StorageTek VSM GUI Version 6.2

Getting Started Guide

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Revision CA

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StorageTek VSM GUI Getting Started Guide

312651601

Revision History

Name	EC	Part Number	Rev	Date	Comments
VSM GUI 6.2.0 Getting Started Guide	132812	312651601	Rev A	July 2007	Initial 6.2 release.
		312651601	Rev B	August 2007	Minor revisions, see below.
		312651601	Rev CA	June 2010	Rebranding.

Revision B Changes:

- Several incorrect references to SKYPROC are changed to SKUPROC.
- Several incorrect references to SKYPRM00 are changed to SKUPRM00.
- Reference to STKSAMP now correctly describes it as HTTPD *and* VSM GUI sample.
- Reference to ENSAMP was removed.

Contents

List of Figures

List of Tables

Preface

Oracle's StorageTek VSM GUI, the Virtual Storage Manager Graphical User Interface, is a Web-based GUI that communicates with the StorageTek MVS HTTP server to provide a point-and-click alternative interface to the mainframe VTCS commands and utilities.

This Getting Started Guide describes procedures for installing and configuring the VSM GUI in the mainframe environment, and for subsequently accessing the installed VSM GUI from a Web browser.

Instructions for using the VSM GUI to run VTCS commands and utilities are in the VSM GUI help system, which is available whenever the GUI is displayed in a Web browser.

Documentation, Support, and Training

Function	URL
Web Site	• http://www.oracle.com/index.html
Documentation	
• Customer:	• http://docs.sun.com
• Employee:	• http://docs.sfbay.sun.com/
• Partner:	• https://spe.sun.com/spx/control/Login
Downloads	
• Customer:	• http://www.sun.com/download/index.jsp
• Employee:	• https://dlrequest-zn-dlapps1.sfbay.sun.com/usr/login
Support	• http://www.sun.com/support/
Training	• http://www.oracle.com/global/us/education/sun_select_country.html
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VSM GUI Getting Started Guide, 312651601

CHAPTER 1

What is the VSM GUI?

Oracle's StorageTek VSM GUI is a Web-based tool that lets you "point and click" instead of entering VTCS commands or running VTCS utilities. The VSM GUI consists of a World Wide Web (WWW) application and a web server to provide network connectivity for WWW browsers. The server component is a multitasking MVS HTTP content server that runs as an MVS started task.

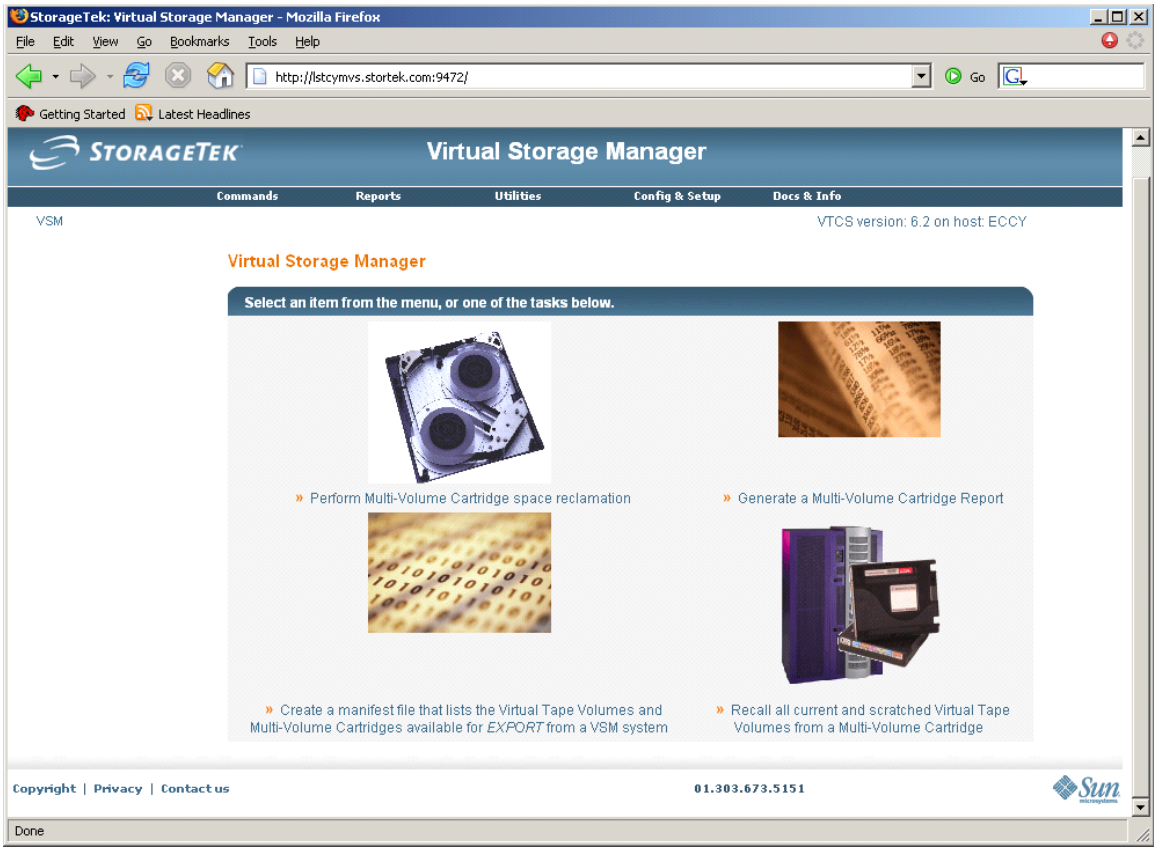
The VSM GUI 6.2.0 supports all VTCS 6.0.0, 6.1.0 and 6.2.0 commands and utilities, including the CONFIG utility. It **does not** support the standalone RTV utility or the HSC commands and utilities.

The VSM GUI also lets you drive VTCS functions from the output of a command or utility. For example, you can run an MVC or VTV report, sort it by any column, then run VTCS operations against a selected MVC or VTV.

Similarly, you can run Query RTD, then right click on any of the RTDs listed on the response to bring up a menu that displays the Audit, Config, Decom, Query Config, Query RTD, and Vary RTD commands. You can then select a command and a web page for that command appears with the RTD field filled in with information for the RTD you selected.

FIGURE 1-1 shows the VSM GUI home page. VSM GUI functions can be initiated from this page using either the pulldown menus or the displayed icons. Refer to the VSM GUI help system for information about specific commands and functions.

FIGURE 1-1 VSM GUI Home Page



CHAPTER 2

Installing and Configuring the VSM GUI

To plan and verify completion of the installation, use the checklist below.

VSM GUI Installation Summary and Checklist

Use the checklist in TABLE 2-1 to help plan and complete your VSM GUI installation and configuration tasks.

TABLE 2-1 VSM GUI Installation Summary and Checklist

Task	Mark when Completed
"Verify VSM GUI Hardware Prerequisites" on page 4	
"Verify VSM GUI Software Prerequisites" on page 4	
"Verify Installation Materials" on page 5	
"Load VSM GUI from Tape or CD-ROM Media" on page 5	
"Unload the VSM GUI SMP/E JCL Data Set" on page 13	
"Set Up the SMP/E Environment and Install the Software" on page 14	
"APF Authorize the VSM GUI Libraries" on page 19	
"Customize the VSM GUI Startup Proc" on page 20	
"Customize the VSM GUI Parameter File" on page 20	
"Start the VSM GUI Server" on page 27	

Verify VSM GUI Hardware Prerequisites

Verify the VSM GUI PC hardware requirements in TABLE 2-2.

TABLE 2-2 VSM GUI PC Hardware Requirements

Hardware Description	Minimum Requirement	Recommended System
System unit	Pentium III, 512MB of memory, 256 colors, mouse	Pentium IV, 1024MB of memory, 64K colors, mouse
CD-ROM drive	present	present
Monitor	1024 x 768 pixels with 256 colors	1280 x 1024 pixels with 64K colors
network card	present	present

Verify VSM GUI Software Prerequisites

Verify the VSM GUI PC software requirements in TABLE 2-3.

TABLE 2-3 VSM GUI Software Requirements

Software	Description
PC Windowing System	Microsoft Windows XP or newer
PC TCP/IP for communications between the VSM GUI PC component and the MVS HTTP server	The 32-bit WINSOCK TCP/IP supplied with the Windows versions listed above is required to enable the GUI to transfer configuration data between the workstation and the mainframe. Customers can also transfer configuration data using other facilities (external to the GUI) if desired.
Web Browser	Microsoft Internet Explorer V6.x or later or Mozilla/FireFox 1.4 or higher
VTCS	VTCS 6.0.0, 6.1.0 or 6.2.0 and prerequisites

Verify Installation Materials

VSM GUI is delivered on a product installation tape or on a CD-ROM. Before attempting to install VSM GUI, make sure you have the VSM GUI 6.2.0 product installation tape or CD-ROM.

Load VSM GUI from Tape or CD-ROM Media

The installation process is the same for each media except for the actual loading of the software from the product installation tape or CD-ROM:

- **Tape:** Follow the instructions below to load and SMP/E install VSM GUI.
- **CD-ROM:** Insert the CD-ROM and open the file named "`Start here.html`" for procedures that load the VSM GUI files from the CD-ROM and then refer you back to this chapter to continue the SMP/E installation.

Product Installation Tape Contents

TABLE 2-4 lists the files included on the VSM GUI 6.2.0 product installation tape.

TABLE 2-4 VSM GUI 6.2.0 Product Installation Tape Contents

File	Data Set Name	Description
1	SMPMCS	VSM GUI SMP/E control statements
2	SSKY500.F1	HTTPD server JCLIN
3	SSKY500.F2	HTTPD load modules
4	SSKY500.F3	HTTPD STKSAMP
5	SSKY500.F4	HTTPD icons
6	ASAR700.F1	SAS/C component JCLIN
7	ASAR700.F2	SAS/C linked LMODs
8	ASAR700.F3	SAS/C linked LMODs
9	ASAR700.F4	SAS/C linked LMODS
10	ASAR700.F5	SAS/C transient LMODs
11	SSKU620.F1	VSM GUI www JCLIN

TABLE 2-4 VSM GUI 6.2.0 Product Installation Tape Contents

File	Data Set Name	Description
12	SSKU620.F2	VSM GUI LMODs
13	SSKU620.F3	VSM GUI www modules
14	SSKU620.F4	VSM GUI www modules
15	SSKU620.F5	VSM GUI www modules
16	SSKU620.F6	VSM GUI www modules
17	SSKU620.F7	VSM GUI www modules
18	SSKU620.F8	VSM GUI www modules
19	SSKU620.F9	VSM GUI www modules
20	SSKU620.F10	VSM GUI www modules
21	SSKU620.F11	VSM GUI www modules
22	SSKU620.F12	VSM GUI www modules
23	SSKU620.F13	VSM GUI www modules
24	SSKU620.F14	VSM GUI www modules
25	SSKU620.F15	VSM GUI www modules
26	SSKU620.F16	VSM GUI www modules
27	SSKU620.F17	VSM GUI www modules
28	SSKU620.F18	VSM GUI www modules
29	SSKU620.F19	VSM GUI www modules
30	SSKU620.F20	VSM GUI translations
31	SSKU620.F21	VSM GUI STK samples
32	PTF.F1	PTFs for HTTPD and SAS/C (required)
33	SMPE.JCL	HTTPD installation JCL (optional)

Note – The VSM GUI installation automatically installs the VSM GUI sample jobs in the VSM GUI STKSAMP.

Product Installation CD-ROM Contents

TABLE 2-5 lists the files included on the VSM GUI 6.2.0 product installation CD-ROM.

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom	Start Here.html	CD-ROM installation Web file
/cdrom	VGUI62.pax	MPNTS binary file
/cdrom/Documents	VGUI62logo.png	CD-ROM installation Web file
/cdrom/Documents	fromlocal.html	CD-ROM installation Web file
/cdrom/Documents	fromnts.html	CD-ROM installation Web file
/cdrom/Documents	loadsamp.html	CD-ROM installation Web file
/cdrom/Documents	notices.html	CD-ROM installation Web file
/cdrom/Documents	troubles.html	CD-ROM installation Web file
/cdrom/Documents	chgit.html	CD-ROM installation Web file
/cdrom/Documents	fromnetwork.html	CD-ROM installation Web file
/cdrom/Documents	index.html	CD-ROM installation Web file
/cdrom/Documents	logoab8.gif	CD-ROM installation Web file
/cdrom/Documents	pax.html	CD-ROM installation Web file
/cdrom/Samples	@@NOTES.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	@SKUEDIT.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	C1CSIBLD.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	C3DDDEFS.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I2ALLOC.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I4RCV.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I6APPLY.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I8ACCEPT.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	LOADSAMP.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	NTSVGUI.samp	UNIX text file representation of sample JCL member

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom/Samples	U1RCV.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	U3ACCEPT.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	V2APPLY.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	@@TOC.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	@SKURUN.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	C2ZONES.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I1DDDEFS.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I3ALLOC.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I5RCV.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I7APPLY.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	I9ACCEPT.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	NETVGUI.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	S1COPY.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	U2APPLY.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	V1RCV.samp	UNIX text file representation of sample JCL member
/cdrom/Samples	V3ACCEPT.samp	UNIX text file representation of sample JCL member
/cdrom/Samples.win	@@NOTES.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	@SKUEDIT.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	C1CSIBLD.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	C3DDDEFS.samp	DOS text file representation of sample JCL member

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom/Samples.win	I2ALLOC.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I4RCV.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I6APPLY.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I8ACCEPT.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	NETVGUI.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	S1COPY.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	U2APPLY.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	V1RCV.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	V3ACCEPT.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	@@TOC.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	@SKURUN.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	C2ZONES.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I1DDDEFS.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I3ALLOC.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I5RCV.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I7APPLY.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	I9ACCEPT.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	NTSVGUI.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	U1RCV.samp	DOS text file representation of sample JCL member
/cdrom/Samples.win	U3ACCEPT.samp	DOS text file representation of sample JCL member

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom/Samples.win	V2APPLY.samp	DOS text file representation of sample JCL member
/cdrom/VGUI62.gimzip	GIMPAF.XML	SMPNTS control file
/cdrom/VGUI62.gimzip	GIMPAF.XSL	SMPNTS control file
/cdrom/VGUI62.gimzip	SMPHOLD	SMPNTS control file
/cdrom/VGUI62.gimzip	SMPPTFIN	SMPNTS control file
/cdrom/VGUI62.gimzip	SMPRELF	SMPNTS control file
/cdrom/VGUI62.gimzip/SMPHOLD	Storage.Tek0001.EMPTY.F80.pax.Z	SMPNTS binary file of SMPHOLD
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0002.ASAR700.SMPPTFIN.pax.Z	SMPNTS binary file of SAS/C control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0035.L1K0001.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0038.L1K0004.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0041.L1S0001.SMPPTFIN.pax.Z	SMPNTS binary file of SAS/C PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0008.SSKU620.SMPPTFIN.pax.Z	SMPNTS binary file of VSM GUI control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0036.L1K0002.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0039.L1K0005.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0030.SSKY500.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0037.L1K0003.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPPTFIN	Storage.Tek0040.L1K0006.SMPPTFIN.pax.Z	SMPNTS binary file of HTTPD PTF control statements
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKY500.F1.pax.Z	SMPNTS binary file of HTTPD server JCLIN
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKY500.F2.pax.Z	SMPNTS binary file of HTTPD load modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKY500.F3.pax.Z	SMPNTS binary file of HTTPD STKSAMP

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKY500.F4.pax.Z	SMPNTS binary file of HTTPD icons
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.ASAR700.F1.pax.Z	SMPNTS binary file of SAS/C component JCLIN
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.ASAR700.F2.pax.Z	SMPNTS binary file of SAS/C linked LMODs
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.ASAR700.F3.pax.Z	SMPNTS binary file of SAS/C linked LMODs
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.ASAR700.F4.pax.Z	SMPNTS binary file of SAS/C linked LMODs
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.ASAR700.F5.pax.Z	SMPNTS binary file of SAS/C transient LMODs
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F1.pax.Z	SMPNTS binary file of VSM GUI www JCLIN
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F2.pax.Z	SMPNTS binary file of VSM GUI load modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F3.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F4.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F5.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F6.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F7.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F8.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F9.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F10.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F11.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F12.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F13.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F14.pax.Z	SMPNTS binary file of VSM GUI www modules

TABLE 2-5 VSM GUI 6.2.0 Product Installation CD-ROM Contents

Directory	File Name	Description
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F15.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F16.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F17.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F18.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F19.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F20.pax.Z	SMPNTS binary file of VSM GUI www modules
/cdrom/VGUI62.gimzip/SMPRELF	Storage.Tek.SSKU620.F21.pax.Z	SMPNTS binary file of VSM GUI www modules

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Note – The VSM GUI installation automatically installs the VSM GUI sample jobs in the VSM GUI STKSAMP.

VSM GUI FMIDs

The VSM GUI software and selected components of the SAS/C runtime library are packaged in standard SMP/E format. The VSM GUI 6.2.0 product installation media includes the following FMIDs:

- SSKY500 - HTTPD server base function
- SSKU620 - VSM GUI base function
- ASAR700 - SAS/C selected components base function

Unload the VSM GUI SMP/E JCL Data Set

Unloading VSM GUI SMP/E JCL Data Set from Tape

The VSM GUI SMP/E JCL Data Set contains sample JCL members for the VSM GUI; see TABLE 2-4 for more information. Use the JCL in FIGURE 2-1 to create a copy of the SMP/E JCL from file 33 of the product installation tape to help install the VSM GUI.

```
jobcard  JOB 'accounting information'
//*
//*
//*         LOAD PDS FROM UNLOADED DATASET
//*
//LOAD      EXEC PGM=IEBCOPY
//SYSUT3    DD   UNIT=VIO,SPACE=(CYL,(20,3))
//IN1       DD   DSN=SMPE.JCL,DISP=(OLD,KEEP),
//          UNIT=3480,
//          LABEL=(33,SL,EXPDT=98000),VOL=SER=SKUnnn
//OUT1      DD   DSN=hlq.SMPEJCL,DISP=(,CATLG),
//          UNIT=SYSDA,
//          SPACE=(TRK,(10,2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440)
//SYSPRINT DD   SYSOUT=*
//SYSIN     DD   *
 COPY OUTDD=OUT1,INDD=IN1
//
```

FIGURE 2-1 JCL to Unload the VSM GUI 6.2.0 SMP/E JCL

Unloading VSM GUI SMP/E JCL Data Set from CD-ROM

The VSM GUI SMP/E JCL Data Set contains sample JCL members for the VSM GUI. Follow the instructions in the file named "`Start here.html`" on the CD-ROM to transfer the VGUI JCL Samples file using one of the following three methods:

- CD-ROM on FTP server and ICSF available

  Receive FROMNETWORK

Note: This also works without ICSF if SMP/E is at v3r4.0 or better and the Java SHA-1 support is available.

- ICSF available; CD-ROM not on FTP server

  Receive from Local Host

- ICSF not available

  Receive from NTS

Set Up the SMP/E Environment and Install the Software

Caution – Do not install the VSM GUI and its supporting SAS/C functions in an SMP/E CSI containing other StorageTek products with SAS/C functions you want to preserve. Otherwise, unpredictable results may occur.

However, if you already have ExPR installed: The VSM GUI should be installed in the same SMP/E CSI so as to share the HTTPD server (the HTTPD server and SAS/C runtime library files are the same on both tapes). SMP/E will determine what needs to be installed.

Caution – VSM GUI version 6.2 cannot coexist with previous VSM GUI versions in the same SMP/E CSI because of data set conflicts.

Caution – Co-existing with ExPR GUI for the same SMP/E environment will require the relevant ExPR GUI maintenance patches (PTF) for the HTTPD server base function and SAS/C function.

Caution – The High Level Qualifiers you will use for the SMP/E data set is restricted to no more than 23 characters. This is to ensure that all the data sets received for the product will comply with the 44 character maximum length data set name, imposed by the operating system.

The SMP/E JCL Data Set contains jobs to create the SMP/E environment (allocating data sets, setting SMP/E options, and so forth) in addition to the SMP/E `RECEIVE`, `APPLY` and `ACCEPT` jobs.

For more information, see the following members:

- `@@NOTES` - General notes on installation process
- `@@TOC` - Table of contents for the members

Each job also contains usage notes that describe what needs to be changed.

▼ To set up the SMP/E environment and install the software:

1. **Customize the installation jobs.**

   You can do this manually with an editor, but it is recommended that you use the provided ISPF edit macro `@SKUEDIT` and `@SKURUN` REXX exec for automated updates of an individual member or all members.

   Before use, first copy these two members to a library in your `SYSPROC` concatenation, then change the job settings in `@SKUEDIT` to the appropriate settings for the site. Then to update a member just invoke `@SKUEDIT` within the member or to change all members, from TSO or ISPF Option 6, enter:

   ```
   @SKURUN smpejcl_dataset_name @SKUEDIT
   ```

   `@SKUEDIT` contains information describing its use.

2. **Build the SMP/E database.**

   Run the following customized members:

   - `C1CSIBLD` - Allocate and initialize the SMP/E data sets.
   - `C2ZONES` - Define and update each zone.
   - `C3DDDEFS` - Define the required DDDEFs for each zone.

   This job may end with return code 4.

   SMP/E warning code of GIM27701W is normal and expected for new SMP/E environments where there is no definition yet defined. The SMP/E Replace command will be changed to an Add command automatically.

3. **Define DDDEFs and allocate the target and distribution data sets.**

   Run the following customized members:

   - `I1DDDEFS` - Define the DDDEFs.

     This job may end with return code 4.

     SMP/E warning code of GIM27701W is normal and expected for new SMP/E environments where there is no definition yet defined. The SMP/E Replace command will be changed to an Add command automatically.

   - `I2ALLOC` - Allocate the HTTPD target and distribution data sets.

     Do not run this job if you already have the HTTPD server installed (e.g., as part of the ExPR GUI).

   - `I3ALLOC` - Allocate VSM GUI Web content target and distribution data sets.

4. **Run the following as required for your installation media:**

   - **TAPE ONLY:** Run customized member I4RCV to RECEIVE the HTTPD, SAS/C and VSM GUI FMIDs.

     Modify this job to exclude the SSKY500 and ASAR700 FMIDs if you already have the HTTPD server and SAS/C run time received in your SMP/E environment.

- **CD-ROM ONLY:** Run customized member NETVGUI to RECIEVE from a network-mounted CD-ROM the HTTPD, SAS/C, required PTFs for HTTPD and SAS/C and VSM GUI FMIDs.

  Modify this job to exclude the SSKY500 and ASAR700 FMIDs if you already have the HTTPD server and SAS/C run time received in your SMP/E environment.

  Modify this job to exclude the PTFs already applied in your SMP/E environment.

- **CD-ROM ONLY:** Run customized member NTSVGUI to RECIEVE from an SMPNTS hierarchy the HTTPD, SAS/C, required PTFs for HTTPD and SAS/C and VSM GUI FMIDs.

  Modify this job to exclude the SSKY500 and ASAR700 FMIDs if you already have the HTTPD server and SAS/C run time received in your SMP/E environment.

  Modify this job to exclude the PTFs already applied in your SMP/E environment.

5. **TAPE ONLY: Run customized member I5RCV to RECEIVE the PTFs required for HTTPD and SAS/C FMIDs.**

   Do not run this job if you already have the required PTFs already applied in your SMP/E environment.

6. **Run customized member I6APPLY to APPLY the HTTPD server and SAS/C FMIDs and required PTFs.**

   Modify this job if you already have the HTTPD server and SAS/C run time applied in your SMP/E environment but do not have the required PTFs.

   Do not run this job if you already have the required PTFs already applied in your SMP/E environment.

   Notes:

   - By default this job will fail with return code 12, due to STOP instructions in the PTFs due to DELETE statements in the SMP/E commands. You will need to modify the job to allow the PTF DELETE commands to be processed with a BYPASS statement.
   - This job will end with return code 4.
   - SMP/E warning code of GIM24701W is normal and expected due to the LINK-EDIT parameters not obtained and using defaults.
   - SMP/E warning code of GIM42001W is normal and expected due to BYPASS instruction in the SMP/E statement.

7. Run customized member I7APPLY to APPLY the VSM GUI FMID.

This job will end with return code 4.

SMP/E warning code of GIM23904W and GIM23903W is normal and expected due to the LINK-EDIT reporting incomplete load modules. These modules will get resolved by the HTTPD at run time.

When the `APPLY` is successful, the SMP/E target libraries contain the following data sets:

TABLE 2-6 SMP/E Target Library Contents

Data Set Name	Contents
HTTPDCMN.ICONS	server icons
SSAROMOD	SAS/C LMODs
SSARRTNS	run time libraries
SSKRRTNS	FCD LMODs
SSKYRTNS	FCD LMODs
STKLOAD	load modules
STKSAMP	HTTPD and VSM GUI sample material
TRANS	web content file translations
VSM.EN.ABOUT	web content
VSM.COMMS	web content
VSM.COMMS.W3C	web content
VSM.EN.CONFIG	web content
VSM.EN.CONFIG.W3C	web content
VSM.EN.DOCS	web content
VSM.EN.DOCS.WHDATA	web content
VSM.EN.DOCS.WHGDATA	web content
VSM.EN.DOCS.WHXDATA	web content
VSM.EN.HOME	web content
VSM.EN.IMAGES	web content
VSM.EN.REPORTS	web content
VSM.EN.REPORTS.W3C	web content
VSM.EN.SCRIPTS	web content
VSM.EN.TEMPLAT	web content
VSM.EN.UTILS	web content
VSM.EN.UTILS.W3C	web content

8. **Run customized member I8ACCEPT to ACCEPT the HTTPD server and SAS/C FMIDs and required PTFs.**

   Notes:

   - By default this job will fail with return code 12, due to STOP instructions in the PTFs due to DELETE statements in the SMP/E commands. You will need to modify the job to allow the PTF DELETE commands to be processed with a BYPASS statement.
   - This job will end with return code 4.
   - SMP/E warning code of GIM24701W is normal and expected due to the LINK-EDIT parameters not obtained and using defaults.
   - SMP/E warning code of GIM42001W is normal and expected due to BYPASS instruction in the SMP/E statement.
   - SMP/E warning code of GIM61903W is normal and expected due to the previous APPLY statements having removed load modules from the DLIB.

9. **Run customized member `I9ACCEPT` to `ACCEPT` the VSM GUI FMID.**

   When the `ACCEPT` is successful, the SMP/E distribution libraries contain the following data sets:

TABLE 2-7 SMP/E Distribution Library Contents

Data Set Name	Contents
AENABT	web content
AENCFG	web content
AENCFGW	web content
AENCMS	web content
AENCMSW	web content
AENDOC	web content
AENDOW	web content
AENDOG	web content
AENDOX	web content
AENHME	web content
AENIMG	web content
AENRPT	web content
AENRPTW	web content
AENSCP	web content
AENTPL	web content
AENUTL	web content
AENUTLW	web content
ASAMP	VSM GUI sample material
ASAROBM	LMODs

TABLE 2-7 SMP/E Distribution Library Contents

Data Set Name	Contents
ASAROMM	LMODs
ASAROSM	LMOD
ASARRTNS	load modules
ASKURTNS	LMODs
ASKYICNS	server icons
ASKYRTNS	LMODs
ASKYSAMP	HTTPD sample material
ATRANS	web content file translations

10. **Run the customized member S1COPY to copy the customizable members to a non-SMP/E controlled data set.**

    When the copy has successfully completed, there will be a new data set, `STKPARM`, to which you can apply your site customization. Refer to the data set members SKUPROC and SKUPRM00 for sample templates to use.

APF Authorize the VSM GUI Libraries

In addition to the NCS libraries, APF authorize the VSM GUI load library `STKLOAD` and the `SSARRTNS` library by any of the following methods:

- Dynamically authorize the load library by using the `MVS SETPROG APF,ADD,DSNAME` operator command.
- Dynamically authorize the load library by:
  - Adding the load library to the MVS parameter library `PROG`*xx* member. For example:

    ```
    SYS1.PARMLIB(PROG00)
    ```

  - Issuing the MVS `SET PROG=`*xx* operator command.
- (Recommended) Permanently authorize the load library by:
- Adding the VSM GUI load libraries to the MVS parameter library members `IEAAPF`*xx* or `PROG`*xx*. For example:

  ```
  SYS1.PARMLIB(IEAAPF00)
  ```

  OR

  ```
  SYS1.PARMLIB(PROG00)
  ```

- IPLing the system.

Customize the VSM GUI Startup Proc

To create the VSM GUI startup procedure, modify STKPARM member SKUPROC as described in the JCL comments and add the procedure to the production PROCLIB.

Caution – The VSM GUI startup procedure must specify the active HSC CDS, otherwise the active CDS can be updated with incorrect values from the secondary or standby CDS.

Customize the VSM GUI Parameter File

The VSM GUI sample startup proc SKUPROC calls the sample parameter file SKUPRM00 from the STKPARM data set. See the following sections for more information and modify the values in SKUPRM00 for your site's needs from the STKPARM data set.

The HTTP server parameter file is formatted with one parameter setting per line, continuation onto following lines is not supported. Comment lines start with a hash character (#).

VSM GUI Server Configuration Parameters

gmtoffset *offset*

The system clock offset from GMT. Required if the system clock 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*

The logging message level. Valid values are `error`, `warning`, `info`, and the default is `warning`. For example, if you specify `info`, you log only information messages. If you specify `error`, you log error, warning, and information messages.

serverbase *hlq*

The high level qualifier of the server data sets in the form *`hlq`*. This should be the same as the hlq used during the SMP/E install. This parameter is required.

VSM_AUDIT *state*

Determine if VTCS commands issued using the GUI will be displayed in the HTTP server log file for audit purposes. Valid values are YES for auditing or any other string for no auditing. Default is no auditing.

Audit lines in the log will begin with the string: VSMGUI AUDIT.

VARY_TIME *seconds*

Determine the period of time to wait after a VARY RTD or VARY CLINK command has been issued before displaying the status of the varied device. Default value is 60 seconds.

Network Parameters

servername *name*

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

serverdomain *domain*

The server domain name reported in responses; for example, `yourcompany.com`. The default is all blanks.

port *pppp*

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

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 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 is the name of the server started task procedure/

   userid is the RACF userid to be associated with the started task.

   groupname is the RACF group associated

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

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

Security Parameters

Security is enabled by the `security` parameter described below.

Note – If you want to use the GUI to run EXPORT, you must give the server address space sufficient authority to write to the data set name you are using for the manifest file. If you want to use the GUI to run IMPORT, you must give the server address space sufficient authority to read from the data set name you are using for the manifest file.

---

authname *title*

The authentication realm title, which appears on the browser userid/password prompt. The default is StorageTek Virtual Storage Manager.

authuserfile *file*

Specifies the text data set containing the user information data set. The file reference can be of the following formats:

DSN:*dsname* - data set name

DDN:*ddname* - DDNAME in startup proc

The target data set can be a sequential data set or a PDS/PDSE member. The default is DDN:SKYPSWD which, in the sample startup proc SKUPROC, references the sample userlist in STKPARM.

security {*file* | *saf*}

Specifies the userid verification method:

`file`

Userid information is verified against the entries in the specified text file. The file entries take the format:

```
userid userid_name password [access_level]
```

access_level is read, update, control or alter. The default access level is read.

See STKSAMP member USERLIST for a sample entry.

Caution – If you change access levels for a user, the user has to log out and log back in again for the change to take effect.

`saf`

The specified system security package, which verifies userid and password information, and that valid users have access to the profile STKHTTPD in class FACILITY. The level of access in that profile is the user's access level for server functions. The access level permits the GUI operations as shown in TABLE 2-8.

TABLE 2-8 VSM GUI Authorization Levels and Commands

Commands	Authorization Level
All Queries	Read
All Reports	Read
Archive (for VTCS 6.2 and above)	Control
Cancel	Update
Vary RTD	Update
Vary VTSS	Update
Vary Cluster Link	Update
Reconcile (for VTCS 6.2 and above)	Control
Migrate	Control
MVC Drain	Control
Recall	Control
Reclaim	Control
MVC Maintenance	Control
VTV Maintenance	Control
Consolidate	Control
Export	Control
Import	Control
Audit	Alter
Config	Alter
Decom	Alter
Set Migration Options	Alter

Content Parameters

updated date

The date and time (gmt) when the web content was last updated in an installation or PTF update. This parameter is required. For example: fri, 06 dec 2002 3:54:00 gmt

translationfile file

Specifies the data set containing the GUI data set name translations. The file reference can be of the following formats:

DSN:*dsname* - for a data set

DDN:*ddname* - for a DD in the startup proc

The target data set can be a sequential data set or a PDS/PDSE member. The default is DDN:SKYTRSN which in the sample startup proc SKUPROC references the SMPE installed translation file. It may be specified more than once for multiple GUI applications.

Miscellaneous Parameters

allow *xxx.xxx.xxx.xxx* / *mm*

Specifies the ip address range allowed to connect to the server. xxx.xxx.xxx.xxx is the base ip address in dotted decimal notation and mm are the significant bits. For example, `10.117.186.0 / 24` specifies that connections are allowed from addresses 10.117.186.*

authenicateexpiry *period*

The period entries will remain in the authentication cache. Period can be specified in any combination of hours, minutes or seconds and if no unit is given seconds are assumed. The default period is one hour.

bufferpool *number*

Sets the minimum number of request buffers. Allowed range is 0 to 400. Default is 200 buffers.

cgionly *yes*|*no*

Only allow CGI processing, default is no. Caution that this parameter MUST NOT be set to yes if using any GUI application as it will disable the GUI.

closetimeout *period*

Sets the request timeout (in seconds) on a client connection. The allowed range is 5 to 60 seconds, default is 30 seconds.

Cookieexpires *time*

Specifies the period after which browser cookies expire.

dirlists *yes*|*no*

Enables generation of virtual directory listings, default is yes.

deny *xxx.xxx.xxx.xxx* / *mm*

Specifies the ip address range forbidden to connect to the server. Syntax as for allow.

execcgi *yes|no*

Specifies if CGI functions can run and should be left as yes. Defaults to yes.

expiry *period*

Specifies the default static content expiry period in seconds. Default is 21600 (six hours).

home *"url-string"*

Specifies the default home page for the server and is relative to the document root. For example:

```
home "/vsm/en/home/index.html"
```

interface *address*

For multihomed hosts, specifies the IP address of the network interface on which the server is to listen.

Keepalive *yes|no*

Enable persistent connections. Default is yes.

keepalivetimeout *period*

Sets the inactivity timeout (in seconds) on a persistent client connection. The allowed range is 15 to 300 seconds. Default is 300 seconds.

linger *period*

Sets the socket timeout (in seconds) on close before it is available for reuse. It can tuned to improve socket availability at high transaction rates but setting too low can cause connections to be disconnected before all data is delivered to the client. The default is the installation TCP/IP default.

loadmodule *module*

Preloads the specified CGI module. The default is to dynamically load and unload such modules as required.

maxclients *number*

Specifies the maximum number of worker tasks that can run.

maxrequestsperchild *number*

Sets the maximum number of requests to be serviced by a worker task before it is restarted. The default is no limit.

maxpasswordlength *number*

Sets the maximum allowed length of a password. Defaults to 8 characters.

maxuseridlength *number*

Sets the maximum allowed length of a password. Defaults to 8 characters.

messageprefix *prefix*

Specifies the three-character prefix for server messages. Default is “SKY”.

order *check-order*

Specifies the order in which a connection source ip address is checked against any allow and/or deny parameters.

Allowable sequences:

allow-deny - Allow directives are checked before deny directives. Unmatched requests are denied.

deny-allow - Deny directives are checked before allow directives. Unmatched requests are allowed.

mutual-exclusion - Only requests that are allowed by an allow directive and are not forbidden by a deny directive are allowed.

For example: `order allow-deny`

The default order is deny-allow. Note that disallowed connections are silently dropped for security reasons and no error messages are returned to such connections.

receivebuffersize *value*

Changes the TCP receive buffer size if authorized. Valid range is 4096 to 65536. Default is the TCP/IP stack default.

sockimplementation *type*

Specifies the socket implementation to be used by the server.

Socktimeout *period*

Specifies the socket timeout in seconds.

Startservers *number*

Specifies the default number of running worker tasks.

Serveradmin *admin*

Identifies the server administrator e-mail address on directory listings.

secure *level*

Specifies the directory levels under which security verification is required. It can be specified for each application but for efficiency it is recommended to have as few as possible. Default is /.

sendbuffersize *value*

Changes the TCP send buffer size if authorized. Valid range is 4096 to 65536. Default is the TCP/IP stack default.

setenv name *text*

Sets an environment variable accessible to cgi modules.

serversignature *yes* | *no*

Specifies whether the server identification line should be included at the bottom of server generated pages such as directory listings or error pages. Default yes.

tcpipprefix *high_level_qualifier*

Sets the system TCPIP high level qualifier. Default is TCPIP. Suggest also allocating the <tcpipprefix>.TCPIP.DATA data set in the started task JCL with DD SYSTCPD.

tcpipdata *reference*

Sets the reference to the TCPIP data set in the form DSN:data set or DDN:ddname. Defaults to DDN:SYSTCPD

Start the VSM GUI Server

To start the VSM GUI server, enter the following operator command.

```
START SKUPROC
```

The server is up and running when the following message appears:

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

Connect to the VSM GUI Server

Specify the URL of the server in the browser window. For example, to connect to the web server running on the MVS system `lstcrmvs` in the `production` domain on port 8888 the URL is:

```
http://lstcrmvs.stortek.com:8888/
```

To connect to this server using default port 80:

```
http://lstcrmvs.stortek.com/
```

Control the VSM GUI Server

By default, when the VSM GUI server is started, it uses the SKUPRM00 member in STKPARM. You can stop the server by entering one of the following MVS commands:

```
P SKUPROC
F SKUPROC,SHUTDOWN
```

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

```
F SKUPROC,D S
```

The following shows a display status response:

```
SKY016I HTTPD Server 6.2.0 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 SKUPROC,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.

CHAPTER 3

Installing PTFs for VSM GUI

This chapter describes how to install corrective service PTFs for VSM GUI.

Note – Before you can install PTFs, you must install VSM GUI as described in "Installing and Configuring the VSM GUI" on page 3.

Downloading PTFs

VSM GUI PTFs are available for download at the following locations:

- http://sunsolve.sun.com/show.do?target=patchpage
- http://oracle.com/support

Installing the PTFs

1. **Ensure that you have customized the installation jobs as described in "Set Up the SMP/E Environment and Install the Software" on page 14.**
2. **If necessary, modify member** `V1RCV`**.**

   Change the `SMPPTFIN` and `SMPHOLD` DDs to point to the downloaded data set names. If there was no `HOLDDATA` downloaded, then remove the `SMPHOLD` DD and only receive `SYSMODS`.
3. **Run member** `V1RCV` **to** `RECEIVE` **the VSM GUI PTFs.**
4. **If necessary, modify member** `V2APPLY`**.**

   Before running the apply job, review the output from the receive job for `HOLDDATA`, and follow the instructions given for each held PTF. When the requirements are met, bypass the hold condition for that held PTF in the apply job with the `BYPASS` parameter. Do **not** bypass `HOLDERROR` conditions.
5. **Run member** `V2APPLY` **to** `APPLY` **the VSM GUI PTFs.**

Note – Expect a return code of 04 with SMP/E message GIM23903W for link-edit processing of VSM GUI modules into the SKYRTNS and SKURTNS libraries. The Binder message IEW2454W is generated for each routine linked into these libraries. The link-edit processing of modules into the STKLOAD library should complete with a return code 0.

6. **Run member** V3ACCEPT **to** ACCEPT **the VSM GUI FMIDs.**

   Use the same BYPASS parameters that were used in the APPLY job. Use the ACCEPT CHECK option, as often as necessary, to identify SMP/E processing problems before the actual ACCEPT process.

   Note – Expect a return code of 04 with SMP/E message GIM24701W. This message is normal when SMP/E accepts new elements into the distribution libraries for the first time.

   After the ACCEPT succeeds, you have installed the VSM GUI PTFs.

CHAPTER 4

Installing Service Tapes for VSM GUI

This chapter describes tells how to install service tapes for VSM GUI. Note that you can also receive service via downloaded PTFs as described in "Installing PTFs for VSM GUI" on page 29.

Before you install a service tape, VSM GUI must be installed as described in "Installing and Configuring the VSM GUI" on page 3.

Contact Software Support for a current service tape containing those PTFs that have become available since the base tape was created.

The VSM GUI service tape contains both the current PUT level PTFs and a file containing all cumulative PTFs available for the product up to that PUT level. Each PTF on the file is assigned a source identifier of PUT*yynn*, where *yy* is the year and *nn* is the sequence number. This value will be the same as the PUT level (for example, `PUT9901`). This allows previous PUTs to be identified and allows installation by source identifier if desired. Additional source identifiers may be included on the SMP/E `RECEIVE` job.

Service Tape Contents

Table 4-1 lists the file names contained in a service tape.

TABLE 4-1 File Names for VSM GUI Service Tapes

File Number	Data Set Name	Description
1	SMPPTFIN	Corrective Service PTFs. For a PUT, these are the PTFs for the current PUT level.
2	PTFLIST	List of Corrective Service PTFs contained on file 1
3	SMPEJCL	Service Tape Installation JCL (Optional)
4	SMPHOLD	SMP/E external hold statements
5	JCLIN	SMP/E JCLIN
6	UCLIN	SMP/E UCLIN
7	PUTCUM	Cumulative Service PTFs. For a PUT, these are all of the PTFs for all the PUTs that have been released. This includes those PTFs in file 1.

Unload the SMP/E JCL Data Set from the Service Tape

The service tape SMP/E JCL Data Set contains sample JCL members for the installation process. Use the JCL in FIGURE 4-1 to create a copy of the SMP/E JCL from file 3 of the distribution tape to help install the service tape contents. Obtain the actual volume serial "VT*yynn*" of the tape from the tape cartridge external label and make other modifications as necessary.

```
//jobcard  JOB 'accounting information'
//*
//        EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DUMMY
//*
//SYSUT1  DD DSN=SMPEJCL,DISP=(OLD,KEEP),
//          UNIT=3480,
//          LABEL=(3,SL,EXPDT=98000),VOL=SER=VTyynn
//*
//SYSUT2  DD DSN=hlq.SMPE.JCL,DISP=(,CATLG),
//          UNIT=SYSALLDA,SPACE=(TRK,(10,2,10)),
//          DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440)
//*
```

FIGURE 4-1 JCL to Unload the VSM GUI Service Tape SMP/E JCL

Installing a Service Tape

Install the contents of a service tape using the following procedure.

1. **Ensure that you have customized the installation jobs as described in "Set Up the SMP/E Environment and Install the Software" on page 14.**

2. **If necessary, modify member** U1RCU**.**

   If the cumulative service was downloaded from the StorageTek CRC, change the SMPPTFIN and SMPHOLD DDs to point to the downloaded data set names. If it is a physical tape, obtain the actual volume serial number "VT*yynn*" from the tape cartridge external label. If there was no HOLDDATA downloaded, then remove the SMPHOLD DD and only receive SYSMODS.

3. **Run member** U1RCV **to** RECEIVE **the VSM GUI service.**

4. **If necessary, modify member** U2APPLY**.**

   Before running the apply job, review the output from the receive job for HOLDDATA, and follow the instructions given for each held PTF. When the requirements are met, bypass the hold condition for that held PTF in the apply job with the BYPASS parameter. Do **not** bypass HOLDERROR conditions.

5. **Run member** U2APPLY **to** APPLY **the VSM GUI service.**

Note – Expect a return code of 04 with SMP/E message GIM23903W for link-edit processing of VSM GUI modules into the SKYRTNS and SKURTNS libraries. The Binder message IEW2454W is generated for each routine linked into these libraries. The link-edit processing of modules into the STKLOAD library should complete with a return code 0.

6. **Run member** U3ACCEPT **to** ACCEPT **the SYSMODs.**

   Use the same BYPASS parameters that were used in the APPLY job. Use the ACCEPT CHECK option, as often as necessary, to identify SMP/E processing problems before the actual ACCEPT process.

   Note – Expect a return code of 04 with SMP/E message GIM24701W. This message is normal when SMP/E accepts new elements into the distribution libraries for the first time.

   After the ACCEPT succeeds, you have installed the VSM GUI service tape contents.

APPENDIX **A**

VSM GUI Messages and Codes

VSM GUI Messages

SKY001I

`name Server version starting on system running MVS level`

httpd server startup message

SKY002E

`Error binding server socket ss, errno=nnn: mmm - terminating`

The server cannot bind to the specified network port ss due to the error indicated by the errno code nnn and error message mmm. The server shuts down.

SKY003I

`name ready to accept requests`

The server name is ready for normal operation.

SKY004E

`Error opening server socket errno=nnn: mmm - terminating`

The server cannot open a socket connection to its configured port due to the error indicated by the errno code nnn and error message mmm. The server shuts down.

SKY005E

`Server select failed rc=ret err=msg`

An error occurred whilst listening for a client connection

SKY006I

`TCP/IP connection terminated`

The client connection was terminated.

SKY007E

`Accept error - shutting down`

There was an error in network connection accept processing. The server shuts down.

SKY008E

`Error reading request`

There was a network error whilst reading a client request.

SKY013I

`Shutdown command from operator acknowledged`

The server has received a console command to shutdown.

SKY016I

`name Server ver started at tttt`

“requests received: nnn

“tasks default: dd active: aa limit: ll

Response to an operator display status command and indicates the server name, version, start date and the total number of requests received. It also details the worker task settings, the default number of idle tasks, the maximum limit of dynamically started tasks and the current number of active tasks.

SKY018I

`Request n task completed rc=ret`

The worker task t has completed with return code ret.

SKY023E

```
Unknown server command: cmd
```

The command cmd is not a valid console command.

SKY025E

```
Invalid command option: oooo
```

The option oooo is not a valid option for the operator command.

SKY026I

```
Task: t Requests: n Client: xxx.xxx.xxx.xxx : pppp
```

Response to a console display client console command. Task t has serviced n requests from the client at IP address xxx.xxx.xxx.xxx port pppp.

SKY027I

```
No active client connections
```

The response to a display client command when there are no client connections.

SKY030E

```
Missing to/from translation string
```

The data set file name translation is incorrect.

SKY031I

```
Connections total: nn max: mm/min
```

Response to a console display client command, there have been a total of nn connections at a maximum rate of mm per minute.

SKY032I

```
Connections rates: nn/min  mm/hour
```

Response to a console display client command, the connection rates are nn per minute and mm per hour.

SKY031W

```
Not APF authorized, some facilities not available
```

The httpd server has found it is not APF authorized.

SKY040I

```
Option nnnn ssss
```

The parameter option nnnn set to ssss

SKY043E

```
Terminating execution due to parameter error(s)
```

There was an error is one or more parameters. The server shuts down.

SKY045E

```
SAF authentication requested but not APF authorized
```

SAF authentication requires caller to be APF authorized but server is not APF authorized. The server will shut down.

SKY046E

```
Supplied parm is too long
```

The length of the parameter string parm exceeds the allowed length.

SKY047E

```
Unable to open dsname
```

The httpd server was unable to open the data set dsname in response to a client request.

SKY048E

```
abend_message_line
```

Message number for abend reporting messages.

SKY049E

```
Not APF authorized, cannot continue
```

The server is not APF authorized but APF authorization is required. The server will shut down.

SKY050E

```
Task shutdown time expired, terminating tasks
```

During httpd server shutdown, some tasks have not stopped before the shutdown timeout was exceeded. These task will be forcibly terminated.

SKY051E

```
Cannot find server module name
```

When the httpd server did its startup checks, it could not find its module: name.

SKY052E

```
Cannot find all server modules, shutting down
```

The httpd server could not find all of its modules when it did its startup checks, the server shuts down.

SKY053I

```
Current active worker tasks: t
```

The current number of worker tasks for servicing requests.

SKY053E

```
Fatal error in main task, commencing forced shutdown
```

The server has suffered a fatal error in tis main task and was not able to do an orderly shutdown.

SKY054E

```
Fatal error in main task, attempting orderly shutdown
```

The server has suffered a fatal error in its main task and is attempting to do an orderly shutdown

SKY055I

```
Forcibly terminating task t
```

The task t will be forcibly terminated.

SKY056I

```
Disable abend handling option specified, handling disabled
```

The httpd server abend handlers will not be enabled so any abends can cause dumps and may also crash the server.

SKY059E

```
Error initializing translation tables
```

There was an error initializing the server file name translation table.

SKY060E

```
SERVERBASE not set, shutting down
```

The required parameter SERVERBASE was not set in the parameter file. The server shuts down since it cannot locate its data files.

SKY061I

```
Authentication request received from client at xxx.xxx.xxx.xxx :
pppp
```

A request to authenticate was received from the client at network address xxx.xxx.xxx.xxx and port pppp.

SKY062E

```
Invalid update date: ssss
```

The string ssss is in not a valid date format.

SKY064W

```
Dynamic allocation for dataset:  ddd error rc=nn reason=rrr info=
iii
```

Details the dynamic allocation error codes for a file allocation failure of dataset ddd.

SKY065W

```
Unable to open dataset ddd: rrr
```

Shows the reason code rrr why the data set ddd could not be opened.

SKY067I

`Buffer pool limit: nn  current: mm`

Shows request buffer pool utilization, pool limit and current values.

SKY068E

CGI api call error for <function>: <reason>

There was an error calling the CGI function <function> for reason <reason>.

SKY069E

`task <nnn> clientConnect: taksocket error: <err> <reason>`

The worker task <nnn> encountered an error obtaining the connection socket with error code <err> and error message <reason>.

SKY070E

`Passrequest: givesocket error: <err> <reason>`

The main task encountered an error passing a connection socket to a worker task, error code <err> and error message <reason>.

SKY071W

`Cannot utilize socket implementation <type> errno <err> <msg>`

The server cannot use the specified socket implementation <type> because of error code <err> and message <msg>. Server processing continues with the default socket implementation.

SKY072I

`Loaded module <module>`

Module<module>wasloadedasrequestedbyaLOADMODULEparameter.

SKY073E

`Connection socket <nn> out of range`

The connection socket exceeds the supported range of sockets. The connection will be dropped and server operation continues.

SKY074W

```
Unable to allocate <dsn> Reason: <rr> rc=<nn> code=<cc>
```

The dataset <dsn> could not be allocated due to reason <rr>, dynamic allocation return code <nn> and code <rr>.

SKY075I

```
Socket <nnn> settings: linger=<spec> sndBuf=<sss> rcvBuf=<rrr>
```

Server connection listener socket <nnn> has the following attributes: - linger= <spec> is the socket time-out on close, either default or (1,<time-in-seconds>) the socket is unavailable for reuse.

SKY076E

```
Cannot allocate <dsn>, dynamic allocation error rc=<rc> error=
<err> info=<inf>
```

A dataset cannot be dynamically allocated, dairfail return and information codes.

SKY100W

```
Unable to set socket option to value
```

The named socket option could not be set. Processing continues.

SKY101W

```
Unable to set socket option
```

A socket option could not be set.

SKY102E

```
Socket option error: explanation
```

Indicates why a socket option could not be set.

SKY103E

```
Cannot open parameter file dsname, terminating
```

The httpd server was unable to open the parameter file dsname. The server shuts down.

SKY104E

```
Parameter ppp invalid
```

The parameter ppp is not known.

SKY105E

```
Unexpected character c encountered, skipping line
```

When parsing the parameter file an unexpected character was encountered. The parameter is skipped by moving onto the next line.

SKY106E

```
Expected number but non numeric: ssss
```

When parsing the parameter file a non numeric item was found when a number was expected.

SKY107I

parm set to vvvv

The parameter parm is set to value vvvv

SKY108E

```
Expected string: sss , skipping
```

When parsing the parameter file the string ssss was expected but not found. Parsing skips on the next parameter.

SKY109I

```
pppp set to vvv
```

When reading the parameter file the parameter pppp was set to the value vvv

SKY110E

```
Unknown token type:  tttt
```

The parameter token is unknown.

SKY112E

```
Cannot create tbl, terminating
```

During initialization the memory table tbl cannot be allocated and the server stops.

SKY113E

```
Cannot start task tttt, terminating
```

During initialization, the task tttt could not be started and the server stops.

SKY114I

```
Task tttt completed, rc = nn
```

The task tttt completed with return code nn.

SKY115I

```
Commencing server shutdown
```

The server has started shutting down.

SKY116E

```
Task tttt unable to get client id
```

An error occurred when passing a socket connection to the work task tttt.

SKY117E

```
Spurious wakeup, work to do ECB not posted.
```

This is an internal error and should not occur.

SKY118I

```
Task t waiting for work
```

The worker task t is now idle after finishing a request.

SKY119I

```
Task t shutting down
```

Task t has commenced shutting down.

SKY120E

```
Task t unable to allocate dir list buffer
```

The worker task t was unable to allocate a memory buffer needed for a directory listing

SKY121E

```
Task t unable to open directory readme
```

The worker task t encountered an error when attempting to open a directory readme file whilst listing a directory.

SKY122E

```
Task ttconnection error with xxx.xxx.xxx.xxx errno error_text
```

The worker task t had a connection error (error number errno, text error_text) with the client at ip address xxx.xxx.xxx.xxx

SKY123E

```
Task t, connection eof from xxx.xxx.xxx.xxx
```

For worker task t, the connection to client at IP address xxx.xxx.xxx.xxx ended

SKY124I

```
Task t connection terminated by peer adr
```

The network connection to worker task t was terminated by the client with ip address adr

SKY125E

```
Task t cmp, abend aaa caught
```

The abend handler for task t in component cmp, intercepted a type aaa abend. Task t will be shutdown and a replacement task created.

SKY126E

```
Task t cmp, illegal instruction abend caught. Code aaa
```

The abend handler for task t in component cmp, intercepted an illegal instruction abend of type aaa. Task t will be shutdown and a replacement task created.

SKY127E

```
Task t cmp memory access abend caught. Code aaa
```

The abend handler for task t in component cmp, intercepted an memory abend of type aaa. Task t will be shutdown and a replacement task created.

SKY128E

`Task t request error nnn msg: description`

For worker task t, there was an http protocol error for the client request. Code nnn, message msg and description dddd

SKY129E

`ppp out of valid range min ñ max`

The numeric parameter ppp is outside the allowed range.

SKY130I

`hhh handler ready`

The handler hhh task has finished initializing and is ready for work.

SKY131I

`hhh handler shutting down`

The handler hhh task has started shutting down.

SKY132E

`hhh handler startup timeout, terminating`

The startup timeout for the handler task hhh has been exceeded. The handler will be terminated.

SKY133E

`Unable to start hhh handler, terminating`

The httpd server was unable to start it handler task hhh. The server shuts down.

SKY134E

`Unable to allocate mmm memory, terminating`

During initialization, memory could not be allocated for mmm memory. The server stops.

SKY135E

```
Unable to open log, reason: rrr
```

The log handler task was unable to open the log file for reason rrr.

SKY136W

```
Out of memory for stack space, requested nnnn bytes
```

A httpd server task was unable to allocate stack memory.

SKY138W

```
No free worker tasks, at maximum limit
```

A request has been received but there are no idle worker tasks and the number of tasks is at the maximum limit. A server busy request is returned to the client. If this condition occurs frequently consider increasing the maximum limit of worker tasks to a value where this is a rare occurrence.

SKY139E

```
Request token nnn Text=ttttt
```

Debugging message issued for each token in an invalid request.

SKY140E

```
Request has nnnn tokens
```

Debugging message issued when an invalid request is received.

VTCS PGMI Return Codes

TABLE A-1 VTCS PGMI Return Codes

Return Code	Reason Code	Description
16	36	Non-zero POST code from SWSPGMIS - probable abend
16	48	Attach for SWSPGMIS task failed
32	0	PGMI interface area not present or not valid
32	4	Request area not present or length not between 0 and 32000.
32	8	Required user exits not available
32	12	Unknown command
32	16	No matching categories
32	24	Not authorized
32	28	HSC at the wrong level
32	32	Advanced Management Feature required and not enabled
32	40	Error detected in the XML structure

Index

N

P

S

U

V

W