

ETERNUS SF Storage Cruiser 13.3



Installation Guide

Windows/Solaris/Linux

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Preface

Purpose

This manual explains the procedures to install ETERNUS SF Storage Cruiser (hereinafter "ESC").

ETERNUS SF is an integrated storage system management software series provided by Fujitsu.

Target readers

This manual is designed for all system administrators who will install systems using ESC.

Also, for system construction purposes, it is assumed that readers have an understanding of fundamental configuration methods of the servers, storage devices, and network devices to be installed.

Organization

This manual is composed as follows.

[Chapter 1 Software organization](#)

The organization of the software is described.

[Chapter 2 Installation flow](#)

The flow of ESC installation is described.

[Chapter 3 Restrictions and advisory notes](#)

Restrictions and advisory notes regarding ESC are described.

[Chapter 4 Manager installation and setup](#)

The installation of ESC Manager is described.

[Chapter 5 Client installation and setup](#)

The installation of ESC Client is described.

[Chapter 6 Agent installation and setup](#)

The installation of ESC Agent is described.

[Chapter 7 Agent uninstallation](#)

The uninstallation of ESC Agent is described.

[Chapter 8 Client uninstallation](#)

The uninstallation of ESC Client is described.

[Chapter 9 Manager uninstallation](#)

The uninstallation of ESC Manager is described.

[Appendix A High-availability admin servers](#)

The procedures for placing admin servers in a cluster configuration are described.

[Appendix B SNIA HBA API library installation](#)

The installation and configuration of an SNIA HBA API library is explained.

[Appendix C Installation with Unified Installer](#)

The circumstances when Agent installation is performed with Unified Installer are described.

[Appendix D Procedure for Upgrading from Softek Storage Cruiser](#)

The procedure for upgrading from Softek Storage Cruiser to ESC is described.

Notational conventions

- This manual omits trademarks and registered trademarks of the following product name.

Solaris(TM) 8 Operating System
 Solaris(TM) 9 Operating System
 Solaris(TM) 10 Operating System
 Red Hat(R) Enterprise Linux(R) AS v.3, Red Hat(R) Enterprise Linux(R) ES v.3
 Red Hat(R) Enterprise Linux(R) AS 3.9, Red Hat(R) Enterprise Linux(R) ES 3.9
 Red Hat(R) Enterprise Linux(R) AS v.4, Red Hat(R) Enterprise Linux(R) ES v.4
 Red Hat(R) Enterprise Linux(R) AS 4.5, Red Hat(R) Enterprise Linux(R) ES 4.5
 Red Hat(R) Enterprise Linux(R) AS 4.6, Red Hat(R) Enterprise Linux(R) ES 4.6
 Red Hat(R) Enterprise Linux(R) 5
 Red Hat(R) Enterprise Linux(R) 5.1
 SUSE(R) Linux Enterprise Server 9 for EM64T
 VMware(R) Infrastructure 3 Starter
 VMware(R) Infrastructure 3 Standard
 VMware(R) Infrastructure 3 Enterprise
 Microsoft(R) Windows(R) 2000 Server
 Microsoft(R) Windows(R) 2000 Advanced Server
 Microsoft(R) Windows(R) 2000 Professional
 Microsoft(R) Windows(R) XP Professional
 Microsoft(R) Windows(R) XP Home Edition
 Microsoft(R) Windows Vista(R) Home Basic
 Microsoft(R) Windows Vista(R) Home Premium
 Microsoft(R) Windows Vista(R) Business
 Microsoft(R) Windows Vista(R) Enterprise
 Microsoft(R) Windows Vista(R) Ultimate
 Microsoft(R) Windows Server(R) 2003, Standard Edition
 Microsoft(R) Windows Server(R) 2003, Standard x64 Edition
 Microsoft(R) Windows Server(R) 2003, Enterprise Edition
 Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition
 Microsoft(R) Windows Server(R) 2003, Enterprise Edition for Itanium-based Systems
 Microsoft(R) Windows Server(R) 2003, Datacenter Edition for Itanium-based Systems
 Microsoft(R) Windows Server(R) 2003 R2, Standard Edition
 Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition
 Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition
 Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition
 Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM)
 Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM)
 Microsoft(R) Windows Server(R) 2008 Datacenter without Hyper-V(TM)

- The Solaris(TM) Operating System is described as "Solaris OS".
- The Manager and Agent of this software are described as follows.

Type	Platform	Notation in this manual
Manager	Solaris OS	"Solaris OS Manager" or "Solaris OS version"
	Linux	"Linux Manager" or "Linux version"
	Windows operating system	"Windows Manager" or "Windows version"
Agent	Solaris OS	"Solaris OS Agent" or "Solaris OS version"
	Linux (*1)	"Linux Agent" or "Linux version"
	Windows operating system	"Windows Agent" or "Windows version"
	HP-UX	"HP-UX Agent" or "HP-UX version"
	VMware	"VMware Agent" or "VMware version"

*1: SUSE Linux Enterprise Server 9 for EM64T is included.

- The reference items, menu names, button names, etc. are described as follows.

Type	Notation in this manual
Reference items in this manual	Its title is enclosed in " ".
Reference items in other manual	Its title is enclosed in " ".
Menu names	Its name is enclosed in []. The order in which menu items are selected is indicated in the form [] - [].
Button names	Its name is enclosed in < >.
Character strings and values that need to be emphasized	Its strings are enclosed in " ".
Variable parts	It is indicated by using <i>italic</i> text.

Abbreviations

The product name or products might be described by the abbreviation as follows.

Proper name	Notation in this manual
Solaris 8 Operating System	Solaris 8 OS
Solaris 9 Operating System	Solaris 9 OS
Solaris 10 Operating System	Solaris 10 OS
Microsoft Windows 2000 Server Microsoft Windows 2000 Advanced Server Microsoft Windows 2000 Professional	When referring to these products as a group, "Windows 2000" will be indicated.
Microsoft Windows XP Professional Microsoft Windows XP Home Edition	When referring to these products as a group, "Windows XP" will be indicated.
Microsoft Windows Vista Home Basic Microsoft Windows Vista Home Premium Microsoft Windows Vista Business Microsoft Windows Vista Enterprise Microsoft Windows Vista Ultimate	When referring to these products as a group, "Windows Vista" will be indicated.
VMware Infrastructure 3 Starter VMware Infrastructure 3 Standard VMware Infrastructure 3 Enterprise	When referring to these products as a group, "VMware" will be indicated.
Softek Storage Cruiser	SSC

Description of this software and notation of this manual

This software and its manual have been developed based on Softek Storage Cruiser (SSC) and Systemwalker Resource Coordinator Storage manager. Output messages or windows may therefore contain references to "Softek Storage Cruiser" or "SSC", "Systemwalker Resource Coordinator" or "Resource Coordinator" accordingly.

Related manuals

The following manuals are provided with ESC. Please refer to these manuals as required.

- ETERNUS SF Storage Cruiser Installation Guide (This manual)

Explains the configuration procedure.

- ETERNUS SF Storage Cruiser User's Guide
Contains a product description, explanations of functions, and methods of operation and maintenance.
- ETERNUS SF Storage Cruiser Message Guide
Explains the messages displayed by storage resource manager.
- ETERNUS SF Storage Cruiser Event Guide
Explains the messages displayed by storage resource manager regarding hardware status.
- ETERNUS SF Storage Cruiser User's Guide for Virtual Storage Conductor
Explains the functions and methods of operating Virtual Storage Conductor.

ETERNUS SF homepage

The latest technical information can be seen on the ETERNUS SF homepage (<http://www.fujitsu.com/global/services/computing/storage/software/>).

At first, reference to the ETERNUS SF homepage is recommended.

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- This manual is subject to change without advance notice.
- The following model numbers are different in Japan and other countries.
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Japan	Other countries
PG-FC106	S26361-F2843-E1
PG-FC105	S26361-F2624-E1
PG-FC102	SNP:SY-F2244E2-P, SNP:SY-F2244E2-A, SNP:SY-F2244L2-P
PG-FCD101	S26361-F3023-E1
GP7B8FC1	GP7B8FC1U
PW008FC2	PW008FC2U
PW008FC3	PW008FC3U
PG-FC201	S26361-F3141-E1
PG-FC107	S26361-F3141-E10, S26361-F3141-E210
PG-FC202	S26361-F3306-E1, S26361-F3306-E201
PG-FCD201	S26361-F3306-E601
SE0X7F11F	SE0X7F11X
SE0X7F12F	SE0X7F12X
XSEFC401AF	XSEFC401AU, XSEFC401AX
XSEFC402AF	XSEFC402AU, XSEFC402AX

This product model is not the same in all regions. Please check with your sales representative to see the model name in your area.

- The following product names are different in Japan and other countries.

When the product name of Japan appears in the text, please take it as referring to the product name of the other countries.

Japan	Other countries
SafeDisk	SynfinityDisk
SafeCluster	SynfinityCluster
SafeFile	SynfinityFile

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Chapter 1 Software organization

The organization of ETERNUS SF Storage Cruiser's software is described.

1.1 CD-ROM organization

ETERNUS SF Storage Cruiser is composed with the following four CD-ROMs.

No.	CD-ROM name	Contained modules
1	ETERNUS SF Storage Cruiser 13.3 Client (Windows)	Software Release Guide, Online Manuals, Client program
2	ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)	Software Release Guide, Online Manuals, Windows Agent program, Windows Manager program,
3	ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)	Software Release Guide, Online Manuals, Solaris OS Agent program, HP-UX Agent program, Solaris OS Manager program
4	ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Linux, VMware)	Software Release Guide, Online Manuals, Linux Agent program, VMware Agent program, Linux Manager program

1.2 Software organization

ETERNUS SF Storage Cruiser is composed of the following three pieces of software.

No.	Software name	Operating server	Overview
1	Manager	Administrative server	Manages an entire system
2	Client	Administrative client	Displays the GUI window
3	Agent	Managed server node	Monitors servers node

1.2.1 Manager

ETERNUS SF Storage Cruiser Manager is composed of the following packages.

Solaris OS version

No.	Package name	Version	Functionality
1	FJSVssmgr	13.4.0	ETERNUS SF Storage Cruiser Manager Virtual storage management
2	FJSVssmgx	13.1.0	ETERNUS SF Storage Cruiser Manager(extension)
3	FJSVswstt	4.1	SNMP trap daemon

No.	Package name	Version	Functionality
4	FJSVtrccb	2.2	Authentication/Role common system
5	FJSVssmge	13.3.0	ETERNUS SF Storage Cruiser Manager(maintenance)
6	FJSVssetl	1.0.0	ETERNUS management library

Linux version

No.	Package name	Version	Functionality
1	FJSVssmgr	13.4.0	ETERNUS SF Storage Cruiser Manager Virtual storage management
2	FJSVssmgx	13.1.0	ETERNUS SF Storage Cruiser Manager(extension)
3	FJSVswstt	13.0	SNMP trap daemon
4	FJSVtrccb	3.0	Authentication/Role common system
5	FJSVssmge	13.3.0	ETERNUS SF Storage Cruiser Manager(maintenance)
6	FJSVssetl	1.0.0	ETERNUS management library

Windows version

No.	Package name	Version	Functionality
1	ETERNUS SF Storage Cruiser Manager	13.3	ETERNUS SF Storage Cruiser Manager

1.2.2 Client

ETERNUS SF Storage Cruiser Client is composed of the following packages.

No.	Program name	Version	Functionality
1	ETERNUS SF Storage Cruiser client	13.3	ETERNUS SF Storage Cruiser window Storage Volume Configuration Navigator Client
2	Eclipse	3.2.1	Common framework for Storage Cruiser windows

1.2.3 Agent

ETERNUS SF Storage Cruiser Agent is composed of the following packages.

Solaris OS version

No.	Package name	Version	Functionality
1	FJSVssage	13.3.0	ETERNUS SF Storage Cruiser Agent

Linux version

No.	Package name	Version	Functionality
1	FJSVssage	13.3.0	ETERNUS SF Storage Cruiser Agent

Windows version

No.	Package name	Version	Functionality
1	ETERNUS SF Storage Cruiser Agent	13.3	ETERNUS SF Storage Cruiser Agent

HP-UX version

No.	Package name	Version	Functionality
1	FJSVssage	13.0.0	ETERNUS SF Storage Cruiser Agent (for HP-UX11/11i)
2	FJSVssage	13.3.0	ETERNUS SF Storage Cruiser Agent (for HP-UX11iv2)

VMware version

No.	Package name	Version	Functionality
1	FJSVssage	13.3.0	ETERNUS SF Storage Cruiser Agent

Chapter 2 Installation flow

Installation of ETERNUS SF Storage Cruiser Manager, Client, and Agent is performed using the following procedure.

Installation procedure	Reference
Manager installation	"Chapter 4 Manager installation and setup"
Client installation	"Chapter 5 Client installation and setup"
Agent installation	"Chapter 6 Agent installation and setup"

Chapter 3 Restrictions and advisory notes

This chapter describes restrictions, advisory notes, and incompatibility information regarding ETERNUS SF Storage Cruiser.

3.1 ETERNUS SF Storage Cruiser restrictions regarding

This section explains the restrictions.

	Environment	Restrictions	Corrective action	Planned resolution
1	Client on Windows Vista	Restrictions for print function: Printable only on a printer set by "Printing Preferences". If you specify other printer, you cannot print.	Print on a printer set by "Printing Preferences".	Next version or later
2	Client on Windows Vista	After doing the following operations on a correlation window, a popup menu is not displayed by right click. 1. Expansion of table element. 2. Drag & drop listed items in the table element to application. 3. Operate a popup menu by the dragged list.	Select other point than the dragged list.	Next version or later
3	Clients on all Windows operating systems	For tree view, map view and list view, you cannot move from screen to screen with the keyboard (Tab key operation), select/move device icons (cursor key operation) and scroll screens with the mousewheel function.	Use the mouse to move screens, select device icons and scroll screens.	Next version or later
4	Solaris OS Manager	fjsnap alone cannot collect required data when collecting detailed investigation data.	Both fjsnap and managersnap should be used.	When Enhanced Support Facility including FJSVsnap(VL: 2.7) is offered.

3.2 ETERNUS SF Storage Cruiser advisory notes

This section explains the advisory notes.

Exclusive software

The Manager, Agent, and Client cannot be used at the same time as other exclusive software described in "Exclusive Software" section from chapter4 to chapter 6. Please follow the instructions and uninstall that software before the installation of this software.

Network Environment

This software is not possible to operate on the Internet Protocol Version 6 (hereafter "IPv6") environment. It is necessary to operate on the Internet Protocol Version 4 (hereafter "IPv4") environment.

If both IPv6 and IPv4 are mixed in the operating environment, set the IP address of the following devices which this software communicates to IPv4 format and then operate.

- Administrative server
- Administrative client

- Managed server nodes (including manually embedded server nodes which do not install the Agent)
- Managed devices (including manually embedded devices)

Shift from Softek Storage Cruiser V1.2.2 to ETERNUS SF Storage Cruiser

For details of the shift, please contact Fujitsu technical staff.

Use zone on Solaris 10 OS

When using zone on Solaris 10 OS, install this software to the global zone. This software can not be installed to the non-global zone.

Zone is handled in this software as follows;

Resource correlation management

Only the global zone is displayed. For the method of displaying the relationship of the global zone and the non-global zone, or performing operation for the non-global zone, refer to the Solaris 10 manual.

Use on Windows and Linux

For hardware (excluding PRIMEQUEST) used under Windows and Linux, disable NX bit or XD bit using BIOS settings. The BIOS settings for NX bit or XD bit vary with the type of hardware. For particulars of BIOS settings, make inquiries to the relevant hardware vendor.

In addition, PRIMERGY BX620 S2 stands for "NX Support" and PRIMERGY BX620 S3 and PRIMERGY BX620 S4 stand for "Execute Disable Bit".

Use on virtual machine

If any virtual machine functions are being used, install this software into the host operating system. If installed into a guest operating system, it does not work properly.

This software treats the guest OS as follows.

Resource related management

Only host operating information is displayed. For how to display the relationship between host operating system and guest operating system and how to operate the guest operating system, refer to the instruction manual for virtualization software.

Use the performance management function

When the transfer rate of FC port exceeds 4Gbps on the operating ETERNUS SN200 series Fibre Channel switch or PRIMERGY BX600 Fibre Channel switchblade, set the performance monitoring interval to any one of 5, 10 or 30 seconds. If the performance monitoring interval is set to 60 seconds, the correct performance value may be not acquired from the device.

3.3 ETERNUS SF Storage Cruiser Incompatibility Information

This section explains the incompatibility information.

3.3.1 Incompatibility in Version 13.1

Change the install directory of the shell script used by the shell link functionality

Incompatibility objects

Solaris OS Manager and Windows Manager

Incompatibility details

Object	Version	Detail
Solaris OS Manager	13.0	/etc/opt/FJSVssmgr/current/trapop.sh
	13.1	/opt/FJSVssmgr/lib/sample/trapop.sh

Object	Version	Detail
Windows Manager	13.0	\$ENV_DIR¥Manager¥etc¥opt¥FJSVssmgr¥current¥trapop.bat (\$ENV_DIR means "Environment Directory" specified at the Manager installation.)
	13.1	\$INS_DIR¥Manager¥opt¥FJSVssmgr¥lib¥sample¥trapop.bat (\$INS_DIR means "Program Directory" specified at the Manager installation.)

 **See**

For details, refer to "6.4 Event Display and Linkage" in the ETERNUS SF Storage Cruiser User's Guide.

Change the following message in relation to the SN200 MDS (Cisco MDS) events

Incompatibility details

Version	Detail
13.0	The status of the port has changed to %STATE%/%STATUS%
13.1	The status of the port has changed to %STATE%/%STATUS% fc%SLOT NUMBER%/%PORT NUMBER IN THE SLOT%(%PORT NUMBER%)

 **See**

For the details of messages after the change, refer to "2.2.4 Explanation of SN200 MDS (Cisco MDS) Events" in the ETERNUS SF Storage Cruiser Event Guide.

3.3.2 Incompatibility in Version 13.2

Change the Argument-1 value to be handed over to the event linked functionality

Incompatibility details

Version	Detail
13.1 or before	SN200 Product name in an error message to be handed over to argument-1 will be handed over as "SilkWorm xxxx".
13.2	SN200 product name in an error message to be handed over to argument-1 will be handed over as "xxxx."

 **Example**

Case of version 13.1 or before:

"AP:SSC: INFO: swsag4203:FC Port No.0 Online in M540(SilkWorm 48000[192.168.0.1])"

Case of version 13.2:

"AP:SSC: INFO: swsag4203:FC Port No.0 Online in M540(48000[192.168.0.1])"

Change the install directory and command name of the restart and stop commands of the administrative server daemon

Incompatibility object

Solaris OS Manager

Incompatibility details

Version	Detail
13.1 or before	/opt/FJSVrcxmr/sbin/rcxmgrctl
13.2	/opt/FJSVssmgr/sbin/managerctl



For details, refer to "12.1.2.2 Starting and stopping the daemons of the administrative server at specific times" in the ETERNUS SF Storage Cruiser User's Guide.

Change the install directory and command name of the command for investigation data collection on the administrative server

Incompatibility object

Solaris OS Manager

Incompatibility details

Version	Detail
13.1 or before	/opt/FJSVrcxmr/sbin/rcxmgrsnap
13.2	/opt/FJSVssmgr/sbin/managersnap



For details, refer to "Appendix D Troubleshooting" in the ETERNUS SF Storage Cruiser User's Guide.

Change the cmdline resource path for cluster environment

Incompatibility object

Solaris OS Manager

Incompatibility details

	Version	Detail
Start script	13.1 or before	/opt/FJSVrcxmr/cluster/cmd/rcxclstartcmd
	13.2	/opt/FJSVssmgr/cluster/cmd/rcxclstartcmd
Stop script	13.1 or before	/opt/FJSVrcxmr/cluster/cmd/rcxclstopcmd
	13.2	/opt/FJSVssmgr/cluster/cmd/rcxclstopcmd
Check script	13.1 or before	/opt/FJSVrcxmr/cluster/cmd/rcxclcheckcmd
	13.2	/opt/FJSVssmgr/cluster/cmd/rcxclcheckcmd



For details, refer to "A.4.3 Manager operation setup (details)".

3.3.3 Incompatibility in Version 13.3

Change the entering information from serial number to IP address

Incompatibility object

Storage Volume Configuration Navigator

Incompatibility details

Version	Detail
13.2 or before	For the device created virtually, it is necessary to enter a serial number before the device matching operation.
13.3	For the device created virtually, it is necessary to enter an IP address before the device matching operation.



.....
For details, refer to "11.1.4 Operation procedure" and "11.2.19 Entering IP address" in the ETERNUS SF Storage Cruiser User's Guide.
.....

Change the procedure for the ETERNUS2000 device creation

Incompatibility object

Storage Volume Configuration Navigator

Incompatibility details

Version	Detail
13.2 or before	By selecting a model number ending "*" from a model name list, it is possible to be designed as a device having the same model number before the "*".
13.3	It is not possible to be designed by selecting a model number ending "*" from a model name list.



.....
For details, refer to "11.2.6 Creating a device unit (for new designing offsite)" in the ETERNUS SF Storage Cruiser User's Guide.
.....

Chapter 4 Manager installation and setup

The installation and setup of ETERNUS SF Storage Cruiser Manager is described.

4.1 [Solaris OS] Manager

The installation and setup of Solaris OS Manager is described.

4.1.1 Operating environment

4.1.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Administrative server	All Sparc/SUN models

4.1.1.2 Software requirements

4.1.1.2.1 Required basic software

The basic software listed below is required when using this software.

No.	Product name	Remarks
1	Solaris 8 OS	-
2	Solaris 9 OS	-
3	Solaris 10 OS	When using zone, install this software to the global zone. Installation to the non-global zone is not possible.

4.1.1.2.2 Required software

The software listed below is required when using this software.

No.	Product name	Version / Level	Remarks
1	PRIMECLUSTER Enterprise Edition	4.1A20 or later	Either one of the two software is required when a cluster is configured by the Admin Server. The supported type is "Standby class, in 1:1 standby mode".
2	PRIMECLUSTER HA Server	4.1A20 or later	

4.1.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	-
2	Softek Storage Cruiser	All	-
3	Server System Manager	V1.2.2 or less	-

4.1.1.2.4 Required patches

The patches listed below are required when using this software.

No.	Product name	Patch ID	Remarks
1	Solaris 8 OS	Latest patch	-
2	Solaris 9 OS	Latest patch	-
3	Solaris 10 OS	Latest patch	-

4.1.1.2.5 Static disk space

For new installations, the following static disk space is necessary.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	1	-
2	/var	2	-
3	/opt	300	-
4	/usr	1	-

4.1.1.2.6 Dynamic disk space

The required dynamic disk space is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	$5 + 1(*A) + 1.2(*B)$	*A: Configuration definition file *B: Database (MW cooperation) -> Calculated assuming 100 products at a maximum
2	/var	$1055 + (*E) + 30(*C) + 20(*D)$	*C: Log *D: Database *E: Repository for Manager Calculated the space required for databases assuming 1000 servers and two devices for each (12KB * Number of registered servers + 4KB * Number of registered devices)

Repository for Manager

For Manager, the following amount of memory is required, depending on the numbers of managed storage modes, switches, and storage units.

$$\text{Amount of disk space (MB)} = 1 + [\text{Number of target units}] * 4$$

Additionally, when performance management is being performed, based on the fibre channel switch used to collect the performance information, the type of target (the ETERNUS/GR series), the number of logical units involved, the number of DE (Disk Enclosure), and the number of days for which information is to be collected, the required capacity given below becomes necessary.

Information

The default number of days for collection is seven. The number of secured LUs (Logical Units) is the actual number of LUs the functions of which are secured in order to perform performance management for the ETERNUS/GR series. Performance management is secured in units of 64 LUN for the ETERNUS/GR series. Therefore, when instructed to secure from LUN 15 to 200, the information for the actual LUs 0 to 255 (256 in total) would be secured.

Device	Required disk space (Unit : MB)
ETERNUS8000	<p>The firmware version is previous V11L40: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * \text{number of secured LUs}) / 1024$</p> <p>The firmware version is V11L40 or later: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]})) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]})) / 1024$</p> <p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) $(\text{Number of days to collect} + 1) * (10.6 + 0.07 * (86400 / \text{performance monitoring interval (seconds)})) / 1024$</p>
ETERNUS6000	<p>$(\text{Number of days to collect} + 1) * (9.85 + (0.06 + 13.43 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs[*1]} + 1956.45 / \text{performance monitoring interval (seconds)})$</p> <p>[*1] For ETERNUS6000 disk array device, it is counted as a total number of LUs (Logical Unit) targeted for performance monitoring.</p>
ETERNUS4000	<p>The firmware version is previous V11L40: $(\text{Number of days to collect} + 1) * (5000 + (30 + 0.4 * \text{number of DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * \text{number of secured LUs}) / 1024$</p> <p>The firmware version is V11L40 or later: $(\text{Number of days to collect} + 1) * (5000 + (30 + 0.4 * \text{number of DEs} + 0.3 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]})) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]})) / 1024$</p>

Device	Required disk space (Unit : MB)
	<p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) (Number of days to collect + 1) * (10.6 + 0.07 * (86400 / performance monitoring interval (seconds))) / 1024</p>
ETERNUS3000 (except models 80 and 100)	(Number of days to collect + 1) * ((0.06 + 11.61 / performance monitoring interval (seconds)) * number of secured LUs + 253.13 / Performance monitoring interval (seconds) + 1.29)
ETERNUS3000 model 80 ETERNUS3000 model 100	(Number of days to collect + 1) * ((0.06 + 11.62 / performance monitoring interval (seconds)) * number of secured LUs + (38.73 / performance monitoring interval (seconds)) + 1.29)
ETERNUS2000	<p>(Number of days to collect +1) * (140 + (0.7 + 0.2 * number of installed DEs + 0.3 * number of secured LUs) * (86400 / performance monitoring interval (seconds)) + (60 * number of installed DEs) + (50 * number of secured LUs)) / 1024</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) (Number of days to collect + 1) * (10.6 + 0.07 * (86400 / performance monitoring interval (seconds))) / 1024</p>
ETERNUS GR740 ETERNUS GR820 ETERNUS GR840	(Number of days to collect + 1) * ((0.06 + 11.61 / performance monitoring interval (seconds)) * number of secured LUs + 341.95 / performance monitoring interval (seconds) + 1.67)
ETERNUS GR720 ETERNUS GR730	(Number of days to collect + 1) * ((0.06 + 11.62 / performance monitoring interval (seconds)) * number of secured LUs + 138.43 / performance monitoring interval (seconds) + 0.65)
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 16) PRIMERGY BX600 Fibre Channel Switch Blade PRIMERGY BX600 Fibre Channel Switch Blade(4Gbps) Brocade Fibre Channel Switch (Maximum number of FC ports = 16)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 1.6
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 32) Brocade Fibre Channel Switch (Maximum number of FC ports = 32)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 3.2
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 128) Brocade Fibre Channel Switch (Maximum number of FC ports = 128)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 13
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 256)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 26

Device	Required disk space (Unit : MB)
Brocade Fibre Channel Switch (Maximum number of FC ports = 256)	
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 384)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 39
Brocade Fibre Channel Switch (Maximum number of FC ports = 384)	
ETERNUS SN200 MDS series Fibre Channel switch	(Number of days to collect +1) * 0.1 * maximum number of slots supported by device[*1] * 128 * (30 / performance monitoring interval (seconds)) [*1] Use 1 as the maximum number of slots for MDS9120

Example

When securing the performance information of 512LUs on an ETERNUS3000 model 200, at 30 second intervals for 7 days, $8 * (30 / 30) * 375 * 512 / 1024 = 1500\text{MB}$ is required.

Additionally, when performance information is output using the performance information operation command, the following disk space is required, depending on the number of LUs of the ETERNUS series and Fibre Channel switches, number of DEs, number of ports that is used to collect performance information, and number of days of performance information output.

Each element (number of installed DEs, installed CA Ports, installed CM Ports, LUs, RAIDGroups, and installed FC Ports) is the number mounted in the device when the command is executed.

Device	Required disk space (Unit : MB)
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	Number of days to output * (((0.3 + 0.4 * number of installed DEs + 0.1 * number of installed CA Ports + 0.2 * (number of LUs + number of RAIDGroups)) * (86400 / performance monitoring interval (seconds))) + (0.9 + 0.8 * number of installed DEs + 0.2 * number of installed CA Ports + 0.4 * (number of LUs + number of RAIDGroups))) / 1024
ETERNUS2000	Number of days to output * (((0.1 + 0.2 * number of installed DEs + 0.1 * number of installed CM Ports + 0.2 * (number of LUs + number of RAIDGroups)) * (86400 / performance monitoring interval (seconds))) + (0.2 + 0.3 * number of installed DEs + 0.2 * number of installed CM Ports + 0.4 * (number of LUs + number of RAIDGroups))) / 1024
Fibre Channel Switch	Number of days to output * (0.1 + number of installed FC ports + (0.1 * number of installed FC ports)) + (0.1 + number of installed ports + (0.1 * number of installed FC ports * (86400 / performance monitoring interval (seconds)))) / 1024

See

For the command, refer to "12.1.1.6 Performance information operation command (storageadm perfdata)" in the ETERNUS SF Storage Cruiser User's Guide.

4.1.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	200	-

4.1.1.2.8 Swap volume

The amount of swap volume used by this software is indicated.

No.	Swap volume (Unit : MB)	Remarks
1	300	-

4.1.2 Advisory notes

When Systemwalker Resource Coordinator, Softek Storage Cruiser or Server System Manager is already installed

In situations where the software described in "[4.1.1.2.3 Exclusive software](#)" is already installed, please uninstall it and then install the ETERNUS SF Storage Cruiser Manager.

Post-installation advisory notes

After this software is installed, take care about the following.

This software can be used in the mixed environment with the following software. When these software are uninstalled, the SNMP Trap-monitoring daemon may be stopped.

- Systemwalker Centric Manager Operation control server
- Systemwalker Centric Manager Section control server
- Systemwalker Network Assist
- Systemwalker Network Topology Manager

When after above software are uninstalled from the mixed environment, restart the system or execute the following.

1. Check if nwsnmp-trapd is running with the following command.

```
# /bin/ps -ef | grep nwsnmp-trapd
```

2. If nwsnmp-trapd is not running, reboot the system or execute the following commands.

```
# /opt/FJSVswstt/bin/mpnm-trapd stop
# /opt/FJSVswstt/bin/mpnm-trapd start
```

4.1.3 Installation procedure

The procedure to install the Manager is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)" is used for installing the Manager.

4.1.3.1 Pre-installation preparations

1. Local file system checking (for the single user mode)

Please install this software in multi-user mode.

When the installation is performed in single-user mode, check whether the local file system is mounted before installation. If it is not mounted, mount the local file system.

```
# /usr/sbin/mountall -l
```



.....
Refer to the operating system manual, for details of mountall command.
.....

2. Check if basic software is installed

Check that required software has been installed and that exclusive software and this software have not been installed.

Insert the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)" into the CD-ROM drive, and execute the following command.

```
# cd CD-ROM_mount_point/manager/Solaris
# ./scinstall.sh -check
```

In the event that the message is output as a result of the above operation, take action as follows.

- When basic required software is not installed
Install the required software.
- When exclusive software has been installed
Uninstall the exclusive software.
- When ETERNUS SF Storage Cruiser Manager has been installed
Refer to "[9.1 \[Solaris OS\] Manager uninstallation](#)" to stop the Manager, and then uninstall the package displayed.



-
- FJSVswstt is a common package to other products, and ETERNUS SF Storage Cruiser uses the installed one. Please do not uninstall it.
 - When the SMAWdtpc package supplied with PRIMECLUSTER Enterprise Edition has been installed, please be sure to delete it before installing this software. For details of the methods for deleting this package, please refer to the "Installation Guide PRIMECLUSTER(TM) Enterprise Edition 4.1A30 for Solaris(TM) Operating Environment".
-

4.1.3.2 Installation time

Installation time for this software is around 10 minutes.

4.1.3.3 Software installation

By executing this software's exclusive installation command "scinstall.sh", multiple packages can be installed simultaneously. The scinstall.sh command invokes the pkgadd(1M) command and installs the component program packages.

1. Login with root (super user).

```
# su
```

2. After performing the procedures in "[4.1.3.1 Pre-installation preparations](#)", move to the directory storing the scinstall.sh command.

```
# cd CD-ROM_mount_point/manager/Solaris
```

3. Execute the scinstall.sh command.

```
# ./scinstall.sh
```

4. The following message is output. To execute installation enter "y", to discontinue the installation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008
This program will install "ETERNUS SF Storage Cruiser" Manager on your system.

Do you want to continue the installation of this package? [y, n, ?, q]
```

5. Enter "y" and the installation will commence.

Message examples are as follows:

```
INFO : Starting Installation of ETERNUS SF Storage Cruiser ...
...
Installation of <FJSVswstt> was successful.
INFO : Package FJSVswstt was successfully installed.
...
Installation of <FJSVtrccb> was successful.
INFO : Package FJSVtrccb was successfully installed.
...
Installation of <FJSVssmgr> was successful.
INFO : Package FJSVssmgr was successfully installed.
...
```

6. When installation is completed successfully, the following message will be displayed.

```
INFO : "ETERNUS SF Storage Cruiser" Manager was installed successfully.
```

If the installation fails, one of the following messages will be displayed.

```
ERROR : Required package_name is not installed.
or
ERROR : Exclusive package "software_name" is installed.
or
ERROR : Package package_name is already installed.
or
ERROR : Installing package_name was failed.
```

7. If the installation fails, check the installation status with the following command.

```
# ./scinstall.sh -check
```

In cases where the same versions of packages have been installed, delete all packages identified by the above command, using the `scuninstall.sh` command. Then recommence the installation process from Step 3.

```
# ./scuninstall.sh
```

Information

.....
The `scuninstall.sh` is stored in the same directory as the `scinstll.sh` command.
.....

When the installation failed even if the above procedure was taken, take note of the message displayed and contact Fujitsu technical engineer.

The installation is completed. Continuously, execute the post-installation setup.

- When the operation control server is not a cluster system
Refer to ["4.1.4 Post-installation setup"](#) and then execute the setup after installation.
- When the operation control server is a cluster system
Refer to ["A.4 Manager operation setup"](#) and execute the setup in the cluster environment.

4.1.4 Post-installation setup

Procedure to setup the Manager is described below.



See

When the admin server is a cluster system, refer to "A.4 Manager operation setup" for the procedure.

4.1.4.1 /etc/services configuration

The Manager operation requires port numbers below to enable it to communicate with the Client or the Agent.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent
nfport	23456/tcp	Client	Manager
ssvsme	7420/tcp 7420/udp	Manager	Virtualization switch



Note

- As well as the above, managers use port number 162/udp for receiving SNMP TRAP from managed devices, including agents.
- The description of "ssvsme" service is required only when using virtual storage management.

Write the contents below in the /etc/services file and declare the use of a port number. In situations where there is no description in the /etc/services file, booting will be from the following port numbers.

```
#Service name  Port number/Protocol name
sscruisera     4917/tcp
nfport         23456/tcp
ssvsme         7420/tcp
ssvsme         7420/udp
```



Information

When a port number is already in use, please specify a vacant port number. In this case, the settings for another server of ETERNUS SF Storage Cruiser, if using the same port number, should also be changed.

4.1.4.2 Administrator login account creation

Procedure to create the administrator's login account is described below.

1. Login with the administrator (root), and execute the following command.

```
# /opt/FJSVssmgr/bin/scsetup
```

2. Create the administrator's login account and perform creation of a CLI encryption key.

The input is required as follows.

```
Input a new CLI crypt key [length:4-56]: CLI encryption key
Are you sure? [y,n,q?] y
Input a new user name [length:1-16]: user name
Input a new password [length:1-16]: password
Retype a new password [length:1-16]: password confirm
Are you sure? [y,n,q?] y
```

CLI encryption key

Please enter the CLI encryption key to be used (between 4 and 56 characters).

Double-byte characters, single-byte alphanumeric characters, symbols, and strings composed entirely of single or double-byte characters can be used.

Notice that CLI encryption is required for ETERNUS SF Storage Cruiser internal use only. Therefore, users don't have to remember the key.

Username

Enter the user name of the login account for administrators (between 1 and 16 characters).

The name must start with an alphabetic character, and alphanumeric characters (including underscores, "_", periods, ".", and hyphens, "-") can be used.

Password

Enter the password of the login account for administrators (between 1 and 16 characters).

The password is a string of alphanumeric characters and symbols, but can not start with "{".

Password confirmation

For password confirmation, enter the password of the administrator again.

3. When a login account is successfully created, the following message will be displayed.

```
FJSVrcx:INFO:27801:rcxcert:The command was successfully completed.
```

If failed, one of the following messages will be displayed.

```
ERROR : Database update failed.
or
FJSVrcx:ERROR:67806:rcxcert:rcxcert setup has already been completed.
FJSVrcx:ERROR:67808:rcxcert:The command was not completed successfully.
or
ERROR: "scsetup" command can not be executed except for " ETERNUS SF Storage Cruiser" Manager.
Please create administrative login account manually.
```

4. If the creation failed, check the status as below.

- Refer to ["4.1.1.2.5 Static disk space"](#) to check if there is free space on the file system which is the installation destination of this software. After resolving the issue, execute the scsetup command again.
- Check if ETERNUS SF Storage Cruiser Manager is correctly installed. If not, uninstall this software by referring to ["9.1 \[Solaris OS\] Manager uninstallation"](#), and then install it again.

If the creation of administrative login account still failed, collect the displayed message and contact Fujitsu System Engineer.

4.1.4.3 Rebooting the system

The system should be restarted upon completion of the settings. ETERNUS SF Storage Cruiser will start automatically.

```
# /usr/sbin/shutdown -y -g0 -i6
```

4.1.5 Upgrading from older products

When the Softek Storage Cruiser Manager or a previous version level of the ETERNUS SF Storage Cruiser Manager has been installed, you can save the setting data and have the current version of ETERNUS SF Storage Cruiser Manager inherit the saved data.

4.1.5.1 Upgrading from Softek Storage Cruiser

See "[Appendix D Procedure for Upgrading from Softek Storage Cruiser](#)".

4.1.5.2 Upgrading from a previous version level

This section explains how to upgrade from a previous version level of the ETERNUS SF Storage Cruiser.



Before migration, refer to "[Chapter 3 Restrictions and advisory notes](#)" for confirmation.

4.1.5.2.1 Upgrading from a previous version level (non-cluster environment)

1. Back up the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to "9.1.1.2.1 Backup of Solaris OS Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to perform backup.

2. Uninstall the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to "9.1 [Solaris] Manager uninstallation" in the ETERNUS SF Storage Cruiser Install Guide for the previous version level, for how to uninstall the Manager.

3. Install the ETERNUS SF Storage Cruiser Manager.



Refer to "4.1 [Solaris OS] Manager", for how to install and set up the Manager.

4. Restore the backup data created by step 1 (the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager).



Refer to "9.1.1.3.1 Restoring Solaris OS Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to restore.

5. Update the configuration information of the performance management function.

When monitoring the performance for number of active disks:

When the performance management function is used for ETERNUS8000, ETERNUS4000 (except models 80 and 100) and ETERNUS2000, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

When migrating from ETERNUS SF Storage Cruiser 13.0:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS3000 models 80 and 100	V20L85 or later, or V30L15 or later
ETERNUS4000 models 80 and 100	V30L15 or later
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V10L50 or later

When migrating from ETERNUS SF Storage Cruiser 13.1 or 13.2:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V11L40 or later

Information

When migrating from ETERNUS SF Storage Cruiser 13.0 or 13.1, a tool tip displayed on the performance control window tree will show a RAID level of "RAID1+0" as "RAID0+1". The "RAID0+1" is only a different name, referring to RAID configuration, the same as "RAID1+0".

The "RAID1+0" will be displayed by updating the configuration information of the performance control.

Refer to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide, for how to update the configuration information.

4.1.5.2.2 Upgrading from a previous version level (cluster environment)

1. Back up the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager.

See

Refer to "9.1.1.2.2 Backup of Solaris OS Manager (cluster environment)" in the ETERNUS SF Storage Cruiser User's Guide, for how to perform backup.

2. Uninstall the previous version level of ETERNUS SF Storage Cruiser Manager.

See

Refer to "Appendix A High-availability admin servers" in the ETERNUS SF Storage Cruiser Install Guide for the previous version level, for how to uninstall the Manager.

3. Install the ETERNUS SF Storage Cruiser Manager.

See

Refer to "Appendix A High-availability admin servers", for how to install and set up the Manager.

- Restore the backup data created by the step 1 (the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager).



Refer to "9.1.1.3.2 Restoring Solaris OS Manager (cluster environment)" in the ETERNUS SF Storage Cruiser User's Guide, for how to restore.

- Update the configuration information of the performance management function.

When monitoring the performance for number of active disks:

When the performance management function is used for ETERNUS8000, ETERNUS4000 (except models 80 and 100) and ETERNUS2000, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

When migrating from ETERNUS SF Storage Cruiser 13.0:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS3000 models 80 and 100	V20L85 or later, or V30L15 or later
ETERNUS4000 models 80 and 100	V30L15 or later
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V10L50 or later

When migrating from ETERNUS SF Storage Cruiser 13.1 or 13.2:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V11L40 or later



When migrating from ETERNUS SF Storage Cruiser 13.0 or 13.1, a tool tip displayed on the performance control window tree will show a RAID level of "RAID1+0" as "RAID0+1". The "RAID0+1" is only a different name, referring to RAID configuration, the same as "RAID1+0".

"RAID1+0" will be displayed by updating the configuration information of the performance control.

Refer to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide, for how to update the configuration information.

4.2 [Linux] Manager

The installation and setup of Linux Manager is described.

4.2.1 Operation environment

4.2.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operation server	Supported model
1	Administrative server	Over 512MB memory and CPU is Pentium(R)III 1.2GHz or better
2		PRIMEQUEST
3		PRIMERGY

4.2.1.2 Software requirements

4.2.1.2.1 Required basic software

The basic software listed below is required when using this software.

No.	Product name	Remarks
1	Red Hat Enterprise Linux 5 (for x86)	Modified kernel is required. Obtain a modified kernel and create a modified kernel update CD. Essential software such as driver kit and update kit also need to be prepared, if any. Refer to server instruction manuals or Linux installation guide for essential software information. In addition, if any virtual machine is being used, install this software to the host operating system. If installed to a guest operating system, it does not work properly.
2	Red Hat Enterprise Linux 5 (for Intel64)	
3	Red Hat Enterprise Linux 5 (for Intel Itanium)	Operation server is only PRIMEQUEST. In addition, if any virtual machine is being used, install this software to the host operating system. If installed to a guest operating system, it does not work properly.
4	Red Hat Enterprise Linux 5.1 (for x86)	Modified kernel is required. Obtain a modified kernel and create a modified kernel update CD. Essential software such as driver kit and update kit also need to be prepared, if any. Refer to server instruction manuals or Linux installation guide for essential software information. In addition, if any virtual machine is being used, install this software to the host operating system. If installed to a guest operating system, it does not work properly.
5	Red Hat Enterprise Linux 5.1 (for Intel64)	
6	Red Hat Enterprise Linux 5.1 (for Intel Itanium)	Operation server is only PRIMEQUEST. In addition, if any virtual machine is being used, install this software to the host operating system. If installed to a guest operating system, it does not work properly.

4.2.1.2.2 Required software

The required software listed below is required when using this software.

No.	Product name	Version / Level	Remarks
1	PRIMECLUSTER Enterprise Edition	4.2A30 or later	Either one of the two software is required when a cluster is configured by the Admin Server. The supported type is "Standby class, 1:1 standby mode".
2	PRIMECLUSTER HA Server	4.2A30 or later	

4.2.1.2.3 Exclusive software

There is no Exclusive software.

4.2.1.2.4 Required batches

The required batches listed below are required when using this software.

No.	Product name	Batch ID	Remarks
1	Red Hat Enterprise Linux 5 (for x86)	None	-
2	Red Hat Enterprise Linux 5 (for Intel64)	None	-
3	Red Hat Enterprise Linux 5 (for Intel Itanium)	None	-
4	Red Hat Enterprise Linux 5.1 (for x86)	None	-
5	Red Hat Enterprise Linux 5.1 (for Intel64)	None	-
6	Red Hat Enterprise Linux 5.1 (for Intel Itanium)	None	-

4.2.1.2.5 Static disk space

For new installations, the following static disk space is required.

No.	Decretory	Required disk space (Unit : MB)	Remarks
1	/etc	1	-
2	/var	2	-
3	/opt	300	-
4	/usr	1	-

4.2.1.2.6 Dynamic disk space

The required dynamic disk space is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	$5 + 1(*A) + 1.2(*B)$	*A : Environment definition file *B : Database (MW link) Calculated the space required for databases assuming 100 products

No.	Directory	Required disk space (Unit : MB)	Remarks
2	/var	1055 + (*E) + 30(*C) + 20(*D)	*C : Log *D : Database *E : Repository for Manager Calculated the space required for databases assuming 1000 servers and two devices for each (12KB * Number of registered servers + 4KB * Number of registered devices)

Repository for Manager

For Manager, the following amount of memory is required, depending on the numbers of managed storage modes, switches, and storage units.

$\text{Amount of disk space (MB)} = 1 + [\text{Number of target units}] * 4$
--

Additionally, when performance management is being performed, based on the fibre channel switch used to collect the performance information, the type of target (the ETERNUS/GR series), the number of logical units involved, the number of DE (Disk Enclosure), and the number of days for which information is to be collected, the required capacity given below becomes necessary.

Information

The default number of days for collection is seven. The number of secured LUs (Logical Units) is the actual number of LUs the functions of which are secured in order to perform performance management for the ETERNUS/GR series. Performance management is secured in units of 64 LUN for the ETERNUS/GR series. Therefore, when instructed to secure from LUN 15 to 200, the information for the actual LUs 0 to 255 (256 in total) would be secured.

Device	Required disk space (Unit : MB)
ETERNUS8000	<p>The firmware version is previous V11L40: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)}) + (120 * \text{number of DEs}) + (50 * \text{number of secured LUs})) / 1024$</p> <p>The firmware version is V11L40 or later: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1])) * (86400 / \text{performance monitoring interval (seconds)}) + (120 * \text{number of DEs}) + (50 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1])))) / 1024$</p> <p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) $(\text{Number of days to collect} + 1) * (10.6 + 0.07 * (86400 / \text{performance monitoring interval (seconds)})) / 1024$</p>
ETERNUS6000	$(\text{Number of days to collect} + 1) * (9.85 + (0.06 + 13.43 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs[*1]} + 1956.45 / \text{performance monitoring interval (seconds)})$

Device	Required disk space (Unit : MB)
	[*1] For ETERNUS6000 disk array device, it is counted as a total number of LUs (Logical Unit) targeted for performance monitoring.
ETERNUS4000	<p>The firmware version is previous V11L40: $(\text{Number of days to collect} + 1) * (5000 + (30 + 0.4 * \text{number of DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * \text{number of secured LUs}) / 1024$</p> <p>The firmware version is V11L40 or later: $(\text{Number of days to collect} + 1) * (5000 + (30 + 0.4 * \text{number of DEs} + 0.3 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]))) * (86400 / \text{performance monitoring interval (seconds)})) + (120 * \text{number of DEs}) + (50 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]))) / 1024$</p> <p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) $(\text{Number of days to collect} + 1) * (10.6 + 0.07 * (86400 / \text{performance monitoring interval (seconds)})) / 1024$</p>
ETERNUS3000 (except models 80 and 100)	$(\text{Number of days to collect} + 1) * ((0.06 + 11.61 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + 253.13 / \text{Performance monitoring interval (seconds)} + 1.29)$
ETERNUS3000 model 80 ETERNUS3000 model 100	$(\text{Number of days to collect} + 1) * ((0.06 + 11.62 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + (38.73 / \text{performance monitoring interval (seconds)})) + 1.29)$
ETERNUS2000	<p>$(\text{Number of days to collect} + 1) * (140 + (0.7 + 0.2 * \text{number of installed DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)})) + (60 * \text{number of installed DEs}) + (50 * \text{number of secured LUs}) / 1024$</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) $(\text{Number of days to collect} + 1) * (10.6 + 0.07 * (86400 / \text{performance monitoring interval (seconds)})) / 1024$</p>
ETERNUS GR740 ETERNUS GR820 ETERNUS GR840	$(\text{Number of days to collect} + 1) * ((0.06 + 11.61 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + 341.95 / \text{performance monitoring interval (seconds)} + 1.67)$
ETERNUS GR720 ETERNUS GR730	$(\text{Number of days to collect} + 1) * ((0.06 + 11.62 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + 138.43 / \text{performance monitoring interval (seconds)} + 0.65)$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 16) PRIMERGY BX600 Fibre Channel Switch Blade PRIMERGY BX600 Fibre Channel Switch Blade(4Gbps)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 1.6$

Device	Required disk space (Unit : MB)
Brocade Fibre Channel Switch (Maximum number of FC ports = 16)	
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 32) Brocade Fibre Channel Switch (Maximum number of FC ports = 32)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 3.2
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 128) Brocade Fibre Channel Switch (Maximum number of FC ports = 128)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 13
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 256) Brocade Fibre Channel Switch (Maximum number of FC ports = 256)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 26
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 384) Brocade Fibre Channel Switch (Maximum number of FC ports = 384)	(Number of days to collect +1) * (30 / performance monitoring interval (seconds)) * 39
ETERNUS SN200 MDS series Fibre Channel switch	(Number of days to collect +1) * 0.1 * maximum number of slots supported by device[*1] * 128 * (30 / performance monitoring interval (seconds)) [*1] Use 1 as the maximum number of slots for MDS9120



Example

When securing the performance information of 512LUs on an ETERNUS3000 model 200, at 30 second intervals for 7 days,
 $8 * (30 / 30) * 375 * 512 / 1024 = 1500\text{MB}$ is required.

Additionally, when performance information is output using the performance information operation command, the following disk space is required, depending on the number of LUs of the ETERNUS series and Fibre Channel switches, number of DEs, number of ports that is used to collect performance information, and number of days of performance information output.

Each element (number of installed DEs, installed CA Ports, installed CM Ports, LUs, RAIDGroups, and installed FC Ports) is the number mounted in the device when the command is executed.

Device	Required disk space (Unit : MB)
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	Number of days to output * (((0.3 + 0.4 * number of installed DEs + 0.1 * number of installed CA Ports + 0.2 * (number of LUs + number of RAIDGroups)) * (86400 / performance monitoring interval (seconds))) + (0.9 + 0.8 * number of installed DEs + 0.2 * number of installed CA Ports + 0.4 * (number of LUs + number of RAIDGroups))) / 1024
ETERNUS2000	Number of days to output * (((0.1 + 0.2 * number of installed DEs + 0.1 * number of installed CM Ports + 0.2 * (number of LUs + number of RAIDGroups)) * (86400 / performance monitoring interval (seconds))) + (0.2 + 0.3 * number of installed DEs + 0.2 * number of installed CM Ports + 0.4 * (number of LUs + number of RAIDGroups))) / 1024
Fibre Channel Switch	Number of days to output * (0.1 + number of installed FC ports + (0.1 * number of installed FC ports)) + (0.1 + number of installed ports + (0.1 * number of installed FC ports * (86400 / performance monitoring interval (seconds))) / 1024



See

For the command, refer to "12.2.1.6 Performance information operation command (storageadm perfdata)" in the ETERNUS SF Storage Cruiser User's Guide.

4.2.1.2.7 Memory capacity

The minimum memory required for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	200	-

4.2.1.2.8 Swap volume

The minimum swap required for operation of this software is indicated.

No.	Swap volume (Unit: MB)	Remarks
1	300	-

4.2.2 Advisory notes

SNMP trap daemon

On the server operating Manager, the standard Linux SNMP trap daemon cannot be used. Also applications that use the SNMP trap daemon cannot be used.

When "PRIMERGY server management software ServerView for Linux" is already installed, caution is necessary regarding AlarmService.

When not using AlarmService, uninstall it following the procedure below.

When using AlarmService, the ServerView trap transfer program (trpsrvd) is required.

For details, refer to "[ServerView trap transfer program \(trpsrvd\)](#)".

Uninstall AlarmService using the following procedure.

1. Redefinition of ServerView alarm settings

When alarm configuration has been performed on a ServerView Linux Agent, redefine the setting definitions for each server on the ServerView console.



See

For details of the methods for defining alarm settings, refer to the ServerView documents.

2. Addition and change of ServerView Linux SNMP trap destinations

When using ServerView alarm settings, configure the ServerView console as the SNMP trap destination.



See

For details of the methods for adding or changing ServerView Linux SNMP trap receivers, refer to the ServerView documents.

3. Uninstallation of AlarmService

Uninstall the "AlarmService" of ServerView on Linux servers.

On Linux servers on which ServerView is operating, execute the following command.

```
# rpm -e AlarmService
```

Applications other than AlarmService, that use the standard Linux SNMP trap daemon must be uninstalled or have their settings changed to prevent them from operating.

When the standard Linux SNMP trap daemon is configured to start automatically, change the configuration to prevent it from starting automatically.

Prevent the SNMP trap daemon from starting automatically using the following procedure.

1. Login with root (super user), and execute the following command.

```
# /usr/sbin/setup
```

(The setup command is only for Red Hat)

A menu window will be displayed.

2. Select "System service", and press the Enter key.

The service window will be displayed.

3. Remove the "*" from the "snmptrapd" parameter.

To remove the "*", align the cursor with the parameter and press the Space key.

4. Use the Tab key to align the cursor with "OK", and press the Enter key.

5. Use the Tab key to align the cursor with "Cancel", and press the Enter key.

Setup is complete.

ServerView trap transfer program (trpsrvd)

When using ServerView AlarmService on servers that manager has been installed on, the ServerView trap transfer program (trpsrvd) for transferring SNMP Trap is required.

The ServerView trap transfer program (trpsrvd) is used to transfer SNMP Traps received at UDP port number 162 to other UDP port numbers.

To obtain the ServerView trap transfer program (trpsrvd), contact Fujitsu technical staff. For details of installation methods, refer to the attached Readme.

Post-installation advisory notes

After this software is installed, take care about the following.

This software can be used in the mixed environment with the following software. When these software are uninstalled, the SNMP Trap-monitoring daemon may be stopped.

- Systemwalker Centric Manager Operation control server
- Systemwalker Centric Manager Section control server

When after above software are uninstalled from the mixed environment, restart the system or execute the following.

1. Check if nwsnmp-trapd is running with the ps command.

```
# /bin/ps -ef | grep nwsnmp-trapd
```

2. If nwsnmp-trapd is not running, execute the following commands.

- On the PRIMEQUEST environment:

```
# /etc/init.d/sw-trapd restart
```

- On other environment:

```
# /opt/FJSVswstt/bin/mpnm-trapd stop  
# /opt/FJSVswstt/bin/mpnm-trapd start
```

4.2.3 Installation procedure

Procedure to install the Manager is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Linux, VMware)" is used for installing the Manager.

4.2.3.1 Pre-installation preparation

1. Check if a local file system is mounted (in the case of a single user mode)

Please install this software in multi-user mode.

When the installation is performed in single-user mode, check whether the local file system is mounted before installation. If it is not mounted, mount the local file system.

```
# /usr/sbin/mountall -l
```



.....
Refer to operation system manual, for details of mountall command.
.....

2. Check if basic software is installed

Make sure that the basic software is installed and this software is not installed.

Set up the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Linux, VMware)" and then execute the command below:

```
# cd CD-ROM mount point /manager/RHEL  
# /bin/sh ./scinstall.sh -check
```

When a message is displayed after executing the above command, take a relevant measure accordingly.

- When basic required software is not installed

Install the required software.

- When ETERNUS SF Storage Cruiser Manager is already installed

Refer to "9.2 [Linux] Manager Uninstallation" to stop the Manager, and then uninstall the package displayed.



-
- FJSVswstt is a common package with other products. ETERNUS SF Storage Cruiser uses a preinstalled package so that the software should not be uninstalled.

- When SMAWdtp package, the bundled software of PRIMECLUSTER Enterprise Edition, is installed, SMAWdtp package must be uninstalled before installing this software. Refer to "PRIMECLUSTER(TM) Enterprise Edition 4.2A30 for Linux(TM) Environment Installation Guide" for how to delete the software.
-

4.2.3.2 Installation time

Installation time for this software is around 10 minutes.

4.2.3.3 Software installation

By executing this software's exclusive installation command "scinstall.sh", multiple packages can be installed simultaneously. The scinstall.sh command calls the rpm(8) command and installs the configuration program package.

1. Login with root (super user).

```
# su
```

2. After performing the procedures in "[4.2.3.1 Pre-installation preparation](#)", move to the directory storing scinstall.sh command.

```
# cd CD-ROM_mount_point/manager/RHEL
```

3. Execute the scinstall.sh command.

```
# /bin/sh ./scinstall.sh
```

4. The following message is output. To execute installation enter "y", to discontinue the installation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008
This program will install "ETERNUS SF Storage Cruiser" Manager on your system.

Do you want to continue the installation of this package? [y, n, ?, q]
```

5. When "y" is entered, the installation will commence.

Message examples are as follows:

```
INFO : Starting Installation of ETERNUS SF Storage Cruiser ...
INFO : Package FJSVswstt was successfully installed.
INFO : Package FJSVtrccb was successfully installed.
INFO : Package FJSVsmgr was successfully installed.
```

6. When the installation is completed successfully, the following message will be displayed.

```
INFO : "ETERNUS SF Storage Cruiser" Manager was installed successfully.
```

If the installation fails, one of the following messages will be displayed.

```
ERROR : Required Package_name is not installed.
or
ERROR : Exclusive package "Software_name" is installed.
or
ERROR : Package Package_name is already installed.
or
ERROR : Installing Package_name was failed.
```

7. If the installation fails, check the installation status with the following command.

```
# /bin/sh ./scinstall.sh -check
```

In cases where the same versions of packages have been installed, delete all packages identified by the above command, using the scuninstall.sh command. Then recommence the installation process from Step 3.

```
# /bin/sh ./scuninstall.sh
```



.....
The scuninstall.sh is stored in the same directory as the scinstall.sh command.
.....

When the installation failed even if the above procedure was taken, take note of the message displayed and contact Fujitsu technical engineer.

The installation is completed. Continuously, execute the post-installation setup.

- When the operation control server is not a cluster system
Refer to "4.2.4 Post-installation setup" and execute a setup after installation.
- When the operation control server is a cluster system
Refer to "A.4 Manager operation setup" and execute a setup in the cluster environment.

4.2.4 Post-installation setup

Procedure to setup the Manager is described below.



See

When the admin server is a cluster system, refer to "A.4 Manager operation setup" for the procedure.

4.2.4.1 /etc/services configuration

The Manager operation requires port numbers below to enable it to communicate with the Client or the Agent.

Service name	Port number/Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent
nfport	23456/tcp	Client	Manager
ssvscme	7420/tcp 7420/udp	Manager	Virtualization switch



Note

- As well as the above, managers use port number 162/udp for receiving SNMP TRAP from managed devices, including agents.
- The description of "ssvscme" service is required only when using virtual storage management.

Write the contents below in the /etc/services file and declare the use of a port number. In situations where there is no description in the /etc/services file, booting will be from the following port numbers.

```
#Service name  Port number/Protocol name
sscruisera    4917/tcp
nfport        23456/tcp
ssvscme       7420/tcp
ssvscme       7420/udp
```



Information

When a port number is already in use, please specify a vacant port number. In this case, the settings for another server of ETERNUS SF Storage Cruiser, if using the same port number, should also be changed.

4.2.4.2 Administrator login account creation

Procedure to create the administrator's login account is described below.

1. Login with the administrator (root), and execute the following command.

```
# /opt/FJSVssmgr/bin/scsetup
```

2. Create the administrator's login account and perform creation of a CLI encryption key.

The input is required as follows.

```
Input a new CLI crypt key [length:4-56]: CLI encryption key
Are you sure? [y,n,q?] y
Input a new user name [length:1-16]: user name
Input a new password [length:1-16]: password
Retype a new password [length:1-16]: password confirm
Are you sure? [y,n,q?] y
```

CLI encryption key

Please enter the CLI encryption key to be used (between 4 and 56 characters).

Double-byte characters, single-byte alphanumerical characters, symbols, and strings composed entirely of single or double-byte characters can be used.

Notice that CLI encryption is required for ETERNUS SF Storage Cruiser internal use only. Therefore, users don't have to remember the key.

Username

Enter the user name of the login account for administrators (between 1 and 16 characters).

The name must start with an alphabetic character, and alphanumerical characters (including underscores, "_", periods, ".", and hyphens, "-") can be used.

Password

Enter the password of the login account for administrators (between 1 and 16 characters).

The password is a string of alphanumerical characters and symbols, but can not start with "{".

Password confirmation

For password confirmation, enter the password of the administrator again.

3. When a login account is successfully created, the following message will be displayed.

```
FJSVrcx:INFO:27801:rcxcert:The command was successfully completed.
```

If failed, one of the following message will be displayed.

```
ERROR : Database update failed.
or
FJSVrcx:ERROR:67806:rcxcert:rcxcert setup has already been completed.
FJSVrcx:ERROR:67808:rcxcert:The command was not completed successfully.
or
ERROR: "scsetup" command can not be executed except for "ETERNUS SF Storage Cruiser" Manager.
Please create administrative login account manually.
```

4. When the creation failed, check the status as below.

- Refer to ["4.2.1.2.5 Static disk space"](#) to check if there is free space on the file system which is the installation destination of this software. After resolving the issue, execute the scsetup command again.
- Check if ETERNUS SF Storage Cruiser Manager is correctly installed. If not, uninstall this software by referring to ["9.2 \[Linux\] Manager Uninstallation"](#), and then install it again.

If the creation of administrative login account still failed, collect the displayed message and contact Fujitsu System Engineer.

4.2.4.3 Rebooting the system

The system should be restarted upon completion of the settings. ETERNUS SF Storage Cruiser will start automatically.

```
# /sbin/shutdown -r now
```

4.2.5 Upgrading from older products

When a previous version level of the ETERNUS SF Storage Cruiser Manager has been installed, you can save the setting data and have the current version of ETERNUS SF Storage Cruiser Manager inherit the saved data.

4.2.5.1 Upgrading from a previous version level

This section explains how to upgrade from a previous version level of the ETERNUS SF Storage Cruiser.



Before migration, refer to "[Chapter 3 Restrictions and advisory notes](#)" for confirmation.

4.2.5.1.1 Upgrading from a previous version level (non-cluster environment)

1. Back up the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to "9.1.1.2.3 Backup of Linux Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to perform backup.

2. Uninstall the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to "9.2 [Linux] Manager uninstallation" in the ETERNUS SF Storage Cruiser Install Guide for the previous version level, for how to uninstall the Manager.

3. Install the ETERNUS SF Storage Cruiser Manager.



Refer to "4.2 [Linux] Manager", for how to install and set up the Manager.

4. Restore the backup data created by step 1 (the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager).



Refer to "9.1.1.3.3 Restoring Linux Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to restore.

5. Update the configuration information of the performance management function.

When monitoring the performance for number of active disks:

When the performance management function is used for ETERNUS8000, ETERNUS4000 (except models 80 and 100) and ETERNUS2000, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

When migrating from ETERNUS SF Storage Cruiser 13.2:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V11L40 or later

4.2.5.1.2 Upgrading from a previous version level (cluster environment)

1. Back up the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager.

 See

.....
Refer to "9.1.1.2.4 Backup of Linux Manager (cluster environment)" in the ETERNUS SF Storage Cruiser User's Guide, for how to perform backup.
.....

2. Uninstall the previous version level of ETERNUS SF Storage Cruiser Manager.

 See

.....
Refer to "Appendix A High-availability admin servers" in the ETERNUS SF Storage Cruiser Install Guide for the previous version level, for how to uninstall the Manager.
.....

3. Install the ETERNUS SF Storage Cruiser Manager.

 See

.....
Refer to "Appendix A High-availability admin servers", for how to install and set up the Manager.
.....

4. Restore the backup data created by the step 1 (the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager).

 See

.....
Refer to "9.1.1.3.4 Restoring Linux Manager (cluster environment)" in the ETERNUS SF Storage Cruiser User's Guide, for how to restore.
.....

5. Update the configuration information of the performance management function.

When monitoring the performance for number of active disks:

When the performance management function is used for ETERNUS8000, ETERNUS4000 (except models 80 and 100) and ETERNUS2000, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

When migrating from ETERNUS SF Storage Cruiser 13.2:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V11L40 or later

4.3 [Windows] Manager

The installation and setup of Windows Manager is described.

4.3.1 Operating environment

4.3.1.1 Hardware requirements

The hardware listed below is required when using this software.

No	Operating server	Supported model
1	Administrative server	Over 512MB memory and CPU is Pentium (R) III 1.2GHz or better

4.3.1.2 Software requirements

4.3.1.2.1 Required basic software

The basic software listed below is required when using this software.

No.	Product name	Remarks
1	Windows Server 2008 Standard without Hyper-V (x86)	The 64-bit version is not supported. The Hyper-V is not supported. The Server Core installation option is not supported.
2	Windows Server 2008 Enterprise without Hyper-V (x86)	
3	Windows Server 2008 Datacenter without Hyper-V (x86)	
4	Windows Server 2003 R2, Standard Edition	includes SP2
5	Windows Server 2003 R2, Enterprise Edition	includes SP2
6	Windows Server 2003, Standard Edition	includes SP1, SP2
7	Windows Server 2003, Enterprise Edition	includes SP1, SP2
8	Windows 2000 Server (SP1 or later version)	-
9	Windows 2000 Advanced Server (SP1 or later version)	-
10	Windows 2000 Professional (SP1 or later version)	-



Note

The notation of Windows operating system products in this chapter:

When referring to products from No.1 to No.3 as a group, "Windows Server 2008" is indicated.
 When referring to products from No.4 to No.7 as a group, "Windows Server 2003" is indicated.

Note that the same method of notation may also be used in other chapters to indicate a different product group.

In addition, the other products notation keeps the word of "Abbreviations" in the "Preface".

4.3.1.2.2 Required software

None.

4.3.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	Excluding Systemwalker Resource Coordinator Virtual server Edition
2	Systemwalker/StorageMGR	All	-
3	Softek Storage Cruiser	All	-
4	Softek SANView	All	-

4.3.1.2.4 Static disk space

For new installations, the following static disk space is required.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	\$INS_DIR (*1)	300	\$INS_DIR means "Program Directory" specified at the Manager installation.
2	\$ENV_DIR (*1)	1	\$ENV_DIR means "Environment Directory" specified at the Manager installation.
3	\$TMP_DIR (*1)	2	\$TMP_DIR means "Work Directory" specified at the Manager installation.

*1: The default directory is C:\Program Files\ETERNUS-SSC when the Windows operating system is installed in drive C.



Note

The all of above directories are needed to operate this software. Don't remove them, even if the Manager installation has been completed.

4.3.1.2.5 Dynamic disk space

The required dynamic disk space is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	\$ENV_DIR(*1)	5 + 1(*A) + 1.2(*B)	\$ENV_DIR means "Environment Directory" specified at the Manager installation.

No.	Directory	Required disk space (Unit : MB)	Remarks
			*A: Configuration definition file *B: Database (MW cooperation) -> Calculated assuming 100 products at a maximum
2	\$TMP_DIR (*1)	1055 + (*E) + 30(*C) + 20(*D)	\$TMP_DIR means "Work Directory" specified at the Manager installation. *C: Log *D: Database *E: Repository for Manager Calculated the space required for databases assuming 1000 servers and two devices for each (12KB * Number of registered servers + 4KB * Number of registered devices)

*1: The default directory is C:\Program Files\ETERNUS-SSC when the Windows operating system is installed in drive C.

Note

The all of above directories are needed to operate this software. Don't remove them, even if the Manager installation has been completed.

Repository for Manager

For Manager, the following amount of memory is required, depending on the numbers of managed storage modes, switches, and storage units.

$$\text{Amount of disk space (MB)} = 1 + [\text{Number of target units}] * 4$$

Additionally, when performance management is being performed, based on the fibre channel switch used to collect the performance information, the type of target (the ETERNUS/GR series), the number of logical units involved, the number of DE (Disk Enclosure), and the number of days for which information is to be collected, the required capacity given below becomes necessary.

Information

The default number of days for collection is seven. The number of secured LUs (Logical Units) is the actual number of LUs the functions of which are secured in order to perform performance management for the ETERNUS/GR series. Performance management is secured in units of 64 LUN for the ETERNUS/GR series. Therefore, when instructed to secure from LUN 15 to 200, the information for the actual LUs 0 to 255 (256 in total) would be secured.

Device	Required disk space (Unit : MB)
ETERNUS8000	<p>The firmware version is previous V11L40: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * \text{number of secured LUs}) * (86400 / \text{performance monitoring interval (seconds)}) + (120 * \text{number of DEs}) + (50 * \text{number of secured LUs})) / 1024$</p> <p>The firmware version is V11L40 or later: $(\text{Number of days to collect} + 1) * (18000 + (90 + 0.4 * \text{number of DEs} + 0.3 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]))) * (86400 / \text{performance monitoring interval (seconds)}) + (120 * \text{number of DEs}) + (50 * (\text{number of secured LUs} + \text{number of secured RAIDGroups[*1]))) / 1024$</p> <p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p>

Device	Required disk space (Unit : MB)
	<p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) (Number of days to collect + 1) * (10.6 + 0.07 * (86400 / performance monitoring interval (seconds))) / 1024</p>
ETERNUS6000	<p>(Number of days to collect + 1) * (9.85 + (0.06 + 13.43 / performance monitoring interval (seconds)) * number of secured LUs[*1] + 1956.45 / performance monitoring interval (seconds))</p> <p>[*1] For ETERNUS6000 disk array device, it is counted as a total number of LUs (Logical Unit) targeted for performance monitoring.</p>
ETERNUS4000	<p>The firmware version is previous V11L40: (Number of days to collect + 1) * (5000 + (30 + 0.4 * number of DEs + 0.3 * number of secured LUs) * (86400 / performance monitoring interval (seconds)) + (120 * number of DEs) + (50 * number of secured LUs)) / 1024</p> <p>The firmware version is V11L40 or later: (Number of days to collect + 1) * (5000 + (30 + 0.4 * number of DEs + 0.3 * (number of secured LUs + number of secured RAIDGroups[*1])) * (86400 / performance monitoring interval (seconds)) + (120 * number of DEs) + (50 * (number of secured LUs + number of secured RAIDGroups[*1]))) / 1024</p> <p>[*1] The "number of secured RAIDGroups" is the number of RAIDGroups created from the secured LUs.</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) (Number of days to collect + 1) * (10.6 + 0.07 * (86400 / performance monitoring interval (seconds))) / 1024</p>
ETERNUS3000 (except models 80 and 100)	<p>(Number of days to collect + 1) * ((0.06 + 11.61 / performance monitoring interval (seconds)) * number of secured LUs + 253.13 / Performance monitoring interval (seconds) + 1.29)</p>
ETERNUS3000 model 80 ETERNUS3000 model 100	<p>(Number of days to collect + 1) * ((0.06 + 11.62 / performance monitoring interval (seconds)) * number of secured LUs + (38.73 / performance monitoring interval (seconds)) + 1.29)</p>
ETERNUS2000	<p>(Number of days to collect + 1) * (140 + (0.7 + 0.2 * number of installed DEs + 0.3 * number of secured LUs) * (86400 / performance monitoring interval (seconds)) + (60 * number of installed DEs) + (50 * number of secured LUs)) / 1024</p> <p>When monitoring the performance for the number of active disks: The following disk space is needed additionally. (On the performance information for the number of active disks, the performance monitoring interval sets 60 seconds if its interval is set to shorter than 60 seconds.) (Number of days to collect + 1) * (10.6 + 0.07 * (86400 / performance monitoring interval (seconds))) / 1024</p>

Device	Required disk space (Unit : MB)
ETERNUS GR740 ETERNUS GR820 ETERNUS GR840	$(\text{Number of days to collect} + 1) * ((0.06 + 11.61 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + 341.95 / \text{performance monitoring interval (seconds)} + 1.67)$
ETERNUS GR720 ETERNUS GR730	$(\text{Number of days to collect} + 1) * ((0.06 + 11.62 / \text{performance monitoring interval (seconds)}) * \text{number of secured LUs} + 138.43 / \text{performance monitoring interval (seconds)} + 0.65)$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 16) PRIMERGY BX600 Fibre Channel Switch Blade PRIMERGY BX600 Fibre Channel Switch Blade(4Gbps) Brocade Fibre Channel Switch (Maximum number of FC ports = 16)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 1.6$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 32) Brocade Fibre Channel Switch (Maximum number of FC ports = 32)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 3.2$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 128) Brocade Fibre Channel Switch (Maximum number of FC ports = 128)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 13$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 256) Brocade Fibre Channel Switch (Maximum number of FC ports = 256)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 26$
ETERNUS SN200 series Fibre Channel switch (Maximum number of FC ports = 384) Brocade Fibre Channel Switch (Maximum number of FC ports = 384)	$(\text{Number of days to collect} + 1) * (30 / \text{performance monitoring interval (seconds)}) * 39$
ETERNUS SN200 MDS series Fibre Channel switch	$(\text{Number of days to collect} + 1) * 0.1 * \text{maximum number of slots supported by device[*1]} * 128 * (30 / \text{performance monitoring interval (seconds)})$ [*1] Use 1 as the maximum number of slots for MDS9120

Example

When securing the performance information of 512LUs on an ETERNUS3000 model 200, at 30 second intervals for 7 days,
 $8 * (30 / 30) * 375 * 512 / 1024 = 1500\text{MB}$ is required.

Additionally, when performance information is output using the performance information operation command, the following disk space is required, depending on the number of LUs of the ETERNUS series and Fibre Channel switches, number of DEs, number of ports that is used to collect performance information, and number of days of performance information output.

Each element (number of installed DEs, installed CA Ports, installed CM Ports, LUs, RAIDGroups, and installed FC Ports) is the number mounted in the device when the command is executed.

Device	Required disk space (Unit : MB)
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	$\text{Number of days to output} * (((0.3 + 0.4 * \text{number of installed DEs} + 0.1 * \text{number of installed CA Ports} + 0.2 * (\text{number of LUs} + \text{number of}$

Device	Required disk space (Unit : MB)
	$\text{RAIDGroups}) * (86400 / \text{performance monitoring interval (seconds)}) + (0.9 + 0.8 * \text{number of installed DEs} + 0.2 * \text{number of installed CA Ports} + 0.4 * (\text{number of LUs} + \text{number of RAIDGroups})) / 1024$
ETERNUS2000	$\text{Number of days to output} * (((0.1 + 0.2 * \text{number of installed DEs} + 0.1 * \text{number of installed CM Ports} + 0.2 * (\text{number of LUs} + \text{number of RAIDGroups})) * (86400 / \text{performance monitoring interval (seconds)}) + (0.2 + 0.3 * \text{number of installed DEs} + 0.2 * \text{number of installed CM Ports} + 0.4 * (\text{number of LUs} + \text{number of RAIDGroups}))) / 1024$
Fibre Channel Switch	$\text{Number of days to output} * (0.1 + \text{number of installed FC ports} + (0.1 * \text{number of installed FC ports})) + (0.1 + \text{number of installed ports} + (0.1 * \text{number of installed FC ports} * (86400 / \text{performance monitoring interval (seconds)}))) / 1024$



See

For the command, refer to "12.3.1.7 Performance information operation command (storageadm perfdata)" in the ETERNUS SF Storage Cruiser User's Guide.

4.3.1.2.6 Memory capacity

The minimum memory required for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	200	-

4.3.2 Advisory notes

- In situations where exclusive software described in "4.3.1.2.3 Exclusive software" is already installed, please uninstall it and then install the ETERNUS SF Storage Cruiser Manager.
- Restrictions in the mixed environment of Systemwalker Centric Manager and Systemwalker Resource Coordinator Virtual server Edition:

ETERNUS SF Storage Cruiser installs SystemWalker MpWksttr service for failure management function. This SystemWalker MpWksttr service is included in the following products, as well.

- Operations management server for Systemwalker Centric Manager
- Division management server for Systemwalker Centric Manager
- Systemwalker Resource Coordinator Virtual server Edition

In the mixed environment of ETERNUS SF Storage Cruiser and these products, SystemWalker MpWksttr service installed by any of the products is shared.

If SystemWalker MpWksttr service has already been installed, ETERNUS SF Storage Cruiser does not install SystemWalker MpWksttr service.

In this mixed environment, if a product (*2) to which Systemwalker Centric Manager (*1) or SystemWalker MpWksttr service is installed is uninstalled, SystemWalker MpWksttr service is deleted (*3). In this case, it is required to install / set up SystemWalker MpWksttr service so that the remaining products can use SystemWalker MpWksttr service. Refer to the manual for any one of the remaining products to install / set up the service.

*1 All Systemwalker Centric Managers including operational environment where SystemWalker MpWksttr service other than operations management server and division management server is not installed.

*2 Product installed first in the mixed environment.

*3 If "SystemWalker MpWksttr service" does not exist in Windows management tool, it is deleted.

If SystemWalker MpWksttr service is deleted by uninstalling ETERNUS SF Storage Cruiser, refer to the manual for other product to install / set up SystemWalker MpWksttr service.

If ETERNUS SF Storage Cruiser is not uninstalled, take the following procedures to install / set up SystemWalker MpWksttr service.

1. Open the command prompt. Execute the command using the OS Administrator's authority.
2. Move to the folder containing the systemWalker MpWksttr service. The \$INS_DIR means "Program Directory" specified at the Manager installation.

```
> cd $INS_DIR¥Manager¥opt¥FJSVswstt¥mpwksttr¥bin
```

3. Execute the installation command:

```
> nwt dsch -install "$INS_DIR¥Manager¥opt¥FJSVswstt"
```

4. Move to the command folder containing the systemWalker MpWksttr service.

```
> cd $INS_DIR¥Manager¥opt¥FJSVswstt¥mpwksttr¥bin
```

5. Set the SNMP trap service.

To co-exist with other operation management software such as ServerView Manager, execute the following command, and set the SNMP trap service. This setting is not required if not co-existing with other operation management software.

```
> mpmts ON
```

6. Restart the system.

For Systemwalker Centric Manager and Systemwalker Resource Coordinator Virtual server Edition, there is no limitation to installation order. However, if the Centric Manager operational environment other than operations management server and division management server has been installed later, take the following procedures to uninstall / set up SystemWalker MpWksttr service independently and then install / set up SystemWalker MpWksttr service according to the said procedures independently.

1. Open the command prompt. Execute the command using the OS Administrator's authority.
2. Move to the directory containing the SystemWalker MpWksttr service. The \$INS_DIR means "Program Directory" specified at the Manager installation.

```
> cd $INS_DIR¥Manager¥opt¥FJSVswstt¥mpwksttr¥bin
```

3. Execute the uninstallation command.

```
> nwt dsch -uninstall
```

4. Restart the system.

- Administrative server LAN port 162

ESC Manager receives SNMP TRAP at LAN port No.162. Therefore, it is required to occupy No.162. If LAN port No.162 is used by other operations management software, installation to other server is required. Pay good attention to this point. However, Systemwalker Centric Manager or Systemwalker Resource Coordinator Virtual server Edition can be installed on the same server. In addition, our software ServerView also uses LAN port No.162. For how to install ServerView Manager to the same server as ESC Manager, refer to Note of Step 11 in "[4.3.3.3 Software installation](#)".

4.3.3 Installation procedure

Procedure to install the Manager is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)" is used for installing the Manager.

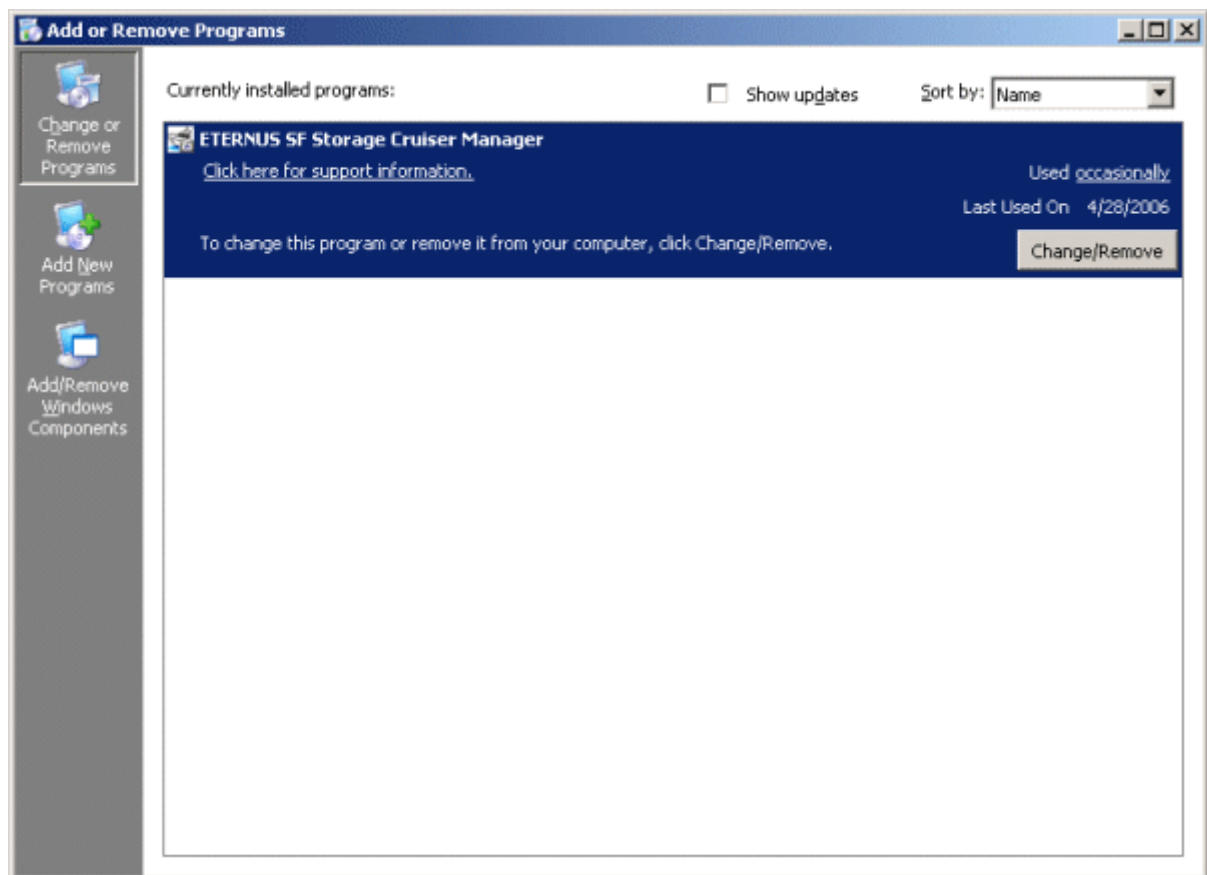
4.3.3.1 Pre-installation preparations

1. Before installing ETERNUS SF Storage Cruiser, please refer to "4.3.1.2.3 Exclusive software", and check whether or not exclusive software is installed.
2. Open the window that can add or remove programs, and check that exclusive softwares and ETERNUS SF Storage Cruiser Manager are not displayed.

The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Programs and Features]

The following is "Add or Remove Programs" window.



3. In the event that software information is displayed as a result of the above operation, this is because the software is already installed. Please uninstall it as outlined below.
 - When required basic software is not installed
Install the basic software.
 - When exclusive software is installed
Uninstall the exclusive software.
 - When ETERNUS SF Storage Cruiser Manager is displayed
Refer to "9.3 [Windows] Manager uninstallation" to uninstall the software.

4.3.3.2 Installation time

Installation time for this software is around 10 minutes.

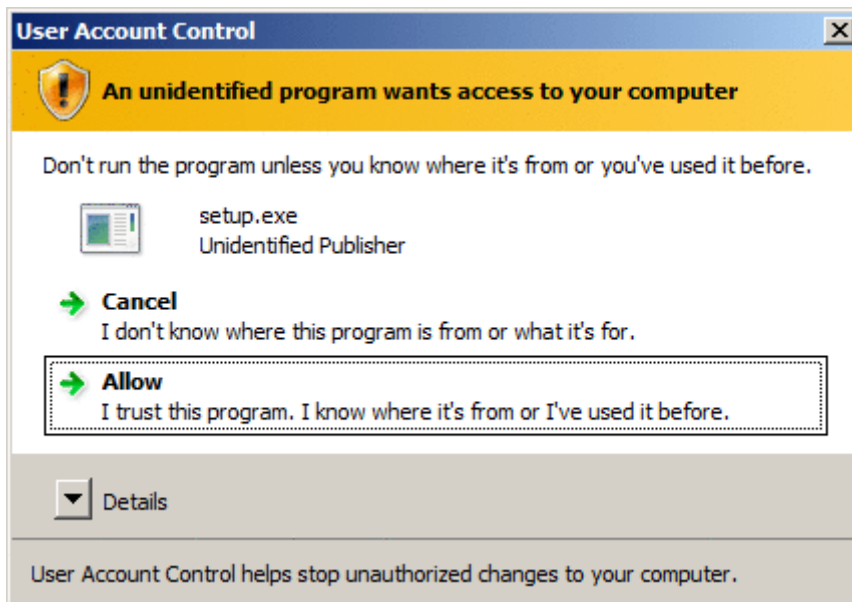
4.3.3.3 Software installation

1. Log on to the Manager installation target system.
Please log on as the OS administrator (Administrator) of the terminal.
2. Insert the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)" into the CD-ROM drive, open the *CD-ROM_drive\manager\Windows\I32* directory using Explorer or another tool, and execute setup.exe. The following window will be displayed.

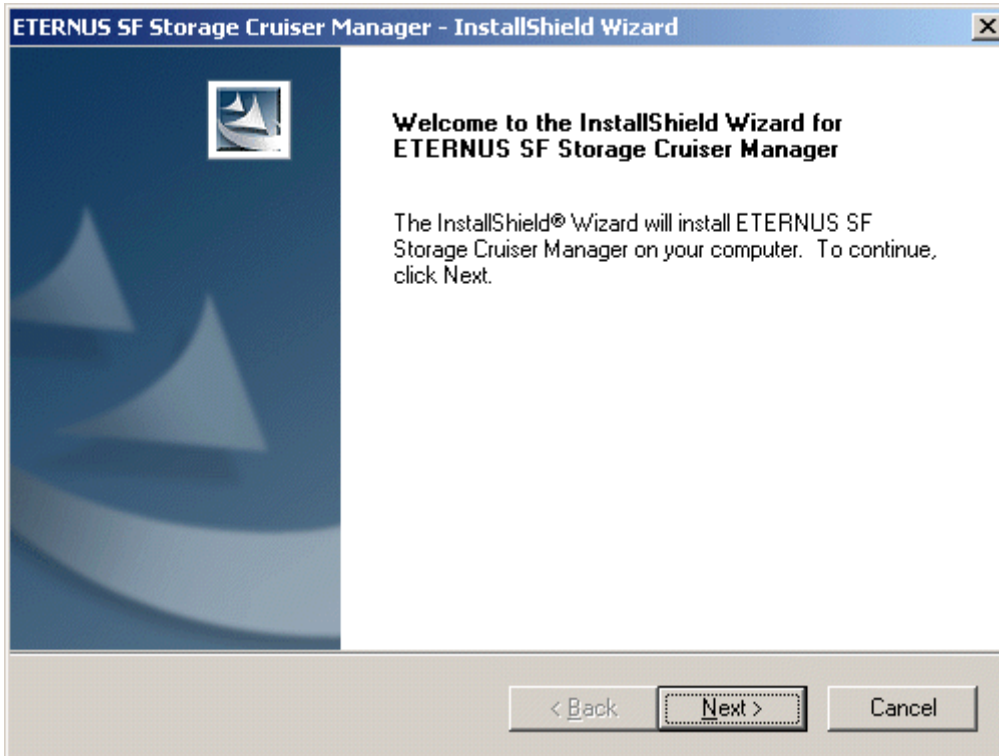
Information

For using Windows Server 2008:

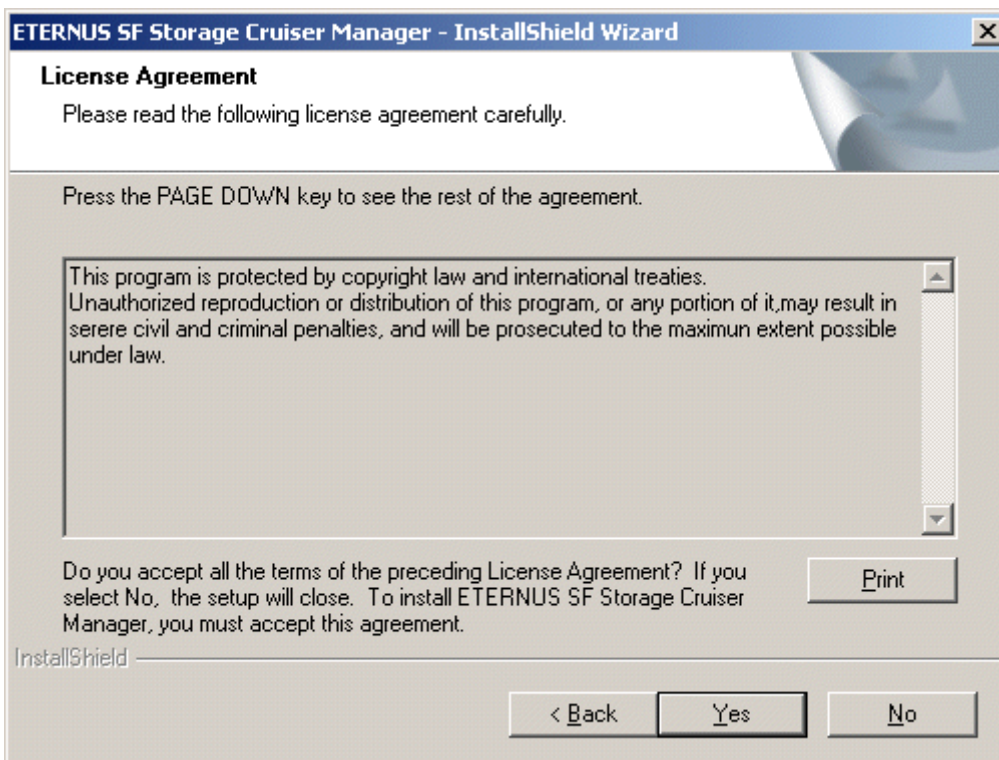
The following warning dialog may be displayed when the setup.exe is executed. In this case, click "Allow".



3. When the InstallShield window appears, confirm the contents and click <Next> button.

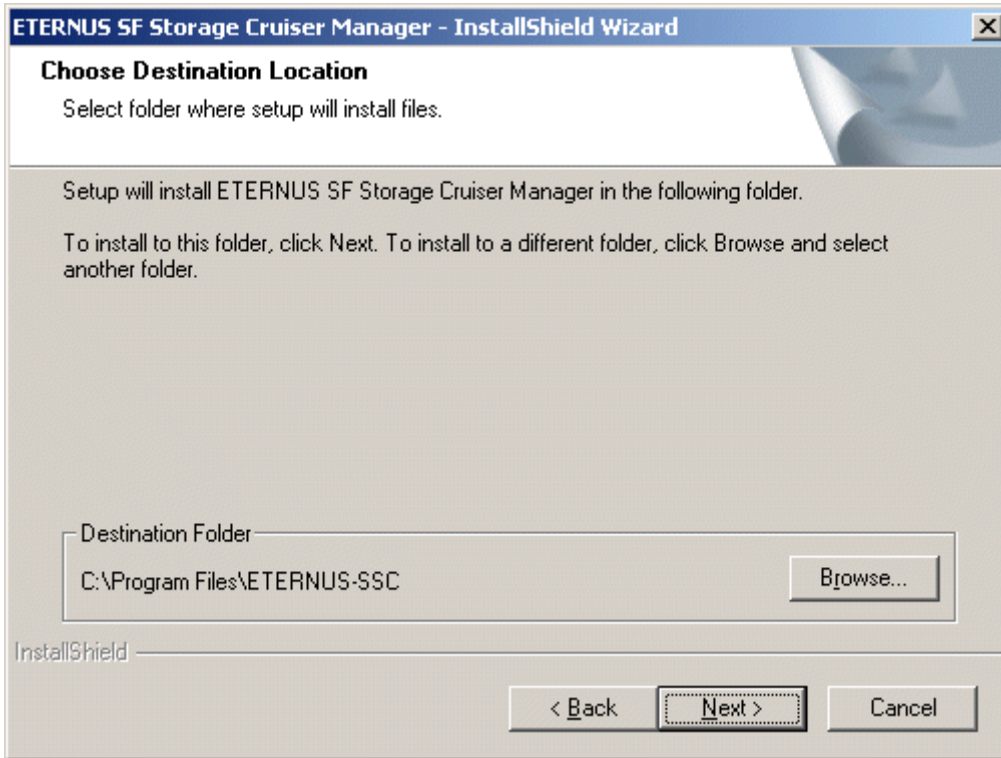


4. On the License Agreement window, accept the agreement.



5. Select the installation directory for ETERNUS SF Storage Cruiser.

In the event that installation is to be performed to a directory other than the default, click <Browse> button and select the directory to install to. When directory specification is completed, click <Next> button.

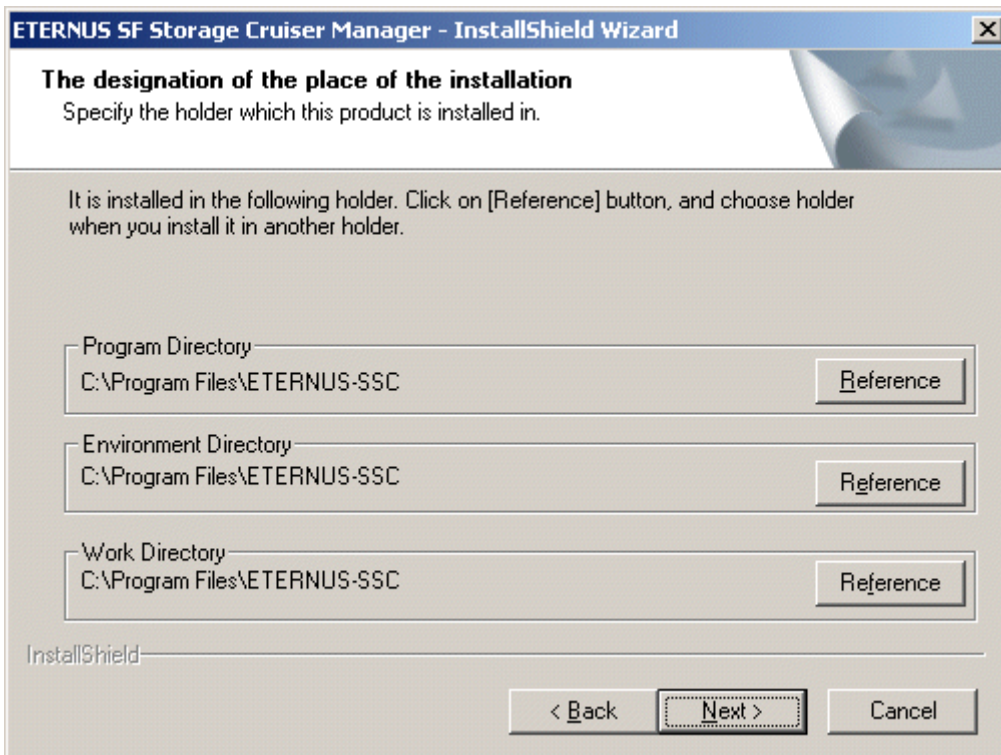


Note

You can specify installation directory names using any printable ASCII characters other than the following symbols.

" | : * ? / . < > , % & ^ = ! ;

- To install in a directory other than the default given in step 5, change the default directory by clicking <Browse> button and select another directory. When all directory specifications are completed, if there are no errors in the configuration details, click <Next> button. To change the settings, click <Back> button.



Note

You can specify installation directory names using any printable ASCII characters other than the following symbols.

" | : * ? / . < > , % & ^ = ! ;

7. Input the port numbers which are necessary for transmissions with manager, clients, and agents.

ETERNUS SF Storage Cruiser Manager - InstallShield Wizard

Registration of port number
Port number is necessary for the communication.

Please input the numbers used to communicate with Agent and Client.

Service name, Port number, Sender / Receiver

sscruisera	4917	administrative server / agent
nfport	23456	administrative server / client

InstallShield

< Back Next > Cancel

The explanation of each tab is as follows:

sscruisera

Set the port numbers which are necessary for transmissions with Manager, and Agent. Please input the same port number when you install Agent. The default port number is "4917".

If default port number is already being used for other purposes, specify an available port number. If the port number was changed, the port number for the same service name set on the other server must also be set to the same value.

nfport

Set the port numbers which are necessary for transmissions with Manager, and Client. Please input the same port number when you install Client. The default port number is "23456".

Please choose an available port number in case that default port is already used by other application.

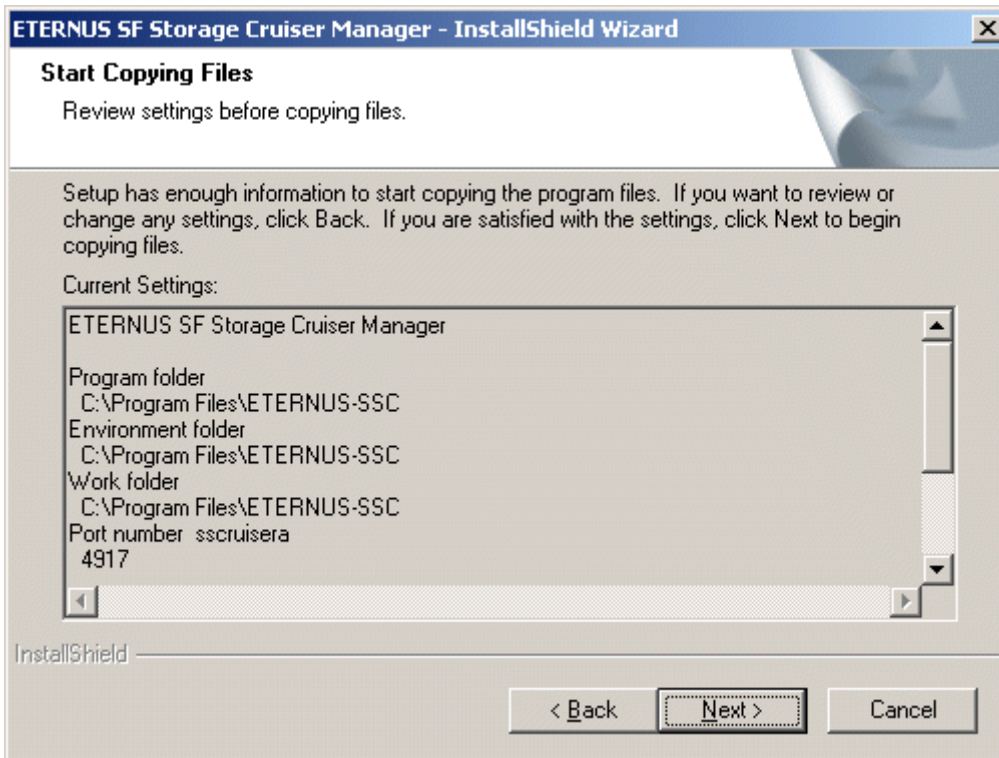
Information

Please confirm the current service file that the port number described above is vacant.

The services file is located in %SystemRoot%\system32\drivers\etc directory. The %SystemRoot% is the directory where the Windows operating system is installed.

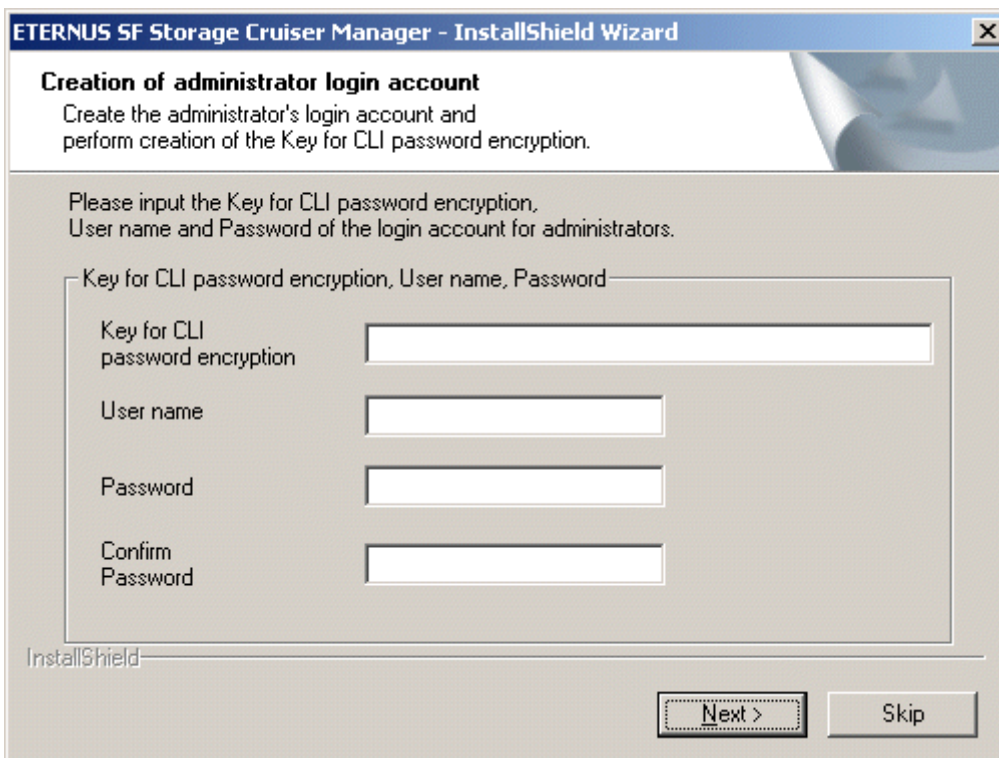
OS	Full path name of services file (default)
Windows 2000	C:\WINNT\system32\drivers\etc\services
Windows Server 2003 Windows Server 2008	C:\Windows\system32\drivers\etc\services

8. Before copy process starts, confirm all the specified content.



9. Copy process starts.

10. Create the administrator's login account and a CLI encryption key in the following window.



The explanation of each tab is as follows:

Key for CLI password encryption

Please enter the CLI encryption key to be used (between 4 and 56 characters).

Single-byte alphanumeric characters and symbols can be used.

Notice that CLI encryption is required for ETERNUS SF Storage Cruiser internal use only, and users don't have to remember the key.

User name

Enter the user name of the login account for administrators (between 1 and 16 characters).

The name must start with an alphabetic character, and alphanumeric characters (including underscores, "_", periods, ".", and hyphens, "-") can be used.

Password

Enter the password of the login account for administrators (between 1 and 16 characters).

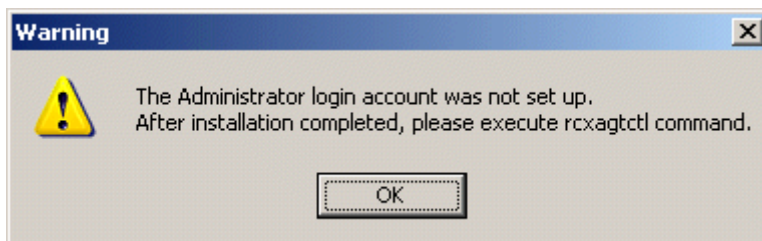
The password is a string of alphanumeric characters and symbols, but can not start with "{".

Confirm Password

For password confirmation, enter the password of the administrator again.

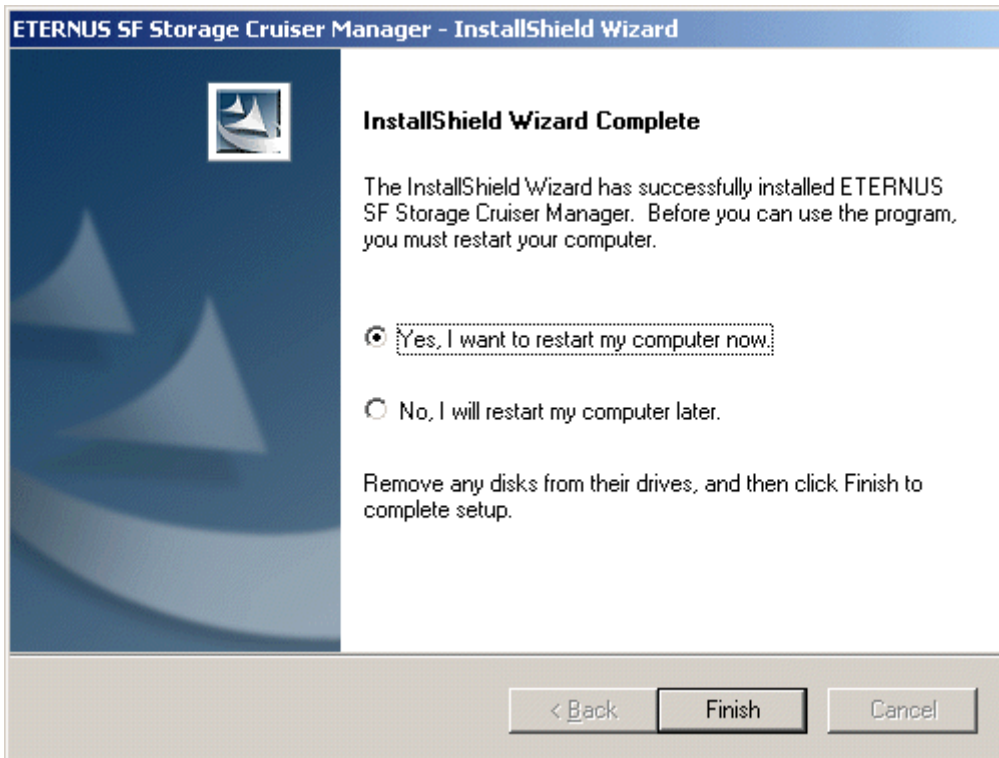
Information

The following message will be displayed, if <Skip> is clicked on the above window.



In this case, create the administrator's login account by referring to "12.3.1.1 Administrator login account creation (rcxcert)" in ETERNUS SF Storage Cruiser User's Guide.

11. After the copy process is complete, the installation will finish. After completing installation, click <Finish> button, and restart the computer.



Note

- When you want this software and the ServerView manager on the same system

Execute the mpmts command with the ON option specified in the `$INS_DIR\Manager\opt\FJSVswstt\bin` directory after installation is complete.

(`$INS_DIR` means "Program Directory" specified at the Manager installation.)

Example When the installation directory is the default:

```
> cd C:\Program Files\ETERNUS-SSC\Manager\opt\FJSVswstt\bin
> mpmts ON
```

When the command has been executed, restart the computer.

- When you execute no use of the ServerView manager and nor this action by mistake

Execute the mpmts command with the OFF option specified in the `$INS_DIR\Manager\opt\FJSVswstt\bin` directory after installation is complete.

Example When the installation directory is the default:

```
> cd C:\Program Files\ETERNUS-SSC\Manager\opt\FJSVswstt\bin
> mpmts OFF
```

When the command has been executed, restart the computer.

The installation is completed. Continuously, execute the post-installation setup by referring to "[4.3.4 Post-installation setup](#)".

4.3.4 Post-installation setup

Procedure to setup the Manager is described below.

4.3.4.1 Services configuration

The Manager operation requires port numbers below to enable it to communicate with the Client or the Agent.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent
nfport	23456/tcp	Client	Manager
ssvscme	7420/tcp 7420/udp	Manager	Virtualization switch

Note

- As well as the above, managers use port number 162/udp for receiving SNMP TRAP from managed devices, including agents.
- The description of "ssvscme" service is required only when using virtual storage management. Please add the port number for virtual storage if necessary.

The services file is located in %SystemRoot%\system32\drivers\etc directory. The %SystemRoot% is the directory where the Windows operating system is installed.

OS	Full path name of services file (default)
Windows 2000	C:\WINNT\system32\drivers\etc\services
Windows Server 2003 Windows Server 2008	C:\Windows\system32\drivers\etc\services

This information reflects the port number that was entered at the point of software installation, in "Registration of port number" window. Check that there are no errors in the information reflected here. When a port number is already in use, specify a vacant port number.

#Service name	Port number/Protocol name
sscruisera	4917/tcp
nfport	23456/tcp

Note

For using Windows Server 2008:

The firewall is enabled in the default configuration of the operating system. For this reason, the settings must be configured so that the following ports, used by Manager to receive data, can pass through the firewall. If a port number is modified, the settings must be changed accordingly.

Service name	Port number / Protocol name
nfport	23456/tcp
snmptrap	162/udp

4.3.5 Upgrading from older products

When the Softek Storage Cruiser Manager or a previous version level of the ETERNUS SF Storage Cruiser Manager has been installed, you can save the setting data and have the current version of the ETERNUS SF Storage Cruiser Manager inherit the saved data.

4.3.5.1 Upgrading from Softek Storage Cruiser

See "[Appendix D Procedure for Upgrading from Softek Storage Cruiser](#)".

4.3.5.2 Upgrading from a previous version level

This section explains how to upgrade from a previous version level of the ETERNUS SF Storage Cruiser.



Before migration, refer to "[Chapter 3 Restrictions and advisory notes](#)" for confirmation.

1. Back up the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to "9.1.1.2.5 Backup of Windows Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to perform backup.

2. Uninstall the previous version level of ETERNUS SF Storage Cruiser Manager.



Refer to the following section in the ETERNUS SF Storage Cruiser Install Guide for the previous version level, for how to uninstall the Manager.

- If the previous version level is 13.0 or 13.1:
Refer to "9.2 [Windows] Manager uninstallation"
- If the previous version level is 13.2:
Refer to "9.3 [Windows] Manager uninstallation"

3. Install the ETERNUS SF Storage Cruiser Manager.



Refer to "4.3 [Windows] Manager", for how to install and set up the Manager.

4. Restore the backup data created by step 1 (the setting data of the previous version level of ETERNUS SF Storage Cruiser Manager).



Refer to "9.1.1.3.5 Restoring Windows Manager" in the ETERNUS SF Storage Cruiser User's Guide, for how to restore.

5. Update the configuration information of the performance management function.

When monitoring the performance for number of active disks:

When the performance management function is used for ETERNUS8000, ETERNUS4000 (except models 80 and 100) and ETERNUS2000, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

When migrating from ETERNUS SF Storage Cruiser 13.0:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS3000 models 80 and 100	V20L85 or later or V30L15 or later
ETERNUS4000 models 80 and 100	V30L15 or later
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V10L50 or later

When migrating from ETERNUS SF Storage Cruiser 13.1 or 13.2:

When the performance management function is used for devices that meet the following conditions, start the Manager, then update the configuration information of those devices by referring to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide.

Storage device	Firmware version
ETERNUS8000 ETERNUS4000 (except models 80 and 100)	V11L40 or later

Information

When migrating from ETERNUS SF Storage Cruiser 13.0 or 13.1, a tool tip displayed on the performance control window tree will show a RAID level of "RAID1+0" as "RAID0+1". The "RAID0+1" is only a different name, referring to RAID configuration, the same as "RAID1+0".

The "RAID1+0" will be displayed by updating the configuration information of the performance control.

Refer to "7.2.11 Updating configuration information" in the ETERNUS SF Storage Cruiser User's Guide, for how to update the configuration information.

Chapter 5 Client installation and setup

The installation and setup of ETERNUS SF Storage Cruiser Clients is described.

5.1 Operating environment

5.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Administrative client (Windows operating systems are as follows) Windows Server 2008 Standard without Hyper-V (x86) Windows Server 2008 Enterprise without Hyper-V (x86) Windows Server 2008 Datacenter without Hyper-V (x86) Windows Vista	Over 1GB memory and CPU is Pentium (R) III 1.2GHz or better
2	Administrative client (Other than above)	Over 512MB memory and CPU is Pentium (R) III 1.2GHz or better

5.1.2 Software requirements

5.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	Windows Server 2008 Standard without Hyper-V (x86)	The 64-bit version is not supported. The Hyper-V is not supported. The Server Core installation option is not supported.
2	Windows Server 2008 Enterprise without Hyper-V (x86)	
3	Windows Server 2008 Datacenter without Hyper-V (x86)	
4	Windows Server 2003, Standard Edition	-
5	Windows Server 2003, Enterprise Edition	-
6	Windows Server 2003 R2, Standard Edition	-
7	Windows Server 2003 R2, Enterprise Edition	-
8	Windows XP Professional	-
9	Windows XP Home Edition	-
10	Windows 2000 Server (SP1 or later)	-
11	Windows 2000 Advanced Server (SP1 or later)	-
12	Windows 2000 Professional (SP1 or later)	-
13	Windows Vista Home Basic	The 64-bit version is not supported.
14	Windows Vista Home Premium	
15	Windows Vista Business	

No.	Product name	Remarks
16	Windows Vista Enterprise	
17	Windows Vista Ultimate	

Note

The notation of Windows operating system products in this chapter:

When referring to products from No.1 to No.3 as a group, "Windows Server 2008" is indicated.

When referring to products from No.4 to No.7 as a group, "Windows Server 2003" is indicated.

Note that the same method of notation may also be used in other chapters to indicate a different product group.

In addition, the other products notation keeps the word of "Abbreviations" in the "Preface".

5.1.2.2 Required Software

The one of software listed below is required when using this software. It is used in the ETERNUS SF Storage Cruiser Client window when calling for specified https (management software, help).

No.	Product name	Package name	Version / Level	Remarks
1	Microsoft Internet Explorer	-	5.5 or later	For using verion 7, it is necessary to apply the latest security update.
2	Netscape Communicator	-	4.7 or later	It is necessary to configure it as the preferred browser on the Windows operating system.

Point

For using Netscape Communicator:

Please be sure to create a help server configuration according to "5.3.1 Configuration for using the Eclipse help system" after performing client installation.

5.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	Excluding Systemwalker Resource Coordinator Virtual server Edition
2	Softek Storage Cruiser	All	-

5.1.2.4 Disk space

In order to perform a new installation or operation, the following disk space is required for the following directory. If necessary, expand the size of the relevant file system.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	\$INS_DIR (*1)	386	\$INS_DIR means "Destination Folder" specified at the Client installation.
2	\$VIS_DIR (*2)	90	This directory will be required for using Windows Server 2008 or Windows Vista.

*1 The default directory is C:\Program Files\ETERNUS-SSC when the Windows operating system is installed in the drive C.

*2 The default directory is C:\ETERNUS-SSC\Client when the Windows operating system is installed in the drive C.

5.1.2.5 Memory capacity

The minimum memory required for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	384	-

5.2 Installation procedure

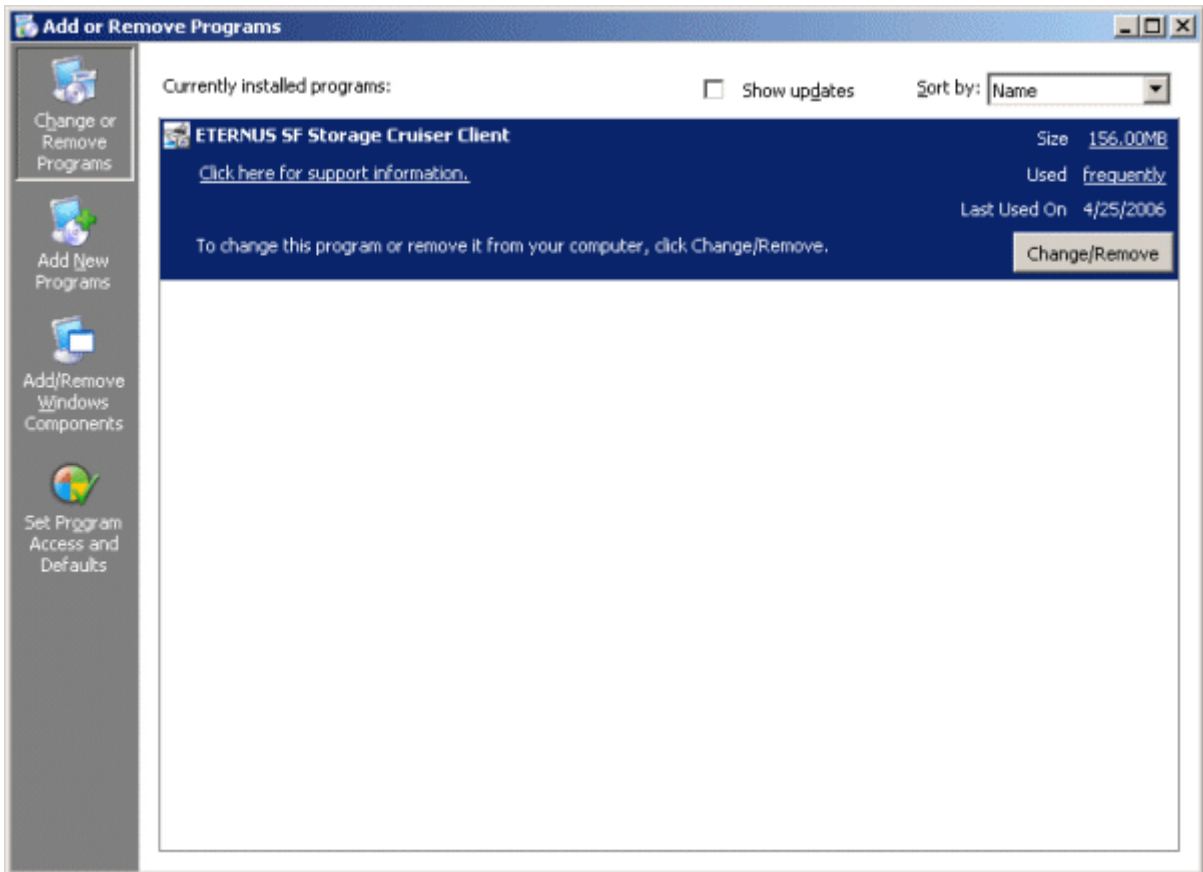
5.2.1 Pre-installation preparations

1. Before installing ETERNUS SF Storage Cruiser, please refer to "5.1.2.3 Exclusive software", and check whether or not exclusive software is installed.
2. Open the window that can add or remove programs, and check that exclusive softwares and ETERNUS SF Storage Cruiser Client are not displayed.

The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Vista	Programs and Features	[Start] - [Control Panel] - [Programs and Features]
Windows XP Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Programs and Features]

The following is "Add or Remove Programs" window.



3. In the event that software information is displayed as a result of the above operation, this is because the software is already installed. Please uninstall it as outlined below.

- If required basic software is not installed
Install the basic software.
- If exclusive software is installed
Uninstall the exclusive software.
- if "ETERNUS SF Storage Cruiser Client" is displayed
Refer to "[8.1 Uninstallation](#)" to uninstall the software.

4. In client installation, Eclipse V3.2.1 is installed simultaneously.

Even if Eclipse is already installed, it can be installed again. In that event, please install it to a directory other than that Eclipse has been installed to.

For installing and using Eclipse, it is necessary to accept the Eclipse license agreement "Common Public License - v1.0" displayed at installation.

Unless agreed to this software cannot be used.

- Eclipse is located in the \$INS_DIR\%Client%\eclipse directory after client installation.
(\$INS_DIR means "Destination Folder" specified at the Client installation.)
- The file containing "Common Public License v1.0" is also found by the \$INS_DIR\%Client%\eclipse\cpl-v10.html.
Please comply with use conditions described in the cpl-v10.html file.

5.2.2 Installation time

Installation time for this software is around 5 minutes.

5.2.3 Software installation

1. Log on to the Client installation target system.

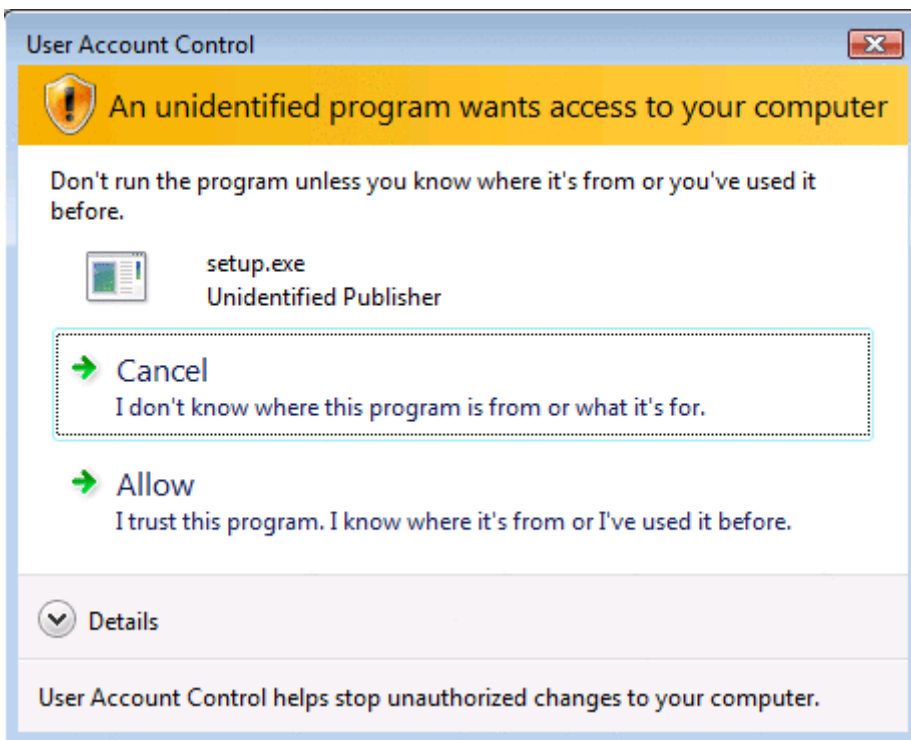
Please log on as the OS administrator (Administrator) of the terminal.

2. Insert the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Client (Windows)", open the CD-ROM drive:¥client¥Windows¥I32 directory using "Explorer" or another tool, and execute setup.exe.

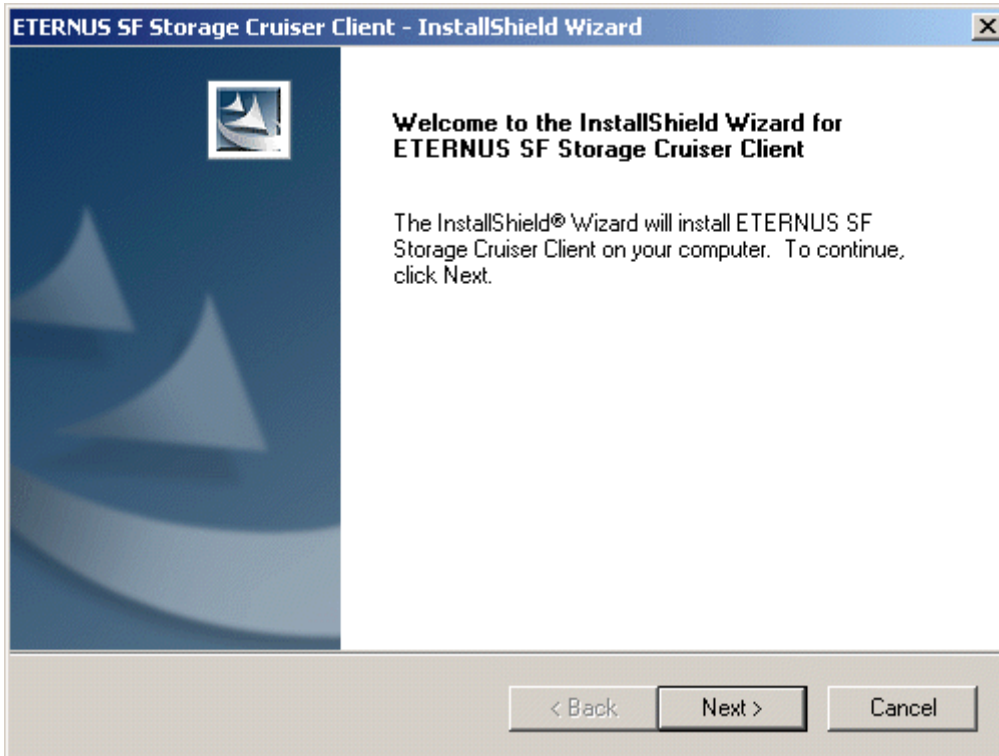
Information

For using Windows Vista or Windows Server 2008:

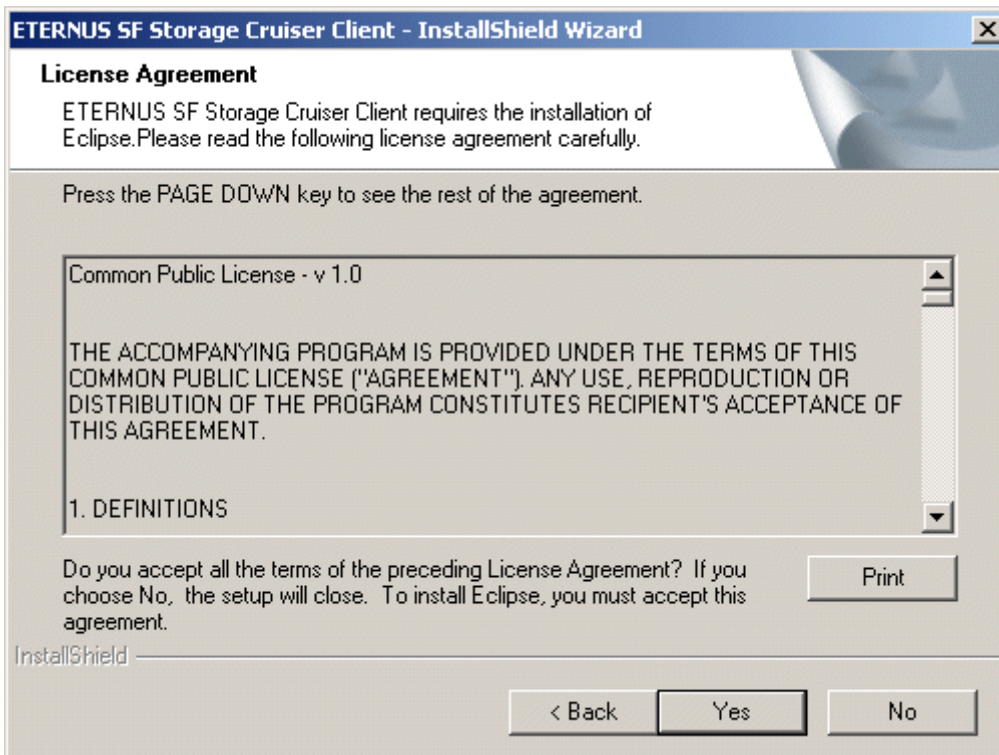
The following warning dialog may be displayed when the setup.exe is executed. In this case, click "Allow".



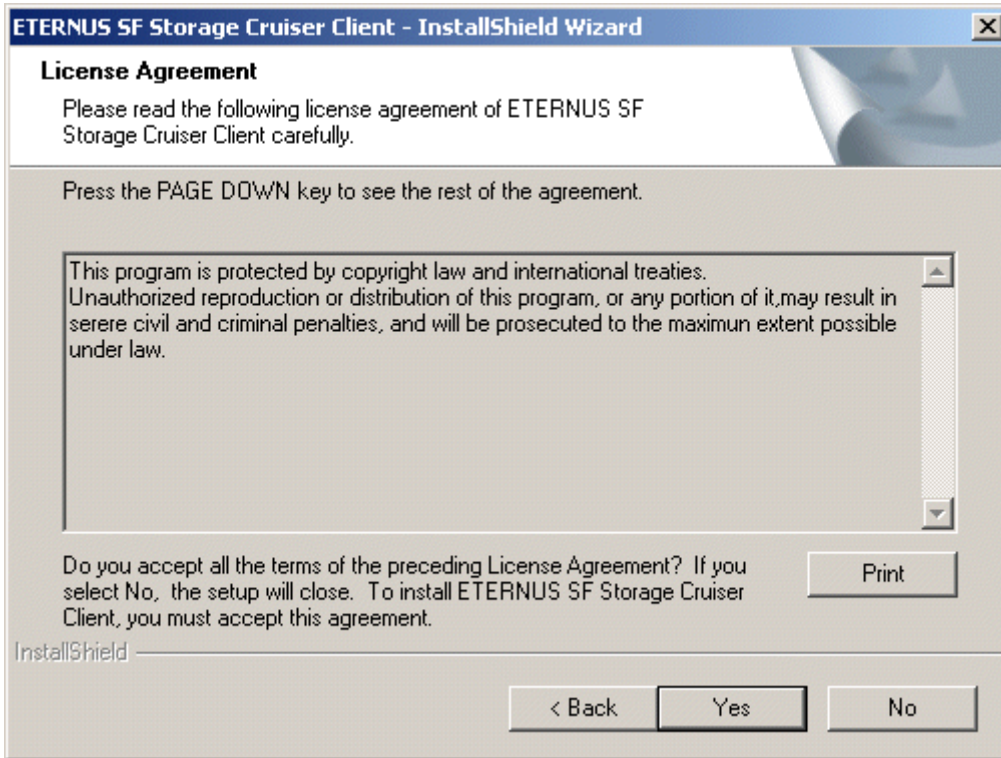
3. When the InstallShield window appears, check the displayed information and then click <Next> button.



4. Accept the Eclipse's "Common Public License - v1.0".
In client installation, Eclipse is installed simultaneously.

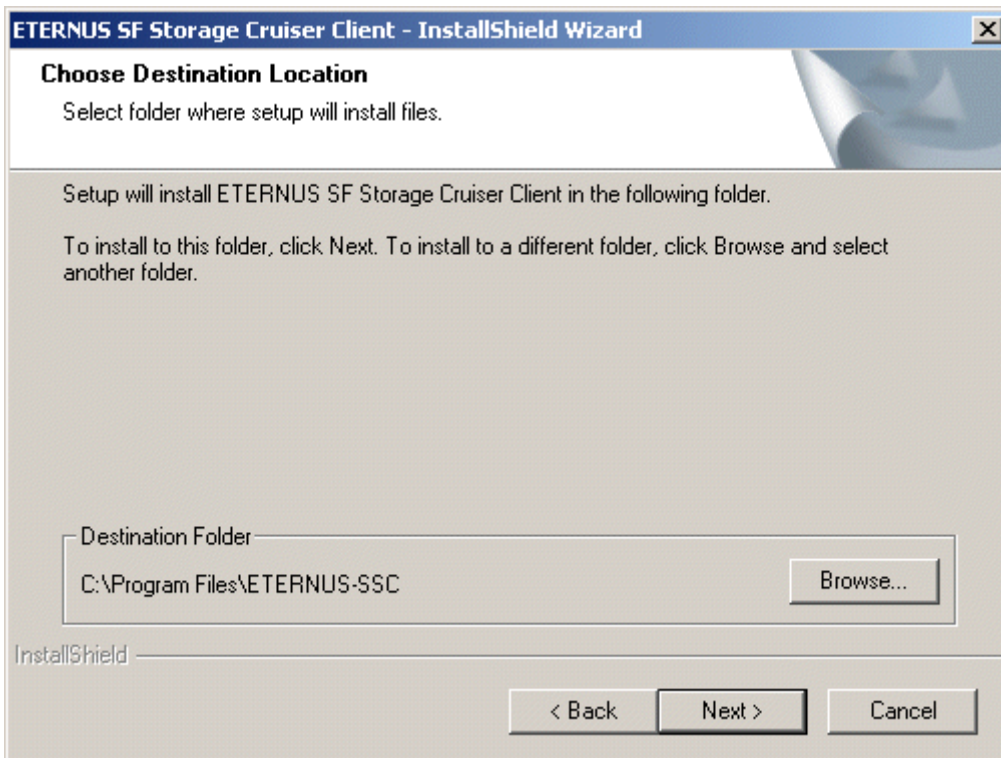


5. On the "License Agreement" window, accept the license.



6. Specify the installation directory.

In the event that installation is to be performed to a directory other than the default, please click <Browse> button, and select the directory to install to. When specification of the directory is complete, please click <Next> button.



7. Specify the installation directory.

To install in a directory other than the default given in step 6, change the default directory by clicking <Browse> button, and select another directory.

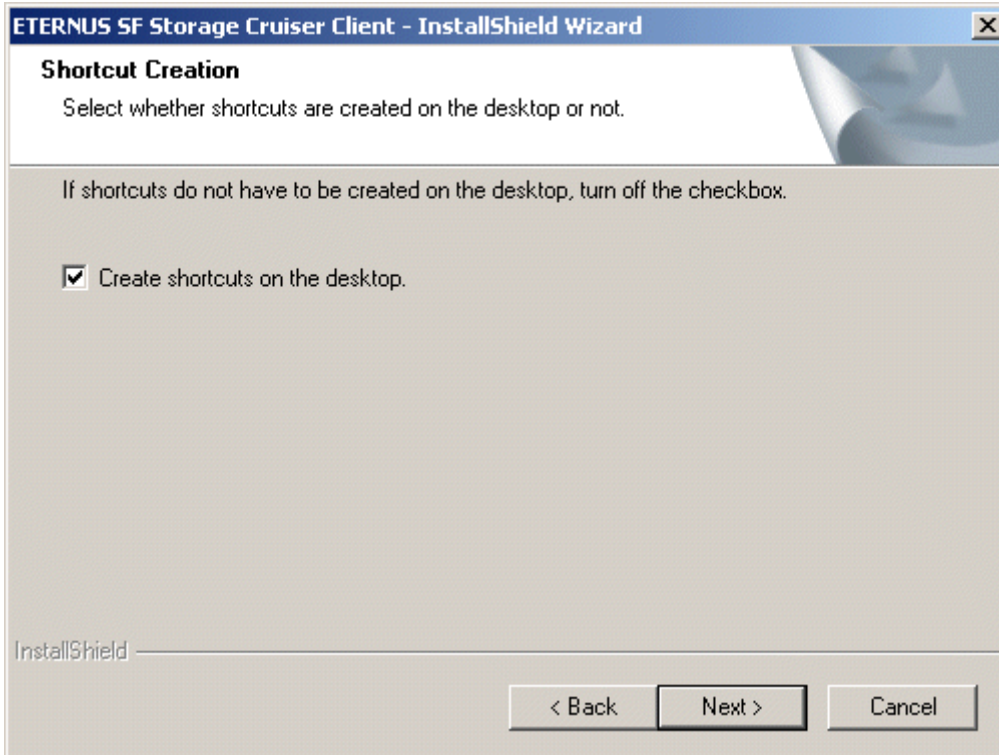
When all directory specifications have been made, if there are no errors in the configuration details, click <Next> button. To change the configuration details, click <Back> button.

 **Note**

You can specify installation directory names using any printable ASCII characters other than the following symbols.

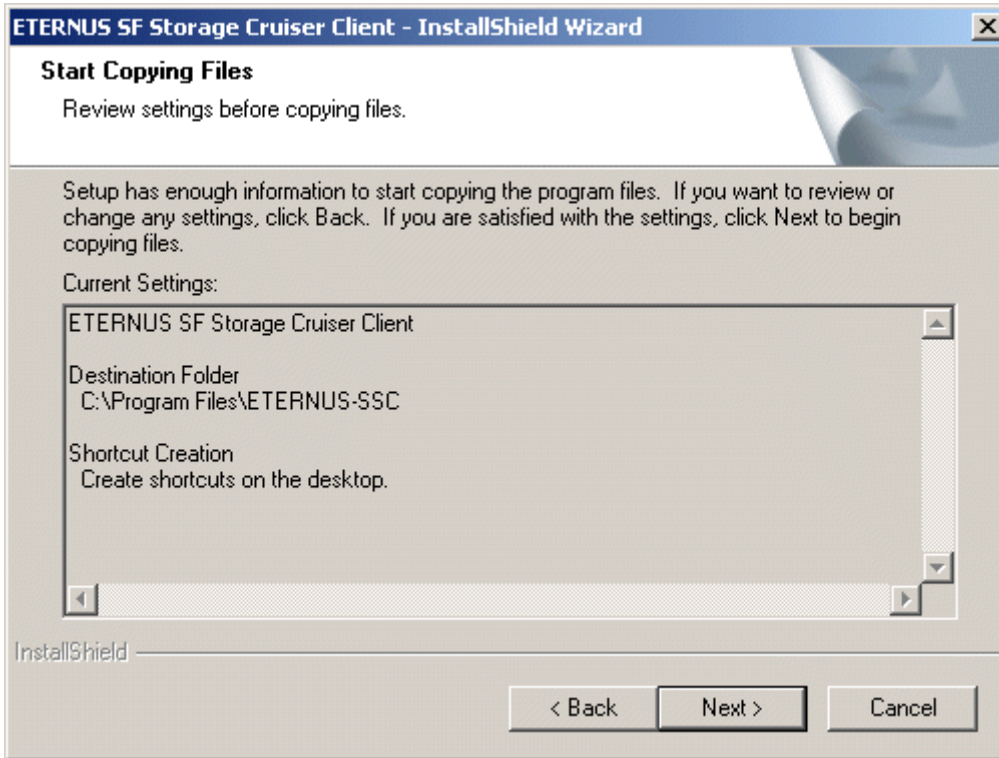
" | : * ? / . < > , % & ^ = ! ;

8. Specify whether or not to create a shortcut on the desktop.

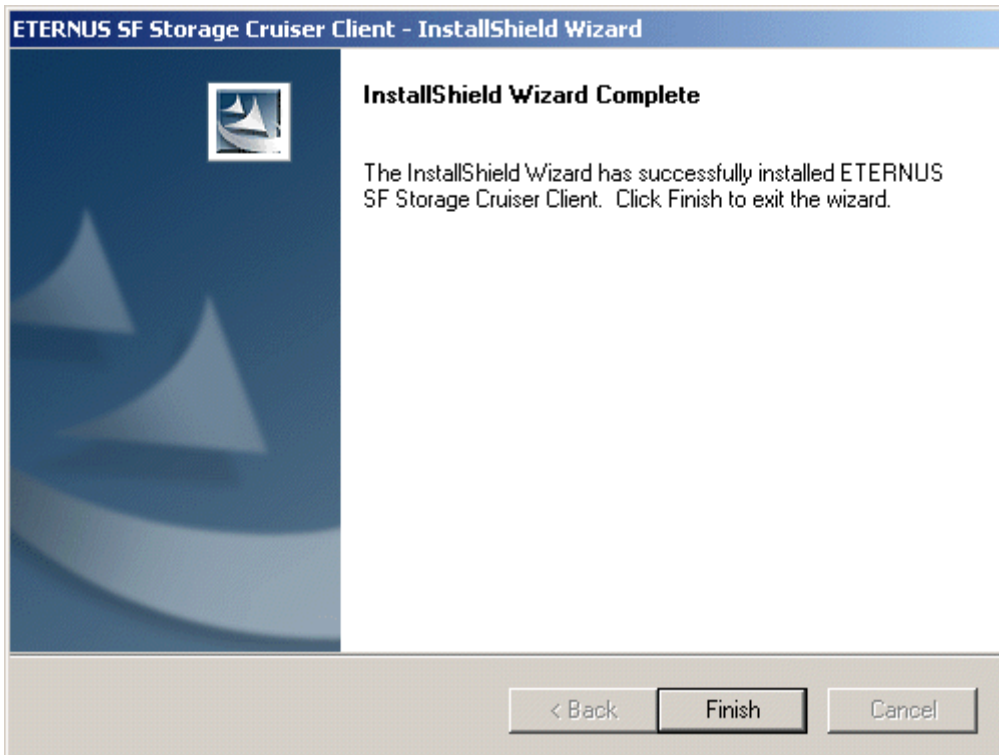


9. Confirm the settings in the "Start Copying Files" window.

If there are no errors in the configuration details, click <Next> button. To change the configuration details, click <Back> button.



10. The copy process will begin. After the copy process is complete, installation of Storage Cruiser will finish.
11. After installation is complete, click <Finish> button to exit the InstallShield.



The installation is completed. Continuously, execute the post-installation setup by referring "[5.3 Post-installation setup](#)".

5.3 Post-installation setup

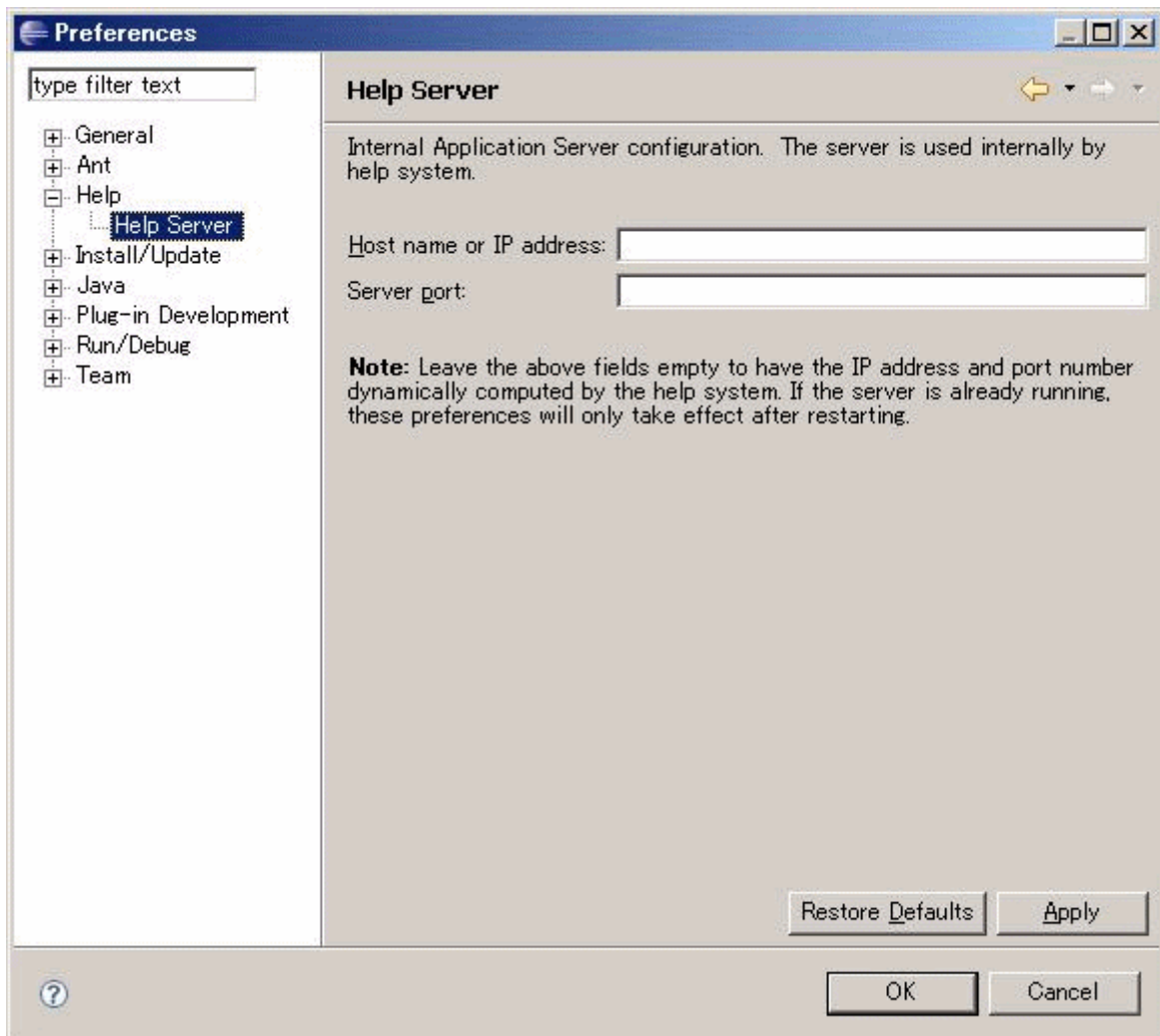
5.3.1 Configuration for using the Eclipse help system

ETERNUS SF Storage Cruiser uses the Eclipse help system for displaying the user's guides. Please perform configuration using the following procedure.

1. On admin client, take one of the following actions:
 - Select [Programs] - [ETERNUS SF Storage Cruiser] - [Storage Cruiser] from the Start menu.
 - Double-click the Storage Cruiser icon on the desktop.

Then, Eclipse will start and the ETERNUS SF Storage Cruiser login window will be displayed.

2. Select Eclipse's menu [Window] - [Preferences].
3. On the "Preferences" dialog, select [Help] - [Help Server] from the tree.
4. The following screen is displayed.
Enter the client's host name or IP address for "Host name of IP address" tab.
It is unnecessary to input for "Server port" tab.



5. Click <Apply> button.
6. Click <OK> button.

5.3.2 Configuration for client manager transmission

Please create a configuration necessary for client manager transmission using the following procedure.

1. Open %SystemRoot%\system32\drivers\etc\hosts file with Notepad.
2. Add the Manager's IP address in hosts file.

Point

A line feed is required in the end of hosts file.

Example

Manager whose IP address is 10.20.30.40 is added as follows.

```
# Copyright (c) 1993-1999 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name.
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com           # source server
#       38.25.63.10      x.acme.com              # x client host

127.0.0.1       localhost
10.20.30.40     scmgr
```

5.3.3 Upgrading from older products

Management information cannot be inherited from previous version levels of the Softek Storage Cruiser Client or the ETERNUS SF Storage Cruiser Client. After uninstalling and then installing the Manager, the user settings must be made again.

5.3.3.1 Upgrading from Softek Storage Cruiser

See "[Appendix D Procedure for Upgrading from Softek Storage Cruiser](#)".

5.3.3.2 Upgrading from a previous version level

Management information for previous version levels of the ESC Clients cannot be inherited. After uninstalling and then installing the Manager, the user settings must be made again.

Chapter 6 Agent installation and setup

This chapter describes the installation and setup of ETERNUS SF Storage Cruiser Agent.

6.1 [Solaris OS] Agent installation and setup

This section describes the installation and setup of Agent on Solaris OS.

6.1.1 Operation Environment

6.1.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Managed server node	All sparc/SUN server

6.1.1.2 Software requirements

6.1.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	Solaris 8 OS	-
2	Solaris 9 OS	-
3	Solaris 10 OS	When zone configuration is used in Solaris 10 OS, this product must be installed in the global zone. This product cannot be installed in the non-global zone.

6.1.1.2.2 Required software

The software listed below is required when using this software.

Before installing the agent, please install the following software.

No.	Product name	Package name	Version	Remarks
1	SNIA HBA API library	-	-	Necessary when managing RAID units with ETERNUS SF Storage Cruiser. Prepare the required libraries for the HBA and OS versions being used. Additionally, the preparation methods vary depending on the HBA and driver versions. Refer to " B.1 SNIA HBA API library installation for Solaris " for details.

6.1.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	-
2	Softek Storage Cruiser	All	-

6.1.1.2.4 Required patches

The patches listed below are required when using this software.

No.	Product name	Patch ID	Remarks
1	Solaris 8 OS	Latest patch	-
2	Solaris 9 OS	Latest patch	-
3	Solaris 10 OS	Latest patch	-

6.1.1.2.5 Static disk space

In order to perform a new installation the following static space volume is required.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	3	-
2	/var	240	-
3	/opt	100	-

6.1.1.2.6 Dynamic disk space

The required dynamic disk space for new installations is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	1	-
2	/var	62	-

6.1.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	300	-

6.1.1.2.8 Swap volume

The swap volume used by this software is indicated.

No.	Swap volume (Unit : MB)	Remarks
1	250	-

6.1.2 Advisory notes

If Systemwalker Resource Coordinator or Softek Storage Cruiser, described in "[6.1.1.2.3 Exclusive software](#)", is already installed, please uninstall it and then install the ETERNUS SF Storage Cruiser Agent.

6.1.3 Installation procedure

The procedure for installing Agents is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)" is used in the installation of Agents.

6.1.3.1 Pre-installation preparations

Check that this software (old version, level etc.) is not installed.

```
# cd CD-ROM_mount_point/agent/Solaris
# ./scagtinstall.sh -check
```

In the event that the message is output as a result of the above operation, take action as follows

- If exclusive software has been installed
Refer to the exclusive software's document, and uninstall it.
- If ETERNUS SF Storage Cruiser Agent has been installed
Refer to "[7.1.1 Stopping agent](#)", and after stopping Agent please uninstall the output package.

Information

Case of installation in the single-user mode:

Check that the local file system is already mounted before the installation. If it is not mounted yet, mount the local file system.

```
# /usr/sbin/mountall -l
```

6.1.3.2 Installation time

Installation time for this software is around 5 minutes.

6.1.3.3 Software installation

1. Login as the super user (root) by the following command.

```
# su
```

2. After performing the procedures in "[6.1.3.1 Pre-installation preparations](#)", move to the directory storing the scagtinstall.sh command.

```
# cd CD-ROM_mount_point/agent/Solaris
```

- Execute the scagtinstall.sh command.

```
# ./scagtinstall.sh
```

- The following message is output. To execute installation enter "y", to discontinue the installation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008
This program will install "ETERNUS SF Storage Cruiser" Agent on your system.

Do you want to continue the installation of this package? [y,n,?,q]
```

- Enter "y" and the installation will commence.

It is necessary to specify the installation directory of Agent.

Specify the program install directory for the following question. The default is "/opt".

```
Please enter install directory. (default: /opt) [?,q]
```

Specify the work directory (log file, temporary file, etc.) for the following question. The default is "/var/opt".

```
Please enter variable configuration directory. (default: /var/opt) [?,q]
```

Specify the environment setting directory for the following question. The default is "/etc/opt".

```
Please enter fixed configuration directory. (default: /etc/opt) [?,q]
```

After all the directories are specified, the installation process will start as follows:

```
Using </opt> as the package base directory.
## Processing package information.
## Processing system information.
## Verifying disk space requirements.
## Checking for conflicts with packages already installed.
## Checking for setuid/setgid programs.

This package contains scripts which will be executed with super-user
permission during the process of installing this package.

Do you want to continue with the installation of <FJSVssage> [y,n,?]
```

- To execute installation enter "y", to discontinue the installation enter a different character.

If enter "y", the installation will be done.

When installation is completed normally, the following message will be displayed.

```
Installing Storage System Agent for ETERNUS SF as <FJSVssage>
...
Installation of <FJSVssage> was successful.
INFO : "ETERNUS SF Storage Cruiser" Agent was installed successfully.
```

If there is an error during installation the following message will be displayed.

```
ERROR : not privileged
or
ERROR : "ETERNUS SF Storage Cruiser" Agent cannot be installed in non-global zone.
or
ERROR : Installing FJSVssage was failed.
```

- If the installation fails, check the install status using the following command.

```
# pkgchk -n FJSVssage
```


If the installation was successful, the package information will be displayed. If any error message is displayed, refer to "7.1 [Solaris OS] Agent uninstallation", delete this software and reinstall it.

The installation is completed. Continuously, execute the post-installation setup by referring to "6.1.4 Post-installation setup".

6.1.4 Post-installation setup

The procedure for managed server node setup is given below. Please perform this procedure in multi-user mode.

6.1.4.1 /etc/services configuration

For operation of the Agent, the following port number is necessary for transmissions with the Manager.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent

Include the following details in the /etc/services file, and declare usage of the port number. In cases where there is no description in the /etc/services file, agent booting will be from 4917 port number.

```
#Service name  Port number/protocol name
sscruisera    4917/tcp
```

Information

When a port number is already in use, please select a vacant port number. In this case, with regards to other ETERNUS SF Storage Cruiser Manager with the same port number configuration, perform the same configuration changes.

6.1.4.2 Agent admin LAN IP address configuration

Configure agent admin LAN IP addresses using the following procedure.

1. It is necessary to stop the agents to perform the configuration of agent admin LAN IP addresses.

When an agent is operating, input the following command and stop the agent.

```
# /opt/FJSVssage/bin/pstorageagt
```

2. Configure the admin LAN IP address on the agent.

```
# /opt/FJSVssage/bin/setagtip -i admin_LAN_IP_address
```

Point

About admin_LAN_IP_address

Specify the IP address of the server node, which is used for communication with the admin server. This is used as the start IP address in order to communicate with the admin server (Manager) via the correct LAN.

- If the managed server node has a single IP address, enter this IP address as the agent admin LAN IP address
- If the managed server node has more than one IP address, enter the start IP address of the server node based on the administrative server LAN IP address.

For example:

Manager IP: 10.10.10.xx

Agent has more than 1 IP like this:

10.10.10.yy

192.168.1.zz

In this case, please input "10.10.10.yy".

- If the managed server node is under firewall or IP of the managed server node is converted by NAT, enter the IP address used for communication between ETERNUS SF Storage Cruiser Manager to the managed server node.



6.1.4.3 SNIA HBA API library installation and configuration

When managing a RAID unit with ETERNUS SF Storage Cruiser it is necessary to install and configure the SNIA HBA API library distributed by the HBA vender.

Please refer to "[B.1 SNIA HBA API library installation for Solaris](#)", and install the SNIA HBA API library.

6.1.4.4 Updating Correlation.ini file

When a SUN HBA is in use, you must update the correlation.ini file that sets the details of the Agent using the following procedure:

```
# cp -p /etc/opt/FJSVssage/Correlation.ini /etc/opt/FJSVssage/Correlation.ini.org
# cp -p /etc/opt/FJSVssage/Correlation.ini.sun /etc/opt/FJSVssage/Correlation.ini
```

6.1.4.5 Rebooting the system

Please reboot the system after finishing configuration. ETERNUS SF Storage Cruiser will automatically commence.

```
# /usr/sbin/shutdown -y -g0 -i6
```

6.1.5 Upgrading from older products

When a Softek Storage Cruiser Agent or an ETERNUS SF Storage Cruiser Agent of a previous version level has been installed, you can save the setting data and have the current version of the ESC Agent inherit the settings.

6.1.5.1 Upgrading from Softek Storage Cruiser

This section describes the procedure for upgrading from the Softek Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the SSC Agent, save the SSC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssagt/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssagt directory
3	User definition information	/opt/FJSVssagt/lib/defusr.dat (If not exist, it is not required for the upgrade.)

2. Uninstall the SSC Agent

To uninstall the SSC Agent, refer to the Softek Storage Cruiser manual.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.1 [Solaris OS] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the /opt/FJSVssage/lib/defusr.dat file.
(This step is not required if the file was not saved in step 1.)

6.1.5.2 Upgrading from previous version levels

This section explains the procedure for upgrading from a previous version level of the ETERNUS SF Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the ESC Agent, save the ESC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssage/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssage directory
3	User definition information	/opt/FJSVssage/lib/defusr.dat (If not exist, it is not required for the upgrade.)

2. Uninstall the previous version level ESC Agent

To uninstall the ESC Agent, refer to the ETERNUS SF Storage Cruiser manual of the previous version level.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.1 [Solaris OS] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved as directed in step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the ESC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the /opt/FJSVssage/lib/defusr.dat file.
(This step is not required if the file was not saved in step 1.)

6.2 [Linux] Agent installation and setup

This section describes the installation and setup of Agent on Linux.

6.2.1 Operation Environment

6.2.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Managed server node	Over 512MB memory and CPU is Pentium(R)III 1GHz or better
2		PRIMEQUEST

6.2.1.2 Software requirements

6.2.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	Red Hat Enterprise Linux AS (v.3 for x86)	A kernel upgrade is necessary. Obtain the kernel upgrade and create a kernel upgrade update CD. In the event that there are required software, such as driver kits, update kits and so on, please prepare them. For required software please refer to the server instruction manuals or the Linux installation guide.
2	Red Hat Enterprise Linux ES (v.3 for x86)	
3	Red Hat Enterprise Linux AS (3.9 for x86)	
4	Red Hat Enterprise Linux ES (3.9 for x86)	
5	Red Hat Enterprise Linux AS (v.4 for x86)	
6	Red Hat Enterprise Linux ES (v.4 for x86)	
7	Red Hat Enterprise Linux AS (v.4 for EM64T)	
8	Red Hat Enterprise Linux ES (v.4 for EM64T)	
9	Red Hat Enterprise Linux AS (v.4 for Itanium)	Only PRIMEQUEST is supported.
10	Red Hat Enterprise Linux AS (4.5 for x86)	A kernel upgrade is necessary. Obtain the kernel upgrade and create a kernel upgrade update CD. In the event that there are required software, such as driver kits, update kits and so on, please prepare them. For required software please refer to the server instruction manuals or the Linux installation guide.
11	Red Hat Enterprise Linux ES (4.5 for x86)	
12	Red Hat Enterprise Linux AS (4.5 for EM64T)	
13	Red Hat Enterprise Linux ES (4.5 for EM64T)	
14	Red Hat Enterprise Linux AS (4.5 for Itanium)	Only PRIMEQUEST is supported.
15	Red Hat Enterprise Linux AS (4.6 for x86)	A kernel upgrade is necessary. Obtain the kernel upgrade and create a kernel upgrade update CD. In the event that there are required software, such as driver kits, update kits and so on, please prepare them.
16	Red Hat Enterprise Linux ES (4.6 for x86)	
17	Red Hat Enterprise Linux AS (4.6 for EM64T)	
18	Red Hat Enterprise Linux ES (4.6 for EM64T)	For required software please refer to the server instruction manuals or the Linux installation guide.
19	Red Hat Enterprise Linux AS (4.6 for Itanium)	Only PRIMEQUEST is supported.
20	Red Hat Enterprise Linux 5 (for x86)	A kernel upgrade is necessary. Obtain the kernel upgrade and create a kernel upgrade update CD. In the event that there are required software, such as driver kits, update kits and so on, please prepare them. For details of the required software please refer to the server instruction manuals or the Linux installation guide.
21	Red Hat Enterprise Linux 5 (for Intel64)	

No.	Product name	Remarks
		When a virtual machine is used, install this software on the administrator operating system. If installed on the guest operating system, the system may not work properly.
22	Red Hat Enterprise Linux 5 (for Intel Itanium)	Only PRIMEQUEST is supported. When a virtual machine is used, install this software on the administrator operating system. If installed on the guest operating system, the system may not work properly.
23	Red Hat Enterprise Linux 5.1 (for x86)	A kernel upgrade is necessary. Obtain the kernel upgrade and create a kernel upgrade update CD. In the event that there are required software, such as driver kits, update kits and so on, please prepare them.
24	Red Hat Enterprise Linux 5.1 (for Intel64)	For details of the required software please refer to the server instruction manuals or the Linux installation guide. When a virtual machine is used, install this software on the administrator operating system. If installed on the guest operating system, the system may not work properly.
25	Red Hat Enterprise Linux 5.1 (for Intel Itanium)	Only PRIMEQUEST is supported. When a virtual machine is used, install this software on the administrator operating system. If installed on the guest operating system, the system may not work properly.
26	SUSE Linux Enterprise Server 9 for EM64T	-

6.2.1.2.2 Required software

The software listed below is required when using this software.

Please install the following software after ESC agent installation.

No.	Product name	Package name	Version	Remarks
1	SNIA HBA API library	-	-	Necessary when managing RAID units with ETERNUS SF Storage Cruiser. Prepare the required libraries for the HBA and OS versions being used. Additionally, the preparation methods vary depending on the HBA and driver versions. Refer to " B.2 SNIA HBA API library installation for Linux/VMware " for details.

6.2.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	Excluding Systemwalker Resource Coordinator Virtual server Edition

No.	Product name	Version / Level	Remarks
2	Softek Storage Cruiser	All	-

6.2.1.2.4 Required patches

The patches listed below are required when using this software.

No.	Product name	Patch ID	Remarks
1	Red Hat Enterprise Linux AS (v.3 for x86)	Bundle correction U05011 or later	-
2	Red Hat Enterprise Linux ES (v.3 for x86)		-
3	Red Hat Enterprise Linux AS (3.9 for x86)	None	-
4	Red Hat Enterprise Linux ES (3.9 for x86)	None	-
5	Red Hat Enterprise Linux AS (v.4 for x86)	Bundle correction U05111 or later	-
6	Red Hat Enterprise Linux ES (v.4 for x86)		-
7	Red Hat Enterprise Linux AS (v.4 for EM64T)	Bundle correction U05121 or later	-
8	Red Hat Enterprise Linux ES (v.4 for EM64T)		-
9	Red Hat Enterprise Linux AS (v.4 for Itanium)	None	-
10	Red Hat Enterprise Linux AS (4.5 for x86)	None	-
11	Red Hat Enterprise Linux ES (4.5 for x86)	None	-
12	Red Hat Enterprise Linux AS (4.5 for EM64T)	None	-
13	Red Hat Enterprise Linux ES (4.5 for EM64T)	None	-
14	Red Hat Enterprise Linux AS (4.5 for Itanium)	None	-
15	Red Hat Enterprise Linux AS (4.6 for x86)	None	-
16	Red Hat Enterprise Linux ES (4.6 for x86)	None	-
17	Red Hat Enterprise Linux AS (4.6 for EM64T)	None	-
18	Red Hat Enterprise Linux ES (4.6 for EM64T)	None	-
19	Red Hat Enterprise Linux AS (4.6 for Itanium)	None	-
20	Red Hat Enterprise Linux 5 (for x86)	None	-
21	Red Hat Enterprise Linux 5 (for Intel64)	None	-
22	Red Hat Enterprise Linux 5 (for Intel Itanium)	None	-
23	Red Hat Enterprise Linux 5.1 (for x86)	None	-
24	Red Hat Enterprise Linux 5.1 (for Intel64)	None	-
25	Red Hat Enterprise Linux 5.1 (for Intel Itanium)	None	-
26	SUSE Linux Enterprise Server 9 for EM64T	None	-

6.2.1.2.5 Static disk space

In order to perform a new installation the following static space volume is required.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/opt	101	-
2	/etc/opt	1	-

No.	Directory	Required disk space (Unit : MB)	Remarks
3	/var/opt	205	-

6.2.1.2.6 Dynamic disk space

The required dynamic disk space for new installations is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	0.3	-
2	/var/opt	48	-

6.2.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	46	-

6.2.2 Advisory notes

If Systemwalker Resource Coordinator or Softek Storage Cruiser, described in "[6.2.1.2.3 Exclusive software](#)", is already installed, please uninstall it and then install the ETERNUS SF Storage Cruiser Agent.

6.2.3 Installation procedure

The procedure for installing Agents is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Linux, VMware)" is used in the installation of Agents.

6.2.3.1 Pre-installation preparations

Check that this software (old version, level etc.) is not installed.

```
# cd CD-ROM_mount_point/agent/RHEL
# /bin/sh ./scagtinstall.sh -check
```

In the event that the message is output as a result of the above operation, take action as follows

- If exclusive software has been installed
Refer to the exclusive software's document, and uninstall it.
- If ETERNUS SF Storage Cruiser Agent has been installed
Refer to "[7.2.1 Stopping agent](#)", and after stopping agent please uninstall the output package.

6.2.3.2 Installation time

Installation time for this software is around 5 minutes.

6.2.3.3 Software installation

6.2.3.3.1 Red Hat Enterprise Linux

1. Login as the super user (root) by the following command.

```
# su
```

2. After performing the procedures in "[6.2.3.1 Pre-installation preparations](#)", move to the directory storing the scagtinstall.sh command.

```
# cd CD-ROM_mount_point/agent/RHEL
```

3. Execute the scagtinstall.sh command.

```
# /bin/sh ./scagtinstall.sh
```

4. The following message is output. To execute installation enter "y", to discontinue the installation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008
This program will install "ETERNUS SF Storage Cruiser" Agent on your system.

Do you want to continue the installation of this package? [y,n,?,q]
```

5. Enter "y" and the installation will commence.

An example of the displayed information is given below.

```
INFO : Starting Installation of ETERNUS SF Storage Cruiser ...
INFO : Installation of <FJSVssage> was successful.
```

When installation is completed normally, the following message will be displayed.

```
INFO : ETERNUS SF Storage Cruiser Agent was installed successfully.
```

If there is an error during installation the following message will be displayed.

```
ERROR : not privileged
or
INFO : Installation is terminated.
or
ERROR : Installing FJSVssage was failed.
```

6. If the installation fails, check the install status using the following command.

```
# rpm -qi FJSVssage
```

If the installation was successful, the package information will be displayed. If any error message is displayed, refer to "[7.2 \[Linux\] Agent uninstallation](#)", delete this software and reinstall it.

The installation is completed. Continuously, execute the post-installation setup by referring to "[6.2.4 Post-installation setup](#)".

6.2.3.3.2 SUSE Linux Enterprise Server 9 for EM64T

1. Login as the super user (root) by the following command.

```
# su
```

2. After performing the procedures in "[6.2.3.1 Pre-installation preparations](#)", move to the directory storing the scagtinstall.sh command.


```
# cd CD-ROM_mount_point/agent/SLES/pkg/SLES9EM64T
```

3. Execute the following command.

```
# rpm -ivh ./FJSVssage-13.3.0-1.x86_64.rpm
```

4. If the installation fails, check the install status using the following command.

```
# rpm -qi FJSVssage
```

If the installation was successful, the package information will be displayed. If any error message is displayed, refer to "[7.2 \[Linux\] Agent uninstallation](#)", delete this software and reinstall it.

The installation is completed. Continuously, execute the post-installation setup by referring to "[6.2.4 Post-installation setup](#)".

6.2.4 Post-installation setup

The procedure for managed server node setup is given below. Please perform this procedure in multi-user mode.

6.2.4.1 /etc/services configuration

For operation of the agent, the following port number is necessary for transmissions with the manager.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent

Include the following details in the /etc/services file, and declare usage of the port number. In cases where there is no description in the /etc/services file, agent booting will be from 4917 port number.

```
#Service name  Port number/protocol name
sscruisera     4917/tcp
```

Information

When a port number is already in use, please select a vacant port number. In this case, with regards to other ETERNUS SF Storage Cruiser Manager with the same port number configuration, perform the same configuration changes.

6.2.4.2 Agent admin LAN IP address configuration

Configure agent admin LAN IP addresses using the following procedure.

1. It is necessary to stop the agents to perform the configuration of agent admin LAN IP addresses.

When an agent is operating, input the following command and stop the agent.

```
# /opt/FJSVssage/bin/pstorageagt
```

2. Configure the admin LAN IP address on the agent.

```
# /opt/FJSVssage/bin/setagtip -i admin_LAN_IP_address
```

Point

About admin_LAN_IP_address

Specify the IP address of the server node, which is used for communication with the admin server. This is used as the start IP address in order to communicate with the admin server (Manager) via correct LAN.

- If the managed server node has a single IP address, enter this IP address as the agent admin LAN IP address
- If the managed server node has more than one IP address, enter the start IP address of the server node based on the administrative server LAN IP address.

For example:

Manager IP: 10.10.10.xx

Agent has more than 1 IP like this:

10.10.10.yy

192.168.1.zz

In this case, please input "10.10.10.yy".

- If the managed server node is under firewall or IP of the managed server node is converted by NAT, enter the IP address used for communication between ETERNUS SF Storage Cruiser's manager and the managed server node.



6.2.4.3 SNIA HBA API library installation and configuration

When managing a RAID unit with ETERNUS SF Storage Cruiser it is necessary to install and configure the SNIA HBA API library distributed by the HBA vender.

Please refer to "[B.2 SNIA HBA API library installation for Linux/VMware](#)", and install the SNIA HBA API library.

6.2.4.4 Rebooting the system

Please reboot the system after finishing configuration. ETERNUS SF Storage Cruiser will automatically commence.

```
# /sbin/shutdown -r now
```

6.2.5 Upgrading from older products

When a Softek Storage Cruiser Agent or an ETERNUS SF Storage Cruiser Agent of a previous version level has been installed, you can save the setting data and have the current version level of the ESC Agent inherit the settings.

6.2.5.1 Upgrading from Softek Storage Cruiser

This section describes the procedure for upgrading from the Softek Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the SSC Agent, save the SSC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssagt/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssagt directory
3	User definition information	/opt/FJSVssagt/lib/defusr.dat (If not exist, it is not required for the upgrade.)

2. Uninstall the SSC Agent

To uninstall the SSC Agent, refer to the Softek Storage Cruiser manual.

3. Install and set up the ESC Agent.

To install and set up the ESC Agent, refer to "6.2 [Linux] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the /opt/FJSVssage/lib/defusr.dat file.
(This step is not required if the file was not saved in step 1.)

6.2.5.2 Upgrading from previous version levels

This section explains the procedure for upgrading from a previous version level of the ETERNUS SF Storage Cruiser Agent.



Note

Since Agent for Red Hat Enterprise Linux 5 does not support PG-FCD101/102 as an HBA to be managed, it does not support transition from Agent for RHEL3 or RHEL4 managing PG-FCD101/102 to Agent for Red Hat Enterprise Linux 5.

1. Save the Agent setting data

Before uninstalling the ESC Agent, save the ESC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssage/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssage directory
3	User definition information	/opt/FJSVssage/lib/defusr.dat (If not exist, it is not required for the upgrade.)

2. Uninstall the previous version level ESC Agent.

To uninstall the ESC Agent, refer to the ETERNUS SF Storage Cruiser manual of the previous version level.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.2 [Linux] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved as directed in step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the ESC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the /opt/FJSVssage/lib/defusr.dat file.
(This step is not required if the file was not saved in step 1.)

6.3 [Windows] Agent installation and setup

This section describes the installation and setup of Agent on Windows operating system.

6.3.1 Operation Environment

6.3.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Managed server node	Over 256MB memory and CPU is Pentium(R)III 1GHz or better
2		PRIMEQUEST

6.3.1.2 Software requirements

6.3.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	Windows Server 2008 Standard without Hyper-V	The 32-bit/64-bit versions are supported. The Hyper-V is not supported. The Server Core installation option is not supported.
2	Windows Server 2008 Enterprise without Hyper-V	
3	Windows Server 2008 Datacenter without Hyper-V	
4	Windows Server 2003, Standard Edition	includes SP1, SP2
5	Windows Server 2003 R2, Standard Edition	includes SP2
6	Windows Server 2003, Enterprise Edition	includes SP1, SP2
7	Windows Server 2003 R2, Enterprise Edition	includes SP2
8	Windows Server 2003, Standard x64 Edition	includes SP2
9	Windows Server 2003 R2, Standard x64 Edition	includes SP2
10	Windows Server 2003, Enterprise x64 Edition	includes SP2
11	Windows Server 2003 R2, Enterprise x64 Edition	includes SP2
12	Windows Server 2003, Enterprise Edition for Itanium-based Systems	Supports SP1 and SP2
13	Windows Server 2003, Datacenter Edition for Itanium-based Systems	Only PRIMEQUEST is supported.
14	Windows 2000 Server (SP1 or later)	-
15	Windows 2000 Advanced Server (SP1 or later)	-
16	Windows 2000 Professional (SP1 or later)	-



Note

The notation of Windows operating system products in this chapter:

When referring to products from No.1 to No.3 as a group, "Windows Server 2008" is indicated.

When referring to products from No.4 to No.13 as a group, "Windows Server 2003" is indicated.

Note that the same method of notation may also be used in other chapters to indicate a different product group.

In addition, the other products notation keeps the word of "Abbreviations" in the "Preface".

6.3.1.2.2 Required software

The software listed below is required when using this software.
After installing the agent, please install the following software.

No.	Product name	Package name	Version	Remarks
1	SNIA HBA API library	-	-	Necessary when managing RAID units with ETERNUS SF Storage Cruiser. Prepare the required libraries for the HBA and OS versions being used. Additionally, the preparation methods vary depending on the HBA and driver versions. Refer to " B.3 SNIA HBA API library installation for Windows " for details.

6.3.1.2.3 Essential patches

The following patches are required to use this software.

No.	Product name	Modification program	Remarks
1	Windows Server 2003, Enterprise Edition	KB922772	-
2	Windows Server 2003 R2, Enterprise Edition	KB922772	-
3	Windows Server 2003, Enterprise x64 Edition	KB922772	-
4	Windows Server 2003 R2, Enterprise x64 Edition	KB922772	-
5	Windows Server 2003, Enterprise Edition for Itanium-based Systems	KB922772	-
6	Windows Server 2003, Datacenter Edition for Itanium-based Systems	KB922772	A support contract is required for Fujitsu to provide the modification programs to customers using this product.

6.3.1.2.4 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	Excluding Systemwalker Resource Coordinator Virtual server Edition
2	Softek Storage Cruiser	All	-

6.3.1.2.5 Static disk space

In order to perform a new installation the following static space volume is required.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	\$INS_DIR (*1)	100	\$INS_DIR means "Program Directory" specified at the Agent installation.

No.	Directory	Required disk space (Unit : MB)	Remarks
2	\$ENV_DIR (*1)	1	\$ENV_DIR means "Environment Directory" specified at the Agent installation.
3	\$TMP_DIR (*1)	1	\$TMP_DIR means "Work Directory" specified at the Agent installation.

*1: The default directory is C:\Program Files\ETERNUS-SSC when the Windows operating system is installed in drive C.

Note

The all of above directories is needed to operate this software. Don't delete them, even if the Agent installation has been completed.

6.3.1.2.6 Dynamic disk space

The required dynamic disk space for new installations is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	\$ENV_DIR (*1)	0.1	\$ENV_DIR means "Environment Directory" specified at the Agent installation.
2	\$TMP_DIR (*1)	20	\$TMP_DIR means "Work Directory" specified at the Agent installation.

*1: The default directory is C:\Program Files\ETERNUS-SSC when the Windows operating system is installed in drive C.

Note

The all of above directories is needed to operate this software. Don't delete them, even if the Agent installation has been completed.

6.3.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	256	-

6.3.2 Advisory notes

If Systemwalker Resource Coordinator or Softek Storage Cruiser, described in "[6.3.1.2.4 Exclusive software](#)", is already installed, please uninstall it and then install the ETERNUS SF Storage Cruiser Agent.

6.3.3 Installation procedure

The procedure for installing Agents is described below.

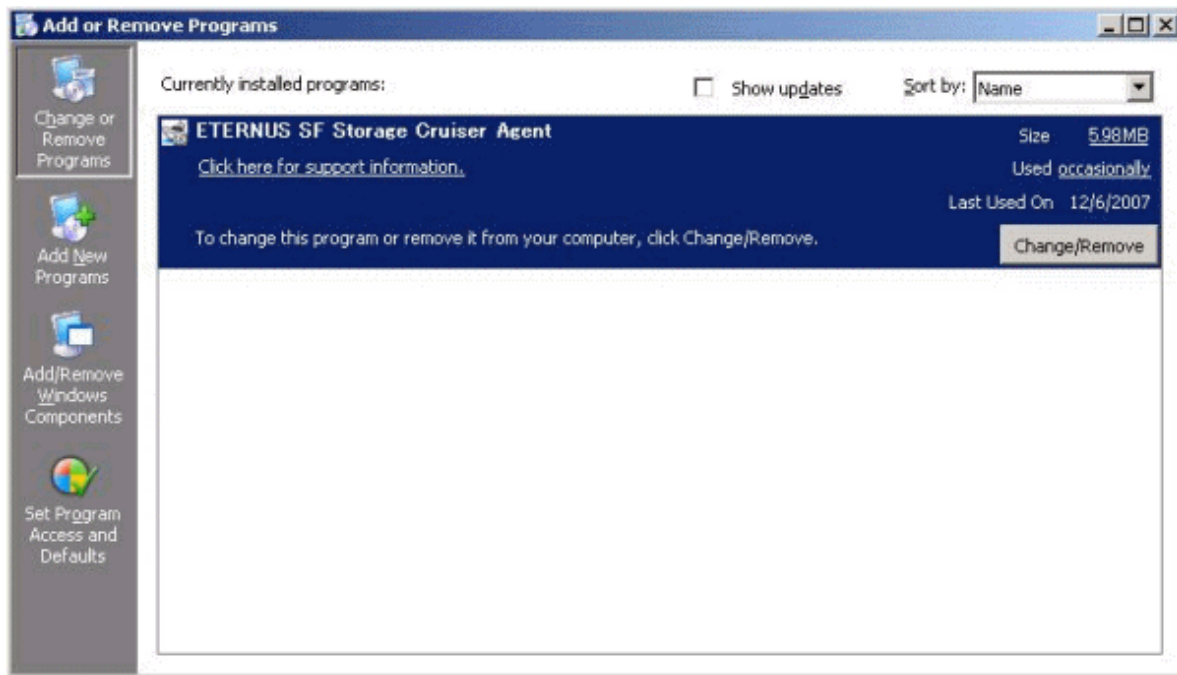
The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)" is used in the installation of Agents.

6.3.3.1 Pre-installation preparations

Open the window that can add or remove programs, and check that ETERNUS SF Storage Cruiser Manager is not displayed. The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Programs and Features]

The following is "Add or Remove Programs" window.



If "ETERNUS SF Storage Cruiser Agent" is displayed as above, please refer to "7.3.1 Stopping agent", and after stopping the agent please uninstall and reinstall it.

6.3.3.2 Installation time

Installation time for this software is around 5 minutes.

6.3.3.3 Software installation

1. Log on to the Agent installation target system.

Please log on as the OS administrator (Administrator) of the terminal.

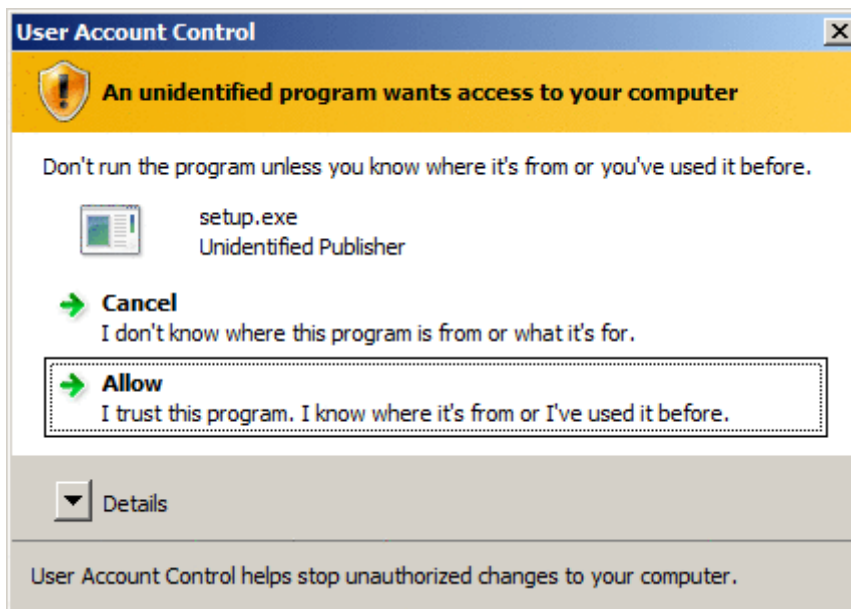
2. Insert the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)" into the CD-ROM drive, open the directory described as below, using Explorer or another tool, and execute setup.exe.

OS	Directory
Windows Server 2003, Enterprise Edition for Itanium-based Systems Windows Server 2003, Datacenter Edition for Itanium-based Systems	<i>CD-ROM_drive:\agent\Windows\IPF</i>
The other products	<i>CD-ROM_drive:\agent\Windows\I32_x64</i>

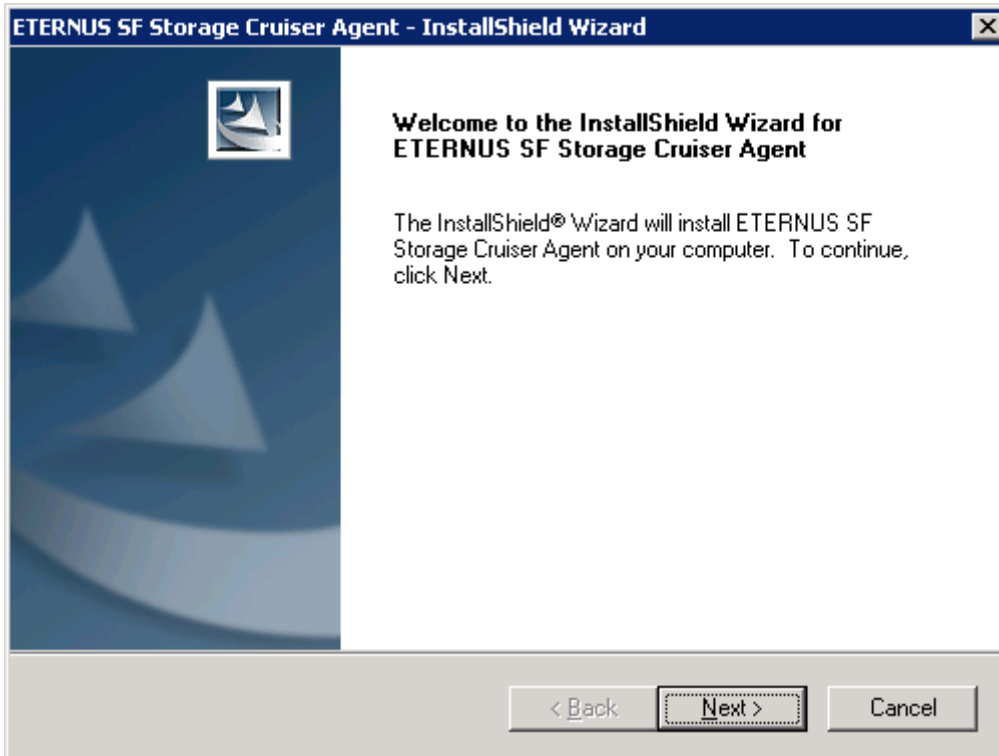
Information

For using Windows Server 2008:

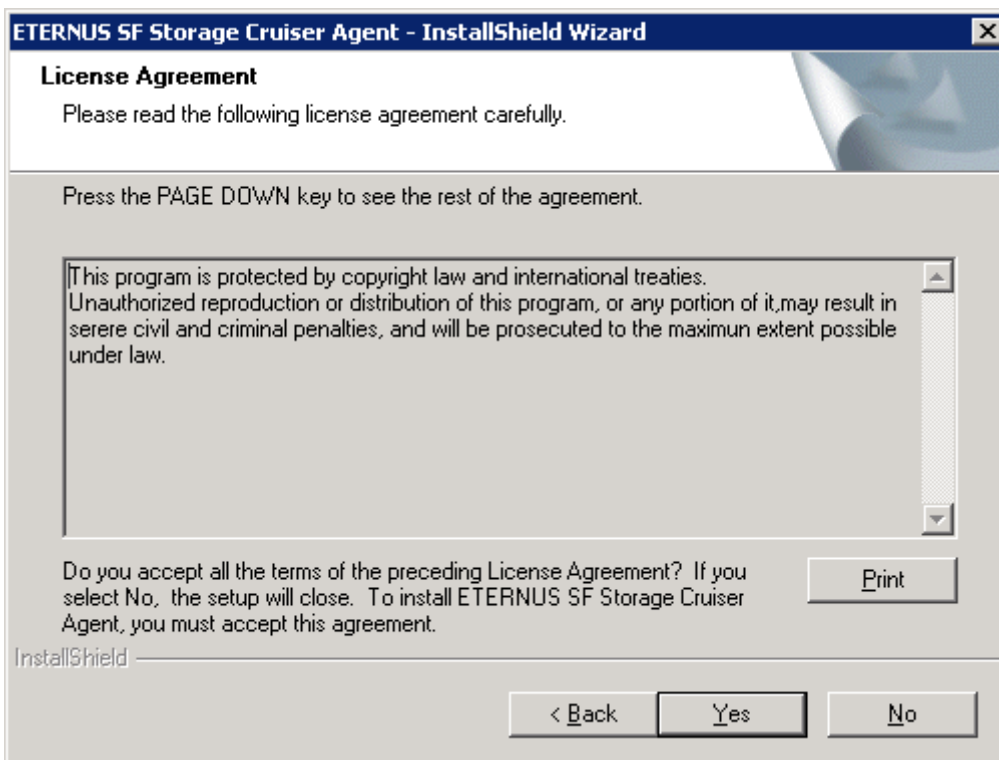
The following warning dialog may be displayed when the setup.exe is executed. In this case, click "Allow".



3. When the InstallShield window appears, check the displayed information and then click <Next> button.

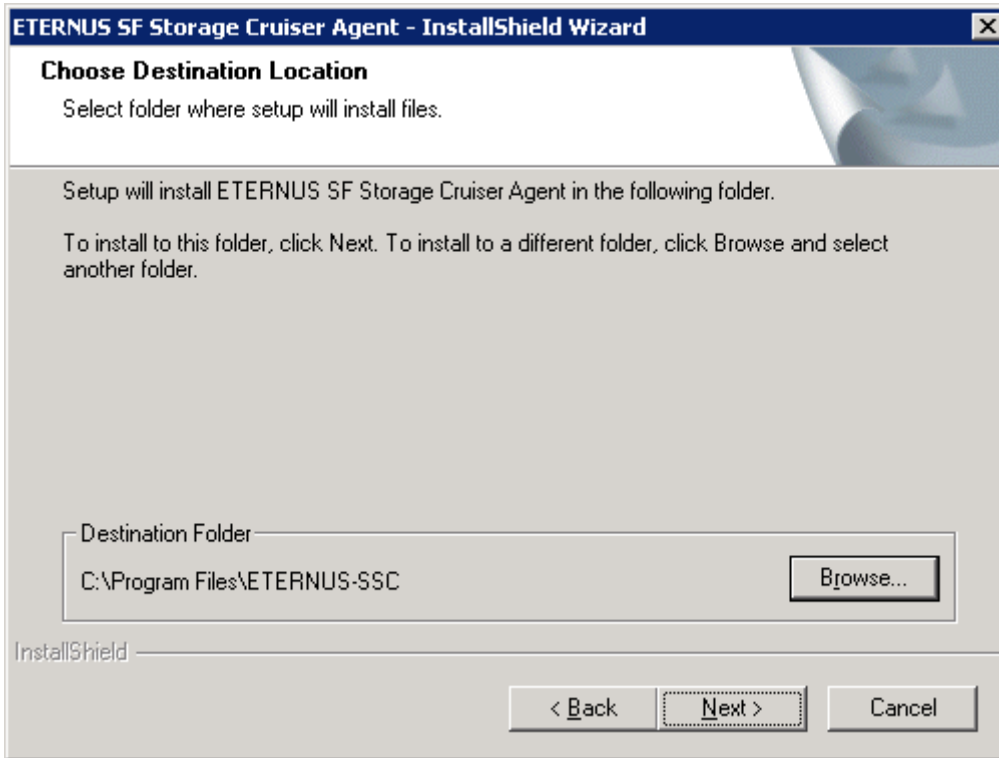


4. On the "License Agreement" window, accept the agreement.



5. Specify the installation directory.

In the event that installation is to be performed to a directory other than the default, click <Browse> button and select the directory to install to. When directory specification is completed, click <Next> button.



Note

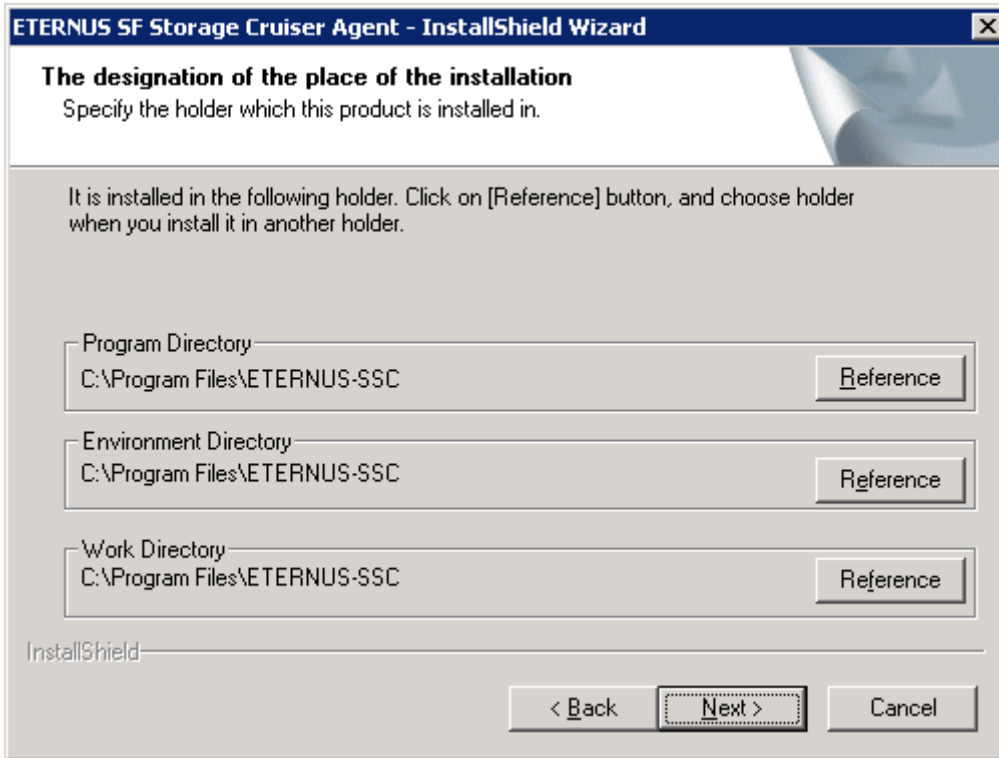
You can specify installation directory names using any printable ASCII characters other than the following symbols.

" | : * ? / . < > , % & ^ = ! ;

6. Specify the installation directory.

To install in a directory other than the default given in step 5, change the default directory by clicking <Browse> button, and select another directory.

When all directory specifications are completed, if there are no errors in the configuration details, click <Next> button. To change the configuration details, click <Back> button.

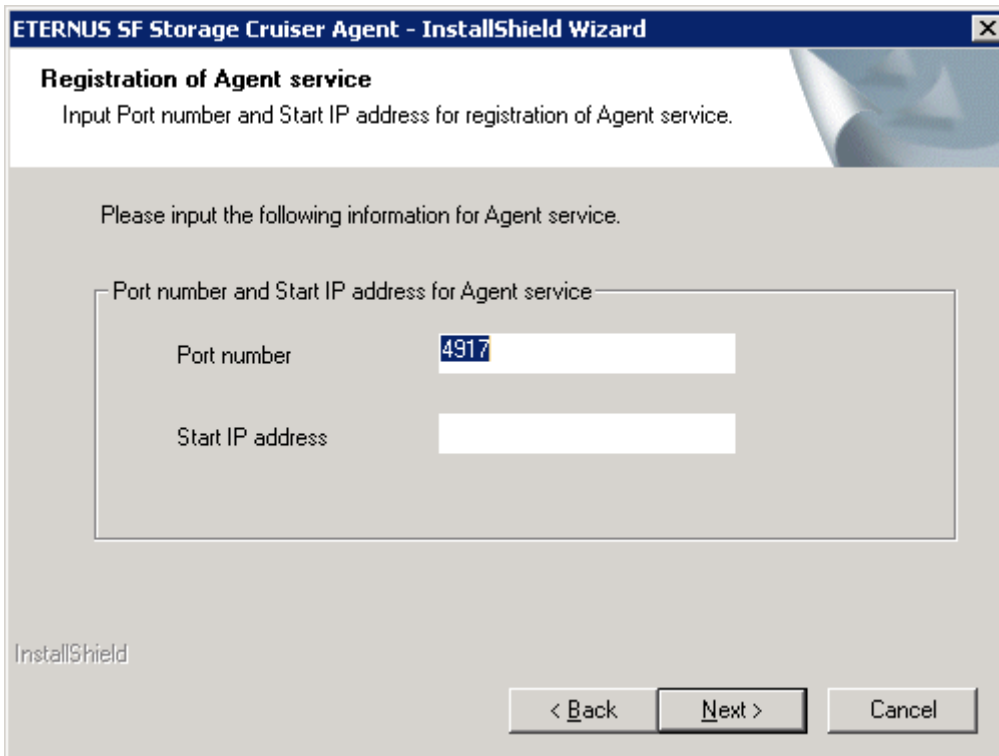


 **Note**

You can specify installation directory names using any printable ASCII characters other than the following symbols.

" | : * ? / . < > , % & ^ = ! ;

7. Enter the port number, admin LAN IP address used by agent services on the following window.



The explanation of each tab is as follows:

Port number

This port number is used for transmission between the agent and the admin server. Enter the same number as specified in the admin server configuration. The default value is 4917, and there is usually no need to change this value. However, if the system is already using this port number, please allocate a vacant port number.

Start IP address

- If the managed server node has a single IP address, enter this IP address as the agent admin LAN IP address,
- If the managed server node has more than one IP address, enter the start IP address of the server node based on the administrative server LAN IP address.

For example:

Manager IP: 10.10.10.xx

Agent has more than 1 IP like this:

10.10.10.yy

192.168.1.zz

In this case, please input "10.10.10.yy".

- If the managed server node is under firewall or IP of the managed server node is converted by NAT, enter the IP address used for communication between ETERNUS SF Storage Cruiser's manager and the managed server node.

Information

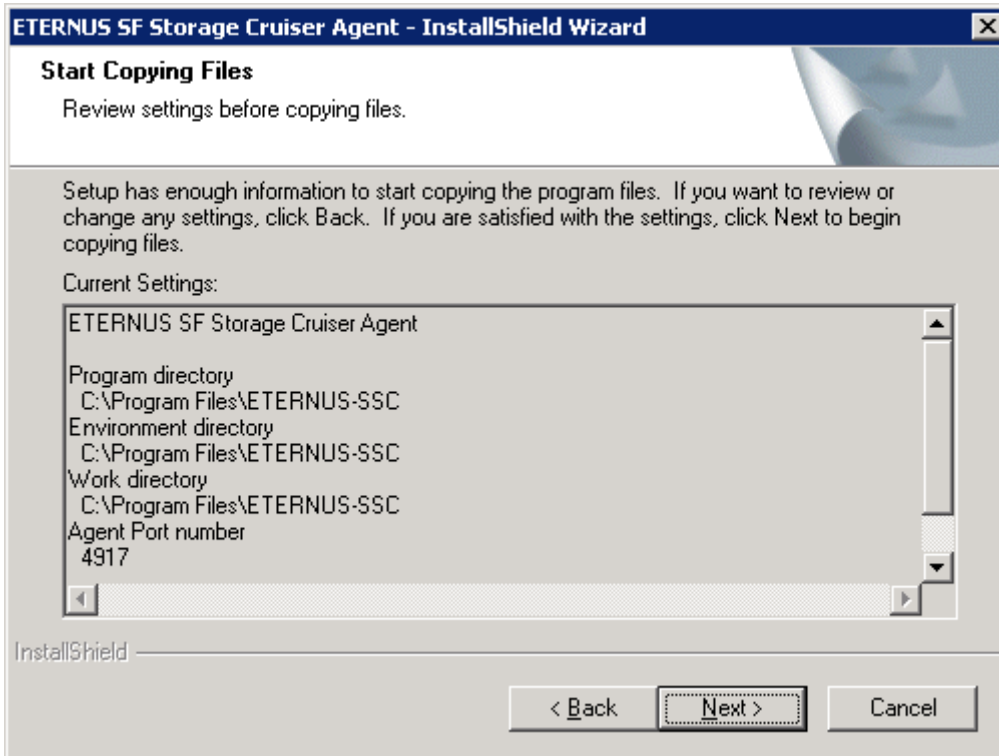
Please confirm the current service file that the port number described above is vacant.

The services file is located in %SystemRoot%\system32\drivers\etc directory. The %SystemRoot% is the directory where the Windows operating system is installed.

OS	Full path name of services file (default)
Windows 2000	C:\WINNT\system32\drivers\etc\services
Windows Server 2003 Windows Server 2008	C:\Windows\system32\drivers\etc\services

8. Confirm the settings in the start copying files window.

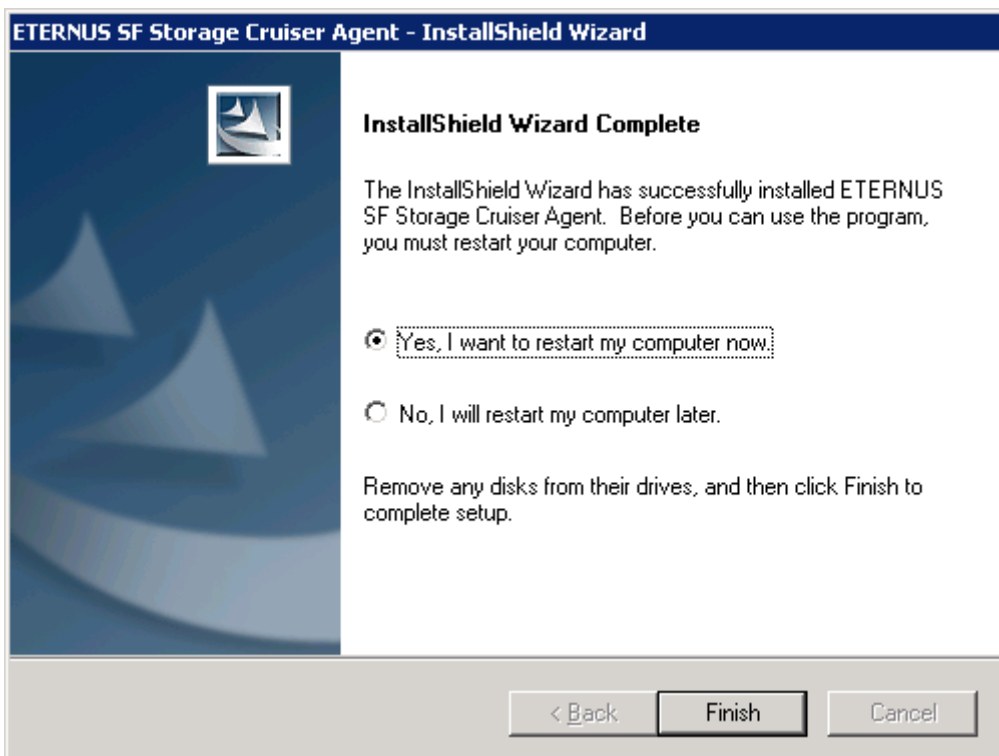
If there are no errors in the configuration details, click <Next> button. To change the configuration details, click <Back> button.



9. Copy processing will begin.

10. After the copy process is complete, Resource Coordinator Agent installation will finish.

After completing installation, click <Finish> button.



The installation is completed. Continuously, execute the post-installation setup by referring to "[6.3.4 Post-installation setup](#)".

6.3.4 Post-installation setup

The procedure for managed server node setup is given below. Please perform this procedure in multi-user mode.

6.3.4.1 Service confirmation

For agent operation, the following port number is necessary for transmissions with the manager.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent

This information reflects the port number that was entered at the point of software installation, in "Registration of Agent service" window to the services file. Check that there are no errors in the information reflected here. When a port number is already in use, specify a vacant port number.

```
#Service name  Port number/protocol name
sscruisera    4917/tcp
```

The services file is located in %SystemRoot%\system32\drivers\etc directory. The %SystemRoot% is the directory where the Windows operating system is installed.

OS	Full path name of services file (default)
Windows 2000	C:\WINNT\system32\drivers\etc\services
Windows Server 2003 Windows Server 2008	C:\Windows\system32\drivers\etc\services



Note

For using Windows Server 2008:

The firewall is enabled in the default configuration of the operating system. For this reason, the settings must be configured so that the following port, used by Agent to receive data, can pass through the firewall. If a port number is modified, the settings must be changed accordingly.

Service name	Port number / Protocol name
sscruisera	4917/tcp

6.3.4.2 SNIA HBA API library installation and configuration

When managing a RAID unit with ETERNUS SF Storage Cruiser it is necessary to install and configure the SNIA HBA API library distributed by the HBA vendor.

Please refer to "[B.3 SNIA HBA API library installation for Windows](#)", and install the SNIA HBA API library.

6.3.5 Upgrading from older products

When a Softek Storage Cruiser Agent or an ETERNUS SF Storage Cruiser Agent of a previous version level has been installed, you can save the setting data and have the current version of the ESC Agent inherit the settings.

6.3.5.1 Upgrading from Softek Storage Cruiser

This section shows the procedure for upgrading from the Softek Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the SSC Agent, save the SSC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	\$\$SSC_TMP_DIR¥Agent¥var¥sanm.ip (\$\$SSC_TMP_DIR means "Work Directory" specified at the SSC Agent installation.)
2	SSC Agent definition file	All files under \$\$SSC_ENV_DIR¥Agent¥etc directory (\$\$SSC_ENV_DIR means "Environment Directory" specified at the SSC Agent installation.)
3	User definition information	\$\$SSC_INS_DIR¥Agent¥lib¥defusr.dat (\$\$SSC_INS_DIR means "Program Directory" specified at the SSC Agent installation.) (If not exist, it is not required for the upgrade.)

2. Uninstall the SSC Agent.

To uninstall the SSC Agent, refer to the Softek Storage Cruiser manual.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "[6.3 \[Windows\] Agent installation and setup](#)".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the \$TMP_DIR¥Agent¥var¥sanm.ip file.
(\$TMP_DIR means "Work Directory" specified at the ESC Agent installation.)
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under \$ENV_DIR ¥Agent¥etc directory.
(\$ENV_DIR means "Environment Directory" specified at the ESC Agent installation.)
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the \$INS_DIR¥Agent¥lib¥defusr.dat file.
(\$INS_DIR means "Program Directory" specified at the ESC Agent installation.)
(This step is not required if the file was not saved in step 1.)

6.3.5.2 Upgrading from previous version levels

This section explains the procedure for upgrading from a previous version level of the ETERNUS SF Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the ESC Agent, save the ESC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	\$OLD_TMP_DIR¥Agent¥var¥sanm.ip (\$OLD_TMP_DIR means "Work Directory" specified at the previous ESC Agent installation.)
2	SSC Agent definition file	All files under \$OLD_ENV_DIR¥Agent¥etc directory (\$OLD_ENV_DIR means "Environment Directory" specified at the previous ESC Agent installation.)
3	User definition information	\$OLD_INS_DIR¥Agent¥lib¥defusr.dat (\$OLD_INS_DIR means "Program Directory" specified at the previous ESC Agent installation.)

No.	Save information	Save file
		Agent installation.) (If not exist, it is not required for the upgrade.)

2. Uninstall the previous version level ESC Agent

To uninstall the ESC Agent, refer to the ETERNUS SF Storage Cruiser manual of the previous version level.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.3 [Windows] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the \$TMP_DIR¥Agent¥var¥sanm.ip file.
(\$TMP_DIR means "Work Directory" specified at the ESC Agent installation.)
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under \$ENV_DIR ¥Agent¥etc directory.
(\$ENV_DIR means "Environment Directory" specified at the ESC Agent installation.)
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)
- Copy the saved file, and create the \$INS_DIR¥Agent¥lib¥defusr.dat file.
(\$INS_DIR means "Program Directory" specified at the ESC Agent installation.)
(This step is not required if the file was not saved in step 1.)

6.4 [HP-UX] Agent installation and setup

This section describes the installation and setup of Agent on HP-UX.

6.4.1 Operation Environment

6.4.1.1 Hardware requirements

The hardware listed below is required when using this software.

No.	Operating server	Supported model
1	Managed server node	All HP-UX server

6.4.1.2 Software requirements

6.4.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	HP-UX 11.0	-
2	HP-UX 11i	-
3	HP-UX 11iv2	-

6.4.1.2.2 Required software

None.

6.4.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Softek Storage Cruiser	All	-

6.4.1.2.4 Required patches

The patches listed below are required when using this software.

No.	Product name	Patch ID	Remarks
1	HP-UX 11.0	Latest patch	-
2	HP-UX 11i	Latest patch	-
3	HP-UX 11iv2	Latest patch	-

6.4.1.2.5 Static disk space

In order to perform a new installation the following static space volume is required.

For using HP-UX 11.0 or HP-UX 11i

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	0.2	-
2	/var	0.2	-
3	/opt	130	-

For using HP-UX 11iv2

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	0.02	-
2	/var	0.03	-
3	/opt	150	-

6.4.1.2.6 Dynamic disk space

The required dynamic disk space for new installations is as below.

The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	0.1	-
2	/var	20	-

6.4.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	32	-

6.4.1.2.8 Swap volume

The swap volume used by this software is indicated.

No.	Swap volume (Unit : MB)	Remarks
1	32	-

6.4.2 Advisory notes

If Softek Storage Cruiser, described in "[6.4.1.2.3 Exclusive software](#)", is already installed, please uninstall it and install the ETERNUS SF Storage Cruiser Agent.

6.4.3 Installation procedure

The procedure for installing Agents is described below.

The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)" is used in the installation of Agents.

6.4.3.1 Pre-installation preparations

1. Login as super user.

```
# su
```

2. Execute daemons by the following command.

```
# /usr/sbin/pfs_mountd &  
# /usr/sbin/pfsd &
```

3. Insert the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)" into the CD-ROM drive.

4. Mount CDROM.

```
# /usr/sbin/pfs_mount -t rrip CD-ROM_mount_point CDROM_mount_name
```

5. Check that this software (old version, level etc.) is not installed.

```
# /usr/sbin/swlist | /usr/bin/grep FJSVssage
```

If package information is displayed, it means that this software is already installed.

Refer to "[7.4.1 Stopping agent](#)", and after stopping the agent please uninstall the output package.

6.4.3.2 Installation time

Installation time for this software is around 5 minutes.

6.4.3.3 Software installation

1. Login as the super user (root) by the following command.

```
# su
```

2. After executing "[6.4.3.1 Pre-installation preparations](#)", execute the following command.

3. Copy a package to a working directory to install.



Secure 250MB free space for the working directory (*work_directory*).

Copy the compressed target operating system package in the CD-ROM to the *work_directory*, and uncompress it. And, execute the `swinstall` command.

- For HP-UX 11.0 or HP-UX 11i:

```
# cp CD-ROM_mount_point/agent/HPUX/pkg/FJSVssage-13.0.0.depot.Z work_directory
# uncompress work_directory/FJSVssage-13.0.0.depot.Z
# swinstall -s work_directory/agent/HPUX/pkg/FJSVssage-13.0.0.depot
```

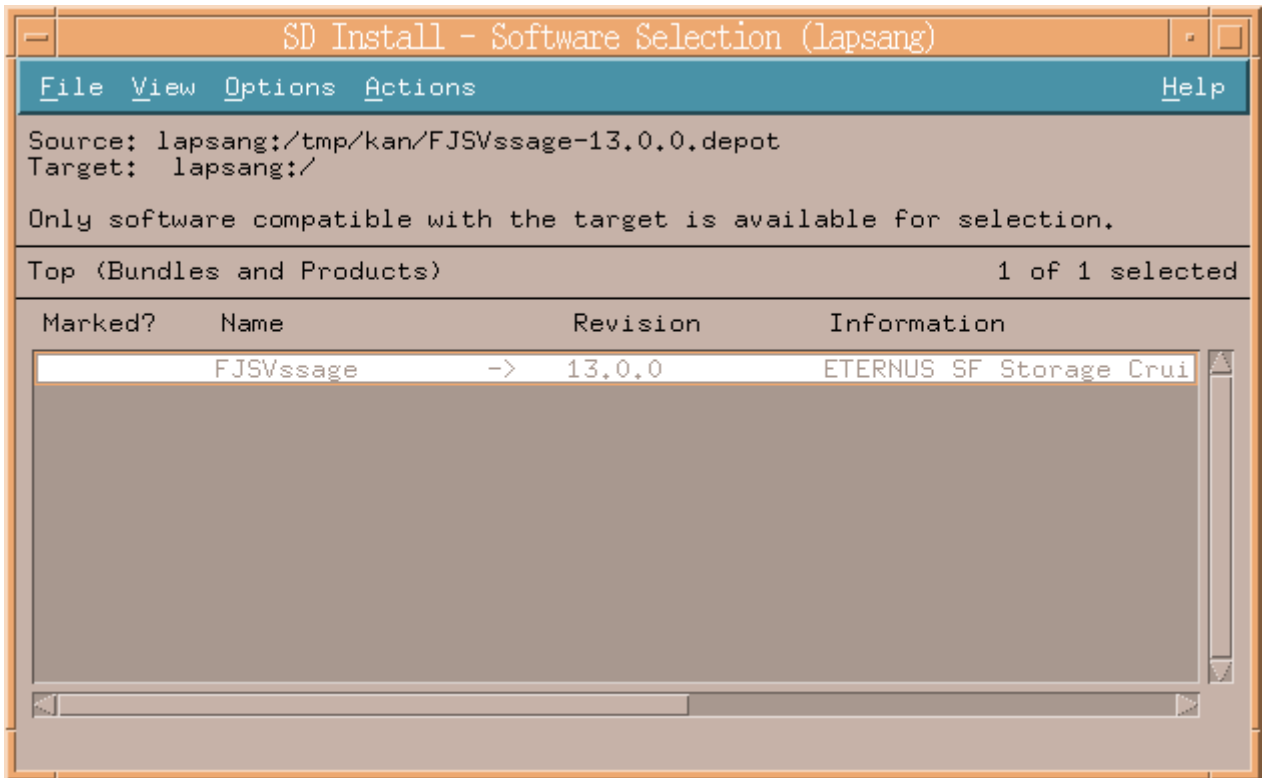
- For HP-UX 11iv2(IPF)

```
# cp CD-ROM_mount_point/agent/HPUX/pkg/FJSVssage-13.3.0_ia64.depot.Z work_directory
# uncompress work_directory/FJSVssage-13.3.0_ia64.depot.Z
# swinstall -s work_directory/agent/HPUX/pkg/FJSVssage-13.3.0_ia64.depot
```

- For HP-UX 11iv2(PA-RISC)

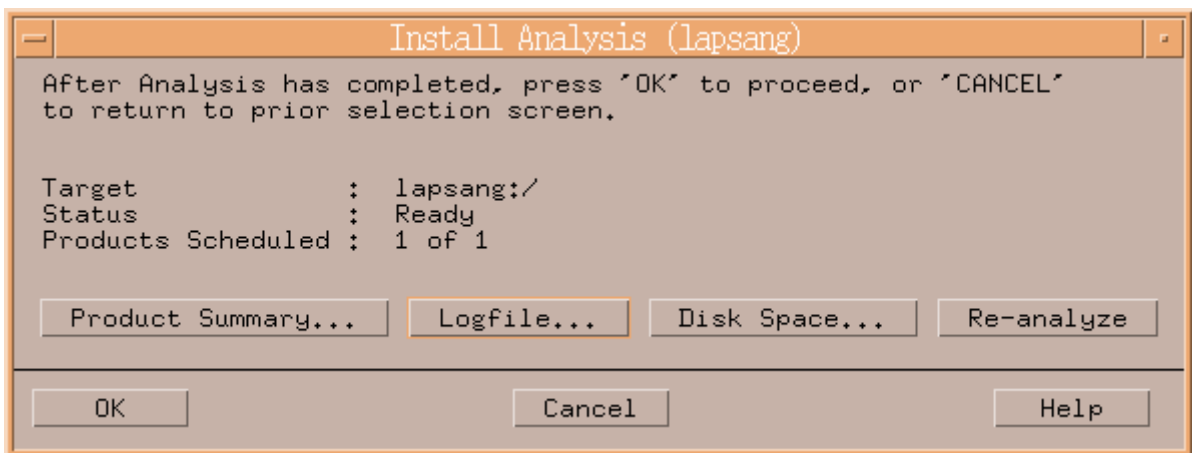
```
# cp CD-ROM_mount_point/agent/HPUX/pkg/FJSVssage-13.3.0_pa.depot.Z work_directory
# uncompress work_directory/FJSVssage-13.3.0_pa.depot.Z
# swinstall -s work_directory/agent/HPUX/pkg/FJSVssage-13.3.0_pa.depot
```

4. The following window will be displayed. Select "FJSVssage" from the list, and click [Actions]-[install].



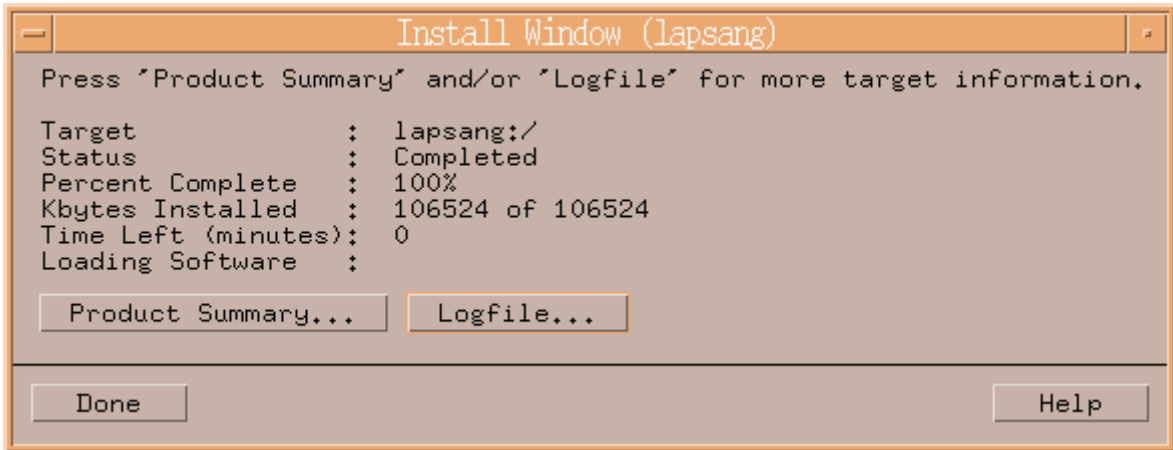
5. The "Install Analysis" dialog will be displayed, and package will be checked.

After checking package, click [OK].



6. The "Install Window" dialog will be displayed.

When "Status" indicates "Completed", the installation is completed. (Click <Logfile> button for the detail information.)
Clicking the <Done> button, the initial dialog will be displayed.



The installation is completed. Continuously, execute the post-installation setup by referring to "6.4.4 Post-installation setup".

6.4.4 Post-installation setup

The procedure for managed server node setup is given below. Please perform this procedure in multi-user mode.

6.4.4.1 /etc/services configuration

For operation of the agent, the following port number is necessary for transmissions with the manager.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent

Include the following details in the /etc/services file, and declare usage of the port number. In cases where there is no description in the /etc/services file, agent booting will be from 4917 port number.

```
#Service name  Port number/protocol name
sscruisera    4917/tcp
```

Information

When a port number is already in use, please select a vacant port number. In this case, with regards to other ETERNUS SF Storage Cruiser Manager with the same port number configuration, perform the same configuration changes.

6.4.4.2 Agent admin LAN IP address configuration

Configure agent admin LAN IP addresses using the following procedure.

1. It is necessary to stop the agents to perform the configuration of agent admin LAN IP addresses.

When an agent is operating, input the following command and stop the agent.

```
# /opt/FJSSvssage/bin/pstorageagt
```

2. Configure the admin LAN IP address on the agent.

```
# /opt/FJSSvssage/bin/setagtip -i admin_LAN_IP_address
```



About admin_LAN_IP_address:

Specify the IP address of the server node, which is used for communication with the admin server. This is used as the start IP address in order to communicate with the admin server (Manager) via correct LAN.

- If the managed server node has a single IP address, enter this IP address as the agent admin LAN IP address
- If the managed server node has more than one IP address, enter the start IP address of the server node based on the administrative server LAN IP address.

For example:

Manager IP: 10.10.10.xx

Agent has more than 1 IP like this:

10.10.10.yy

192.168.1.zz

In this case, please input "10.10.10.yy".

- If the managed server node is under firewall or IP of the managed server node is converted by NAT, enter the IP address which can access to the managed server node from ETERNUS SF Storage Cruiser's manager.

6.4.4.3 Rebooting the system

Please reboot the system after finishing configuration. ETERNUS SF Storage Cruiser will automatically commence.

```
# /sbin/shutdown -r -y 0
```

6.4.5 Upgrading from older products

When the Softek Storage Cruiser Agent or the ETERNUS SF Storage Cruiser Agent of a previous version level has been installed, you can save the setting data and have the current version level of the ESC Agent inherit the settings.

6.4.5.1 Upgrading from Softek Storage Cruiser

This section describes the procedure for upgrading from the Softek Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the SSC Agent, save the SSC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssagt/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssagt directory

2. Uninstall the SSC Agent.

To uninstall the SSC Agent, refer to the Softek Storage Cruiser manual.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.4 [HP-UX] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)

6.4.5.2 Upgrading from previous version levels

This section explains the procedure for upgrading from a previous version level of the ETERNUS SF Storage Cruiser Agent.

1. Save the Agent setting data

Before uninstalling the ESC Agent, save the ESC Agent setting data as follows.

No.	Save information	Save file
1	SNMP Trap transmission place address	/var/opt/FJSVssage/sanm.ip
2	SSC Agent definition file	All files under /etc/opt/FJSVssage directory

2. Uninstall the previous version level ESC Agent

To uninstall the ESC Agent, refer to the ETERNUS SF Storage Cruiser manual of the previous version level.

3. Install and set up the ESC Agent

To install and set up the ESC Agent, refer to "6.4 [HP-UX] Agent installation and setup".

4. Convert the saved Agent setting data

Convert the Agent setting data saved by step 1.

- Copy the saved file, and create the /var/opt/FJSVssage/sanm.ip file.
- By referring to the saved files, and reflect the changes made since the SSC Agent installation to the all files under /etc/opt/FJSVssage directory.
(If no changes were made in the definitions, it is nothing to do. The new definitions can be used.)

6.5 [VMware] Agent installation and setup

This section describes the installation and setup of Agent on VMware.

6.5.1 Operation Environment

6.5.1.1 Hardware requirements

Refer to "VMware Infrastructure 3 Installation Guide for PRIMERGY" for details of hardware requirements.

6.5.1.2 Software requirements

6.5.1.2.1 Required basic software

One of the basic software listed below is required when using this software.

No.	Product name	Remarks
1	VMware Infrastructure 3 Starter	When a virtual machine is used, install this software on the administrator operating system. If installed on the guest operating system, the system may not work properly. The functions of this software treat the guest operating system as follows. Resource related management and information for host operating system alone are displayed. For how to display relationship between host OS and guest OS and how to operate guest OS, refer for to the instruction manual for virtualization software.
2	VMware Infrastructure 3 Standard	
3	VMware Infrastructure 3 Enterprise	

This product will be installed on the VMware ESX Server host which contains required basic software "VMware Service Console" for installation operation.

6.5.1.2.2 Required software

The software listed below is required when using this software.
Please install the following software after ESC agent installation.

No.	Product name	Package name	Version	Remarks
1	SNIA HBA API Library	-	-	Necessary when managing RAID units with ETERNUS SF Storage Cruiser. Prepare the required libraries for the HBA and OS versions being used. Additionally, the preparation methods vary depending on the HBA and driver versions. Refer to " B.2 SNIA HBA API library installation for Linux/VMware " for details.

6.5.1.2.3 Exclusive software

This software cannot be used in combination with the following software.

No.	Product name	Version / Level	Remarks
1	Systemwalker Resource Coordinator	All	Excluding Systemwalker Resource Coordinator Virtual server Edition

6.5.1.2.4 Required patches

No required patches.

6.5.1.2.5 Static disk space

In order to perform a new installation the following static space volume is required.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/opt	101	-
2	/etc/opt	1	-
3	/var/opt	205	-

6.5.1.2.6 Dynamic disk space

The required dynamic disk space for new installations is as below.
The following disk space is required for each directory, in addition to the static disk resources.

No.	Directory	Required disk space (Unit : MB)	Remarks
1	/etc	0.3	-
2	/var/opt	48	-

6.5.1.2.7 Memory capacity

The minimum memory necessary for operation of this software is indicated.

No.	Required memory (Unit : MB)	Remarks
1	46	-

6.5.2 Advisory notes

There are no advisory notes.

6.5.3 Installation procedure

The procedure for installing Agents is described below.
The CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Linux, VMware)" is used in the installation of Agents.
The agent is installed on the VMware ESX Server Service Console.

6.5.3.1 Pre-installation preparations

Login with Administrator Operating System (root) to VMware ESX Server Service Console.

Check that this software (old version, level etc.) is not installed.

```
# cd CD-ROM_mount_point/agent/RHEL
# ./scagtinstall.sh -check
```

In the event that the message is output as a result of the above operation, take action as follows

- If ETERNUS SF Storage Cruiser Agent package has been installed
Refer to the exclusive software's document, and uninstall it.
Refer to "[7.5.1 Stopping agent](#)", and after stopping agent please uninstall the output package.

6.5.3.2 Installation time

Installation time for this software is around 5 minutes.

6.5.3.3 Software installation

1. Login as the super user (root) by the following command.

```
# su
```

2. After performing the procedures in "[6.5.3.1 Pre-installation preparations](#)", move to the directory storing the scagtinstall.sh command.

```
# cd CD-ROM_mount_point/agent/RHEL
```

3. Execute the scagtinstall.sh command.

```
# ./scagtinstall.sh
```

4. The following message is output. To execute installation enter "y", to discontinue the installation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008
This program will install "ETERNUS SF Storage Cruiser" Agent on your system.

Do you want to continue the installation of this package? [y,n,?,q]
```

5. Enter "y" and the installation will commence.

An example of the displayed information is given below.

```
INFO : Starting Installation of ETERNUS SF Storage Cruiser ...
INFO : Installation of <FJSVssage> was successful.
```

When installation is completed normally, the following message will be displayed.

```
INFO : ETERNUS SF Storage Cruiser Agent was installed successfully.
```

If there is an error during installation, the following message will be displayed.

```
ERROR : not privileged
or
INFO : Installation is terminated.
or
ERROR : Installing FJSVssage was failed.
```

6. If the installation fails, check the install status using the following command.

```
# rpm -qi FJSVssage
```

If the installation was successful, the package information will be displayed. If any error message is displayed, refer to "[7.5 \[VMware\] Uninstallation](#)", delete this software and reinstall it.

The installation is completed. Continuously, execute the post-installation setup by referring to "[6.5.4 Post-installation setup](#)".

6.5.4 Post-installation setup

The procedure for managed server node setup is given below. Please perform this procedure in multi-user mode.

6.5.4.1 /etc/services configuration

The agent communicates with the admin server (Manager) by using LAN port number 4917 as default.

Service name	Port number / Protocol name	Sender	Receiver
sscruisera	4917/tcp	Manager	Agent

Include the following details in the /etc/services file, and declare usage of the port number. In cases where there is no description in the /etc/services file, agent booting will be from port number 4917

#Service name	Port number/protocol name
sscruisera	4917/tcp

Information

When a port number is already in use, please select a vacant port number. In this case, with regards to other ETERNUS SF Storage Cruiser Manager with the same port number configuration, perform the same configuration changes.

Point

For port numbers used by agent, be sure to disable firewall settings.

6.5.4.2 Agent admin LAN IP address configuration

Configure agent admin LAN IP addresses using the following procedure.

1. It is necessary to stop the agents to perform the configuration of agent admin LAN IP addresses.

When an agent is operating, input the following command and stop the agent.

```
# /opt/FJSVssage/bin/pstorageagt
```

2. Configure the admin LAN IP address on the agent.

```
# /opt/FJSVssage/bin/setagtip -i admin_LAN_IP_address
```

Point

About `admin_LAN_IP_address`

Specify the IP address of the server node, which is used for communication with the admin server. This is used as the start IP address in order to communicate with the admin server (Manager) via correct LAN.

- If the managed server node has a single IP address, enter this IP address as the agent admin LAN IP address.
- If the managed server node has more than one IP address, enter the start IP address of the server node based on the administrative server LAN IP address.

For example:

Manager IP: 10.10.10.xx

Agent has more than 1 IP like this:

10.10.10.yy

192.168.1.zz

In this case, please input "10.10.10.yy".

- If the managed server node is under firewall or IP of the managed server node is converted by NAT, enter the IP address used for communication between ETERNUS SF Storage Cruiser's manager and the managed server node.

6.5.4.3 SNIA HBA API library installation and configuration

When managing a RAID unit with ETERNUS SF Storage Cruiser, it is necessary to install and configure the SNIA HBA API library distributed by the HBA vender.

Please refer to "[B.2 SNIA HBA API library installation for Linux/VMware](#)", and install the SNIA HBA API library.

6.5.4.4 Rebooting the system,

Please reboot the system after finishing configuration. ETERNUS SF Storage Cruiser will automatically commence.

```
# /sbin/shutdown -r now
```

Chapter 7 Agent uninstallation

The uninstallation of ETERNUS SF Storage Cruiser Agent is described.

7.1 [Solaris OS] Agent uninstallation

The uninstallation of Solaris OS Agent is described.

7.1.1 Stopping agent

1. Stop the Agent daemon.

```
# /opt/FJSVssage/bin/pstorageagt
```

2. Check that the Agent daemon has been stopped using the following command.

```
# /bin/ps -ef | grep FJSVssage
```

3. If not stopped, execute the following command.

```
# /usr/bin/kill -9 process_ID
```

7.1.2 Uninstallation

1. Login with root (super user).

```
# su
```

2. Remove ETERNUS SF Storage Cruiser Agent using the pkgrm command.

```
# pkgrm FJSVssage
```



If the package is reinstalled in another directory after the pkgrm command is executed, make sure that no package directories remain. For the package directories, see "[6.1.1.2.5 Static disk space](#)".

If the user has created a new file in a package directory, this file will not be deleted in the uninstallation processing when the pkgrm command is executed. Since the package directory will not be deleted, delete the directory directly.

3. Delete the sscruisera lines from the /etc/services file.

4. Reboot the system.

```
# /usr/sbin/shutdown -y -g0 -i6
```

7.2 [Linux] Agent uninstallation

The Uninstallation procedures for Red Hat Enterprise Linux Agent and SUSE Linux Enterprise Server 9 for EM64T Agent are the same.

7.2.1 Stopping agent

1. Stop the Agent daemon.

```
# /opt/FJSVssage/bin/pstorageagt
```

2. Check that the agent daemon has been stopped using the following command.

```
# /bin/ps -ef | grep FJSVssage
```

3. If not stopped, execute the following command.

```
# /usr/bin/kill -9 process_ID
```

7.2.2 Uninstallation

1. Login with root (super user).

```
# su
```

2. Remove ETERNUS SF Storage Cruiser Agent using the rpm command.

```
# rpm -e FJSVssage
```



.....

If the package is reinstalled in another directory after the rpm command is executed, make sure that no package directories remain. For the package directories, see "[6.2.1.2.5 Static disk space](#)".

If the user has created a new file in a package directory, this file will not be deleted in the uninstallation processing when the rpm command is executed. Since the package directory will not be deleted, delete the directory directly.

.....

3. Delete the sscruisera lines from the /etc/services file.

4. Reboot the system.

```
# /sbin/shutdown -r now
```

7.3 [Windows] Agent uninstallation

The uninstallation of Windows Agent is described.



.....

The notation of Windows operating system products in this chapter:

The notation keeps the word of "[6.3.1.2.1 Required basic software](#)".

Note that the same method of notation may also be used in other chapters to indicate a different product group.

.....

7.3.1 Stopping agent

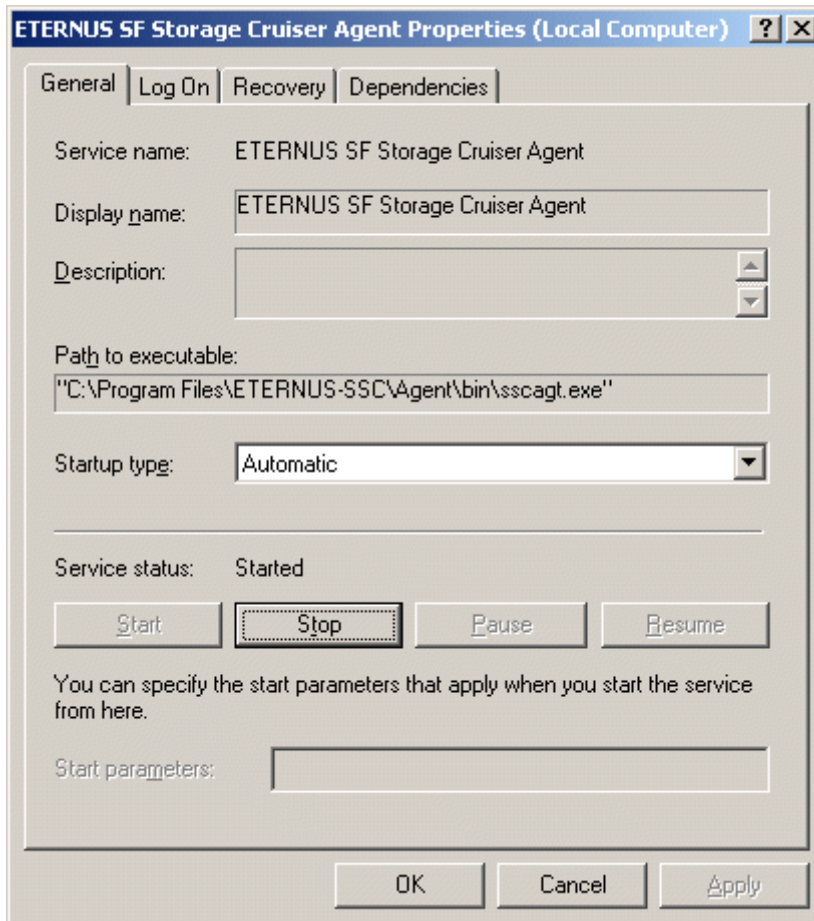
1. Logon to Windows operating system to uninstall Agent.

Please logon with the OS administrator (Administrator) of the terminal.

2. Open "Services" window, and select ETERNUS SF Storage Cruiser Agent to stop services.

The method to open "Services" window is as follows.

OS	Method to open "Services" window
Windows 2000	[Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Services]
Windows Server 2003 Windows Server 2008	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Administrative Tools] - [Services] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Services]



7.3.2 Uninstallation

1. Logon to Windows operating system to uninstall Agent.

Please logon with the OS administrator (Administrator) of the terminal.

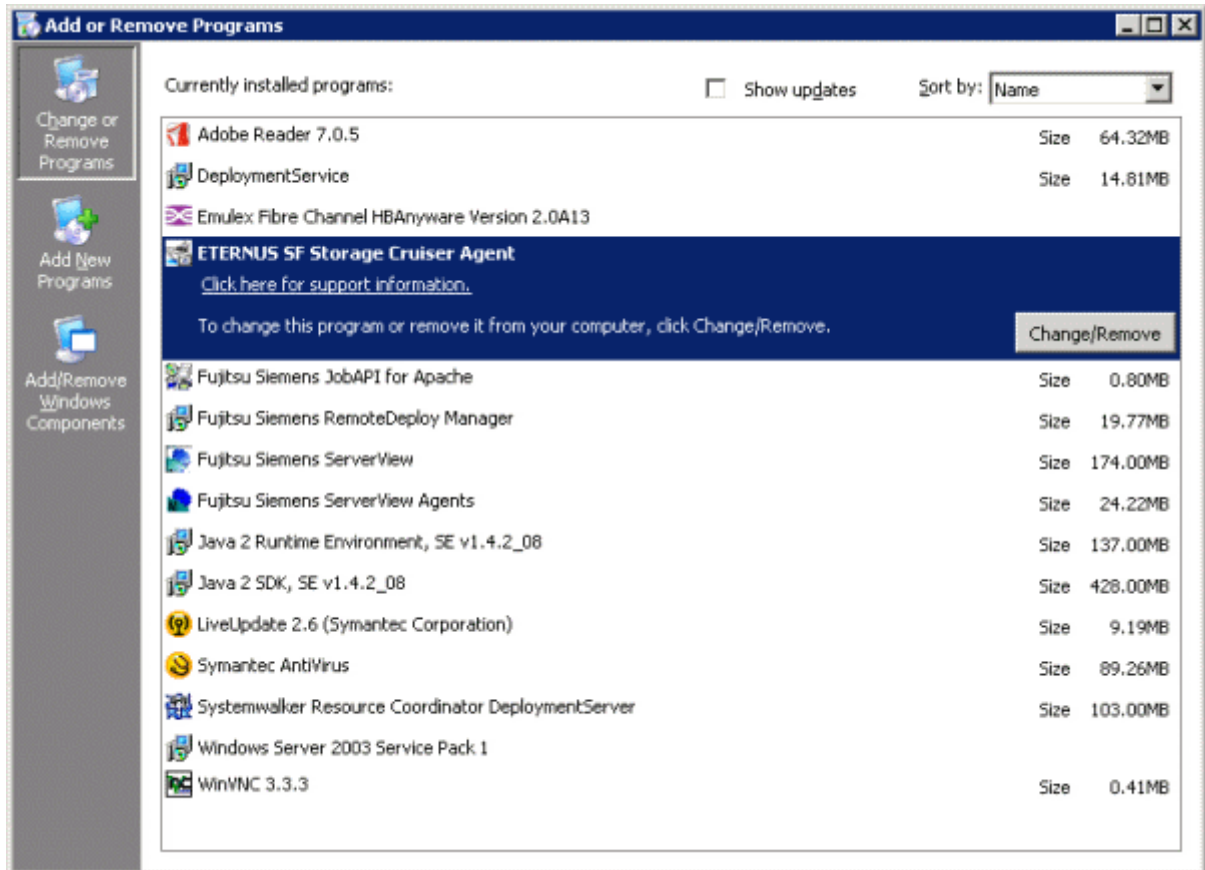
2. Open the window that can add or remove programs, and delete ETERNUS SF Storage Cruiser Agent.

The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs]

OS	Name of window	Method to open window
		<ul style="list-style-type: none"> When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none"> When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features] When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Programs and Features]

The following is "Add or Remove Programs" window.

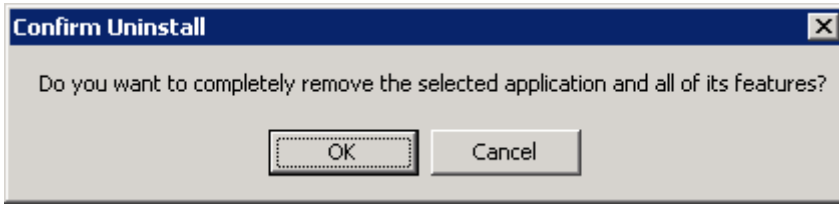


Information

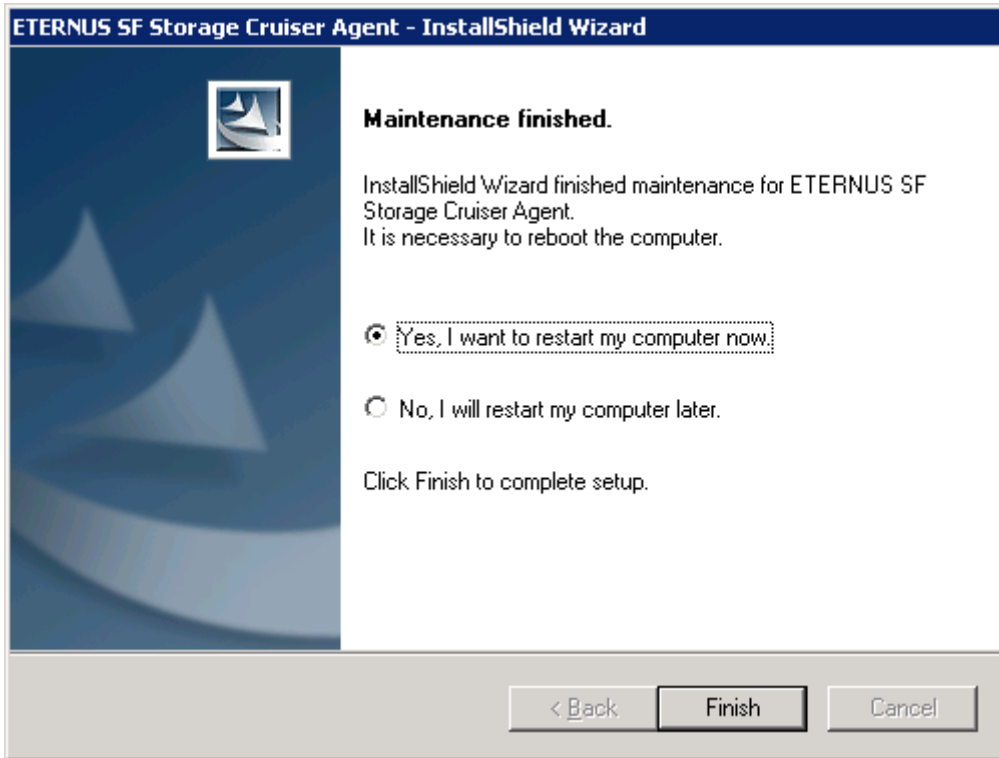
The uninstallation may fail, and you receive "Error reading setup initialization file" error message. In such case, insert the CD-ROM that was used for installation into the CD-ROM drive, open the directory described as below, using Explorer or another tool, and execute setup.exe.

OS	Directory
Windows Server 2003, Enterprise Edition for Itanium-based Systems Windows Server 2003, Datacenter Edition for Itanium-based Systems	<i>CD-ROM_drive:\agent\Windows\IPF</i>
The other products	<i>CD-ROM_drive:\agent\Windows\I32_x64</i>

3. The following confirmation window will be displayed, click <OK> button.



4. When the uninstallation is completed, the following confirmation window will be displayed. Click <Finish> button, and reboot the computer.



Information

After the uninstallation, the installation directory may remain.

```
<Example>  
C:\Program Files\ETERNUS-SSC\Agent
```

In this case, please delete the remaining directory manually using Explorer.

7.4 [HP-UX] Agent uninstallation

The uninstallation of HP-UX Agent is described.

7.4.1 Stopping agent

1. Stop the Agent daemon.

```
# /opt/FJSSvssage/bin/pstorageagt
```
2. Check that the Agent daemon has been stopped using the following command.

```
# /usr/bin/ps -ef | grep FJSVssage
```

3. If not stopped, execute the following command.

```
# /usr/bin/kill -9 process_ID
```

7.4.2 Uninstallation

1. Login with root (super user).

```
# su
```

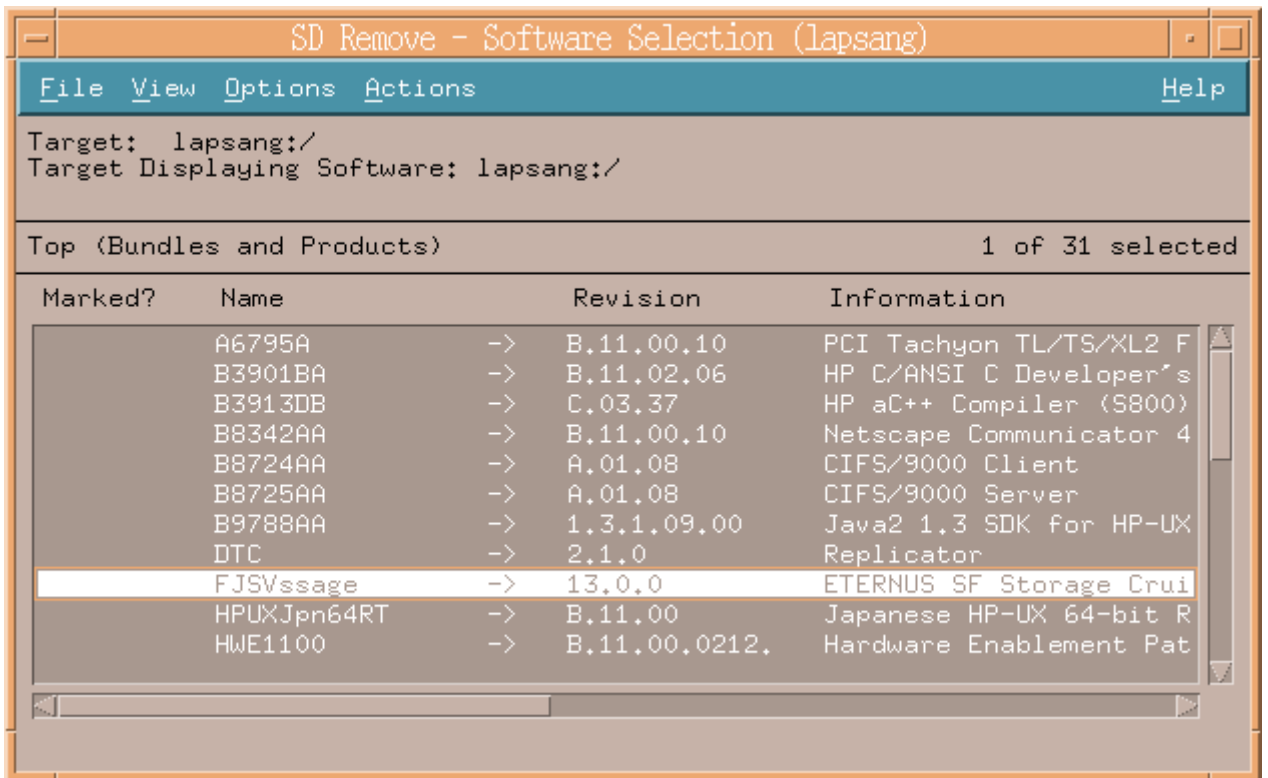
2. Move to the root directory (/).

```
# cd /
```

3. Execute the following command.

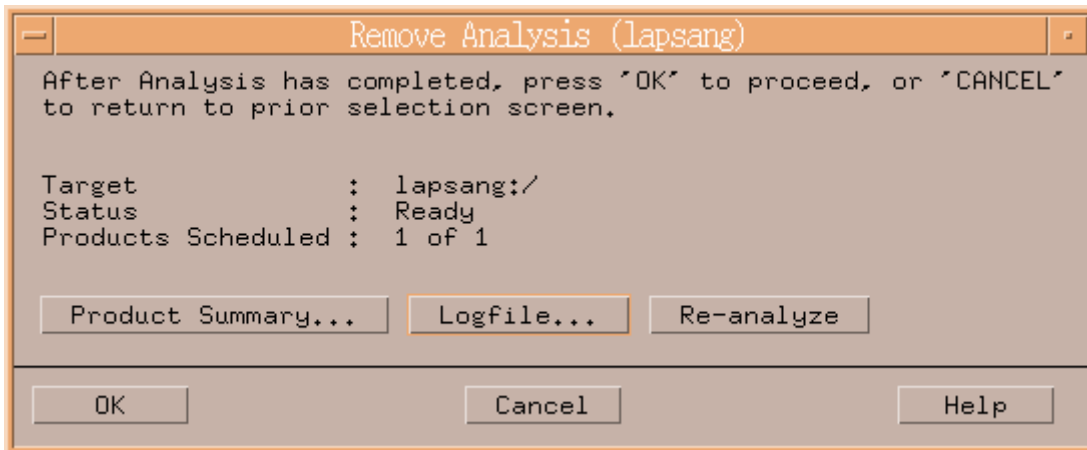
```
# swremove
```

4. The following window will be displayed. Select the FJSVssage package from the list, and select [Actions]-[Remove] menu.



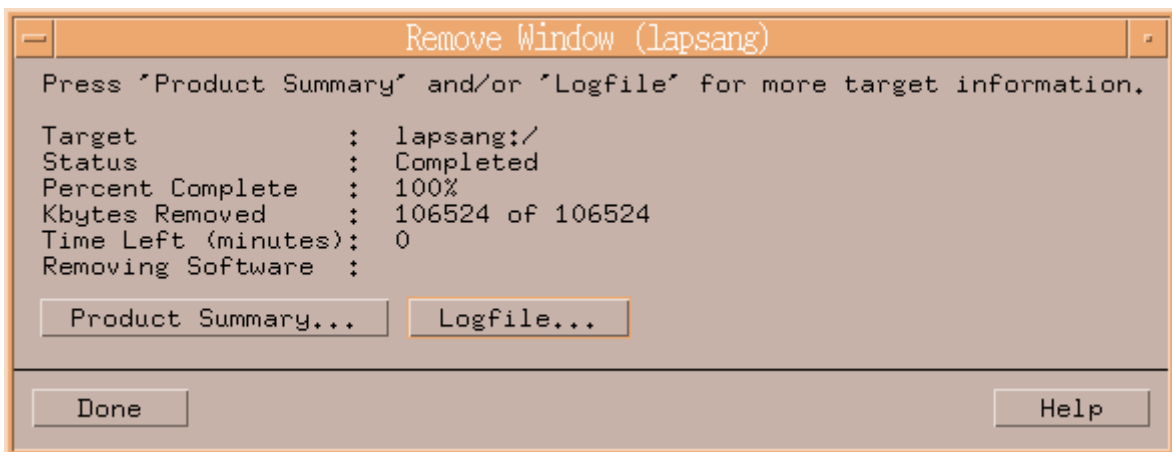
5. The "Remove Analysis" dialog is displayed, and package will be checked.

After checking package, click [OK].



- The "Remove Window" dialog is displayed.

When "Status" indicates "Completed", the uninstallation is completed. Clicking the <Done> button, the initial dialog will be displayed.



- Delete the sscrusera lines from the /etc/services file.

7.5 [VMware] Uninstallation

The uninstallation of VMware Agent is described.

7.5.1 Stopping agent

- Login to the Service Console of VMware ESX Server as the operating system administrator (root).

- Stop the Agent daemon

```
# /opt/FJSVssage/bin/pstorageagt
```

- Check that the Agent daemon has been stopped using the following command

```
# /bin/ps -ef | grep FJSVssage process_ID
```

- If not stopped, execute the following command.

```
# /usr/bin/kill -9 process_ID
```

7.5.2 Uninstallation

1. Login with root (super user).

```
# su
```

2. Execute the rpm command. By executing this command, the package will be deleted.

```
# rpm -e FJSVssage
```



Note

Files created by users will not be removed during the uninstallation process by the rpm command, they must be deleted manually.

3. Delete the sscrusera lines from the /etc/services file.
4. Reboot the system.

```
# /sbin/shutdown -r now
```

Chapter 8 Client uninstallation

The uninstallation of ETERNUS SF Storage Cruiser Client is described.

8.1 Uninstallation

The procedure for the uninstallation of the Client is given below.



The notation of Windows operating system products in this chapter:

The notation keeps the word of "[5.1.2.1 Required basic software](#)".

Note that the same method of notation may also be used in other chapters to indicate a different product group.

1. Logon to Windows operating system to uninstall Client.

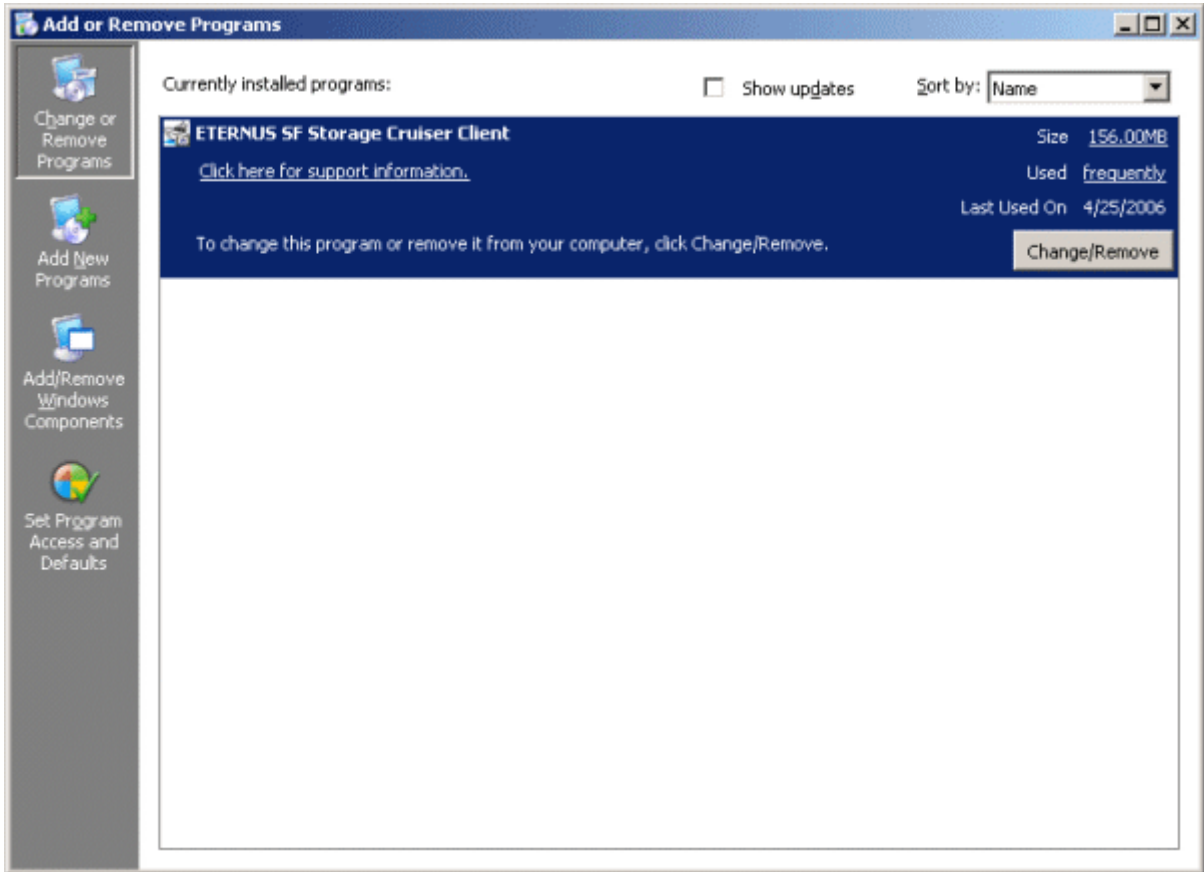
Please logon with the OS administrator (Administrator) of the terminal.

2. Open the window that can add or remove programs, and remove ETERNUS SF Storage Cruiser client.

The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Vista	Programs and Features	[Start] - [Control Panel] - [Programs and Features]
Windows XP Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none">• When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs]• When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none">• When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features]• When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] -[Programs and Features]

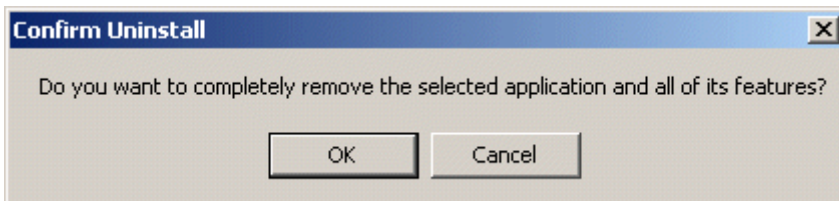
The following is "Add or Remove Programs" window.



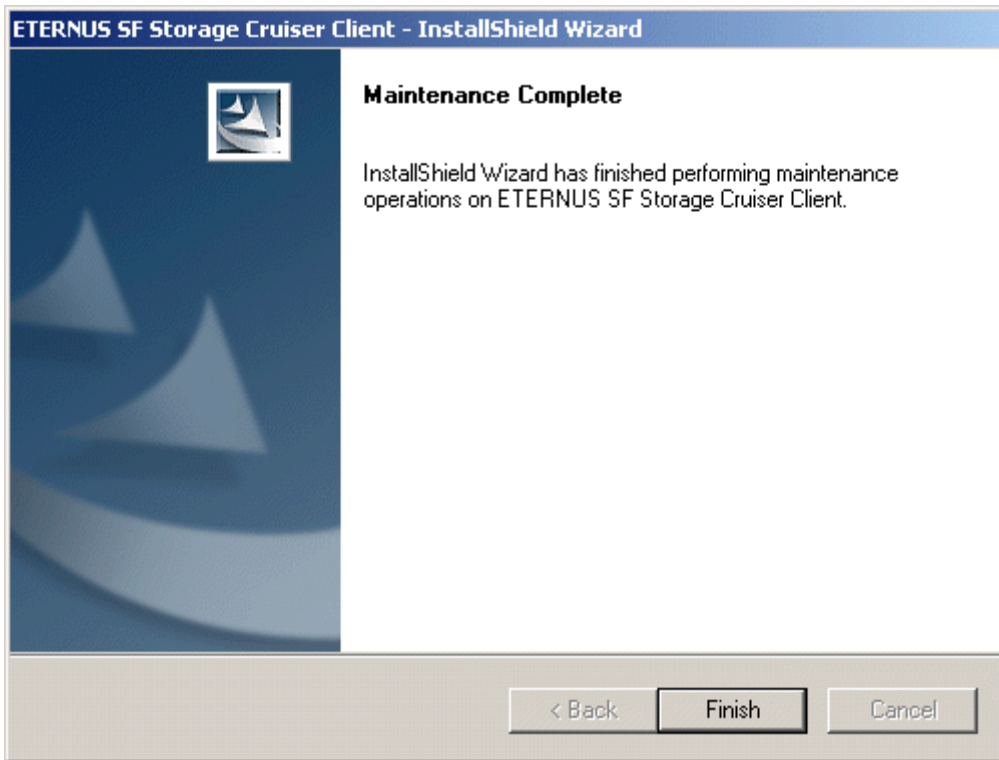
Information

The uninstallation may fail, and you receive "Error reading setup initialization file" error message. In such case, insert the CD-ROM that was used for installation into the CD-ROM drive, open the *CD-ROM_drive:\client\Windows\I32* directory using Explorer or another tool, and execute setup.exe.

3. The following confirmation window will be displayed, please click <OK> button.



4. When the uninstallation is completed, the following confirmation window will be displayed. Click <Finish> button. This completes the uninstallation process for Client.



Information

After the uninstallation, the installation directory may remain.

```
<Example>  
C:\Program Files\ETERNUS-SSC\Client
```

For using Windows Vista or Windows Server 2008, the following directory could be left.

```
C:\ETERNUS-SSC\Client
```

In this case, please delete the remaining directory manually using Explorer.

Information

There is a possibility that the menu is not deleted in the start menu when ETERNUS SF Storage Cruiser is uninstalled when Server System Manager and ETERNUS SF Storage Cruiser are installed.

Please execute the deletion of the menu according to the following procedures.

1. Select its menu from the start menu.
2. Select "Delete" from the pop-up menu displayed by right-clicking.

Chapter 9 Manager uninstallation

The uninstallation of ETERNUS SF Storage Cruiser Manager is described.

9.1 [Solaris OS] Manager uninstallation

The uninstallation of Solaris OS Manager is described.

9.1.1 Stopping manager

1. Login with root (super user), and stop the Manager daemon.

```
# /opt/FJSVssmgr/sbin/managerctl stop
```

2. Check that the Manager daemon has been stopped using the following command.

```
# /bin/ps -ef | grep /opt/FJSVssmgr/jre/bin/java | grep cruiser=daemon | grep -v grep  
# /bin/ps -ef | grep /opt/FJSVswstt/bin/nwsnmp-trapd
```

3. If not stopped, execute the following command.

```
# /usr/bin/kill -9 process_ID
```



In environments where the following products have been installed, please do not stop nwsnmp-trapd.

- Systemwalker Centric Manager admin server
- Systemwalker Centric Manager group admin server
- SystemWalker/StorageMGR-M V5.1/V10
- Systemwalker Network Topology Manager
- SAN manager under the Softek SANView4.1 CD-ROM Sub-directory
- Server System Manager V1.2.3 or later



If the Manager has not stopped, stop the following processes in this order.

1. /opt/FJSVssmgr/sys/rcxrespawn
2. /opt/FJSVssmgr/jre/bin/java -Dcruiser=daemon

9.1.2 Uninstallation

1. Login with root (super user), and execute the scuninstall.sh command. By executing this command the packages will be deleted. The scuninstall.sh command is also included in the packages. Therefore, please copy this file to another directory then execute the command.

Example

When copying the file to /work and uninstllation Manager:

```
# cp /opt/FJSVssmgr/bin/scuninstall.sh /work
# /work/scuninstall.sh
```

2. The following message is output. To execute uninstallation enter "y", to discontinue the uninstallation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008

This program will uninstall "ETERNUS SF Storage Cruiser" Manager on your system.

Do you want to continue the uninstallation of this package? [y,n,?,q]
```

3. When "y" is entered, the uninstallation will commence.

When the uninstallation is completed successfully, the message given below will be displayed.

```
INFO: "ETERNUS SF Storage Cruiser" Manager was uninstalled successfully.
```

When the uninstallation fails, the message given below will be displayed.

```
ERROR : Uninstalling package_name was failed.
```

When the uninstallation fails, use the `pkgrm` command to delete the packages given in the message, and repeat the process from step 1.

```
# pkgrm package_name
```

4. Delete the `sscruisera`, `nfport`, and `ssvsme` lines from `/etc/services`.

Information

- After the uninstallation, the directories below may remain.
In such a case, please delete the remaining directories manually.

```
/opt/FJSVssmgr
/opt/FJSVswstt (*1)
/opt/FJSVtrccb
/opt/FJSVssetl
/etc/opt/FJSVssmgr
/etc/opt/FJSVswstt (*1)
/etc/opt/FJSVtrccb
/etc/opt/FJSVssetl
/var/opt/FJSVssmgr
/var/opt/FJSVswstt (*1)
/var/opt/FJSVtrccb
/var/opt/FJSVssetl
```

*1: In an environment where the following products have been installed, delete these directories after deleting the following products and site manager.

- Systemwalker Centric Manager admin server
- Systemwalker Centric Manager group admin server
- SystemWalker/StorageMGR-M V5.1/V10
- Systemwalker Network Assist
- Systemwalker Network Topology Manager

- SAN manager under the Softek SANView4.1 CD-ROM Sub-directory
- Server System Manager V1.2.3 or later
- With Solaris 10 OS there is a possibility that the core file of svc.startd will be output to the root (/) directory. Delete this file, as it has no effect on the uninstallation.
The method for checking the core file is given below.

```
# file core
core: ELF 32-bit MSB core_file SPARC version 1[file_name svc.startd]
```

9.2 [Linux] Manager Uninstallation

The uninstallation of Linux Manager is described.

9.2.1 Stopping Manager

1. After restarting the system, login again with the administrator operating system (root), and then stop the Manager daemon.

```
# /opt/FJSVssmgr/sbin/managerctl stop
```

2. Check that the Manager daemon has been stopped using the following command.

```
# /bin/ps -ef | grep /opt/FJSVssmgr/jre/bin/java | grep cruiser=daemon | grep -v grep
# /bin/ps -ef | grep /opt/FJSVswstt/bin/nwsnmp-trapd <
```

3. If not stopped, execute the following command.

```
# /usr/bin/kill -9 Process_ID
```

Information

In the PRIMEQUEST environment, nwsnmp-trapd is not stopped by the managerctl command, so even if nwsnmp-trapd process exists, it is not necessary to stop it.

Note

In environments where the following products have been installed, please do not stop nwsnmp-trapd.

- Systemwalker Centric Manager administrative server
- Systemwalker Centric Manager section control server

Point

If Manager (/opt/FJSVssmgr/jre/bin/java) is not stopped, stop it in order of the following process names.

1. /opt/FJSVssmgr/sys/rcxrespawn
2. /opt/FJSVssmgr/jre/bin/java -Dcruiser=daemon

9.2.2 Uninstallation

1. Login with the administrator operating system (root), and execute the scuninstall.sh command. By executing this command the packages will be deleted. The scuninstall.sh command is also included in the packages. Therefore, please copy this file to another directory then execute the command.

Example

When copying the file to /work and uninstllation Manager:

```
# cp /opt/FJSVssmgr/bin/scuninstall.sh /work
# /work/scuninstall.sh
```

2. The following message is output. To execute uninstallation enter "y", to discontinue the uninstallation enter a different character.

```
ETERNUS SF Storage Cruiser 13.3
All Rights Reserved, Copyright(c) FUJITSU LIMITED 2006-2008

This program will uninstall "ETERNUS SF Storage Cruiser" Manager on your system.

Do you want to continue the uninstallation of this package? [y,n,?,q]
```

3. When "y" is entered, the uninstallation will commence.

When the uninstallation is completed successfully, the message given below will be displayed.

```
INFO: "ETERNUS SF Storage Cruiser" Manager was uninstalled successfully.
```

When the uninstallation fails, the message given below will be displayed.

```
ERROR : Uninstalling Package name was failed.
```

When the uninstallation fails, use the rpm command to delete the packages given in the message, and repeat the process from step 1.

```
# rpm -e package_name
```

4. Delete the sscrusera, nfport, and ssvscme lines from /etc/services.

Point

In the PRIMEQUEST environment, restart the system or execute the following.

- Administrative server for Systemwalker Centric Manager
- Division management server for Systemwalker Centric Manager

For environments where the above products are not installed:

1. Check if nwsnmp-trapd is running with the following command.

```
# /bin/ps -ef | grep nwsnmp-trapd
```

2. If /opt/FJSVswstt/bin/nwsnmp-trapd is running, execute the following command to stop it. (Do not stop nwsnmp-trapd other than /opt/FJSVswstt/bin)

```
# /usr/bin/kill -9 Process_ID_of_/opt/FJSVswstt/bin/nwsnmp-trapd
```

3. If nwsnmp-trapd is not running in step 1, or /opt/FJSVswstt/bin/nwsnmp-trapd is stopped in step 2, execute the following command.

```
# /etc/init.d/sw-trapd restart
```

For environments where the above products are not installed:

1. Check that /opt/FJSVswstt/bin/nwsnmp-trapd has stopped with the following command.

```
# /bin/ps -ef | grep /opt/FJSVswstt/bin/nwsnmp-trapd
```
2. If /opt/FJSVswstt/bin/nwsnmp-trapd is running, execute the following command to stop it.

```
# /usr/bin/kill -9 Process_ID_of_/opt/FJSVswstt/bin/nwsnmp-trapd
```
3. Execute the following command.

```
# /etc/init.d/snmptrapd restart
```

 **Information**

After the uninstallation, the directories below may remain.
In such a case, delete the remaining directories manually.

```
/opt/FJSVssmgr  
/opt/FJSVswstt (*1)  
/opt/FJSVtrccb  
/opt/FJSVssetl  
/etc/opt/FJSVssmgr  
/etc/opt/FJSVswstt (*1)  
/etc/opt/FJSVtrccb  
/etc/opt/FJSVssetl  
/var/opt/FJSVssmgr  
/var/opt/FJSVswstt (*1)  
/var/opt/FJSVtrccb  
/var/opt/FJSVssetl
```

*1: In an environment where the following products have been installed, delete these directories after deleting the following products and site manager.

- Systemwalker Centric Manager administrative server
 - Systemwalker Centric Manager section control server
-

9.3 [Windows] Manager uninstallation

The uninstallation of Windows Manager is described.

 **Note**

The notation of Windows operating system products in this chapter:

The notation keeps the word of "[4.3.1.2.1 Required basic software](#)".

Note that the same method of notation may also be used in other chapters to indicate a different product group.

9.3.1 Stopping manager

1. Logon to Windows operating system to uninstall Manager.
Please logon with the OS administrator (Administrator) of the terminal.

- Open "Services" window, and select ETERNUS SF Storage Cruiser Manager services and SystemWalker MpWksttr services to stop.

The method to open "Services" window is as follows.

OS	Method to open "Services" window
Windows 2000	[Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Services]
Windows Server 2003 Windows Server 2008	<ul style="list-style-type: none"> When "Start menu" is used: [Start] - [Control Panel] - [Administrative Tools] - [Services] When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Administrative Tools] - [Services]

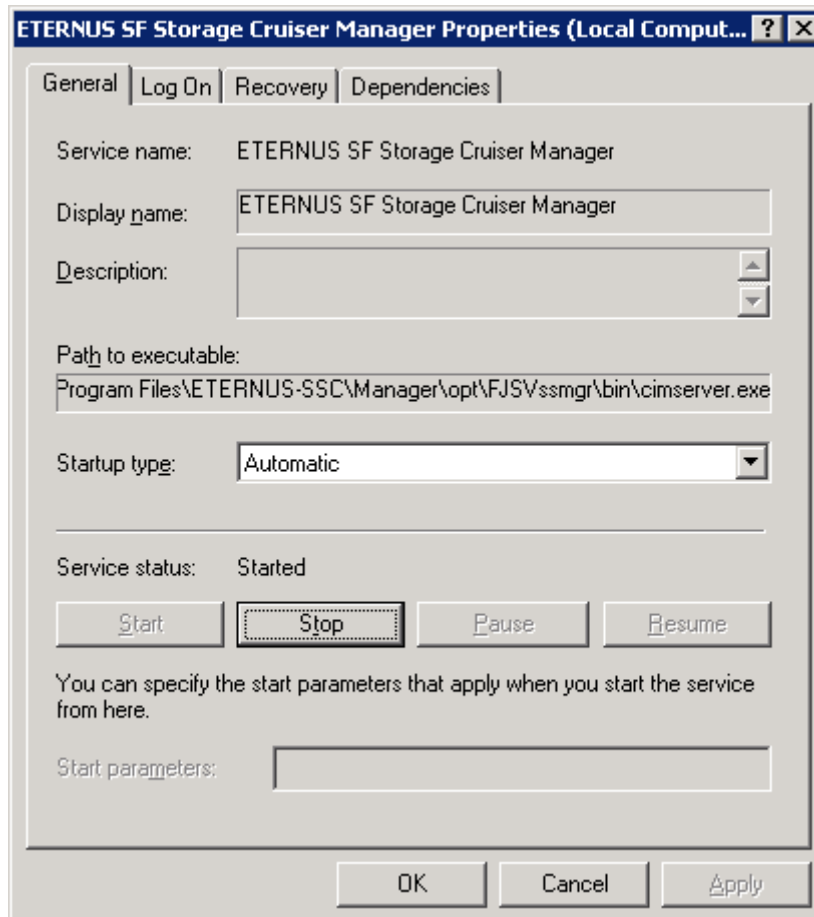


Note

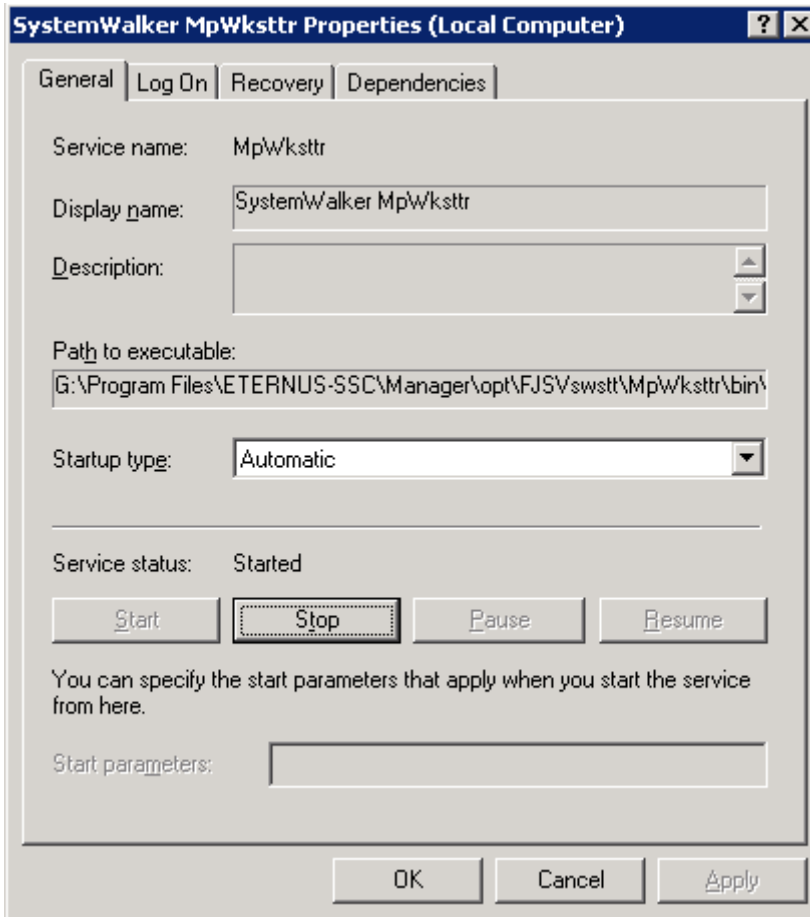
In the mixed environment where SystemWalker MpWksttr services are shared with other product:

Don't stop SystemWalker MpWksttr services installed by products other than ETERNUS SF Storage Cruiser. For mixed environment, refer to "[4.3.2 Advisory notes](#)".

The example of ETERNUS SF Storage Cruiser Manager services is as follows.



The example of SystemWalker MpWksttr services is as follows.



For SystemWalker MpWksttr service installed by ETERNUS SF Storage Cruiser, "Executable file path" is in common with ETERNUS SF Storage Cruiser service as far as C:\Program Files\ETERNUS-SSC\Manager\opt.

If not in common, it is SystemWalker MpWksttr service installed by product other than ETERNUS SF Cruiser, so don't stop the SystemWalker MpWksttr service but stop only ETERNUS SF Storage Cruiser Manager service.

9.3.2 Uninstallation

1. Logon to Windows operating system to uninstall Manager.

Please logon with the OS administrator (Administrator) of the terminal.

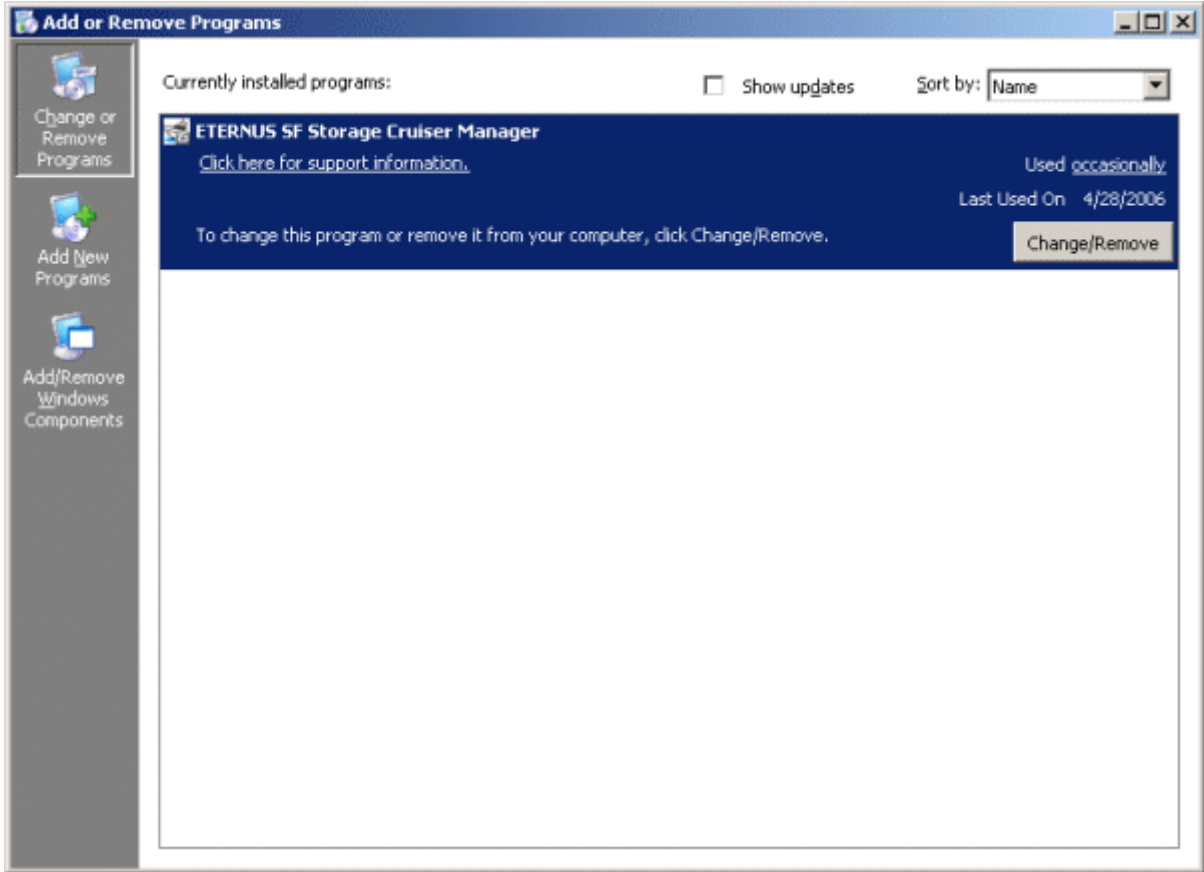
2. Open the window that can add or remove programs, and delete ETERNUS SF Storage Cruiser Manager

The name of window that can add or remove programs and the method to open its window are as follows.

OS	Name of window	Method to open window
Windows 2000	Add/Remove Programs	[Start] - [Settings] - [Control Panel] - [Add/Remove Programs]
Windows Server 2003	Add or Remove Programs	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Add or Remove Programs] • When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] - [Add or Remove Programs]
Windows Server 2008	Programs and Features	<ul style="list-style-type: none"> • When "Start menu" is used: [Start] - [Control Panel] - [Programs and Features]

OS	Name of window	Method to open window
		<ul style="list-style-type: none"> When "Classic Start menu" is used: [Start] - [Settings] - [Control Panel] -[Programs and Features]

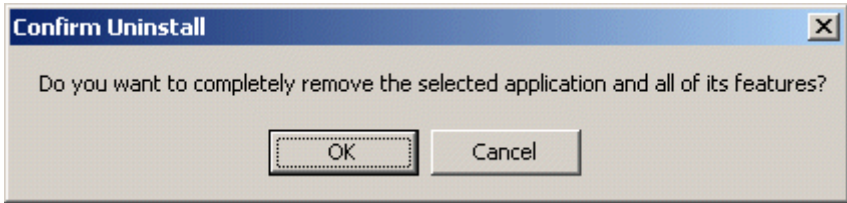
The following is "Add or Remove Programs" window.



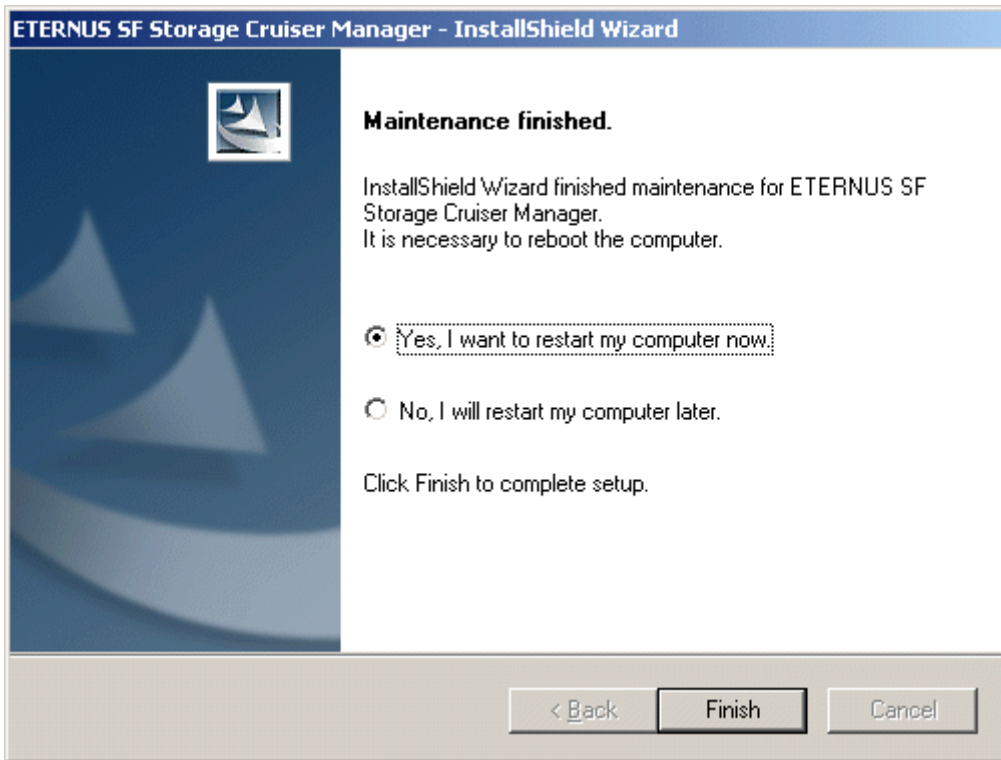
Information

The uninstallation may fail, and you receive "Error reading setup initialization file" error message. In such case, insert the CD-ROM that was used for installation into the CD-ROM drive, open the *CD-ROM_drive:\manager\Windows\I32* directory using Explorer or another tool, and execute setup.exe.

- The following confirmation window will be displayed, click <OK> button.



- When the uninstallation is completed, the following confirmation window will be displayed. Click <Finish> button, and reboot the computer.



Information

After the uninstallation, the installation directory may remain.

```
<Example>  
C:\Program Files\ETERNUS-SSC\Manager
```

In this case, please delete the remaining directory manually using Explorer.

Information

Case of the mixed environment where SystemWalker MpWksttr service is shared with other products:

SystemWalker MpWksttr service installed by ETERNUS SF Storage Cruiser is deleted according to the uninstallation procedure. Therefore, on completion of uninstallation, refer to the manual for each product to install and set up SystemWalker MpWksttr service.

For mixed environment, refer to "[4.3.2 Advisory notes](#)".

Appendix A High-availability admin servers

Admin servers in cluster systems ensure high-availability and maximize uptime.

A.1 What are cluster systems?

A cluster system provides high-availability by operating two or more servers as one virtual server.

If a system is run with only one server machine, and the server machine or the server application fails, all operations would stop until it is rebooted.

In a cluster system where two or more server machines are linked together, if the primary server machine becomes unusable due to an error on the server machine or the application being run, the secondary server machine can restart the application that was running on the failed server machine to resume the operation, reducing the operation stop time. The switchover from a failed server to another server is called failover.

These two or more linked server machines are referred to as a cluster of server machines and clustering server machines are referred to as nodes in the cluster system.

Clusters of server machines are classified into one of the following types.

- Standby class

This is a cluster of standby nodes that stand ready to take over from operating nodes. The mode can be one of the following four modes.

- 1:1 standby

A cluster system consist one operating node and one standby node. The operating node is operational and the standby node stands ready to take over if needed. This operation mode ensures the continuous availability of cluster applications even after failover.

- n:1 standby

A cluster consists of n operating nodes and one standby node. The n operating nodes run different operations and the standby node stands ready to take over from all of the operating nodes. This operation mode ensures the availability of cluster applications even after failover. It is also cost-effective because only one node serves as the standby node for cluster applications.

- Mutual standby

A cluster consists of two nodes with both operating and standby applications. The two nodes run different operations and stand ready to take over from each other. If one of these nodes fails, the other node runs both of the operations. In this operation mode, two or more cluster applications will be operating on the failover node in the event of a node failure.

- Cascade

A cluster consist three or more nodes. One of the nodes is the operating node and the others are the standby nodes. If the operating node fails, cluster applications are switched to one of the standby nodes. Even if a failover fails, cluster applications are moved to another standby node. When one node is stopped in the event of node failure or scheduled downtime such as system maintenance or upgrading, the redundant configuration can be maintained. This operation mode ensures the continuous availability of cluster applications.

- Scalable class

This is a cluster that allows multiple server machines to operate concurrently for performance improvement and degradation. The difference from the standby class is that this class does not divide the nodes into the operating type and the standby type. If one of the nodes in the cluster fails, the operation is degraded to the other servers.



See

.....
For details, refer to the version of "PRIMECLUSTER Installation and Administration Guide" for the respective operating System.
.....

A.2 Supported software

The following pieces of ETERNUS SF Storage Cruiser's software are supported:

- Solaris OS Manager
- Linux Manager

A.3 Manager installation

This section describes the procedure for manager installation on a cluster system.

Information

To distinguish two physical nodes, one is called the primary node and the other is called the secondary node.

The primary node indicates an operating node on which the cluster service (cluster application) runs at initial boot time, and the secondary node indicates a standby node on which the cluster service (cluster application) stands ready at initial boot time.

A.3.1 New manager installation

A.3.1.1 Preparation

Cluster installation and configuration

To operate managers as cluster services (cluster applications) in a cluster system, install and configure manager software on each node. Be sure to check the device names and the mount point names when configuring the shared disks.

Information

Operations that are run where the manager is set up as cluster service (cluster application) is referred to as manager operations is respectively. Collectively, these operations are called Manager operations.

See

For details about PRIMECLUSTER, refer to the version of "PRIMECLUSTER Installation and Administration Guide" for the respective operating System.

Resource configuration

Manager installation on a cluster system requires the following resources.

- Resources used in the cluster system
 - Takeover IP addresses for the admin servers
Allocate new unique IP addresses in the network that are used for the admin servers in the cluster system with PRIMECLUSTER Ipaddress resource creation. This step can be skipped if the IP addresses for the existing cluster services (cluster applications) are used.
 - Shared disks for the admin servers
Configure PRIMECLUSTER GDS volumes that will store shared data for the admin servers. The number of required volumes is as follows.

Name	Number	Content
Shared data disk for the server	1 (Note 1)	Shared data storage destination for the server

Note1: When a server operates as the server, both the admin servers use one shared disk.

Note2: Necessary when Interstage Application Server Smart Repository is installed.

- Resources used outside the cluster system

- Port numbers for the admin servers

Allocate the port numbers for the admin servers, which are set as described in "4.1.4.1 /etc/services configuration" (in Solaris OS) or "4.2.4.1 /etc/services configuration" (in Linux).

Shared disk space

The ETERNUS SF Storage Cruiser shared disks include the following directories that are used with ETERNUS SF Storage Cruiser.

- For the admin server

Required disk space is calculated from the sum of static disk space and dynamic disk space. For details, please refer to "4.1.1.2.5 Static disk space" and "4.1.1.2.6 Dynamic disk space" (in Solaris OS) or "4.2.1.2.5 Static disk space" and "4.2.1.2.6 Dynamic disk space" (in Linux).

Section number	Directory	Required disk space (Unit : MB)
1	/etc	6
2	/var	552 + Repository for storage resource manager (Note 1)

Note 1: For how to calculate the "repository for storage resource manager", please refer to "Repository for Manager" in "4.1.1.2.6 Dynamic disk space" (in Solaris OS) or "Repository for Manager" in "4.2.1.2.6 Dynamic disk space" (in Linux).

A.3.1.2 Installation

Install manager.

Using similar steps on the primary node and the secondary node, perform the procedure from the beginning of "4.1.3 Installation procedure" (in Solaris OS) or "4.2.3 Installation procedure" (in Linux) for manager.



Note

- Please do not install software on the shared disks.
- Please do not perform the procedure described in "4.1.4 Post-installation setup" (in Solaris OS) or "4.2.4 Post-installation setup" (in Linux) for manager at this point.

A.4 Manager operation setup

This section describes the procedure for setting up managers as cluster services (cluster applications) in a cluster system.



Point

Prior to setup, decide whether to add the manager operations to existing cluster services (cluster applications) or as new cluster services (cluster applications).

A.4.1 In advance checks

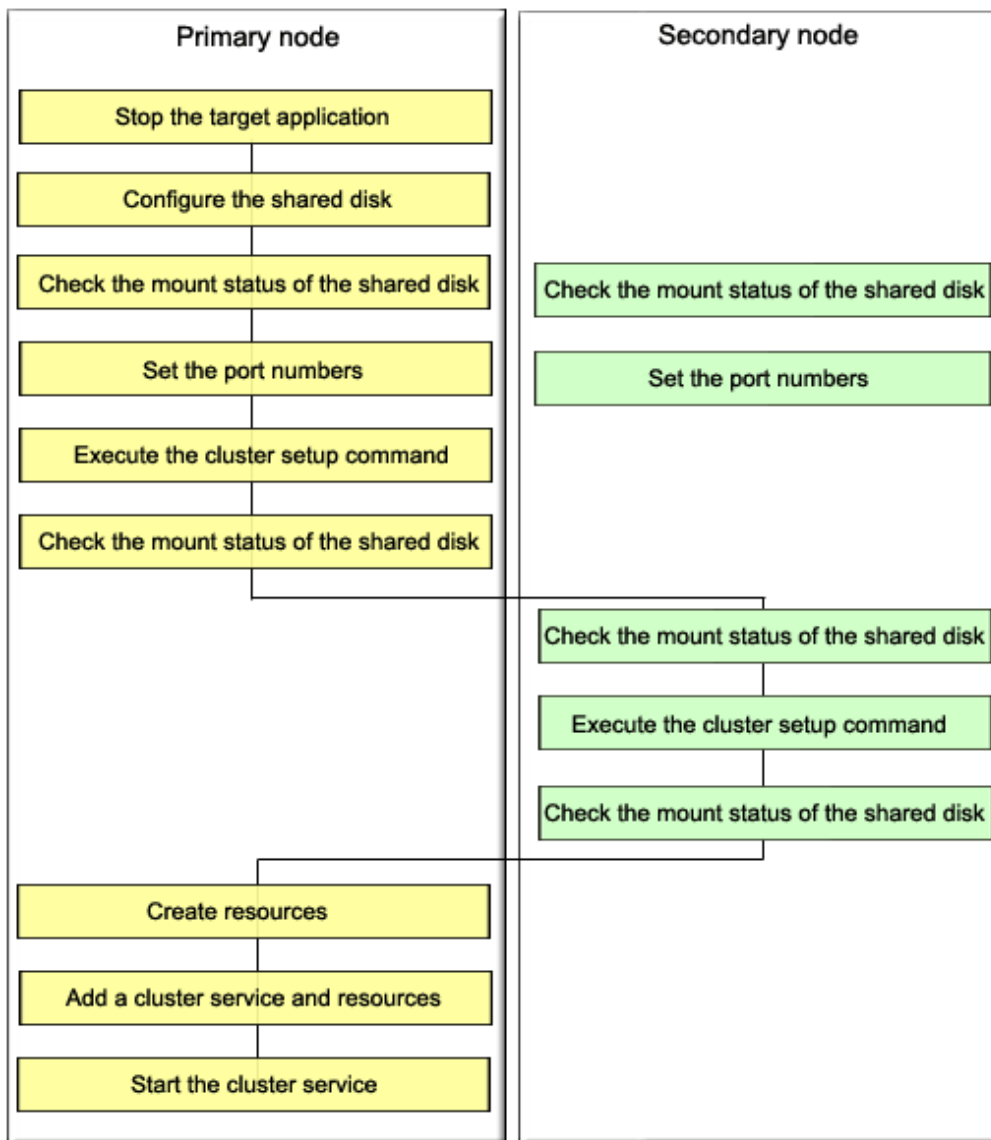
Check that the manager installation is complete. For the admin server, check that the procedure from the beginning of "[4.1.3 Installation procedure](#)" (in Solaris OS) or "[4.2.3 Installation procedure](#)" (in Linux) is complete.

Information

Use the cluster setup command for configuring "LOGICAL_MANAGER_IP" in /etc/opt/FJSVssmgr/current/sanma.conf.

A.4.2 Manager operation setup (outline)

Set up managers on the admin servers.
The following figure shows the setup flow.



A.4.3 Manager operation setup (details)

Set up managers as cluster services (cluster applications) using the following steps. Only a user with system administrator privileges can conduct the following procedures.

When rebooting the system after installing managers, stop the managers before performing the following procedure.

1. When adding a manager to an existing cluster service (cluster application), stop the cluster service (cluster application) using the cluster admin of the cluster system.
2. Configure the shared disk using PRIMECLUSTER GDS.



For details, refer to "PRIMECLUSTER Global Disk Services Guide (Solaris(TM) operating system version)" of the respective operating system.

3. Mount the shared data disk for the server on the primary node.
4. Specify the port numbers for the server in "/etc/services" on both the primary node and the secondary node.
5. Perform the procedure described in "4.1.4.2 Administrator login account creation" (in Solaris OS) or "4.2.4.2 Administrator login account creation" (in Linux) only on the primary node. The created login account information will be set on the shared data disk when the cluster setup command is executed.
6. Execute the cluster setup command on the primary node.

After preventing access by other users to the shared data disk for the server, execute the following cluster setup command on the primary node.

```
# /opt/FJSVssmgr/cluster/esc_clsetup -k Primary -m Mount_point_on_the_shared_data_disk_for_the_server -i Server_takeover_IP_address
```

7. Check the configurations.

Information specified with the command is output. Check the output information and enter "y". To cancel setup at this point, enter "n".

```
# /opt/FJSVssmgr/cluster/esc_clsetup -k Primary -m /zzz -i 10.10.10.10
ETERNUS SF Storage Cruiser settings are as follows.

Cluster system : PRIMECLUSTER

Node type      : Primary

Mount point   : /zzz

IP Address    : 10.10.10.10

Manager cluster setup : Are you sure? [y,n,?]
```

8. Setup on the primary node is executed.

```
FJSVrcx:INFO:27700:esc_clsetup:primary node setup completed
```

The command execution runs cluster setup and sets the "LOGICAL_MANAGER_IP" configuration of /etc/opt/FJSVssmgr/current/sanma.conf on the shared disk into sanma.conf.

```
LOGICAL_MANAGER_IP="10.10.10.10";
```

9. Unmount the shared data disk for the server from the primary node.
10. Mount the shared data disk for the server on the secondary node.
11. Execute the cluster setup command on the secondary node.

After preventing access by other users to the shared data disk for the server, execute the following cluster setup command on the secondary node.

```
# /opt/FJSVssmgr/cluster/esc_clsetup -k Secondary -m
Mount_point_on_the_shared_data_disk_for_the_server
```

12. Check the configurations.

Information specified with the command is output. Check the output information and enter "y". To cancel setup at this point, enter "n".

```
# /opt/FJSVssmgr/cluster/esc_clsetup -k Secondary -m /zzz
Systemwalker Resource Coordinator settings are as follows.

Cluster system : PRIMECLUSTER

Node type      : Secondary

Mount point   : /zzz

IP Address    : 10.10.10.10

Manager cluster setup : Are you sure? [y,n,?]
```

13. Setup on the secondary node is executed.

```
FJSVrcx:INFO:27701:esc_clsetup:secondary node setup completed
```

14. Unmount the shared data disk for the server from the secondary node.

15. Create a cluster service (cluster application).



For details, refer to "PRIMECLUSTER Installation and Administration Guide" for the respective operating system.

For Solaris OS:

Use userApplication Configuration Wizard for cluster system to create the following required PRIMECLUSTER resources on the cluster service (cluster application). After creating the resources a. to d. described below, create the cluster service (cluster application) as follows.

- Select "Standby" for the admin server configuration.
- For attribute values, set AutoStartUp to "yes", AutoSwitchOver to "HostFailure|ResourceFailure|ShutDown", and HaltFlag to "yes".
When using Interstage Application Server Smart Repository, or creating a hot standby configuration, set StandbyTransitions to "ClearFaultRequest|StartUp|SwitchRequest".

Then create the following resources on the created cluster service (cluster application).

a. Cmdline resource (Create the Cmdline resources for ESC.)

Select "Cmdline" for Resource creation in the userApplication Configuration Wizard to create the resources through path input, and make the following configurations.

Type	Input pathname
Start script	/opt/FJSVssmgr/cluster/cmd/rcxclstartcmd
Stop script	/opt/FJSVssmgr/cluster/cmd/rcxclstopcmd
Check script	/opt/FJSVssmgr/cluster/cmd/rcxclcheckcmd

Flag (attribute value) settings: When a value other than "NO" is specified for the cluster service (cluster application) attribute value "StandbyTransitions", set ALLEXITCODES to "yes" and STANDBYCAPABLE to "yes".

 **Point**

.....
If shared with the operations management server or division management server for Systemwalker Centric Manager, make settings so that they are started after Systemwalker Centric Manager.
.....

b. **Ipaddress resource (Configure the takeover logical IP address for the cluster system.)**

Select Ipaddress for Resource creation in the userApplication Configuration Wizard and configure the takeover logical IP address. Configure the takeover logical IP address for the NIC of clients. For the takeover network type, select "IP address takeover".

c. **Fsystem resource (Configure the mount point of the shared data disk for the server.)**

Select Fsystem for Resource creation in the userApplication Configuration Wizard and configure the file system. If no mount point definition exists, please refer to the "PRIMECLUSTER Installation and Administration Guide" and define the mount point.

d. **Gds resource (Specify the configuration created for the shared data disk for the server.)**

Select Gds for Resource creation in the userApplication Configuration Wizard and configure the shared disk. Specify the configuration created for the shared data disk for the server.

For Linux:

Use RMS Wizard for cluster system to create the following PRIMECLUSTER resources on the cluster service (cluster application).

To create a new cluster service (cluster application), select "Application-Create" to specify a primary node for Machines[0] and a secondary node for Machines[1] to create. For settings of "Machines+Basics", set "yes" to AutoStartUp, "HostFailure|ResourceFailure|ShutDown" to a value of AutoSwitchOver and "yes" to HaltFlag.

Then, create the following resources a. to d. on the created cluster service (cluster application).

Perform settings by means of the RMS Wizard to any of the nodes configured in a cluster.

a. **Cmdline resources (Create Cmdline resources for ESC)**

Select "CommandLines" with the RMS Wizard to perform the following settings.

Type	Input pathname
Start script	/opt/FJSVssmgr/cluster/cmd/rcxclstartcmd
Stop script	/opt/FJSVssmgr/cluster/cmd/rcxclstopcmd
Check script	/opt/FJSVssmgr/cluster/cmd/rcxclcheckcmd

Flag settings (attribute value): If anything other than "without value" is specified for attribute value StandbyTransitions of the cluster service (cluster application), set the Flags ALLEXITCODES(E) and STANDBYCAPABLE(O) to "Enabled".

 **Point**

.....
If shared with the operations management server or division management server for Systemwalker Centric Manager, make settings so that they are started after Systemwalker Centric Manager.
.....

b. **Gls resources (Set a takeover logical IP address to be used for cluster system.)**

Select "Gls:Global-Link-Services" with the RMS Wizard to set a takeover logical IP address The takeover logical IP address is set to the client NIC. If the configuration information for takeover logical IP address has not been created, refer to "PRIMECLUSTER Global Link Services Instruction Manual (Redundancy function in transmission lines) (Linux)" to create it.

c. **Fsystem resources (Set mount points of management server-shared disks.)**

Select "LocalFileSystems" with the RMS Wizard to set file systems. If mount points have not been defined, refer to "PRIMECLUSTER Installation Guide (Linux)" to define.

d. Gds resources (Specify the settings for management server shared disks.)

Select "Gds:Global-Disk-Sevices" with the RMS Wizard to set shared disks. Specify the settings created for management server-shared disks.

16. Perform the procedure as instructed in "[4.1.4.3 Rebooting the system](#)" (In Solaris OS) or "[4.2.4.3 Rebooting the system](#)" (In Linux) on both the primary node and the secondary node.

A.5 Admin server daemons

After cluster setup, the following daemons become resources of the cluster services (cluster applications) as the manager operations.

- Operation control daemon

Execute the following command in a command line.

```
# ps -ef | grep -v grep | grep /opt/FJSVssmgr/jre/bin/java | grep cruiser=daemon
```

If a line containing the following character strings is output, the manager monitoring daemon is active.

```
/opt/FJSVssmgr/jre/bin/java -Dcruiser=daemon
```

A.6 Advisory notes

This section provides advisory notes on admin server operation in cluster systems.

/etc/opt/FJSVssmgr/current/sanma.conf configuration

Specify a logical IP address as the takeover IP address for the LOGICAL_MANAGER_IP parameter in /etc/opt/FJSVssmgr/current/sanma.conf. However, the cluster setup command usually configures the takeover IP address automatically.

Cluster service (cluster application) switchover

An event that occurred during cluster service switchover cannot be output.

Troubleshooting material

Refer to "D.1 Troubleshooting information" in the ETERNUS SF Storage Cruiser User's Guide, for how to collect troubleshooting material.

Commands

For the command execution methods, there is no difference between regular operation and cluster operation.

Messages

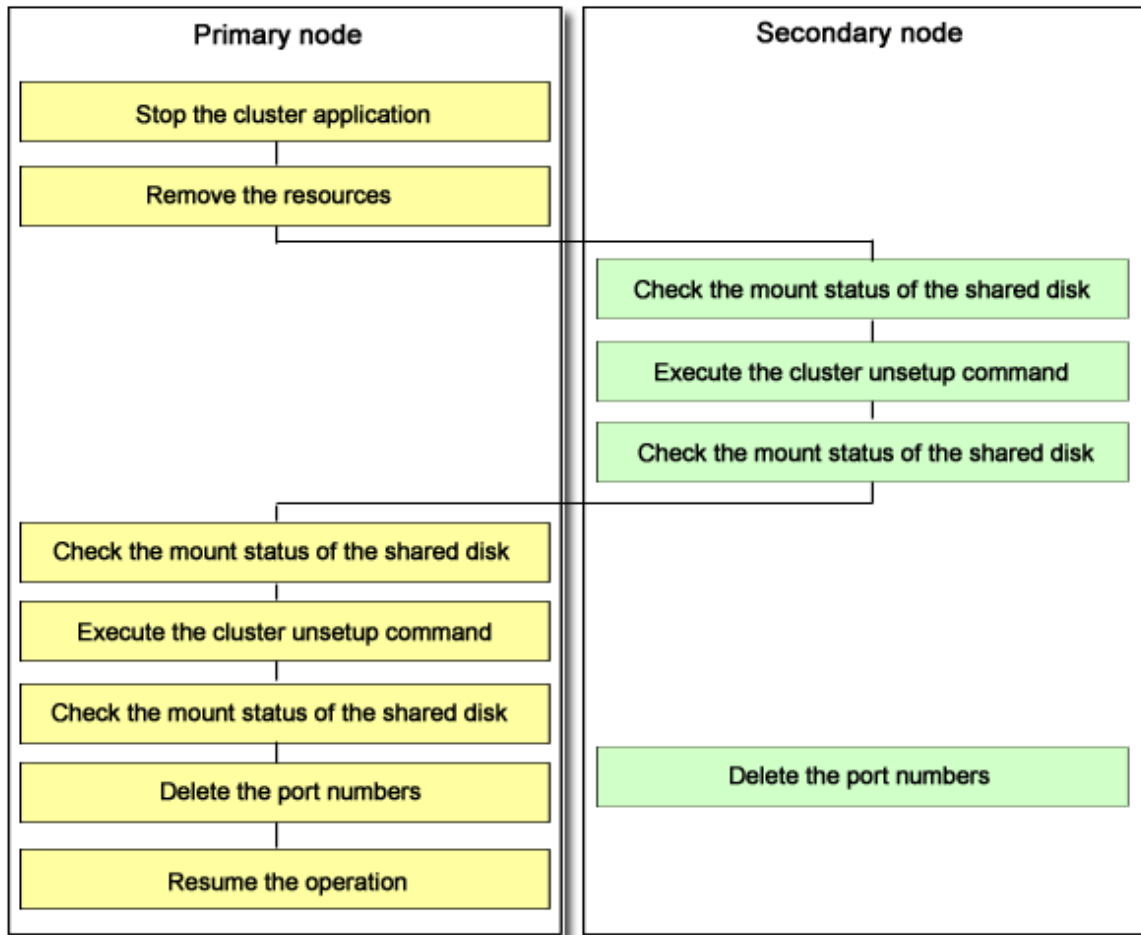
Refer to the ETERNUS SF Storage Cruiser Message Guide and "[A.8 Cluster-related messages](#)".

A.7 Cluster environment deletion

This section describes how to delete cluster environments for the manager operations.

A.7.1 Cluster environment deletion procedure (outline)

The following figure shows the manager operation cluster environment deletion flow.



A.7.2 Cluster environment deletion procedure (details)

Delete cluster environments using the following steps. Perform the deletion procedures on the server admin server in the cluster system respectively. Only a user with system administrator privileges can conduct the following procedures.

For the admin server

1. Stop the cluster service (cluster application) configured for the manager operation using the cluster admin of the cluster system.
2. Delete resources for management tasks registered to the target cluster service (cluster application).



For details, refer to the "PRIMECLUSTER Installation and Administration Guide" for the respective operating system version.

For Solaris OS:

Remove the following resources with the userApplication Configuration Wizard:

- Cmdline resource (For ESC)
- Ippaddress resource (if not used at all)
- Gds resource (if not used at all)
- Fsystem resource (mount point of the shared data disk for the admin server)

For Linux:

Using the RMS Wizard for cluster system delete the resources for management tasks registered to the target cluster service (cluster application). If the cluster service consists of only the resources for management server, delete also the cluster service (cluster application).

Delete the following resources with the RMS Wizard.

- Cmdline resources (for ESC)
- Gls resources (if not used for other purpose)
- Gds resources (not available for other purposes)
- Fsystem fdxouf resources (mount points of shared data disks for operations management server)

Deletion with the RMS Wizard is performed with respect to any of the nodes in a cluster.

3. Check that the shared data disk for the server is unmounted on the primary node and the secondary node.
4. Mount the shared data disk for the server on the secondary node.
5. Execute the cluster unsetup command on the secondary node.

After preventing access by other users to the shared data disk for the server, execute the following command on the secondary node.

```
# /opt/FJSVssmgr/cluster/esc_clunsetup  
or  
# /opt/FJSVssmgr/cluster/esc_clunsetup -l
```

Option specification is not required under normal conditions, but specify the -l option if local free disk space on the secondary node is insufficient.

6. Check the configurations (no option in this example).

Check the configurations and enter "y". To cancel unsetup at this point, enter "n".

```
ETERNUS SF Storage cruiser settings were as follows.  
  
Cluster system : PRIMECLUSTER  
  
Node type      : Secondary  
  
Mount point    : /zzz  
  
IP Address     : 10.10.10.10  
  
Mode           : Normal (restore from Shared Disk)  
  
Manager cluster deletion : Are you sure? [y,n,?]
```

7. Deletion on the secondary node is executed.

```
FJSVrcx:INFO:27703:esc_clunsetup:secondary node deletion completed
```

8. Unmount the shared data disk for the admin server from the secondary node.
9. Mount the shared data disk for the admin server on the primary node.
10. Execute the cluster unsetup command on the primary node.

After preventing access by other users to the shared data disk for the server, execute the following command on the primary node.

```
# /opt/FJSVssmgr/cluster/esc_clunsetup  
or  
# /opt/FJSVssmgr/cluster/esc_clunsetup -l
```

Option specification is not required under normal conditions, but specify the -l option if local free disk space on the primary node is insufficient.

11. Check the configurations (no option in this example).

Check the configurations and enter "y". To cancel unsetup at this point, enter "n".

```
ETERNUS SF Storage Cruiser settings were as follows.

Cluster system : PRIMECLUSTER

Node type      : Primary

Mount point    : /zzz

IP Address     : 10.10.10.10

Mode           : Normal (restore from Shared Disk)

Manager cluster deletion : Are you sure? [y,n,?]
```

12. Deletion on the primary node is executed.

```
FJSVrcx:INFO:27702:esc_clunsetup:primary node deletion completed
```

13. Unmount the shared data disk for the server from the primary node.
14. Delete the port numbers for the server from /etc/services on both the primary node and the secondary node.
15. Start the cluster service (cluster application) using the cluster admin of the cluster system. If the cluster service (cluster application) was deleted in step 2, this step is not required.
16. Execute the following command on both the primary node and the secondary node to stop nwsnmp-trapd.

```
# /opt/FJSVswstt/bin/mpnm-trapd stop
```
17. Uninstall managers from both the primary node and the secondary node using the procedure as described in "9.1 [Solaris OS] Manager uninstallation" (In Solaris OS) or "9.2 [Linux] Manager Uninstallation" (in Linux).

A.8 Cluster-related messages

This section describes messages output at the time of cluster environment setup and unsetup.

A.8.1 Informative messages

FJSVrcx:INFO:27700:command:primary node setup completed

Description

The cluster setup on the primary node ended normally.

Corrective action

Proceed to the next operation according to the cluster environment configuration procedure.

FJSVrcx:INFO:27701:command:secondary node setup completed

Description

The cluster setup on the secondary node ended normally.

Corrective action

Proceed to the next operation according to the cluster environment configuration procedure.

[FJSVrcx:INFO:27702:command:primary node deletion completed](#)

Description

The cluster deletion on the primary node ended normally.

Corrective action

Proceed to the next operation according to the cluster environment configuration procedure.

[FJSVrcx:INFO:27703:command:secondary node deletion completed](#)

Description

The cluster deletion on the secondary node ended normally.

Corrective action

Proceed to the next operation according to the cluster environment configuration procedure.

[FJSVrcx:INFO:27733:command:canceled](#)

Description

The command was canceled.

Corrective action

No specific action is required.

[FJSVrcx:INFO:27751:command:cluster deletion \(erase shared disk data\) completed](#)

Description

The shared disk data deletion is completed.

Corrective action

If any node where the cluster environment is not deleted exists, delete the cluster environment in force mode (using `-f` when executing `esc_clunsetup`). After the deletion is completed, uninstall the manager.

[FJSVrcx:INFO:27753:command:cluster deletion \(force mode\) completed](#)

Description

The cluster unsetup in force mode was completed.

Corrective action

Uninstall the manager.

A.8.2 Warning messages

[FJSVrcx:WARNING:47752:command:cluster deletion \(force mode\) completed excluding erase shared disk data](#)

Description

Except for shared disk data deletion, the cluster unsetup in force mode is completed.

Corrective action

Check that the shared disk is accessible, and delete shared disk data (using `esc_clunsetup` with `-e MountPoint`).

A.8.3 Error messages

[FJSVrcx:ERROR:67704:command:option:secondary node deletion completed](#)

Description

The option is incorrect. Usage will be output.

Corrective action

Check the command then re-execute.

[FJSVrcx:ERROR:67706:command:ipaddress:invalid IP address format](#)

Description

The IP address format is incorrect.

Corrective action

Check the IP address.

[FJSVrcx:ERROR:67707:command:setup command already running](#)

Description

The cluster setup command or the cluster unsetup command is already active.

Corrective action

Check whether the cluster setup command or the cluster unsetup command is running somewhere else.

[FJSVrcx:ERROR:67709:command:not privileged](#)

Description

The command was activated by a non-OS administrator (non-root user).

Corrective action

Execute the command as an OS administrator (root user).

[FJSVrcx:ERROR:67710:command:mountpoint:not mounted](#)

Description

The shared disk has not been mounted on mount point *mountpoint*.

Corrective action

Check the mount status of the shared disk for admin server shared data.
If the mount destination *mountpoint* contains "/" at the end, delete the last "/" and re-execute.

FJSVrcx:ERROR:67711:command:software:not installed

Description

Cluster software *software* has not been installed.

Corrective action

Check whether the cluster setup command or the cluster unsetup command is running.

FJSVrcx:ERROR:67714:command:nodetype: cluster setup already completed in this node

Description

The cluster environment of node type *nodetype* has been configured on the current node.

Corrective action

Check the cluster environment status on the current node.

FJSVrcx:ERROR:67715:command:cluster setup already completed in another node

Description

The cluster environment of the node type specified with the cluster setup command has been configured on another node.

Corrective action

Check whether the node type specified with the executed command is correct.
Check whether the cluster environment of the node type specified with the executed command has already been configured on another node.

FJSVrcx:ERROR:67716:command:primary node setup not completed

Description

The cluster environment has not been configured on the primary node.

Corrective action

Check whether the shared disk for mounted admin server shared data is correct.
Configure the cluster environment on the primary node.

FJSVrcx:ERROR:67717:command:switch:parameter:parameter conflict

Description

Data different from the previous one was specified.

Corrective action

Check the argument values of the command.

FJSVrcx:ERROR:67725:command:option:illegal option

Description

The option is incorrect. Usage will be output.

Corrective action

Check the command then re-execute.

FJSVrcx:ERROR:67726:command:secondary node not deleted

Description

The cluster environment on the secondary node is not deleted.

Corrective action

Check whether the shared disk for mounted admin server shared data is correct.
Delete the cluster environment then re-execute the command.

FJSVrcx:ERROR:67727:command:no cluster setup node

Description

The cluster environment has not been configured.

Corrective action

Check whether the admin server cluster environment has been configured.

FJSVrcx:ERROR:67740:command:cluster setup failed (setup data invalid)

Description

The cluster setup failed. The cluster environment configurations are invalid.

Corrective action

Delete the cluster environment in force mode then uninstall the manager.

FJSVrcx:ERROR:67741:command:setup command not installed

Description

The module for cluster setup has not been installed.

Corrective action

Check whether the manager installation is valid.

FJSVrcx:ERROR:67742:command:file:setup data inconsistency

Description

An inconsistency was found in the cluster environment configurations.

Corrective action

Collect the following files and contact Fujitsu technical staff.

The file indicated by *file*

For manager: All files under /opt/FJSVssmgr/cluster/env

FJSVrcx:ERROR:67743:command:setup data invalid

Description

The cluster environment configurations are invalid.

Corrective action

Delete the cluster environment in force mode (using -f when executing `esc_clunsetup`). After the deletion is completed, uninstall the manager.

FJSVrcx:ERROR:67744:command:shared disk data invalid

Description

Data on the shared disk is invalid.

Corrective action

Delete the cluster environment in force mode (using -f when executing `esc_clunsetup`). After the deletion is completed, uninstall the manager.

FJSVrcx:ERROR:67745:command:property:manager:value:setup data conflict

Description

The property value *property* of the cluster setup command does not match the configuration value *value* on the admin server *manager* for which cluster setup is done.

Corrective action

Specify the same configuration value to perform setup.

FJSVrcx:ERROR:67747:command:cluster setup failed

Description

The cluster setup failed.

Corrective action

Check the execution environment then re-execute the command. If the situation is not improved, contact Fujitsu technical staff.

FJSVrcx:ERROR:67748:command: can not execute in normal cluster setup node

Description

The cluster setup is in normal condition. The `unsetup` command cannot be executed specifying shared disk data deletion.

Corrective action

Shared disk data deletion (using `esc_clunsetup` with -e MountPoint) cannot be performed.

Delete the cluster environment following the procedure given in "[A.7.2 Cluster environment deletion procedure \(details\)](#)".

FJSVrcx:ERROR:67749:command:cluster deletion failed

Description

The cluster `unsetup` failed.

Corrective action

Delete the cluster environment in force mode (using -f when executing esc_clunsetup). After the deletion is completed, uninstall the manager.

FJSVrcx:ERROR:67750:command:cluster deletion (erase shared disk data) failed

Description

The shared disk data deletion failed.

Corrective action

Check the execution environment then re-execute the command. If the situation is not improved, contact Fujitsu technical staff.

Appendix B SNIA HBA API library installation

To manage HBAs installed on Solaris OS server nodes, it is necessary to install and configure the following HBA vendor's SNIA HBA API library.

B.1 SNIA HBA API library installation for Solaris

B.1.1 For PW008FC2A, PW008FC2-G, PW008FC3, GP7B8FC1A, GP7B8FC1-G, GP7B8FC1

By installing PW008FC2A, PW008FC2-G, PW008FC3, GP7B8FC1A, GP7B8FC1-G, or GP7B8FC1 drivers (FUJITSU PCI Fibre Channel 2.2.1 or 3.0), the SNIA HBA API library is installed.

Additionally, for FUJITSU PCI Fibre Channel 2.2.1, it is necessary to apply required patches (912069-17 or later).

FUJITSU PCI Fibre Channel 2.2 is not supported.

B.1.2 For Emulex's LP9000, LP9002S, LP9002L, LP9802, LP10000

Please refer to the manual of the driver and install HBAnyware (SNIA HBA API).

B.1.3 For SE0X7F11F, SE0X7F12F

After installing the SE0X7F11F or SE0X7F12F driver (FUJITSU PCI Fibre Channel 4.0 or later), the SNIA HBA API library must be changed using the following procedure:

1. Change the link between /usr/lib/libfchba.so and /opt/FJSPfca/sbin/libfchba.so to /opt/FJSPfca/sbin/libfchba1.so.

```
# rm /usr/lib/libfchba.so
# ln -s /opt/FJSPfca/lib/libfchba1.so /usr/lib/libfchba.so
```

2. Reboot.

```
# /usr/sbin/shutdown -y -i6 -g0
```

B.1.4 For XSEFC401AF, XSEFC402AF

Setting of the SNIA HBA API library is not required as it is included in the driver handled by the operating system.

B.1.5 For SG-XPCI1FC-QF2, SG-XPCI2FC-QF2, SG-XPCI1FC-QL2, SG-XPCI2FC-QF2-Z

The SNIA HBA API library does not require settings, as it is already included in the driver bundled with the operating system.

B.2 SNIA HBA API library installation for Linux/VMware

To manage HBA installed on a Linux/VMware server node, install the following HBA vendor's HBA API library.

B.2.1 For PG-FC105, PG-FC106, PG-FC107, PG-FC201, PG-FC202, PG-FCD201

HBA API library installation check

Check whether the following two conditions are met to determine the installation status. If both the conditions are met, the HBA API library has been installed.

- All the following files exist:
 - /usr/lib/libHBAAPI.so
 - /usr/lib/libemulexhbaapi.so
 - /etc/hba.conf
- An integer larger than or equal to "1" is displayed as a result of the following command execution.

```
# egrep -c [^[:blank:]]+[:blank:]+/usr/lib/libemulexhbaapi.so /etc/hba.conf
```

HBA API library installation

- For driver version V1.23a-0 or V4.20q-1

Please install the SNIA HBA API common library (for Common HBA API Version 2.18) using the following procedure.

1. Back up the /usr/lib/libHBAAPI.so file if it exists.
2. For /opt/FJVSsagt/lib/libHBAAPI.so, create a copy in /usr/lib/, or create a symbolic link with the following command.

```
# ln -s /opt/FJVSsage/lib/libHBAAPI.so /usr/lib/libHBAAPI.so
```

3. For "libemulexhbaapi.so" (SNIA HBA API vendor specific library), please obtain it from Fujitsu technical staff, then install.

- For driver versions other than V1.23a-0 or v4.20g-1

For the SNIA HBA API library for Linux, please obtain it from Fujitsu technical staff, then install.

- For VMware:

Download the SNIA HBA API library appropriate for VMware version and driver version from the website of Emulex. Then, install according to the document attached to the SNIA HBA API library.

B.2.2 For PG-FCD101, PG-FCD102

HBA API library installation check

Check whether the following two conditions are met to determine the install status. If both the conditions are met, the HBA API library has been installed.

- All the following files exist:
 - /usr/lib/libHBAAPI.so
 - /usr/lib/libqlsdrm.so (* For VMware, /usr/lib/libqlsdrm-ia32.so will do.)
 - /etc/hba.conf
- An integer larger than or equal to "1" is displayed as a result of the following command execution.

```
# egrep -c [^[:blank:]]+[:blank:]+/usr/lib/libqlsdrm.so /etc/hba.conf
```

However, for VMware, if it falls under the *-marked point in the preceding item, executing the following command will result in display of an integer value "1" or more.

```
# egrep -c [^[:blank:]]+[:blank:]+/usr/lib/libqlsdm-ia32.so /etc/hba.conf
```

HBA API library installation

- For Linux:

Please install the SNIA HBA API common library (for Common HBA API Version 2.18) using the following procedure.

1. Back up the /usr/lib/libHBAAPI.so file, if it exists.
2. For /opt/FJSVssagt/lib/libHBAAPI.so, create a copy in /usr/lib/, or create a symbolic link with the following command.

```
# ln -s /opt/FJSVssagt/lib/libHBAAPI.so /usr/lib/libHBAAPI.so
```

3. For "libqlsdm.so" (SNIA HBA API vendor specific library), please obtain it from Fujitsu technical staff, then install.

- For VMware:

Download the QLA2342 SNIA HBA API library appropriate for VMware version and driver version from the website of QLogic Corporation. Then, install according to the document attached to the SNIA HBA API library.

B.2.3 For MC-08FC11, MC-08FC31, MC-08FC41, MC-08FC51, MC-08FC61, MC-08FC71

HBA API library installation check

The MC-08FC11 install status checking method is similar to the methods for PG-FC105, PG-FC106, PG-FC107 and PG-FC201. For details, please refer to ["HBA API library installation check"](#).

HBA API library installation

Please install HBAAnyware (SNIA HBA API) according to the HBA card's instruction manual or the driver's manual.

B.3 SNIA HBA API library installation for Windows

To manage the HBA installed in a Windows server node, please install the following HBA vendor's SNIA HBA API library.

- For PG-FC105, PG-FC106, PG-FC107, PG-FC201, PG-FC202, PG-FCD201, and Emulex's LP9000, LP9002L, LP9802, LP1050, LP1050Ex

Please install HBAAnyware (SNIA HBA API) according to the HBA card's instruction manual or the driver's manual.

When using the driver version v5-2.13a4 (Windows2000) with PG-FC105, this configuration is not necessary.

To use PG-FC202 or PG-FCD201, change the \$INS_DIR\Agent\bin\HBAAPI.dll to another name (for example, HBAAPI.dll.bak).

If the \$INS_DIR\Agent\bin\HBAAPI.dll does not exist, file name change is not necessary.

(\$INS_DIR means "Program Directory" specified at the Agent installation.)

- For PG-FCD101, PG-FCD102, and Qlogic's QLA2340

Please install the SNIA HBA API common library (for Common HBA API Version 2.18).

Copy \$INS_DIR\Agent\lib\HBAAPI.dll to \$INS_DIR\Agent\bin\HBAAPI.dll.

(\$INS_DIR means "Program Directory" specified at the Agent installation.)

When the same files already exist in the copy destination, copying is not necessary.

- For MC-08FC11, MC-08FC31, MC-08FC41, MC-08FC51, MC-08FC61, MC-08FC71

Please install HBAnywhere (SNIA HBA API) according to the HBA card's instruction manual or the driver's manual.

Appendix C Installation with Unified Installer

ETERNUS SF Storage Cruiser supports the Unified Installer for the Solaris OS Agent.

C.1 [Solaris OS] Agent for Unified Installer

C.1.1 Install scripts

The following scripts for the Unified Installer are provided on the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)".

No.	File	Description
1	.FJSVclis/Disk1/cdsetup	Script for obtaining information from CD-ROM
2	.FJSVclis/Product1/prodsetup	Script for product installation

- The assumption is that the cdsetup, prodsetup scripts are executed from Unified Installer.
- When the Agent package "FJSVssage" is already installed, prodsetup will install nothing.

C.1.2 Configuration script

The following configuration script for the Unified Installer is provided on the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Solaris, HP-UX)".

No.	File	Description
1	.FJSVclis/Config1/I30FJSVssage.sh	Configuration script. When this script is executed, the agent start IP address will be set and the agent will start.
2	.FJSVclis/Config1/config/FJSVssage.m	Configuration script template.

There are the following environmental conditions.

- The assumption is that the configuration scripts are executed from Unified Installer.
- The assumption is that the configuration scripts are executed in single user mode.
- To execute the configuration script, ESC Agent must be installed. In case of using unified installer, please select ETERNUS SF Storage Cruiser to install ESC Agent program.
- The admin LAN IP address must be active, and hostname is available.

The configuration file usage is described below.

1. Copy the I30FJSVssagt.sh script and the FJSVssagt.m file.

Copy FJSVssagt.m file under the "config" directory as same as the CD-ROM construction.

- *copy_destination_directory*/I30FJSVssage.sh
- *copy_destination_directory*/config/FJSVssage.m

2. Edit the FJSVssagt.m file.

Customize (edit) the copied scripts on the installation server for the environments of all server nodes to configure. The details that must be customized are put between the header and the footer as below.

```
Header: ##### EDIT FROM HERE #####  
Footer: ##### STOP EDITING HERE #####
```

Modify the following "10.10.10.10" to the real agent admin LAN IP address.
Please refer to "[6.1.4.2 Agent admin LAN IP address configuration](#)" for the detail information of set agent admin LAN IP address.

```
AgentIPAddress=10.10.10.10
```

The following command is executed by the configuration script.

```
/opt/FJSVssage/bin/setagtip -i xx.xx.xx.xx
```

The "xx.xx.xx.xx" is the real agent admin IP address specified in the FJSVssagt.m file. Refer to "[6.1.4.2 Agent admin LAN IP address configuration](#)" for IP address setting. For setagtip command, refer to "12.5.1.2 Agent Information change command (setagtip)" in the ETERNUS SF Storage Cruiser User's Guide.

Information

When the configuration script terminates abnormally:

The error message is output. Please modify FJSVssagt.m file and re-try the configuration script.

Appendix D Procedure for Upgrading from Softek Storage Cruiser

D.1 Overview

D.1.1 Upgrade Items

This appendix explains the Manager and the Client.

The explanation does not refer to the Agent (because the SSC Agent can be managed by the ESC Manager).

The explanation applies to the upgrade of any version of SSC to ESC.

D.1.2 Supported Devices

After the upgrade to ESC, the Manager retains the pre-upgrade registration device information. Therefore, you can continue to use the administrative devices, such as the server (SSC Agent) or storage devices, with the ESC Manager after the upgrade. It is not necessary to re-register them.

Note, however, that the range of supported devices will be as follows after the upgrade:

Devices	Range of supported devices
Server (SSC Agent)	SSC supported devices/platforms
Non-server	ESC supported devices

Of the SSC Client settings, only the maximum memory usage setting can be upgraded (RAID group integration mode, maximum memory usage, application element information etc.). The rest of settings must be reset after installing the ESC Client.

D.1.3 Differences between SSC and ESC, and Operation Design

For the functional differences, refer to "1.5 Function comparison of ESC and SSC" in the ETERNUS SF Storage Cruiser User's Guide. Differences in the operation design from SSC are explained as follows:

- Supported OS

The ESC Manager supports operation in the following OS.

Platform	Supported OS
Solaris	Solaris 8 OS Solaris 9 OS Solaris 10 OS
Linux	Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux 5 (for Intel64) Red Hat Enterprise Linux 5 (for Intel Itanium) Red Hat Enterprise Linux 5.1 (for x86) Red Hat Enterprise Linux 5.1 (for Intel64) Red Hat Enterprise Linux 5.1 (for Intel Itanium)
Windows	Windows Server 2008 Standard without Hyper-V (x86) Windows Server 2008 Enterprise without Hyper-V (x86) Windows Server 2008 Datacenter without Hyper-V (x86)

Platform	Supported OS
	Windows Server 2003 R2, Standard Edition Windows Server 2003 R2, Enterprise Edition Windows Server 2003, Standard Edition Windows Server 2003, Enterprise Edition Windows 2000 Server (SP1 or later version) Windows 2000 Advanced Server (SP1 or later version) Windows 2000 Professional (SP1 or later version)

The ESC Client supports operation in the environment of "[5.1.2.1 Required basic software](#)". It does not support operation in the Windows NT environment.

- Supported cluster software

The ESC Manager does not support operation in the SafeCLUSTER environment.

- Network requirements

Communication between the Manager and the Client will change as described in the following table. You must review the network settings, such as that of the firewall, as required.

Product	Port/Protocol	Direction of communication
SSC	Invariant/tcp	Both directions
ESC	23456/tcp	From the Client to the Manager

- Systemwalker Centric Manager link function

The link function does not support linkage to Systemwalker Centric Manager versions earlier than V11.

To use the link function to Systemwalker Centric Manager, you must reset the administrative client after the upgrade to ESC. Refer to "[D.3.11 Resetting Systemwalker Centric Manager Link Function After Upgrade](#)" for details. When ESC is called from the node popup menu of the Systemwalker Centric Manager administrative client, the ESC user authentication cannot be omitted.

D.2 Files supplied

The upgrade tool is stored in the following directory on the CD-ROM "ETERNUS SF Storage Cruiser 13.3 Manager/Agent (Windows)".

Directory location CD-ROM drive name¥manager¥upgrade directory + upgrade.exe
--

The following directory files will be extracted by executing upgrade.exe (self-extract format) on the Windows operating system:

upgrade directory + solupgrade.tar (upgrade tool for Solaris) + winupgrade.exe (upgrade tool for Windows)

Copy the upgrade tool applicable to the platform in use to the work directory of the server for upgrade (where the SSC Manager is installed). Delete it after the upgrade is complete.

D.3 Upgrade process

The process for upgrading from SSC to ESC and the estimated time required for each task is as follows. For the detailed procedure for each step, refer to the referenced section.

Work Items	Duration (min.)	
D.3.1 Stopping service	1	} Work to be performed by SSC
D.3.2 Back up of device control information	1	
D.3.3 Back up of settings and log file	0~10	
D.3.4 SSC Manager uninstallation ※1	5	
D.3.5 SSC Client uninstallation ※2	5	
D.3.6 ESC Client installation ※2	10	} Work to be performed by ESC
D.3.7 ESC Manager installation	5	
D.3.8 Migration of backed up settings and log file ※2	0~20	
D.3.9 Migration of backed up device control information	1~5	} Work to be performed by Systemwalker Centric Manager Operation Control Client
D.3.10 Restart of ESC Manager	1	
D.3.11 Resetting of coordinated functionality after migrating Systemwalker Centric Manager	1 × A + 5 ※3	

- ※1: This duration is the case where a user has not customized the setup file. If a user has customized the setup file, the duration will be longer depending on the size.
- ※2: This does not include the system restart time.
- ※3: "A" indicates the number of nodes to be registered with Systemwalker Centric Manager Operation Control Client.

 **Point**

.....

Before upgrading, be sure to backup the system beforehand and be prepared for recovery in the event of failure.

.....

 **Point**

.....

If upgrading with the Windows Manager, log on as an Administrator. If upgrading with the Solaris Manager, log on at the root (supervisor). To copy files using the cp command, be sure to specify the -p (retain) option with the command. To copy directory by directory, specify the -R (recursion) option with the command.

.....

D.3.1 Stopping Services

For Windows Manager:

The following services will be stopped.

- Softek StorageCruiser CIMOM
- SystemWalker MpWksttr

However, if other software uses the SystemWalker MpWksttr service, stop the Softek StorageCruiser CIMOM service only.

For Solaris OS Manager:

You must stop the Daemon of the SSC Manager by referring to "6.1.1 Unsetup" in the "Softek Storage Cruiser Installation Guide".

For a cluster environment, refer to "4.3 Stopping a Daemon" in the "Softek Storage Cruiser Operator's Guide for cluster environment" to stop the Daemon of the SSC Manager.

D.3.2 Saving the Device Management Information

The device management information of the SSC Manager must be saved.

In the place of "save_destination" referred to in the following procedure, specify a directory in which the information will be saved.

For Windows Manager:

1. Copy the upgrade tool "winupgrade.exe" to the work directory (for more information, refer to "[D.2 Files supplied](#)").

The work directory is referred to as "D:\%tmp%\upgrade" in the following steps.

2. Execute the winupgrade.exe file in the work directory.

The following files will be extracted in the work directory:

- cimbackup.bat
- cimrestore.bat
- sscreg.exe
- dbkit.jar
- perfkit.jar

3. Start the command prompt, and move to the work directory.

```
C:\%Document and Settings%\Administrator> D:  
D:\> cd D:\%tmp%\upgrade  
D:\%tmp%\upgrade>
```

4. Execute cimbackup.bat at the command prompt.

```
D:\%tmp%\upgrade> cimbackup [/all] save_destination
```

When executed without specifying /all option, a performance information CSV file will not be backed up. When migrating performance information that has already been acquired, specify the /all option. When the /all option is specified, execution of the command may take longer, as it depends on the size of the performance information CSV file.

When the command is executed successfully, the following message will be displayed on the last line.

```
INFO: cimbackup has been completed.
```

For Solaris OS Manager:

For the cluster environment, mount the shared disk for the administrative server shared data.

1. Copy the upgrade tool "solupgrade.exe" to the work directory (for more information, refer to "[D.2 Files supplied](#)").

The work directory is referred to as "/tmp/upgrade" in the following explanation.

2. Move to the work directory, and extract solupgrade.tar.

```
# cd /tmp/upgrade  
# tar xvf solupgrade.tar
```

The following files will be extracted in the work directory.

- cimbackup.sh
- cimrestore.sh
- dbkit.jar
- perfkit.jar

3. Execute cimbackup.sh.

```
# ./cimbackup.sh [-all] save_destination
```

When executed without specifying -all option, a performance information CSV file will not be backed up. When migrating performance information that has already been acquired, specify the -all option. When the -all option is specified, execution of the command may take longer, as it depends on the size of the performance information CSV file.

When the command is executed successfully, the following message will be displayed on the last line.

```
INFO: cimbackup has been completed.
```

Information

- If the cimbackup command is executed without stopping the Daemon/service of the SSC Manager, the following message is output and the command terminates abnormally.

- On the Solaris OS

```
WARNING: Unable to backup, while the FJSVssmgr is running.
```

- On the Windows operating system

```
WARNING: Unable to backup, while the Softek StorageCruiser CIMOM is running.
```

- If the save_destination directory is not specified in the cimbackup command, the following message is output and the command terminates abnormally.

- On the Solaris OS

```
Usage: cimbackup.sh save-directory
```

- On the Windows operating system

```
Usage: cimbackup.bat save-directory
```

- If the directory specified in the cimbackup command does not exist, the following message is output and the command terminates abnormally.

```
ERROR: The specified directory [directory-name] is not found.
```

- If Softek Storage Cruiser has not been installed, the following message is output and the command terminates abnormally.

```
WARNING: The old package is not installed.
```

- If the cimbackup command cannot create the directory, the following message is output and the command terminates abnormally.

```
ERROR: Unable to copy file-name to directory-name
```

- If the source file to copy cannot be found, the following message is output the command terminates abnormally.

```
ERROR: Unable to find file-name
```

- If the directory specified in the cimbackup command already contains a backup created using the same command, the following message is output and the command terminates abnormally.

WARNING: The backup files are found in directory-name

D.3.3 Setting and Saving Log Files

You must save the following files on the SSC Manager and SSC Client.

For Windows Manager:



In the following explanation, `$$SSC_INS_DIR` means "Program Directory" specified at the SSC Manager installation. `$$SSC_ENV_DIR` means "Environment Directory" specified at the SSC Manager installation. `$$SSC_TMP_DIR` means "Work Directory" specified at the SSC Manager installation.

The default location of all directories is "C:\Program Files\Softek\StorageCruiser".

- Setup files

The following files must be saved. It is not necessary to save other files if no changes have been made since installing SSC.

- `$$SSC_ENV_DIR\Manager\etc\san\engine` directory
 - bcm.conf
 - sanma.conf
 - ssmgr.conf
- `$$SSC_INS_DIR\Manager\bin` directory
 - manager.ini

- bat files

You must save the `$$SSC_ENV_DIR\Manager\etc\san\engine\trapop.bat` file, unless they have not been changed since installing SSC. You must also save the files related to the processing of the current batch.

- Error monitor XML files

If the user has customized any of the error monitor XML files, you must save those files in the `$$SSC_ENV_DIR\Manager\etc\san\engine\snmpth` directory. It is not necessary to save files to which this does not apply.

- Device polling setting XML files

If the user has customized any of the device polling setting XML files, you must save those files in the `$$SSC_ENV_DIR\Manager\etc\san\engine\devicepolling` directory. It is not necessary to save files to which this does not apply.

- Event log files

You must save the `$$SSC_TMP_DIR\Manager\var\san\engine\systemevent.csv` file.

For Solaris OS Manager:

In the place of "*save-destination*", referred to in the following procedure, specify a directory in which the information will be saved. For a cluster environment, mount the shared disk for the administrative server shared data.

- Setup files

The following files must be saved. It is not necessary to save other files if no changes have been made since installing SSC.

- `/etc/opt/FJSVssmgr` directory

- bcm.conf
- sanma.conf
- ssmgr.conf
- /opt/FJSVssmgr/bin directory
 - manager.ini

Copy the file to the *save-destination* using the following command:

```
# cp -p save-file save-destination
```

- shell scripts

You must save /etc/opt/FJSVssmgr/trapop.sh file, unless they have not been changed since installing SSC. You must also save the files related to the processing of the current shell script.

Copy the files to the *save-destination* using the following command:

```
# cp -p /etc/opt/FJSVssmgr/trapop.sh save-destination
```

- Error monitor XML files

If the user has defined or customized any of the error monitor XML files, you must save those files in the /etc/opt/FJSVssmgr/snmpth directory. It is not necessary to save files to which this does not apply.

Copy the files to the *save-destination* using the following command:

```
# cp -p /etc/opt/FJSVssmgr/snmpth/save-file save-destination
```

- Device polling setting XML files

If the user has defined or customized any of the device polling setting XML files, you must save those files in the /etc/opt/FJSVssmgr/devicepolling directory. It is not necessary to save files to which this does not apply.

Copy the files to the *save-destination* using the following command:

```
# cp -p /etc/opt/FJSVssmgr/devicepolling/save-file save-destination
```

- Event log files

You must save /var/opt/FJSVssmgr/systemevent.csv file.

Copy the file to the *save-destination* using the following command:

```
# cp -p /var/opt/FJSVssmgr/systemevent.csv save-destination
```

For the Client:



In the following explanation, \$SSC_INS_DIR means "Destination Folder" specified at the SSC Client installation.
 The default location of \$SSC_IND_DIR is "C:\Program Files\Softek\StorageCruiser".

You must save the \$SSC_INS_DIR\Client\bin\client.ini file, unless it has not been changed since installing SSC.

D.3.4 Uninstalling the SSC Manager

Uninstall the SSC Manager by referring to "Chapter 6 Uninstalling the Manager" in the "Softek Storage Cruiser Installation Guide".

If the SSC Manager is the Solaris OS version and is in a cluster environment, install and set up the SSC Manager by referring to "Chapter 6 Deleting the Cluster Environment" in the "Softek Storage Cruiser Operator's Guide for cluster environment".

D.3.5 Uninstalling the SSC Client

Uninstall the SSC Client by referring to "Chapter 5 Uninstalling the Client" in the "Softek Storage Cruiser Installation Guide".

D.3.6 Installing the ESC Client

Install and set up the ESC Client by referring to "[Chapter 5 Client installation and setup](#)".

D.3.7 Installing the ESC Manager

Install and set up the ESC Manager by referring to "[Chapter 4 Manager installation and setup](#)".

If the ESC Manager is the Solaris OS version and is in a cluster environment, you must install and set up the ESC Manager by referring to "[A.3 Manager installation](#)" and "[A.4 Manager operation setup](#)".

D.3.8 Upgrading Saved Settings and Log Files

You must upgrade the saved files in the ESC Manager/Client environment that has been reactivated as a part of the setup procedure.

For Windows Manager:



.....

In the following explanation, \$INS_DIR means "Program Directory" specified at the ESC Manager installation.

\$ENV_DIR means "Environment Directory" specified at the ESC Manager installation.

\$TMP_DIR means "Work Directory" specified at the ESC Manager installation.

The default location of all directories is "C:\Program Files\ETERNUS-SSC".

.....

1. Stop the ESC Manager and the ESC Client.

Stop the ESC Manager by referring to the "[9.3.1 Stopping manager](#)". The ESC Client must be stopped if running.

2. Upgrade the files that were saved as directed in "[D.3.3 Setting and Saving Log Files](#)".

- bcm.conf

Copy the files to the \$ENV_DIR\Manager\etc\opt\FJSSV\ssmgr\current directory.

- sanma.conf

Reflect the saved parameter settings for sanma.conf in the \$ENV_DIR\Manager\etc\opt\FJSSV\ssmgr\current\sanma.conf file.



.....

For details of parameters, refer to "C.2 sanma.conf Parameter" in the ETERNUS SF Storage Cruiser User's Guide.

.....

- ssmgr.conf

Reflect the saved parameter settings for ssmgr.conf in the \$ENV_DIR\Manager\etc\opt\FJSSV\ssmgr\current\ssmgr.conf file.

See

For details of parameters, refer to "C.3 ssmgr.conf Parameter" in the ETERNUS SF Storage Cruiser User's Guide.

- manager.ini

Reflect the saved parameter settings for manager.ini in the `$INS_DIR¥Manager¥opt¥FJSVssmgr¥bin¥manager.ini` file.

Reflect the difference between the set value and SSC default value (140) in ESC default value (512) as follows:

```
set_value - SSC_default_value = difference_value
ESC_default_value + difference_value = reflect_value
```

Example

Case of the value is set 300 in SSC:

```
300 (set_value) - 140 (SSC_default_value) = 160 (difference_value)
512 (ESC_defalut_value) + 160 (difference_value) = 672 (reflect_value)
```

Therefore, the following must be setting in ESC.

```
MAXMEMORY=672
```

See

For details of parameters in the ssmgr.conf file, refer to "C.5 Change in the Maximum Memory Used" in the ETERNUS SF Storage Cruiser User's Guide.

- trapop.bat

Copy the files to the `$ENV_DIR¥Manager¥etc¥opt¥FJSVssmgr¥current` directory. The current batch processing must be modified as required. For example, processing that recognizes the installation directory must be modified because the installation directories of SSC and ESC are different.

- Error monitor XML files

Copy the XML files with the same names as the saved XML files onto the directory for customized XML (`$ENV_DIR¥Manager¥etc¥opt¥FJSVssmgr¥current¥snmpth`) from the default XML directory (`$INS_DIR¥Manager¥opt¥FJSVssmgr¥lib¥snmpth`).

Reflect the contents of the saved XML files in the copied files.

See

For details of error monitor XML files, refer to "C.6 SNMP Trap XML Definition File" in the ETERNUS SF Storage Cruiser User's Guide.

- Device polling setting XML files

Copy the files with the same names as the saved XML files onto the directory for customized XML (`$ENV_DIR¥Manager¥etc¥opt¥FJSVssmgr¥current¥devicepolling`) from the default XML directory (`$INS_DIR¥Manager¥opt¥FJSVssmgr¥lib¥devicepolling`).

Reflect the contents of the saved XML files in the copied files.

See

For details of device polling setting XML files, refer to "C.10 Device Polling Setting File" in the ETERNUS SF Storage Cruiser User's Guide.

- Event log files

Copy the systemevent.csv file that has been saved to the \$TMP_DIR¥Manager¥var¥opt¥FJSVssmgr¥current directory.

For Solaris OS Manager:

1. Stop the ESC Manager and the ESC Client.

Stop the ESC Manager by referring to the "9.1.1 Stopping manager". The ESC Client must be stopped if running.

For a Manager in a cluster environment, mount the shared disk for the administrative server shared data after closing the manager task cluster service (cluster application).

2. Upgrade the files that were saved as directed in "D.3.3 Setting and Saving Log Files".

- bcm.conf

Copy the files to /etc/opt/FJSVssmgr/current directory.

Copy from the *save-destination* using the following command:

```
# cp -p save-destination bcm.conf /etc/opt/FJSVssmgr/current
```

- sanma.conf

Reflect the saved parameter settings for sanma.conf in /etc/opt/FJSVssmgr/current/sanma.conf file.



See

For details of parameters, refer to "C.2 sanma.conf Parameter" in the ETERNUS SF Storage Cruiser User's Guide.

- ssmgr.conf

Reflect the saved parameter settings for ssmgr.conf in /etc/opt/FJSVssmgr/current/ssmgr.conf file.



See

For details of parameters, refer to "C.3 ssmgr.conf Parameter" in the ETERNUS SF Storage Cruiser User's Guide.

- manager.ini

Reflect the saved parameter settings for manager.ini in /opt/FJSVssmgr/bin/manager.ini file. In a cluster environment, reflect the settings for each cluster node saved.

Reflect the difference between the set value and SSC default value (140) in ESC default value (512) as follows:

```
set_value - SSC_default_value = difference_value
ESC_default_value + difference_value = reflect_value
```



Example

Case of the value is set 300 in SSC:

```
300 (set_value) - 140 (SSC_default_value) = 160 (difference_value)
512 (ESC_defalut_value) + 160 (difference_value) = 672 (reflect_value)
```

Therefore, the following must be setting in ESC.

```
MAXMEMORY=672
```



See

For details of parameters in the `ssmgr.conf` file, refer to "C.5 Change in the Maximum Memory Used" in the ETERNUS SF Storage Cruiser User's Guide.

- `trapop.sh`

Copy the file to `/etc/opt/FJSVssmgr/current` directory. The current script processing must be modified as required.

Copy from the *save-destination* using the following command:

```
# cp -p save-destination/trapop.sh /etc/opt/FJSVssmgr/current
```

- Error monitor XML files

Copy the XML files with the same names as the saved XML files onto the directory for customized XML (`/etc/opt/FJSVssmgr/current/snmph`) from the default XML directory (`/opt/FJSVssmgr/lib/snmph`).

```
# cd /opt/FJSVssmgr/lib/snmph
# cp -p relevant-file /etc/opt/FJSVssmgr/current/snmph
```

Reflect the contents of the saved XML files in the copied files.



See

For details of error monitor XML files, refer to "C.6 SNMP Trap XML Definition File" in the ETERNUS SF Storage Cruiser User's Guide.

- Device polling setting XML files

Copy the files with the same names as the saved XML files onto the directory for customized XML (`/etc/opt/FJSVssmgr/current/devicepolling`) from the default XML directory (`/opt/FJSVssmgr/lib/devicepolling`).

```
# cd /opt/FJSVssmgr/lib/devicepolling
# cp -p relevant-file /etc/opt/FJSVssmgr/current/devicepolling
```

Reflect the contents of the saved XML files in the copied files.



See

For details of error monitor XML files, refer to "C.10 Device Polling Setting File" in the ETERNUS SF Storage Cruiser User's Guide.

- Event log files

Copy the saved `systemevent.csv` file to `/var/opt/FJSVssmgr/current` directory.

Copy from the *save-destination* using the following command:

```
# cp -p save-destination/systemevent.csv /var/opt/FJSVssmgr/current
```

For the Client



Information

In the following explanation, `$INS_DIR` means "Destination Folder" specified at the ESC Client installation.

The default location of `$IND_DIR` is "C:\Program Files\ETERUNUS-SSC".

1. The ESC Client must be closed if already activated.

2. If client.ini has been saved as directed in "D.3.3 Setting and Saving Log Files", reflect the parameter settings in the \$INS_DIR %Client%bin%client.ini file.

Reflect the difference between the set value and SSC default value (192) in ESC default value (256) as follows:

```
set_value - SSC_default_value = difference_value
ESC_default_value + difference_value = reflect_value
```

Example

Case of the value is set 320 in SSC:

```
320 (set_value) - 192 (SSC_default_value) = 128 (difference_value)
256 (ESC_defalut_value) + 128 (difference_value) = 384 (reflect_value)
```

Therefore, the following must be setting in ESC.

```
MAXMEMORY=384
```

See

For details of parameters in the ssmgr.conf file, refer to "C.5 Change in the Maximum Memory Used" in the ETERNUS SF Storage Cruiser User's Guide.

D.3.9 Upgrade of Saved Device Management Information

You must upgrade the saved device management information to the ESC Manager.

The following explanation assumes the work directory to be the same as that in "D.3.2 Saving the Device Management Information" and that the upgrade tool has been extracted in the same way.

For Windows Manager:

1. Start the command prompt and move to the work directory.

```
C:\Documents and Settings\Administrator> D:
D:\> cd D:\tmp\upgrade
D:\tmp\upgrade>
```

2. Execute cimrestore.bat at the command prompt.

```
D:\tmp\upgrade> cimrestore [/all] save-destination
```

When executed without specifying the /all option, a performance information CSV file will not be restored. When migrating performance information that has already been acquired, specify the /all option. When the /all option is specified, execution of the command may take longer, as it depends on the size of the performance information CSV file.

When the command is executed successfully, the following message will be displayed on the last line.

```
INFO: cimrestore has been completed.
```

For Solaris OS Manager:

1. Move to the work directory.

```
# cd /tmp/upgrade
```

2. Execute cimrestore.sh.

```
# ./cimrestore.sh [-all] save-destination
```

When executed without specifying the -all option, a performance information CSV file will not be restored. When migrating performance information that has already been acquired, specify the -all option. When the -all option is specified, execution of the command may take longer, as it depends on the size of the performance information CSV file.

When the command is executed successfully, the following message will be displayed on the last line.

```
INFO: cimrestore has been completed.
```

Information

- If the cimrestore command is executed without stopping the daemon/services of the ESC Manager, the following message is output and the command terminates abnormally.

- On the Solaris OS

```
WARNING: Unable to restore, while the FJSVssmgr is running.
```

- On the Windows operating system

```
WARNING: Unable to restore, while the ETERNUS SF Storage Cruiser Manager is running.
```

- If the save_destination directory is not specified in the cimrestore command, the following message is output and the command terminates abnormally.

- On the Solaris OS

```
Usage: cimrestore.sh save-directory
```

- On the Windows operating system

```
Usage: cimrestore.bat save-directory
```

- If the backup files created by the cimbackup command do not exist in the directory specified, the following message is output and the command terminates abnormally.

```
ERROR: The backup files are not found in directory-name.
```

- If ETERNUS SF Storage Cruiser has not been installed, the following message is output and the command terminates abnormally.

- On the Solaris OS

```
ERROR: Is the FJSVssmgr installed?
```

- On the Windows operating system

```
ERROR: Is the ETERNUS SF Storage Cruiser Manager installed?
```

- If the repository could not be upgraded successfully using the cimrestore command, the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to convert the Repository <Directory where backup is created>/repository
```

- On the Windows operating system

```
ERROR: Unable to convert the Repository.
```

- If the repository could not be initiated successfully using the cimrestore command, the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to initialize the Repository /var/opt/FJSVssmgr/current/opencimom/logr
```

- On the Windows operating system

```
ERROR: Unable to initialize the Repository.
```

- If the repository could not be rebuilt successfully using the cimrestore command, the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to reconstruct the Repository /var/opt/FJSVssmgr/current/opencimom/logr
```

- On the Windows operating system

```
ERROR: Unable to reconstruct the Repository.
```

- If the cimrestore command fails to reconstruct perf.conf (Setting file for performance administration), the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to convert the perf.conf /etc/opt/FJSVssmgr/current/
```

- On the Windows operating system

```
ERROR: Unable to convert the perf.conf.
```

- If the cimrestore command fails to reconstruct perf.conf (Setting file for performance administration), the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to convert the perfenv.conf /opt/etc/FJSVssmgr/current/
```

- On the Windows operating system

```
ERROR: Unable to convert the perfenv.conf.
```

- If the cimrestore command fails to reconstruct perf.conf (Setting file for performance administration), the following message is output and the command terminates abnormally. Restore the system from the system backup.

- On the Solaris OS

```
ERROR: Unable to convert the configuration XML File /var/opt/FJSVssmgr/current/perf/xml
```

- On the Windows operating system

```
ERROR: Unable to convert the configuration XML File.
```

D.3.10 Starting ESC Manager

For Windows Manager:

You must activate the following services.

- ETERNUS SF Storage Cruiser Manager
- SystemWalker MpWkstr

If Systemwalker MpWkstr has already been activated, only the ETERNUS SF Storage Cruiser Manager must be started.

When executing performance monitoring/threshold monitoring before migrating to SSC, performance monitoring/threshold monitoring will be restarted automatically when the Manager is restarted.

For Solaris OS Manager:

You must start the Daemon for the ESC Manager using the following command:

```
# /opt/FJSVssmgr/sbin/managerctl start
```

In a cluster environment, the manager task cluster service (cluster application) must be started using the administrative view (Cluster Admin) of the cluster system.

When executing performance monitoring/threshold monitoring before migrating to SSC, performance monitoring/threshold monitoring will be restarted automatically when the Manager is restarted.

D.3.11 Resetting Systemwalker Centric Manager Link Function After Upgrade

When the Systemwalker Centric Manager link function was used with SSC, the Storage Cruiser activation method that was selected on the node popup menu and registered with the Systemwalker Centric Manager administrative client must be reset after the upgrade to ESC.

The mpaplreg command of Systemwalker Centric Manager is used for resetting. Refer to the following sections in the manuals for details.

- "11.2.4.2 Setup from a Centric Manager Administrative Client" in the Softek Storage Cruiser User's Guide
- "10.2.4.1 Setup from Systemwalker Centric Manager administrative client" in the ETERNUS SF Storage Cruiser User's Guide

You must reset the function by performing the following procedure on the Centric Manager Administrative client:

1. Confirm the node where the node popup menu is registered.

Input as follows on the command line (assuming the menu name is "SSC").

```
> mpaplreg -v -m SSC
```

Save the node name from the output result, an example of which is shown below.

```
Management domain name: melba
Application name: SSC
Command line: "C:\Program Files\Softek_StorageCruiser\Client\bin\client.exe" -sCMGR -c%PAC -
a1.2.3.4 -p4916
Node: tama
```

2. Delete the SSC activation method on the node popup menu.

Input the following on the command line (assuming the menu name is "SSC").

```
> mpaplreg -d -m SSC
```

3. Register the ESC activation method on the node popup menu.

Input the command line as follows for each node name saved as directed in Item 1. Make changes appropriate to the environment if required. (The example assumes the menu name is "ESC", node name is "tama", and the ESC Client is installed in the directory "C:\ProgramFiles\ETERNUS-SSC".)

```
> Mpaplreg -a -m ESC -p tama -c "%C:\ProgramFiles\ETERNUS-SSC\Client\bin\rcxclient.exe"
```

4. Check the popup menu for the node.

Restart the Systemwalker Centric Manager service on the administrative client, and re-execute [Detect Node] in the monitored area. The ESC icon will be displayed on the node popup menu.

If the icon of this product is not displayed on the node popup menu, check the registration using the following command (assuming the menu name is "ESC").

```
> mpapreg -v -m ESC
```