an attachment to an MVS-based (LibraryStation) server using TCP/IP communications
CSCPARM4	Sample MVS/CSC startup parameter file that is an example of an attachment to an MVS-based (LibraryStation) server using LU 6.2 communications
CSCPARM5	Sample MVS/CSC startup parameter file that is an example of an attachment to a UNIX-based (ACSLS) server using LU 6.2 communications
CSCPARM6	Sample MVS/CSC startup parameter file that is an example of an attachment to an MVS-based (LibraryStation) server using XCF communications
CSCPROC	Sample startup JCL
DEFAPPC	Sample JCL to create APPC Side Information File
IEAAPFYY	Sample MVS/CSC APF list entries
IEFSSNYY	Sample MVS/CSC subsystem name table entry
JCLCFGV1	Sample JCL for Configuration Verification Utility to verify startup parameters and MVS system definitions only
JCLCFGV2	Sample JCL for Configuration Verification Utility to verify startup parameters, MVS system definitions, and the server configuration for compatibility
JCLCONDB	Sample JCL for Scratch Conversion Utility
JCLLOGR	Sample JCL for Event Log Report Utility
JCLSCRUP	Sample JCL for Scratch Update Utility
LU6APPL	Sample definition of a local LU for VTAM
PGMISAM1	Sample QVOLUME request issued within a single MVS/CSC subsystem environment
PGMISAM2	Sample QCSC and QVOLUME request issued within a multiple MVS/CSC subsystem environment
PROGYY	Sample MVS/CSC APF list entries
SCHEDYY	Sample MVS Program Properties Table (PPT) entry for MVS/CSC

Table 14. MVS/CSC Samples (Continued)

Member Name	Description
TREQSAM1	Sample TAPEREQ control statements
TREQSAM2	Sample TAPEREQ control statements
UX05CSC1	Sample MVS/CSC User Exit 05 which returns a nonoperational return code

Table 15. MVS/CSC Macros

Member Name	Description
SCSUX05P	MVS/CSC User Exit 05 parameter list
SCSXREQ	Programmatic Interface request
SCSXREQM	Programmatic Interface mapping macro

LibraryStation Samples and Source Code Modules

The following tables list the LibraryStation samples, source code modules, and macros contained on the NCS installation tape:

Table 16. LibraryStation Samples

Member Name	Description
SLGPROC	Sample LibraryStation startup JCL
SLGAPFXX	Sample LibraryStation APF list entries
SLGDBCR	Sample JCL for defining the LibraryStation PDF
SLGPRGXX	Sample LibraryStation APF list entries

Table 17. LibraryStation Source Code Modules

Member Name	Description
SLGDJCL	Sample JCL for running the SLGDIAG Installation Verification Program (IVP)
SLGDEXEC	Sample REXX exec for running the SLGDIAG IVP

Appendix B. Installing Product Maintenance

Overview

This appendix contains instructions for installing NCS product maintenance.

Before attempting to install NCS software maintenance, contact Sun StorageTek Software Support for the latest information concerning installation.

Customer Services has established an independent phone line to Level 1 Software Support. This number is available for domestic U.S. software customers. Customer Services is committed to providing excellent service. Customers must have their site location number when calling. Refer to the *Requesting Help from Software Support* guide for more information about contacting Sun Microsystems for assistance.

Note: Sun Microsystems recommends that you use the MVS Program Binder when installing NCS products and maintenance. Failure to do so may result in link-editing errors.

Maintenance Installation Data Sets

NCS maintenance is installed with SMP/E. Thus, the SMP/E target and distribution libraries used for installation of the NCS base products are required. See page 17 for more information about these libraries.

Maintenance Tape Descriptions

Product Update Tape (PUT) maintenance is distributed on a **standard label** tape. The volume serial number can be found on the cover letter included with the tape.

PTF maintenance is distributed on a **nonlabeled** tape (e.g., an All PTFs tape).

SMP/E Sample JCL

Sample JCL members for installing NCS maintenance were unloaded during the installation process. See page 15 for more information. These JCL samples can be used to process maintenance in mass mode, or by individual SYSMOD.

SMP/E RECEIVE an Accumulated PTF Tape

Sample members MAINTRCF and MAINTRCS provide sample JCL to perform an SMP/E RECEIVE for maintenance on an accumulated PTF tape. Choose one of the following methods:

- Use MAINTRCF to SMP/E RECEIVE maintenance by specific FMID.
- Use MAINTRCS to SMP/E RECEIVE maintenance by specific SYSMOD.

Read the instructions commented in the JCL for necessary modifications.

SMP/E RECEIVE a PUT

Sample member MAINTRCP provides sample JCL to perform an SMP/E RECEIVE for maintenance on a Product Update Tape (PUT).

Read the instructions commented in the JCL for necessary modifications.

SMP/E APPLY JCL

Sample members MAINTAPF and MAINTAPS provide sample JCL used to perform an SMP/E APPLY for maintenance. Choose one of the following methods:

- MAINTAPF to SMP/E APPLY maintenance by specific FMID.
- MAINTAPS to SMP/E APPLY maintenance by specific SYSMOD.

Read the instructions commented in the JCL for necessary modifications and procedures for performing an SMP/E APPLY CHECK followed by an actual SMP/E APPLY.

Note: You must specify the ASSEM option to the SMP/E statements in the sample JCL if:

- SMC JES3 FMIDs are included in the APPLY.
- HSC SAMPLIB members that require tape management macros to assemble correctly are included in the APPLY (i.e., SLUCONDB, SLUDRCA1, SLUDRRMM, or SLUDRTLM).

SMP/E ACCEPT JCL

Note: Performing an SMP/E ACCEPT for maintenance is **optional**.

Sample members MAINTACF and MAINTACS provide sample JCL to perform an SMP/E ACCEPT for maintenance. Choose one of the following methods:

- Use MAINTACF to SMP/E ACCEPT maintenance by specific FMID.
- Use MAINTACS to SMP/E ACCEPT maintenance by specific SYSMOD.

Read the instructions commented in the JCL for necessary modifications and procedures for performing an SMP/E ACCEPT CHECK followed by an actual SMP/E ACCEPT.

Separate HELD HSC PTFs

Examine the output from the APPLY in the previous section to identify those PTFs that failed to be applied due to HOLDSYSTEM exception data. Examine the cover letters for those PTFs to determine if the PTFs are applicable to your environment. Generally, HSC SYSMODS with HOLDSYSTEM fall into two categories:

- SYSMODS that update the tape management system scratch conversion modules (SLUDRCA1, SLUDRTLM, and SLUDRRMM).
- Those SYSMODS that have dependencies beyond control of the HSC SMP/E environment. For example, certain HSC PTFs may require a particular MVS PTF to be applied or you may need to update an automated operations package.

From the examination of the SYSMODS that were not applied due to HOLDSYSTEM exception data, create four lists of PTFs as follows:

list 1
: Tape management system PTFs for a tape management system that is not installed at your site.

list 2
: Tape management system PTFs where the tape management system is installed at your site and modification of the source is necessary.

list 3
: Non-tape management system PTFs that cannot be applied because your site does not comply with the conditions defined in the PTF cover letters.

list 4
: All other PTFs held for HOLDSYSTEM exception data. These are held PTFs that are applicable to your installation. Included are tape management system PTFs where the tape management system is installed at your site and you don't need to modify the source code.

APPLY Applicable HSC HOLDSYSTEM SYSMODS

Use the following JCL to SMP/E APPLY applicable HOLDSYSTEM SYSMODS:

```
//jobname  JOB .....
//S1       EXEC smpe-proc
//SMPCNTL  DD   *
   SET BDY(target-zone) .
   APPLY PTFS
         EXCLUDE(ptf1,ptf2,........ptfn)
         GROUPEXTEND
         FORFMID(
             /SOS6100 HSC 6.1.0 Base HSC for MVS 5.2 and later    */
                                )
         BYPASS(HOLDSYSTEM)
          ASSEM
               .
/*
```

Note: The EXCLUDEd PTFs should consist of all PTFs in List 1, List 2, and List 3 (see "Separate HELD HSC PTFs" on page 87).

APPLY Tape Management SYSMODS Without an ASSEMBLE

```
/jobname  JOB .....
//S1       EXEC smpe-proc
//SMPCNTL  DD   *
  SET BDY(dlib-zone) .
  ACCEPT PTFS
         EXCLUDE(ptf1,ptf2,........,ptfn)
         GROUPEXTEND
        FORFMID(
         /* SOS6100  HSC 6.1.0      Base for MVS 5.2 and later    */
                    )
        BYPASS(HOLDSYSTEM).
/*
```

The EXCLUDE list should specify only the PTFs in List 3 (see "Separate HELD HSC PTFs" on page 87). This APPLY installs all HSC SYSMODS held for HOLDSYSTEM exception data where the PTFs are for:

- A tape management system installed at your site where you have determined that the HSC tape management components require modification.
- A tape management system that is not installed at your site.

Note: APPLYing the PTFs for Tape Management Systems (TMS) that are not installed at your site is desirable because:

- APPLYing these PTFs ensures that all TMS maintenance is current. This is important if you decide to change tape management systems. APPLYing these PTFs may also satisfy IFREQs.
- There is a separate HSC module for each tape management system. Maintenance for one TMS will not affect other tape management systems.
- You should have no problem APPLYing these PTFs because the ASSEM option is not specified.

This APPLY does not generate an assembly for the HSC tape management system source modules because the ASSEM option is not specified. The SAMPLIB data set is updated with new source versions. If required, you can now modify the source and reassemble the relevant module(s). See the note above.

After running the APPLY steps for HOLDSYSTEM SYSMODS and tape management SYSMODS without an ASSEMBLE, the only held PTFs that are not applied should be those you determined cannot be applied because you do not comply with their specific requirements (see “Separate HELD HSC PTFs” on page 87).

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