Virtual Storage Manager Graphical User Interface

Getting Started

Version 1.0.0

CRC Update Only

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This edition applies to Version 1.0.0 of the Virtual Storage Manager Graphical User Interface software. Information in this publication is subject to change. Send comments about this publication to:

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About this Book

The VSM Graphical User Interface 1.0.0 (VSM GUI 1.0.0) is a PC-based GUI which communicates with the StorageTek MVS HTTP server to provide a point-and-click alternative to the VTCS commands and utilities.

Audience

This guide is for StorageTek or customer personnel who are responsible for installing and configuring the VSM GUI.

Reader's Comments

If you have comments on this book, please e–mail us at **glsfs@stortek.com** and include the document title and number with your comments.

Prerequisites

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

- MVS or OS/390 operating system
- JES2 or JES3
- System Modification Program Extended (SMP/E)
- Nearline Control Solution (NCS)
- Virtual Tape Control System (VTCS)
- PC hardware, operating systems, and Internet browsers.

About the Software

This guide applies to the VSM GUI 1.0.0 and VTCS 5.0.0 and 5.1.0. VTCS executes in the native MVS or OS/390 environment and does not use or require OS/390 OpenEdition services.

How this Guide is Organized

This guide contains the following sections:

- "What is the VSM GUI?"
- "Installing and Configuring the VSM GUI"
- "Installing PTFs for VSM GUI"
- "VSM GUI Messages and Codes"

Conventions for Reader Usability

Conventions are used to shorten and clarify explanations and examples within this book.

Typographic

The following typographical conventions are used in this book:

- **Bold** is used to introduce new or unfamiliar terminology.
- `Letter Gothic` is used to indicate command names, filenames, and literal output by the computer.
- **`Letter Gothic Bold`** is used to indicate literal input to the computer.
- *`Letter Gothic Italic`* is used to indicate that you must substitute the actual value for a command parameter. In the following example, you would substitute your name for the "username" parameter.

  `Logon` *`username`*
- A bar (|) is used to separate alternative parameter values. In the example shown below either username or systemname must be entered.

  `Logon` *`username`* `|` *`systemname`*
- Brackets [ ] are used to indicate that a command parameter is optional.
- Ellipses (...) are used to indicate that a command may be repeated multiple times.
- The use of mixed upper and lower case characters (for non–case sensitive commands) indicates that lower case letters may be omitted to form abbreviations. For example, you may simply enter **Q** when executing the **Quit** command.

Keys

Single keystrokes are represented by double brackets [[ ]] surrounding the key name. For example, press [[ESC]] indicates that you should press only the escape key.

Combined keystrokes use double brackets and the plus sign (+). The double brackets surround the key names and the plus sign is used to add the second keystroke. For example, press [[ALT]] + [[C]] indicates that you should press the alternate key and the C key simultaneously.

Enter Command

The instruction to "press the [[ENTER]] key" is omitted from most examples, definitions, and explanations in this book.

For example, if the instructions asked you to "enter" **Logon pat**, you would type in **Logon pat** *and* press [[ENTER]].

However, if the instructions asked you to "type" **Logon pat**, you would type in **Logon pat** and you would *not* press [[ENTER]].

Symbols

The following symbols are used to highlight text in this book.

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

Caution: Information necessary to keep you from corrupting your data.

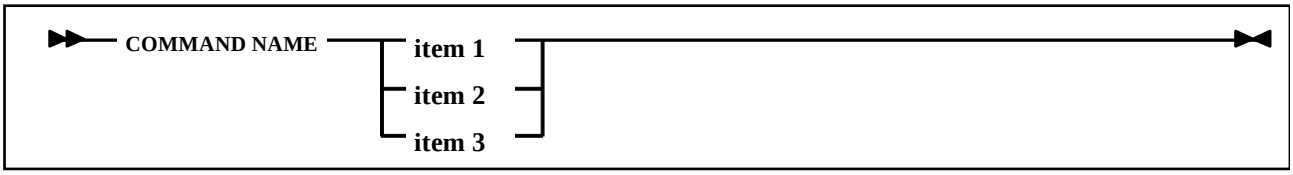
Hint: Information that can be used to shorten or simplify your task or they may simply be used as a reminder.

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

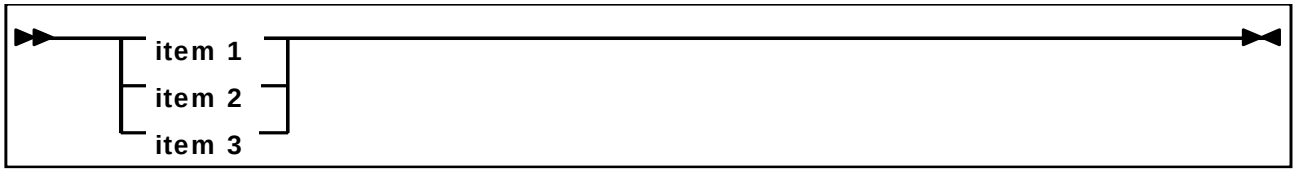
Syntax

Syntax flow diagram conventions include the following:

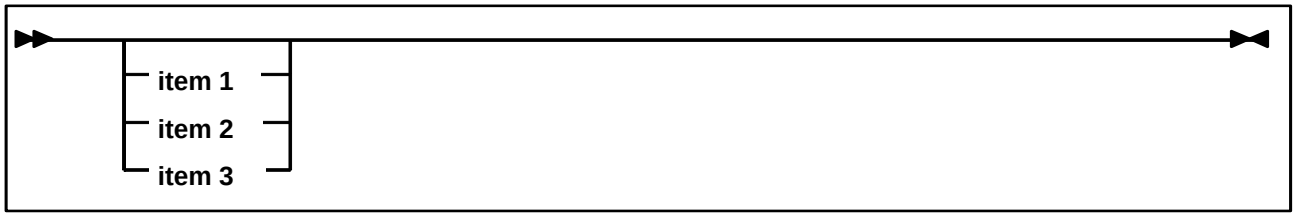
Flow Lines—Syntax diagrams consist of a horizontal baseline, horizontal and vertical branch lines and the command text. Diagrams are read left to right and top to bottom. Arrows show flow and direction.



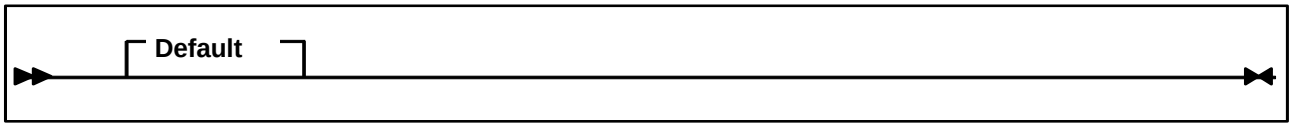
Single Required Choice—Branch lines (without repeat arrows) indicate that a single choice must be made. If one of the items to choose from is on the baseline of the diagram, one item must be selected.



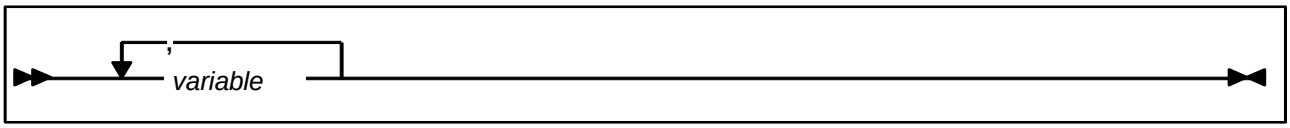
Single Optional Choice—If the first item is on the line below the baseline, one item may optionally be selected.



Defaults—Default values and parameters appear above the baseline.



Repeat Symbol—A repeat symbol indicates that more than one choice can be made or that a single choice can be made more than once. The repeat symbol shown in the following example indicates that a comma is required as the repeat separator.



Keywords—All command keywords are shown in all upper case or in mixed case. When commands are not case sensitive, mixed case implies that the lowercase letters may be omitted to form an abbreviation.

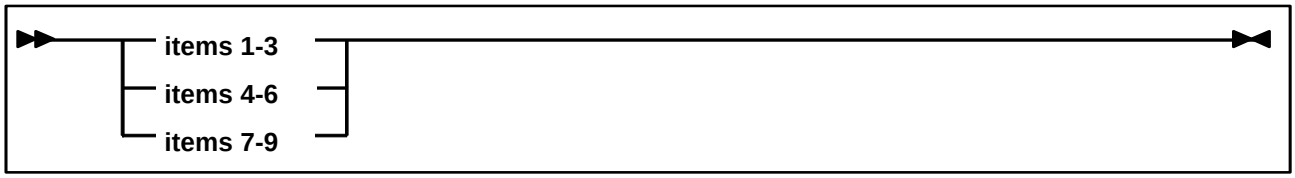
Variables—Italic type is used to indicate a variable.

Alternatives—A bar (|) is used to separate alternative parameter values.

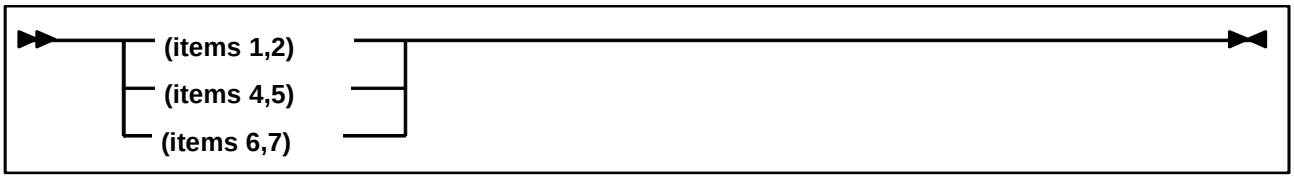
Optional—Brackets [ ] are used to indicate that a command parameter is optional.

Delimiters—If a comma (,), a semicolon (;), or other delimiter is shown with an element of the syntax diagram, it must be entered as part of the statement or command.

Ranges—An inclusive range is indicated by a pair of elements of the same length and data type, joined by a dash. The first element must be strictly less than the second element.



Lists—A list consists of one or more elements. If more than one element is specified, the elements must be separated by a comma or a blank and the entire line must be enclosed by parentheses.



Related Publications

The following publications provide additional information about VSM and StorageTek's Automated Cartridge System software and hardware.

VTCS and VSM

The VTCS and VSM 5.1.0 documentation set consists of the following:

- *Introduction to VSM*, which you can request from your StorageTek representative
- The VTCS 5.1.0 Information CD-ROM, which contains PDF file formats of *Virtual Tape Control System Installation and Configuration Guide*, *Virtual Tape Control System Reference*, *Virtual Tape Control System Administrator's Guide*, *Virtual Tape Control System Messages*, and *Virtual Tape Control System XML Reference*
- *Virtual Tape Control System Installation and Configuration Guide*
- *Virtual Tape Control System Reference*
- *Virtual Tape Control System Administrator's Guide*
- *Virtual Tape Control System Messages*
- *Virtual Tape Control System Quick Reference*
- *Virtual Tape Control System XML Reference*
- *VSM Offsite Vault Disaster Recovery Guide* (supplied with the VSM Offsite Vault Disaster Recovery Feature)

VTSS

- *Virtual Storage Manager Planning, Implementation, and Usage Guide*
- *Virtual Storage Manager Physical Planning Guide*
- *VTSS Installation Guide*

NCS	• *NCS Installation Guide* • *SMC Administration and Configuration Guide*
HSC-MVS Environment	• *Configuration Guide* • *Operator's Guide* • *System Programmer's Guide* • *Messages and Codes* • *System Programmer's Reference Summary* • *Operator's Reference Summary*
LibraryStation	• *Configuration Guide* • *Operator and System Programmer's Guide* • *Messages and Codes*
MVS/CSC	• *Configuration Guide* • *Operator Guide* • *System Programmer Guide* • *Messages and Codes*

ExPR 4.1.0

- *Introduction to ExPR*
- *ExPR SMP/E Installation, Configuration, and Administration Guide*
- *ExPR MVS User's Guide*
- *ExPR PC User's Guide*
- *ExPR Messages Guide*

ExLM 4.0.0

The ExLM 4.0.0 documentation set consists of the following:

- The ExLM 4.0.0 Information CD-ROM, which contains PDF file formats of *ExLM Installation Guide*, *ExLM System Administrator's Guide*, *ExLM System Administrator's Guide - Field Tables Supplement,* and *ExLM Messages and Codes*
- *ExLM Installation Guide*
- *ExLM System Administrator's Guide*
- *ExLM System Administrator's Guide - Field Tables Supplement*
- *ExLM Messages and Codes*
- *ExLM Quick Reference*

ExLM 5.0.0 and Above

The ExLM 5.0.0 and above documentation set consists of the following:

- The ExLM 5.0.0 Information CD-ROM, which contains PDF file formats of the ExLM publications
- *ExLM Installation Guide*
- *ExLM System Administrator's Guide*
- *ExLM Messages and Codes*
- *ExLM Quick Reference* (includes information formerly provided in the *ExLM 4.0.0 System Administrator's Guide - Field Tables Supplement*)

IBM Publications

- *IBM ESA/390 Common I/O-Device Commands and Self Description*
- *IBM 3490 Magnetic Tape Subsystem*
  Models A01, A02, A10, A20, B02, B04, B20, and B40
  Introduction
- *IBM 3490 Magnetic Tape Subsystem*
  Models A01, A02, A10, A20, B02, B04, B20, and B40
  Hardware Reference
  (Referred to in this book as the *IBM 3490 Hardware Reference*)
- *IBM 3490 Command Reference*
- *IBM 3480 Magnetic Tape Subsystem Reference*
- *IBM 3480 Installation Guide and Reference*
- *OS/390 V2R4.0 MVS Planning: Global Resource Serialization*
- *MVS Authorized Assembler Services Guide*

Online Documentation on the StorageTek CRC

The StorageTek Customer Resource Center (CRC) on the World Wide Web provides online versions in PDF format of this book, the related StorageTek publications listed on page vii, and many other StorageTek software and hardware publications.

To access PDF documents on the StorageTek CRC:

1. **Using an Internet browser such as Netscape or Internet Explorer, go to the StorageTek CRC at:**

   `http://www.support.storagetek.com/`

2. **Click the** `Login` **link.**

3. **Fill in the login information.**

   If this is the first time you have used the CRC, click `Request a CRC password` and fill in the requested information. You should receive your account information within two business days.

4. **From the upper left bar, click** `Product Information` **and** `Current Products` **from the dropdown links.**

5. **Select** `Software` **from the Product Family dropdown menu and click** `Next`**.**

   Click the desired product link from the Product Categories and navigate to the documents you want to view.

Technical Support

Refer to *Requesting Help from Software Support* for information about contacting StorageTek for technical support and for requesting changes to software products.

Document Effectivity

EC Number	Date	Doc Kit Number	Type	Effectivity
128660	March 2003	---	First Edition	This document applies to VSM GUI, Version 1.0.0.
---	March 2003	---	First Edition, Revision A	This document applies to VSM GUI, Version 1.0.0.
---	March 2005	---	First Edition, Revision B	This document applies to VSM GUI, Version 1.0.0.
---	May 2005	---	First Edition, Revision C	This document applies to VSM GUI, Version 1.0.0.

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Chapter 1. What is the VSM GUI?

The 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 PC-based WWW browsers. The server component is a multitasking MVS HTTP content server that runs as an MVS started task.

The VSM GUI 1.0.0 supports all VTCS 5.0.0 and 5.1.0 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 shows the VSM GUI home page.

Figure 1. VSM GUI Home Page

Chapter 2. Installing and Configuring the VSM GUI

To plan and verify completion of the installation, use the checklist in “VSM GUI Installation Summary and Checklist” on page 4.

VSM GUI Installation Summary and Checklist

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

Table 1. VSM GUI Installation Summary and Checklist

Task	✓ to Verify Completion
"Verify VSM GUI Hardware and Software Prerequisites" on page 5	
"Verify Installation Materials" on page 6	
"Unload the VSM GUI SMP/E JCL Data Set" on page 8	
"Set Up the SMP/E Environment and Install the Software" on page 9	
"APF Authorize the VSM GUI Libraries" on page 12	
"Customize the VSM GUI Startup Proc" on page 12	
"Customize the VSM GUI Parameter File" on page 13	
"Start the VSM GUI Server" on page 18	

Verify VSM GUI Hardware and Software Prerequisites

Verify the VSM GUI 1.0.0 PC hardware requirements in Table 2 and the software requirements in Table 3.

Table 2. VSM GUI 1.0.0 PC Hardware Requirements

Hardware Description	Minimum Requirement	Recommended System
System unit	Pentium 166, 64MB of memory, 20MB disk space and 256 colors with mouse	Pentium II 400, 196MB of memory, 20MB disk space and 64K colors with mouse
CD-ROM drive	present	present
Monitor	800 x 600 pixels with small fonts	1024 x 768 pixels with 256 colors
network card	present	present

Table 3. VSM GUI 1.0.0 Software Requirements

Software	Description
PC Windowing System	Microsoft Windows 98, Windows NT 4.0, Windows 2000, or later, 100% compatible version
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
VTCS	VTCS 5.0.0 or 5.1.0 and prerequisites

Verify Installation Materials

Before installing VSM GUI, make sure you have the VSM GUI 1.0.0 product tape.

Note: For information about service for the VSM GUI, see:

- "Installing PTFs for VSM GUI" on page 21
- "Installing Service Tapes for VSM GUI" on page 23

VSM GUI Installation Tape Contents

As described in"Verify Installation Materials", VSM GUI 1.0.0 is delivered on a product tape. Table 4 lists the files included on the VSM GUI 1.0.0 product tape.

Table 4. VSM GUI 1.0.0 Product 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	SSKU500.F1	VSM GUI www JCLIN
12	SSKU500.F2	VSM GUI LMODs
13	SSKU500.F3	VSM GUI www modules
14	SSKU500.F4	VSM GUI www modules
15	SSKU500.F5	VSM GUI www modules
16	SSKU500.F6	VSM GUI www modules
17	SSKU500.F7	VSM GUI www modules
18	SSKU500.F8	VSM GUI www modules
19	SSKU500.F9	VSM GUI www modules
20	SSKU500.F10	VSM GUI www modules
21	SSKU500.F11	VSM GUI www modules
22	SSKU500.F12	VSM GUI www modules

Table 4. VSM GUI 1.0.0 Product Tape Contents

File	Data Set Name	Description
23	SSKU500.F13	VSM GUI www modules
24	SSKU500.F14	VSM GUI www modules
25	SSKU500.F15	VSM GUI www modules
26	SSKU500.F16	VSM GUI translations
27	SMPE.JCL	HTTPD installation JCL (optional)

Note: The VSM GUI 1.0.0 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 1.0.0 installation tape includes the following FMIDs:

SSKY500
: HTTPD server base function

SSKU500
: VSM GUI base function

ASAR700
: SAS/C selected components base function

Unload the VSM GUI SMP/E JCL Data Set

The VSM GUI SMP/E JCL Data Set contains sample JCL members for the VSM GUI; see “VSM GUI Installation Tape Contents” on page 6 for more information. Use the JCL in Figure 2 to create a copy of the SMP/E JCL from file 27 of the distribution 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=(27,SL,EXPDT=98000),VOL=SER=SKYnnn
//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. JCL to Unload the VSM GUI 1.0.0 SMP/E JCL

Set Up the SMP/E Environment and Install the Software

Warning: Do not install the VSM GUI 1.0.0 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.

You unloaded the VSM GUI SMP/E JCL Data Set in "Unload the VSM GUI SMP/E JCL Data Set" on page 8. 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 contain usage notes that describe what needs to be changed.

To set up the SMP/E environment:

1. **Customize the installation jobs**

   You can do this manually with an editor, but StorageTek recommends that you use the provided ISPF edit macro `@SKYEDIT` and `@SKYRUN` 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 `@SKYEDIT` to the appropriate settings for the site. Then to update a member just invoke `@SKYEDIT` within the member or to change all members, from TSO or ISPF Option 6 enter:

   ```
   @SKYRUN smpejcl_dataset_name @SKYEDIT
   ```

   `@SKYEDIT` 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.

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

   Run the following customized members:

   `I1DDDEFS`
   : Define the DDDEFs.

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

4. **Run customized member `I3RCV` to `RECEIVE` the VSM GUI FMIDs.**

5. **Run customized member `I4APPLY` to `APPLY` the VSM GUI FMIDs.**

   When the `APPLY` is successful, the SMP/E target libraries contain the data sets described in Table 5.

Table 5. SMP/E Target Library Contents

Data Set Name	Contents
HTTPDCMN.ICONS	server icons
SSAROMOD	SAS/C LMODs
SSARRTNS	run time libraries
SSKURTNS	FCD LMODs
SSKYRTNS	FCD LMODs
STKLOAD	load modules
STKSAMP	sample material
TRANS	web content file translations
VSM.EN.ABOUT	web content
VSM.EN.COMMS	web content
VSM.EN.COMMS.W3C	web content
VSM.EN.CONFIG	web content
VSM.EN.CONFIG.W3C	web content
VSM.EN.DOCS	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.UTILS	web content
VSM.EN.UTILS.W3C	web content

6. **Run customized member `I5ACCEPT` to `ACCEPT` the VSM GUI FMIDs.**

   When the `ACCEPT` is successful, the SMP/E distribution libraries contain the data sets described in Table 6.

Table 6. 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
AENHME	web content
AENIMG	web content
AENRPT	web content
AENRPTW	web content
AENSCP	web content
AENUTL	web content
AENUTLW	web content
ASAROBM	LMODs
ASAROMM	LMODs
ASAROSM	LMODs
ASARRTNS	load modules
ASKURTNS	LMODs
ASKYICNS	server icons
ASKYRTNS	LMODs
ASKYSAMP	sample material
ATRANS	web content file translations

7. **Run the customized member `I6COPY` 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.

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 SKYPROC 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 `SKYPROC` calls the sample parameter file `SKYPRM00` from the `STKPARM` data set. See the following sections for more information and modify the values in `SKYPRM00` for your site's needs from the `STKPARM` data set.

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.

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` *p*

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

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

`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 7. on page 16.

Table 7. VSM GUI Authorization Levels and Commands

Command	**Authorization Level**
All Queries	Read
All Reports	Read
Cancel	Update
Vary RTD	Update
Vary VTSS	Update
Vary Cluster Link	Update
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

`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 `SKYPROC`, references the sample userlist in `STKPARM`.

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 VSM GUI data set name translations. 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:SKYTRSN` which in the sample startup proc `SKYPROC` references the SMPE installed translation file.

Start the VSM GUI Server

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

```
START SKYPROC
```

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 the SKYPRM00 member in STKPARM. You can stop the server by entering one of the following MVS commands:

```
P SKYPROC
F SKYPROC,SHUTDOWN
```

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

```
F SKYPROC,D S
```

The following shows a display status response:

```
SKY016I HTTPD Server 1.0.0 started at Fri Jan 24 06:51:35 2003
requests received 85
tasks default: 20 active: 20 limit:40
SKY053I Current active worker tasks: 0
```

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

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

```
F OWCH72,D C
```

The following shows a display connections response:

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

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

Chapter 3. Installing PTFs for VSM GUI

This chapter describes tells how to install the corrective service PTFs for VSM GUI, which you can download from the StorageTek Customer Resource Center at:

`http://www.support.storagetek.com`.

For information on requesting a CRC account, see “Online Documentation on the StorageTek CRC” on page xi.

Before you install PTFs, you must install VSM GUI as described in “Installing and Configuring the VSM GUI” on page 3.

Installing the PTFs

After you have downloaded the desired PTFs from the StorageTek CRC, install them using the following procedure:

To install PTFs:

1. **Ensure that you have customized the installation jobs as described in Step 1 on page 22.**
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 PTFs downloaded from the Storage CRC as described in “Installing PTFs for VSM GUI” on page 21.

Before you install a service tape, you must install VSM GUI as described in “Installing and Configuring the VSM GUI” on page 3. Contact StorageTek Software Support for a current service tape containing those PTFs that have become available since the base tape was created. For more information, see “Technical Support” on page xi.

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. See “Service Tape Contents” on page 24 for information about the files on the service tape.

Service Tape Contents

Table 8 lists the file names contained in a service tape.

Table 8. 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; see “Service Tape Contents” on page 24 for more information. Use the JCL in Figure 3 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 3. 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.

To install the contents of a service tape:

1. **Ensure that you have customized the installation jobs as described in Step 1 on page 25.**
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*

Explanation: Httpd server startup message

SKY002E Error binding server socket – terminating

Explanation: The server cannot bind to the specified network port. The server will shutdown.

SKY003I *name* ready to accept requests

Explanation: The server name is ready for normal operation.

SKY004E Error opening server socket – terminating

Explanation: The server cannot open a socket connection to the required network port. The server shuts down.

SKY005E Server select failed rc=*ret* err=*msg*

Explanation: An error occurred whilst listening for a client connection

SKY006I TCP/IP connection terminated

Explanation: The client connection was terminated.

SKY007E Accept error - shutting down

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

SKY008E Error reading request

Explanation: There was a network error whilst reading a client request.

SKY013I Shutdown command from operator acknowledged

Explanation: 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*

Explanation: 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*

Explanation: The worker task *t* has completed with return code *ret*.

SKY023E Unknown server command: *cmd*

Explanation: The command *cmd* is not a valid console command.

SKY025E Invalid command option: *oooo*

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

SKY030E Missing to/from translation string

Explanation: The data set file name translation is incorrect.

SKY031W Not APF authorized, some facilities not available

Explanation: The httpd server has found it is not APF authorized.

SKY043E Terminating execution due to parameter error(s)

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

SKY045E SAF authentication requested but not APF authorized

Explanation: SAF authentication requires caller to be APF authorized but server is not APF authorized. The server will shutdown.

SKY046E Supplied *parm* is too long

Explanation: The length of the parameter string *parm* exceeds the allowed length.

SKY047E Unable to open *dsname*

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

SKY049E `Not APF authorized, cannot continue`

Explanation: The server is not APF authorized but APF authorization is required. The server will shutdown.

SKY050E `Task shutdown time expired, terminating tasks`

Explanation: 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*

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

SKY052E `Cannot find all server modules, shutting down`

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

SKY053E `Fatal error in main task, commencing forced shutdown`

Explanation: 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`

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

SKY055I `Forcibly terminating task` *id*

Explanation: The task id will be forcibly terminated.

SKY056I `Disable abend handling option specified, handling disabled`

Explanation: 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`

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

SKY060E `SERVERBASE not set, shutting down`

Explanation: 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*

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

SKY100W Unable to set socket *option* to *value*

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

SKY101W Unable to set socket option

Explanation: A socket option could not be set.

SKY102E Socket *option* error: *explanation*

Explanation: Indicates why a socket option could not be set.

SKY103E Cannot open parameter file *dsname,* terminating

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

SKY104E Parameter *ppp* invalid

Explanation: The parameter *ppp* is not known.

SKY105E Unexpected character *c* encountered, skipping line

Explanation: 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*

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

SKY108E Expected string: *ssss*, skipping

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

SKY109I *pppp* set to *vvv*

Explanation: When reading the parameter file the parameter *pppp* was set to the value *vvv*.

SKY110E Unknown token type: *tttt*

Explanation: The parameter token is unknown.

SKY115I Commencing server shutdown

Explanation: The server has started shutting down.

SKY116E Task *tttt* unable to get client id

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

SKY118I Task *t* waiting for work

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

SKY119I Task *t* shutting down

Explanation: Task *t* has commenced shutting down.

SKY120E Task *t* unable to allocate dir list buffer

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

SKY121E Task *t* unable to open directory readme

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

SKY124I Task *t* connection terminated by peer *adr*

Explanation: The network connection to worker task *t* was terminated by the client with IP address *adr.*

SKY125E Task *t cmp*, abend *aaa* caught

Explanation: 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*

Explanation: 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*

Explanation: 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.

SKY129E *ppp* out of valid range min – max

Explanation: The numeric parameter *ppp* is outside the allowed range.

SKY130I *hhh* handler ready

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

SKY131I *hhh* handler shutting down

Explanation: The handler *hhh* task has started shutting down.

SKY132E *hhh* handler startup timeout, terminating

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

SKY133E Unable to start *hhh* handler, terminating

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

SKY135E Unable to open log, reason: *rrr*

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

SKY136W Out of memory for stack space, requested *nnnn* bytes

Explanation: A httpd server task was unable to allocate stack memory.

SKY138W No free worker tasks, at maximum limit

Explanation: 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.

VTCS PGMI Return Codes

Table 9. 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