

StorageTek Enterprise Library Software

Installing ELS

Version 7.1 for MSP

ORACLE

Revision 03
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Submit comments about this document to STP_FEEDBACK_US@ORACLE.COM.

Installing ELS, Version 7.1 for MSP

E35323-03

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Preface

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

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

This publication describes how to install Oracle's StorageTek Enterprise Library Software (ELS). It is intended for storage administrators, system programmers and operators responsible for installing and configuring their storage environment.

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

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

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Related Documentation

StorageTek Enterprise Library Software (ELS)

- *Introducing ELS*
- *ELS Command, Control Statement, and Utility Reference*
- *ELS Syntax Quick Reference*
- *ELS Messages and Codes*
- *ELS Programming Reference*
- *ELS Legacy Interfaces Reference*
- *Configuring HSC and VTCS*
- *Managing HSC and VTCS*
- *Configuring and Managing SMC*
- *ELS Disaster Recovery and Offsite Data Management Guide*

Conventions for Reader Usability

Typographic

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

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

Control Statements

The standard syntax conventions for control statements are as follows:

- The only valid control statement information area is from column 1 to column 72. Columns 73-80 are ignored.
- Parameters may be separated by one or more blanks or a comma.
- A value is associated with a parameter by an equal (=) sign or by enclosing the value in parentheses, and concatenating it immediately after the parameter.
- Case (upper or lower) is ignored in actual control statements.
- Continuations are supported by including a plus (+) sign at the end of the line to be continued. A control statement is terminated if the statement is not continued.
- /* and */ can be used to enclose comments in the job stream. HSC PARMLIB members and definition data sets must specify comments in this format.
 - A comment is not required as the first control statement of any PARMLIB member.
 - Comments can be continued over multiple lines, but cannot be nested.
- The maximum length for any control statement is 1024 characters.

What's New?

Revision 03

This revision includes updated instructions for installing ELS from ELS installation tape, ZIP file or media (CD-ROM).

Preparing for Installation

Overview

This chapter describes the ELS installation package and its pre-installation requirements. The following topics are included:

- The ELS installation package
- Software and hardware requirements
- Virtual storage requirements
- Pre-installation considerations

The ELS Installation Package

The ELS installation package includes the following materials:

- ELS installation tape, ZIP file or media (CD-ROM) containing ELS software functions (FMIDs) and the samples used to install them. Software functions are provided for the following software:

Base Software:

- StorageTek Storage Management Component (SMC)
(includes the product formerly known as StorageTek HTTP Server)
 - StorageTek Host Software Component (HSC)
 - StorageTek Virtual Tape Control Software (VTCS)
 - StorageTek Concurrent Disaster Recovery Test (CDRT)
- *ELS Read Me First* letter containing important release-specific product information.

As part of the installation, you must obtain and install the latest cumulative maintenance (PTFs and HOLDDATA) for ELS 7.1 and for any release of Oracle StorageTek software that coexists with ELS 7.1.

Note – Use the MSP/EX Linkage Editor when installing ELS software and service. Failure to do so may result in link-editing errors.

Download cumulative maintenance from the My Oracle Support (MOS) site:

<http://www.myoraclesupport.com>

Visit this site frequently for HOLDDATA and PTF updates and install cumulative maintenance updates on a regular schedule. PTFs are released monthly to MOS.

See [Chapter 3, “Installing ELS Maintenance”](#) for information about installing ELS cumulative maintenance.

ELS Installation Tape Contents

ELS is distributed on a standard label 9840B tape with a volume serial number of SEA710. The ELS installation tape includes the following files:

TABLE 1-1 ELS 7.1 Installation Tape Contents

File	Data Set Name	Description
1	SMPMCS	SMP control statements
2	SEA@710.F1	ELS (HSC, SMC, VTCS, and CDRT) JCLIN and installation samples
3	SEA@710.F2	ELS samples
4	SEA@710.F3	ELS macros
5	SEA@710.F4	ELS source modules
6	SEA@710.F5	ELS object modules

ELS Installation ZIP File Contents

ELS is available on a standard CD-ROM, or as a ZIP file download from the Oracle Software Delivery Cloud website. Both options deliver a single ZIP file, SEA@710.zip. You must copy this file to your PC and unzip the file to extract the file contents.

The following table describes the files included in the ELS installation ZIP file:

TABLE 1-2 ELS 7.1 Installation ZIP File Contents

File	Data Set Name	Description
1	SMPMCS	SMP control statements
2	SEA@710.F1	Compressed file containing ELS products excluding JCL samples
3	SEA@710.F2	ELS samples
4	SEA@710.F3	ELS macros
5	SEA@710.F4	ELS source modules
6	SEA@710.F5	ELS object modules

Software and Hardware Requirements

Software Requirements

TABLE 1-3 ELS 7.1 Software Requirements

Category	Supported Software
Operating system	Any Fujitsu supported version of MSP/EX at C08061 or later and MAF installed (JES environments).
Required ELS software	<ul style="list-style-type: none"> ■ StorageTek SMC 7.1 ■ StorageTek HSC 7.1
Optional ELS software	<ul style="list-style-type: none"> ■ StorageTek VTCS 7.1 ■ StorageTek CDRT 7.1
TCP/IP communications	<ul style="list-style-type: none"> ■ Fujitsu TISP V20 or higher ■ CA Unicenter TCPaccess Communications Server Release 5.0 or higher ■ CA Unicenter TCPaccess X.25 Server Release 1 or higher
SORT software	<ul style="list-style-type: none"> ■ Fujitsu SORT V12 or later
HSC Server System Communications	<ul style="list-style-type: none"> ■ LMU Microcode Release 1.5.x or higher is required for multiple-level host-to-host communications.
Independent Software Vendor Products	<ul style="list-style-type: none"> ■ ASG-Zara ■ CA-1 ■ CA-DYNAM/TLMS ■ CA-1®/Copycat Computer Associates International ■ CA-Dynam®/TLMS/Copycat Computer Associates International ■ CONTROL-M/TAPE ■ FATSCopy Innovation Data Processing ■ FDR MIM Syncsort ■ Sysplex ■ Tape/Copy OpenTech Systems, Inc. ■ TelTape Cartagena Software Limited

ELS Software Compatibility

Use the following matrix to determine ELS 7.1 software compatibility:

TABLE 1-4 ELS 7.1 Software Compatibility Matrix

ELS 7.1 Software	Compatible Software Releases		
	SMC	HSC/VTCS	ExPR
SMC 7.1		7.1 (same host) 6.1, 6.2, 7.0, 7.1 (different host)	
HSC/VTCS 7.1 VTCS 7.1 requires minimum CDS level F	7.1 (same host) 6.1, 6.2, 7.0, 7.1 (different host)		6.1

Note – All hosts **must** be at ELS version 7.1 before moving to VMS CDS level “H”. This requirement does **not** apply to SMC client LPARs, which are compatible at versions 6.1, 6.2, 7.0 and 7.1.

Hardware Requirements

TABLE 1-5 ELS 7.1 Hardware Requirements

Category	Supported Hardware
Processor	Fujitsu or compatible processor running MSP (any Fujitsu-supported version of MSP/EX)
StorageTek Library Storage Modules (LSMs)	<ul style="list-style-type: none"> ■ SL3000 modular library system ■ SL8500 modular library system ■ PowderHorn™ 9310 ■ TimberWolf 9740 ■ WolfCreek 9360 ■ Standard 4410
StorageTek transports and associated media	<ul style="list-style-type: none"> ■ T1000A/B/C ■ T9940A/B ■ T9840A/B/C/D ■ TimberLine™ 9490EE ■ TimberLine™ 9490 ■ 4490 ■ 4480 ■ SD3

Note –

- An ACS can contain mixed library transports and media.
 - Refer to the publication *Managing HSC and VTCS* for more information about HSC support for the SL8500 and SL3000 libraries.
 - Refer to the publication *Configuring HSC and VTCS* for SL8500 and SL3000 configuration information.
-

Virtual Storage Requirements

MSP virtual storage requirements for the ELS software include the following:

TABLE 1-6 ELS 7.1 MSP Virtual Storage Requirements

ELS Software	Virtual Storage Requirements
SMC	<ul style="list-style-type: none"> ■ In JES, approximately 2.8 MB of ECSA above the 16M line for load modules and data structures. ■ There are no CSA requirements below the 16M line.
HSC VTCS	<ul style="list-style-type: none"> ■ 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. ■ Minimum region size of 6 MB, unless you are running utilities or commands that manipulate manifest files, in which case you require the maximum region size your system will allow. <p>Note:</p> <ul style="list-style-type: none"> ■ These requirements also apply to VTCS, as they execute in the HSC address space on MSP. ■ Approximately 400 bytes of the below-the-line CSA storage is located in subpool 228 (FIXED).

Note –

- 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.
 - The actual amount of ECSA varies slightly based on the size of the library and number of transports defined to MSP.
 - Additional CSA may be required when installing corrective service tapes, software enhancements, or newer software releases.
-

Pre-Installation Considerations

- SMC and HSC are **required** ELS components and **must** be installed.
- Contact StorageTek Software Support for information about additional PTFs that might be required before installing the ELS product components.
- If you are migrating from a previous NCS software release, study the appropriate migration and coexistence guidelines in your ELS product publications.
- ELS software is installed with SMP. All installation instructions in this guide are based on SMP.
- Use the MSP/EX Linkage Editor when installing ELS products and maintenance. Failure to do so may result in link-editing errors.

Installing ELS and Additional Software

Overview

This chapter describes the tasks required to install the ELS software. The following topics are included:

- Installation checklist
- Unloading the SMP JCL library
- Preparing the SMP PRJ environment
- Allocating ELS target and distribution library data sets and required DDDEF entries
- Updating the SYSLIB concatenation
- Reviewing the ELS FMIDs
- Receiving the ELS functions (SMP RECEIVE)
- Applying the ELS functions (SMP APPLY)
- Accepting the ELS functions (SMP ACCEPT)

Before installing ELS, verify ELS requirements and review pre-installation considerations described in [“Preparing for Installation” on page 1](#).

Installation Checklist

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

Note – Before installing ELS, verify ELS requirements and review pre-installation considerations described in [“Preparing for Installation”](#) on page 1.

TABLE 2-1 Installation Checklist

✓	Step	Description	Sample Member	Page
	1	Unload the SMP JCL library from tape, ZIP file, or CD-ROM.		11
	2	Define and initialize the SMP PRJ.	I30CSI	16
	3	Allocate the ELS and JES target and distribution library data sets and their required DDDEF entries.	I40ZON	18
	4	Update the SYSLIB concatenation.	I50LIB	20
	5	Review the ELS FMIDs.		20
	6	SMP RECEIVE the desired base functions, communication functions, and optionally, the SMC JES function.	I60RCV	21
	7	SMP APPLY the desired base functions, communication functions, and optionally, the SMC JES function.	I70APP	22
	8	SMP ACCEPT the desired base functions, communication functions, and optionally, the SMC JES function.	I80ACC	23
	9	SMP RECEIVE maintenance for the ELS base functions.	MAINTRCF	28
	10	SMP APPLY maintenance for the ELS base functions.	MAINTAPF	28
	11	Optionally, SMP ACCEPT maintenance for the base functions.	MAINTACF	29
	12	Proceed with ELS post-installation tasks described in Chapter 4 .		31

Unloading the SMP JCL Library

To begin ELS installation, unload the SMP JCL library from the ELS installation tape, ZIP file, or CD-ROM. This library includes JCL sample members used to prepare your installation environment and install the ELS functions and associated maintenance.

The following sample members are included:

TABLE 2-2 SMP JCL Sample Members

Member Name	Function
I10JCL	Unload SMP JCL library from the ELS installation tape
I30CSI	Define and initialize the ELS Global SMP PRJ
I40ZON	Allocate target and distribution data sets for ELS (and additional software) and define the appropriate DDDEF entries in the SMP PRJ. Allocate ELS (and optionally, JES) target and distribution data sets and define the appropriate DDDEF entries in the SMP PRJ.
I50LIB	Add required DDDEF entries and modify the SYSLIB concatenation
I60RCV	SMP RECEIVE ELS and additional functions from the ELS installation tape
I70APP	SMP APPLY ELS and additional functions
I80ACC	SMP ACCEPT ELS and additional functions
MAINTACF	SMP ACCEPT maintenance in a mass mode for specific FMIDs
MAINTAPF	SMP APPLY maintenance in mass mode for specific FMIDs
MAINTRCF	SMP RECEIVE maintenance for a specific FMID

Unloading the SMP JCL Library from the ELS Installation Tape

To unload the SMP JCL library from file 2 of the ELS installation tape, use the following sample JCL and perform the steps below.

```
//jobname JOB your jobcard parameters
//*
//UNLOAD EXEC PGM=IEBCOPY
//INDD DD DSN=SEA@710.F1,DISP=SHR,
// UNIT=tape-unit,VOL=SER=SEA710,LABEL=(2,SL)
//OUTDD DD DSN=your.smp.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=SEA@710
E M=SMZ@710
```

FIGURE 2-1 JCL to Unload SMP JCL Library from the ELS Installation Tape

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

1. Change the JOB card, specifying values for *jobname* and *your jobcard parameters*.
2. Change tape unit (UNIT=*tape-unit*) as necessary.
3. Change DSN=*your.smp.jcllib* as necessary.
4. Change VOL=SER=SEA710 to the library volser if you have copied the installation tape into a library.
5. Submit the job. A completion code of 0 for all steps indicates successful completion.

Unloading the SMP JCL Library from the ELS Installation ZIP File

To unload the SMP JCL library from the ELS installation ZIP file, use the following sample JCL and perform the following steps:

1. Copy the ZIP file to your PC and extract the file contents as described in [“ELS Installation ZIP File Contents”](#) on page 3.
2. Use the JCL in [FIGURE 2-2 on page 13](#) to allocate data sets on the MSP system on which you intend to install ELS.
 - Change the JOB card, specifying values for *jobname* and *your jobcard parameters*.

- Submit the job. A completion code of 0 for all steps indicates successful completion.

```
//jobname JOB your jobcard parameters
//*
//SMPMCS EXEC PGM=KDJBR14
//DD1 DD DSN=els_710.SMPMCS,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(5,1),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=23680)
//*
//DD2 DD DSN=els_710.SEA@710.F1.UNLOAD,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(5,1),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
//*
//DD3 DD DSN=els_710.SEA@710.F2.UNLOAD,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(5,1),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
//*
//DD4 DD DSN=els_710.SEA@710.F3.UNLOAD,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(5,1),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
//*
//DD5 DD DSN=els_710.SEA@710.F4.UNLOAD,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(5,1),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
//*
//DD6 DD DSN=els_710.SEA@710.F5.UNLOAD,
// UNIT=SYSDA,DISP=(,CATLG,DELETE),
// VOL=SER=volser,SPACE=(CYL,(10,10),RLSE),
// DCB=(DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=800)
//*
```

FIGURE 2-2 JCL to Allocate Data Sets

- Using FTP binary mode, upload the files from your PC to the corresponding mainframe data sets allocated in the above step. The following table shows these data sets:

TABLE 2-3 PC Files and Corresponding Mainframe Data Sets

PC File Name	Mainframe File Name
SMPMCS	els_710.SMPMCS
SEA@710.F1	els_710.SEA@710.F1.UNLOAD
SEA@710.F2	els_710.SEA@710.F2.UNLOAD
SEA@710.F3	els_710.SEA@710.F3.UNLOAD
SEA@710.F4	els_710.SEA@710.F4.UNLOAD
SEA@710.F5	els_710.SEA@710.F5.UNLOAD

4. Use the JCL in [FIGURE 2-3 on page 14](#) and [FIGURE 2-4 on page 15](#) to restore the uploaded PS data sets to PO.
 - Change the JOB card, specifying values for *jobname* and *your jobcard parameters*.
 - Submit the job. A completion code of 0 for all steps indicates successful completion.

```

//jobname JOB your jobcard parameters
//*
//F1      EXEC PGM=JSGMOVE
//SYSPRINT DD SYSOUT=*
//SYSUT1  DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//FROM    DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//TO      DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//SYSIN   DD *
COPY PDS=els_710.SEA@710.F1.UNLOAD, X
      FROM=SYSDA=volser,TO=SYSDA=volser, X
      RENAME=els_710.SEA@710.F1,CATLG
/*
/*
//F2      EXEC PGM=JSGMOVE
//SYSPRINT DD SYSOUT=*
//SYSUT1  DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//FROM    DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//TO      DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//SYSIN   DD *
COPY PDS=els_710.SEA@710.F2.UNLOAD, X
      FROM=SYSDA=volser,TO=SYSDA=volser, X
      RENAME=els_710.SEA@710.F2,CATLG
/*
/*
//F3      EXEC PGM=JSGMOVE
//SYSPRINT DD SYSOUT=*
//SYSUT1  DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//FROM    DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//TO      DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//SYSIN   DD *
COPY PDS=els_710.SEA@710.F3.UNLOAD, X
      FROM=SYSDA=volser,TO=SYSDA=volser, X
      RENAME=els_710.SEA@710.F3,CATLG
/*
/*

```

FIGURE 2-3 JCL to Restore Uploaded Data Sets to PO (Part 1)

```

//F4      EXEC PGM=JSGMOVE
//SYSPRINT DD SYSOUT=*
//SYSUT1  DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//FROM    DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//TO      DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//SYSIN   DD *
COPY PDS=els_710.SEA@710.F4.UNLOAD, X
      FROM=SYSDA=volser,TO=SYSDA=volser, X
      RENAME=els_710.SEA@710.F4,CATLG
/*
/*
//F5      EXEC PGM=JSGMOVE
//SYSPRINT DD SYSOUT=*
//SYSUT1  DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//FROM    DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//TO      DD DISP=SHR,UNIT=SYSDA,VOL=SER=volser
//SYSIN   DD *
COPY PDS=els_710.SEA@710.F5.UNLOAD, X
      FROM=SYSDA=volser,TO=SYSDA=volser, X
      RENAME=els_710.SEA@710.F5,CATLG
/*
/*

```

FIGURE 2-4 JCL to Restore Uploaded Data Sets to PO (Part 2)

5. Use the JCL in [FIGURE 2-5 on page 15](#) to unload the install JCL.
 - Change the JOB card, specifying values for *jobname* and *your jobcard parameters*.
 - Submit the job. A completion code of 0 for all steps indicates successful completion.

```

//jobname JOB your jobcard parameters
//S01     EXEC PGM=JSECOPY,REGION=1024K
//SYSPRINT DD SYSOUT=*
//IN      DD DISP=SHR,DSN=els_710.SEA@710.F1
//OUT     DD DISP=(,CATLG,DELETE),DSN=ELSMSP.EDEL710.JCLIN,
//         UNIT=SYSALLDA,VOL=SER=volser,SPACE=(CYL,(2,1,10)),
//         DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSIN   DD *
COPY INDD=((IN,R)),OUTDD=OUT
/*
/*

```

FIGURE 2-5 JCL to Unload Install JCL

Preparing the SMP Environment

This section describes how to prepare the SMP environment for installation of the ELS base functions and SMC JES support function. If you are installing service, see [Chapter 3, “Installing ELS Maintenance”](#) for more information.

ELS products are installed using SMP. The SMP installation process involves a RECEIVE, APPLY, and ACCEPT job to install functions into the correct SMP target and distribution zones.

SMP Considerations

- ELS must be installed with SMP. All installation instructions in this guide are based on SMP.
- SMP V10L10 or higher is required to install ELS.
- Install all ELS 7.1 product components in a new target and distribution SMP PRJ.
- Do **not** install products from other vendors in the same global SMP PRJ as ELS.
- SMP ACCEPT all of your ELS base products.
- Load modules for the TMS (Tape Management System) interface routines (SLUDRCA1, SLUDRRMM, SLUDRSMC, SLUDRTL, and SLUDRZAR) are included in the SEALINK library generated during ELS installation. These modules are shared among HSC and SMC.

Caution – If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, all SYSMODS for the previous release are deleted from the SMP PRJ. If you choose to do this, it is recommended that you back up the existing global SMP PRJ prior to installing the ELS 7.1 product components.

Defining and Initializing the ELS Global SMP Project (PRJ)

Use sample member **I30CSI** (included in your SMP JCL library) to define and initialize the ELS Global Project (PRJ).

This job performs the following actions:

- Defines the required SMP data sets.
- Defines the Project (PRJ) data set that contains the SMP global, target, and distribution zones for this release.
- Initializes the SMP PRJ.
- Adds zones, options, utilities, and DDDEF entries to the SMP PRJ.

To run the I30CSI job:

1. Enter Edit mode for member I30CSI.
2. Submit the I30CSI job.

Note – Follow the instructions in the prologue of the I30CSI sample member, edit as needed, and submit the job.

Allocating Target and Distribution Library Data Sets and Required DDDEF Entries

Use sample member **I40ZON** (included in your SMP JCL library) to allocate target and distribution data sets and define the appropriate DDDEF entries in the SMP PRJ.

[TABLE 2-4 on page 19](#) and [TABLE 2-5 on page 19](#) list the target and distribution library data sets for ELS and additional software.

To run the I40ZON job:

1. Enter Edit mode for member I40ZON.
2. Submit the I40ZON job.

Note –

- Follow the instructions in the prologue of the I40ZON sample member, edit as needed, and submit the job.
 - If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product:
 - SMPPRJ statement must point to the existing global PRJ.
 - SMPLOG and SMPLOGA statements must point to the global log.
 - SMPPTS statement must point to the global SMPPTS.
-

Target and Distribution Library Data Sets

TABLE 2-4 and TABLE 2-5 list the target and distribution library data sets allocated by the I40ZON job.

Note –

- *hlq* represents the high-level qualifier for your data sets. Choose a high-level qualifier that conforms to the naming conventions defined for your installation.
 - 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 *hlq.SEALINK*, the corresponding DDname is SEALINK.
 - The SMP DSSPACE parameter, which specifies the amount of space to be allocated to temporary RELFILE data sets, must be set to at least (300,150,270).
-

TABLE 2-4 ELS Target Library Data Sets

Data Set Name	Product(s)	DSORG	RECFM	LRECL	BLKSIZE	Blocks (Pri/Sec)	Directory Blocks
<i>hlq</i> .SEALINK	ELS	PO	U	-	32760	500/50	99
<i>hlq</i> .SEAMAC	ELS	PO	FB	80	27920	20/10	5
<i>hlq</i> .SEASAMP	ELS	PO	FB	80	27920	20/10	5
<i>hlq</i> .SMZLINK	SMC JES	PO	U	-	32760	20/10	5

TABLE 2-5 ELS Distribution Library Data Sets

Data Set Name	Product	DSORG	RECFM	LRECL	BLKSIZE	Blocks (Pri/Sec)	Directory Blocks
<i>hlq</i> .ASEALINK	ELS	PO	U	-	32760	500/50	999
<i>hlq</i> .ASEAMAC	ELS	PO	FB	80	27920	20/10	5
<i>hlq</i> .ASEASAMP	ELS	PO	FB	80	27920	20/10	5
<i>hlq</i> .ASMZLINK	SMC JES	PO	U	-	32760	20/10	5

Updating the SYSLIB Concatenation

ELS supports different versions of MSP/ESA JES and multiple tape management systems (e.g. TLMS and CA-1).

Use sample member **I50LIB** (included in your SMP JCL library) to add required DDDEF entries to the SMP PRJ, and modify the SYSLIB concatenation to include the appropriate macro libraries.

To run the I50LIB job:

1. Enter Edit mode for member I50LIB.
2. Submit the I50LIB job.

The return code must be 4 or less for all steps executed in this job. If you receive a different return code, contact StorageTek Software Support.

Note –

- Follow the instructions in the prologue of the I50LIB sample member, edit as needed, and submit the job.
 - If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, the SMPPRJ statement must point to the existing global PRJ.
-

Reviewing the ELS FMID

ELS is packaged in standard SMP format, and is delivered as multiple function SYStem MODifications (SYSMODs) identified by the SEA@710 FMID.

The SEA@710 FMID includes HSC, SMC, VTCS and CDRT load modules, distributed macros, and samples.

Receiving the ELS Functions

You must issue the SMP RECEIVE command to receive the functions you want to install into the target and distribution zones.

Caution –

- If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, all SYSMODS for the previous release are deleted from the SMP PRJ.
 - It is recommended that you back up the existing global SMP PRJ prior to installing the ELS 7.1 product components.
 - The SMPPRJ statement must point to the existing global PRJ.
-

Use the **I60RCV** sample member provided in your SMP JCL library to SMP RECEIVE the functions you wish to install. See [“Reviewing the ELS FMID” on page 20](#) for a list of ELS SMP FMIDs.

To run the I60RCV job:

1. Enter Edit mode for member I60RCV.
2. Submit the I60RCV job.

The return code must be 4 or less for all steps executed in this job. If you receive a different return code, contact StorageTek Software Support.

Note – Follow the instructions in the prologue of the I60RCV sample member, edit as needed, and submit the job.

Caution – If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, the SMPPRJ statement must point to the existing global PRJ.

Applying the ELS Functions

Use the **I70APP** sample member provided in your SMP JCL library to install the ELS functions into the appropriate target zone.

To run the I70APP job:

1. Enter Edit mode for member I70APP.
2. Submit the I70APP job.

The return code must be 4 or less for all steps executed in this job. If you receive a different return code, contact StorageTek Software Support.

Note –

- Follow the instructions in the prologue of the I70APP sample member, edit as needed, and submit the job.
 - You can use the APPLY CHECK option as often as necessary to identify SMP processing problems before the actual APPLY process. All SMP detected problems must be resolved before the base functions can be successfully installed.
-

Caution – If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, the SMPPRJ statement must point to the existing global PRJ.

Accepting the ELS Functions

Use the **I80ACC** sample member provided in your SMP JCL library to accept the ELS functions in the appropriate target zone.

To run the I80ACC job:

1. Enter Edit mode for member I80ACC.
2. Submit the I80ACC job.

The return code must be 4 or less for all steps executed in this job. If you receive a different return code, contact StorageTek Software Support.

Note –

- Follow the instructions in the prologue of the I80ACC sample member, edit as needed, and submit the job.
- You can use the ACCEPT CHECK option as often as necessary to identify SMP processing problems before the actual ACCEPT process. All SMP detected problems must be resolved before the base functions can be successfully installed.

Warning –

- If you install an ELS 7.1 product component in an existing global SMP PRJ containing a previous release of that product, the SMPPRJ statement must point to the existing global PRJ.
-

Installing ELS Maintenance

Overview

This chapter describes how to install ELS maintenance. It includes the following topics:

- Maintenance Installation Data Sets
- ELS Cumulative Service Contents
- Unloading the ELS Maintenance SMP JCL Samples
- Unloading Cumulative Maintenance
- SMP RECEIVE Maintenance
- SMP APPLY Maintenance
- SMP ACCEPT Maintenance

You must obtain and install the latest cumulative maintenance (PTFs and HOLDDATA) for ELS 7.1 and for any release of Oracle StorageTek software that coexists with ELS 7.1. Download cumulative maintenance from the My Oracle Support (MOS) site:

<http://www.myoraclesupport.com>

Visit this site frequently for HOLDDATA and PTF updates and install cumulative maintenance updates on a regular schedule. PTFs are released monthly to MOS.

Before attempting to install maintenance, contact Oracle Global Customer Services for information about the latest maintenance available. See “Preface” on page xi for information about contacting Oracle for assistance.

Note –

- PTFs and HOLDDATA may not exist at ELS release launch but will follow in time and are released monthly to MOS.
 - Use the MSP/EX Linkage Editor when installing ELS products and maintenance. Failure to do so may result in link-editing errors.
-

Maintenance Installation Data Sets

ELS maintenance is installed with SMP. Thus, the SMP target and distribution libraries used for installation of the ELS base products are required. See [“Allocating Target and Distribution Library Data Sets and Required DDDEF Entries” on page 18](#) for more information about these libraries.

ELS Cumulative Service Contents

ELS cumulative maintenance is distributed in a ZIP file. The following table describes the files included in the ZIP file:

TABLE 3-1 ELS 7.1 Cumulative Service Contents (Code Directory)

File	Data Set Name	Description
1	els71.cvr	PTF cover letters and JCL samples
2	els71.hdd	SMP HOLDDATA
3	els71.ptf	Service PTFs
4	els71.smm	Summary data

Unloading the ELS Maintenance SMP JCL Samples

Sample JCL members for installing ELS maintenance were unloaded from the ELS installation tape during the ELS installation process. See [“Unloading the SMP JCL Library” on page 11](#) for more information.

These JCL samples can be used to process maintenance in mass mode, or by individual SYSMOD.

Unloading Cumulative Maintenance

Perform the following steps to unload COVER letters, HOLDDATA, PTFs, and SUMMARY data:

1. Pre-allocate the following FTP receiving data sets as shown in the following example. Change *hlq* to your high-level-qualifier; change *vr* to 71.

```

Data Set Name . . . :hlq.ELSVr.HDD - HOLDDATA
// RECFM=FB,LRECL=80,SPACE=(27920,(30,30))

Data Set Name . . . :hlq.ELSVr.PTF - PTFs
// RECFM=FB,LRECL=80,SPACE=(27920,(13000,300))

Data Set Name . . . :hlq.ELSVr.CVR - Cover Letters
// RECFM=FB,LRECL=80,SPACE=(27920,(30,30))

Data Set Name . . . :hlq.ELSVr.SMM - Summary
// RECFM=FB,LRECL=80,SPACE=(27920,(30,30))

```

2. Open a DOS window and use the cd (change directory) command to go to the directory that contains the downloaded cumulative maintenance files.
3. Enter the following commands:

```

FTP mspghost
(Supply your user and password credentials.)

binary

mput els71.cvr
mput els71.hdd
mput els71.ptf
mput els71.smm

quit

```

Running this sequence of mput commands copies the following files:

- els71.cvr
- els71.hdd
- els71.ptf
- els71.smm

...to the following data sets on your MSP system:

- *hlq*.ELS71.CVR
- *hlq*.ELS71.HDD
- *hlq*.ELS71.PTF
- *hlq*.ELS71.SMM

where *hlq* is your high-level qualifier.

SMP RECEIVE Maintenance

Sample member MAINTRCF provides sample JCL to SMP RECEIVE maintenance by specific FMID.

Modify this sample member as follows:

- Modify the SMPPTFIN DD statement to point to the hlq.ELS71.PTF data set.
- Modify the SMPHOLD DD statement to point to the hlq.ELS71.HDD data set.

Follow the instructions in the prologue of the sample member and submit the job to receive maintenance.

The return code must be zero (0) for all steps executed in this job. If you receive a different return code, contact StorageTek Software Support.

SMP APPLY Maintenance

Sample member MAINTAPF provides sample JCL used to SMP APPLY maintenance by specific FMID.

Follow the instructions in the prologue of the sample member for necessary modifications and procedures for performing an SMP APPLY CHECK followed by an actual SMP APPLY. Submit the job to apply maintenance.

Note – You must specify the ASSEM option on the APPLY command in the sample JCL when the SMC JES FMID is included in the APPLY.

SMP ACCEPT Maintenance

Note – Performing an SMP ACCEPT for maintenance is **optional**.

Sample member MAINTACF provides sample JCL to SMP ACCEPT maintenance by specific FMID.

Follow the instructions in the prologue of the sample member for necessary modifications and procedures for performing an SMP ACCEPT CHECK followed by an actual SMP ACCEPT. Submit the job to apply maintenance.

Separate HELD ELS 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, ELS SYSMODS with HOLDSYSTEM fall into two categories:

- SYSMODS that update the tape management system scratch conversion modules (SLUDRCA1, SLUDRRMM, SLUDRSMC, SLUDRTL, and SLUDRZAR).
- Those SYSMODS that have dependencies beyond control of the ELS SMP environment. For example, certain ELS PTFs may require a particular MSP 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 ELS HOLDSYSTEM SYSMODS

Use the following JCL to SMP APPLY applicable HOLDSYSTEM SYSMODS:

```
//jobname JOB .....  
//S1      EXEC smpe-proc  
//SMPCNTL DD *  
    SET BDY(target-zone) .  
    APPLY PTFs  
        EXCLUDE(ptf1,ptf2,.....ptfn)  
        FORFMID(  
            /* FMID-id */  
        )  
        BYPASS(HOLDSYSTEM)  
        ASSEM  
        .  
/*
```

Note –

- The EXCLUDEd PTFs should consist of all PTFs in List 1, List 2, and List 3 (see [“Separate HELD ELS PTFs” on page 29](#)).
 - See [“Reviewing the ELS FMID” on page 20](#) for a list of FMIDs.
-

Performing ELS Post-Installation Tasks

Overview

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

- ELS load library authorization
- SMC post-installation tasks
- HSC post-installation tasks

Note –

- Before proceeding, verify that you have completed the installation tasks described in [Chapter 2](#).
 - There are no specific post-installation tasks for VTCS. Refer to the publication *Configuring HSC and VTCS* for required VTCS configuration tasks.
-

ELS Load Library Authorization

SMC, HSC, and VTCS must run as authorized programs in MSP. Therefore, you must perform the following steps to APF authorize the ELS load library:

1. Add the ELS load library to either the KAAAPFzz member of SYS1.PARMLIB.
2. Issue the commands described in [“Authorizing the ELS Load Library” on page 32](#) to authorize the load library.

Adding the ELS Load Library to the KAAAPFzz Member

Add the following entry to the KAAAPFzz member to authorize the ELS load library:

```
your.SEALINK volser,
```

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

If there are multiple entries in the KAAAPFzz member, each entry (except the last) must end with a comma to indicate continuation. Omit the comma on the last entry.

Note – If the ELS 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 **cannot** be authorized.

Authorizing the ELS Load Library

Adding an entry to the KAAAPFzz member is necessary so that the library will be authorized in event of an IPL. In the meantime, dynamically authorize the library on your running system by issuing one of the following MSP system commands:

If the library is SMS managed:

```
SETPROG APF,ADD,DSN=your.SEALINK,SMS
```

If the library is not SMS managed:

```
SETPROG APF,ADD,DSN=your.SEALINK,volser
```

Performing SMC Post-Installation Tasks

This section describes required SMC post-installation tasks. The following topics are included:

- Defining SMC as an MSP subsystem
- Modifying the MSP Program Properties Table
- SMC data space considerations

Defining SMC as an MSP Subsystem

SMC executes as a dynamically defined MSP subsystem. It can either run under the master MSP subsystem, or as a secondary subsystem under the primary Job Entry Subsystem.

Because SMC is dynamically defined, for many installations, it does not need to be added to the MSP subsystem name table.

However, under any of the following conditions, you must add SMC to the MSP subsystem name table (SYS1.PARMLIB member SUBSYSzz) as required.

- If you are running SMC and the Unicenter CA-MIA product on the same host, 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 35.
- If you are running SMC, a tape management system, and the Unicenter CA-MIA product on the same host, add all three products to the subsystem name table. See [“SMC, TMS, and Unicenter CA-MIA Interaction and the Subsystem Name Table”](#) on page 35.
- If you wish to run the SMC under the master MSP subsystem (rather than under the primary Job Entry Subsystem), add the SMC to the subsystem name table. See [“Running SMC under MSTR and the Subsystem Name Table”](#) on page 36.

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(MSTJCLzz), under DD IEFPDSI.

Tape Management System Interaction and the Subsystem Name Table

If you are running a Tape Management System (TMS), you must ensure that it processes MSP 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(JES) PRIMARY(YES) START(NO)
SUBSYS SUBNAME(TMS)
SUBSYS SUBNAME(SMC0) INITRTN(SMCBPRES)
```

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

Note – See [“Notes on Subsystem Name Table Modifications for SMC”](#) on page 36.

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 (JES) 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 *ELS Command, Control Statement, and Utility Reference* for information about the ALLOCDEF command.

Note – See [“Notes on Subsystem Name Table Modifications for SMC” on page 36.](#)

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

If you are running SMC, a Tape Management System (TMS), and Unicenter CA-MIA all on the same host, add all three products to the subsystem name table in the order indicated in the following example:

```
SUBSYS SUBNAME (JES) 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 *ELS Command, Control Statement, and Utility Reference* for information about the ALLOCDEF command.

Note – See [“Notes on Subsystem Name Table Modifications for SMC” on page 36.](#)

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 following entry to the subsystem name table to identify the SMC subsystem name:

```
SUBSYS SUBNAME (SMC0)
```

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

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 publication *Configuring and Managing SMC* 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 MSP start command. Refer to the publication *Configuring and Managing SMC* for information about executing the SMC start procedure.

Notes on Subsystem Name Table Modifications for SMC

- The SUBNAME(*name*) parameter specifies a 1-4 character name that 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 publication *Configuring and Managing SMC* 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 your Fujitsu MSP/EX publications for more information about defining subsystem names.
- If you are not defining the subsystem name dynamically, you must perform an IPL of the MSP host system before the SMC subsystem name entry takes effect.
- If you have added the Unicenter CA-MIA subsystem name to the subsystem name table, one of the following is required:
 - 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(MSTJCLzz), under DD IEFPSI.
 - The Start command for Unicenter CA-MIA must specify the SUB=JES parameter. For example, S CAMIA,SUB=JES.

Adding SMC to the MSP Program Properties Table

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

Add the following entry to member PPTPRMzz of SYS1.PARMLIB:

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

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.
 - After modifying the PPTPRMzz 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.

Performing HSC Post-Installation Tasks

This section describes required HSC post-installation tasks. The following topics are included:

- Defining HSC as an MSP subsystem
- HSC user exit library authorization
- Copying or moving the SLSBPREI module to an MSP LINKLIST library
- Adding HSC to the MSP Program Properties Table
- Adding SMF parameters for HSC and VTCS
- Re-assembling the SLUCONDB (Scratch Conversion) modules

Defining HSC as an MSP Subsystem

HSC can either run under the master MSP subsystem, or as a secondary subsystem under the primary Job Entry Subsystem.

- If you run HSC under the master MSP subsystem, you must add a line to your subsystem name table (SYS1.PARMLIB member SUBSYSzz) 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 MSP subsystem, you must add a line to your subsystem name table (SYS1.PARMLIB member SUBSYSzz) to identify the following:
 - The subsystem name. This is a one- to four-character name that corresponds to the HSC START procedure name.
 - 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 MSP subsystem, or as a secondary MSP subsystem:

```
SUBSYS SUBNAME(SLS0) /* keyword format */
```

Note –

- If the HSC subsystem name you define in the subsystem name table does not match the HSC START procedure name, you must include the SYSS option on the PARM parameter in the START procedure. Refer to the publication *Configuring HSC and VTCS* for information about creating an HSC startup procedure.
- HSC no longer interacts with tape management systems in processing MSP 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 your Fujitsu MSP/EX publications for more information about defining subsystem names.

HSC User Exit Library Authorization

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 perform the following steps to APF authorize the user exit load library:

1. Add the HSC user exit load library to the KAAAPFzz member of SYS1.PARMLIB.
2. Issue the commands described in [“Authorizing the HSC User Exit Load Library” on page 39](#) to authorize the load library.

Adding the HSC User Exit Load Library to the KAAAPFzz Member

Add the following entries to the KAAAPFzz member to authorize the HSC user exit load library:

```
your.SEALINK      volser,
your.HSC_USEREXIT.LOAD    volser,
```

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

If there are multiple entries in the KAAAPFzz member, each entry (except the last) must end with a comma to indicate continuation. Omit the comma on the last entry.

Authorizing the HSC User Exit Load Library

Adding an entry to the KAAAPFzz member is necessary so that the library will be authorized in event of an IPL.

Adding HSC to the MSP Program Properties Table

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

Add the following entry to member PPTPRMzz of SYS1.PARMLIB:

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

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.

Adding SMF Parameters for HSC and VTCS

HSC can produce SMF record subtypes for HSC and VTCS events. To produce these record subtypes, you must add two lines to your System Management Facility (SMF) parameters in SYS1.PARMLIB member SMFPRMzz to specify the following:

- HSC subsystem name
- HSC recording interval, specified as INTERVAL(*hhmmss*).
The smaller the number, the more often data is recorded.
A minimum of 15 minutes (001500) is strongly recommended to avoid impacts to library performance. For HSC systems that do not support VSM, an interval of one hour (010000) is recommended.
- HSC SMF record type
- HSC/VTCS SMF record subtypes to be recorded.
Refer to the *ELS Programming Reference* for more information about the subtypes that HSC and VTCS can generate.

Assuming your HSC subsystem name is SLS0, the following example shows the lines that add HSC and VTCS record subtypes:

```
SUBSYS(SLS0, INTERVAL(001500), TYPE(255))
OPTION(SUBTYPE,
(1-8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 25, 26, 27, 28, 29, 30, 31))
```

Note – 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.

Re-assembling the TMS Interface (SLUDR*) Routines

Depending on your tape management system and its associated release level, you may need to re-assemble the TMS (Tape Management System) interface (SLUDR*) routines called by the HSC SLUCONDB utility and SMC SMCUDBX utility. This is also necessary if local modifications are made to these routines. These routines are included in the SEALINK library generated during ELS installation.

Note –

- The source of the TMS interface routines changed for ELS 7.0. If you have local modifications to any module with a name matching SLUDR*, you **must** modify the ELS 7.0/7.1 source with your local changes and re-assemble. Older versions of the SLUDR* modules **are not** compatible with the ELS 7.0/7.1 versions of SLUCONDB.
 - Refer to the *ELS Command, Control Statement, and Utility Reference* for more information about the SLUCONDB and SMCUDBX utilities, and the TMS interface routines.
 - Refer to the publication *Managing HSC and VTCS* for more information about Scratch Conversion (SLUCONDB) utility re-assembly requirements.
-

ELS Samples, Modules and Macros

Overview

This appendix lists samples, source code modules load modules, and macros included in the ELS package.

Note – See [TABLE 1-1 on page 3](#) for information about JCL samples used for ELS installation.

ELS Samples, Source Code Modules, and Macros

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

TABLE A-1 ELS Samples

Member Name	Description
GTFEXTR	Sample extract for SMC trace of a single job
GTFLMU	Sample MSP 2.X PARMLIB member to trace LMU requests
GTFPARMS	Sample GTF parameters for SMC trace
GTFPROC	Sample GTF startup JCL
KAAAPFzz	Sample SMC APF list entries
SUBSYSzz	Sample SMC subsystem name table entry
INSTUXIT	Sample SMP for installing SMP managed user exits
LIBGNJCL	Sample JCL to assemble and link a LIBGEN source file
MSGMPFUX	Sample MPF user exit
POLCVT01	Sample POLCVT member
POLCVT02	Sample POLCVT REXX data set program
PROGZZ	Sample ELS APF list entries
PPTPRMzz	Sample MSP Program Properties Table (PPT) entry for ELS
SENDEL	Sample SEN macro interface program
SENDISA	Sample SEN macro interface program
SENENA	Sample SEN macro interface program
SENEXIT	Sample SEN user exit
SENQRST	Sample SEN macro interface program
SLSSYS00	Sample HSC startup parameter file
SLSUX03	Default scratch subpool user exit
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
SLUCONDB	Source code for Scratch Conversion Utility
SMC3UX09	Sample SMC JES IATUX09 user exit source
SMC3UX71	Sample SMC JES IATUX71 user exit source
SMCCMDS	Sample command file for the SMCCMDS DD statement
SMCJRSLA	Sample JCL to assemble and link module SMCERSLV (JES only)

TABLE A-1 ELS Samples (Continued)

Member Name	Description
SMCJRSLV	Sample JCL for running UCLIN for SMCERSLV (JES only)
SMCJTYP1	Sample JCL to SMP install the SMC Type 1 modifications (JES only)
SMCJUX09	Sample JCL to SMP install the SMC IATUX09 user modification (JES only)
SMCJUX71	Sample JCL to SMP install the SMC IATUX71 user modification (JES only)
SMCPARMS	Sample parameter file for SMCPARMS DD statement
SMCPROC	Sample startup JCL
SMCUIICM	Sample IATIICM Type 1 modification (JES only)
SMCUIIP1	Sample IATIIP1 Type 1 modification (JES only)
SMCUMDAL	Sample IATMDAL Type 1 modification (JES only)
SMCUMDFE	Sample IATMDFE Type 1 modification (JES only)
SMCUUX09	Sample SMC JES IATUX09 user modification (JES only)
SMCUUX71	Sample SMC JES IATUX71 user modification (JES only)
SMFPRMXX	Sample PARMLIB definitions for HSC SMF record subtypes
UX06SAM1	Sample HSC User Exit 06 interface to a tape management system

TABLE A-2 ELS Source Code Modules

Member Name	Description
SMCERSLV	Source code for JES macro field resolution routine
SLSUX03	Source code for Scratch Subpool User Exit
SLSUX05	Source code for PGMI Authorization User Exit
SLSUX06	Source code for Insert/Delete User Exit
SLSUX14	Source code for Volume Access User Exit
SLSUX15	Source code for Command Authorization User Exit
SLUCONDB	Source code for SLUCONDB
SLUDRCA1	Source code for Scratch Conversion Utility CA-1 (TMS) database READ routine
SLUDRRMM	Source code for Scratch Conversion Utility DFSMSrmm database READ routine
SLUDRSMC	Source code for TMS database extract READ routine
SLUDRTLMS	Source code for Scratch Conversion Utility CA-TLMS (TLMS) database READ routine
SLUDRZAR	Source code for Zara database extract READ routine

TABLE A-3 ELS Macros

Member Name	Description
ACSRQ	format a parameter list for an ACS request
NCSCOMM	NCSCOMM parameter list
NCSUUII	NCS UUI call service
NUUIIA	NCS UUI interface area
SLSUX01P	HSC format User Exit 01 parameter list
SLSUX02P	HSC format User Exit 02 parameter list
SLSUX04P	HSC format User Exit 04 parameter list (JES only)
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 (JES only)
SLSUX12P	HSC format User Exit 12 parameter list (JES only)
SLSUX13P	HSC format User Exit 13 parameter list (JES only)
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

TABLE A-3 ELS Macros (Continued)

Member Name	Description
SLSDILLT	LIBGEN LOCATION type
SLSDVAR	Distributed volume attribute record length
SMCEHOOK	SMC Type 1 modification macro (JES only)
SMCEMFLD	JES macro field resolution block (used by SMCERSLV) (JES only)
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
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 AHS 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

TABLE A-3 ELS Macros (Continued)

Member Name	Description
SLSSMF23	HSC format 23 SMF record
SLSSMF24	HSC format 24 SMF record
SLSSMF25	HSC format 25 SMF record
SLSSMF26	HSC format 26 SMF record
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
SLSSWMSG	Map logrec records written for WTO-type messages issued by HSC
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
SLUDRINF	TMS DB Read parameter list
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
SLUIDAT	Flat file CDS information DSECT
SLUVMDAT	Flat file MVC data DSECT
SLUVPDAT	QCDS CAP information DSECT

TABLE A-3 ELS Macros (Continued)

Member Name	Description
SLUVSDAT	Flat file ACS station address DSECT
SLUVTDAT	Flat file VTV data DSECT
SLUVVDAT	Flat file volume data DSECT
SLX	HSC external interface reply
SWSPGMIA	VTCS PGMI interface area (VTCS only)

