FUJITSU

FUJITSU Storage
ETERNUS SF
Express V16.8 / Storage Cruiser V16.8 / AdvancedCopy Manager V16.8

Migration Guide

B1FW-6000-09ENZ0(00)
November 2019

Preface

Purpose of This Manual

This manual describes how to upgrade to this version from the previous version for the following products:

- FUJITSU Storage ETERNUS SF Express (hereafter abbreviated as "Express")
- FUJITSU Storage ETERNUS SF Storage Cruiser (hereafter abbreviated as "Storage Cruiser")
- FUJITSU Storage ETERNUS SF AdvancedCopy Manager (hereafter abbreviated as "AdvancedCopy Manager")

Intended Readers

This manual is intended for users who upgrade to this version from a previous version of these software products, or who perform the upgrade process (mainly for system administrators).

For upgrade procedures described in this manual, it is assumed that the reader understands the installation environment of the previous version and knows the backup and the restoration methods for the operational environment of the previous version.
If you newly install the software, refer to the *FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Installation and Setup Guide*.

Structure of This Manual

The structure of this manual is as follows.

Chapter 1 Overview

This chapter provides an overview of upgrade.

Chapter 2 Upgrade from Express Version 15.x

This chapter describes the upgrade procedure from Express Version 15.x.

Chapter 3 Upgrade from Express Version 16.x

This chapter describes the upgrade procedure from Express Version 16.x.

Chapter 4 Upgrade from Storage Cruiser Version 15.x

This chapter describes the upgrade procedure from Storage Cruiser Version 15.x.

Chapter 5 Upgrade from Storage Cruiser Version 16.x

This chapter describes the upgrade procedure from Storage Cruiser Version 16.x.

Chapter 6 Upgrade from AdvancedCopy Manager Version 15.x

This chapter describes the upgrade procedure from AdvancedCopy Manager Version 15.x.

Chapter 7 Upgrade from AdvancedCopy Manager Version 16.x

This chapter describes the upgrade procedure from AdvancedCopy Manager Version 16.x.

Chapter 8 Collecting Troubleshooting Information

This chapter describes the method for troubleshooting if a problem occurs during the Upgrade Installation process.

Chapter 9 Configuration Import

This chapter describes the command used during the configuration information update during the upgrade process.

Appendix A Operation for Previous Version Environment

This appendix describes the operations performed in the environment of the previous version.

Appendix B Installation parameter

This appendix describes the install parameter file and the details of each install parameter.

Appendix C Performing Upgrading

This appendix describes the upgrading procedure.

Conventions

This manual abides by the conventions listed in "Conventions" in the *FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Documentation Road Map*.

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Notes

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Update History

Content of Update	Updated Section	Revision
Information related to the following software is deleted. - Microsoft Windows Server 2008 R2 - Microsoft Windows Server 2008 - Red Hat Enterprise Linux 5 (for x86) - Red Hat Enterprise Linux 5 (for Intel64)	General	9
Information about upgrading from Version 14 is deleted.	General	
The description for Conventions is changed so that the *FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Documentation Road Map* is referenced.	"Conventions" in Preface	
The "Manual Organization and Reading Suggestions" section is deleted from Preface.	Preface	
The "mount" command execution example in Solaris or Linux environments is modified.	Chapter 2, 4, 6, and Appendix C	
The form of the installation parameter file is modified.	B.1	
In [Point] of step 9, information is added.	C.1, C.5	
Information related to Windows Server 2019 is added.	"Notation" and "Others" in Preface	8.1
[Note] is added in step 6.	7.1.1.3	
Information related to the ETERNUS DX8900 S4 is added.	"Notation" in Preface	8
In [Note], information is added.	1.3	
[Note] is added.	1.4	
The procedure and [Point] is added.	6.2.2.7, 7.2.2.6, 9.2.2.6, 10.2.2.6	
Information related to Solaris 9 is deleted.	"Notation" in Preface	7
Information related to the ETERNUS DX500 S4/DX600 S4 is added.	"Notation" in Preface	
Information related to the ETERNUS AF250 S2/AF650 S2 is added.	"Notation" in Preface	
Information related to SUSE Linux Enterprise Server 11 is deleted.	6.5, Chapter 7, 7.5, 9.4, 9.4.1.1, 9.4.1.2, 9.4.2.1, 9.4.2.2, Chapter 10, 10.4, 10.4.1.1, 10.4.1.2, 10.4.1.3.1,	

Content of Update	Updated Section	Revision
	10.4.2.1, 10.4.2.2, 10.4.2.3.1, 11.2.3, 11.2.5, 11.3.4, 11.3.6	
Information related to SUSE Linux Enterprise Server 12 is added.	Chapter 7, 7.5, Chapter 10, 10.4, 10.4.1.1, 10.4.1.2, 10.4.1.3.1, 11.2.5	
[Point] is added in the replication management list restoration step of [If Replication Operation Has Been Done].	A.11 - A.13	
The procedure is modified.	11.3.1	6.1
Information related to Windows Server 2016 is added.	"Notation" and "Others" in Preface	6
Information related to Windows Vista is deleted.	"Notation" in Preface	
Information related to SUSE Linux Enterprise Server 12 for AMD64 & Intel64 is added.	"Notation" in Preface	
Information related to the ETERNUS DX60 S4/DX100 S4/DX200 S4 is added.	"Notation" in Preface	
In [Point] at the beginning of each chapter, the reference destination related to the combination of the manager program and the agent program is changed.	Chapter 5 - 10	
The procedure is modified.	4.1.1, 4.1.3 , 6.4.2, 7.1.1.1, 7.1.1.3, 7.1.2.1, 7.1.2.6, 7.2.1.3, 7.4.4, 10.1.1.1, 10.1.1.3, 10.1.2.1, 10.1.2.6, 11.2.3	
A new section is added.	6.4.3	
In the reload procedure of server information using Web Console, the explanation when the target server is VM guest is added.	8.2.10, 9.3.1.3, 9.3.2.6, 9.4.1.3, 9.5.8, 10.3.1.4, 10.3.2.8, 10.4.1.4, 10.4.2.8, 10.5.8	
Unnecessary steps are deleted.	10.2.1.3	
The procedure is modified.	4.1.1, 4.1.3, 7.1.1.1, 7.1.1.3, 7.1.2.1, 7.1.2.6, 10.1.1.1, 10.1.1.3, 10.1.2.1, 10.1.2.6	5.1
Information related to HP-UX 11i v1/v2 is deleted.	"Notation" in Preface, A.13	5
Information related to VMware vSphere 4 is deleted.	"Notation" in Preface	
Information related to the ETERNUS DX80/DX90 is deleted.	"Notation" in Preface	
Information related to the ETERNUS AF250/AF650 is added.	"Notation" and "Others" in Preface	
Correction is made so that the required information is listed in proper places.	Chapter 1 - 3, Chapter 5 - 10, Chapter 12, A.23, A.24	
The "Description of the work required for migration from Version 16.0 or earlier" that was added in Revision 4.1 is deleted as not needed in this version level.	Chapter 2, 2.3.1, Chapter 3, 3.1.3.1, 3.2.3.1, 4.1, 4.1.1, 4.2, 4.2.1, 5.1, 5.1.4.1, 6.1, 6.1.3.1.1, 6.1.2.4, 6.1.2.5, 6.2, 6.2.1.3.1, 6.2.2.4, 6.2.2.5, 7.1, 7.1.1.1, 7.1.2.1, 7.2, 7.2.1.1, 7.2.2.1, 8.1, 8.1.4.1, 9.1, 9.1.1.3.1, 9.1.2.4, 9.1.2.5, 9.2, 9.2.1.3.1, 9.2.2.4, 9.2.2.5, 10.1, 10.1.1.1, 10.1.2.1, 10.2, 10.2.1.1, 10.2.2.1, A.34, A.35	
The conditions that do not require to update the device information are added.	4.1.4, 4.2.4, 7.1.3, 7.2.3	
The description of anti-virus log is deleted from [Note].	4.1.4, 4.2.4, 7.1.3, 7.2.3	

Content of Update	Updated Section	Revision
The upgrade description of ETERNUS VASA Provider is added.	7.1.1.3	
In step 12, the description is added when the version of the old product is Version 14.x.	C.1	
Description of the work required for migration from Version 16.0 or earlier is added.	Chapter 2, 2.3.1, Chapter 3, 3.1.3.1, 3.2.3.1, 4.1, 4.1.1, 4.2, 4.2.1, 5.1, 5.1.4.1, 6.1, 6.1.3.1.1, 6.1.2.4, 6.1.2.5, 6.2, 6.2.1.3.1, 6.2.2.4, 6.2.2.5, 7.1, 7.1.1.1, 7.1.2.1, 7.2, 7.2.1.1, 7.2.2.1, 8.1, 8.1.4.1, 9.1, 9.1.1.3.1, 9.1.2.4, 9.1.2.5, 9.2, 9.2.1.3.1, 9.2.2.4, 9.2.2.5, 10.1, 10.1.1.1, 10.1.2.1, 10.2, 10.2.1.1, 10.2.2.1, A.34, A.35	4.1
Description of Red Hat(R) Enterprise Linux(R) 7 is added to the Upgrade Installation available environment.	Chapter 7 and 10	
Information related to Windows Server 2003 is deleted.	"Notation" in Preface, 8.2.3, 8.2.9, 9.3, 9.5, 9.5.1 - 9.5.4, 9.5.8, 9.5.9, 10.3, 10.5, 10.5.1 - 10.5.4, 10.5.8, 10.5.9, 11.2.4, 11.2.6, 11.2.7, 11.3.5, 11.3.7, 11.3.8, A.3, A.8	4
Information related to Windows 10 is added.	"Notation" in Preface	
The description about mounting of the DVD-ROM media is added or modified.	1.4.1, 3.2.1.1, 3.2.3.1, 6.2.1.1.1, 6.2.1.3.1, 6.2.2.1, 6.2.2.4, 6.2.2.5, 6.5.1.1, 7.5.1.1, 9.2.1.1.1, 9.2.1.3.1, 9.2.2.1, 9.2.2.4, 9.2.2.5, 9.4.1.1, 9.4.1.2, 9.4.2.1, 9.4.2.2, 9.7.1.1.1, 9.7.1.3.1, 9.7.2.1, 9.7.2.4, 9.7.2.5, 10.4.1.1, 10.4.1.2, 10.4.1.3.1, 10.4.2.1, 10.4.2.2, 10.4.2.3.1, C.2, C. 4.1, C.4.2, C.6, C.8.1, C.8.2	
Information when using the SNMPv3 protocol is added.	2.3.9, 3.1.4, 3.2.4, 4.1.4, 4.2.4, 5.1.5, 6.1.1.4, 6.1.2.6, 6.2.1.1.7, 6.2.1.3,1, 6.2.2.1, 6.2.2.4, 6.2.2.5, 6.2.3, 7.1.3, 7.2.1.1, 7.2.1.3, 7.2.2.1, 7.2.2.4, 7.2.2.5, 7.2.3	
In [Note], information is added.	3.1.4, 3.2.4, 6.1.1.4, 6.1.2.6, 6.2.3	
Unnecessary information is deleted.	3.2.1.1, 6.2.1.1.1, 6.2.2.1, 9.2.1.1.1, 9.2.2.1	
[Point] is added.	4.1.3, 7.1.1.3, 7.1.2.6, 10.1.1.3, 10.1.2.6	
[Note] is added.	4.1.4, 4.2.4, 7.1.3, 7.2.3	
The content of step 5 is modified.	7.1.1.3	
The upgrade procedure in Red Hat(R) Enterprise Linux(R) 7 (for Intel64) environment is added.	7.5, 7.5.1 - 7.5.4, 10.4, 10.4.1.1 - 10.4.1.3, 10.4.1.3.1, 10.4.2.1 - 10.4.2.3, 10.4.2.3.1, 11.2.3, 11.2.5, 11.3.4, 11.3.6	
The explanation of upgrading from Version 16.2 is added.	7.1.2.4, 7.2.2.4, 10.1.2.4, 10.2.2.4, 10.3.2.4, 10.4.2.4	

Content of Update	Updated Section	Revision
Information about the install parameter AdvancedCopy_Manager_ARCH is deleted.	B.1, B.2, C.2	
Information about the install parameter StartService is added.	B.1, B.2, C.2	
Information related to ETERNUS DX8700 S3/DX8900 S3 is added.	"Notation" in Preface	3.2
The title of the reference destination section is modified.	8.2.5	
The term "VMware Virtual Volumes" is changed to "VMware vSphere Virtual Volumes" according to the terms used by VMware, Inc.	Throughout this manual	3.1
Information related to VMware vSphere(R) 6 is added.	"Notation" in Preface	
Information related to the ETERNUS DX200F is modified.	"Others" in Preface	3
The information of ETERNUS SF V16.1 or later is added.	4.1.3, 4.2.3, 7.1.1.3, 7.1.2.4, 7.1.2.5, 7.2.1.3, 7.2.2.4, 7.2.2.5, 10.1.1.3, 10.1.2.4, 10.1.2.5, 10.2.1.3, 10.2.2.4, 10.2.2.5	
The upgrade procedure of the RHEL6 environment is added.	6.5.2, 7.5.4	
The information related to Red Hat(R) Enterprise Linux(R) AS v.4 and Red Hat(R) Enterprise Linux(R) ES v.4 is deleted.	6.6, 7.6, 9.5, 9.5.1, 9.5.2, 9.5.8, 10.5, 10.5.1, 10.5.2, 10.5.8, 11.2.6, 11.2.7, 11.3.7, 11.3.8	
The upgrade procedure is added.	7.1.2.2	
The procedure after upgrade is modified.	7.3.4	
The upgrade information of ETERNUS SF Manager V16.1 or later is added.	10.5.6	
The backup procedure of ETERNUS SF Manager V16.1 or later is added.	A.1, A.2	
The explanation of the tuning of the kernel parameter is added.	3.2.1.6, 6.2.1.1.6, 9.2.1.1.6	2
Procedures for transferring from Express 16.x are added.	Chapter 4	
Procedures for restoring older version levels after installing a version update are added.	5.1.1.3.1, 5.1.2.4, 5.2.1.3.1, 5.2.2.4, A.29, A.31	
The procedure of Storage Cruiser agent's upgrade is modified.	5.2	
The procedure for the tuning of the kernel parameter is added.	6.2.2.1, 9.2.2.1	
Tasks after installing the version update are added.	6.3.2, 6.3.3, 7.3.2, 7.3.4	
Procedures for transferring from Storage Cruiser 16.x are added.	Chapter 7	
Procedures for transferring from AdvancedCopy Manager 16.x are added.	Chapter 10	
How to correspond in cases when an error has occurred during the version update has been added.	Chapter 11	
Procedures for installing version updates of Express / Storage Cruiser / AdvancedCopy Manager have been moved from each chapter to Appendix C.	Appendix C	
The information related to ETERNUS DX200F is described.	"Others" in Preface	1.1

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Chapter 1 Overview

This chapter is an overview of the upgrade process from a previous version to this version for Express, Storage Cruiser, and AdvancedCopy Manager.

1.1 What Is Upgrade Installation?

This version allows installation without uninstalling the previous version first. It is described as "Upgrade Installation" in this manual.

Information

- For uninstallation of previous version

  You may be asked if you uninstall the previous version while upgrading. If the user chooses to uninstall the previous version, the uninstallation process is done automatically.

1.2 Products Which Can Be Upgraded

You can upgrade the following products to this version.

- Express Version 15 (all levels)
- Express Version 16 (all levels)
- Storage Cruiser Version 15 (all levels)
- Storage Cruiser Version 16 (all levels)
- AdvancedCopy Manager Version 15 (all levels)
- AdvancedCopy Manager Version 16 (all levels)

Whether the Upgrade Installation for the program of the above-mentioned products is available is as follows.

Product Name	Program Type	Upgrade Installation (A=Available, N/A=Not Available)
Express V15 Express V16	Manager program	A
Storage Cruiser V15 Storage Cruiser V16	Manager program	A
	Agent program	A (for Windows, Linux, or Solaris environments only)
AdvancedCopy Manager V15 AdvancedCopy Manager V16	Manager program	A
	Agent program	A (for Windows, Linux, or Solaris environments only)
	AdvancedCopy Manager Copy Control Module	A

Note

- For upgrading from previous version products that are not listed in the table above and that installed in HP-UX or AIX environments

  It is not possible to use the Upgrade Installation.
  Uninstall the previous version product and install this version product. Afterwards, perform as new all necessary setup and customization operations for this version.

1.3 Upgrade Patterns

This section explains the system configuration before upgrade and after upgrade.

Point

This version product combinations obey to the following rules:

- Express cannot be combined with Storage Cruiser in a same system environment.
- Express can be combined with AdvancedCopy Manager in a same system environment. And also, Storage Cruiser can be combined with AdvancedCopy Manager in a same system environment.

  With ETERNUS SF Version 15 or later, the manager functions for the three products (Express, Storage Cruiser and AdvancedCopy Manager) are integrated in the same component. Moreover, the GUI for the three products is unified.

Refer to the followings according to the combination of the installed products.

Combination of Products				Reference
Express	Storage Cruiser	AdvancedCopy Manager	AdvancedCopy Manager Copy Control Module	
Y	-	-	-	- When upgrading from Express Version 15.x "Chapter 2 Upgrade from Express Version 15.x" - When upgrading from Express Version 16.x "Chapter 3 Upgrade from Express Version 16.x"
Y	-	Y	-	
Y	-	-	Y	
Y	-	Y	Y	
-	Y	-	-	- When upgrading from Storage Cruiser Version 15.x "Chapter 4 Upgrade from Storage Cruiser Version 15.x" - When upgrading from Storage Cruiser Version 16.x "Chapter 5 Upgrade from Storage Cruiser Version 16.x"
-	Y	Y	-	
-	Y	-	Y	
-	Y	Y	Y	
-	-	Y	-	- When upgrading from AdvancedCopy Manager Version 15.x "Chapter 6 Upgrade from AdvancedCopy Manager Version 15.x" - When upgrading from AdvancedCopy Manager Version 16.x "Chapter 7 Upgrade from AdvancedCopy Manager Version 16.x"
-	-	Y	Y	
-	-	-	Y	- When upgrading from AdvancedCopy Manager Version 15.x - "6.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)"

Combination of Products				Reference
Express	Storage Cruiser	AdvancedCopy Manager	AdvancedCopy Manager Copy Control Module	
				- "6.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)" - When upgrading from AdvancedCopy Manager Version 16.x - "7.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)" - "7.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)"

Y: Product installed, -: Product not installed

1.4 Notes on Upgrade

Operating Systems

The operating system version on the server where the upgrade is performed must be supported by the version of the product that is installed.

See

Refer to "Operating Environment" in the *Installation and Setup Guide* for information on the operating system versions supported by the product.

Note

For Solaris environments, the ETERNUS SF Manager process may stop due to OS problems. If this occurs, perform the following procedure.

1. Delete the second "security.provider.*n*" (where *n* is an integer) from the /opt/FJSVesfcm/JRE/lib/security/java.security file. After that, below the deleted line, decrease the number for each "security.provider.*n*" by one.
2. Restart the OS.

Migration to IPv6 Environments

After performing the Upgrade Installation of this product, change the settings for IP address environments in this product, operating system and associated software.

See

- Refer to "Changing IP Address of Management Server" and "Changing IP Address of Server Node" in the *Storage Cruiser Operation Guide* for information on changing the IP address environment in Storage Cruiser.

- Refer to "Changing IP Address of Management Server" and "Changing IP Address of Managed Server" in the *AdvancedCopy Manager Operation Guide* for the corresponding operating system of the server to be changed for information on changing the IP address environment in AdvancedCopy Manager.

Concerning Configuration of Version 15 Session Timeout

When a time longer than the screen refresh interval is configured for the session timeout value, in Version 15, the session timeout function was disabled. In Version 16 or later, the session timeout function has been enabled. When the session timeout value is exceeded without Web Console being operated, a session timeout occurs.

Upgrade Installation passes the values configured for the session timeout value and the screen update interval to this version. For this reason, even if session timeout was disabled before performing the update, it is enabled after performing the update.

In order to disable session timeout, login to Web Console after upgrading to this version, and configure the session timeout value to be 0 (minutes).

Information

Refer to "Change Value for Session Timeout" in the *Web Console Guide* for information on how to change the session timeout value.

Concerning Mounting of DVD-ROM Media (For Linux Environments Only)

When mounting the DVD-ROM media of this product manually, specify the iso9660 file system explicitly when executing the "mount" command.
In command example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom". The device name of the DVDROM drive may differ depending on the device.

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

When automatic mount (autofs) is used for DVD-ROM, specify the iso9660 file system for the "/etc/fstab" file.

Note

The DVD-ROM media of this product has been created in the UDF Bridge format. For this reason, it is possible to mount as the iso9660 or UDF file system. However, if you mount as the UDF file system, the execution privileges for the execution file may sometimes be removed. In this case, problems such as being unable to execute the installer may occur. Note that, depending on the operating system, the mount specification may sometimes be as shown below. The mount options for the mounted DVD-ROM can be checked by executing the "mount" command with no argument.

- If you mount the DVD-ROM using automatic mount, or using the "mount" command with no file system option, the DVD-ROM is mounted as the UDF file system, Therefore, it is not possible to execute the command on the DVD-ROM.

Chapter 2 Upgrade from Express Version 15.x

To upgrade Express Version 15.x to this version, install the ETERNUS SF Manager.

Point

- The following information cannot be imported from the previous version:
  - Operation History
  - Events
  - Login/Logout history
  - Threshold Monitoring Alarms
- It is possible to perform an Upgrade Installation with existing Advanced Copy and Remote Advanced Copy sessions. Regardless of whether there are Advanced Copy sessions or not, the upgrade procedure is the same.
- Of the devices that were supported in the previous version, the information for the devices that are not supported in this version is not imported. Refer to "Supported Devices" in the *Installation and Setup Guide* for information on the supported devices in this version.

2.1 Upgrading Express (for Windows)

2.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

2.1.1.1 Backing Up Operational Environment of Previous Version

With the following procedure, back up the operational environment of the previous version:

1. Back up the following information manually.
   - Performance monitoring

     If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.
     - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)
2. Back up the Express operational environment of the previous version.

   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to stop the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Stop_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

d. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

```
dvdromDrive:\Manager_windows\vuptools\esfpreinst.bat backupDir [tmpDir]
```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

Point

- Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
- The number of characters in a directory name must be up to 220.
- Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

2.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

2.1.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

2.1.1.4 Estimating Database Size

A database is necessary for this version of Express.
Estimate the database size before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

2.1.1.5 Preparing for Uninstallation

Refer to "A.4 Unsetting Up Database" to perform the repository database unsetup of the previous version:

2.1.2 Performing Upgrade

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "2.1.3 Tasks to Be Performed After Upgrade".

2.1.3 Tasks to Be Performed After Upgrade

2.1.3.1 Restoring Operational Environment from Previous Version

With the following procedure, restore the Express operational environment of the previous version.
Note that if step 1 and step 2 have already been performed, perform from step 3.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the files related to the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfpostinst.bat backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
   - The number of characters in a directory name must be up to 220.

4. Eject the DVD-ROM.
5. Execute the following batch file to restart the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Start_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

2.1.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator privileges.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
$INS_DIR\Common\bin\esfadm devconf import -all
```

$INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Note

- If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.
- When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

2.1.3.3 Redefining Operational Environment

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, restart the performance monitoring.
  Refer to "Instruction for Performance Management" in the *Express Operation Guide* for information on how to restart the performance monitoring.

  Note

  Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

2.1.3.4 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 4 of "2.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

2.1.3.5 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below:

- Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
  If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

2.1.4 Resuming Operation

When the tasks described above have been performed, the upgrade of Express is complete. Restart the Express operation.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to the following section in the chapter "Maintenance" in the *Express Operation Guide* for this version and configure your operational environment.

- "Changing Express's Manager Environment (Windows)" > "Changing SNMP Communication Protocol"

2.2 Upgrading Express (for Linux)

2.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

2.2.1.1 Backing Up Operational Environment of Previous Version

With the following procedure, back up the operational environment of the previous version:

1. Back up the following information manually.

   - Performance monitoring

     If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.

     - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)

2. Back up the Express operational environment of previous version.

   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      Example:

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to stop the daemon of ETERNUS SF Manager.

      ```
      # /opt/FJSVesfcm/bin/stopesf.sh
      ```

   e. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfpreinst.sh backupDir [tmpDir]
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.

- The number of characters in a directory name must be up to 220.
- Move the files (*tmpDir*) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

2.2.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

2.2.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed. If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

2.2.1.4 Estimating Database Size

A database is necessary for this version of Express.
The database size must be estimated before starting the upgrade.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

2.2.1.5 Tuning Kernel Parameters

Kernel parameter tuning must be performed in order to use this version of the Express. Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

2.2.1.6 Confirming Port Number for Communication Service

Ensure the new ports are available before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

2.2.1.7 Preparing for Uninstallation

Refer to "A.5 Cancelling Repository Settings" to unsetup the repository database of the previous version.

2.2.2 Performing Upgrade

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)" to perform the upgrade.

This section describes the upgrade procedure for Express.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "2.2.3 Tasks to Be Performed After Upgrade".

2.2.3 Tasks to Be Performed After Upgrade

2.2.3.1 Restoring Operational Environment from Previous Version

With the following procedure, restore the Express operational environment of the previous version.
Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.

   Example:

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following command to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the files related to the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfpostinst.sh backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

   ### Point

   - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.

- The number of characters in a directory name must be up to 220.

5. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

6. Eject the DVD-ROM.

7. Execute the following command to restart the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

2.2.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator privileges.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
# /opt/FJSVesfcm/bin/esfadm devconf import -all
```

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

2.2.3.3 Redefining Operational Environment

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, restart the performance monitoring.
  Refer to "Instruction for Performance Management" in the *Express Operation Guide* for information on how to restart the performance monitoring.

  Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

2.2.3.4 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 5 of "2.2.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

2.2.3.5 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below.

1. Start the uninstaller of Symfoware to delete the Symfoware package.
   Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

```
# /opt/symfoware/setup/symfo_remove
```

2. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
   A message to re-confirm uninstallation appears. Enter "y" to perform out the uninstallation and "q" when it is not required.

   Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

3. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2.2.4 Resuming Operation

When the tasks described above have been performed, the upgrade of Express is complete. Restart the Express operation.

However, when you change the SELinux setting to "enforcing" mode during the upgrade, refer to the following section in the chapter "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version and restart the operation after the installation of the SELinux policy module for snmptrapd.

- "Setup of Express's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > "Installation of SELinux Policy Module for SNMP Trap Daemon"

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to the following section in the chapter "Maintenance" in the *Express Operation Guide* for this version and configure your operational environment.

- "Changing Express's Manager Environment (Linux)" > "Changing SNMP Communication Protocol"

Chapter 3 Upgrade from Express Version 16.x

To upgrade Express Version 16.x to this version, install the ETERNUS SF Manager.

3.1 Upgrading Express (for Windows)

3.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed.

   Note that in cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

3. If the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
4. Execute the following batch file to stop the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Stop_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

5. When using the ETERNUS VASA Provider, stop the Provider function.
   With the Windows services screen, stop the ETERNUS Information Provider.
6. When using the ETERNUS SF SNMP Trap Service, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

   Note

   In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

3.1.2 Performing Upgrade

Refer to "C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)" and perform the Upgrade Installation.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

3.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

2. If the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

3. Execute the following batch file to restart the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Start_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

4. When using the ETERNUS VASA Provider, start the Provider function.
   With the Windows services screen, start the ETERNUS Information Provider.

5. If the ETERNUS SF SNMP Trap Service was used with the previous version, start the ETERNUS SF SNMP Trap Service with the Windows services screen.

Point

When ETERNUS SF Manager has been recovered to normal state by performing the task described in "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)", to ensure data consistency, execute the "stgxfwcmmodsrv" command to perform the server information change processing.

Specify the Management Server name to the -n option and execute the "stgxfwcmmodsrv" command. Check **Server** column of the "stgxfwcmdispsrv" command execution result for the Management Server name specified to the -n option.

```
programDir\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

3.1.4 Resuming Operation

When the tasks described above have been performed, the upgrade of Express is complete. Restart operation after performing the following actions.

1. Deleting Web Browser's Cache

   If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

2. Reloading Server Information

   If all the following conditions are satisfied, this procedure is not required:

   - The pre-upgrade environment is Version 16.3.

- In the pre-upgrade environment, the patch for Problem Report Number PH09090 has already been applied to the Management Server.
- The storage device that is in use is the ETERNUS DX60 S3/DX100 S3/DX200 S3 or the ETERNUS DX200F, whose firmware version is V10L60 or later.

If the above conditions are not satisfied and you use the new supported function from this version level, perform the following operations with Web Console to reload the server information.

a. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed in the Main pane.
b. On the Main pane, check the target ETERNUS Disk storage system checkbox.
c. On the Action pane, click **Reload Conf**. under **Storage**.

See

Refer to "Reload ETERNUS Disk Storage System Configuration Information" in the *Web Console Guide* for this version for information on reloading the configuration information.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to the following section in the chapter "Maintenance" in the *Express Operation Guide* for this version and configure your operational environment.

- "Changing Express's Manager Environment (Windows)" > "Changing SNMP Communication Protocol"

Note

Information related to the captured capacity and the captured logs before the upgrade is not displayed on the Dashboard. Refer to the following screens:

- Capacity information
  - Capacity Graph of Thin Provisioning Pool
  - Capacity Graph of Tier Pool
- Logs information
  - Operation History
  - Events
  - Threshold Monitoring Alarms
  - Quota Management (NAS Management)

3.2 Upgrading Express (for Linux)

3.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (200 MB) on the server where the upgrade is performed.

   Note that in cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

   ```
   ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
   area.
   ```

3. Execute the following command to stop the daemon of ETERNUS SF Manager.

   ```
   # /opt/FJSVesfcm/bin/stopesf.sh
   ```

3.2.2 Performing Upgrade

Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

3.2.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

      ```
      # /opt/symfoware/setup/symfo_remove
      ```

   c. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
      A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

      Example of Uninstallation with the Specification "all"

      ```
      Start checking the installation environment.
      Check of installation environment is ended.

      WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
      Edition".
      ```

```
Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. Perform the kernel parameter tuning.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

3. As required, start the daemon of ETERNUS SF Manager.

   If the operating system is not restarted after having performed kernel parameter tuning in step 2, execute the following command to start the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

3.2.4 Resuming Operation

When the tasks described above have been performed, the upgrade of Express is complete. Restart operation after performing the following actions.

1. Changing SELinux Setting to "enforcing" Mode

   When you change the SELinux setting to "enforcing" mode during the upgrade, refer to the following section in the chapter "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version and restart the operation after the installation of the SELinux policy module for snmptrapd.

   - "Setup of Express's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > "Installation of SELinux Policy Module for SNMP Trap Daemon"

2. Deleting Web Browser's Cache

   If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

3. Reloading Server Information

   If all the following conditions are satisfied, this procedure is not required:

- The pre-upgrade environment is Version 16.3.
- In the pre-upgrade environment, the patch for Problem Report Number PH09090 has already been applied to the Management Server.
- The storage device that is in use is the ETERNUS DX60 S3/DX100 S3/DX200 S3 or the ETERNUS DX200F, whose firmware version is V10L60 or later.

If the above conditions are not satisfied and you use the new supported function from this version level, perform the following operations with Web Console to reload the server information.

a. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed in the Main pane.
b. On the Main pane, check the target ETERNUS Disk storage system checkbox.
c. On the Action pane, click **Reload Conf**. under **Storage**.

See

Refer to "Reload ETERNUS Disk Storage System Configuration Information" in the *Web Console Guide* for this version for information on reloading the configuration information.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to the following section in the chapter "Maintenance" in the *Express Operation Guide* for this version and configure your operational environment.

- "Changing Express's Manager Environment (Linux)" > "Changing SNMP Communication Protocol"

Note

Information related to the captured capacity and the captured logs before the upgrade is not displayed on the Dashboard. Refer to the following screens:

- Capacity information
  - Capacity Graph of Thin Provisioning Pool
  - Capacity Graph of Tier Pool
- Logs information
  - Operation History
  - Events
  - Threshold Monitoring Alarms
  - Quota Management (NAS Management)

Chapter 4 Upgrade from Storage Cruiser Version 15.x

To upgrade Storage Cruiser Version 15.x to this version, install the ETERNUS SF Manager.

Point

- In the version level of the Storage Cruiser, there are conditions for the combination of manager and agent. Upgrade your version, in order to fulfill the combination that is described in "Notes on Combining Versions and Levels" of the *Release Notes*.
- If AdvancedCopy Manager and AdvancedCopy Manager Copy Control Module are both installed on the same server, when upgrading, both AdvancedCopy Manager and AdvancedCopy Manager Copy Control Module are upgraded. Therefore, perform backups of the previous versions before starting the upgrade.
- The following information cannot be imported from the previous version:
  - Operation History
  - Events
  - Login/Logout history
  - Threshold Monitoring Alarms
- It is possible to perform an Upgrade Installation with existing Advanced Copy and Remote Advanced Copy sessions. Regardless of whether there are Advanced Copy sessions or not, the upgrade procedure is the same.
- Of the devices that were supported in the previous version, the information for the devices that are not supported in this version is not imported. Refer to "Supported Devices" in the *Installation and Setup Guide* for information on the supported devices in this version.

4.1 Upgrading Storage Cruiser's Manager (for Windows)

4.1.1 Upgrading on Non-clustered Systems

4.1.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

4.1.1.1.1 Backing Up Operational Environment of Previous Version

With the following procedure, back up the operational environment of the previous version:

1. Back up the following information manually.
   - Performance monitoring

     If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.
     - Interval that obtains performance information (in seconds)
     - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)

- VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.
  5. Record the IP address and the port number of VMware vCenter Server that are displayed in the Main pane.

- Hyper-V host configuration information

  If the Hyper-V hosts were registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (Hyper-V)**.
  5. Of the servers displayed in the Main pane, record the IP address of the server for which the **Registration as Hyper-V Host** column is displayed as "Registered".

2. Back up of the operation environment of the previous version of the Storage Cruiser's manager.

   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to stop the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Stop_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   d. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfpreinst.bat backupDir [tmpDir]
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
   - The number of characters in a directory name must be up to 220.
   - Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

4.1.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

4.1.1.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

4.1.1.1.4 Estimating Database Size

A database is necessary for this version of Storage Cruiser.
The database size must be estimated before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

4.1.1.1.5 Preparing for Uninstallation

Refer to "A.4 Unsetting Up Database" to unsetup the repository database of the previous version.

4.1.1.2 Performing Upgrade

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "4.1.1.3 Tasks to Be Performed After Upgrade".

4.1.1.3 Tasks to Be Performed After Upgrade

4.1.1.3.1 Restoring Environment from Previous Version

With the following procedure, restore the operation environment of the previous version of the Storage Cruiser's manager.
Note that if step 1 and step 2 have already been performed, perform from step 3.

Information

About the notation in procedure

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.
$ENV_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfpostinst.bat backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   #### Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
   - The number of characters in a directory name must be up to 220.

4. Eject the DVD-ROM.
5. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

6. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the polling service setting file that is stored in the following directory to an arbitrary location.
   After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

7. Execute the following batch file to restart the service of ETERNUS SF Manager.

```
$INS_DIR\Common\bin\Start_ESFservice.bat
```

4.1.1.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
$INS_DIR\Common\bin\esfadm devconf import -all
```

$INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Point

The communication method between this product and fibre channel switch (Fabric OS v6.3 or later) has been changed from telnet to SSH. If the SSH feature is disabled on the targeted switch, enable the SSH feature. Refer to the manual provided by the equipment for details on setting the SSH feature.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

4.1.1.3.3 Redefining Operational Environment

- Re-registering the server information

  If the Managed Server of AdvancedCopy Manager is a VM guest and if a migration is performed while VMware Tools is not running, AdvancedCopy Manager may be registered with the unused state. For this reason, take the following action:

  1. Log in to Web Console.
  2. On the Server List screen, check whether "AdvancedCopy Manager" is displayed in the **Function Level** column of the registered server.
     If it is displayed, what you have to do is finished at this step. If it is not displayed, go to step 3.
  3. On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
  4. On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.
  5. Upon completion of the change, select the VM host in which the target VM guest exists from the Server List screen, and click **Reload Conf.** under **Server** on the Action pane.

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, based on the information that was backed up in step 1 of "4.1.1.1.1 Backing Up Operational Environment of Previous Version", restart the performance monitoring.
  Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *Storage Cruiser Operation Guide* for information on how to restart the performance monitoring.

Note

Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

- Re-registering the VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, re-register VMware vCenter Server with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.
  5. On the Action pane, click **Register/Reload** under **VMware vCenter Server**.
  6. Based on the information that was backed up in step 1 of "4.1.1.1.1 Backing Up Operational Environment of Previous Version", after entering the necessary information, click **Confirm**.

- Re-registering the Hyper-V host configuration information

  If the Hyper-V hosts were registered in the Storage Cruiser's manager of the previous version, re-register the Hyper-V hosts with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (Hyper-V)**.
  5. On the Main pane, check the target server checkbox to register as a Hyper-V host.
  6. On the Action pane, click **Register/Reload** under **Hyper-V Host**.
     The information input screen is displayed.
  7. Based on the information that was backed up in step 1 of "4.1.1.1.1 Backing Up Operational Environment of Previous Version", after entering the necessary information, click **Confirm**.

4.1.1.3.4 Change Associated Software

If the following software was being used with the previous version, it is necessary to update these to a version that supports this version.

- ETERNUS VASA Provider
- Fujitsu ETERNUS Storage Systems Monitoring Pack

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

4.1.1.3.5 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 4 of "4.1.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

4.1.1.3.6 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below.

- Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
  If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

4.1.1.4 Resuming Operation

When the tasks described above have been performed, the upgrade of the Storage Cruiser's manager is complete. Restart the Storage Cruiser operation.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to "Changing SNMP Communication Protocol of Management Server" in the *Storage Cruiser Operation Guide* for this version and configure your operational environment.

4.1.2 Upgrading on Clustered Systems

The following values are used in the description.

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.
$ENV_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

4.1.2.1 Manual Backing Up Operational Environment

The following information is not backed up automatically. Back up the following information of the previous version manually:

- Performance monitoring

  If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.

  - Interval that obtains performance information (in seconds)
  - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)

- VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.

5. Record the IP address and the port number of VMware vCenter Server that are displayed in the Main pane.

- Hyper-V host configuration information

  If the Hyper-V hosts were registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (Hyper-V)**.
  5. Of the servers displayed in the Main pane, record the IP address of the server for which the **Registration as Hyper-V Host** column is displayed as "Registered".

4.1.2.2 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Check that the services of ETERNUS SF Manager are stopped on the secondary node.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of ETERNUS SF Manager.
3. When using the ETERNUS VASA Provider or the ETERNUS Information Provider, on the secondary node, confirm that the ETERNUS Information Provider service has been stopped.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of the ETERNUS Information Provider.
4. On the primary, node stop the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.
5. When using the ETERNUS VASA Provider or the ETERNUS Information Provider, stop the ETERNUS Information Provider service on the primary node.
   Use the Failover Cluster Manager to stop the transactions of the ETERNUS Information Provider.
   However, the shared disk for shared data of the ETERNUS Information Provider must be online.
6. If Managed Server transactions coexist in the clustered system, perform the following procedure:
   a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

      If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.

   b. On the primary node for a target transaction, stop the Managed Server transaction.

      Use the Failover Cluster Manager to stop Managed Server transactions.
      However, the shared disk for shared data of Managed Server transactions must be online.
      If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.
7. Stop the local transactions on all the nodes, perform the following procedure:

   Perform the following steps.

   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.

b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.

8. On the primary node, perform a backup of the operating environment of the previous version of the Storage Cruiser's manager.
Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Log on to the server using Administrator privileges. If already logged on as the Administrator privileges, this step is unnecessary.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpreinst_cluster.bat backupDir [tmpDir] -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.
      - Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

   d. Eject the DVD-ROM.

9. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.
   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager.
   Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

   Required Disk Space for Previous Version

   The space required to install the previous version of the ETERNUS SF Manager.
   Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

10. Uninstalling incompatible software

    Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
    If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

    See

    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

11. Estimating the database size

    A database is necessary for this version of Storage Cruiser.
    The database size must be estimated before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

12. On the secondary node, perform a backup of the operating environment of the previous version of the Storage Cruiser's manager.
    The capacity required for performing this backup is 10 MB.

    a. Log on to the server using Administrator privileges. If already logged on as the Administrator privileges, this step is unnecessary.

    b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

    c. Mount the shared disk for shared data of ETERNUS SF Manager.
    If it is mounted on the primary node, unmount it to mount on the secondary node.

    d. Execute the following batch file to perform a backup of the previous version.

    For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

    ```
    dvdromDrive:\Manager_windows\vuptools\esfpreinst_cluster.bat backupDir [tmpDir] -secondary
    ```

    When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

    Point

    - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
    - The number of characters in a directory name must be up to 220.
    - Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

    e. Unmount the shared disk for shared data of ETERNUS SF Manager.
    If it is required for the work on the primary node, mount it on the primary node.

    f. Eject the DVD-ROM.

13. Checking for available disk space

    Ensure that there is enough available disk space on the server where the upgrade is performed.
    The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

    Required Disk Space for New Version

    The space required to install this version of the ETERNUS SF Manager.
    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

    Required Disk Space for Previous Version

    The space required to install the previous version of the ETERNUS SF Manager.
    Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

14. Uninstalling incompatible software

    Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
    If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

    See

    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

15. Performing the cluster unsetup

    Refer to "Uninstallation of ETERNUS SF Manager" in "Deletion of Cluster Environment for Management Server Transactions" in the *Cluster Environment Setup Guide* for the relevant previous version to delete the service resources, the cluster resources and unnecessary resources.

    Note

    - Do not uninstall the ETERNUS SF Manager program.
    - Do not delete the ETERNUS SF Manager installation directory of each node.
    - In cases when Managed Server transactions coexist, do not release the configurations of these Managed Server transactions.

4.1.2.3 Performing Upgrade (Primary Node)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "4.1.2.4 Performing Upgrade (Secondary Node)".

4.1.2.4 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "4.1.2.3 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *Cluster Environment Setup Guide* for this version for information on the cluster setup.

4.1.2.5 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.

2. Restore the operation environment of the previous version of the Storage Cruiser's manager.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpostinst_cluster.bat backupDir [tmpDir] -primary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.

   e. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
      Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
      After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

   f. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
      Save the polling service setting file that is stored in the following directory to an arbitrary location.
      After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

3. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data, on the primary node for a target service.

   On the primary node for target transactions, edit the following files:

   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\clsetup.ini
   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\etc\swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

4. Start the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.

5. If Managed Server transactions coexist in a clustered system, change the server information of the Managed Server transactions.

   To ensure data consistency, execute the "stgxfwcmmodsrv" command to change the server information.
   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

   This operation should be performed on the primary node for Management Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

6. Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.
   Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
$INS_DIR\Common\bin\esfadm devconf import -all
```

   After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

   In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Point

The communication method between this product and fibre channel switch (Fabric OS v6.3 or later) has been changed from telnet to SSH. If the SSH feature is disabled on the targeted switch, enable the SSH feature. Refer to the manual provided by the equipment for details on setting the SSH feature.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

7. Uninstalling Symfoware
   In the version level of this ETERNUS SF Manager, Symfoware is not used.
   Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   - Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
     If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

Point

- If the ETERNUS VASA Provider was being used with the previous version
  It is necessary to reinstall a version of the ETERNUS VASA Provider that supports this version.
- If the Fujitsu ETERNUS Storage Systems Monitoring Pack was being used with the previous version
  It is necessary to reinstall a version of the Fujitsu ETERNUS Storage Systems Monitoring Pack that supports this version.

4.1.2.6 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check that the services of ETERNUS SF Manager are stopped.
   If not stopped, use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
2. Restore the operation environment of the previous version of the Storage Cruiser's manager.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.
   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
   c. Mount the shared disk for shared data of ETERNUS SF Manager.
      If it is mounted on the primary node, unmount it to mount on the secondary node.
   d. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpostinst_cluster.bat backupDir [tmpDir] -secondary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

   e. Unmount the shared disk for shared data of ETERNUS SF Manager.
      If it is required for the work on the primary node, mount it on the primary node.
   f. Eject the DVD-ROM.
3. Uninstalling Symfoware
   In the version level of this ETERNUS SF Manager, Symfoware is not used.
   Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   - Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
     If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

Point

- If the ETERNUS VASA Provider was being used with the previous version
  It is necessary to reinstall a version of the ETERNUS VASA Provider that supports this version.
- If the Fujitsu ETERNUS Storage Systems Monitoring Pack was being used with the previous version
  It is necessary to reinstall a version of the Fujitsu ETERNUS Storage Systems Monitoring Pack that supports this version.

4.1.2.7 Starting ETERNUS SF Manager

After performing "4.1.2.5 Tasks to Be Performed After Upgrade (Primary Node)" and "4.1.2.6 Tasks to Be Performed After Upgrade (Secondary Node)", perform the following procedure:

1. Check that the services of ETERNUS SF Manager are started on the primary node.
   If not started, use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.
2. When using the ETERNUS VASA Provider or the ETERNUS Information Provider, start the ETERNUS Information Provider service on the primary node.

   Use the Failover Cluster Manager to start the transactions of the ETERNUS Information Provider.
3. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.
4. Perform the following steps to start the local transactions on all the nodes.
   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.
   b. Select "AdvancedCopy Manager COM Service" and then click **Start**.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Point

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 8-c and12-d of "4.1.2.2 Preparing for Upgrade" maybe deleted.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to "Changing SNMP Communication Protocol of Management Server" in the *Storage Cruiser Operation Guide* for this version and configure your operational environment.

4.1.2.8 Redefining Operational Environment

- Re-registering the server information

  If the Managed Server of AdvancedCopy Manager is a VM guest and if an upgrade is performed while VMware Tools is not running, AdvancedCopy Manager may be registered with the unused state. For this reason, take the following action:

  1. Log in to Web Console.

2. On the Server List screen, check whether "AdvancedCopy Manager" is displayed in the **Function Level** column of the registered server.
   If it is displayed, what you have to do is finished at this step. If it is not displayed, go to step 3.
3. On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
4. On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.
5. Upon completion of the change, select the VM host in which the target VM guest exists from the Server List screen, and click **Reload Conf.** under **Server** on the Action pane.

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, based on the information that was backed up in "4.1.2.1 Manual Backing Up Operational Environment", restart the performance monitoring.
  Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *Storage Cruiser Operation Guide* for information on how to restart the performance monitoring.

Note

Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

- Re-registering the VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, re-register VMware vCenter Server with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.
  5. On the Action pane, click **Register/Reload** under **VMware vCenter Server**.
  6. Based on the information that was backed up in "4.1.2.1 Manual Backing Up Operational Environment", after entering the necessary information, click **Confirm**.

- Re-registering the Hyper-V host configuration information

  If the Hyper-V hosts were registered in the Storage Cruiser's manager of the previous version, re-register the Hyper-V hosts with the following procedure.

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (Hyper-V)**.
  5. On the Main pane, check the target server checkbox to register as a Hyper-V host.
  6. On the Action pane, click **Register/Reload** under **Hyper-V Host**.
     The information input screen is displayed.
  7. Based on the information that was backed up in "4.1.2.1 Manual Backing Up Operational Environment", after entering the necessary information, click **Confirm**.

4.2 Upgrading Storage Cruiser's Manager (for Solaris, Linux)

4.2.1 Upgrading on Non-clustered Systems

4.2.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

4.2.1.1.1 Backing Up Operational Environment of Previous Version

With the following procedure, back up the operational environment of the previous version:

1. Back up the following information manually.

   - Performance monitoring

     If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.

     - Interval that obtains performance information (in seconds)
     - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)

   - VMware vCenter Server configuration information

     If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

     1. Log in to Web Console.
     2. On the global navigation tab, click **Server**.
     3. On the Category pane, click **Correlation**.
        The items of the Category pane change into the items concerning the correlation management.
     4. On the Category pane, click **End to End View (VMware)**.
        The VMware End to End view list is displayed in the Main pane.
     5. Record the IP address and the port number of VMware vCenter Server that are displayed in the Main pane.

2. Back up the operation environment of the previous version of the Storage Cruiser's manager.

   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

        ```
        # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
        ```

        The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

d. Execute the following command to stop the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/stopesf.sh
```

e. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

```
# dvdromMountPoint/Manager_unix/vuptools/esfpreinst.sh backupDir [tmpDir]
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

Point

- Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
- The number of characters in a directory name must be up to 220.
- Move the files (*tmpDir*) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

4.2.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

4.2.1.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

4.2.1.1.4 Estimating Database Size

A database is necessary for this version of Storage Cruiser.
The database size must be estimated before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

4.2.1.1.5 Tuning Kernel Parameters

Kernel parameter tuning must be performed in order to use this version of the Storage Cruiser's manager. Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

4.2.1.1.6 Confirming Port Number for Communication Service

Therefore, ensure the new ports are available before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

4.2.1.1.7 Preparing for Uninstallation

1. Perform the DB unsetup.
   Refer to "A.5 Cancelling Repository Settings" to unsetup the repository database of the previous version.
2. When upgrading from Version 15.3 on a Linux environment, uninstall the FJSVswstt package (SNMP Trap daemon package).

   Execute the following command to check whether the FJSVswstt package is installed.

   ```
   # rpm -q FJSVswstt
   ```

   If the FJSVswstt package information is displayed, execute the following command to uninstall the FJSVswstt package.

   ```
   # rpm -e FJSVswstt
   ```

4.2.1.2 Performing Upgrade

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below:

1. Install the target version.
2. If the installation is successfully completed, continue from "4.2.1.3 Tasks to Be Performed After Upgrade".

4.2.1.3 Tasks to Be Performed After Upgrade

4.2.1.3.1 Restoring Environment from Previous Version

With the following procedure, restore the operation environment of the previous version of the Storage Cruiser's manager. Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".
   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following command to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the files related to the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfpostinst.sh backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

   Point

   - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
   - The number of characters in a directory name must be up to 220.
5. Unmount the DVD-ROM.

   ```
   # umount dvdromMountPoint
   ```
6. Eject the DVD-ROM.
7. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
/etc/opt/FJSVssmgr/current/snmpth
8. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.

Save the polling service setting file that is stored in the following directory to an arbitrary location.
After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
/etc/opt/FJSVssmgr/current/polling/pollingService.xml

9. As required, perform the SNMP Trap configuration (for Linux environments only).

   Only when the FJSVswstt package is installed using the procedure described in the step 2 of "4.2.1.1.7 Preparing for Uninstallation", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

   - "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

10. Execute the following command to restart the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

4.2.1.1.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
# /opt/FJSVesfcm/bin/esfadm devconf import -all
```

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Point

The communication method between this product and fibre channel switch (Fabric OS v6.3 or later) has been changed from telnet to SSH. If the SSH feature is disabled on the targeted switch, enable the SSH feature. Refer to the manual provided by the equipment for details on setting the SSH feature.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

4.2.1.1.3.3 Redefining Operational Environment

- Re-registering the server information

  If the Managed Server of AdvancedCopy Manager is a VM guest and if an upgrade is performed while VMware Tools is not running, AdvancedCopy Manager may be registered with the unused state. For this reason, take the following action:

  1. Log in to Web Console.
  2. On the Server List screen, check whether "AdvancedCopy Manager" is displayed in the **Function Level** column of the registered server.
     If it is displayed, what you have to do is finished at this step. If it is not displayed, go to step 3.

3. On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
4. On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.
5. Upon completion of the change, select the VM host in which the target VM guest exists from the Server List screen, and click **Reload Conf.** under **Server** on the Action pane.

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, based on the information that was backed up in step 1 of "4.2.1.1.1 Backing Up Operational Environment of Previous Version", restart the performance monitoring.
  Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *Storage Cruiser Operation Guide* for information on how to restart the performance monitoring.

Note

Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

- Re-registering the VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, re-register VMware vCenter Server with the following procedure:

1. Log in to Web Console.
2. On the global navigation tab, click **Server**.
3. On the Category pane, click **Correlation**.
   The items of the Category pane change into the items concerning the correlation management.
4. On the Category pane, click **End to End View (VMware)**.
   The VMware End to End view list is displayed in the Main pane.
5. On the Action pane, click **Register/Reload** under **VMware vCenter Server**.
6. Based on the information that was backed up in step 1 of "4.2.1.1.1 Backing Up Operational Environment of Previous Version", after entering the necessary information, click **Confirm**.

4.2.1.3.4 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 5 of "4.2.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

4.2.1.3.5 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below:

1. Start the uninstaller of Symfoware to delete the Symfoware package.
   Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

```
# /opt/symfoware/setup/symfo_remove
```

2. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select

the function to uninstall.
A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

3. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

4. When FSUNiconv package is installed, delete it (only in Solaris environments).
   Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

Subsequently, go to "4.2.3 Resuming Operation".

4.2.2 Upgrading on Clustered Systems

Note

If Cluster Unsetup is executed after upgrading from Version 15.0B to this version, the cluster resources and scripts created by the old version's commands starting with "stgclset" are not deleted.

4.2.2.1 Manual Backing Up Operational Environment

The following information is not backed up automatically. Back up the following information of the previous version manually:

- Performance monitoring

  If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with Web Console of the previous version and record the configuration information of the previous version.

  - Interval that obtains performance information (in seconds)
  - Performance monitoring target (only for ETERNUS Disk storage system. Minimum LUN_V, Maximum LUN_V)
- VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, record the configuration information of the previous version with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.
  5. Record the IP address and the port number of VMware vCenter Server that are displayed in the Main pane.

4.2.2.2 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Check that the cluster application (transaction) is stopped on the secondary node.

   Check whether the cluster application (transaction) to which ETERNUS SF Manager belongs has stopped.
   If not stopped, stop the cluster application (transaction).

   Refer to the relevant cluster software manuals for information on stopping it.

2. Stop the cluster application (transaction) on the primary node.

   Stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.

3. If Managed Server transactions coexist in the clustered system, perform the following procedure:

   a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

      If not stopped, stop Managed Server transactions on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.
      Refer to the relevant cluster software manuals for information on stopping it.

   b. On the primary node for a target transaction, stop the Managed Server transaction.

      Refer to the relevant cluster software manuals, stop Managed Server transactions.
      However, the shared disk for shared data of Managed Server transactions must be mounted.
      If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

4. Stop the local transactions on all the nodes, perform the following procedure:

   Stop the communication daemon for the local transactions of the AdvancedCopy Manager's manager.
   Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on stopping the daemon.

5. On the primary node, perform a backup of the operating environment of the previous version of the Storage Cruiser's manager.
   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfpreinst_cluster.sh backupDir [tmpDir] -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
      - The number of characters in a directory name must be up to 220.
      - Move the files (tmpDir) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

   g. Eject the DVD-ROM.

6. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.
   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager.
   Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

7. Uninstalling incompatible software

   Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
   If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

   See

   Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

8. When upgrading from Version 15.3 on a Linux environment, uninstall the FJSVswstt package (SNMP Trap daemon package) on the primary node.

   Execute the following command to check whether the FJSVswstt package is installed.

   ```
   # rpm -q FJSVswstt
   ```

   If the FJSVswstt package information is displayed, execute the following command to uninstall the FJSVswstt package.

   ```
   # rpm -e FJSVswstt
   ```

9. Estimating the database size

   A database is necessary for this version of Storage Cruiser.
   The database size must be estimated before starting the upgrade.

   See

   Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

10. Confirming the port number for the communication service (for Solaris or Linux environments)

    Therefore, ensure the new ports are available before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

11. Perform the kernel parameter tuning on the primary node.

    Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

12. On the secondary node, perform a backup of the operating environment of the previous version of the Storage Cruiser's manager.
    The capacity required for performing this backup is 10 MB.

    a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

c. Mount the DVD-ROM.

- Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

d. Mount the shared disk for shared data of ETERNUS SF Manager.
If it is mounted on the primary node, unmount it to mount on the secondary node.

e. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir,* specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir.*

```
# dvdromMountPoint/Manager_unix/vuptools/esfpreinst_cluster.sh backupDir [tmpDir] -
secondary
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

Point

- Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
- The number of characters in a directory name must be up to 220.
- Move the files (tmpDir) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

f. Unmount the shared disk for shared data of ETERNUS SF Manager.
If it is required for the work on the primary node, mount it on the primary node.

g. Change to a directory other than the DVD-ROM.

Example:

```
# cd
```

h. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

i. Eject the DVD-ROM.

13. Checking for available disk space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

14. Uninstalling incompatible software

    Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
    If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

    See

    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

15. When upgrading from Version 15.3 on a Linux environment, uninstall the FJSVswstt package (SNMP Trap daemon package) on the secondary node.

    Execute the following command to check whether the FJSVswstt package is installed.

    ```
    # rpm -q FJSVswstt
    ```

    If the FJSVswstt package information is displayed, execute the following command to uninstall the FJSVswstt package.

    ```
    # rpm -e FJSVswstt
    ```

16. Confirming the port number for the communication service

    Therefore, ensure the new ports are available before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

17. Perform the kernel parameter tuning on the secondary node.

    Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

18. In cases when Managed Server transactions coexist in the cluster system, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

    On the primary node and the secondary node, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

19. Performing the cluster unsetup

    Refer to "Uninstallation of ETERNUS SF Manager" in "Deletion of Cluster Environment for Management Server Transactions" in the *Cluster Environment Setup Guide* for the relevant previous version to delete unnecessary resources.

Note

- Do not uninstall the ETERNUS SF Manager program.
- In cases when Managed Server transactions coexist, do not release the configurations of these Managed Server transactions.

4.2.2.3 Performing Upgrade (Primary Node)

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)"to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below:

1. Install the target version.
2. If the installation is successfully completed, continue from "4.2.2.4 Performing Upgrade (Secondary Node)".

4.2.2.4 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "4.2.2.3 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below:

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *Cluster Environment Setup Guide* for this version for information on the cluster setup.

In cases when Managed Server transactions coexist in the cluster system, restore the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions backup location (step 17 of "4.2.2.2 Preparing for Upgrade").

- On the primary node and the secondary node, restore the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions.

4.2.2.5 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the cluster application (transaction)
   Stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.
2. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data, on the primary node for a target service.

   On the primary node for target transactions, edit the following files:

   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/clsetup.ini
   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

3. Restore the operation environment of the previous version of the Storage Cruiser's manager.
Note that if step a through step c have already been performed, perform from step d.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfpostinst_cluster.sh backupDir [tmpDir] -primary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      #### Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

   g. Eject the DVD-ROM.

h. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
/etc/opt/FJSVssmgr/current/snmpth

i. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
Save the polling service setting file that is stored in the following directory to an arbitrary location.
After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
/etc/opt/FJSVssmgr/current/polling/pollingService.xml

4. As required, perform the SNMP Trap configuration (for Linux environments only).

   Only when the FJSVswstt package is installed using the procedure described in the step 8 of "4.2.2.2 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

   - "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

5. Start the cluster application (transaction).
   Start the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information.

6. If Managed Server transactions coexist in a clustered system, change the server information of the Managed Server transactions.

   To ensure data consistency, execute the "stgxfwcmmodsrv" command to change the server information.
   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

   This operation should be performed on the primary node for Management Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on the command.

7. Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.
   Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
# /opt/FJSVesfcm/bin/esfadm devconf import -all
```

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Point

The communication method between this product and fibre channel switch (Fabric OS v6.3 or later) has been changed from telnet to SSH. If the SSH feature is disabled on the targeted switch, enable the SSH feature. Refer to the manual provided by the equipment for details on setting the SSH feature.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

8. Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   a. Start the uninstaller of Symfoware to delete the Symfoware package.
      Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

      ```
      # /opt/symfoware/setup/symfo_remove
      ```

   b. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
      A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

      Example of Uninstallation with the Specification "all"

      ```
      Start checking the installation environment.
      Check of installation environment is ended.

      WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
      Edition".

      Continue the uninstallation?
      y: Continue the uninstallation
      q: End directly without uninstallation
      [y,q]: y

      Uninstallation of "Symfoware Server Enterprise Edition" begins.

      Please select the functions to be uninstalled.
      1: Base function (Server function, Client function)
      Separate multiple selections with ",". (Example: 1, 2)
      [all:All functions,1,q]: all

      Selected functions
      - Base function (Server function, Client function)

      Start the uninstallation of the above functions?
      y: Uninstallation begins
      n: Select the functions again
      q: End directly without uninstallation
      ```

```
[y,n,q]: y

Uninstallation begins.
```

c. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

d. When FSUNiconv package is installed, delete it (only in Solaris environments).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

4.2.2.6 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check the cluster application (transaction) is stopped.
If not stopped, stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.

2. Restore the operation environment of the previous version of the Storage Cruiser's manager.
Note that if step a through step c have already been performed, perform from step d.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Mount the shared disk for shared data of ETERNUS SF Manager.
   If it is mounted on the primary node, unmount it to mount on the secondary node.

   e. Execute the following command to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfpostinst_cluster.sh backupDir [tmpDir] -
   secondary
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

Point

- Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
- The number of characters in a directory name must be up to 220.

f. Unmount the shared disk for shared data of ETERNUS SF Manager.
   If it is required for the work on the primary node, mount it on the primary node.

g. Change to a directory other than the DVD-ROM.

   Example:

```
# cd
```

h. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

i. Eject the DVD-ROM.

3. Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   a. Start the uninstaller of Symfoware to delete the Symfoware package.
      Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

```
# /opt/symfoware/setup/symfo_remove
```

   b. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
      A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

      Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

   c. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

d. When FSUNiconv package is installed, delete it (only in Solaris environments).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

4. As required, perform the SNMP Trap configuration (for Linux environments only).

Only when the FJSVswstt package is installed using the procedure described in the step 15 of "4.2.2.2 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

- "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

4.2.2.7 Starting ETERNUS SF Manager

Perform the following procedure:

1. Check that start the cluster application (transaction) is started on the primary node.

   If not started, start the cluster application (transaction) of ETERNUS SF Manager.
   Refer to the relevant cluster software manuals for information on starting it.

2. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.

   If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.

3. Start the local transactions on all the nodes.

   - Start the communication daemon for local transactions of AdvancedCopy Manager's manager.
     Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on starting the daemon.
   - For Solaris environments, start the SNMP Trap monitoring daemon on all local nodes. No action is necessary if it is already started. Refer to "Starting and Stopping Daemons (Solaris Environment)" in the *Storage Cruiser Operation Guide* for this version for information on how to start the daemon.

Point

- Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 6-d and 12-e of "4.2.2.2 Preparing for Upgrade" maybe deleted.
- Even if the message "A1001 : Could not establish connection with SNMP Trap daemon/service" is output to the system log when the cluster application (transaction) is started, no action is necessary.

4.2.2.8 Redefining Operational Environment

- Re-registering the server information

  If the Managed Server of AdvancedCopy Manager is a VM guest and if an upgrade is performed while VMware Tools is not running, AdvancedCopy Manager may be registered with the unused state. For this reason, take the following action:

  1. Log in to Web Console.
  2. On the Server List screen, check whether "AdvancedCopy Manager" is displayed in the **Function Level** column of the registered server.
     If it is displayed, what you have to do is finished at this step. If it is not displayed, go to step 3.
  3. On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
  4. On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.

5. Upon completion of the change, select the VM host in which the target VM guest exists from the Server List screen, and click **Reload Conf.** under **Server** on the Action pane.

- Restarting the performance monitoring

  If the performance monitoring was performed with the previous version, based on the information that was backed up in "4.2.2.1 Manual Backing Up Operational Environment", restart the performance monitoring.
  Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *Storage Cruiser Operation Guide* for information on how to restart the performance monitoring.

Note

Information related to the captured capacity before the upgrade is not displayed on the Dashboard. Confirm with the Capacity Graph screen of Thin Provisioning Pool.

- Re-registering the VMware vCenter Server configuration information

  If VMware vCenter Server was registered in the Storage Cruiser's manager of the previous version, re-register VMware vCenter Server with the following procedure:

  1. Log in to Web Console.
  2. On the global navigation tab, click **Server**.
  3. On the Category pane, click **Correlation**.
     The items of the Category pane change into the items concerning the correlation management.
  4. On the Category pane, click **End to End View (VMware)**.
     The VMware End to End view list is displayed in the Main pane.
  5. On the Action pane, click **Register/Reload** under **VMware vCenter Server**.
  6. Based on the information that was backed up in "4.2.2.1 Manual Backing Up Operational Environment", after entering the necessary information, click **Confirm**.

Subsequently, go to "4.2.3 Resuming Operation".

4.2.3 Resuming Operation

When the tasks described above have been performed, the upgrade of the Storage Cruiser's manager is complete. Restart the Storage Cruiser operation.

However, when you change the SELinux setting to "enforcing" mode during the upgrade in the Linux environment, refer to the following section in the chapter "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version and restart the operation after the installation of the SELinux policy module for snmptrapd.

- "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > "Installation of SELinux Policy Module for SNMP Trap Daemon"

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to "Changing SNMP Communication Protocol of Management Server" in the *Storage Cruiser Operation Guide* for this version and configure your operational environment.

4.3 Upgrading Storage Cruiser's Agent (for Windows)

4.3.1 Preparing for Upgrade

4.3.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
   Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Open the Service Control Manager and stop the ETERNUS SF Storage Cruiser Agent service.
4. Start the command prompt with "Run as administrator".
5. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   ```
   dvdromDrive:\Agent_windows\Storage_Cruiser\windows_x86\scagtpreinst.bat backupDir
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

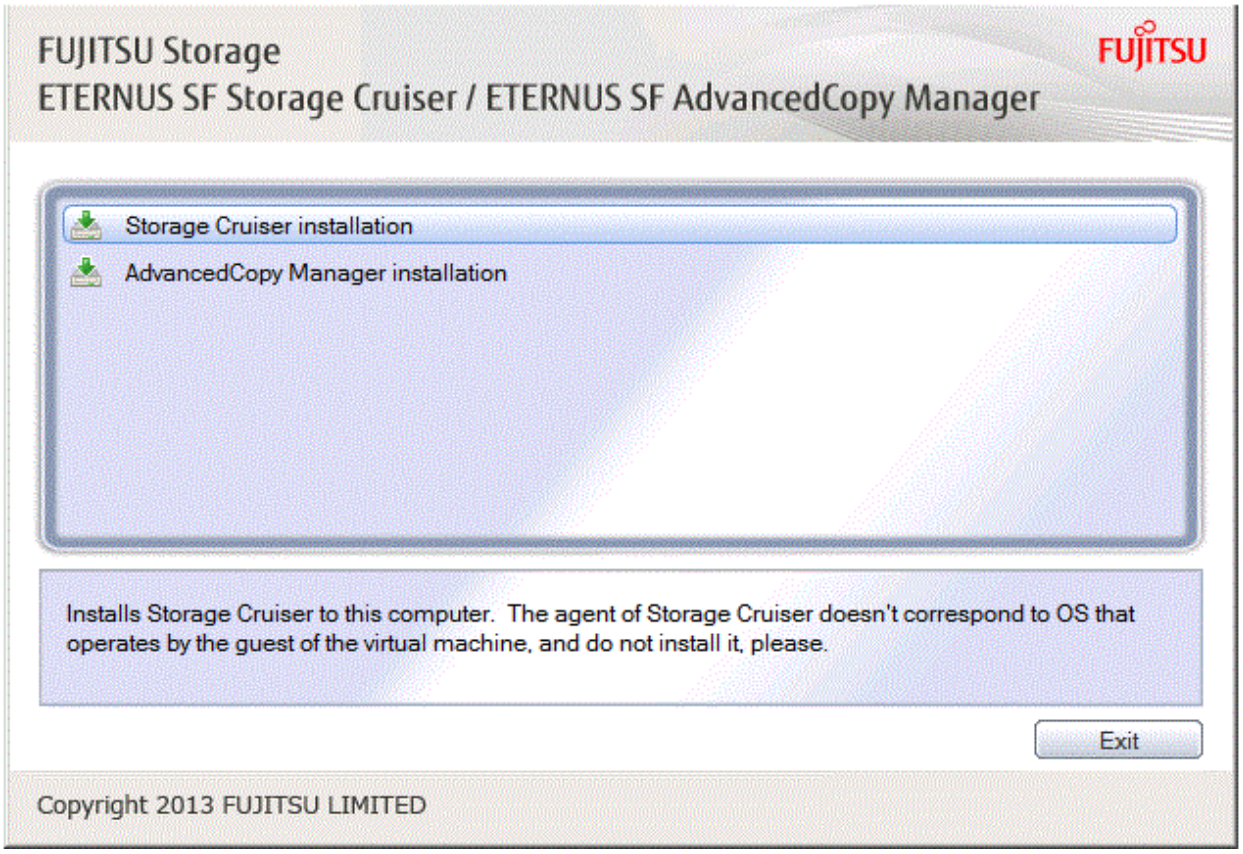
   - The characters " | : * ? / . < > , % & ^ = ! ; are not supported for directory name.
   - If the directory name contains any spaces, they should be surrounded by double quote characters.

6. Back up the operating system.

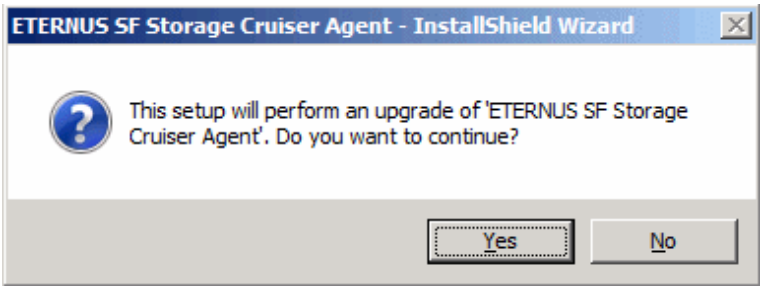
4.3.2 Performing Upgrade

1. Execute autorun.exe in the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program & Manual)" for this version.

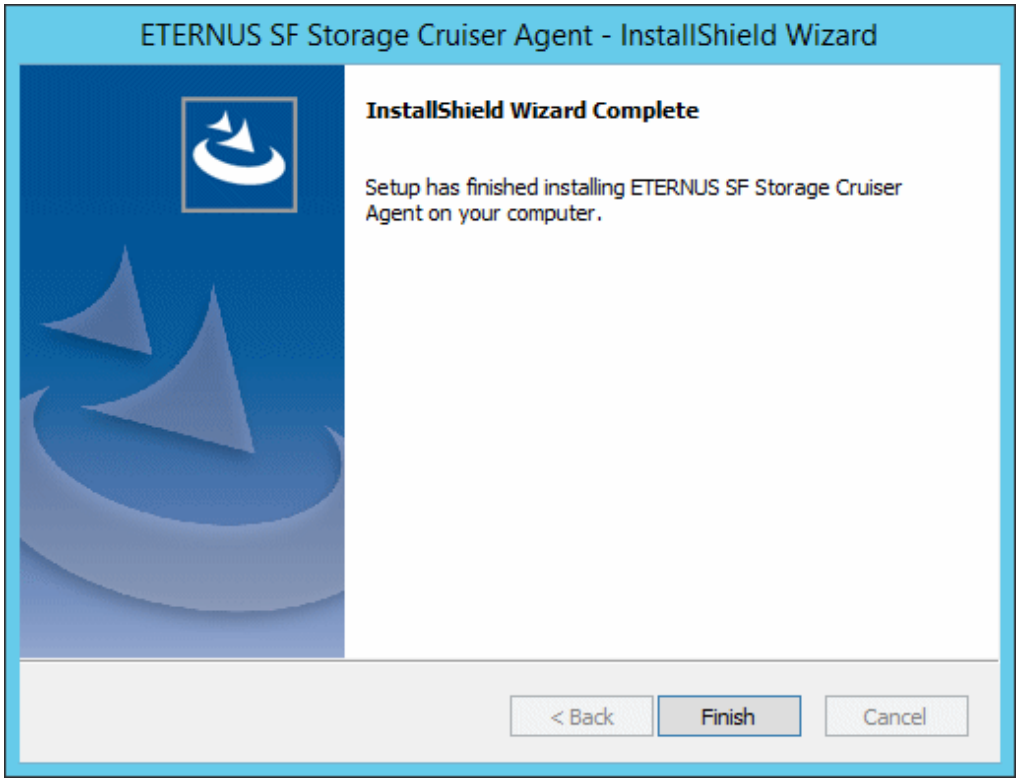
2. The following window is displayed. Click **Storage Cruiser installation**.



3. The following dialog box is displayed. Click **Yes**.



4. When the upgrade is completed, the following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



5. Eject the DVDROM.

4.3.3 Tasks to Be Performed After Upgrade

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from Web Console.

Point

When performing an upgrade of Storage Cruiser's manager at the same time, perform the following procedures after completing the upgrade of Storage Cruiser's manager.

1. Where there has been customization of "Correlation.ini Parameter" in the *Storage Cruiser Operation Guide*, restore the Storage Cruiser Agent Settings information.
   If customization has not been performed, no action is required.
   The configuration information of the previous version Storage Cruiser's agent is saved in the following file under the *backupDir* directory specified by "4.3.1.1 Backing Up Operational Environment of Previous Version".

   ```
   backupDir\etc\Correlation.ini
   ```

   Refer to the backup file and reflect the definitions which have been changed from the installation of the previous version Storage Cruiser's agent to the $ENV_DIR\ESC\Agent\etc\Correlation.ini file.
   ($ENV_DIR means the "Environment Directory" specified at the Storage Cruiser's agent installation.)

   ### See

   Refer to "Correlation.ini Parameter" in the *Storage Cruiser Operation Guide* for information on customizing Correlation.ini parameters.

2. Open the Service Control Manager and activate the ETERNUS SF Storage Cruiser Agent Service.
3. Perform the following operations with Web Console to reload the server information.
   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.
   b. On the Main pane, check the target server checkbox.
   c. On the Action pane, click **Reload Conf**. under **Server**.

See

If you want to change the IP address after upgrading, refer to "Changing IP Address of Server Node" in "[Windows Version] Maintenance of Agent" in the *Storage Cruiser Operation Guide*.

Point

- When returning back to the state before installation of the upgrade, recover (restore) the system from the backup taken in step 6 of "4.3.1.1 Backing Up Operational Environment of Previous Version".
- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "4.3.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

4.4 Upgrading Storage Cruiser's Agent (for Solaris)

Point

For Performing Upgrade in 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
```

4.4.1 Preparing for Upgrade

Point

- It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).
  When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.
- If the upgrade was terminated abnormally, refer to "8.1.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.
- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "4.4.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

4.4.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

2. Execute the following command to stop the daemon.

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

3. Execute the following command to confirm that the daemon has stopped.

```
# /bin/ps -ef | grep FJSVssage
```

If not stopped, execute the following command to stop it forcibly.

```
# /usr/bin/kill -9 daemonProcID
```

4. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

5. Mount the DVD-ROM.

Example:

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

6. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
# dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris/scagtpreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

4.4.2 Performing Upgrade

1. Execute the following command.

```
# cd dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris
# ./scagtinstall.sh
```

2. The following message is displayed. To continue, enter "y". To discontinue, enter "n" or "q".

```
ETERNUS SF Storage Cruiser 16.8
Copyright FUJITSU LIMITED 2013-2019
This program will upgrade "ETERNUS SF Storage Cruiser" Agent on your system.

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

3. If "y" was entered, the following message is displayed. To continue, enter "y". To discontinue, enter "n".

```
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,?]
```

4. If "y" was entered, the upgrade continues.

If the upgrade completes normally, the following message is displayed.

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

If the upgrade fails, the following message is displayed.

```
ERROR : not privileged
or
ERROR : Upgrading FJSVssage was failed.
```

5. Unmount and eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

4.4.3 Tasks to Be Performed After Upgrade

Perform the following procedure:

1. If the SNMP Trap XML definition file was customized in the environment of the previous version, customize this version as well.

   a. Save the SNMP Trap XML definition file ("1_3_6_1_4_1_211_4_1_3_21_2_21.xml") that is stored in the "/etc/opt/FJSVssage/snmpth" directory to an arbitrary location.

   b. Prepare the SNMP Trap XML definition file for this version in the "/etc/opt/FJSVssage/snmpth" directory.
   From that directory, copy the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml.new" file to the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file.

   c. Refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location in step a.

2. Execute the following command in the Managed Server to start the daemon.

```
# /opt/FJSVssage/bin/sstorageagt
```

3. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.

   c. On the Action pane, click **Reload Conf**. under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

4.5 Upgrading Storage Cruiser's Agent (for Linux)

4.5.1 Preparing for Upgrade

Point

- It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).
  When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.
- If the upgrade was terminated abnormally, refer to "8.1.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.

- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "4.5.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

4.5.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Execute the following command to stop the daemon.

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

3. Execute the following command to confirm that the daemon has stopped.

```
# /bin/ps -ef | grep FJSVssage
```

   If not stopped, execute the following command to stop it forcibly.

```
# /usr/bin/kill -9 daemonProcID
```

4. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD ROM drive.
5. Mount the DVD-ROM.

   Example:

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

6. Execute the following command to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
# dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux/scagtpreinst.sh backupDir
```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

4.5.2 Performing Upgrade

1. Execute the following command.

```
# cd dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux
# /bin/sh ./scagtinstall.sh
```

2. The following message is displayed. To continue, enter "y". To discontinue, enter "n" or "q".

```
ETERNUS SF Storage Cruiser 16.8
Copyright FUJITSU LIMITED 2013-2019
This program will upgrade "ETERNUS SF Storage Cruiser" Agent on your system.

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

3. If "y" was entered, the upgrade continues.

   If the upgrade completes normally, the following message is displayed.

```
INFO : Starting Upgrade of ETERNUS SF Storage Cruiser ...
...
```

```
INFO : Upgrade of <FJSVssage> was successful.
INFO : ETERNUS SF Storage Cruiser Agent was upgraded successfully.
```

If the upgrade fails, the following message is displayed.

```
ERROR : not privileged
or
INFO  : Upgrade is terminated.
or
ERROR : Upgrading FJSVssage was failed.
```

4. Unmount and eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

5. In Red Hat Enterprise Linux 6 environments, add the following line to any row of the "/etc/opt/FJSVssage/Correlation.ini" file.

```
EventMessageMarking=1
```

6. Execute the following command to start the daemon.

```
# /opt/FJSVssage/bin/sstorageagt
```

7. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.

   c. On the Action pane, click **Reload Conf**. under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

4.6 Upgrading Storage Cruiser's Agent (for HP-UX, AIX)

The upgrade is performed as follows:

1. Back up the Storage Cruiser's agent settings information.

No.	Settings Information to Be Backed Up	File to Be Backed Up
1	SNMP Trap sending destination address	/var/opt/FJSVssage/sanm.ip
2	Agent definition file	All files under the "/etc/opt/FJSVssage" directory
3	User definition information	/opt/FJSVssage/lib/defusr.dat *1: If there is no file, backing up is not required.

2. Uninstall the previous version of the Storage Cruiser's agent.

   Refer to "Uninstallation of Storage Cruiser's agent" in the *Installation and Setup Guide* for the relevant previous version for details.

3. Install this version of the Storage Cruiser's agent.

   Refer to "Installation of Storage Cruiser's Agent" in the *Installation and Setup Guide* for this version for details.

4. Set up the Storage Cruiser's agent.

   Refer to "Setup of Storage Cruiser's Agent" in the *Installation and Setup Guide* for this version for details.

5. Restore the Storage Cruiser's agent settings information that was backed up in step 1.

   - Copy the file of No. 1 (in the table above) and create the "/var/opt/FJSVssage/sanm.ip" file.

- Refer to each file of No. 2 (in the table above) and reflect the definitions which have been changed from the installation of the previous version of Storage Cruiser's agent to the "/etc/opt/FJSVssage" directory.

  Migration is not required for files whose definitions have not been changed. Use the new definition files.

- Copy the file of No. 3 (in the table above) and create the "/opt/FJSVssage/lib/defusr.dat" file.

  This is not required if the file was not backed up in step 1.

6. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server.**
      The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.

   c. On the Action pane, click **Reload Conf**. under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

See

If you want to change the IP address after upgrading, refer to the following sections in the *Storage Cruiser Operation Guide*:

- For HP-UX environments, refer to "Changing IP Address of Server Node" in "[HP-UX Version] Maintenance of Agent"
- For AIX environments, refer to "Changing IP Address of Server Node" in "[AIX Version] Maintenance of Agent"

Chapter 5 Upgrade from Storage Cruiser Version 16.x

To upgrade Storage Cruiser Version 16.x to this version, install the ETERNUS SF Manager.

Point

- In the version level of the Storage Cruiser, there are conditions for the combination of manager and agent. Upgrade your version, in order to fulfill the combination that is described in "Notes on Combining Versions and Levels" of the *Release Notes*.
- If AdvancedCopy Manager and AdvancedCopy Manager Copy Control Module are both installed on the same server, when upgrading, both AdvancedCopy Manager and AdvancedCopy Manager Copy Control Module are upgraded. Therefore, perform backups of the previous versions before starting the upgrade.
- For the upgrade, there is a method where the upgrade is performed in an interactive format and a method where the upgrade is performed using a command for silent installation without the need of responses (silent installation procedure).
  The operating environment that supports the upgrade with the silent installation procedure is as follows:
  - Windows Server 2012 or later
  - Solaris 11 or Solaris 10
  - Red Hat Enterprise Linux 7, Red Hat Enterprise Linux 6, or SUSE Linux Enterprise Server 12

5.1 Upgrading Storage Cruiser's Manager (for Windows)

5.1.1 Upgrading on Non-clustered Systems

5.1.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

3. If the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
4. Execute the following batch to stop the services of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Stop_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.
5. When using the ETERNUS VASA Provider, stop the Provider function.
   With the Windows services screen, stop the ETERNUS Information Provider.

6. When using the ETERNUS SF SNMP Trap Service, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

   Note

   In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

5.1.1.2 Performing Upgrade

Refer to "C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)" to perform the upgrade.

Point

If the upgrade was terminated abnormally, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" to recover the system to the normal state.

5.1.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

Information

About the notation in procedure

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.
$ENV_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

2. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of the location of Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

3. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the polling service setting file that is stored in the following directory to an arbitrary location.

After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

4. If the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

5. Execute the following batch to restart the services of ETERNUS SF Manager.

```
$INS_DIR\Common\bin\Start_ESFservice.bat
```

6. When ETERNUS VASA Provider was used in a previous version of ETERNUS SF system, upgrade it to the version corresponding to this version of ETERNUS SF system. After the upgrade, confirm that the Provider function is running.
   If it is not running, start ETERNUS Information Provider from the Windows services screen.

   However, if the following conditions are satisfied, reinstall (uninstall and install) ETERNUS VASA Provider:

   - The upgrade from Version 16.2 is performed, and
   - ETERNUS VASA Provider whose version corresponds to this version level is installed.

   Note

   The host name of the Management Server must be a name that can be specified as the FQDN name in ETERNUS VASA Provider. Because the ETERNUS VASA Provider that supports this version limits the available FQDN name, change the host name of the Management Server as required. For details about the available FQDN names for ETERNUS VASA Provider, refer to the ETERNUS VASA Provider manuals.

7. If the ETERNUS SF SNMP Trap Service was used with the previous version, start the ETERNUS SF SNMP Trap Service with the Windows services screen.

Point

When ETERNUS SF Manager has been recovered to normal state by performing the task described in "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)", to ensure data consistency, execute the "stgxfwcmmodsrv" command to perform the server information change processing.

Specify the Management Server name to the -n option and execute the "stgxfwcmmodsrv" command. Check **Server** column of the "stgxfwcmdispsrv" command execution result for the Management Server name specified to the -n option.

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "5.1.3 Resuming Operation".

5.1.2 Upgrading on Clustered Systems

The following values are used in the description.

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.
$ENV_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.
$TMP_DIR	"Work Directory" specified at the ETERNUS SF Manager installation.

5.1.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Management Server transactions
- Shared disk for shared data of Managed Server transactions

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed on the secondary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

3. Check that the services of ETERNUS SF Manager are stopped on the secondary node.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of ETERNUS SF Manager.
4. When using the ETERNUS SF SNMP Trap Service, on the secondary node, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

   Note

   In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

5. When using the ETERNUS VASA Provider, on the secondary node, confirm that the ETERNUS VASA Provider service has been stopped.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of the ETERNUS VASA Provider.
6. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed on the primary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

7. On the primary, node stop the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.
8. When using the ETERNUS SF SNMP Trap Service, on the primary node, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

Note

In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

9. When using the ETERNUS VASA Provider, stop the ETERNUS VASA Provider service on the primary node.
   Use the Failover Cluster Manager to stop the transactions of the ETERNUS VASA Provider.
   However, the shared disk for shared data of the ETERNUS Information Provider must be online.

10. If Managed Server transactions coexist in the clustered system, perform the following procedure:

    a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

       If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
       If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.

    b. On the primary node for a target transaction, stop the Managed Server transaction.

       Use the Failover Cluster Manager to stop Managed Server transactions.
       However, the shared disk for shared data of Managed Server transactions must be online.
       If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

11. In all of the nodes in which the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.

12. Stop the local transactions on all the nodes, perform the following procedure:

    With the Windows services screen, start the AdvancedCopy Manager COM Service.

5.1.2.2 Performing Upgrade (Primary Node)

Performing the upgrade is as follows.

1. Save the environment setting files (sys.properties) for AdvancedCopy Manager Copy Control Module.
   environment setting files for AdvancedCopy Manager Copy Control Module :

   ```
   $INS_DIR\CCM\sys\sys.properties
   ```

   Make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

2. Recover the original environment configurations file (sys.properties) of the AdvancedCopy Manager CCM.
   Overwrite the original environment configurations file onto the file of the copying destination.

Original Environment Configurations File	Copying Destination File
$INS_DIR\CCM\noncluster\sys\sys.properties	$INS_DIR\CCM\sys\sys.properties

3. Save the general script for the AdvancedCopy Manager CCM.
   In corresponding previous version of "Preparing General Scripts for AdvancedCopy Manager CCM" corresponding to each OS and nodes in the *Cluster Environment Setup Guide*, in cases when the general scripts have been stored under the bin directory of the program directory of the AdvancedCopy Manager CCM, make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

4. If the following directories created by Installer exist, use Explorer to modify the directory names:

   - $ENV_DIR\ESC\Manager\etc
   - $TMP_DIR\ESC\Manager\var

Examples to change the directory name are shown below:

- C:\ETERNUS_SF\ESC\Manager\etc_original
- C:\ETERNUS_SF\ESC\Manager\var_original

Note

If another program is using any files in the above directories, modification of the directory names may fail.
If modification of the directory names fails, reboot the server and try again.

5. Set up links to the directories of the shared disk.
   If the link of the local disk from which to set the link of the following table does not exist, set up links to the directory of shared disk.

Local Disk (Linked Source)	Shared Disk (Link Target)
$ENV_DIR\ESC\Manager\etc	*sharedDisk*\ESC\Manager\etc
$TMP_DIR\ESC\Manager\var	*sharedDisk*\ESC\Manager\var

   Execute the following command for all directories.

```
> mklink /d srcDir dstDir
```

   For *srcDir*, specify the directory on the local disk from which to set the link.
   For *dstDir*, specify the directory on the shared disk to which the link is to be set.

6. Refer to "C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)" to perform the upgrade.
7. The shared disk for shared data of ETERNUS SF Manager must be offline.

Point

If the upgrade was terminated abnormally, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" to recover the system to the normal state.

5.1.2.3 Performing Upgrade (Secondary Node)

1. The shared disk for shared data of ETERNUS SF Manager must be online.
2. Perform the upgrade for the secondary node.
   The upgrade procedure is the same as that for the primary node. Refer to "5.1.2.2 Performing Upgrade (Primary Node)".
3. The shared disk for shared data of ETERNUS SF Manager must be offline.

5.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)

When the upgrade has been completed, the tasks below need to be performed on the primary node.
The shared disk for shared data of ETERNUS SF Manager must be offline.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, steps a, b, and g are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

c. Restore the environment setting files (sys.properties) for AdvancedCopy Manager Copy Control Module.
Overwrite the environment configurations file (sys.properties) saved during "5.1.2.2 Performing Upgrade (Primary Node)" onto the following file after upgrade installation.
Environment setting files for AdvancedCopy Manager Copy Control Module :

```
$INS_DIR\CCM\sys\sys.properties
```

d. Evacuate the general script for the AdvancedCopy Manager CCM.
When general scripts are backed up in "5.1.2.2 Performing Upgrade (Primary Node)", restore the backed-up general scripts to the directory stored in "Preparing General Scripts for AdvancedCopy Manager CCM", which corresponds to respective operating systems and nodes described in the *Cluster Environment Setup Guide* of the appropriate earlier version.

e. Edit the environment setting files for AdvancedCopy Manager on the shared disk for ETERNUS SF Manager shared data.
Edit the following files: edit the following files:

- <Drive of shared disk for shared data of ETERNUS SF Manager>:\etc\opt\swstorage\clsetup.ini
- <Drive of shared disk for shared data of ETERNUS SF Manager>:\etc\opt\swstorage\etc\swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

f. If Managed Server transactions exist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data, on the primary node for a target service.
On the primary node for target transactions, edit the following files:

- <Drive of shared disk for shared data of Managed Server transactions>:\etc\opt\swstorage\clsetup.ini
- <Drive of shared disk for shared data of Managed Server transactions>:\etc\opt\swstorage\etc\swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

g. The resource is deleted from the transactions belonging to the ETERNUS SF Manager.
Making use of failover cluster manager, the resources stated below are deleted from the transactions belonging to ETERNUS SF Manager. No measures are necessary where the resources do not exist.

Name of Resources

- AdvancedCopy GUI Service
- SymfoWARE RDB RDBSWSTF

When the operation divides shared disk for shared data use and the shared disk for repository use, the resources of the shared disk for repository use are deleted.

2. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

3. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the polling service setting file that is stored in the following directory to an arbitrary location.
   After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

5.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

When the upgrade has been completed, the tasks below need to be performed on the secondary node.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

2. Check that the services of ETERNUS SF Manager are stopped.
   If not stopped, use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.

3. Restore the environment setting files (sys.properties) for AdvancedCopy Manager Copy Control Module.
   Overwrite the environment configurations file (sys.properties) saved during "5.1.2.3 Performing Upgrade (Secondary Node)" onto the following file after upgrade installation.
   Environment setting files for AdvancedCopy Manager Copy Control Module :

```
$INS_DIR\CCM\sys\sys.properties
```

4. Restore the saved general scripts for the AdvancedCopy Manager CCM.
   When general scripts are backed up in "5.1.2.3 Performing Upgrade (Secondary Node)", restore the backed-up general scripts to the directory stored in "Preparing General Scripts for AdvancedCopy Manager CCM", which corresponds to respective operating systems and nodes described in the *Cluster Environment Setup Guide* of the appropriate earlier version.

5.1.2.6 Starting ETERNUS SF Manager

After performing "5.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and "5.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)", perform the following procedure:

1. Check that the services of ETERNUS SF Manager are started on the primary node.
   If not started, use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.

2. When using the ETERNUS VASA Provider, start the ETERNUS VASA Provider service on the primary node.

   Use the Failover Cluster Manager to start the transactions of the ETERNUS VASA Provider.

3. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.

4. In all of the nodes in which the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

5. Start the local transactions on all the nodes.

   With the Windows services screen, stop the AdvancedCopy Manager COM Service.

6. If the ETERNUS SF SNMP Trap Service was used with the previous version, on all the nodes, start the ETERNUS SF SNMP Trap Service with the Windows services screen.

Point

When ETERNUS SF Manager has been recovered to normal state by performing the task described in "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)", to ensure data consistency, execute the "stgxfwcmmodsrv" command to perform the server information change processing.

Specify the Management Server name to the -n option and execute the "stgxfwcmmodsrv" command. Check **Server** column of the "stgxfwcmdispsrv" command execution result for the Management Server name specified to the -n option.

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "5.1.3 Resuming Operation".

5.1.3 Resuming Operation

With the above, the upgrade is completed. Restart operation after performing the following actions.

1. Deleting Web Browser's Cache

   If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

2. Reloading Device Information

   If all the following conditions are satisfied, this procedure is not required:

   - The pre-upgrade environment is Version 16.3.
   - In the pre-upgrade environment, the patch for Problem Report Number PH09090 has already been applied to the Management Server.
   - The storage device that is in use is the ETERNUS DX S3 series or the ETERNUS DX200F, whose firmware version is V10L60 or later.

   If the above conditions are not satisfied and you use the new supported function from this version level, perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Storage**.
      The registered ETERNUS Disk storage systems are displayed in the Main pane.
   b. On the Main pane, check the target ETERNUS Disk storage system checkbox.
   c. On the Action pane, click **Reload Conf**. under **Storage**.

See

Refer to "Reload ETERNUS Disk Storage System Configuration Information" in the *Web Console Guide* for this version for information on reloading the configuration information.

3. Upgrading Performance Management

   When using the performance management function of NAS volume and NAS system after the upgrade, it is required to restart the performance management function. To set Start of performance management, select "Yes" for **Create Device Configuration File**.
   Refer to "Displaying Performance Information of NAS Volume and NAS System" in the *Storage Cruiser Operation Guide* for details.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to "Changing SNMP Communication Protocol of Management Server" in the *Storage Cruiser Operation Guide* for this version and configure your operational environment.

Note

Information related to the captured capacity and the captured logs before the upgrade is not displayed on the Dashboard. Refer to the following screens:

- Capacity information
  - Capacity Graph of Thin Provisioning Pool
  - Capacity Graph of Tier Pool
- Logs information
  - Operation History
  - Events
  - Threshold Monitoring Alarms
  - Quota Management (NAS Management)

5.2 Upgrading Storage Cruiser's Manager (for Solaris, Linux)

5.2.1 Upgrading on Non-clustered Systems

5.2.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

2. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed.

   Note that in cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

3. Execute the following command to stop the ETERNUS SF Manager daemon.

```
# /opt/FJSVesfcm/bin/stopesf.sh
```

4. When upgrading from Version 16.2 or earlier on a Linux environment, uninstall the FJSVswstt package (SNMP Trap daemon package).

   Execute the following command to check whether the FJSVswstt package is installed.

```
# rpm -q FJSVswstt
```

   If the FJSVswstt package information is displayed, execute the following command to uninstall the FJSVswstt package.

   - For Red Hat Enterprise Linux 7 environments

```
# systemctl stop startsc-snmptrapd.service
# systemctl disable startsc-snmptrapd.service
# rm /usr/lib/systemd/system/startsc-snmptrapd.service
# rpm -e FJSVswstt
```

   - For Red Hat Enterprise Linux 6 environments

```
# rpm -e FJSVswstt
```

5.2.1.2 Performing Upgrade

Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

5.2.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

```
# /opt/symfoware/setup/symfo_remove
```

   c. Confirmation message to uninstall Symfoware is displayed.
      To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to

select the function to uninstall.
A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
/etc/opt/FJSVssmgr/current/snmpth/

3. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the polling service setting file that is stored in the following directory to an arbitrary location.
   After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
/etc/opt/FJSVssmgr/current/polling/pollingService.xml

4. As required, perform the SNMP Trap configuration (for Linux environments only).

   Only when the FJSVswstt package is installed using the procedure described in the step 4 of "5.2.1.1 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

- "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

5. Perform the kernel parameter tuning.

   See

   Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

6. As required, restart the daemon of ETERNUS SF Manager.
   If the operating system is not restarted after having performed kernel parameter tuning in step 5, execute the following command to restart the ETERNUS SF Manager daemon.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

Subsequently, go to "5.2.3 Resuming Operation".

5.2.2 Upgrading on Clustered Systems

5.2.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Management Server transactions
- Shared disk for shared data of Managed Server transactions

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed on the secondary node.

   In cases when upgrade is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk area.
```

3. On the secondary node, check whether the cluster application (transaction) to which ETERNUS SF Manager belongs has stopped.

   If not stopped, refer to the relevant cluster software manuals for information on stopping it.

4. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed on the primary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

5. On the primary node, stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.

6. If Managed Server transactions coexist in the clustered system, perform the following procedure:

   a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

      If not stopped, stop Managed Server transactions on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.
      Refer to the relevant cluster software manuals for information on stopping it.

   b. On the primary node for a target transaction, stop the Managed Server transaction.

      Refer to the relevant cluster software manuals, stop Managed Server transactions.
      However, the shared disk for shared data of Managed Server transactions must be mounted.
      If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

7. Stop the local transactions on all the nodes, perform the following procedure:

   Stop the communication daemon for the local transactions of the AdvancedCopy Manager's manager.
   Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on stopping the daemon.

8. On the primary node and the secondary node, recover the start and stop script of the Management Server transaction.

9. In cases when Managed Server transactions coexist in the cluster system, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

   On the primary node and the secondary node, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

10. When upgrading from Version 16.2 or earlier on a Linux environment, uninstall the FJSVswstt package (SNMP Trap daemon package).

    Execute the following command to check whether the FJSVswstt package is installed.

```
# rpm -q FJSVswstt
```

    If the FJSVswstt package information is displayed, execute the following command to uninstall the FJSVswstt package.

    - For Red Hat Enterprise Linux 7 environments

```
# systemctl stop startsc-snmptrapd.service
# systemctl disable startsc-snmptrapd.service
# rm /usr/lib/systemd/system/startsc-snmptrapd.service
# rpm -e FJSVswstt
```

    - For Red Hat Enterprise Linux 6 environments

```
# rpm -e FJSVswstt
```

5.2.2.2 Performing Upgrade (Primary Node)

1. Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

2. Unmount the shared disk for shared data of ETERNUS SF Manager.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

5.2.2.3 Performing Upgrade (Secondary Node)

1. Mount the shared disk for shared data of ETERNUS SF Manager.
2. Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.
3. Unmount the shared disk for shared data of ETERNUS SF Manager.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

5.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.
The shared disk for shared data of ETERNUS SF Manager must be mounted.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

   ```
   # /opt/symfoware/setup/symfo_remove
   ```

   c. Confirmation message to uninstall Symfoware is displayed.
   To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
   A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

   Example of Uninstallation with the Specification "all"

   ```
   Start checking the installation environment.
   Check of installation environment is ended.

   WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
   Edition".

   Continue the uninstallation?
   y: Continue the uninstallation
   q: End directly without uninstallation
   [y,q]: y

   Uninstallation of "Symfoware Server Enterprise Edition" begins.

   Please select the functions to be uninstalled.
   1: Base function (Server function, Client function)
   Separate multiple selections with ",". (Example: 1, 2)
   [all:All functions,1,q]: all
   ```

```
Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. Edit the environment setting files for ETERNUS SF Manager.
   Edit the following files:

   - *<Mount point of shared disk for shared data of ETERNUS SF Manager>*/etc/opt/swstorage/clsetup.ini
   - *<Mount point of shared disk for shared data of ETERNUS SF Manage* >/etc/opt/swstorage/swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

3. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data, on the primary node for a target service.

   On the primary node for target transactions, edit the following files:

   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/clsetup.ini
   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

4. Recover the activation suspension script of Management Server tasks saved during "5.2.2.1 Preparing for Upgrade".
5. In cases when Managed Server transaction coexist in the cluster system, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction evacuated of "5.2.2.1 Preparing for Upgrade".
6. If the SNMP Trap XML definition file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the SNMP Trap XML definition file that is stored in the following directory to an arbitrary location.
   After that, refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the SNMP Trap XML

definition file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location.

Directory of Location of Customization Definition files
/etc/opt/FJSVssmgr/current/snmpth/

7. If the polling service setting file is customized in the environment of the previous version, it is necessary to customize this version as well.
   Save the polling service setting file that is stored in the following directory to an arbitrary location.
   After that, refer to "Polling Service Setting File" in the *Storage Cruiser Operation Guide* and customize the Polling Service Setting file. For the contents of the customization, refer to the polling service setting file which was saved to the arbitrary location.

Customization Definition files
/etc/opt/FJSVssmgr/current/polling/pollingService.xml

8. As required, perform the SNMP Trap configuration (for Linux environments only).

   Only when the FJSVswstt package is installed using the procedure described in the step 10 of "5.2.2.1 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

   - "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

9. Perform the kernel parameter tuning.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

5.2.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

```
# /opt/symfoware/setup/symfo_remove
```

   c. Confirmation message to uninstall Symfoware is displayed.
      To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
      A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

      Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
```

```
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. Recover the activation suspension script of Management Server tasks evacuated during "5.2.2.1 Preparing for Upgrade".

3. In cases when Managed Server transaction coexist in the cluster system, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction evacuated of "5.2.2.1 Preparing for Upgrade".

4. As required, perform the SNMP Trap configuration (for Linux environments only).

   Only when the FJSVswstt package is installed using the procedure described in the step 10 of "5.2.2.1 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version.

   - "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > Step 4 in "When Using ETERNUS SF SNMP Trap Monitoring Daemon"

5. Perform the kernel parameter tuning.

   See

   Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

6. Check the cluster application (transaction) is stopped.
   If not stopped, refer to the relevant cluster software manuals for information on stopping it.

5.2.2.6 Starting ETERNUS SF Manager

After performing "5.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and "5.2.2.5 Tasks to Be Performed After Upgrade (Secondary Node)", perform the following procedure:

1. Check that the cluster application (transaction) is started on the primary node.

   If not started, start the cluster application (transaction) of ETERNUS SF Manager.
   Refer to the relevant cluster software manuals for information on starting it.

2. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.

If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.

3. Start the local transactions on all the nodes.

   - Start the communication daemon for local transactions of AdvancedCopy Manager's manager.
     Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on starting the daemon.
   - Start the SNMP Trap monitoring daemon on all local nodes. No action is necessary if it is already started. Refer to the following section in the *Storage Cruiser Operation Guide* for this version for information on how to start the daemon.
     - For Solaris environments

       "Starting and Stopping Daemons (Solaris Environment)"
     - For Linux environments (Only if the ETERNUS SF SNMP Trap Monitoring Daemon was used with the previous version)

       "Starting and Stopping Daemons (Linux Environment)"

Subsequently, go to "5.2.3 Resuming Operation".

Point

Even if the message "A1001 : Could not establish connection with SNMP Trap daemon/service" is output to the system log when the cluster application (transaction) is started, no action is necessary.

5.2.3 Resuming Operation

When the tasks described above have been performed, the upgrade of the Storage Cruiser's manager is complete. Restart operation after performing the following actions.

1. Changing SELinux Setting to "enforcing" Mode

   When you change the SELinux setting to "enforcing" mode during the upgrade, refer to the following section in the chapter "Setup of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version and restart the operation after the installation of the SELinux policy module for snmptrapd.

   - "Setup of Storage Cruiser's Manager" > "SNMP Trap Setting" > "SNMP Trap Setting (for Linux)" > "Installation of SELinux Policy Module for SNMP Trap Daemon"

2. Deleting Web Browser's Cache

   If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

3. Reloading Device Information

   If all the following conditions are satisfied, this procedure is not required:

   - The pre-upgrade environment is Version 16.3.
   - In the pre-upgrade environment, the patch for Problem Report Number PH09090 has already been applied to the Management Server.
   - The storage device that is in use is the ETERNUS DX S3 series or the ETERNUS DX200F, whose firmware version is V10L60 or later.

   If the above conditions are not satisfied and you use the new supported function from this version level, perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Storage**.
      The registered ETERNUS Disk storage systems are displayed in the Main pane.
   b. On the Main pane, check the target ETERNUS Disk storage system checkbox.
   c. On the Action pane, click **Reload Conf**. under **Storage**.

See

Refer to "Reload ETERNUS Disk Storage System Configuration Information" in the *Web Console Guide* for this version for information on reloading the configuration information.

4. Upgrading Performance Management

   When using the performance management function of NAS volume and NAS system after the upgrade, it is required to restart the performance management function. To set Start of performance management, select "Yes" for **Create Device Configuration File**.
   Refer to "Displaying Performance Information of NAS Volume and NAS System" in the *Storage Cruiser Operation Guide* for details.

Information

After upgrading to this version, when changing the SNMP communication protocol used for fault management from SNMPv1 to SNMPv3, refer to "Changing SNMP Communication Protocol of Management Server" in the *Storage Cruiser Operation Guide* for this version and configure your operational environment.

Note

Information related to the captured capacity and the captured logs before the upgrade is not displayed on the Dashboard. Refer to the following screens:

- Capacity information
  - Capacity Graph of Thin Provisioning Pool
  - Capacity Graph of Tier Pool
- Logs information
  - Operation History
  - Events
  - Threshold Monitoring Alarms
  - Quota Management (NAS Management)

5.3 Upgrading Storage Cruiser's Agent (for Windows)

5.3.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

5.3.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Log on to the server using Administrator privileges.

2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
   Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Open the Service Control Manager and stop the ETERNUS SF Storage Cruiser Agent service.
4. Start the command prompt with "Run as administrator".
5. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
dvdromDrive:\Agent_windows\Storage_Cruiser\windows_x86\scagtpreinst.bat backupDir
```

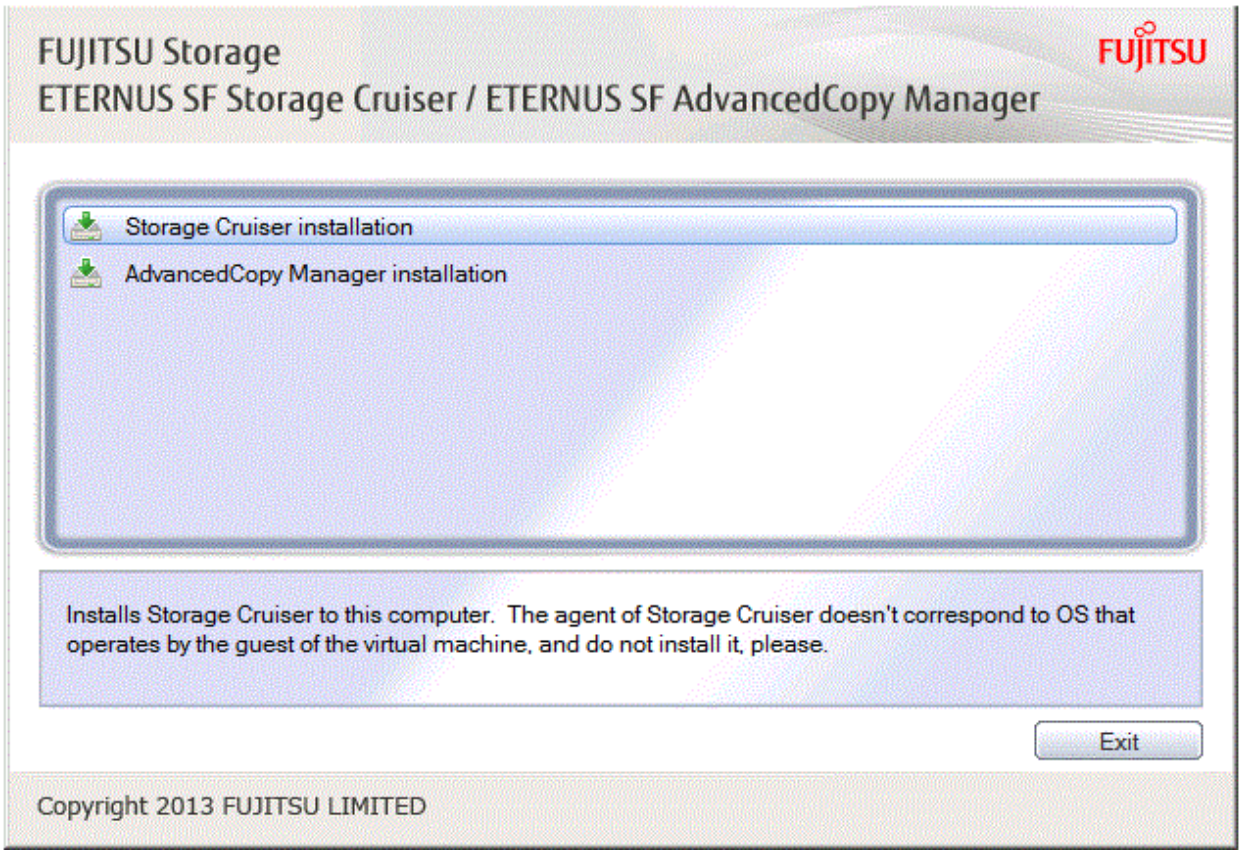
   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

Point

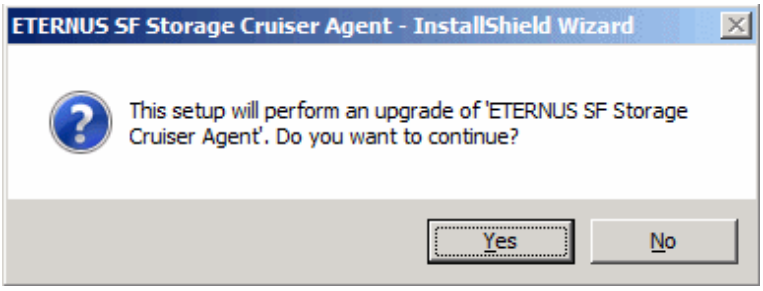
- The characters " | : * ? / . < > , % & ^ = ! ; are not supported for directory name.
- If the directory name contains any spaces, they should be surrounded by double quote characters.

5.3.2 Performing Upgrade

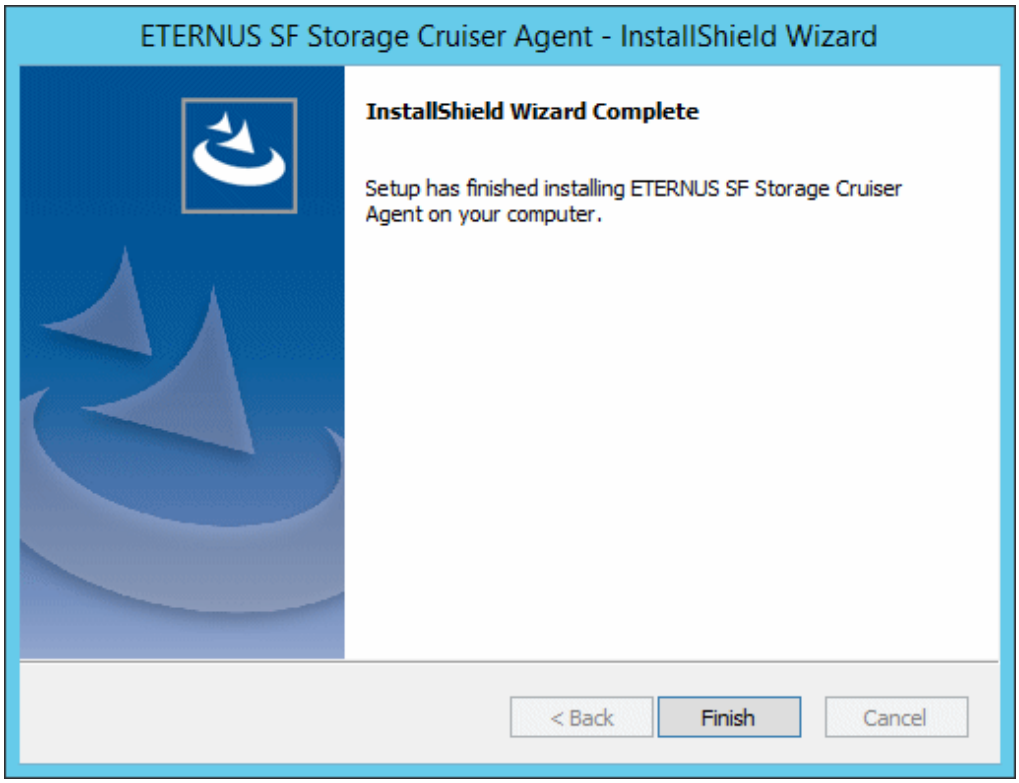
1. Execute autorun.exe in the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program & Manual)" for this version.
2. The following window is displayed. Click **Storage Cruiser installation**.



3. The following dialog box is displayed. Click **Yes**.



4. When the upgrade is completed, the following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



5. Eject the DVDROM.

The Storage Cruiser's agent upgrade is completed.

Refer to "5.3.4 Tasks to Be Performed After Upgrade" to set up the Storage Cruiser's agent.

Point

If the upgrade was terminated abnormally, refer to "8.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Windows)" to recover the system to the normal state.

5.3.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. 5.3.3.1 Performing Upgrade with Silent Installation Procedure
2. 5.3.3.2 Confirming Results of Upgrade with Silent Installation

5.3.3.1 Performing Upgrade with Silent Installation Procedure

Note that if step 1 and step 2 have already been performed, it is unnecessary to perform these again.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVDROM drive.
   Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Start the command prompt with "Run as administrator".
4. Execute the following silent installation command.

   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

   ```
   dvdromDrive:\Agent_windows\Storage_Cruiser\windows_x86\scagtsilentinstall.bat [-l
   installLogFile]
   ```

   Point

   - If nothing is specified for *installLogFile*, an install log file named " scagtsilentinstall.log" is created in the working directory specified by the environment variable TEMP.
   - If there is any file of the same name as the specified install log file, it is overwritten.
   - It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
   - If the path name of the installation log file contains any spaces, they should be surrounded by double quote characters.
   - The characters " | : * ? / . < > % & ^ ; ! are not supported for path name of the installation log file.

   Note

   - If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
   - Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
   - During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5. On completion of installation, a command prompt is displayed.
   Eject the DVD-ROM.

5.3.3.2 Confirming Results of Upgrade with Silent Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for Storage Cruiser's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the upgrade was terminated abnormally, refer to "8.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Windows)" to recover the system to the normal state.

5.3.4 Tasks to Be Performed After Upgrade

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from Web Console.

Point

When performing an upgrade of Storage Cruiser's manager at the same time, perform the following procedures after completing the upgrade of Storage Cruiser's manager.

1. Where there has been customization of "Correlation.ini Parameter" in the *Storage Cruiser Operation Guide*, restore the Storage Cruiser Agent Settings information.
   If customization has not been performed, no action is required. The configuration information of the previous version Storage Cruiser's agent is saved in the following file under the *backupDir* directory specified by "5.3.1.1 Backing Up Operational Environment of Previous Version".

   ```
   backupDir\etc\Correlation.ini
   ```

   Refer to the backup file and reflect the definitions which have been changed from the installation of the previous version Storage Cruiser's agent to the $ENV_DIR\ESC\Agent\etc\Correlation.ini file.
   ($ENV_DIR is "Environment Directory" specified at the Storage Cruiser's agent installation.)

   ### See

   Refer to "Correlation.ini Parameter" in the *Storage Cruiser Operation Guide* for information on customizing Correlation.ini parameters.

2. Where there has been customization of "TFOConfig.ini Parameter" in the *Storage Cruiser Operation Guide*, restore the Storage Cluster Controller Settings information.
   If customization has not been performed, no action is required. The configuration information of the previous version Storage Cluster Controller is saved in the following file under the *backupDir* directory specified by "5.3.1.1 Backing Up Operational Environment of Previous Version".

   ```
   backupDir\etc\TFOConfig.ini
   ```

   Refer to the backup file and reflect the definitions which have been changed from the installation of the previous version Storage Cruiser's agent to the $ENV_DIR\ESC\Agent\etc\ TFOConfig.ini file.
   ($ENV_DIR is "Environment Directory" specified at the Storage Cruiser's agent installation.)

   ### See

   Refer to "TFOConfig.ini Parameter" in the *Storage Cruiser Operation Guide* for information on customizing TFOConfig.ini parameters.

3. Open the Service Control Manager and activate the ETERNUS SF Storage Cruiser Agent Service.
4. Perform the following operations with Web Console to reload the server information.
   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.
   b. On the Main pane, check the target server checkbox.

c. On the Action pane, click **Reload Conf**. under **Server**.

See

If you want to change the IP address after upgrading, refer to "Changing IP Address of Server Node" in "[Windows Version] Maintenance of Agent" in the *Storage Cruiser Operation Guide*.

Point

- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "5.3.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

5.4 Upgrading Storage Cruiser's Agent (for Solaris)

Point

For Performing Upgrade in 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
```

5.4.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

5.4.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Execute the following command to stop the daemon.

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

3. Execute the following command to confirm that the daemon has stopped.

   ```
   # /bin/ps -ef | grep FJSVssage
   ```

   If not stopped, execute the following command to stop it forcibly.

   ```
   # /usr/bin/kill -9 daemonProcID
   ```

4. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
5. Mount the DVD-ROM.

   Example:

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

6. Execute the following command to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
# dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris/scagtpreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

5.4.2 Performing Upgrade

1. Execute the following command.

```
# cd dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris
# ./scagtinstall.sh
```

2. The following message is displayed. To continue, enter "y". To discontinue, enter "n" or "q".

```
ETERNUS SF Storage Cruiser 16.8
Copyright FUJITSU LIMITED 2013-2019
This program will upgrade "ETERNUS SF Storage Cruiser" Agent on your system.

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

3. If "y" was entered, the following message is displayed. To continue, enter "y". To discontinue, enter "n".

```
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,?]
```

4. If "y" was entered, the upgrade continues.

   If the upgrade completes normally, the following message is displayed.

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

   If the upgrade fails, the following message is displayed.

```
ERROR : not privileged
or
ERROR : Upgrading FJSVssage was failed.
```

5. Unmount and eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

The Storage Cruiser's agent upgrade is completed.

Refer to "5.4.4 Tasks to Be Performed After Upgrade" to set up the Storage Cruiser's agent.

Point

- If the upgrade was terminated abnormally, refer to "8.2.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.
- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "5.4.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

5.4.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. 5.4.3.1 Performing Upgrade with Silent Installation Procedure
2. 5.4.3.2 Confirming Results of Upgrade with Silent Installation

5.4.3.1 Performing Upgrade with Silent Installation Procedure

1. Execute the following command.

```
dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris/scagtsilentinstall.sh [-l installLogFile]
```

2. On completion of installation, a command prompt is displayed.
3. Eject the DVD-ROM.

```
# umount dvdromMountPoint
```

Point

- If nothing is specified for *installLogFile*, an install log file named "scagtsilentinstall.log" is created in the "/var/tmp" directory.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5.4.3.2 Confirming Results of Upgrade with Silent Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for Storage Cruiser's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the upgrade was terminated abnormally, refer to "8.2.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.

5.4.4 Tasks to Be Performed After Upgrade

Perform the following procedure:

1. If the SNMP Trap XML definition file was customized in the environment of the previous version, customize this version as well.

   a. Save the SNMP Trap XML definition file ("1_3_6_1_4_1_211_4_1_3_21_2_21.xml") that is stored in the "/etc/opt/FJSVssage/snmpth" directory to an arbitrary location.

   b. Prepare the SNMP Trap XML definition file for this version in the "/etc/opt/FJSVssage/snmpth" directory.
   From that directory, copy the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml.new" file to the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file.

   c. Refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location in step a.

2. Execute the following command in the Managed Server to start the daemon.

```
# /opt/FJSVssage/bin/sstorageagt
```

3. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.

   c. On the Action pane, click **Reload Conf.** under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

5.5 Upgrading Storage Cruiser's Agent (for Linux)

5.5.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

5.5.1.1 Backing Up Operational Environment of Previous Version

For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the Storage Cruiser's agent.
The procedure is shown below:

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

2. Execute the following command to stop the daemon.

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

3. Execute the following command to confirm that the daemon has stopped.

```
# /bin/ps -ef | grep FJSVssage
```

If not stopped, execute the following command to stop it forcibly.

```
# /usr/bin/kill -9 daemonProcID
```

4. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD ROM drive.

5. Mount the DVD-ROM.

Example:

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

6. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
# dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux/scagtpreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

5.5.2 Performing Upgrade

1. Execute the following command.

```
# cd dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux
# /bin/sh ./scagtinstall.sh
```

2. The following message is displayed. To continue, enter "y". To discontinue, enter "n" or "q".

```
ETERNUS SF Storage Cruiser 16.8
Copyright FUJITSU LIMITED 2013-2019
This program will upgrade "ETERNUS SF Storage Cruiser" Agent on your system.

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

3. If "y" was entered, the upgrade continues.

If the upgrade completes normally, the following message is displayed.

```
INFO : Starting Upgrade of ETERNUS SF Storage Cruiser ...
...
INFO : Upgrade of <FJSVssage> was successful.
INFO : ETERNUS SF Storage Cruiser Agent was upgraded successfully.
```

If the upgrade fails, the following message is displayed.

```
ERROR : not privileged
or
INFO  : Upgrade is terminated.
or
ERROR : Upgrading FJSVssage was failed.
```

4. Unmount and eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

The Storage Cruiser's agent upgrade is completed.

Refer to "5.5.4 Tasks to Be Performed After Upgrade" to set up the Storage Cruiser's agent.

Point

- It is recommended that you back up the system before starting the upgrade.
  By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.
- If the upgrade was terminated abnormally, refer to "8.2.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.
- Once normal operation has been confirmed after the upgrade of the Storage Cruiser's agent, the backup data in the backup destination directory created in step 5 of "5.5.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

5.5.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. 5.5.3.1 Performing Upgrade with Silent Installation Procedure
2. 5.5.3.2 Confirming Results of Upgrade with Silent Installation

5.5.3.1 Performing Upgrade with Silent Installation Procedure

1. Execute the following command.

```
dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux/scagtsilentinstall.sh [-l installLogFile]
```

2. On completion of installation, a command prompt is displayed.
3. Eject the DVD-ROM.

```
# umount dvdromMountPoint
```

Point

- If nothing is specified for *installLogFile*, an install log file named "scagtsilentinstall.log" is created in the /var/tmp directory.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen, and the process terminates with error.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5.5.3.2 Confirming Results of Upgrade with Silent Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for Storage Cruiser's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the upgrade was terminated abnormally, refer to "8.2.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to recover the system to the normal state.

5.5.4 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In Red Hat Enterprise Linux 6 environments and if the previous version is Version 16.1 or earlier, add the following line to any row of the "/etc/opt/FJSVssage/Correlation.ini" file.

```
EventMessageMarking=1
```

2. Execute the following command to start the daemon on the Management Server.

```
# /opt/FJSVssage/bin/sstorageagt
```

3. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.

   c. On the Action pane, click **Reload Conf.** under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

5.6 Upgrading Storage Cruiser's Agent (for HP-UX, AIX)

The upgrade is performed as follows:

1. Back up the Storage Cruiser's agent settings information.

No.	Settings Information to Be Backed Up	File to Be Backed Up
1	SNMP Trap sending destination address	/var/opt/FJSVssage/sanm.ip
2	Agent definition file	All files under the "/etc/opt/FJSVssage" directory
3	User definition information	/opt/FJSVssage/lib/defusr.dat *1: If there is no file, backing up is not required.

2. Uninstall the previous version of the Storage Cruiser's agent.

   Refer to "Uninstallation of Storage Cruiser's agent" in the *Installation and Setup Guide* for the relevant previous version for details.

3. Install this version of the Storage Cruiser's agent.

   Refer to "Installation of Storage Cruiser's Agent" in the *Installation and Setup Guide* for this version for details.

4. Set up the Storage Cruiser's agent.

   Refer to "Setup of Storage Cruiser's Agent" in the *Installation and Setup Guide* for this version for details.

5. Restore the Storage Cruiser's agent settings information that was backed up in step 1.

   - Copy the file of No. 1 (in the table above) and create the "/var/opt/FJSVssage/sanm.ip" file.
   - Refer to each file of No. 2 (in the table above) and reflect the definitions which have been changed from the installation of the previous version of Storage Cruiser's agent to the "/etc/opt/FJSVssage" directory.

     Migration is not required for files whose definitions have not been changed. Use the new definition files.
   - Copy the file of No. 3 (in the table above) and create the "/opt/FJSVssage/lib/defusr.dat" file.

     This is not required if the file was not backed up in step 1.

6. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server.**
      The registered server list is displayed in the Main pane.
   b. On the Main pane, check the target server checkbox.
   c. On the Action pane, click **Reload Conf**. under **Server**.

When the tasks described above have been performed, the upgrade of Storage Cruiser's agent is complete.

See

If you want to change the IP address after upgrading, refer to the following sections in the *Storage Cruiser Operation Guide*:

- For HP-UX environments, refer to "Changing IP Address of Server Node" in "[HP-UX Version] Maintenance of Agent"
- For AIX environments, refer to "Changing IP Address of Server Node" in "[AIX Version] Maintenance of Agent"

Chapter 6 Upgrade from AdvancedCopy Manager Version 15.x

To upgrade AdvancedCopy Manager's manager to this version, install the ETERNUS SF Manager.

If performing an upgrade to a system environment using Agent-based operation model, perform the upgrade in the following sequence:

1. AdvancedCopy Manager's manager
2. AdvancedCopy Manager's agent

Point

- In the version level of the AdvancedCopy Manager, there are conditions for the combination of manager and agent. Upgrade your version, in order to fulfill the combination that is described in "Notes on Combining Versions and Levels" of the *Release Notes*.
- If Storage Cruiser and AdvancedCopy Manager Copy Control Module are both installed on the same server, when upgrading, both Storage Cruiser and AdvancedCopy Manager Copy Control Module are upgraded at the same time. Therefore, perform backups of the previous versions before starting the upgrade.
- The following information cannot be imported from the previous version:
  - Operation History
  - Events
  - Login/Logout history
- It is possible to perform an Upgrade Installation with existing Advanced Copy and Remote Advanced Copy sessions. Regardless of whether there are Advanced Copy sessions or not, the upgrade procedure is the same.

6.1 Upgrading AdvancedCopy Manager's Manager (for Windows)

6.1.1 Upgrading on Non-clustered Systems

6.1.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

6.1.1.1.1 Backing Up Operational Environment of Previous Version

With the following steps, perform a backup of the operation environment of the previous version of the AdvancedCopy Manager's manager.

Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to stop the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Stop_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

4. Execute the following batch file to perform a backup of the previous version.

   For *backupDir,* specify the directory in which to store the backup data with an absolute path. In the *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir.*

   ```
   dvdromDrive:\Manager_windows\vuptools\esfpreinst.bat backupDir [tmpDir]
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
   - The number of characters in a directory name must be up to 220.
   - Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

6.1.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

6.1.1.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

6.1.1.1.4 Estimating Database Size

A database is necessary for this version of AdvancedCopy Manager.
The database size must be estimated before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

6.1.1.1.5 Preparing for Uninstallation

Refer to "A.4 Unsetting Up Database" to unsetup the repository database of the previous version:

6.1.1.2 Performing Upgrade

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.1.1.3 Tasks to Be Performed After Upgrade".

6.1.1.3 Tasks to Be Performed After Upgrade

6.1.1.3.1 Restoring Environment from Previous Version

With the following procedure, restore the operation environment of the previous version of the AdvancedCopy Manager's manager. Note that if step 1 and step 2 have already been performed, perform from step 3.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfpostinst.bat backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
   - The number of characters in a directory name must be up to 220.

4. Eject the DVD-ROM.
5. Execute the following batch file to restart the service of ETERNUS SF Manager.

   ```
   $INS_DIR\Common\bin\Start_ESFservice.bat
   ```

   $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

6.1.1.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
$INS_DIR\Common\bin\esfadm devconf import -all
```

$INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

6.1.1.3.3 Change Associated Software

If the following related software was being used with the previous version, it is necessary to update these to a version that supports this version.

- ETERNUS VASA Provider
- Fujitsu ETERNUS Storage Systems Monitoring Pack

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

6.1.1.3.4 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 4 of "6.1.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

6.1.1.3.5 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below.

- Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
  If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

6.1.2 Upgrading on Clustered Systems

The following values are used in the description.

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.
$ENV_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

6.1.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Check that the ETERNUS SF Manager services are stopped on the secondary node.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of ETERNUS SF Manager.
3. When using the ETERNUS VASA Provider or the ETERNUS Information Provider, on the secondary node, confirm that the ETERNUS Information Provider service has been stopped.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of the ETERNUS Information Provider.
4. On the primary node, stop the ETERNUS SF Manager services.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.
5. When using the ETERNUS VASA Provider or the ETERNUS Information Provider, stop the ETERNUS Information Provider service on the primary node.
   Use the Failover Cluster Manager to stop the transactions of the ETERNUS Information Provider.
   However, the shared disk for shared data of the ETERNUS Information Provider must be online.
6. If Managed Server transactions coexist in the clustered system, perform the following procedure:
   a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

      If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.

   b. On the primary node for a target transaction, stop the Managed Server transaction.

      Use the Failover Cluster Manager to stop Managed Server transactions.
      However, the shared disk for shared data of Managed Server transactions must be online.
      If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.
7. Perform the following steps to stop the local transactions on all the nodes.
   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.
   b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.
8. On the primary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's manager.
   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.
   a. Log on to the server using Administrator privileges.
      If already logged on as the Administrator privileges, this step is unnecessary.
   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
   c. Execute the following batch file to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpreinst_cluster.bat backupDir [tmpDir] -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

- Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

d. Eject the DVD-ROM.

9. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.
   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager.
   Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

   Required Disk Space for Previous Version

   The space required to install the previous version of the ETERNUS SF Manager.
   Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

10. Uninstalling incompatible software

    Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.

    If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

    See

    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

11. Estimating the database size

    A database is necessary for this version of AdvancedCopy Manager.
    The database size must be estimated before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

12. On the secondary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's manager.
    The capacity required for performing this backup is 10 MB.

    a. Log on to the server using Administrator privileges.
       If already logged on as the Administrator privileges, this step is unnecessary.

    b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

    c. Mount the shared disk for shared data of ETERNUS SF Manager.
       If it is mounted on the primary node, unmount it to mount on the secondary node.

    d. Execute the following batch file to perform a backup of the previous version.

       For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an

absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

```
dvdromDrive:\Manager_windows\vuptools\esfpreinst_cluster.bat backupDir [tmpDir] -secondary
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

Point

- Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
- The number of characters in a directory name must be up to 220.
- Move the files (*tmpDir*) related to the performance management function to the same logical drive as the drive on which the product of the previous version is installed. In the case of backup to a different logical drive, it may take time to perform backup and restore.

e. Unmount the shared disk for shared data of ETERNUS SF Manager.
If it is required for the work on the primary node, mount it on the primary node.

f. Eject the DVD-ROM.

13. Checking for available disk space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

14. Uninstalling incompatible software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

15. Performing the cluster unsetup

Refer to "Uninstallation of ETERNUS SF Manager" in "Deletion of Cluster Environment for Management Server Transactions" in the *Cluster Environment Setup Guide* for the relevant previous version to delete the service resources, the cluster resources and unnecessary resources.

Note

- Do not uninstall the ETERNUS SF Manager program.
- Do not delete the ETERNUS SF Manager installation directory of each node.

- In cases when Managed Server transactions coexist, do not release the configurations of these Managed Server transactions.

6.1.2.2 Performing Upgrade (Primary Node)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.1.2.3 Performing Upgrade (Secondary Node)".

6.1.2.3 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "6.1.2.2 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *Cluster Environment Setup Guide* of this version for information on the cluster setup.

6.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.
2. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data.

   On the primary node for target transactions, edit the following files:

   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\clsetup.ini
   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\etc\swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

3. Restore the operation environment of the previous version of the AdvancedCopy Manager's manager.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpostinst_cluster.bat backupDir [tmpDir] -primary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.

4. Start the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.

5. If Managed Server transactions coexist in a clustered system, change the server information of the Managed Server transactions.

   To ensure data consistency, execute the "stgxfwcmmodsrv" command to change the server information.
   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   ```
   $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
   ```

   This operation should be performed on the primary node for Management Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

   Note

   For changing the server information, start a new window for command execution, and then perform the procedure on the window.

   See

   Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

6. Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.
   Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

   ```
   $INS_DIR\Common\bin\esfadm devconf import -all
   ```

   After executing the "esfadm devconf import" command, confirm that the **IMPORT STATUS** column displays "Complete" with "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

7. Uninstalling Symfoware
   In the version level of this ETERNUS SF Manager, Symfoware is not used.
   Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   - Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
     If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

Point

- If the ETERNUS VASA Provider was being used with the previous version
  It is necessary to reinstall a version of the ETERNUS VASA Provider that supports this version.
- If the Fujitsu ETERNUS Storage Systems Monitoring Pack was being used with the previous version
  It is necessary to reinstall a version of the Fujitsu ETERNUS Storage Systems Monitoring Pack that supports this version.

6.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check that the services of ETERNUS SF Manager are stopped.
   If not stopped, use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
2. Restore the operation environment of the previous version of the AdvancedCopy Manager's manager.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.
   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
   c. Mount the shared disk for shared data of ETERNUS SF Manager.
      If it is mounted on the primary node, unmount it to mount on the secondary node.
   d. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfpostinst_cluster.bat backupDir [tmpDir] -secondary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

e. Unmount the shared disk for shared data of ETERNUS SF Manager.
If it is required for the work on the primary node, mount it on the primary node.

f. Eject the DVD-ROM.

3. Uninstalling Symfoware
In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
The procedures to uninstall Symfoware are stated below.

- Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
If both Symfoware Server and Symfoware Client are installed, uninstall Symfoware Client first.

Point

- If the ETERNUS VASA Provider was being used with the previous version
It is necessary to reinstall a version of the ETERNUS VASA Provider that supports this version.
- If the Fujitsu ETERNUS Storage Systems Monitoring Pack was being used with the previous version
It is necessary to reinstall a version of the Fujitsu ETERNUS Storage Systems Monitoring Pack that supports this version.

6.1.2.6 Starting ETERNUS SF Manager

Perform the following procedure:

1. Check that the services of ETERNUS SF Manager are started on the primary node.

   If not started, use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.

2. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.

3. Perform the following steps to start the local transactions on all the nodes.

   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.

   b. Select "AdvancedCopy Manager COM Service" and then click **Start**.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

Point

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 8-c and step 12-d of "6.1.2.1 Preparing for Upgrade" maybe deleted.

6.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)

6.2.1 Upgrading on Non-clustered Systems

6.2.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

6.2.1.1.1 Backing Up Operational Environment of Previous Version

With the following procedure, back up the operation environment of the previous version of the AdvancedCopy Manager's manager. Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".
   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following command to stop the daemon of ETERNUS SF Manager.

   ```
   # /opt/FJSVesfcm/bin/stopesf.sh
   ```
5. Execute the following command to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfpreinst.sh backupDir [tmpDir]
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

   Point

   - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
   - The number of characters in a directory name must be up to 220.
   - Move the files (*tmpDir*) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

6.2.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

6.2.1.1.3 Uninstalling Incompatible Software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

6.2.1.1.4 Estimating Database Size

A database is necessary for this version of AdvancedCopy Manager.
The database size must be estimated before starting the upgrade.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

6.2.1.1.5 Tuning Kernel Parameters

Kernel parameter tuning must be performed in order to use this version of the AdvancedCopy Manager's manager. Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

6.2.1.1.6 Confirming Port Number for Communication Service

Therefore, ensure the new ports are available before starting the upgrade.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

6.2.1.1.7 Preparing for Uninstallation

Refer to "A.5 Cancelling Repository Settings" to unsetup the repository database of the previous version.

6.2.1.2 Performing Upgrade

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.2.1.3 Tasks to Be Performed After Upgrade".

6.2.1.3 Tasks to Be Performed After Upgrade

6.2.1.3.1 Restoring Environment from Previous Version

With the following procedure, restore the operation environment of the previous version of the AdvancedCopy Manager's manager. Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".
   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following command to restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfpostinst.sh backupDir [tmpDir]
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

   Point

   - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
   - The number of characters in a directory name must be up to 220.
5. Unmount the DVD-ROM.

   ```
   # umount dvdromMountPoint
   ```
6. Eject the DVD-ROM.

7. Execute the following command to restart the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

6.2.1.3.2 Importing Configuration Information

Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.

Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
/opt/FJSVesfcm/bin/esfadm devconf import -all
```

After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.

In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

6.2.1.3.3 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 5 of "6.2.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

6.2.1.3.4 Uninstalling Symfoware

In the version level of this ETERNUS SF Manager, Symfoware is not used.
Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.

The procedures to uninstall Symfoware are stated below.

1. Start the uninstaller of Symfoware to delete the Symfoware package.
   Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

   ```
   # /opt/symfoware/setup/symfo_remove
   ```

2. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
   A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

   Example of Uninstallation with the Specification "all"

   ```
   Start checking the installation environment.
   Check of installation environment is ended.

   WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
   Edition".

   Continue the uninstallation?
   y: Continue the uninstallation
   q: End directly without uninstallation
   [y,q]: y

   Uninstallation of "Symfoware Server Enterprise Edition" begins.
   ```

```
Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

3. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

4. When FSUNiconv package is installed, delete it (only in Solaris environments).
   Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

Subsequently, go to "6.2.3 Resuming Operation".

6.2.2 Upgrading on Clustered Systems

Note

If Cluster Unsetup is executed after upgrading from Version 15.0B to this version, the cluster resources and scripts created by the old version's commands starting with "stgclset" are not deleted.

6.2.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Check that the cluster application (transaction) has stopped on the secondary node.

   Check whether the cluster application (transaction) to which ETERNUS SF Manager belongs has stopped.
   If not stopped, stop the cluster application (transaction).

   Refer to the relevant cluster software manuals for information on stopping it (transaction).

2. Stop the cluster application (transaction) on the primary node.

   Stop the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.

3. If Managed Server transactions coexist in a clustered system, perform the following.

   a. On the secondary node for the target transactions, check that the Managed Server transactions have stopped.

      If not stopped, stop them on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure for each secondary node for Managed Server transactions.

      Refer to the relevant cluster software manuals for information on stopping the Managed Server transactions.

   b. On the primary node for the target transactions, stop the Managed Server transactions.

      Refer to the relevant cluster software manuals to stop the Managed Server transactions.
      However, the shared disk for shared data of Managed Server transactions must be mounted.
      If multiple Managed Server transactions exist, perform this procedure for each primary node for Managed Server transactions.

4. Stop the local transactions on all the nodes.

   Stop the communication daemon for the local transactions of the AdvancedCopy Manager's manager.

   Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on stopping the daemon.

5. On the primary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's manager.
   Refer to "A.7 Capacity Necessary for Backup of Previous Version" for information on the capacity required to perform a backup.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfpreinst_cluster.sh backupDir [tmpDir] -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

- Move the files (*tmpDir*) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

e. Change to a directory other than the DVD-ROM.

Example:

```
# cd
```

f. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

g. Eject the DVD-ROM.

6. Checking for available disk space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager.
Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

Required Disk Space for Previous Version

The space required to install the previous version of the ETERNUS SF Manager.
Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

7. Uninstalling incompatible software

Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

See

Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

8. Estimating the database size

The Symfoware product is bundled with this product. If Symfoware is already installed on the server where the upgrade is performed, check the Symfoware environment before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for details.

9. Confirming the port number for the communication service

Therefore, ensure the new ports are available before starting the upgrade.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

10. Perform the kernel parameter tuning on the primary node.

    Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

11. On the secondary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's manager.
    The capacity required for performing this backup is 10 MB.

    a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

    b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

    c. Mount the DVD-ROM.

    - Example for Solaris environments

    ```
    # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
    ```

    The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

    - Example for Linux environments

    ```
    # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
    ```

    The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

    d. Mount the shared disk for shared data of ETERNUS SF Manager.
    If it is mounted on the primary node, unmount it to mount on the secondary node.

    e. Execute the following command to perform a backup of the previous version.

    For *backupDir*, specify the directory in which to store the backup data with an absolute path. For the *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not being used, it is unnecessary to specify a directory for the *tmpDir*.

    ```
    # dvdromMountPoint/Manager_unix/vuptools/esfpreinst_cluster.sh backupDir [tmpDir] -
    secondary
    ```

    When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

    Point

    - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
    - The number of characters in a directory name must be up to 220.
    - Move the files (tmpDir) related to the performance management function to under /var/opt. In the case of backup to a different location from that under /var/opt, it may take time to perform backup and restore.

    f. Unmount the shared disk for shared data of ETERNUS SF Manager.
    If it is required for the work on the primary node, mount it on the primary node.

    g. Change to a directory other than the DVD-ROM.

    Example:

```
# cd
```

h. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

i. Eject the DVD-ROM.

12. Checking for available disk space

    Ensure that there is enough available disk space on the server where the upgrade is performed.
    The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

    Required Disk Space for New Version

    The space required to install this version of the ETERNUS SF Manager.
    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the required disk space.

    Required Disk Space for Previous Version

    The space required to install the previous version of the ETERNUS SF Manager.
    Refer to "Operating environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for the previous version for information on the required disk space.

13. Uninstalling incompatible software

    Check if any incompatible software for this version of the ETERNUS SF Manager is installed on the server where the upgrade is performed.
    If incompatible software is found, refer to the relevant software manual and uninstall it before starting the upgrade.

    See

    Refer to "Operating Environment of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on the incompatible software.

14. Confirming the port number for the communication service

    Therefore, ensure the new ports are available before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on port numbers.

15. Perform the kernel parameter tuning on the secondary node.

    Therefore, perform the necessary kernel parameter tuning before starting the upgrade.

    See

    Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

16. In cases when Managed Server transactions coexist in the cluster system, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

    On the primary node and the secondary node, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

17. Performing the cluster unsetup

    Refer to "Uninstallation of ETERNUS SF Manager" in "Deletion of Cluster Environment for Management Server Transactions" in the *Cluster Environment Setup Guide* for the relevant previous version to delete unnecessary resources.

    Note

    - Do not uninstall the ETERNUS SF Manager.
    - In cases when Managed Server transactions coexist, do not release the configurations of these Managed Server transactions.

6.2.2.2 Performing Upgrade (Primary Node)

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.2.2.3 Performing Upgrade (Secondary Node)".

6.2.2.3 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "6.2.2.2 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *Cluster Environment Setup Guide* of this version for information on the cluster setup.

In cases when Managed Server transaction coexist in the cluster system, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction evacuated in step 16 of "6.2.2.1 Preparing for Upgrade". On the primary node and the secondary node, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction.

6.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.
2. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for shared data of Managed Server transactions, on the primary node for a target service.

   On the primary node for target transactions, edit the following files:

   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/clsetup.ini
   - *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

3. Restore the operation environment of the previous version of the AdvancedCopy Manager's manager.
Note that if step a through step c have already been performed, perform from step d.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

        The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

        The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

```
# dvdromMountPoint/Manager_unix/vuptools/esfpostinst_cluster.sh backupDir [tmpDir] -primary
```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

```
# cd
```

   f. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

g. Eject the DVD-ROM.

4. Start the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information.

5. In cases when Managed Server transactions coexist in the cluster system, change the server information of the Managed Server transactions.

   To ensure data consistency, use the "stgxfwcmmodsrv" command to change the server information.
   When executing the "stgxfwcmmodsrv" command, specify the Management Server name for the -n option.

```
# /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

   This operation should be performed on the primary node for Management Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for this version for information on the command.

6. Import the configuration information from the previous version by executing the "esfadm devconf import" command using Administrator permissions.
   Check that the managed devices and servers can be accessed before executing the "esfadm devconf import" command.

```
# /opt/FJSVesfcm/bin/esfadm devconf import -all
```

   After executing the "esfadm devconf import" command, confirm that "Complete" is displayed in **IMPORT STATUS** column in the "esfadm devconf importstatus" command.
   In addition, confirm that "Complete" is displayed in **STATUS** column of the import status of the migration target resources. When "Failed" is displayed, the import of configuration information has failed. Refer to "9.2 What to Do When Error Occurs" to take the corrective action.

Note

When executing the "esfadm devconf import" command, if a managed device or server is not accessible, the "esfadm devconf import" command should be re-executed since the device configuration information is not imported.

7. Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
   The procedures to uninstall Symfoware are stated below.

   a. Start the uninstaller of Symfoware to delete the Symfoware package.
      Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

```
# /opt/symfoware/setup/symfo_remove
```

   b. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
      When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to

select the function to uninstall.
A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

c. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

d. When FSUNiconv package is installed, delete it (only in Solaris environments).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

6.2.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check that the cluster application (transaction) has stopped.
   If not stopped, stop the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information on stopping it (transaction).

2. Restore the operation environment of the previous version of the AdvancedCopy Manager's manager.
   Note that if step a through step c have already been performed, perform from step d.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

d. Mount the shared disk for shared data of ETERNUS SF Manager.
If it is mounted on the primary node, unmount it to mount on the secondary node.

e. Execute the following command to perform a restore of the previous version.

For *backupDir*, specify the directory in which the backup data is stored with an absolute path. For *tmpDir*, specify a directory in which to temporarily place the files related to the performance management function of Storage Cruiser with an absolute path. When the performance management function is not backed up, it is unnecessary to specify a directory for the *tmpDir*.

```
# dvdromMountPoint/Manager_unix/vuptools/esfpostinst_cluster.sh backupDir [tmpDir] -
secondary
```

When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

Point

- Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory names.
- The number of characters in a directory name must be up to 220.

f. Unmount the shared disk for shared data of ETERNUS SF Manager.
If it is required for the work on the primary node, mount it on the primary node.

g. Change to a directory other than the DVD-ROM.

Example:

```
# cd
```

h. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

i. Eject the DVD-ROM.

3. Symfoware should only be installed in cases where it was used by ETERNUS SF Manager only.
The procedures to uninstall Symfoware are stated below.

a. Start the uninstaller of Symfoware to delete the Symfoware package.
Before deleting the package, confirm that none of the package functions used by any system other than ETERNUS SF Manager.

```
# /opt/symfoware/setup/symfo_remove
```

b. Confirmation message to uninstall Symfoware is displayed. To perform the uninstallation, enter "y". To cancel the process, enter "q".
When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to

select the function to uninstall.
A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

c. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

d. When FSUNiconv package is installed, delete it (only in Solaris environments).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

6.2.2.6 Starting ETERNUS SF Manager

Perform the following procedure:

1. Check that the cluster application (transaction) has started on the primary node.

   If not started, start the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information on starting it.

2. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions on the primary node for the target transactions.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.

   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

3. Start the local transactions on all the nodes.

   - Start the communication daemon for local transactions of AdvancedCopy Manager's manager.
     Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for this version for information on starting the daemon.

- For Solaris environments, start the SNMP Trap monitoring daemon on all local nodes. No action is necessary if it is already started. Refer to "Starting and Stopping Daemons (Solaris Environment)" in the *Storage Cruiser Operation Guide* for this version for information on how to start the daemon.

Subsequently, go to "6.2.3 Resuming Operation".

Point

- Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 5-d and step 11-e of "6.2.2.1 Preparing for Upgrade" maybe deleted.
- Even if the message "A1001 : Could not establish connection with SNMP Trap daemon/service" is output to the system log when the cluster application (transaction) is started, no action is necessary.

6.2.3 Resuming Operation

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's manager is complete. Restart the AdvancedCopy Manager operation.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

6.3 Upgrading AdvancedCopy Manager's Agent (for Windows)

6.3.1 Upgrading on Non-clustered Systems

6.3.1.1 Preparing for Upgrade

1. Log on to the server using Administrator privileges.
2. If the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
3. Perform the following steps to stop the service of AdvancedCopy Manager's agent.
   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.
   b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.
4. Perform a backup of the previous version.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   Information

   The capacity required for performing the backup is the total value of the following:

   - Environment Directory and Work Directory of "For Windows environments" under "Required disk space for installation" in the *Installation and Setup Guide*
   - "For Windows environments" under "Required disk space for operation" in the *Installation and Setup Guide*

   The procedure is shown below:

a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
Furthermore, if the Installer screen is displayed by autorun, exit the installer.

b. Select **Control Panel** > **Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent that has been installed.

   - When using the "AdvancedCopy Manager (x86) - Agent"

     The 32 bit version AdvancedCopy Manager's agent has been installed.

   - When using the "AdvancedCopy Manager (x64) - Agent"

     The 64 bit version AdvancedCopy Manager's agent has been installed.

c. Start the command prompt with "Run as administrator".

d. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   - When using the 32 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\esfacmapreinst.bat
     backupDir
     ```

   - When using the 64 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\esfacmapreinst.bat
     backupDir
     ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - The characters " | : * ? / . < > % & ^ ; ! are not supported for directory names.
   - If the directory name contains any spaces, they should be surrounded by double quote characters.

e. Back up the operating system.

6.3.1.2 Performing Upgrade

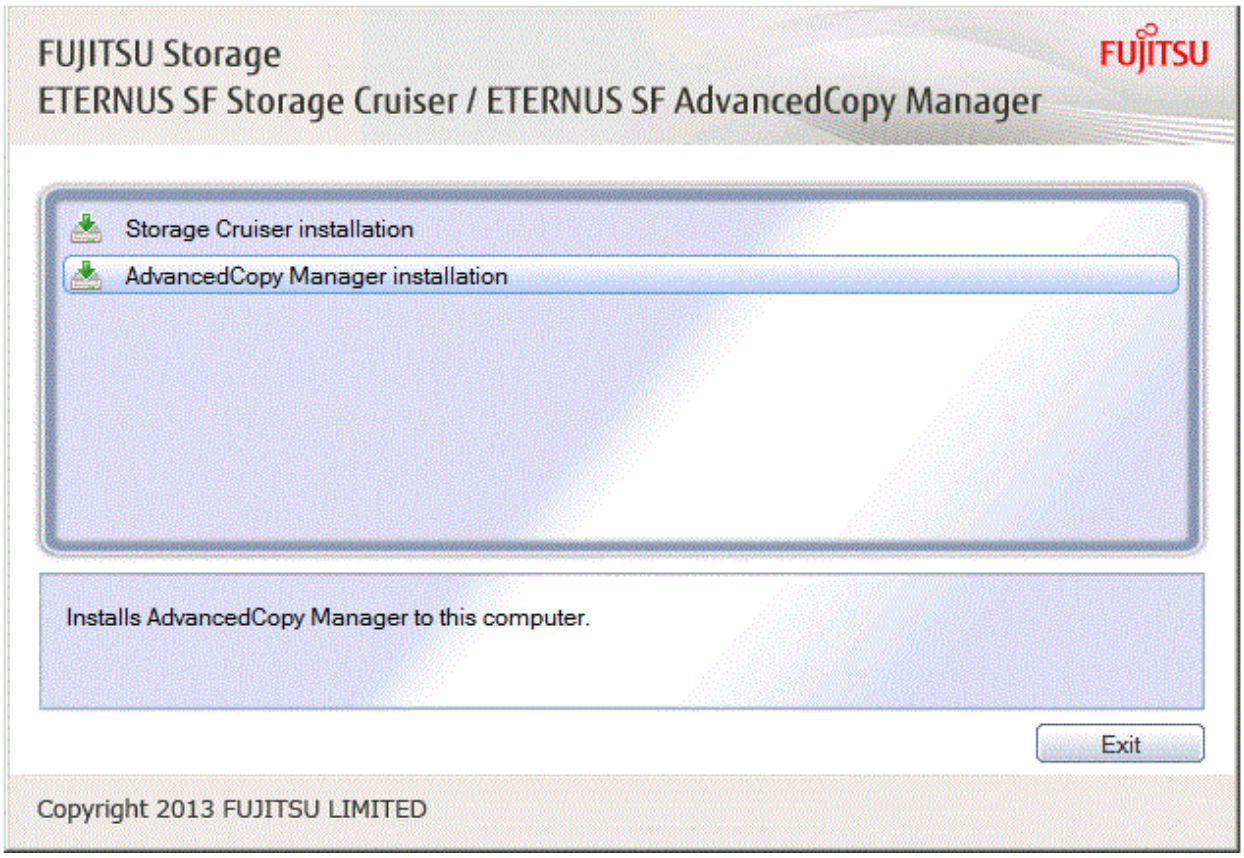
Note that if step 1 and step 2 have already been performed, it is unnecessary to perform these again.

Note

Although the initial screen of the installer is displayed during these steps, this is not used in the Upgrade Installation. Be sure to click **Exit** and end the screen.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

3. The following window is displayed.
   For the Upgrade Installation, this window is not used. Click **Exit**.



4. Start the following installation wizard corresponding to the architecture of AdvancedCopy Manager's agent checked in preparing for the upgrade:

   - For 32 bit version

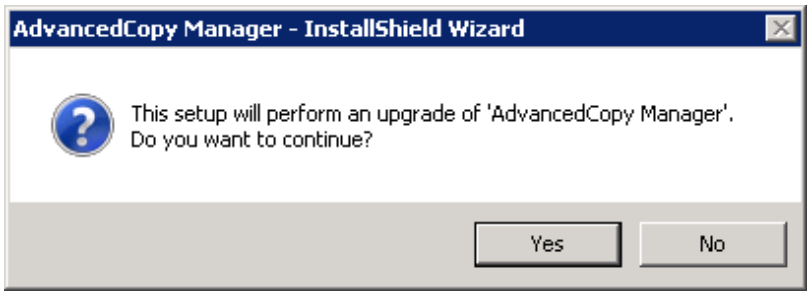
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

   - For 64 bit version

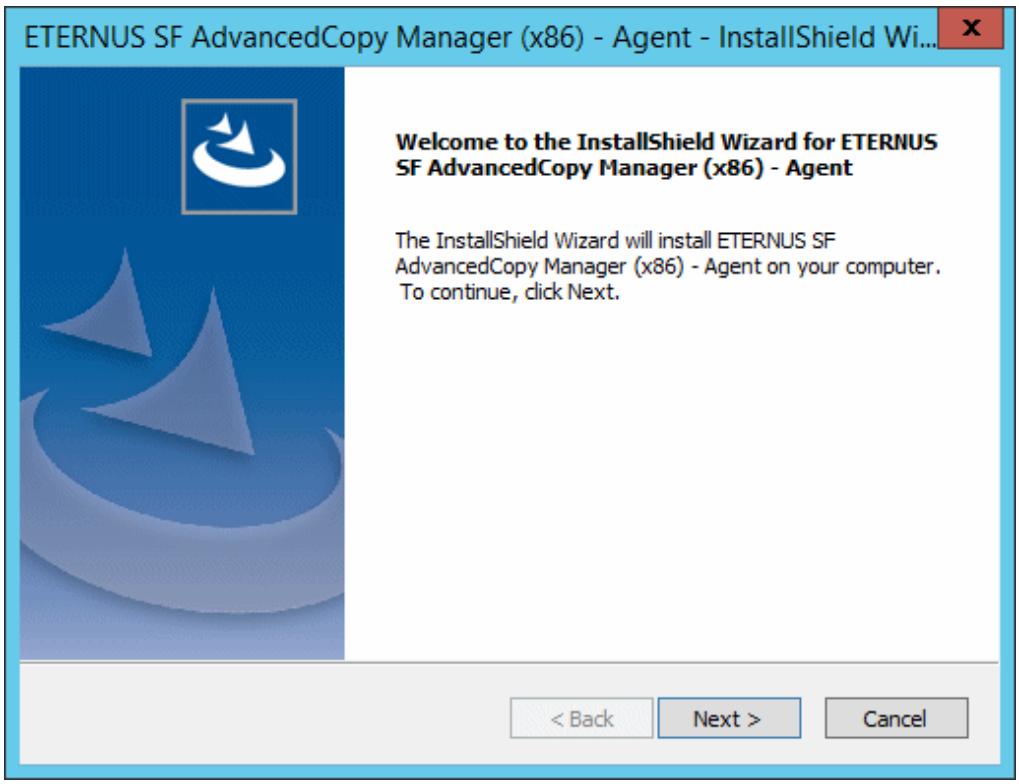
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

   The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

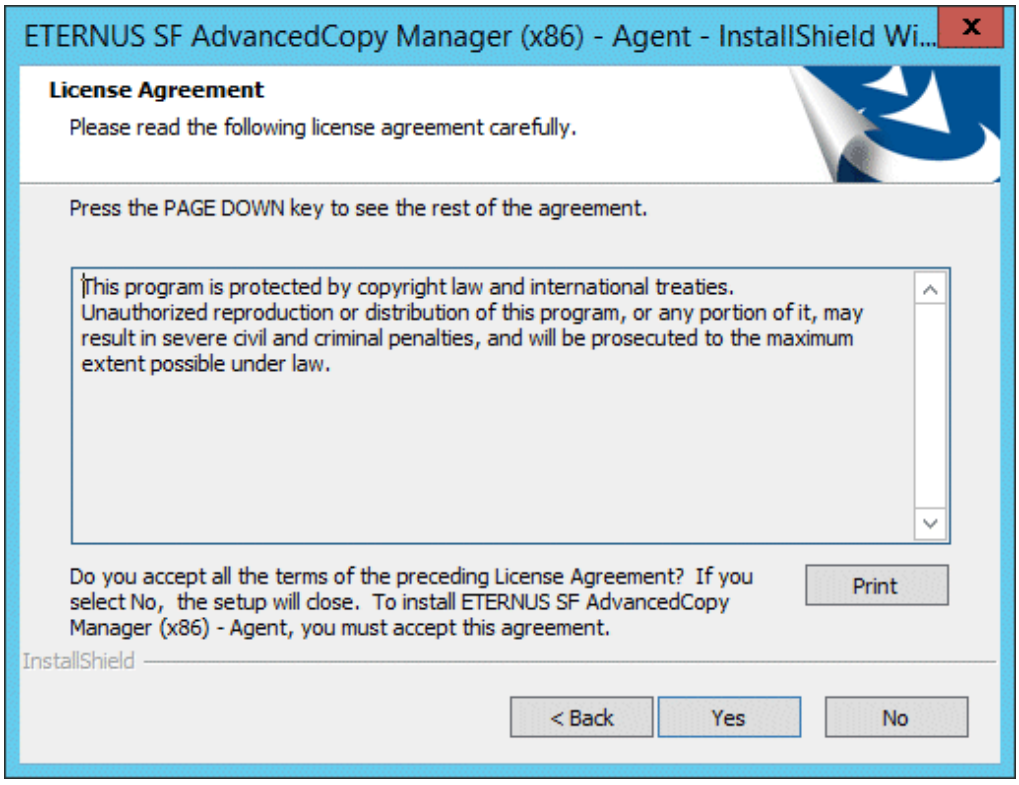
5. The following dialog box is displayed. Click **Yes**.



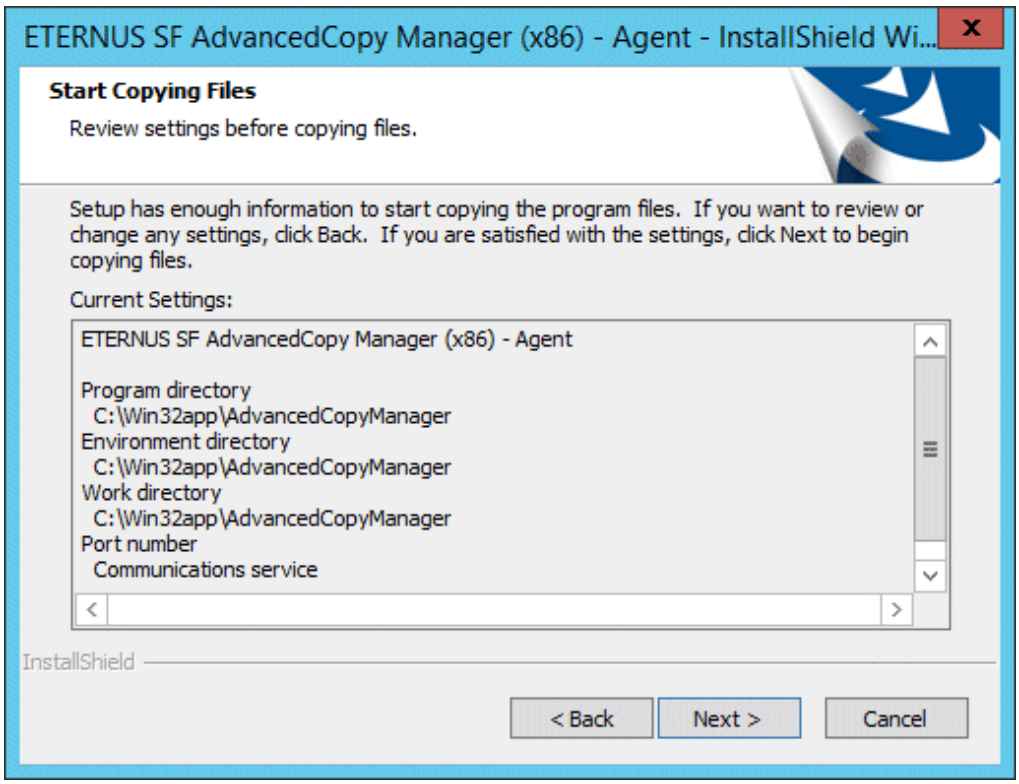
6. The installation wizard page is displayed. Click **Next**.



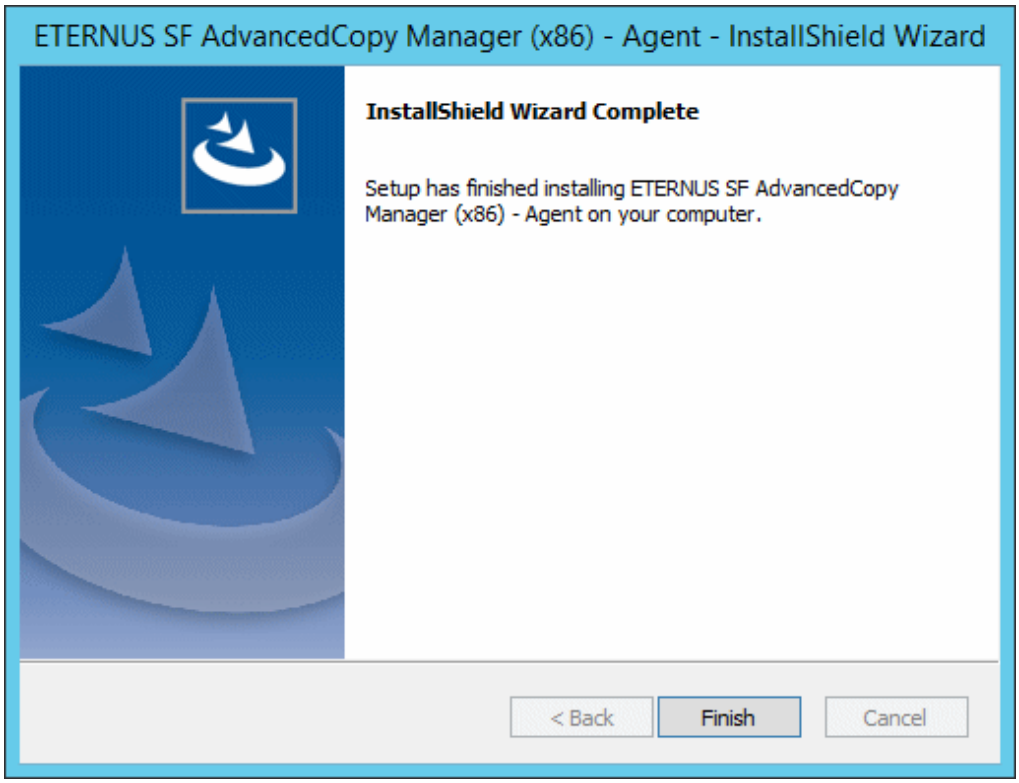
7. Read the terms and conditions of the **License Agreement** page.
   If the conditions are agreeable, click **Yes**.



8. Check the settings information in the **Start Copying Files** page, and then click **Next**.



9. Copying of the program is started.
   The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



10. Eject the DVD-ROM.

6.3.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed. Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. If the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.
2. Perform the following steps to start the service of AdvancedCopy Manager's agent.
   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.
   b. Select "AdvancedCopy Manager COM Service" and then click **Start**.
3. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

     ```
     $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
     ```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
     ```

   Note

   For changing the server information, start a new window for command execution, and then perform the procedure on the window.

   See

   Refer to "stgxfwcmmodsrv (Server Information Change Command)" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on the command.

4. Perform the following operations with Web Console to reload the server information.
   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.
   b. On the Main pane, check the target server checkbox.
      If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.
   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

- Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 4-d of "6.3.1.1 Preparing for Upgrade" maybe deleted.
- When returning back to the state before installation of the upgrade, recover (restore) the system from the backup taken in step 4-e of "6.3.1.1 Preparing for Upgrade".

6.3.2 Upgrading on Clustered Systems

6.3.2.1 Preparing for Upgrade

1. Log on to the server using Administrator privileges.
2. Check that Managed Server transactions are stopped on the secondary node.

   If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
   If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.
3. Stop the Managed Server transaction on the primary node.

   Use the Failover Cluster Manager to stop the Managed Server transactions.
   However, the shared disk for shared data of Managed Server transactions must be online.
   If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.
4. In all of the nodes in which the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent.
   Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
5. Perform the following steps to stop the local transactions on all the nodes.
   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.
   b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.
6. Perform a backup of the previous version with all of the nodes.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   - On the primary node and the secondary node, perform a backup of the previous version.
   - In cases when there are multiple Managed Server transactions, in each primary node of the Managed Server transactions, switch the shared disk for the shared data of the Managed Server transactions online.

   Information

   The capacity required for performing the backup is the total value of the following:

   - Environment Directory and Work Directory of "For Windows environments" under "Required disk space for installation" in the *Installation and Setup Guide*
   - "For Windows environments" under "Required disk space for operation" in the *Installation and Setup Guide*

   In the case of a primary node operating a Managed Server transaction, add the following to the capacity required to perform the backup:

   - "Capacity of Shared Disk" in the *Cluster Environment Setup Guide*

   The procedure is shown below:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
      Furthermore, if the Installer screen is displayed by autorun, exit the installer.
   b. Select **Control Panel** > **Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent that has been installed.
      - When using the "AdvancedCopy Manager (x86) - Agent"

        The 32 bit version AdvancedCopy Manager's agent has been installed.
      - When using the "AdvancedCopy Manager (x64) - Agent"

        The 64 bit version AdvancedCopy Manager's agent has been installed.
   c. Start the command prompt with "Run as administrator".

d. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   - When using the 32 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\esfacmapreinst.bat
     backupDir
     ```

   - When using the 64 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\esfacmapreinst.bat
     backupDir
     ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - The characters " | : * ? / . < > % & ^ ; ! are not supported for directory names.
   - If the directory name contains any spaces, they should be surrounded by double quote characters.

e. Perform a backup of the following.

   - Windows System (primary node and secondary node)
   - Shared Disk for the Shared Data of the Managed Server transactions

f. Eject the DVD-ROM.

6.3.2.2 Performing Upgrade (Primary Node)

Note that if step 1 and step 2 have already been performed, it is unnecessary to perform these again.

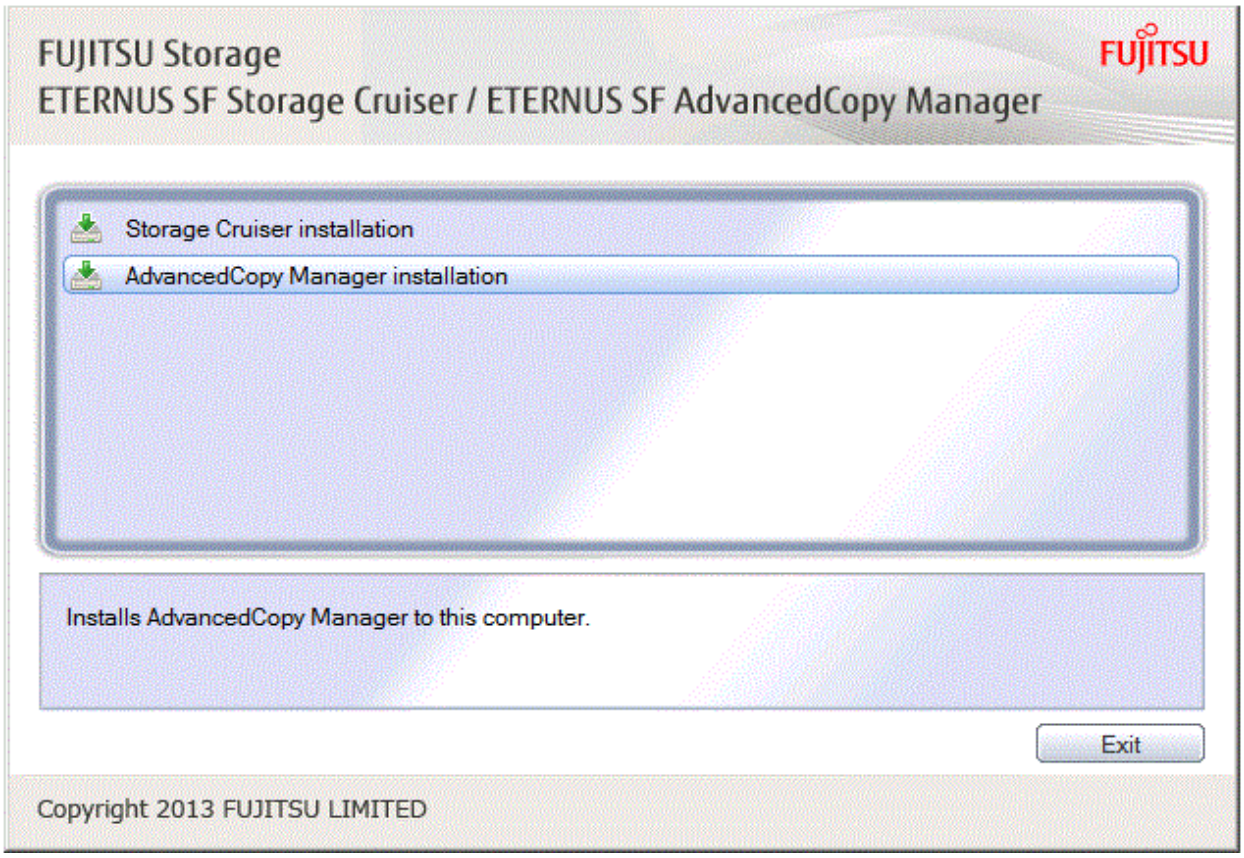
If multiple Managed Server transactions exist, use this procedure on each primary node for Managed Server transactions.

Note

Although the initial screen of the installer is displayed during these steps, this is not used in the Upgrade Installation. Be sure to click **Exit** and end the screen.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

3. The following window is displayed.
   For the Upgrade Installation, this window is not used. Click **Exit**.



4. Start the following installation wizard corresponding to the architecture of AdvancedCopy Manager's agent checked in preparing for the upgrade:

   - For 32 bit version

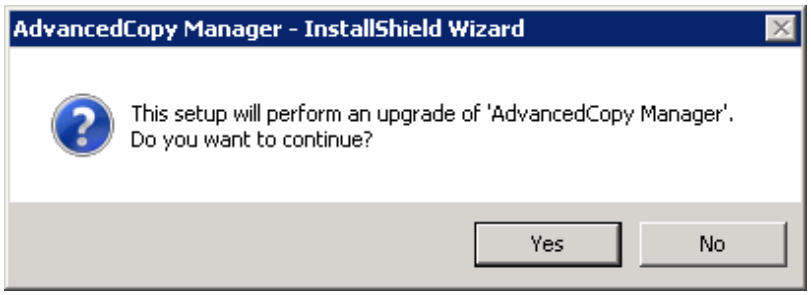
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

   - For 64 bit version

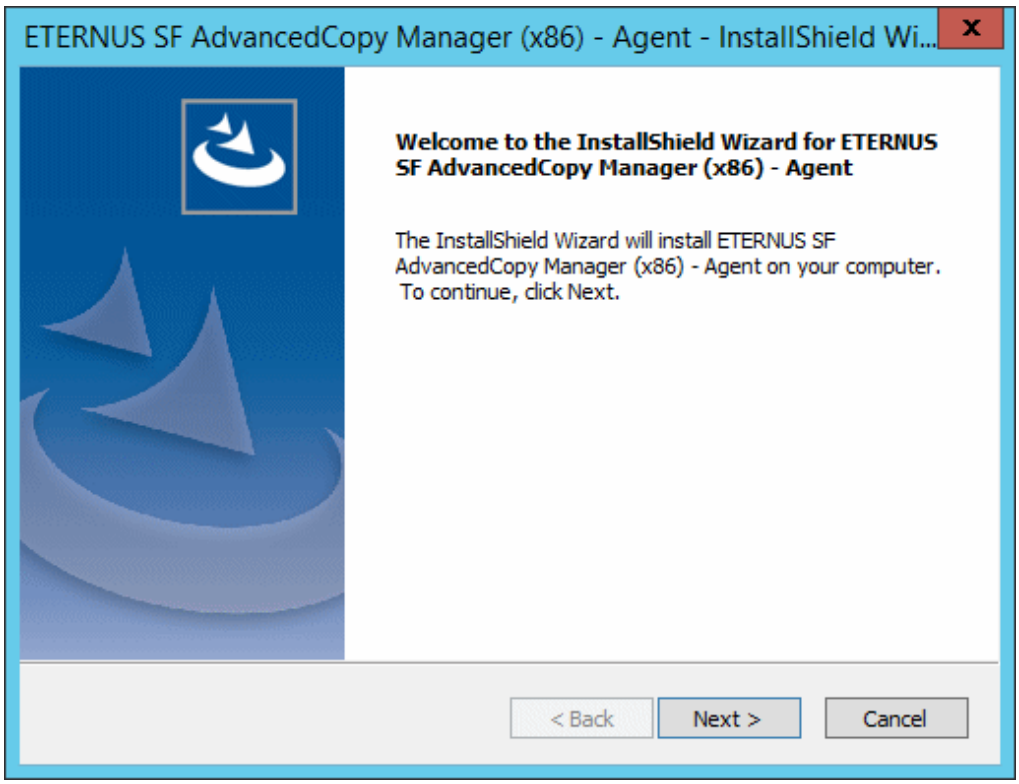
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

   The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

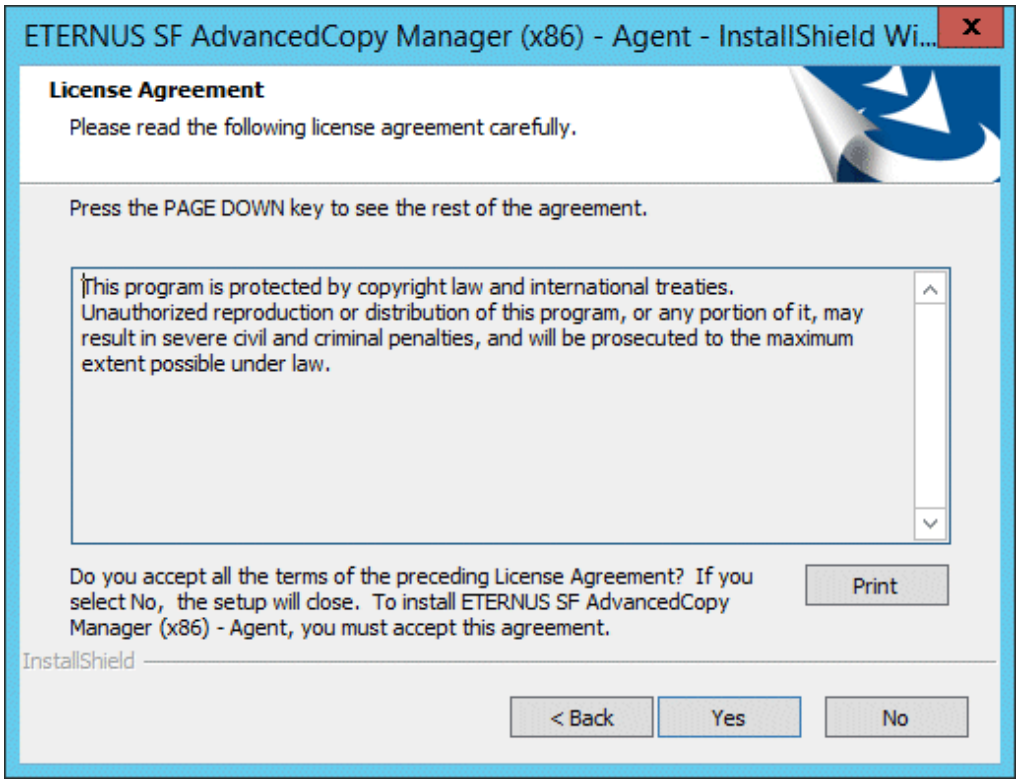
5. The following dialog box is displayed. Click **Yes**.



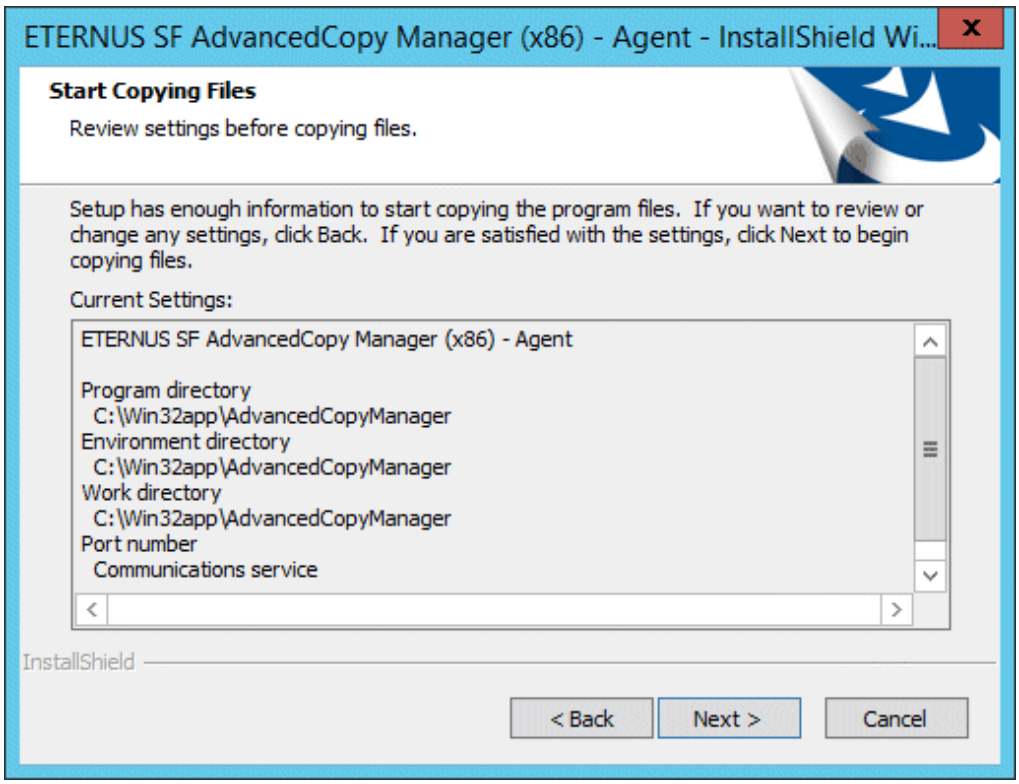
6. The following installation wizard page is displayed. Click **Next**.



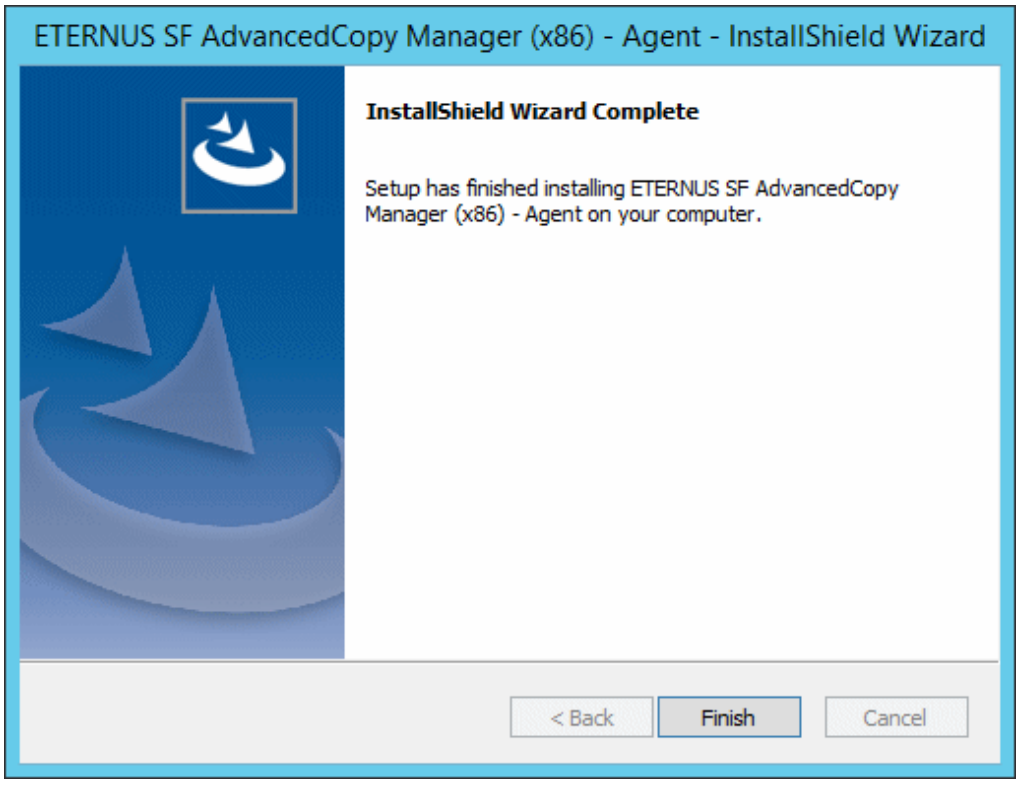
7. Read the terms and conditions of the **License Agreement** page.
   If the conditions are agreeable, click **Yes**.



8. Check the settings information in the **Start Copying Files** page, and then click **Next**.



9. Copying of the program is started.
The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



10. Eject the DVD-ROM.

6.3.2.3 Tasks to Be Performed After Upgrade (Primary Node)

If multiple Managed Server transactions exist, use this procedure in each primary node for Managed Server transaction.

Edit the following environment setting files for Managed Server transaction on the shared disk for shared data:

- *<Drive of shared disk for shared data of Managed Server transaction>*:\etc\opt\swstorage\clsetup.ini
- *<Drive of shared disk for shared data of Managed Server transaction>*:\etc\opt\swstorage\etc\swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

6.3.2.4 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.

The upgrade procedure is the same as that for the primary node. Refer to "6.3.2.2 Performing Upgrade (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

6.3.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

There is no further action required after the upgrade for the secondary node.

6.3.2.6 Starting Managed Server Transactions

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. On the primary node, start the Managed Server transactions.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

2. In all of the nodes in which the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

3. Perform the following steps to start the local transactions on all the nodes.

   a. Select **Control Panel** > **Administrative Tools** > **Services** to open the Windows Services screen.

   b. Select "AdvancedCopy Manager COM Service" and then click **Start**.

4. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

$INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

In addition, if there is any node that is running local transactions, perform this procedure on the relevant node.

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

5. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

- Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 6-d of "6.3.2.1 Preparing for Upgrade" maybe deleted.
- When returning back to the state before installation of the upgrade, recover (restore) the system from the backup taken in step 6-e of "6.3.2.1 Preparing for Upgrade".

6.4 Upgrading AdvancedCopy Manager's Agent (for Solaris, Linux)

6.4.1 Upgrading on Non-clustered Systems

6.4.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade installation, it is possible to return the system to its state prior to the upgrade installation, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

2. Execute the following command to stop the daemon of AdvancedCopy Manager's agent.

```
# /opt/swstorage/bin/stopacm
```

3. Perform a backup of the previous version.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   Information

   The capacity required for performing the backup is the total value of the following:

   - Fixed configuration directory and Modifying configuration directory of "For Solaris environments" or "For Linux environments" under "Required disk space for installation" in the *Installation and Setup Guide*
   - "For Solaris, Linux, HP-UX or AIX environments" under "Required disk space for operation" in the *Installation and Setup Guide*

   The procedure is shown below:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

   b. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   c. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path.

      - When using the Solaris Agent

      ```
      # dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
      ```

      - When using the Red Hat Enterprise Linux 6 Agent

      ```
      # dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

6.4.1.2 Performing Upgrade

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

3. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following commands to install the AdvancedCopy Manager's agent.

   ```
   # cd environmentDir
   # ./swsetup
   ```

   The *environmentDir* is as follows.

OS Type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86

5. The installation information is displayed.

   ```
   swsetup: Installer is preparing for installation...

   +-------------------------------------------------------------+
   |              ETERNUS SF AdvancedCopy Manager                |
   |                          16.8                               |
   |                  Copyright FUJITSU LIMITED 2013-2019        |
   +-------------------------------------------------------------+


   Welcome to Setup.
   This program will install "AdvancedCopy Manager" on your system.
   ```

6. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

   ```
   An old version is installed in this system.
   Do you want to upgrade? [y,q]:
   ```

7. If "y" was entered for step 6, the upgrade continues.

   If the upgrade completes successfully, the following message is displayed.

   ```
   swsetup: AdvancedCopy Manager was installed successfully.
   ```

8. Execute the following commands, and then eject the DVD-ROM.

   ```
   # cd /
   # umount dvdromMountPoint
   ```

Point

If the upgrade was terminated abnormally, refer to "8.1.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

6.4.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed. Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. Execute the following command to start the daemon of AdvancedCopy Manager's agent.

```
# /opt/swstorage/bin/startacm
```

2. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

   ### Note

   For changing the server information, start a new window for command execution, and then perform the procedure on the window.

   ### See

   Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

3. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
      If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 3-d of "6.4.1.1 Preparing for Upgrade" maybe deleted.

6.4.2 Upgrading on Clustered Systems

Note

If Cluster Unsetup is executed after upgrading from Version 15.0B to this version, the cluster resources and scripts created by the old version's commands starting with "stgclset" are not deleted.

6.4.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade installation, it is possible to return the system to its state prior to the upgrade installation, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Managed Server transactions

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Check that Managed Server transactions are stopped on the secondary node.

   If not stopped, stop them on the secondary node. Refer to the relevant cluster software manuals for information on stopping it.
   If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.
3. Stop the Managed Server transaction on the primary node.

   Stop the Managed Server transactions by referring to the relevant cluster software manuals.
   However, the shared disk for shared data of Managed Server transactions must be mounted.
   If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.
4. Execute the following command to stop the local transactions on all the nodes.

   ```
   # /opt/swstorage/bin/stopacm
   ```
5. Perform a backup of the previous version with all of the nodes.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   - On the primary node and the secondary node, perform a backup of the previous version.
   - In cases when there are multiple Managed Server transactions, in each primary node of the Managed Server transactions, switch the shared disk for the shared data of the Managed Server transactions online.

   ### Information

   The capacity required for performing the backup is the total value of the following:

   - Fixed configuration directory and Modifying configuration directory of "For Solaris environments" or "For Linux environments" under "Required disk space for installation" in the *Installation and Setup Guide*
   - "For Solaris, Linux, HP-UX or AIX environments" under "Required disk space for operation" in the *Installation and Setup Guide*

   In the case of a primary node operating a Managed Server transaction, add the following to the capacity required to perform the backup:

   - "Capacity of Shared Disk" in the *Cluster Environment Setup Guide*

   The procedure is shown below:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

b. Mount the DVD-ROM.

- Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

c. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path.

- When using the Solaris Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

- When using the Red Hat Enterprise Linux 6 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

d. Execute the following commands, and then eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

e. Back up the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions.

On the primary node and the secondary node, back up the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions.

6.4.2.2 Performing Upgrade (Primary Node)

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.

- Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows.

OS Type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86

5. The installation information is displayed.

```
swsetup: Installer is preparing for installation...

+-------------------------------------------------------------+
|              ETERNUS SF AdvancedCopy Manager                |
|                          16.8                               |
|                  Copyright FUJITSU LIMITED 2013-2019        |
+-------------------------------------------------------------+


Welcome to Setup.
This program will install "AdvancedCopy Manager" on your system.
```

6. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

```
An old version is installed in this system.
Do you want to upgrade? [y,q]:
```

7. If "y" was entered for step 6, the upgrade continues.

   If the upgrade completes successfully, the following message is displayed.

```
swsetup: AdvancedCopy Manager was installed successfully.
```

8. Execute the following commands, and then eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

Point

If the upgrade was terminated abnormally, refer to "8.1.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

6.4.2.3 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. When the AdvancedCopy Manager's agent upgrade has been completed for the primary node, perform the following procedure:

   If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

   Edit the following environment setting files for Managed Server transaction on the shared disk for shared data:

   - <*Mount point of shared disk for shared data of Managed Server transaction*>/etc/opt/swstorage/clsetup.ini
   - <*Mount point of shared disk for shared data of Managed Server transaction*>/etc/opt/swstorage/swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V15.*x*	Version=V16.8

Note

Do not change anything other than the version information.

2. For the ETERNUS SF Manager Version 15.0B installed environment, edit the line starting with "System=" in the "/opt/FJSVswstf/cluster/swcluster.ini" file as follows:

```
System=GEN
```

Note

Do not change anything other than the line starting with "System=".

6.4.2.4 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "6.4.2.2 Performing Upgrade (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

6.4.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

For the ETERNUS SF Manager Version 15.0B installed environment, edit the line starting with "System=" in the "/opt/FJSVswstf/cluster/swcluster.ini" file as follows.

```
System=GEN
```

Note

Do not change anything other than the line starting with "System=".

6.4.2.6 Starting Managed Server Transactions

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. Start the Managed Server transactions on the primary node.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

2. Perform the following command to start the local transactions on all the nodes.

```
# /opt/swstorage/bin/startacm
```

3. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

     ```
     $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
     ```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
     ```

   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

   In addition, if there is any node that is running local transactions, perform this procedure on the relevant node.

   Note

   For changing the server information, start a new window for command execution, and then perform the procedure on the window.

   See

   Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

4. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
      If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 5-d of "6.4.2.1 Preparing for Upgrade" maybe deleted.

6.5 Upgrading AdvancedCopy Manager's agent (for HP-UX, AIX)

This section describes the upgrade procedure for AdvancedCopy Manager's agent.

1. 6.5.1 Backing Up Repository Data
2. 6.5.2 Backing Up Management Information
3. 6.5.3 Uninstalling Previous Version
4. 6.5.4 Installing This Version
5. 6.5.5 Restoring Repository Data
6. 6.5.6 Changing Server Information
7. 6.5.7 Restoring Management Information
8. 6.5.8 Updating Version Information

6.5.1 Backing Up Repository Data

Refer to the following sections to back up the repository data on the Management Server (only when the Managed Server is operated in a clustered system).

OS Type of Management Server	Reference
Windows	A.1 Backing Up Repository Data (for Windows)
Solaris, Linux	A.2 Backing Up Repository Data (for Solaris, Linux)

6.5.2 Backing Up Management Information

Refer to "A.3 Backing Up Management Information (for HP-UX, AIX)" to back up the management information on the Managed Server.

6.5.3 Uninstalling Previous Version

Uninstall the previous version by referring to the relevant previous version manual.

For Non-clustered Systems

Note

For the procedures below, be careful not to perform the procedure "Deletion of all Managed Servers".

Perform the procedures for "Stopping services/daemons" in the *Installation and Setup Guide*.

For Clustered Systems

If clustered systems are used for Managed Servers as Managed Server transactions, perform the unsetup of cluster settings before performing uninstallation.

See

Refer to "Deletion of Cluster Environment for Managed Server Transactions" in the *Cluster Environment Setup Guide* for the previous version for information on the unsetup of cluster settings.

6.5.4 Installing This Version

Install the AdvancedCopy Manager's agent of this version, and setup the operating environment.

About Installation

- For non-clustered systems

  Refer to "Installation of AdvancedCopy Manager's Agent" in the *Installation and Setup Guide* for this version to install the AdvancedCopy Manager's agent.

- For clustered systems

  Refer to "Installation of ETERNUS SF Agent" in the *Cluster Environment Setup Guide* for this version to install the AdvancedCopy Manager's agent.

Setting Up Operating Environment

- For non-clustered systems

  Refer to "Setup of AdvancedCopy Manager's Agent" in the *Installation and Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

Afterwards, start the AdvancedCopy Manager's agent on the Managed Server. Refer to "Starting and Stopping Daemons" or "Starting and Stopping Services" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Managed Server for the start procedure.

- For clustered systems

  Refer to "Customization of Managed Server Transactions" in the *Cluster Environment Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

6.5.5 Restoring Repository Data

Restore the backed up repository data on the Management Server (only when the Managed Server is operated in a cluster configuration).

Execute the "stgrepocnv" command to restore the repository data and then convert it for use with the current version of the repository.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgrepocnv -d backupDir
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgrepocnv -d backupDir
```

Note

For restoration of the repository data, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

6.5.6 Changing Server Information

To ensure data consistency, execute Web Console or the "stgxfwcmmodsrv" command to change the server information. The stgxfwcmmodsrv command must be executed on the Management Server.

When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

6.5.7 Restoring Management Information

Refer to "A.6 Restoring Management Information (for HP-UX, AIX)" to restore the management information on the Managed Server.

6.5.8 Updating Version Information

If not using clustered systems, and moreover, if the restoration of repository data has already been performed with the restoration of the replication management list, execute Web Console or the "stgxfwcmmodsrv" command to update the version information for the Managed Server. The "stgxfwcmmodsrv" command must be executed on the Management Server.

When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

Finally, perform the following operations with Web Console to reload the server information.

1. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.
2. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.
3. On the Action pane, click **Reload Conf**. under **Server**.

Note

For updating the version information, start a new window for command execution, and then perform the procedure on the window.

See

- Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.
- Refer to "Reload Server Configuration Information" in the *Web Console Guide* for information on reloading the server information using Web Console.

6.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)

If only AdvancedCopy Manager CCM is installed and used, perform the upgrade mentioned in this section.

If ETERNUS SF Manager is installed and AdvancedCopy Manager CCM is used, refer to "6.1 Upgrading AdvancedCopy Manager's Manager (for Windows)" to perform the upgrade.

6.6.1 Upgrading on Non-clustered Systems

6.6.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

6.6.1.1.1 Backing Up Environment Setting Files

With the following procedure, back up the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.

Note that the capacity required for performing this backup is 100 MB.

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfccmpreinst.bat backupDir
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
   - The number of characters in a directory name must be up to 220.

6.6.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

- For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager:

  "Operating Environment of ETERNUS SF Manager"

- For installing the AdvancedCopy Manager Copy Control Module:

  "Operating Environment of AdvancedCopy Manager CCM"

Required Disk Space for Previous Version

The space required to install previous version of the ETERNUS SF Manager or the AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

- When using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

  "Operating environment of the ETERNUS SF Manager"

- When installing and using the AdvancedCopy Manager Copy Control Module Program

  "Operating environment of the AdvancedCopy Manager CCM"

6.6.1.2 Performing Upgrade (for Windows)

Refer to "C.5 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.6.1.3 Tasks to Be Performed After Upgrade".

6.6.1.3 Tasks to Be Performed After Upgrade

6.6.1.3.1 Restoring Environment Setting Files

With the following procedure, restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module. Note that if step 1 and step 2 have already been performed, perform from step 3.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. Execute the following batch file to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

   ```
   dvdromDrive:\Manager_windows\vuptools\esfccmpostinst.bat backupDir
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
   - The number of characters in a directory name must be up to 220.

4. Eject the DVD-ROM.

6.6.1.3.2 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 3 of "6.6.1.1.1 Backing Up Environment Setting Files" maybe deleted.

6.6.2 Upgrading on Clustered Systems

The following values are used in the description:

Value	Description
$INS_DIR	"Program Directory" specified at the AdvancedCopy Manager CCM installation.

6.6.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Check that the CCM Server transactions are stopped on the secondary node.

   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of AdvancedCopy Manager Copy Control Module.
3. Stop the CCM Server transactions on the primary node.

   Use the Failover Cluster Manager to stop the transactions of AdvancedCopy Manager Copy Control Module.
   However, the shared disk for shared data of AdvancedCopy Manager Copy Control Module must be online.
4. On the primary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that the capacity required for performing this backup is 100 MB.

   a. Log on to the server using Administrator privileges.
      If already logged on as the Administrator privileges, this step is unnecessary.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfccmpreinst_cluster.bat backupDir -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.
5. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.
   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

- For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager

  "Operating Environment of ETERNUS SF Manager"

- For installing the AdvancedCopy Manager Copy Control Module

  "Operating Environment of AdvancedCopy Manager CCM"

Required Disk Space for Previous Version

The space required to install previous version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

- When using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

  "Operating environment of the ETERNUS SF Manage"

- When installing and using the AdvancedCopy Manager Copy Control Module Program

  "Operating environment of the AdvancedCopy Manager CCM"

6. On the secondary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   The capacity required for performing this backup is 10 MB.

   a. Log on to the server using Administrator privileges.
      If already logged on as the Administrator privileges, this step is unnecessary.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfccmpreinst_cluster.bat backupDir -secondary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.

7. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.

   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

   - For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager

     "Operating Environment of ETERNUS SF Manager"

- For installing the AdvancedCopy Manager Copy Control Module

  "Operating Environment of AdvancedCopy Manager CCM"

Required Disk Space for Previous Version

The space required to install previous version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

- For using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

  "Operating environment of the ETERNUS SF Manager"

- For installing and using the AdvancedCopy Manager Copy Control Module Program

  "Operating environment of the AdvancedCopy Manager CCM"

8. Performing the cluster unsetup

See

Refer to "Deletion of Cluster Environments for CCM Server Transactions" in the *Cluster Environment Setup Guide* for the previous version for information.

6.6.2.2 Performing Upgrade (Primary Node)

Refer to "C.5 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Windows)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.6.2.3 Performing Upgrade (Secondary Node)".

6.6.2.3 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.

The upgrade procedure is the same as that for the primary node. Refer to "6.6.2.2 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing CCM Server Transactions" and "Customization for CCM Server Transactions" in the *Cluster Environment Setup Guide* for this version.

6.6.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the CCM Server transactions
   Use the Failover Cluster Manager to stop the transactions to which the AdvancedCopy Manager CCM.
   However, the shared disk for shared data of the AdvancedCopy Manager CCM must be online.

2. Restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfccmpostinst_cluster.bat backupDir -primary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.

6.6.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check that the CCM Server transactions are stopped.
   If not stopped, use the Failover Cluster Manager to stop the transactions to which the AdvancedCopy Manager CCM belongs.
2. Restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that if step a and step b have already been performed, perform from step c.

   a. Log on to the server using Administrator privileges.

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

   c. Execute the following batch file to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

      ```
      dvdromDrive:\Manager_windows\vuptools\esfccmpostinst_cluster.bat backupDir -secondary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

      Point

      - Spaces and the characters " | : * ? / . < > , % & ^ = ! ; ( ) are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   d. Eject the DVD-ROM.

6.6.2.6 Start CCM Server Transactions

Start the CCM Server transactions.

Use the Failover Cluster Manager on the primary node to start the transactions of AdvancedCopy Manager CCM.

Point

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 4-c and step 6-c of "6.6.2.1 Preparing for Upgrade" maybe deleted.

6.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)

If only AdvancedCopy Manager CCM is installed and used, perform the procedure mentioned in this section.

If ETERNUS SF Manager is installed and AdvancedCopy Manager CCM is used, refer to "6.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)" to perform the upgrade.

6.7.1 Upgrading on Non-clustered Systems

6.7.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

6.7.1.1.1 Backing Up Environment Setting Files

With the following procedure, backup the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.
Note that the capacity required for performing this backup is 100 MB.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following command to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfccmpreinst.sh backupDir
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

Point

- Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
- The number of characters in a directory name must be up to 220.

6.7.1.1.2 Checking for Available Disk Space

Ensure that there is enough available disk space on the server where the upgrade is performed.
The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

Required Disk Space for New Version

The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

- For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager

  "Operating Environment of ETERNUS SF Manager"

- For installing the AdvancedCopy Manager Copy Control Module

  "Operating Environment of AdvancedCopy Manager CCM"

Required Disk Space for Previous Version

The space required to install previous version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

- When using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

  "Operating environment of the ETERNUS SF Manager"

- When installing and using the AdvancedCopy Manager Copy Control Module Program

  "Operating environment of the AdvancedCopy Manager CCM"

6.7.1.2 Performing Upgrade (for Solaris, Linux)

Refer to "C.6 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Solaris, Linux)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.7.1.3 Tasks to Be Performed After Upgrade".

6.7.1.3 Tasks to Be Performed After Upgrade

6.7.1.3.1 Restoring Environment Setting Files

With the following procedure, restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module. Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

3. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following command to perform a restore of the previous version.

   For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

   ```
   # dvdromMountPoint/Manager_unix/vuptools/esfccmpostinst.sh backupDir
   ```

   When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

   Point

   - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
   - The number of characters in a directory name must be up to 220.

5. Unmount the DVD-ROM.

   ```
   # umount dvdromMountPoint
   ```

6. Eject the DVD-ROM.

6.7.1.3.2 Deleting Backup Data

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 4 of "6.7.1.1.1 Backing Up Environment Setting Files" maybe deleted.

6.7.2 Upgrading on Clustered Systems

The section describes the upgrade of clustered systems.

6.7.2.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade. If a failure occurs during the upgrade, you cannot restore the environment to the pre-installation status (rollback).

When returning back to the state before installation of the upgrade, recover (restore) the system from the backup.

1. Check that the CCM Server transactions are stopped on the secondary node.

   If not stopped, stop the transaction of AdvancedCopy Manager Copy Control Module.
   Refer to the relevant cluster software manuals for information on stopping it.

2. Stop the CCM Server transaction on the primary node.

   Refer to the relevant cluster software manuals for information on stopping it.

The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be mounted.

3. On the primary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that the capacity required for performing this backup is 100 MB.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfccmpreinst_cluster.sh backupDir -primary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

   g. Eject the DVD-ROM.

4. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.
   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

   - For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager

     "Operating Environment of ETERNUS SF Manager"

- For installing the AdvancedCopy Manager Copy Control Module

  "Operating Environment of AdvancedCopy Manager CCM"

Required Disk Space for Previous Version

The space required to install previous version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

- When using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

  "Operating environment of the ETERNUS SF Manager"

- When installing and using the AdvancedCopy Manager Copy Control Module Program

  "Operating environment of the AdvancedCopy Manager CCM"

5. On the secondary node, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   The capacity required for performing this backup is 10 MB.

   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).

   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.

   c. Mount the DVD-ROM.

      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

        The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

        The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a backup of the previous version.

      For *backupDir*, specify the directory in which to store the backup data with an absolute path.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfccmpreinst_cluster.sh backupDir -secondary
      ```

      When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

g. Eject the DVD-ROM.

6. Checking for available disk space

   Ensure that there is enough available disk space on the server where the upgrade is performed.

   The required disk space for the upgrade is calculated as the "Required Disk Space for New Version" minus the "Required Disk Space for Previous Version".

   Required Disk Space for New Version

   The space required to install this version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for this version for information on the required disk space.

   - For using the AdvancedCopy Manager Copy Control Module in ETERNUS SF Manager

     "Operating Environment of ETERNUS SF Manager"

   - For installing the AdvancedCopy Manager Copy Control Module

     "Operating Environment of AdvancedCopy Manager CCM"

   Required Disk Space for Previous Version

   The space required to install previous version of the ETERNUS SF Manager or AdvancedCopy Manager Copy Control Module. Refer to the following locations in the *Installation and Setup Guide* for the relevant previous version for information on the required disk space.

   - When using the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager Program

     "Operating environment of the ETERNUS SF Manager"

   - When installing and using the AdvancedCopy Manager Copy Control Module Program

     "Operating environment of the AdvancedCopy Manager CCM"

7. Performing the cluster unsetup

   See

   Refer to "Deletion of Cluster Environments for CCM Server Transactions" in the *Cluster Environment Setup Guide* for the previous version for information.

6.7.2.2 Performing Upgrade (Primary Node)

Refer to "C.6 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Solaris, Linux)" to perform the upgrade.

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from "6.7.2.3 Performing Upgrade (Secondary Node)".

6.7.2.3 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.

The upgrade procedure is the same as that for the primary node. Refer to "6.7.2.2 Performing Upgrade (Primary Node)".

Information

When the Upgrade Installation terminates in an error, perform recovery by following the steps outlined below.

1. Install the target version.
2. If the installation is successfully completed, continue from the following tasks.

After upgrading on the primary node and the secondary node, perform the cluster setup. Refer to "Preparations for Customizing CCM Server Transactions" and "Customization for CCM Server Transactions" in the *Cluster Environment Setup Guide* for this version.

6.7.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.

1. Stop the CCM Server transactions.
   Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of the AdvancedCopy Manager CCM must be mounted.
2. Restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that if step a through step c have already been performed, perform from step d.
   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
   c. Mount the DVD-ROM.
      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfccmpostinst_cluster.sh backupDir -primary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

   g. Eject the DVD-ROM.

6.7.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. Check that the CCM Server transactions are stopped.
   If not stopped, stop the CCM Server transactions. Refer to the relevant cluster software manuals for information on stopping it.
2. Restore the operation environment of the previous version of the AdvancedCopy Manager Copy Control Module.
   Note that if step a through step c have already been performed, perform from step 4.
   a. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
   b. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
   c. Mount the DVD-ROM.
      - Example for Solaris environments

      ```
      # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

      - Example for Linux environments

      ```
      # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
      ```

      The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

   d. Execute the following command to perform a restore of the previous version.

      For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

      ```
      # dvdromMountPoint/Manager_unix/vuptools/esfccmpostinst_cluster.sh backupDir -secondary
      ```

      When the restore fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

      Point

      - Spaces and the characters " / ` * ? \ $ [ ] , % ! { } are not supported for directory name.
      - The number of characters in a directory name must be up to 220.

   e. Change to a directory other than the DVD-ROM.

      Example:

      ```
      # cd
      ```

   f. Unmount the DVD-ROM.

      ```
      # umount dvdromMountPoint
      ```

   g. Eject the DVD-ROM.

6.7.2.6 Start CCM Server Transactions

Start the transactions of AdvancedCopy Manager Copy Control Module.

Refer to the relevant cluster software manuals for information on stopping it.

Point

Once normal operation has been confirmed after the upgrade, the backup data in the backup destination directory created in step 3-d and step 5-d of "6.7.2.1 Preparing for Upgrade" maybe deleted.

6.7.3 Resuming Operation

When the tasks described above have been performed, the upgrade and setup of AdvancedCopy Manager Copy Control Module is complete. Restart the AdvancedCopy Manager Copy Control Module operation.

Chapter 7 Upgrade from AdvancedCopy Manager Version 16.x

To upgrade AdvancedCopy Manager's manager to this version, install the ETERNUS SF Manager.

If performing an upgrade to a system environment using Agent-based operation model, perform the upgrade in the following sequence.

1. AdvancedCopy Manager's manager
2. AdvancedCopy Manager's agent

For the upgrade, there is a method where the upgrade is performed in an interactive format and a method where the upgrade is performed using a command for silent installation without the need of responses (silent installation procedure).
The operating environment that supports the upgrade with the silent installation procedure is as follows:

- Windows Server 2012 or later
- Solaris 11 or Solaris 10
- Red Hat Enterprise Linux 7, Red Hat Enterprise Linux 6, or SUSE Linux Enterprise Server 12

Point

- In the version level of the AdvancedCopy Manager, there are conditions for the combination of manager and agent. Upgrade your version, in order to fulfill the combination that is described in "Notes on Combining Versions and Levels" of the *Release Notes*.
- If Storage Cruiser and AdvancedCopy Manager Copy Control Module are both installed on the same server, when upgrading, both Storage Cruiser and AdvancedCopy Manager Copy Control Module are upgraded at the same time. Therefore, perform backups of the previous versions before starting the upgrade.
- It is possible to perform an Upgrade Installation with existing Advanced Copy and Remote Advanced Copy sessions. Regardless of whether there are Advanced Copy sessions or not, the upgrade procedure is the same.

7.1 Upgrading AdvancedCopy Manager's Manager (for Windows)

7.1.1 Upgrading on Non-clustered Systems

7.1.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

3. If the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.

4. Execute the following batch to stop the services of ETERNUS SF Manager.

```
$INS_DIR\Common\bin\Stop_ESFservice.bat
```

   $INS_DIR means "Program Directory" specified at the ETERNUS SF Manager installation.

5. When using the ETERNUS VASA Provider, stop the Provider function.
   With the Windows services screen, stop the ETERNUS Information Provider.

6. When using the ETERNUS SF SNMP Trap Service, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

Note

In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

7.1.1.2 Performing Upgrade

Refer to "C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)" and perform the Upgrade Installation.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

7.1.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

2. If the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

3. Execute the following batch to start the services of ETERNUS SF Manager.

```
$INS_DIR\Common\bin\Start_ESFservice.bat
```

   $INS_DIR means "Program Directory" specified at the ETERNUS SF Manager installation.

4. When using the ETERNUS VASA Provider, start the Provider function.
   With the Windows services screen, start the ETERNUS Information Provider.

5. If the ETERNUS SF SNMP Trap Service was used with the previous version, start the ETERNUS SF SNMP Trap Service with the Windows services screen.

Point

When ETERNUS SF Manager has been recovered to normal state by performing the task described in "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)", to ensure data consistency, execute the "stgxfwcmmodsrv" command to perform the server information change processing.

Specify the Management Server name to the -n option and execute the "stgxfwcmmodsrv" command. Check **Server** column of the "stgxfwcmdispsrv" command execution result for the Management Server name specified to the -n option.

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

$INS_DIR means "Program Directory" specified at the ETERNUS SF Manager installation.

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "7.1.3 Resuming Operation"

7.1.2 Upgrading on Clustered Systems

The following values are used in the description.

Directory Name	Explanation
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.

7.1.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Management Server transactions
- Shared disk for shared data of Managed Server transactions

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed on the secondary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

3. Check that the services of ETERNUS SF Manager are stopped on the secondary node.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of ETERNUS SF Manager.
4. When using the ETERNUS SF SNMP Trap Service, on the secondary node, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

Note

In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

5. When using the ETERNUS VASA Provider, on the secondary node, confirm that the ETERNUS VASA Provider service has been stopped.
   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of the ETERNUS VASA Provider.

6. Ensure that there is enough available disk space (400 MB) on the server where the upgrade is performed on the primary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

   ```
   The available capacity of the specified disk (C:) is insufficient. Please execute it again after increasing the disk area.
   ```

7. On the primary node, stop the services of ETERNUS SF Manager.
   Use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.
   However, the shared disk for shared data of ETERNUS SF Manager must be online.

8. When using the ETERNUS SF SNMP Trap Service, on the primary node, stop the SNMP Trap function.
   With the Windows services screen, stop the ETERNUS SF SNMP Trap Service.

Note

In an environment where other software using SNMP Traps such as Systemwalker Centric Manager and ServerView Resource Orchestrator coexists on a target server, if you stop the ETERNUS SF SNMP Trap Service, other software using SNMP Traps cannot perform the fault monitoring. Make sure that even if the fault monitoring cannot be performed, no problem is caused, and perform this step.

9. When using the ETERNUS VASA Provider, stop the ETERNUS VASA Provider service on the primary node.
   Use the Failover Cluster Manager to stop the transactions of the ETERNUS VASA Provider.
   However, the shared disk for shared data of the ETERNUS Information Provider must be online.

10. If Managed Server transactions coexist in the clustered system, perform the following procedure:

    a. On the secondary node for a target transaction, check that the Managed Server transactions are stopped.

       If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
       If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.

    b. On the primary node for a target transaction, stop the Managed Server transaction.

       Use the Failover Cluster Manager to stop Managed Server transactions.
       However, the shared disk for shared data of Managed Server transactions must be online.
       If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

11. In all of the nodes in which the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.

12. Stop the local transactions on all the nodes, perform the following procedure.

    With the Windows services screen, stop the AdvancedCopy Manager COM Service.

7.1.2.2 Performing Upgrade (Primary Node)

Performing the upgrade is as follows.

1. Save the environment setting files for AdvancedCopy Manager Copy Control Module (sys.properties).
   The environment setting files for AdvancedCopy Manager Copy Control Module is as follows.

   ```
   $INS_DIR\CCM\sys\sys.properties
   ```

   Make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

2. Recover the original environment configurations file (sys.properties) of the AdvancedCopy Manager CCM.
   Overwrite the original environment configurations file onto the file of the copying destination.

Original Environment Configurations File	Copying Destination File
$INS_DIR\CCM\noncluster\sys\sys.properties	$INS_DIR\CCM\sys\sys.properties

3. Save the general script for the AdvancedCopy Manager CCM.
   In corresponding previous version of "Preparing General Scripts for AdvancedCopy Manager CCM" corresponding to each OS and nodes in the *Cluster Environment Setup Guide*, in cases when the general scripts have been stored under the bin directory of the program directory of the AdvancedCopy Manager CCM, make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

4. Refer to "C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)" to perform the upgrade.

5. The shared disk for shared data of ETERNUS SF Manager must be offline.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

7.1.2.3 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "7.1.2.2 Performing Upgrade (Primary Node)".

7.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.
The shared disk for shared data of ETERNUS SF Manager must be online.

In the version level of this ETERNUS SF Manager, Symfoware is not used.
To upgrade from Version 16.1 or later, steps 1, 2, and 7 are not needed.
To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

1. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

2. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
   If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

3. Restore the environment setting files for AdvancedCopy Manager Copy Control Module (sys.properties).
   Overwrite the environment configurations file (sys.properties) saved in "7.1.2.2 Performing Upgrade (Primary Node)" onto the

following file after upgrade installation.
The environment setting files for AdvancedCopy Manager Copy Control Module is as follows.

```
$INS_DIR\CCM\sys\sys.properties
```

4. Restore the saved general scripts for the AdvancedCopy Manager CCM.
   When general scripts are backed up in "7.1.2.2 Performing Upgrade (Primary Node)", restore the backed-up general scripts to the directory stored in "Preparing General Scripts for AdvancedCopy Manager CCM", which corresponds to respective operating systems and nodes described in the *Cluster Environment Setup Guide* of the appropriate earlier version.

5. Edit the environment setting files for AdvancedCopy Manager on the shared disk for ETERNUS SF Manager shared data.

   Edit the following files:

   - <*Drive of shared disk for shared data of ETERNUS SF Manager*>:\etc\opt\swstorage\clsetup.ini
   - <*Drive of shared disk for shared data of ETERNUS SF Manager* >:\etc\opt\swstorage\etc\swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

6. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for Managed Server transactions shared data.

   On the primary node for target transactions, edit the following files:

   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\clsetup.ini
   - <*Drive of shared disk for shared data of Managed Server transactions*>:\etc\opt\swstorage\etc\swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

7. The resource is deleted from the transactions belonging to the ETERNUS SF Manager.
   Making use of failover cluster manager, the resources stated below are deleted from the transactions belonging to ETERNUS SF Manager. No measures are necessary where the resources do not exist.

   - Name of Resources
     - AdvancedCopy GUI Service
     - SymfoWARE RDB RDBSWSTF

   When the operation divides shared disk for shared data use and the shared disk for repository use, the resources of the shared disk for repository use are deleted.

7.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Uninstall Symfoware from the **Add or Remove Programs** or **Programs and Features** page.
      If Symfoware Server and Symfoware Client are both installed, uninstall the Symfoware Client first.

2. Check that the services of ETERNUS SF Manager are stopped.
   If not stopped, use the Failover Cluster Manager to stop the transactions of ETERNUS SF Manager.

3. Restore the environment setting files (sys.properties) for AdvancedCopy Manager Copy Control Module.
   Overwrite the environment configurations file (sys.properties) saved in "7.1.2.3 Performing Upgrade (Secondary Node)" onto the following file after upgrade installation.
   The environment setting files for AdvancedCopy Manager Copy Control Module is as follows.

   ```
   $INS_DIR\CCM\sys\sys.properties
   ```

4. Restore the saved general scripts for the AdvancedCopy Manager CCM.
   When general scripts are backed up in "7.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)", restore the backed-up general scripts to the directory stored in "Preparing General Scripts for AdvancedCopy Manager CCM", which corresponds to respective operating systems and nodes described in the *Cluster Environment Setup Guide* of the appropriate earlier version.

7.1.2.6 Starting ETERNUS SF Manager

After performing "7.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and "7.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)", perform the following procedure:

1. Check that the services of ETERNUS SF Manager are started on the primary node.

   If not started, use the Failover Cluster Manager to start the transactions of ETERNUS SF Manager.

2. When using the ETERNUS VASA Provider, start the ETERNUS VASA Provider service on the primary node.
   Use the Failover Cluster Manager to start the transactions of the ETERNUS VASA Provider.

3. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions in the primary node for a target transaction.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, apply this procedure for each Managed Server transaction.

4. In all of the nodes in which the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

5. Start the local transactions on all the nodes.

   With the Windows services screen, start the AdvancedCopy Manager COM Service.

6. If the ETERNUS SF SNMP Trap Service was used with the previous version, on all the nodes, start the ETERNUS SF SNMP Trap Service with the Windows services screen.

Point

When ETERNUS SF Manager has been recovered to normal state by performing the task described in "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)", to ensure data consistency, execute the "stgxfwcmmodsrv" command to perform the server information change processing.

Specify the Management Server name to the -n option and execute the "stgxfwcmmodsrv" command. Check **Server** column of the "stgxfwcmdispsrv" command execution result for the Management Server name specified to the -n option.

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "7.1.3 Resuming Operation".

7.1.3 Resuming Operation

With the above, the upgrade is completed. Restart the AdvancedCopy Manager operation.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

7.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)

7.2.1 Upgrading on Non-clustered Systems

7.2.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

   ```
   ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk area.
   ```

3. Execute the following command to stop the daemon of ETERNUS SF Manager.

   ```
   # /opt/FJSVesfcm/bin/stopesf.sh
   ```

7.2.1.2 Performing Upgrade

Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.2.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

   ```
   # /opt/symfoware/setup/symfo_remove
   ```

   c. Confirmation message to uninstall Symfoware is displayed.
   To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
   A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

   Example of Uninstallation with the Specification "all"

   ```
   Start checking the installation environment.
   Check of installation environment is ended.

   WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
   Edition".

   Continue the uninstallation?
   y: Continue the uninstallation
   q: End directly without uninstallation
   [y,q]: y

   Uninstallation of "Symfoware Server Enterprise Edition" begins.

   Please select the functions to be uninstalled.
   1: Base function (Server function, Client function)
   Separate multiple selections with ",". (Example: 1, 2)
   [all:All functions,1,q]: all

   Selected functions
   - Base function (Server function, Client function)

   Start the uninstallation of the above functions?
   y: Uninstallation begins
   n: Select the functions again
   q: End directly without uninstallation
   [y,n,q]: y

   Uninstallation begins.
   ```

   d. The following message is displayed after the Symfoware uninstallation is completed normally.

   ```
   Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
   ```

2. Perform the kernel parameter tuning.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

3. As required, start the daemon of ETERNUS SF Manager.

   If the operating system is not restarted after having performed kernel parameter tuning in step 2, execute the following command to start the daemon of ETERNUS SF Manager.

```
# /opt/FJSVesfcm/bin/startesf.sh
```

Subsequently, go to "7.2.3 Resuming Operation".

7.2.2 Upgrading on Clustered Systems

7.2.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Management Server transactions
- Shared disk for shared data of Managed Server transactions

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed on the secondary node.
   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   [Output Message (in cases when the directory of the destination of the installation is "/opt")]

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

3. On the secondary node, check whether the cluster application (transaction) to which ETERNUS SF Manager belongs has stopped.
   If not stopped, refer to the relevant cluster software manuals for information on stopping it.
4. Ensure that there is enough available disk space (650 MB in a Solaris environment, 200 MB in a Linux environment) on the server where the upgrade is performed on the primary node.
   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   [Output Message (in cases when the directory of the destination of the installation is "/opt")]

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

5. On the primary node, stop the cluster application (transaction) to which ETERNUS SF Manager belongs. Refer to the relevant cluster software manuals for information on stopping it.
   However, the shared disk for shared data of ETERNUS SF Manager must be mounted.
6. If Managed Server transactions coexist in a clustered system, perform the following.

   a. On the secondary node for the target transactions, check that the Managed Server transactions have stopped.

      If not stopped, stop them on the secondary node.
      If multiple Managed Server transactions exist, perform this procedure for each secondary node for Managed Server transactions.

Refer to the relevant cluster software manuals for information on stopping the Managed Server transactions.

b. On the primary node for the target transactions, stop the Managed Server transactions.

Refer to the relevant cluster software manuals to stop the Managed Server transactions.
However, the shared disk for shared data of Managed Server transactions must be mounted.
If multiple Managed Server transactions exist, perform this procedure for each primary node for Managed Server transactions.

7. Stop the local transactions on all the nodes.

Stop the communication daemon for the local transactions of the AdvancedCopy Manager's manager.

Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on stopping the daemon.

8. On the primary node and the secondary node, save the start and stop script of the Management Server transaction.

9. In cases when Managed Server transactions coexist in the cluster system, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

On the primary node and the secondary node, move the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions to a backup location.

7.2.2.2 Performing Upgrade (Primary Node)

1. Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

2. Unmount the shared disk for shared data of ETERNUS SF Manager.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.2.2.3 Performing Upgrade (Secondary Node)

1. Mount the shared disk for shared data of ETERNUS SF Manager.

2. Refer to "C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.

3. Unmount the shared disk for shared data of ETERNUS SF Manager.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.
The shared disk for shared data of ETERNUS SF Manager must be mounted.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
To upgrade from Version 16.1 or later, the procedures listed below are not needed.
To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

b. Start the uninstaller of Symfoware to delete the Symfoware package.

```
# /opt/symfoware/setup/symfo_remove
```

c. Confirmation message to uninstall Symfoware is displayed.
To perform the uninstallation, enter "y". To cancel the process, enter "q".
When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. Edit the environment setting files for ETERNUS SF Manager.
Edit the following files:

- *<Mount point of shared disk for shared data of ETERNUS SF Manager>*/etc/opt/swstorage/clsetup.ini
- *<Mount point of shared disk for shared data of ETERNUS SF Manager>*/etc/opt/swstorage/swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

3. If Managed Server transactions coexist in the clustered system, edit the environment setting files for AdvancedCopy Manager on the shared disk for shared data of Managed Server transactions, on the primary node for a target service.

   On the primary node for target transactions, edit the following files:

   - <*Mount point of shared disk for shared data of Managed Server transaction*>/etc/opt/swstorage/clsetup.ini
   - <*Mount point of shared disk for shared data of Managed Server transaction*>/etc/opt/swstorage/swstg.ini

   Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

4. Recover the activation suspension script of Management Server tasks saved in "7.2.2.1 Preparing for Upgrade".
5. In cases when Managed Server transaction coexist in the cluster system, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction saved in "7.2.2.1 Preparing for Upgrade".
6. Perform the kernel parameter tuning.

See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

7.2.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

The tasks below need to be performed on the secondary node.

1. In the version level of this ETERNUS SF Manager, Symfoware is not used.
   To upgrade from Version 16.1 or later, the procedures listed below are not needed.
   To upgrade from Version 16.0 or earlier, follow the procedures listed below to uninstall the Symfoware Server.

   a. Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.

   b. Start the uninstaller of Symfoware to delete the Symfoware package.

```
# /opt/symfoware/setup/symfo_remove
```

   c. Confirmation message to uninstall Symfoware is displayed.
   To perform the uninstallation, enter "y". To cancel the process, enter "q".
   When "y" is entered, a message allowing to select the function to uninstall is shown. Input "all" or "number to delete" to select the function to uninstall.
   A message to re-confirm uninstallation appears. Enter "y" to perform the uninstallation and "q" when it is not required.

   Example of Uninstallation with the Specification "all"

```
Start checking the installation environment.
Check of installation environment is ended.

WARNING: There is a possibility that another product uses "Symfoware Server Enterprise
Edition".

Continue the uninstallation?
```

```
y: Continue the uninstallation
q: End directly without uninstallation
[y,q]: y

Uninstallation of "Symfoware Server Enterprise Edition" begins.

Please select the functions to be uninstalled.
1: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:All functions,1,q]: all

Selected functions
- Base function (Server function, Client function)

Start the uninstallation of the above functions?
y: Uninstallation begins
n: Select the functions again
q: End directly without uninstallation
[y,n,q]: y

Uninstallation begins.
```

d. The following message is displayed after the Symfoware uninstallation is completed normally.

```
Uninstallation of "Symfoware Server Enterprise Edition" is ended normally.
```

2. Recover the activation suspension script of Management Server tasks saved in "7.2.2.1 Preparing for Upgrade".
3. In cases when Managed Server transaction coexist in the cluster system, recover the AdvancedCopy Manager daemon start and stop script of the Managed Server transaction saved in "7.2.2.1 Preparing for Upgrade".
4. Perform the kernel parameter tuning.

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *Installation and Setup Guide* for this version for information on tuning.

5. Check that the cluster application (transaction) has stopped.
   If not stopped, stop the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information on stopping it (transaction).

7.2.2.6 Starting ETERNUS SF Manager

After performing "7.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and "7.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node) ", perform the following procedure:

1. Check that the cluster application (transaction) has started on the primary node.

   If not started, start the cluster application (transaction) to which ETERNUS SF Manager belongs.
   Refer to the relevant cluster software manuals for information on starting it.

2. If Managed Server transactions coexist in a clustered system, start the Managed Server transactions on the primary node for the target transactions.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.

   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

3. Start the local transactions on all the nodes.

   - Start the communication daemon for local transactions of AdvancedCopy Manager's manager.
     Refer to "Starting and Stopping Communication Daemon" in the *AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for this version for information on starting the daemon.

- Start the SNMP Trap monitoring daemon on all local nodes. No action is necessary if it is already started. Refer to the following section in the *Storage Cruiser Operation Guide* for this version for information on how to start the daemon.
  - For Solaris environments

    "Starting and Stopping Daemons (Solaris Environment)"
  - For Linux environments (Only if the ETERNUS SF SNMP Trap Monitoring Daemon was used with the previous version)

    "Starting and Stopping Daemons (Linux Environment)"

Subsequently, go to "7.2.3 Resuming Operation".

Point

Even if the message "A1001 : Could not establish connection with SNMP Trap daemon/service" is output to the system log when the cluster application (transaction) is started, no action is necessary.

7.2.3 Resuming Operation

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's manager is complete. Restart the AdvancedCopy Manager operation.

Note

If operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

7.3 Upgrading AdvancedCopy Manager's Agent (for Windows)

7.3.1 Upgrading on Non-clustered Systems

7.3.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Log on to the server using Administrator privileges.
2. If the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
3. Stop the service of AdvancedCopy Manager's agent.

   With the Windows services screen, stop the AdvancedCopy Manager COM Service.
4. Perform a backup of the previous version.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   Information

   The capacity required for performing the backup is the total value of the following:

- Environment Directory and Work Directory of "For Windows environments" under "Required disk space for installation" in the *Installation and Setup Guide*
- "For Windows environments" under "Required disk space for operation" in the *Installation and Setup Guide*

The procedure is shown below:

a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
Furthermore, if the Installer screen is displayed by autorun, exit the installer.

b. Select **Control Panel** > **Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent that has been installed.

- When using the "AdvancedCopy Manager (x86) - Agent"

  The 32 bit version AdvancedCopy Manager's agent has been installed.

- When using the "AdvancedCopy Manager (x64) - Agent"

  The 64 bit version AdvancedCopy Manager's agent has been installed.

c. Start the command prompt with "Run as administrator".

d. Execute the following batch file to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path.

- When using the 32 bit version Agent

```
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\esfacmapreinst.bat
backupDir
```

- When using the 64 bit version Agent

```
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\esfacmapreinst.bat
backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

Point

- The characters " | : * ? / . < > % & ^ ; ! are not supported for directory names.
- If the directory name contains any spaces, they should be surrounded by double quote characters.

7.3.1.2 Performing Upgrade

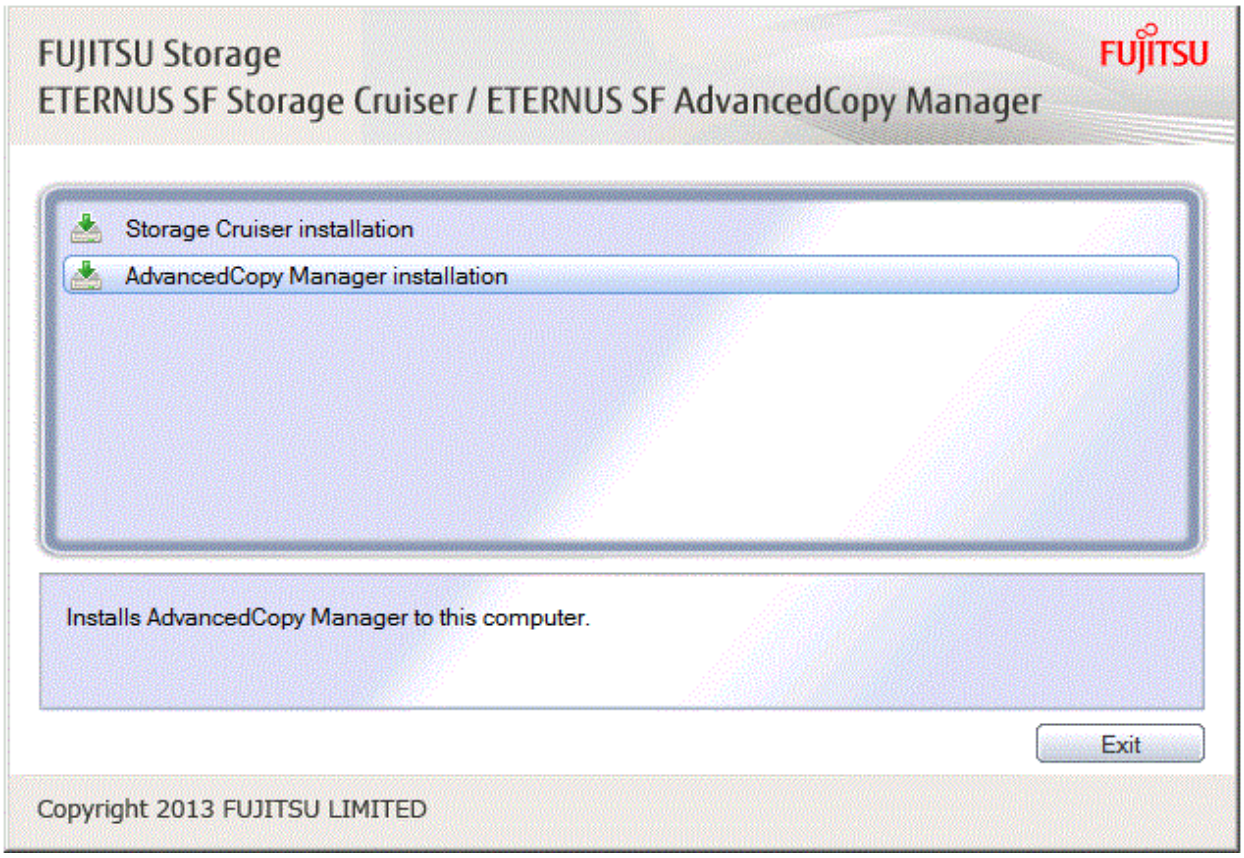
Note that if step 1 and step 2 have already been performed, perform from step 3.

Note

Although the initial screen of the installer is displayed during these steps, this is not used in the Upgrade Installation. Be sure to click **Exit** and end the screen.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

3. The following window is displayed.
   For the Upgrade Installation, this window is not used. Click **Exit**.



4. Start the following installation wizard corresponding to the architecture of AdvancedCopy Manager's agent checked in preparing for the upgrade:

   - For 32 bit version

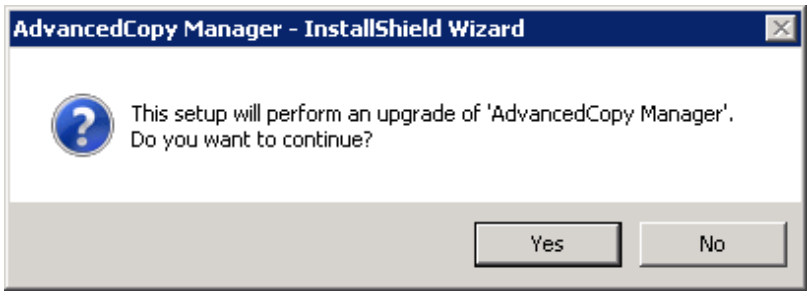
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

   - For 64 bit version

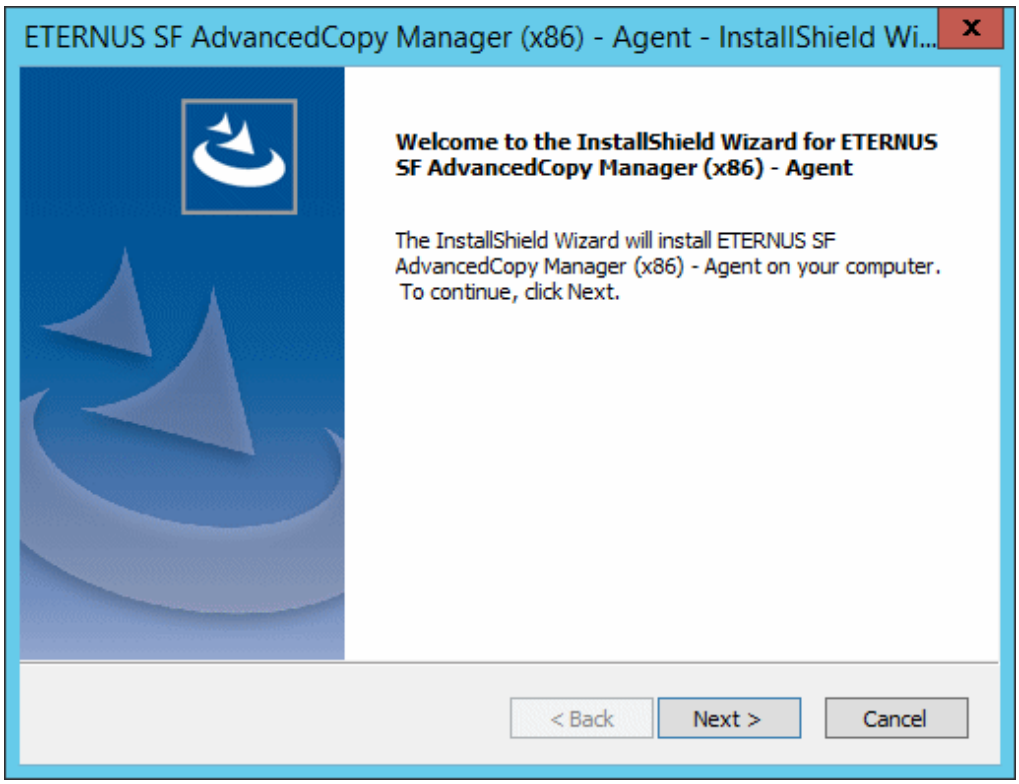
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

   The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

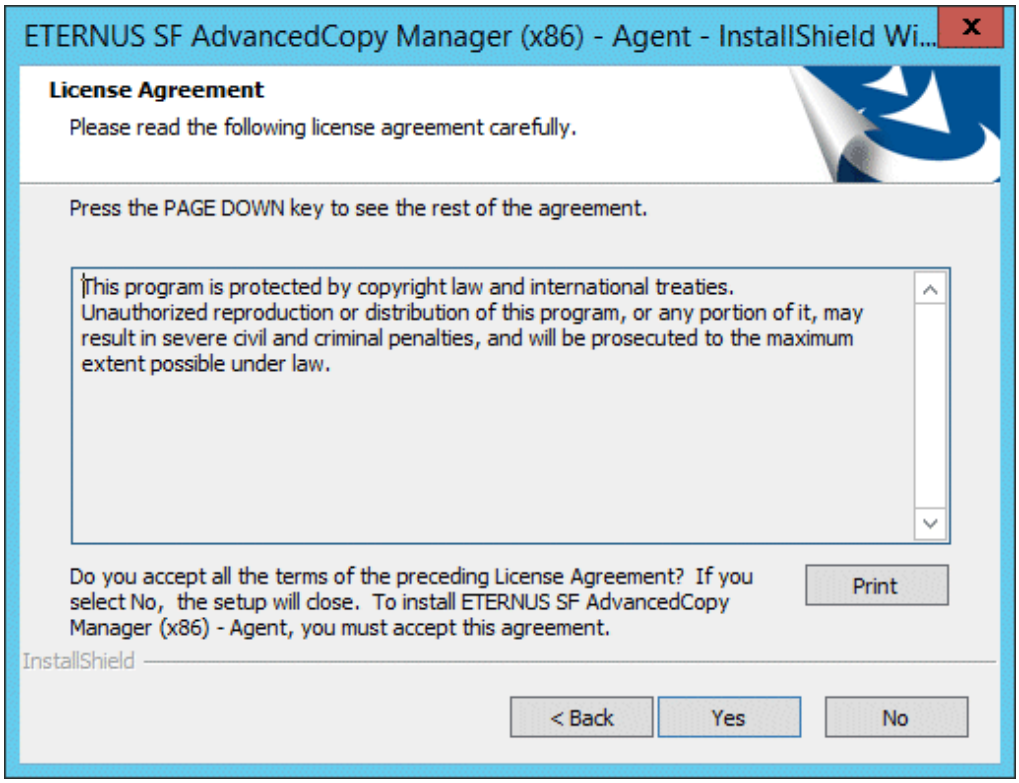
5. The following dialog box is displayed. Click **Yes**.



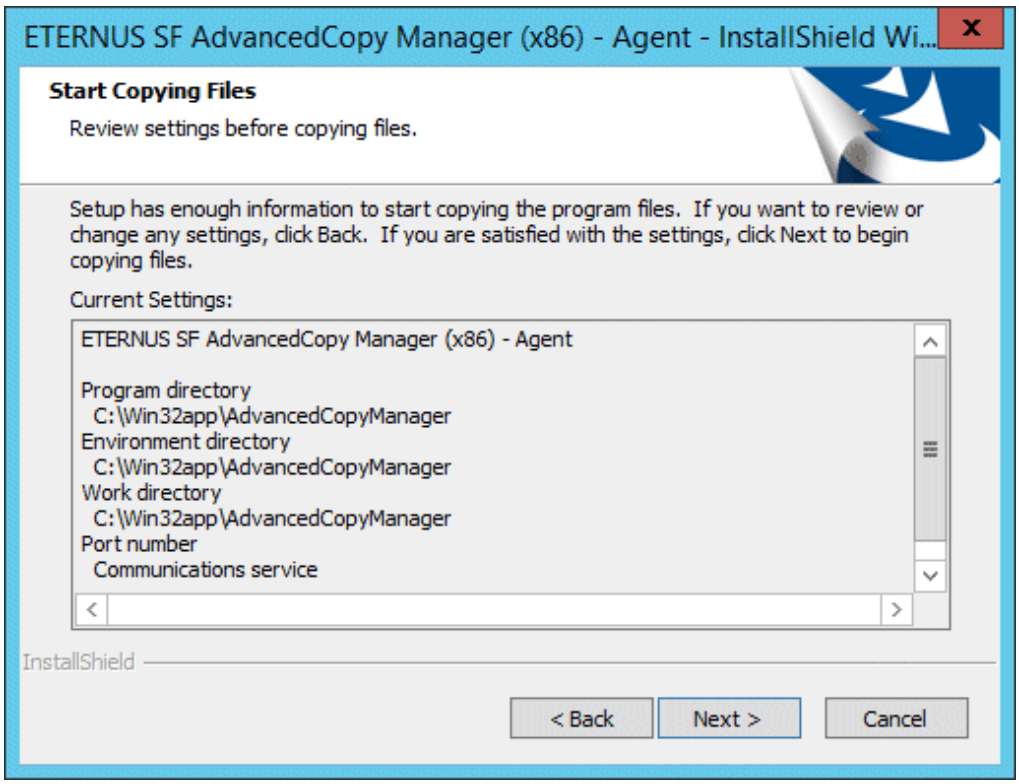
6. The installation wizard page is displayed. Click **Next**.



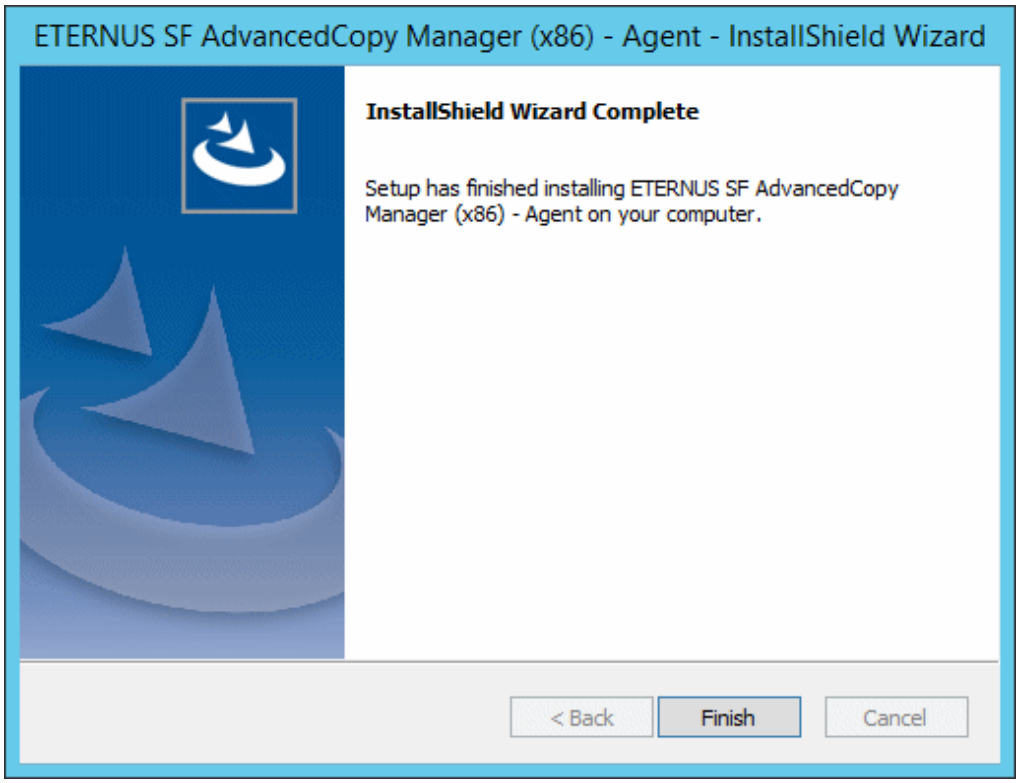
7. Read the terms and conditions of the **License Agreement** page.
   If the conditions are agreeable, click **Yes**.



8. Check the settings information in the **Start Copying Files** page, and then click **Next**.



9. Copying of the program is started.
   The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



10. Eject the DVD-ROM.

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's agent is complete.

Refer to "7.3.1.4 Tasks to Be Performed After Upgrade" to setup the AdvancedCopy Manager's agent.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)" and return the system to a normal state.

7.3.1.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. 7.3.1.3.1 Performing Upgrade with Silent Installation Procedure
2. 7.3.1.3.2 Confirming Results of Upgrade with Silent Installation

7.3.1.3.1 Performing Upgrade with Silent Installation Procedure

Note that if step 1 and step 2 have already been performed, perform from step 3.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVDROM drive.
   Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Start the command prompt with "Run as administrator".
4. Install the AdvancedCopy Manager's agent.
   In response to the architecture of the AdvancedCopy Manager's agent confirmed at the operation before upgrade, execute the commands for silent installation below to install.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

   - When using the 32 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\acmagtsilentinstall.bat [-l installLogFile]
     ```

   - When using the 64 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\acmagtsilentinstall.bat [-l installLogFile]
     ```

   Point

   - If nothing is specified for *installLogFile*, an install log file named "acmagtsilentinstall.log" is created in the working directory specified by the environment variable TEMP.
   - If there is any file of the same name as the specified install log file, it is overwritten.
   - It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
   - If the path name of the installation log file contains any spaces, they should be surrounded by double quote characters.
   - The characters " | : * ? / . < > % & ^ ; ! are not supported for path name of the installation log file.

   Note

   - If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.

- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5. On completion of installation, a command prompt is displayed.
   Eject the DVD-ROM.

7.3.1.3.2 Confirming Results of Upgrade with Silent Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for AdvancedCopy Manager's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)" and return the system to a normal state.

7.3.1.4 Tasks to Be Performed After Upgrade

The tasks below need to be performed. Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. If the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.
2. Starting the service of AdvancedCopy Manager's agent

   With the Windows services screen, start the AdvancedCopy Manager COM Service.
3. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

     ```
     $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
     ```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
     ```

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on the command.

4. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
      The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
      If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 4-d of "7.3.1.1 Preparing for Upgrade" maybe deleted.

7.3.2 Upgrading on Clustered Systems

7.3.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Managed Server transactions

1. Log on to the server using Administrator privileges.
2. Check that Managed Server transactions are stopped on the secondary node.

   If not stopped, use the Failover Cluster Manager to stop Managed Server transactions on the secondary node.
   If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.
3. Stop the Managed Server transaction on the primary node.

   Use the Failover Cluster Manager to stop the Managed Server transactions.
   However, the shared disk for shared data of Managed Server transactions must be online.
   If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.
4. In all of the nodes in which the Storage Cruiser's agent has been installed, stop the service of the Storage Cruiser's agent.
   Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to stop the service.
5. Stop the local transactions on all the nodes, perform the following procedure.

   With the Windows services screen, stop the AdvancedCopy Manager COM Service.
6. Perform a backup of the previous version with all of the nodes.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   - On the primary node and the secondary node, perform a backup of the previous version.
   - In cases when there are multiple Managed Server transactions, in each primary node of the Managed Server transactions, switch the shared disk for the shared data of the Managed Server transactions online.

   Information

   The capacity required for performing the backup is the total value of the following:

- Environment Directory and Work Directory of "For Windows environments" under "Required disk space for installation" in the *Installation and Setup Guide*
- "For Windows environments" under "Required disk space for operation" in the *Installation and Setup Guide*

In the case of a primary node operating a Managed Server transaction, add the following to the capacity required to perform the backup:

- "Capacity of Shared Disk" in the *Cluster Environment Setup Guide*

The procedure is shown below:

a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
Furthermore, if the Installer screen is displayed by autorun, exit the installer.

b. Select **Control Panel** > **Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent that has been installed.

   - When using the "AdvancedCopy Manager (x86) - Agent"

     The 32 bit version AdvancedCopy Manager's agent has been installed.

   - When using the "AdvancedCopy Manager (x64) - Agent"

     The 64 bit version AdvancedCopy Manager's agent has been installed.

c. Start the command prompt with "Run as administrator".

d. Execute the following batch file to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   - When using the 32 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\esfacmapreinst.bat
     backupDir
     ```

   - When using the 64 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\esfacmapreinst.bat
     backupDir
     ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the batch file.

   Point

   - The characters " | : * ? / . < > % & ^ ; ! are not supported for directory names.
   - If the directory name contains any spaces, they should be surrounded by double quote characters.

e. Eject the DVD-ROM.

7.3.2.2 Performing Upgrade (Primary Node)

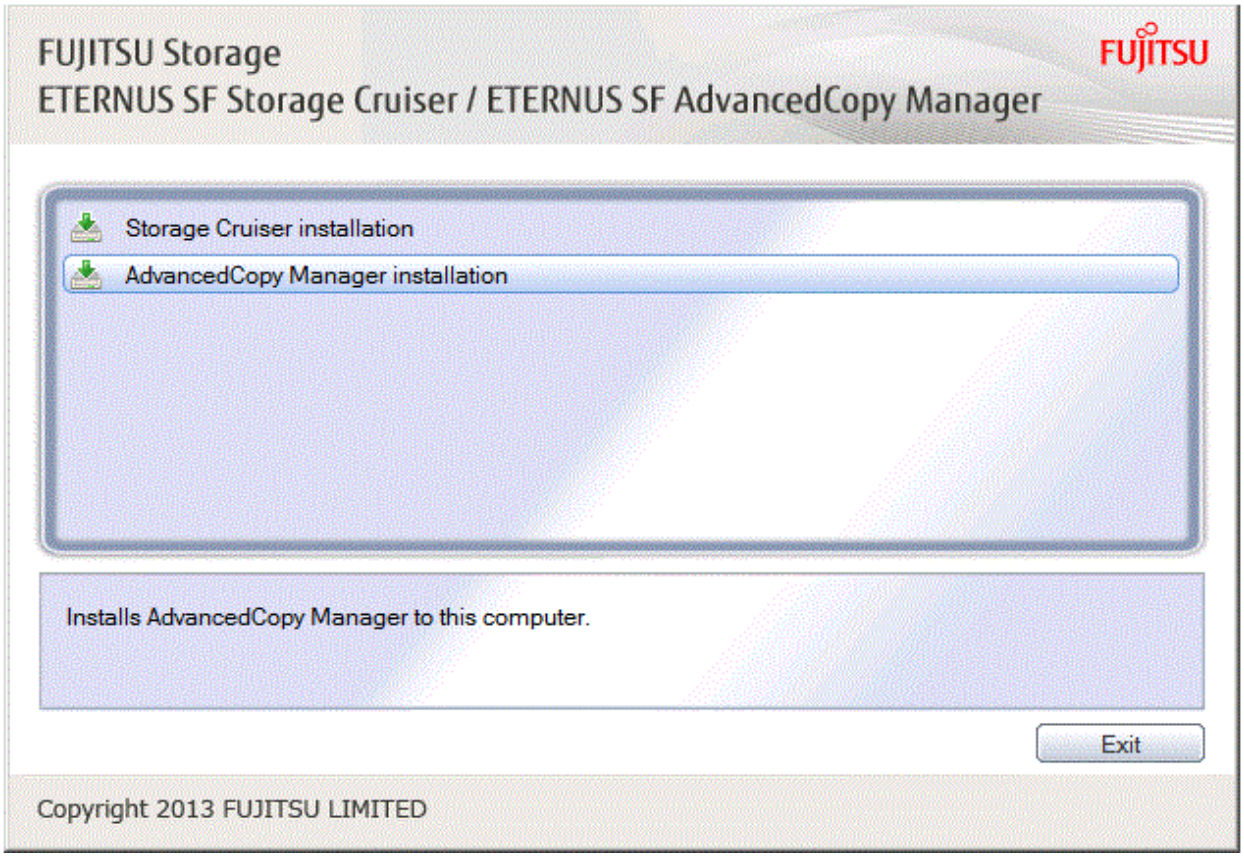
Note that if step 1 and step 2 have already been performed, perform from step 3.

If multiple Managed Server transactions exist, use this procedure on each primary node for Managed Server transactions.

Note

Although the initial screen of the installer is displayed during these steps, this is not used in the Upgrade Installation. Be sure to click **Exit** and end the screen.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
3. The following window is displayed.
   For the Upgrade Installation, this window is not used. Click **Exit**.



4. Start the following installation wizard corresponding to the architecture of AdvancedCopy Manager's agent checked in preparing for the upgrade:

   - For 32 bit version

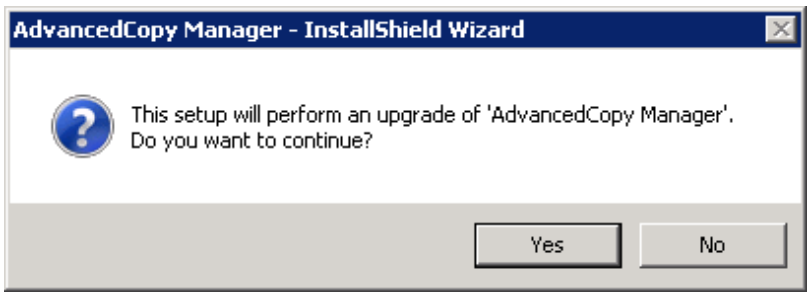
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

   - For 64 bit version

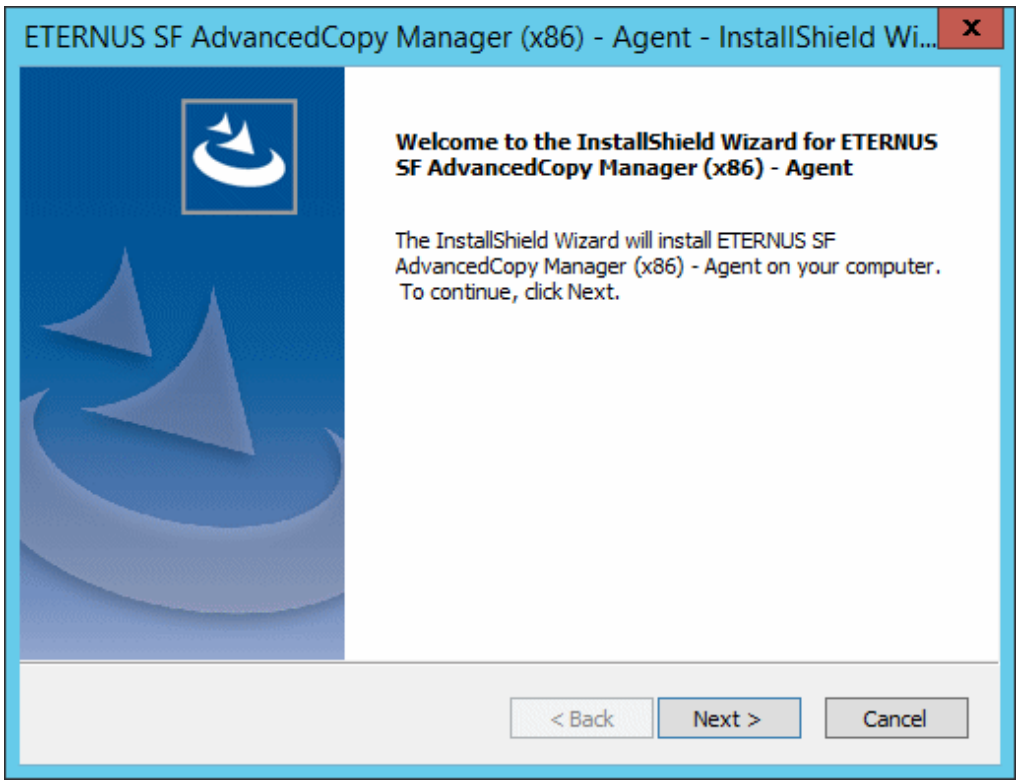
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

   The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

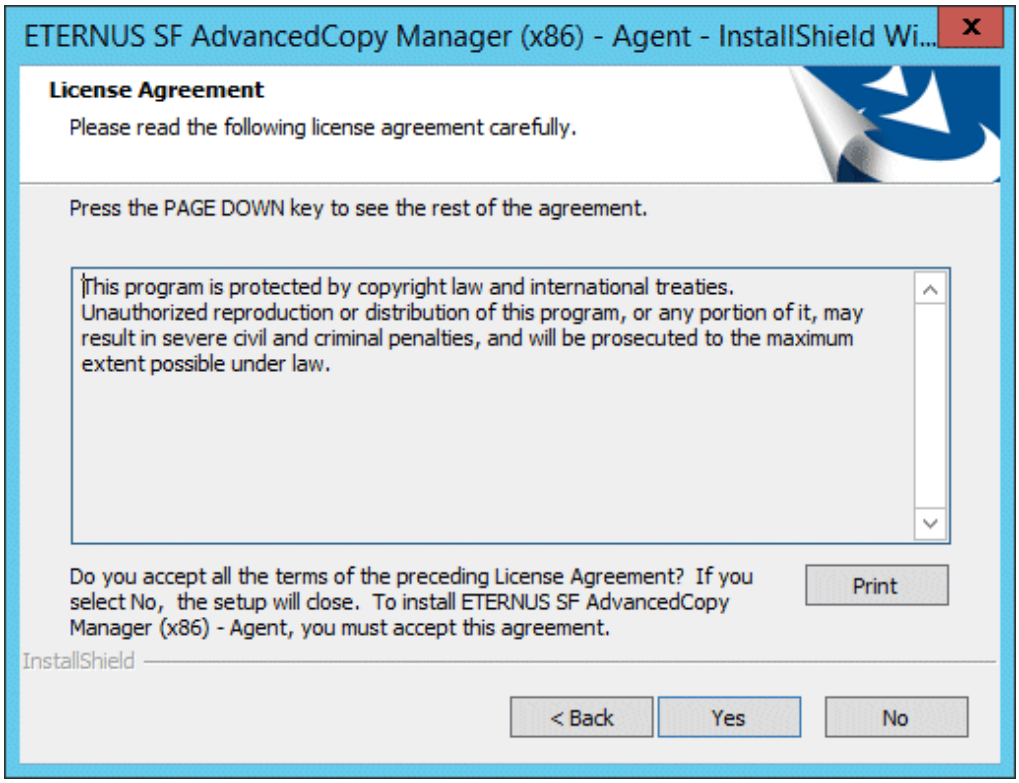
5. The following dialog box is displayed. Click **Yes**.



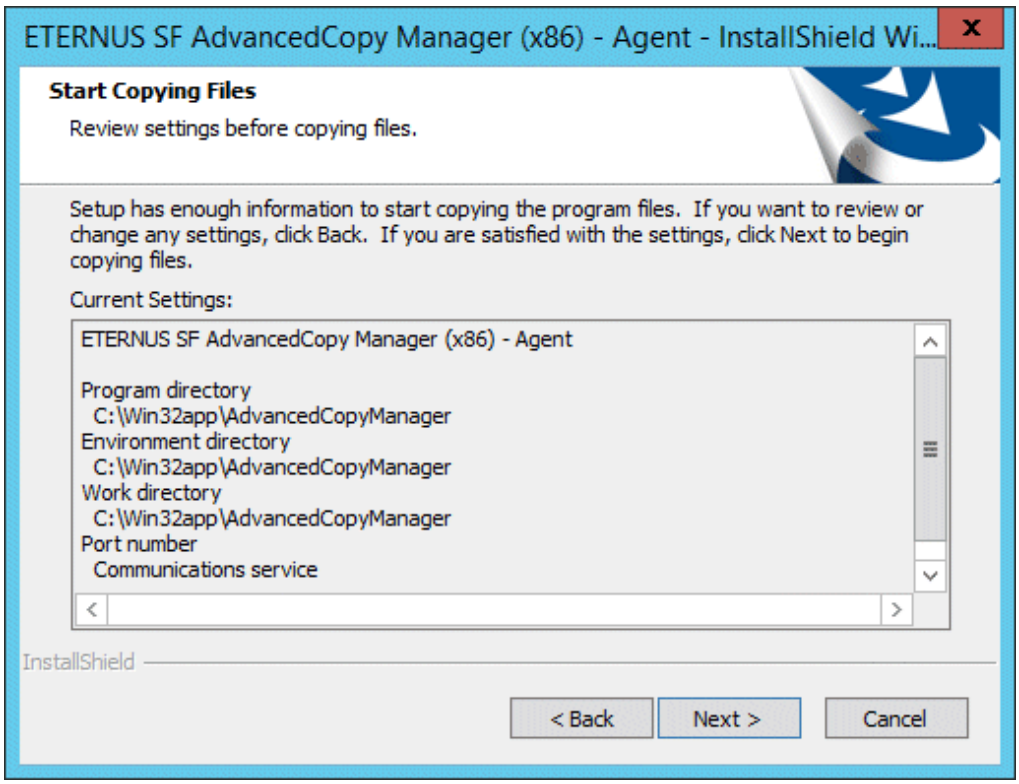
6. The following installation wizard page is displayed. Click **Next**.



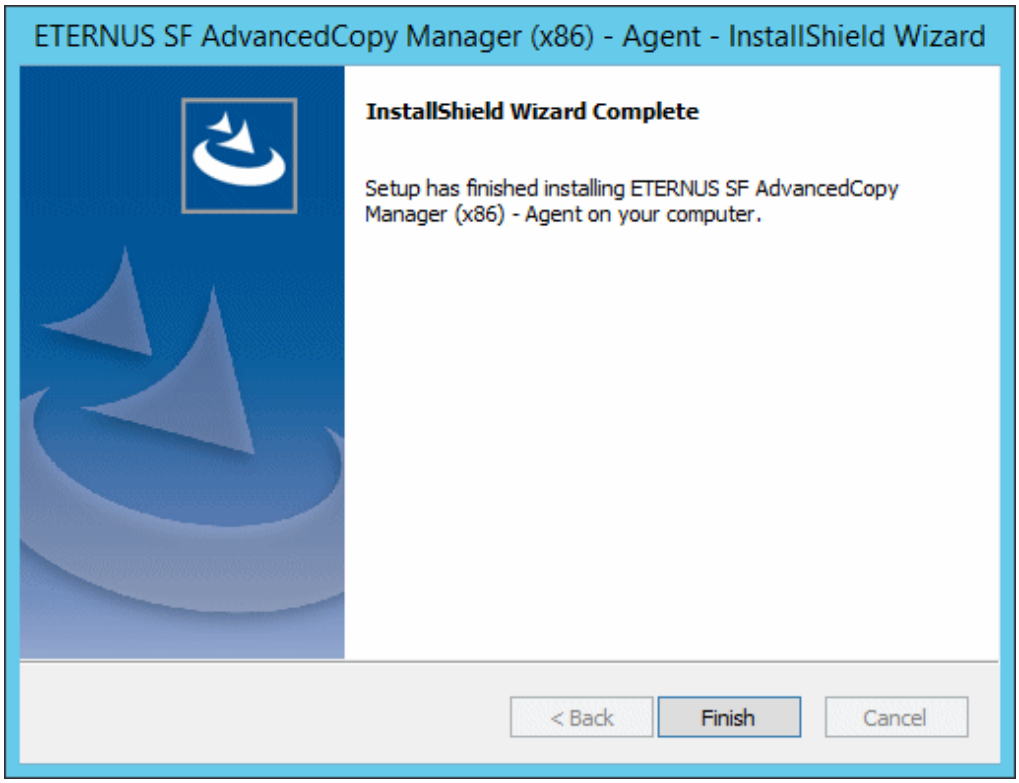
7. Read the terms and conditions of the **License Agreement** page.
   If the conditions are agreeable, click **Yes**.



8. Check the settings information in the **Start Copying Files** page, and then click **Next**.



9. Copying of the program is started.
   The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



10. Eject the DVD-ROM.

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's agent is complete.

When the upgrade of the primary node has been completed, refer to "7.3.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and set up the AdvancedCopy Manager's agent of the primary node.
When the upgrade of the secondary node has been completed, refer to "7.3.2.7 Tasks to Be Performed After Upgrade (Secondary Node) " and set up the AdvancedCopy Manager's agent of the secondary node.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)" and return the system to a normal state.

7.3.2.3 Upgrade with Silent Installation Tasks (Primary Node)

The upgrade is performed as follows:

1. 7.3.2.3.1 Upgrade with Silent Installation Tasks (Primary Node)
2. 7.3.2.3.2 Confirming Results of Upgrade with Silent Installation (Primary Node)

7.3.2.3.1 Upgrade with Silent Installation Tasks (Primary Node)

Note that if step 1 and step 2 have already been performed, perform from step 3.

If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVDROM drive.
   Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Start the command prompt with "Run as administrator".
4. Install the AdvancedCopy Manager's agent.
   In response to the architecture of the AdvancedCopy Manager's agent confirmed at the operation before upgrade, execute the commands for silent installation below to install.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

   - When using the 32 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\acmagtsilentinstall.bat [-l installLogFile]
     ```

   - When using the 64 bit version Agent

     ```
     dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\acmagtsilentinstall.bat [-l installLogFile]
     ```

   Point

   - If nothing is specified for *installLogFile*, an install log file named "acmagtsilentinstall.log" is created in the working directory specified by the environment variable TEMP.
   - If there is any file of the same name as the specified install log file, it is overwritten.
   - It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
   - If the path name of the installation log file contains any spaces, they should be surrounded by double quote characters.
   - The characters " | : * ? / . < > % & ^ ; ! are not supported for path name of the installation log file.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5. On completion of installation, a command prompt is displayed.
   Eject the DVD-ROM.

7.3.2.3.2 Confirming Results of Upgrade with Silent Installation (Primary Node)

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for AdvancedCopy Manager's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)" and return the system to a normal state.

7.3.2.4 Tasks to Be Performed After Upgrade (Primary Node)

When the upgrade has been completed, the tasks below need to be performed.
If multiple Managed Server transactions exist, use this procedure in each primary node for Managed Server transaction.

Edit the following environment setting files for Managed Server transaction on the shared disk for shared data:

- *<Drive of shared disk for shared data of Managed Server transaction>*:\etc\opt\swstorage\clsetup.ini
- *<Drive of shared disk for shared data of Managed Server transaction>*:\etc\opt\swstorage\etc\swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

7.3.2.5 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "7.3.2.2 Performing Upgrade (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

7.3.2.6 Upgrade with Silent Installation Tasks (Secondary Node)

Perform the upgrade with silent installation for the secondary node.
The upgrade with silent installation procedure is the same as that for the primary node. Refer to "7.3.2.3 Upgrade with Silent Installation Tasks (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

7.3.2.7 Tasks to Be Performed After Upgrade (Secondary Node)

There is no further action required after the upgrade for the secondary node.

7.3.2.8 Starting Managed Server Transactions

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. On the primary node, start the Managed Server transactions.

   Use the Failover Cluster Manager to start the Managed Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

2. In all of the nodes in which the Storage Cruiser's agent has been installed, start the service of the Storage Cruiser's agent. Refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* for information on how to start the service.

3. Start the local transactions on all the nodes, perform the following procedure.

   With the Windows services screen, start the AdvancedCopy Manager COM Service.

4. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

     ```
     $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
     ```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
     ```

   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

   In addition, if there is any node that is running local transactions, perform this procedure on the relevant node.

   Note

   For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

5. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 6-d of "7.3.2.1 Preparing for Upgrade" maybe deleted.

7.4 Upgrading AdvancedCopy Manager's Agent (for Solaris, Linux)

7.4.1 Upgrading on Non-clustered Systems

7.4.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Execute the following command to stop the daemon of AdvancedCopy Manager's agent.

```
# /opt/swstorage/bin/stopacm
```

3. Perform a backup of the previous version.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   Information

   The capacity required for performing the backup is the total value of the following:

   - Fixed configuration directory and Modifying configuration directory of "For Solaris environments" or "For Linux environments" under "Required disk space for installation" in the *Installation and Setup Guide*
   - "For Solaris, Linux, HP-UX or AIX environments" under "Required disk space for operation" in the *Installation and Setup Guide*

   The procedure is shown below:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

b. Mount the DVD-ROM.

- Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

c. Execute the following command to perform a backup of the previous version.

For *backupDir*, specify the directory in which to store the backup data with an absolute path.

- When using the Solaris Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

- When using the Red Hat Enterprise Linux 7 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapreinst.sh backupDir
```

- When using the Red Hat Enterprise Linux 6 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

- When using the SUSE Linux Enterprise Server 12 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles12_x64/esfacmapreinst.sh
backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

7.4.1.2 Performing Upgrade

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.

- Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows.

OS Type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 7 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel7_x86
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86
SUSE Linux Enterprise Server 12 for AMD64 & Intel64	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/sles12_x64

5. The installation information is displayed.

```
swsetup: Installer is preparing for installation...

+-------------------------------------------------------------+
|              ETERNUS SF AdvancedCopy Manager                |
|                          16.8                               |
|              Copyright FUJITSU LIMITED 2013-2019            |
+-------------------------------------------------------------+


Welcome to Setup.
This program will install "AdvancedCopy Manager" on your system.
```

6. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

```
An old version is installed in this system.
Do you want to upgrade? [y,q]:
```

7. If "y" was entered for step 6, the upgrade continues.

   If the upgrade completes successfully, the following message is displayed.

```
swsetup: AdvancedCopy Manager was installed successfully.
```

8. Execute the following commands, and then eject the DVD-ROM.

```
# cd /
# umount dvdromMountPoint
```

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's agent is complete.

Refer to "7.4.1.4 Tasks to Be Performed After Upgrade" to setup the AdvancedCopy Manager's agent.

Point

If the upgrade was terminated abnormally, refer to "8.2.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

7.4.1.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. 7.4.1.3.1 Performing Upgrade with Silent Installation Procedure

2. 7.4.1.3.2 Confirming Results of Upgrade with Silent Installation

7.4.1.3.1 Performing Upgrade with Silent Installation Procedure

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVDROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".
   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following commands for the silent installation to install the AdvancedCopy Manager's agent.

   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

   ```
   # environmentDir/acmagtsilentinstall.sh [-l installLogFile]
   ```

   The *environmentDir* is as follows.

OS type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 7 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel7_x86
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86
SUSE Linux Enterprise Server 12 for AMD64 & Intel64	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/sles12_x64

Point

- If nothing is specified for *installLogFile*, an install log file named "acmagtsilentinstall.log" is created in /var/tmp directory.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.

- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5. On completion of installation, a command prompt is displayed.

   Execute the following command, and then eject the DVD-ROM.

```
# umount dvdromMountPoint
```

7.4.1.3.2 Confirming Results of Upgrade with Silent Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for AdvancedCopy Manager's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the upgrade was terminated abnormally, refer to "8.2.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

7.4.1.4 Tasks to Be Performed After Upgrade

The tasks below need to be performed. Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. Execute the following command to start the daemon of AdvancedCopy Manager's agent.

```
# /opt/swstorage/bin/startacm
```

2. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

3. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

- Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 3-d of "7.4.1.1 Preparing for Upgrade" maybe deleted.

7.4.2 Upgrading on Clustered Systems

7.4.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- Shared disk for shared data of Managed Server transactions

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Check that Managed Server transactions are stopped on the secondary node.

   If not stopped, stop them on the secondary node. Refer to the relevant cluster software manuals for information on stopping it.
   If multiple Managed Server transactions exist, perform this procedure on each secondary node for Managed Server transactions.

3. Stop the Managed Server transaction on the primary node.

   Stop the Managed Server transactions by referring to the relevant cluster software manuals.
   However, the shared disk for shared data of Managed Server transactions must be mounted.
   If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

4. Execute the following command to stop the local transactions on all the nodes.

```
# /opt/swstorage/bin/stopacm
```

5. Perform a backup of the previous version with all of the nodes.

   For recovery in case the upgrade fails, perform a backup of the operating environment of the previous version of the AdvancedCopy Manager's agent.

   - On the primary node and the secondary node, perform a backup of the previous version.
   - In cases when there are multiple Managed Server transactions, in each primary node of the Managed Server transactions, switch the shared disk for the shared data of the Managed Server transactions online.

   Information

   The capacity required for performing the backup is the total value of the following:

   - Fixed configuration directory and Modifying configuration directory of "For Solaris environments" or "For Linux environments" under "Required disk space for installation" in the *Installation and Setup Guide*

- "For Solaris, Linux, HP-UX or AIX environments" under "Required disk space for operation" in the *Installation and Setup Guide*

In the case of a primary node operating a Managed Server transaction, add the following to the capacity required to perform the backup:

- "Capacity of Shared Disk" in the *Cluster Environment Setup Guide*

The procedure is shown below:

a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

b. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

c. Execute the following command to perform a backup of the previous version.

   For *backupDir*, specify the directory in which to store the backup data with an absolute path.

   - When using the Solaris Agent

   ```
   # dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
   ```

   - When using the Red Hat Enterprise Linux 7 Agent

   ```
   # dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapreinst.sh backupDir
   ```

   - When using the Red Hat Enterprise Linux 6 Agent

   ```
   # dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
   ```

   When the backup fails, after confirming the output error message and removing the cause of the failure, re-execute the command.

d. Execute the following commands, and then eject the DVD-ROM.

   ```
   # cd /
   # umount dvdromMountPoint
   ```

e. On the primary node and the secondary node, back up the AdvancedCopy Manager daemon start and stop script of the Managed Server transactions.

7.4.2.2 Performing Upgrade (Primary Node)

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.

3. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Execute the following commands to install the AdvancedCopy Manager's agent.

   ```
   # cd environmentDir
   # ./swsetup
   ```

   The *environmentDir* is as follows.

OS Type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 7 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel7_x86
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86

5. The installation information is displayed.

   ```
   swsetup: Installer is preparing for installation...

   +-------------------------------------------------------------+
   |              ETERNUS SF AdvancedCopy Manager                |
   |                          16.8                               |
   |              Copyright FUJITSU LIMITED 2013-2019            |
   +-------------------------------------------------------------+


   Welcome to Setup.
   This program will install "AdvancedCopy Manager" on your system.
   ```

6. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

   ```
   An old version is installed in this system.
   Do you want to upgrade? [y,q]:
   ```

7. If "y" was entered for step 6, the upgrade continues.

   If the upgrade completes successfully, the following message is displayed.

   ```
   swsetup: AdvancedCopy Manager was installed successfully.
   ```

8. Execute the following commands, and then eject the DVD-ROM.

   ```
   # cd /
   # umount dvdromMountPoint
   ```

When the tasks described above have been performed, the upgrade of the AdvancedCopy Manager's agent is complete.

When the upgrade of the primary node has been completed, refer to "7.4.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and set up the AdvancedCopy Manager's agent of the primary node.

When the upgrade of the secondary node has been completed, refer to "7.4.2.7 Tasks to Be Performed After Upgrade (Secondary Node)" and set up the AdvancedCopy Manager's agent of the secondary node.

Point

If the upgrade was terminated abnormally, refer to "8.2.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

7.4.2.3 Upgrade with Silent Installation Tasks (Primary Node)

The upgrade is performed as follows:

1. 7.4.2.3.1 Performing Upgrade with Silent Installation Procedure (Primary Node)
2. 7.4.2.3.2 Confirming Results of Upgrade with Silent Installation (Primary Node)

7.4.2.3.1 Performing Upgrade with Silent Installation Procedure (Primary Node)

Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVDROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".
   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
4. Execute the following commands for the silent installation to install the AdvancedCopy Manager's agent.

   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

   ```
   # environmentDir/acmagtsilentinstall.sh [-l installLogFile]
   ```

   The *environmentDir* is as follows.

OS type	Directory
Solaris	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 7 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel7_x86
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	*dvdromMountPoint*/Agent_unix/AdvancedCopy_Manager/rhel6_x86

Point

- If nothing is specified for *installLogFile*, an install log file named "acmagtsilentinstall.log" is created in /var/tmp directory.
- If there is any file of the same name as the specified install log file, it is overwritten.

- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

5. On completion of installation, a command prompt is displayed.

   Execute the following commands, and then eject the DVD-ROM.

```
# umount dvdromMountPoint
```

7.4.2.3.2 Confirming Results of Upgrade with Silent Installation (Primary Node)

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for AdvancedCopy Manager's Agent)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

Point

If the upgrade was terminated abnormally, refer to "8.2.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" to recover the system to the normal state.

7.4.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed.

When the AdvancedCopy Manager's agent upgrade has been completed for the primary node, perform the following procedure.

If multiple Managed Server transactions exist, perform this procedure on each primary node for Managed Server transaction.

Edit the following environment setting files for Managed Server transaction on the shared disk for shared data:

- *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/clsetup.ini
- *<Mount point of shared disk for shared data of Managed Server transaction>*/etc/opt/swstorage/swstg.ini

Change the version information within each file, as follows.

Descriptive Contents of Version Information	
Before	After
Version=V16.*x*	Version=V16.8

Note

Do not change anything other than the version information.

7.4.2.5 Performing Upgrade (Secondary Node)

Perform the upgrade for the secondary node.
The upgrade procedure is the same as that for the primary node. Refer to "7.4.2.2 Performing Upgrade (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

7.4.2.6 Upgrade with Silent Installation Tasks (Secondary Node)

Perform the upgrade with silent installation for the secondary node.
The upgrade with silent installation procedure is the same as that for the primary node. Refer to "7.4.2.3 Upgrade with Silent Installation Tasks (Primary Node)".

Point

If this secondary node acts as a primary node for other Managed Server transactions, it is upgraded as a primary node, so this procedure is not needed.

7.4.2.7 Tasks to Be Performed After Upgrade (Secondary Node)

No operation is required after upgrade at the secondary node.

7.4.2.8 Starting Managed Server Transactions

Perform the following procedure:
Note that in these tasks, in addition to operations with the Managed Server, there are operations to execute from the Management Server and Web Console.

1. Start the Managed Server transactions on the primary node.

   Refer to the relevant cluster software manuals to start the Managed Server transactions.
   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

2. Perform the following command to start the local transactions on all the nodes.

   ```
   # /opt/swstorage/bin/startacm
   ```

3. To ensure data consistency, with the Management Server, execute the "stgxfwcmmodsrv" command to change the server information.

   When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

   - When the Management Server OS is Windows

     ```
     $INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
     ```

     $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

   - When the Management Server OS is Solaris or Linux

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
     ```

   If multiple Managed Server transactions exist, perform this procedure for each Managed Server transaction.

   In addition, if there is any node that is running local transactions, perform this procedure on the relevant node.

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

4. Perform the following operations with Web Console to reload the server information.

   a. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.

   b. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.

   c. On the Action pane, click **Reload Conf**. under **Server**.

Point

Once normal operation has been confirmed after the upgrade of the AdvancedCopy Manager's agent, the backup data in the backup destination directory created in step 5-d of "7.4.2.1 Preparing for Upgrade" maybe deleted.

7.5 Upgrading AdvancedCopy Manager's agent (for HP-UX, AIX)

This section describes the upgrade procedure for AdvancedCopy Manager's agent.

1. 7.5.1 Backing Up Repository Data
2. 7.5.2 Backing Up Management Information
3. 7.5.3 Uninstalling Previous Version
4. 7.5.4 Installing This Version
5. 7.5.5 Restoring Repository Data
6. 7.5.6 Changing Server Information
7. 7.5.7 Restoring Management Information
8. 7.5.8 Updating Version Information

7.5.1 Backing Up Repository Data

Refer to the following sections to back up the repository data on the Management Server (only when the Managed Server is operated in a clustered system).

OS Type of Management Server	Reference
Windows	A.1 Backing Up Repository Data (for Windows)
Solaris, Linux	A.2 Backing Up Repository Data (for Solaris, Linux)

7.5.2 Backing Up Management Information

Refer to "A.3 Backing Up Management Information (for HP-UX, AIX)" to back up the management information on the Managed Server.

7.5.3 Uninstalling Previous Version

Uninstall the previous version by referring to the relevant previous version manual.

For Non-clustered Systems

Note

For the procedures below, be careful not to perform the procedure "Deletion of all Managed Servers".

Perform the procedures for "Stopping services/daemons" in the *Installation and Setup Guide*.

For Clustered Systems

If clustered systems are used for Managed Servers as Managed Server transactions, perform the unsetup of cluster settings before performing uninstallation.

See

Refer to "Deletion of Cluster Environment for Managed Server Transactions" in the *Cluster Environment Setup Guide* for the previous version for information on the unsetup of cluster settings.

7.5.4 Installing This Version

Install the AdvancedCopy Manager's agent of this version, and setup the operating environment.

About Installation

- For non-clustered systems

  Refer to "Installation of AdvancedCopy Manager's Agent" in the *Installation and Setup Guide* for this version to install the AdvancedCopy Manager's agent.

- For clustered systems

  Refer to "Installation of ETERNUS SF Agent" in the *Cluster Environment Setup Guide* for this version to install the AdvancedCopy Manager's agent.

Setting Up the Operating Environment

- For non-clustered systems

  Refer to "Setup of AdvancedCopy Manager's Agent" in the *Installation and Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

  Afterwards, start the AdvancedCopy Manager's agent on the Managed Server. Refer to "Starting and Stopping Daemons" or "Starting and Stopping Services" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Managed Server for the start procedure.

- For clustered systems

  Refer to "Customization of Managed Server Transactions" in the *Cluster Environment Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

7.5.5 Restoring Repository Data

Restore the backed up repository data on the Management Server (only when the Managed Server is operated in a cluster configuration).

Execute the "stgrepocnv" command to restore the repository data and then convert it for use with the current version of the repository.

For upgrade from Version 16.0

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgrepocnv -d backupDir
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgrepocnv -d backupDir
```

For upgrade from Version 16.1 or later

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgrepocnv -d repositoryDataBackupFile
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgrepocnv -d repositoryDataBackupFile
```

Note

For restoration of the repository data, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

7.5.6 Changing Server Information

To ensure data consistency, execute Web Console or the "stgxfwcmmodsrv" command to change the server information. The "stgxfwcmmodsrv" command must be executed on the Management Server.

When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

Note

For changing the server information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

7.5.7 Restoring Management Information

Refer to "A.6 Restoring Management Information (for HP-UX, AIX)" to restore the management information on the Managed Server.

7.5.8 Updating Version Information

If not using clustered systems, and moreover, if the restoration of repository data has already been performed with the restoration of the replication management list, execute Web Console or the "stgxfwcmmodsrv" command to update the version information for the Managed Server. The "stgxfwcmmodsrv" command must be executed on the Management Server.

When executing the "stgxfwcmmodsrv" command, specify the Managed Server name for the -n option.

- When the Management Server OS is Windows

```
$INS_DIR\ACM\bin\stgxfwcmmodsrv -n serverName
```

  $INS_DIR means the "Program Directory" specified at the ETERNUS SF Manager installation.

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -n serverName
```

Finally, perform the following operations with Web Console to reload the server information.

1. On the global navigation tab, click **Server**.
   The registered server list is displayed in the Main pane.
2. On the Main pane, check the target server checkbox.
   If the target server is a VM guest, check the checkbox of the VM host where the VM guest exists.
3. On the Action pane, click **Reload Conf**. under **Server**.

Note

For updating the version information, start a new window for command execution, and then perform the procedure on the window.

See

Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

7.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)

If only AdvancedCopy Manager CCM is installed and used, perform the upgrade mentioned in this section.

If ETERNUS SF Manager is installed and AdvancedCopy Manager CCM is used, refer to "7.1 Upgrading AdvancedCopy Manager's Manager (for Windows)" to perform the upgrade.

7.6.1 Upgrading on Non-clustered Systems

7.6.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

```
The available capacity of the specified disk (C:) is insufficient. Please execute it again after
increasing the disk area.
```

7.6.1.2 Performing Upgrade

Refer to "C.7 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Windows) " to perform the upgrade. When this work ends, operation can be restarted.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

7.6.2 Upgrading on Clustered Systems

The following values are used in the description:

Value	Description
$INS_DIR	"Program Directory" specified at the AdvancedCopy Manager CCM installation.

7.6.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- The shared disk for shared data of the AdvancedCopy Manager CCM

1. Log on to the server using Administrator privileges.
2. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed on the secondary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

```
The available capacity of the specified disk (C:) is insufficient. Please execute it again after
increasing the disk area.
```

3. Check that the CCM Server transactions are stopped on the secondary node.

   If not stopped, use the Failover Cluster Manager on the secondary node to stop the transactions of AdvancedCopy Manager Copy Control Module.

4. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed on the primary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output message (when the drive letter of the destination of the installation is "C:"):

```
The available capacity of the specified disk (C:) is insufficient. Please execute it again after
increasing the disk area.
```

5. Stop the CCM Server transactions on the primary node.

   Use the Failover Cluster Manager to stop the transactions of AdvancedCopy Manager Copy Control Module.
   However, the shared disk for shared data of AdvancedCopy Manager Copy Control Module must be online.

7.6.2.2 Performing Upgrade (Primary Node)

1. Save the environment setting files for AdvancedCopy Manager Copy Control Module (sys.properties).
   The environment setting files for AdvancedCopy Manager Copy Control Module is as follows.

```
$INS_DIR\CCM\sys\sys.properties
```

   Make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

2. Recover the original environment configurations file (sys.properties) of the AdvancedCopy Manager CCM.
   Overwrite the original environment configurations file onto the file of the copying destination.

Original Environment Configurations File	Copying Destination File
$INS_DIR\CCM\noncluster\sys\sys.properties	$INS_DIR\CCM\sys\sys.properties

3. Save the general script for the AdvancedCopy Manager CCM.
   In corresponding previous version of "Preparing General Scripts for AdvancedCopy Manager CCM" corresponding to each OS and nodes in the *Cluster Environment Setup Guide*, in cases when the general scripts have been stored under the bin directory of the program directory of the AdvancedCopy Manager CCM, make a copy on any directory that is other than the directory which is the destination of the installation of AdvancedCopy Manager CCM.
   The saved file is used in tasks after the upgrade.

4. Refer to "C.7 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Windows)" to perform the upgrade.

5. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be offline.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

7.6.2.3 Performing Upgrade (Secondary Node)

1. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be online.

2. Perform the upgrade for the secondary node.
   The upgrade procedure is the same as that for the primary node. Refer to "7.6.2.2 Performing Upgrade (Primary Node)".
3. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be offline.

Point

If the Upgrade Installation has ended in an error, refer to "8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.

7.6.2.4 Tasks to Be Performed After Upgrade (Primary Node)

The tasks below need to be performed on the primary node.
The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be online.

1. Restore the environment setting files (sys.properties) for AdvancedCopy Manager Copy Control Module
   Overwrite the environment configurations file (sys.properties) saved in "7.6.2.2 Performing Upgrade (Primary Node)" onto the following file after upgrade installation.
   The environment setting files for AdvancedCopy Manager Copy Control Module is as follows.

   ```
   $INS_DIR\CCM\sys\sys.properties
   ```

2. Restore the saved general scripts for the AdvancedCopy Manager CCM.
   When general scripts are backed up in "7.6.2.2 Performing Upgrade (Primary Node)", restore the backed-up general scripts to the directory stored in "Preparing General Scripts for AdvancedCopy Manager CCM", which corresponds to respective operating systems and nodes described in the *Cluster Environment Setup Guide* of the appropriate earlier version.

7.6.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

Tasks that are required after installing the upgrade of the secondary node are the same as with the primary node. Refer to "7.6.2.4 Tasks to Be Performed After Upgrade (Primary Node)".

When the upgrade has been completed, the shared disk for shared data of AdvancedCopy Manager Copy Control Module must be offline.
Afterwards, it must be online on the primary node.

7.6.2.6 Start CCM Server Transactions

When the upgrade has been completed, start the CCM Server transactions.

Use the Failover Cluster Manager on the primary node to start the transactions of AdvancedCopy Manager CCM.
Check that the CCM Server transactions are stopped on the secondary node.
If not stopped, stop the CCM Server transactions. Refer to the relevant cluster software manuals for information on stopping it.

7.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)

If only AdvancedCopy Manager CCM is installed and used, perform the procedure mentioned in this section.

If ETERNUS SF Manager is installed and AdvancedCopy Manager CCM is used, refer to "7.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)" to perform the upgrade.

7.7.1 Upgrading on Non-clustered Systems

7.7.1.1 Preparing for Upgrade

Point

It is recommended that you back up the system before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

7.7.1.2 Performing Upgrade

Refer to "C.8 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Solaris, Linux) " to perform the upgrade. When this work ends, operation can be restarted.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.7.2 Upgrading on Clustered Systems

7.7.2.1 Preparing for Upgrade

Point

It is recommended that you back up the following resources before starting the upgrade.
By preparing a backup, in cases when an error occurs during the upgrade, it is possible to return the system to its state prior to the upgrade, simply by recovering (restoring) the system from the backup.

- System (the primary node and the secondary node)
- The shared disk for shared data of the AdvancedCopy Manager CCM

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed on the secondary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

```
ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk
area.
```

3. Check that the CCM Server transactions are stopped on the secondary node.

   If not stopped, stop the transaction of AdvancedCopy Manager Copy Control Module.
   Refer to the relevant cluster software manuals for information on stopping it.

4. On the secondary node, recover the start and stop script of the CCM Server transaction.
5. Ensure that there is enough available disk space (100 MB) on the server where the upgrade is performed on the primary node.

   In cases when upgrade installation is executed in a state where the capacity required for the upgrade is not available, the following message is displayed and the installation terminates in an error. Re-execute the upgrade after securing the capacity required for the installation.

   Output Message (in cases when the directory of the destination of the installation is "/opt"):

   ```
   ERROR:Disk /opt has an insufficient free space. Please execute it again after increasing the disk area.
   ```

6. Stop the CCM Server transaction on the primary node.

   Refer to the relevant cluster software manuals for information on stopping it.
   The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be mounted.
7. On the primary node, recover the start and stop script of the CCM Server transaction.

7.7.2.2 Performing Upgrade (Primary Node)

1. Refer to "C.8 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.
2. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be unmounted.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.7.2.3 Performing Upgrade (Secondary Node)

1. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be mounted.
2. Refer to "C.8 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Solaris, Linux)" and perform the Upgrade Installation.
3. The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be unmounted.

Point

If the Upgrade Installation has ended in an error, after removing the cause of the failure of the Upgrade Installation, re-execute the installation from the execution of the installation shell.

7.7.2.4 Tasks to Be Performed After Upgrade (Primary Node)

After installing the upgrade of the primary node, recover the activation suspension script for the CCM server tasks saved in "7.7.2.1 Preparing for Upgrade".

The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be mounted.

7.7.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

After installing the upgrade of the secondary node, recover the activation suspension script for the CCM server tasks saved in "7.7.2.1 Preparing for Upgrade".

7.7.2.6 Start CCM Server Transactions

On the primary node, start the transactions of AdvancedCopy Manager Copy Control Module.

Refer to the relevant cluster software manuals for information on starting it.
Check that the CCM Server transactions are stopped on the secondary node.

If not stopped, stop the CCM Server transactions. Refer to the relevant cluster software manuals for information on stopping it.

7.7.3 Resuming Operation

When the tasks described above have been performed, the upgrade and setup of AdvancedCopy Manager Copy Control Module is complete. Restart the AdvancedCopy Manager Copy Control Module operation.

Chapter 8 Collecting Troubleshooting Information

This chapter describes the method for troubleshooting if a problem occurs during the Upgrade Installation process.

The troubleshooting method differs according to the way the Upgrade Installation fails.
Use the appropriate method according to the problem type.

8.1 In Case of Problem During Upgrade from Version 15.x

This section describes the method for troubleshooting if a problem occurs during the Upgrade Installation process for version 15.x.

8.1.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows, Solaris, Linux)

The workaround is stated in the procedures for upgrade in this document. Confirm the individual procedures for upgrading.

If the problem persists, refer to the following manuals, to collect the troubleshooting information and then contact Fujitsu Technical Support.

- In Case of problem during uninstallation of previous version

target for Update	Reference (*1)
Express	"Trouble analysis" in the *Express Operation Guide*
Storage Cruiser	"Troubleshooting information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting maintenance information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"How to collect data" in the *Express / AdvancedCopy Manager Operation Guide for Copy Control Module*

*1: Refer to the applicable manual of the previous version.

- In Case of problem during installation of this version

target for Update	Reference (*1)
Express	"Collecting Troubleshooting Information" in the *Express Operation Guide*
Storage Cruiser	"Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide for Copy Control Module*

*1: Refer to the manual of this version.

8.1.2 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Windows)

The workaround is stated in the procedures for upgrade in this document. Confirm the individual procedures for upgrading.

If the problem persists, refer to "Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide* to collect the troubleshooting information and then contact Fujitsu Technical Support.

8.1.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)

The system can be recovered to the same status as Upgrade Installation completed normally.

For the server on which Upgrade Installation failed, perform the following actions:

1. Resolve any problems of installation failure.
2. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
3. Execute the following command to uninstall the previous version.
   - For Solaris environments

     ```
     # pkgrm FJSVssage
     ```

   - For Linux environments

     ```
     # rpm -e FJSVssage
     ```

4. Install Storage Cruiser's agent.

   Newly install this version of the Storage Cruiser's agent from the DVD-ROM.
   However, on completion of installation, the Storage Cruiser's agent setup is unnecessary.

5. Restore the environment in which the previous version was used.

   Take the following procedure to restore the previous version:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
      If already inserted, this step is unnecessary.

   b. Mount the DVD-ROM.
      If already mounted, this step is unnecessary.

   c. Execute the following shell scripts in the DVD-ROM, to restore the previous version.
      - For Solaris environments

        ```
        # dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris/scagtpostinst.sh backupDir
        ```

      - For Linux environments

        ```
        # dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux/scagtpostinst.sh backupDir
        ```

      For *backupDir*, specify the directory in which backup data is stored with the absolute path.

   d. Unmount the DVD-ROM.

   e. Eject the DVD-ROM.

6. If the SNMP Trap XML definition file was customized in the environment of the previous version, customize this version as well.

   a. Save the SNMP Trap XML definition file ("1_3_6_1_4_1_211_4_1_3_21_2_21.xml") that is stored in the /etc/opt/FJSVssage/snmpth directory to an arbitrary location.

   b. Prepare the SNMP Trap XML definition file for this version in the /etc/opt/FJSVssage/snmpth directory.
      From that directory, copy the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml.new" file to the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file.

   c. Refer to "SNMP Trap XML Definition File" in the *Storage Cruiser Operation Guide* and customize the "1_3_6_1_4_1_211_4_1_3_21_2_21.xml" file. For the contents of the customization, refer to the SNMP Trap XML definition file which was saved to the arbitrary location in step a.

7. Execute the following command to start the daemon.

   ```
   # /opt/FJSVssage/bin/sstorageagt
   ```

8. Reload the server information on Web Console.

8.1.4 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)

The workaround is stated in the procedures for upgrade in this document. Confirm the individual procedures for upgrading.

If the problem persists, refer to "Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide* to collect the troubleshooting information and then contact Fujitsu Technical Support.

8.1.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)

The system can be restore to the same status as Upgrade Installation completed normally.

For the server on which Upgrade Installation failed, perform the following actions.
For cluster environments, take the following procedure for the node on which Upgrade Installation failed, which is not necessary for the node on which Upgrade Installation succeeded:

Point

For non-cluster environments, recheck the following matters before performing the actions:

- AdvancedCopy Manager communication daemon should be stopped.
- The user should be a root user.

For cluster environments, in addition to non-cluster environments, recheck the following matters before performing the actions:

- On all the nodes for which Upgrade Installation is done, the Managed Server transactions should be stopped.
- On the primary node for which Upgrade Installation is done, the shared disk for shared data of Managed Server transactions should be mounted.

1. Resolve any problems of installation failure.
2. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
3. Execute the following command to uninstall the previous version.

```
# /opt/swstorage/setup/stg/swunsetup
```

Information

- After executing the swunsetup command, when reinstalling AdvancedCopy Manager's agent in other directory, make sure that the directory of the package listed in "Program Components of AdvancedCopy Manager's Agent" in this version of the *Installation and Setup Guide* is not left.
- Even if the swunsetup command is executed, the directory of the package listed in "Program Components of AdvancedCopy Manager's Agent" in this version of the *Installation and Setup Guide* may not be removed. If not needed, delete the remaining directory manually.

4. Newly install this version of the AdvancedCopy Manager's agent from the DVD-ROM.
   However, on completion of installation, the AdvancedCopy Manager's agent setup is unnecessary.
5. Restore the environment in which the previous version was used.

   Take the following procedure to restore the previous version:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
      If already inserted, this step is unnecessary.

b. Mount the DVD-ROM.
   If already mounted, this step is unnecessary.

c. Execute the following shell scripts in the DVD-ROM, to restore the previous version.

   - For the Solaris Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapostinst.sh backupDir
```

   - For the Red Hat Enterprise Linux 7 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapostinst.sh
backupDir
```

   - For the Red Hat Enterprise Linux 6 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapostinst.sh
backupDir
```

   - For the SUSE Linux Enterprise Server12 Agent

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles12_x64/esfacmapostinst.sh
backupDir
```

   For *backupDir*, specify the directory in which backup data is stored with the absolute path.

   If restore should fail, check the output error message and resolve any problems of failure. After that, rerun the shell scripts.

d. Unmount the DVD-ROM.

e. Eject the DVD-ROM.

6. For cluster environments, restore the "AdvancedCopy Manager daemon start/stop script" for the Managed Server transactions.

   Restore the "AdvancedCopy Manager daemon start/stop script" for the Managed Server transactions, which was backed up prior to Upgrade Installation, to the same directory as prior to backup.

This is the end of the actions in case of problem during upgrade.
Continue the Upgrade Installation. Take the following procedure:

- For non-cluster environments
  "6.4.1.3 Tasks to Be Performed After Upgrade"
- For primary nodes in cluster environments
  "6.4.2.3 Tasks to Be Performed After Upgrade (Primary Node)"
- For secondary nodes in cluster environments
  "6.4.2.5 Tasks to Be Performed After Upgrade (Secondary Node)"

8.1.6 In Case of Problem During Uninstallation of Previous Version of Storage Cruiser's Agent or AdvancedCopy Manager's Agent

The target environment is as follows:

- HP-UX
- AIX

After the problem has been diagnosed and solved, restart the Upgrade Installation from the beginning.

Point

- When an error message is displayed, refer to the following manuals for the previous version, and take the appropriate action for relevant message.

Target for Upgrade	Reference
Express	*Messages*
Storage Cruiser	
AdvancedCopy Manager	
AdvancedCopy Manager Copy Control Module	

- When no error message is displayed, refer to the following manuals for the previous version, to collect the troubleshooting information and then contact Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Trouble analysis" in the *Express Operation Guide*
Storage Cruiser	"Troubleshooting information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting maintenance information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"How to collect data" in the *Express / AdvancedCopy Manager Operation Guide for Copy Control Module*

8.1.7 In Case of Problem During Installation of This Version of Storage Cruiser's Agent or AdvancedCopy Manager's Agent

The target environment is as follows:

- HP-UX
- AIX

The uninstallation of the previous version has succeeded.
After the installation problem has been diagnosed and solved, refer to the *ETERNUS SF Installation and Setup Guide* for this version to install this version.

Point

- When an error message is displayed, refer to the following manuals for this version, and take the appropriate action for relevant message.

Target for Upgrade	Reference
Express	*Messages*
Storage Cruiser	
AdvancedCopy Manager	
AdvancedCopy Manager Copy Control Module	

- When no error message is displayed, refer to the following manuals for this version, to collect the troubleshooting information and then contact Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the *Express Operation Guide*
Storage Cruiser	"Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide*

Target for Upgrade	Reference
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide for Copy Control Module*

8.2 In Case of Problem During Upgrade from Version 16.x

This section describes the method for troubleshooting if a problem occurs during the Upgrade Installation process for version 16.x.

8.2.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)

If a problem occurs during the Upgrade Installation process for ETERNUS SF Manager version 16.x. for the server on which Upgrade Installation failed, perform the following actions.

1. For cluster environments, if the general script files (for start/stop) of the following services are in use, back up to an optional directory.
   - ETERNUS SF Manager Apache Service
   - ETERNUS SF Manager Tomcat Service
2. Start the command prompt.
3. Save the device.ini file. (only for Management Server which also serves as a Managed Server)

   Save the following file by using the copy command.
   - For non-clustered systems

File for Save	File Name
device.ini	$ENV_DIR\ACM\etc\device.ini

   $ENV_DIR is "Environment Directory" specified at the ETERNUS SF Manager installation.
   - For clustered systems

File for Save	File Name
device.ini	<*shared disk*>:\etc\opt\swstorage\etc\device.ini

4. Execute the following command in the DVD-ROM to uninstall the previous version.

```
<DVD-ROM drive>\Manager_windows\vuptools\esfvup_recovery_first.bat
```

   When the command is executed, the following message is displayed.
   - Displayed message when the command ends with no errors

```
esfvup_recovery_first processing was finished successfully.
Please reboot a system. Afterwards, please install this version of the ETERNUS SF Manager or
AdvancedCopy Manager Copy Control Module in the same directory as the previous version.
```

   - Displayed message when the command ends in an error

```
esfvup_recovery_first processing has failed.
```

   If this message is output, malfunction of the system is possible. Contact Fujitsu Technical Support.

Note

This command backs up the data of the previous version to an installation destination directory and uninstalls the ETERNUS SF Manager program. At this point, do not delete the installation destination directory. On completion of restoring steps, the program deletes the following backup destination directory:

<*Installation directory*>\backup_recovery_dir

5. Restart the system.

6. Install the product of this version.
For the installation procedure, refer to this version of the *Installation and Setup Guide*.

Note

Install the product in the directory in which the previous version was installed. Also, if the port number is changed in the previous version, set it at the time of installation.

7. To restore the data of the previous version, execute the following command:

```
<DVD-ROM drive>\Manager_windows\vuptools\esfvup_recovery_second.bat
```

When the command is executed, the following message is displayed.

- Displayed message when the command ends with no errors

```
esfvup_recovery_second processing was finished successfully.
```

- Displayed message when the command ends in an error

```
esfvup_recovery_second processing has failed.
```

If this message is output, malfunction of the system is possible. Contact Fujitsu Technical Support.

8. Restore the device.ini file. (only for Management Server which also serves as a Managed Server)

Restore the device.ini file saved in step 3 by executing the copy command.

- For non-clustered systems

File for Restoration	Directory Name for Restoration Destination
device.ini	$ENV_DIR\ACM\etc

$ENV_DIR is "Environment Directory" specified at the ETERNUS SF Manager installation.

- For clustered systems

File for Restoration	Directory Name for Restoration Destination
device.ini	<*shared disk*>:\etc\opt\swstorage\etc

9. For cluster environments, if step 1 is performed, the general script files (for start/stop) of services are restored.

This is the end of the actions in case of problem during upgrade.
Return to the steps for installing the upgrade to continue with the tasks.

8.2.2 In Case of Problem During Upgrade of ETERNUS SF Manager (for Solaris, Linux)

The workaround is stated in the procedures for upgrade in this document. Confirm the individual procedures for upgrading.

If the problem persists, refer to the manual below, to collect the troubleshooting information and then contact Fujitsu Technical Support.

target for Update	Reference (*1)
Express	"Collecting Troubleshooting Information" in the *Express Operation Guide*
Storage Cruiser	"Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide for Copy Control Module*

8.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Windows)

The system can be recovered to the same status as Upgrade Installation completed normally.

For the server on which Upgrade Installation failed, perform the following actions.

1. Resolve any problems of installation failure.
2. Uninstall the previous version.

   If the previous version number is displayed on the Program and Function screen, uninstall the previous version. If no previous version number is displayed, or even if it is displayed but its uninstallation fails, force delete Storage Cruiser's agent in the following steps:

   a. Stop Storage Cruiser's agent services

      Open Service Control Manager to stop ETERNUS SF Storage Cruiser's agent services.

      If no ETERNS SF Storage Cruiser's agent service exists in Service Control Manager, execute the following command from the command prompt executed as an administrator.

      ```
      > sc stop "ETERNUS SF Storage Cruiser Agent"
      ```

      Even if this command terminates with error, ignore it.

   b. Delete Storage Cruiser's agent services

      Delete Storage Cruiser's agent services.

      Execute the following command from the command prompt executed as an administrator to delete Storage Cruiser's agent services.

      ```
      > sc delete "ETERNUS SF Storage Cruiser Agent"
      ```

   c. Delete registry

      Delete Storage Cruiser's agent associated registry.
      If no appropriate registry exists, this process is not necessary.

      Note

      If registry deletion fails, a critical impact may be given on the system. It is recommended that you back up the registry beforehand.

      Delete the following registries by Registry Editor:

      - For 32 bit operating system

        ```
        HKEY_CLASSES_ROOT\Installer\Products\472B5B2AC92C5C44682AC58BE99AA69B
        HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\ETERNUS-SSC\Agent
        HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\Install\ETERNUS-SSC\AgentLevel
        HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData
        \S-1-5-18\Products\472B5B2AC92C5C44682AC58BE99AA69B
        ```

```
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\{A2B5B274-
C29C-44C5-86A2-5CB89EA96AB9}
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall
\InstallShield_{A2B5B274-C29C-44C5-86A2-5CB89EA96AB9}
```

- For 64 bit operating system

```
HKEY_CLASSES_ROOT\Installer\Products\472B5B2AC92C5C44682AC58BE99AA69B
HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\ETERNUS-SSC\Agent
HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\Install\ETERNUS-SSC\AgentLevel
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData
\S-1-5-18\Products\472B5B2AC92C5C44682AC58BE99AA69B
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\{A2B5B274-
C29C-44C5-86A2-5CB89EA96AB9}
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall
\InstallShield_{A2B5B274-C29C-44C5-86A2-5CB89EA96AB9}
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\ETERNUS-SSC\Agent
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\Install\ETERNUS-SSC\AgentLevel
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Installer
\UserData\S-1-5-18\Products\472B5B2AC92C5C44682AC58BE99AA69B
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall\
{A2B5B274-C29C-44C5-86A2-5CB89EA96AB9}
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall
\InstallShield_{A2B5B274-C29C-44C5-86A2-5CB89EA96AB9}
```

d. Delete Storage Cruiser's agent installed directories

Delete by Explorer the program directory, environment configuration directory and working directory when Storage Cruiser's agent of the previous version was installed.

e. Delete the directory created by Installer

If the following directories created by Installer exist, delete them by Explorer:

- For 32 bit operating system

```
<Windows Install Drive>\Program Files\InstallShield Installation Information\{A2B5B274-
C29C-44C5-86A2-5CB89EA96AB9}
```

- For 64 bit operating system

```
<Windows Install Drive>\Program Files (x86)\InstallShield Installation Information\
{A2B5B274-C29C-44C5-86A2-5CB89EA96AB9}
```

Point

Installer creates a hidden directory.
Select the "Show hidden files, folders and drives" radio button on the View tab for Folder and Search options in Explorer, and hidden directories are displayed.

f. Delete service name

Delete the service name.

Delete the line when the following lines exist in the %SystemRoot%\system32\drivers\etc\services file.

- sscruisera

3. Install Storage Cruiser's agent.

Newly install this version of the Storage Cruiser's agent from the DVD-ROM.

4. Restore the environment in which the previous version was used.

Take the following procedure to restore the previous version:

a. Log on to the target server as Administrator privileges. If already logged on as the Administrator privileges, this step is unnecessary.

b. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
If already inserted, this step is unnecessary.

c. Execute the following batch file in the DVD-ROM to restore the previous version.

```
<DVD-ROM drive>\Agent_windows\Storage_Cruiser\windows_x86\scagtpostinst.bat backupDir
```

For *backupDir*, specify the directory in which backup data is stored with the absolute path.

Point

If the directory name contains any spaces, it is surrounded by double quote characters.

d. Eject the DVD-ROM.

This is the end of the actions in case of problem during upgrade.
Subsequently, perform the post-Upgrade Installation work. Take the appropriate actions described in "5.3.4 Tasks to Be Performed After Upgrade".

8.2.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)

In case of problem during upgrade of Storage Cruiser's agent, refer to "8.1.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Linux)" to action.

8.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)

The system can be recovered to the same status as Upgrade Installation completed normally.

For the server on which Upgrade Installation failed, perform the following actions.

For cluster environments, take the following procedure for the node on which Upgrade Installation failed, which is not necessary for the node on which Upgrade Installation succeeded.

Point

- If Storage Cruiser's agent is installed, recheck the following matter before taking the action:
  - Storage Cruiser's agent services are stopped.
    If not, refer to "Starting and Stopping Agent" in the *Storage Cruiser Operation Guide* to stop the services.
- For non-cluster environments, recheck the following matters before performing the actions:
  - The user should be with Administrator privileges.
- For cluster environments, in addition to non-cluster environments, recheck the following matters before performing the actions:
  - On all the nodes for which Upgrade Installation is done, the Managed Server transactions should be stopped.
  - On the primary node for which Upgrade Installation is done, the shared disk for shared data of Managed Server transactions should be mounted.

1. Resolve any problems of installation failure.
2. Log on to the server using Administrator privileges.
   If already logged on as the Administrator privileges, this step is unnecessary.

3. Uninstall the previous version.

   If the previous version cannot be uninstalled, force delete AdvancedCopy Manager's agent with the following steps:

   a. Stop AdvancedCopy Manager COM Service's services

   ```
   > sc stop "AdvancedCopy COM"
   ```

   b. Delete AdvancedCopy Manager COM Service's services

   ```
   > sc delete "AdvancedCopy COM"
   ```

   c. Delete registry

      Delete AdvancedCopy Manager's agent associated registry.
      If no appropriate registry exists, this process is not necessary.

      Note

      If deleting the registry fails, a critical impact may be given to the system. It is recommended that you back up the registry beforehand.

      Delete the following registries by Registry Editor:

      - When the AdvancedCopy Manager's agent is a 32 bit version on 32 bit operating system

      ```
      HKEY_CLASSES_ROOT\Installer\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\Install\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData
      \S-1-5-18\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall
      \{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall
      \InstallShield_{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      ```

      - When the AdvancedCopy Manager's agent is a 32 bit version on 64 bit operating system

      ```
      HKEY_CLASSES_ROOT\Installer\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData
      \S-1-5-18\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Fujitsu\Install\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall
      \{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall
      \InstallShield_{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      ```

      - When the AdvancedCopy Manager's agent is a 64 bit version on 64 bit operating system

      ```
      HKEY_CLASSES_ROOT\Installer\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Fujitsu\Install\AdvancedCopy Manager
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Installer\UserData
      \S-1-5-18\Products\F8087B8841D72AB4F9C6DCD4966C1565
      HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall
      \{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Microsoft\Windows\CurrentVersion\Uninstall
      \InstallShield_{88B7808F-7D14-4BA2-9F6C-CD4D69C65156}
      ```

   d. Delete AdvancedCopy Manager installed directories.

      Delete the program directory, environment configuration directory and working directory when Advanced Copy Manager's agent was installed.

The command example of a default installation directory is as follows. Execute the command to delete the directory:

```
> rd /s /q C:\Win32app\AdvancedCopyManager
```

When custom installation was used, delete the directories specified during installation.

4. Newly install this version of the AdvancedCopy Manager's agent from the DVD-ROM.

   However, on completion of installation, the AdvancedCopy Manager's agent setup is unnecessary.

5. Restore the environment in which the previous version was used.

   Take the following procedure to restore the previous version:

   a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
   If already inserted, this step is unnecessary.

   b. Execute the following batch file in the DVD-ROM to restore the previous version.

      - When the AdvancedCopy Manager's agent is a 32 bit version

      ```
      <DVD-ROM Drive>:\Agent_windows\AdvancedCopy_Manager\agent
      \windows_x86\esfacmapostinst.bat backupDir
      ```

      - When the AdvancedCopy Manager's agent is a 64 bit version

      ```
      <DVD-ROM Drive>:\Agent_windows\AdvancedCopy_Manager\agent
      \windows_x64\esfacmapostinst.bat backupDir
      ```

      For *backupDir*, specify the directory in which backup data is stored with the absolute path.

      Point

      If the directory name contains any spaces, it is surrounded by double quote characters.

   c. Eject the DVD-ROM.

This is the end of the actions in case of problem during upgrade.
Subsequently, perform the post-Upgrade Installation work. Perform the following actions:

- For non-cluster environments
  "7.3.1.4 Tasks to Be Performed After Upgrade"
- For primary nodes in cluster environments
  "7.3.2.4 Tasks to Be Performed After Upgrade (Primary Node)"
- For secondary nodes in cluster environments
  "7.3.2.7 Tasks to Be Performed After Upgrade (Secondary Node)"

8.2.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)

In case of problem during upgrade of AdvancedCopy Manager's agent, take the following actions:

1. The system can be recovered to the same status as Upgrade Installation completed normally.
   "8.1.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Linux)" follow steps 1 through 6 to restore to the status that Upgrade Installation is normally completed.

2. Perform the post-Upgrade Installation work. Perform the following matters:

   - For non-cluster environments
     "7.4.1.4 Tasks to Be Performed After Upgrade"
   - For primary nodes in cluster environments
     "7.4.2.4 Tasks to Be Performed After Upgrade (Primary Node)"

- For secondary nodes in cluster environments
  "7.4.2.7 Tasks to Be Performed After Upgrade (Secondary Node)"

8.2.7 In Case of Problem During Uninstallation of Previous Version of Storage Cruiser's Agent or AdvancedCopy Manager's Agent

The target environment is as follows:

- HP-UX
- AIX

After the problem has been diagnosed and solved, restart the upgrade process from the beginning.

Point

- When an error message is displayed, refer to the following manuals for the previous version, and take the appropriate action for relevant message.

Target for Upgrade	Reference
Express	*Messages*
Storage Cruiser	
AdvancedCopy Manager	
AdvancedCopy Manager Copy Control Module	

- When no error message is displayed, refer to the following manuals for the previous version, to collect the troubleshooting information and then contact Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the *Express Operation Guide*
Storage Cruiser	"Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide for Copy Control Module*

8.2.8 In Case of Problem During Installation of This Version of Storage Cruiser's Agent or AdvancedCopy Manager's Agent

The target environment is as follows:

- HP-UX
- AIX

The uninstallation of the previous version has succeeded.

After the installation problem has been diagnosed and solved, refer to the ETERNUS SF Installation and Setup Guide for this version to install.

Point

- When an error message is displayed, refer to the following manuals for this version, and take the appropriate action for relevant message.

Target for Upgrade	Reference
Express	*Messages*
Storage Cruiser	
AdvancedCopy Manager	
AdvancedCopy Manager Copy Control Module	

- When no error message is displayed, refer to the following manuals for this version, to collect the troubleshooting information and then contact Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the *Express Operation Guide*
Storage Cruiser	"Collecting Troubleshooting Information" in the *Storage Cruiser Operation Guide*
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide*
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the *AdvancedCopy Manager Operation Guide for Copy Control Module*

Chapter 9 Configuration Import

This chapter describes the configuration import.

9.1 Command References

9.1.1 esfadm devconf import (Configuration Import Command)

NAME

esfadm devconf import - import the configuration information from the previous version

SYNOPSIS

- For Windows environments

  ```
  $INS_DIR\Common\bin\esfadm devconf import -all
  ```

  ($INS_DIR is the program directory specified at the ETERNUS SF Manager installation.)

- For Solaris or Linux environments

  ```
  /opt/FJSVesfcm/bin/esfadm devconf import -all
  ```

DESCRIPTION

A request for the configuration information import from the previous version is issued to this product. OS Administrator permissions are required in order to execute the command.

When the command is executed, this product starts asynchronously to import and convert the configuration information from the previous version.

OPTIONS

-all

All configuration information registered at the previous version is imported.
At this version, specify this option.

EXIT STATUS

=0: Completed successfully
>0: Terminated abnormally

EXAMPLES

- For Windows environments

  ```
  > C:\ETERNUS_SF\Common\bin\esfadm devconf import -all
  esfadm90000 Operation is accepted.
  ```

- For Solaris or Linux environments

  ```
  # /opt/FJSVesfcm/bin/esfadm devconf import -all
  esfadm90000 Operation is accepted.
  ```

NOTES

- Check that the targeted devices can be accessed from this product before executing this command.

- Of the devices that were supported in the previous version, the information for the devices that are not supported in this version is not imported. Refer to "Supported Devices" in the *Installation and Setup Guide* for information on the supported devices in this version.
- Operation is not possible on the targeted devices during the command execution.
- When the removed devices are registered in the configuration information at the previous version, the import of configuration information for their devices fails. In this case, the action is unnecessary.
- Import time for a storage device is approximately 10 minutes. For an estimate of the total import time, do the following calculation.

```
[Total import time] = number of storage devices x 10 minutes
```

- The result of the import process is output in the Operation History of Web Console. To try again to import the devices for which the import process has failed, re-execute this command after taking appropriate action for the message of Operation History.

9.1.2 esfadm devconf importstatus (Configuration Import Status Display Command)

NAME

esfadm devconf importstatus - displays the import status of configuration information of the previous version

SYNOPSIS

- For Windows environments

  ```
  $INS_DIR\Common\bin\esfadm devconf importstatus -detail
  ```

  ($INS_DIR is the program directory specified at the ETERNUS SF Manager installation.)

- For Solaris or Linux environments

  ```
  /opt/FJSVesfcm/bin/esfadm devconf importstatus -detail
  ```

DESCRIPTION

The import status of configuration information of the previous version is displayed.
OS Administrator permissions are required in order to execute the command.

The information displayed is as follows:

- Import process status

  The status of the process of configuration information import into previous version is displayed.

Title	Displayed Contents
IMPORT STATUS	Configuration information import status Execute : the configuration information import process is executing Complete : the configuration information import is complete

- Import status of migration target resources

  The import status for the configuration information of the previous version is displayed.

Title	Displayed Contents
CATEGORY	Type of the migration target resource tierpolicy: Tiering policy storage : storage fcswitch : fibre channel switch

Title	Displayed Contents
	server : server library : tape library
DEVICE NAME	Name of the device When the CATEGORY is "tierpolicy", a hyphen (-) is displayed.
IP ADDRESS	IP address of the device When the CATEGORY is "tierpolicy", a hyphen (-) is displayed.
REGISTER MODE	Device registration mode Auto : Automatic registration Manual : Manual registration When the CATEGORY is "tierpolicy", a hyphen (-) is displayed.
STATUS	Import status for the migration target resource Wait : Paused Execute : Executing Complete : Completed Failed : Failed (*1)

*1: Refer to the Operation History of Web Console for details.

OPTIONS

-detail

All of the import processing status and the import status of the migration target resources are displayed.
At this version, specify this option.

EXIT STATUS

=0: Completed successfully
>0: Terminated abnormally

EXAMPLES

- For Windows environments

```
> C:\ETERNUS_SF\Common\bin\esfadm devconf importstatus -detail
-----------------------------------------------------------------------
IMPORT STATUS
-----------------------------------------------------------------------
Complete
-----------------------------------------------------------------------

-----------------------------------------------------------------------
CATEGORY   DEVICE NAME     IP ADDRESS      REGISTER MODE   STATUS
-----------------------------------------------------------------------
tierpolicy -                -              -               Complete
server     server-w01      10.xxx.xxx.xxx  Manual          Complete
server     server-s01      10.xxx.xxx.xxx  Auto            Complete
storage    storage-1       10.xxx.xxx.xxx  Manual          Complete
storage    storage-2       10.xxx.xxx.xxx  Auto            Complete
storage    storage-3       10.xxx.xxx.xxx  Auto            Complete
storage    storage-4       10.xxx.xxx.xxx  Auto            Complete
storage    storage-5       10.xxx.xxx.xxx  Auto            Complete
storage    storage-6       10.xxx.xxx.xxx  Auto            Complete
fcswitch   fc-sw-001       10.xxx.xxx.xxx  Auto            Complete
fcswitch   fc-sw-002       10.xxx.xxx.xxx  Auto            Complete
fcswitch   fc-sw-003       10.xxx.xxx.xxx  Auto            Complete
```

```
library    tapelibrary-1   10.xxx.xxx.xxx  Auto            Complete
-------------------------------------------------------------------------
```

9.2 What to Do When Error Occurs

The results of the import process are output in the Operation History of Web Console. To try and import again the devices for which the import process has failed, re-execute the "esfadm devconf import" command after taking appropriate action for the message of Operation History.

If the import status does not change or nothing is displayed, there is a possibility of this product malfunctioning. Check that there is no error message in the Event log of Web Console.

Appendix A Operation for Previous Version Environment

A.1 Backing Up Repository Data (for Windows)

Save the repository data to the specified directory all at once.
Perform this operation on the Management Server (Storage Management Server).

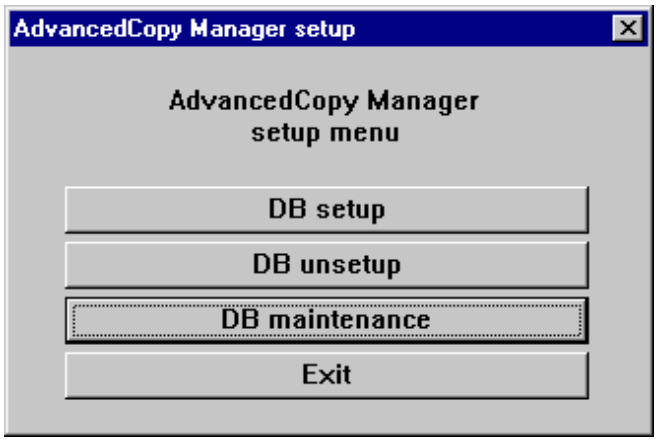
When Pre-Upgrade Environment Is Version 16.0 or Earlier

Note

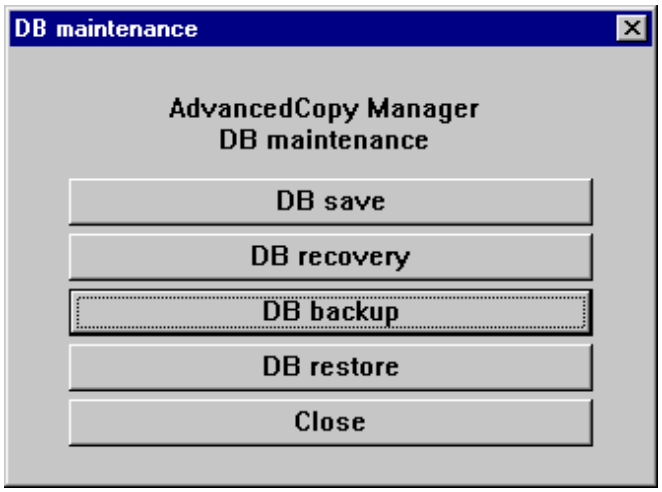
- Create a directory in which data is saved in advance.
- Do not use the telnet server service.
  This operation fails when issued from the telnet server service.

The procedure is shown below:

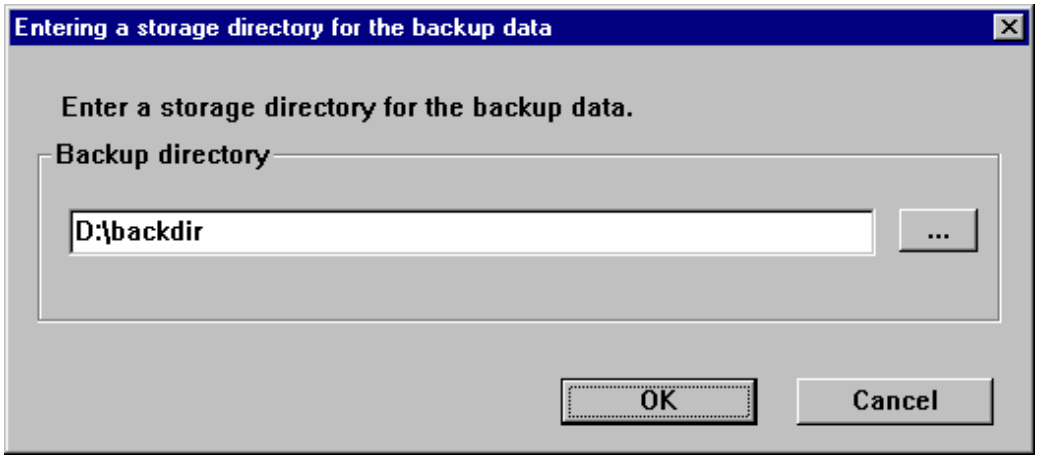
1. Click **Start** > **Programs** > **AdvancedCopy Manager** or **ETERNUS SF Manager** > **DB Setup**.
2. The following screen is displayed.
   Click **DB maintenance**.



3. The following screen is displayed.
   Click **DB backup**.

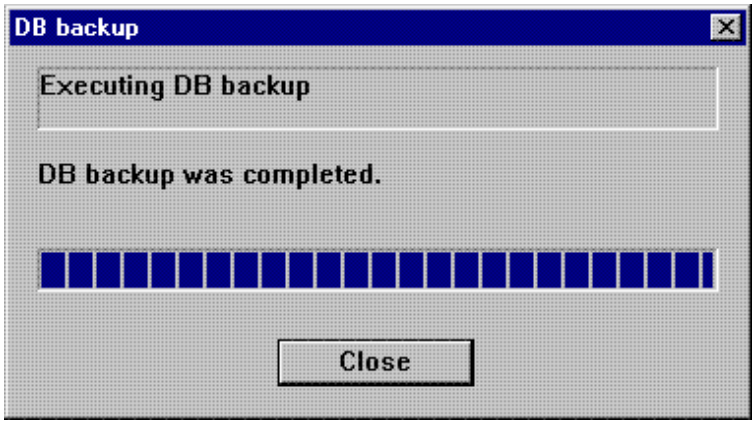


4. The following screen is displayed.
   Enter a backup directory and click **OK**.



5. The following screen is displayed.
   Check that the displayed information is correct and click **Start**.

6. The following screen is displayed after the process is completed.
   Click **Close**.



7. Click **Close** displayed in step 3 to complete the DB maintenance.
8. Click **Exit** displayed in step 2 to complete the DB backup.
9. Check that the backup of database has been completed successfully.
   Make sure that the file with ".unl" extension is created in the specified directory.

When Pre-Upgrade Environment Is Version 16.1 or Later

Information

Notation in Procedure:

File Name / Directory Name	Explanation
$BAK_FILE	Backup file name for which an absolute path is specified
$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation

The procedure is shown below:

1. Stop the ETERNUS SF Express Tomcat service.

   Open Service Control Manager to stop the following service.

   - ETERNUS SF Manager Tomcat Service

2. Create backup data.

   a. If you did not change the port number, specify 15432 for *portNumber*. If you did change the port number, specify the changed port number for *portNumber*.
   The file name of the created backup data is $BAK_FILE.

   ```
   $INS_DIR\Common\sys\postgres\bin\pg_dump -U esfpostgres -a --attribute-inserts -p
   portNumber -t esccs.\"BASE_\"* -t esccs.\"REP_REPVOL\" -t esccs.\"BR_\"* -f $BAK_FILE esfdb
   ```

   b. The prompt is displayed, and waiting for input. Input the following strings.

   master01!

3. Start the ETERNUS SF Express Tomcat service.

   Open Service Control Manager to start the following service.

   - ETERNUS SF Manager Tomcat Service

A.2 Backing Up Repository Data (for Solaris, Linux)

Save the repository data to the specified directory all at once.
Perform this operation on the Management Server (Storage Management Server).

When Pre-Upgrade Environment Is Version 16.0 or Earlier

Note

- Create a directory in which data is saved in advance.
- Perform this operation as a root user.
- Perform this operation with the locale specified when you installed the Management Server. If Symfoware has been installed in advance, perform this operation with the locale specified at the time of installing Symfoware.

The procedure is shown below:

1. Execute the following command.

   ```
   # /opt/swstorage/bin/stgdbbackup
   ```

2. The following message is displayed.
   To continue processing, enter "y". To stop processing, enter "n".

   ```
   ////////////////////////////////////////////////////////////////
         AdvancedCopy Manager Storage Management Server ( **** )
   ```

```
                          Database backup
////////////////////////////////////////////////////////////////////

  +-----------------------------------------------------------------+
  |                                                                 |
  |   All of the stored data will be saved in an external file.     |
  |                                                                 |
  |  [Notes]                                                        |
  |    Prepare a directory for storing the data to be saved.        |
  |                                                                 |
  +-----------------------------------------------------------------+

         Do you want to continue with processing? [y/n] ==> y
```

3. The following message is displayed.
   Enter the absolute path name of the directory for storing the data to be saved.

```
////////////////////////////////////////////////////////////////////
      AdvancedCopy Manager Storage Management Server ( **** )
                          Database backup
////////////////////////////////////////////////////////////////////


         Enter the absolute path name of the directory
         for storing the data to be saved.

                  Enter ==> /storage/backdir
```

Note

If the saved data exists in the directory, the processing is not performed.
Delete the saved data in the directory or specify another directory to retry the processing.

4. The following message is displayed.
   Enter "y" to continue processing or "n" to stop processing.
   When you enter "n", the screen returns step 2.

```
////////////////////////////////////////////////////////////////////
      AdvancedCopy Manager Storage Management Server ( **** )
                          Database backup
////////////////////////////////////////////////////////////////////

         Directory containing the saved data : /storage/backdir

         Do you want to continue with processing? [y/n] ==> y
```

5. The processing is performed and the execution results are displayed on the screen.
   The following example is for the execution result.

```
////// AdvancedCopy Manager database backup //////

====================================================================
DB data backup will start.
====================================================================
....
Unloading of data is complete.(base)
...
Unloading of data is complete.(backup)
.
Unloading of data is complete.(repl)

====================================================================
```

```
Backup of DB data is complete.
================================================================

Database backup ended normally.

#
```

6. Check that the backup of database has been completed successfully.
   Make sure that the file with ".unl" extension is created in the specified directory.

When Pre-Upgrade Environment Is Version 16.1 or Later

Note

- Create a directory in which data is saved in advance.
- Perform this operation as a root user.

Information

Notation in Procedure:

File Name	Explanation
$BAK_FILE	Backup file name for which an absolute path is specified

The procedure is shown below:

1. Stop the ETERNUS SF Manager Web service.
   Execute the following shell script to stop the service.

   ```
   /opt/FJSVesfcm/bin/stop-webservice.sh
   ```

2. Create backup data.

   a. From a user with OS Administrator privilege, execute the following command to create backup data.
      If you did not change the port number, specify 15432 for *portNumber*. If you did change the port number, specify the changed port number for *portNumber*.
      The file name of the created backup data is $BAK_FILE.

      ```
      /opt/FJSVesfcm/postgres/bin/pg_dump -U esfpostgres -a --attribute-inserts -p portNumber -t
      esccs.\"BASE_\"* -t esccs.\"REP_REPVOL\" -t esccs.\"BR_\"* -f $BAK_FILE esfdb
      ```

   b. The prompt is displayed, and waiting for input. Input the following strings.

      ```
      master01!
      ```

3. Start the ETERNUS SF Manager Web service.

   Execute the following shell script to start the service.

   ```
   /opt/FJSVesfcm/bin/start-webservice.sh
   ```

A.3 Backing Up Management Information (for HP-UX, AIX)

Save the management information which exists in the Managed Server (Storage Server).

If Backup Operation Has Been Done

1. Check the data size of the backup management list under the following directory:

   - If the Managed Server is in a non-cluster environment
     /etc/opt/FJSVswsts/data
   - If the Managed Server is in a cluster environment
     /etc/opt/FJSVswsts/*logicalNodeName*/data

2. Save the backup management list.

   Specify the directory which can store the data size checked in step 1 and execute the following command:

   ```
   # /opt/FJSVswsts/bin/swstresback saveDir
   ```

   See

   Refer to "swstresback (Resource backup command)" in the *AdvancedCopy Manager Operation Guide* according to the previous operating environment's version for information on the command.

3. Save pre-processing and post-processing scripts.

   Save the following files by using the cp command:

   - Pre-processing and post-processing scripts for backup management function

   For Non-clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for backup management function	/etc/opt/FJSVswsts/sh/OpcBackup.pre /etc/opt/FJSVswsts/sh/OpcBackup.post /etc/opt/FJSVswsts/sh/OpcRestore.pre /etc/opt/FJSVswsts/sh/OpcRestore.post

   For Clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for backup management function	/etc/opt/FJSVswsts/*logicalNodeName*/sh/OpcBackup.pre /etc/opt/FJSVswsts/*logicalNodeName*/sh/OpcBackup.post /etc/opt/FJSVswsts/*logicalNodeName*/sh/OpcRestore.pre /etc/opt/FJSVswsts/*logicalNodeName*/sh/OpcRestore.post

If Replication Operation Has Been Done

1. Save the replication management list.

   The replication management list is stored in the repository on the Management Server (Storage Management Server). For this reason, if the repository data has been saved when migrating the Management Server, this step is not required.

   If the repository data on the Storage Management Serve has not been saved, perform the operation with reference to the following:

   - If the Management Server is in a Windows environment

     "A.1 Backing Up Repository Data (for Windows)"

   - If the Management Server is in a Solaris or Linux environment

     "A.2 Backing Up Repository Data (for Solaris, Linux)"

2. Save pre-processing and post-processing scripts and specification files.

   Save the following files by using the cp command:

   - Pre-processing and post-processing scripts for replication management function

- Timeout value setting file for the concurrent suspend function

For Non-clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for replication management function	/etc/opt/FJSVswsrp/sh/RepSrc.pre /etc/opt/FJSVswsrp/sh/RepDst.pre /etc/opt/FJSVswsrp/sh/RepSrc.post /etc/opt/FJSVswsrp/sh/RepDst.post
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/data/DEFAULT/check.ini

For Clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for replication management function	/etc/opt/FJSVswsrp/*logicalNodeName*/sh/RepSrc.pre /etc/opt/FJSVswsrp/*logicalNodeName*/sh/RepDst.pre /etc/opt/FJSVswsrp/*logicalNodeName*/sh/RepSrc.post /etc/opt/FJSVswsrp/*logicalNodeName*/sh/RepDst.post
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/*logicalNodeName*/data/DEFAULT/check.ini

A.4 Unsetting Up Database

Perform the database unsetup to delete the database, its environment or cancel the repository settings.

Note

- Do not use the telnet server service.
  This operation fails when issued from the telnet server service.
- When another software is monitoring Symfoware, stop Symfoware monitoring before executing the database unsetup.
  During Symfoware monitoring, the database unsetup may fail.
  The monitoring of Symfoware must restart after the operation of the upgrade restarts.

The procedure is shown below:

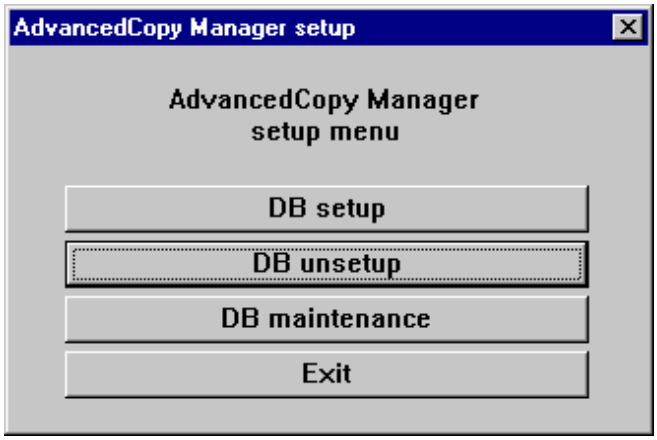
1. Login to the server where the database unsetup is performed.

   For installing AdvancedCopy Manager of the previous version, login to the server as the user that has been specified when setting the database information.

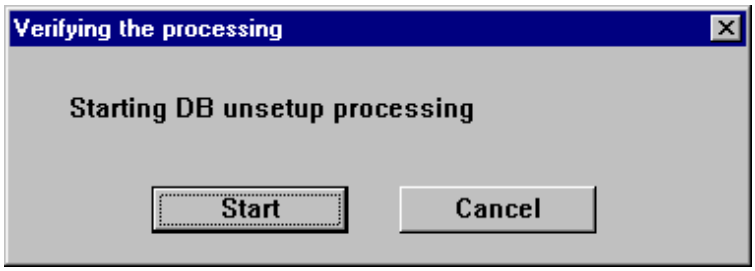
   If you login to the server with another user, this operation may fail.

2. Click **Start** > **Programs** > **AdvancedCopy Manager** or **ETERNUS SF Manager** > **DB Setup**.

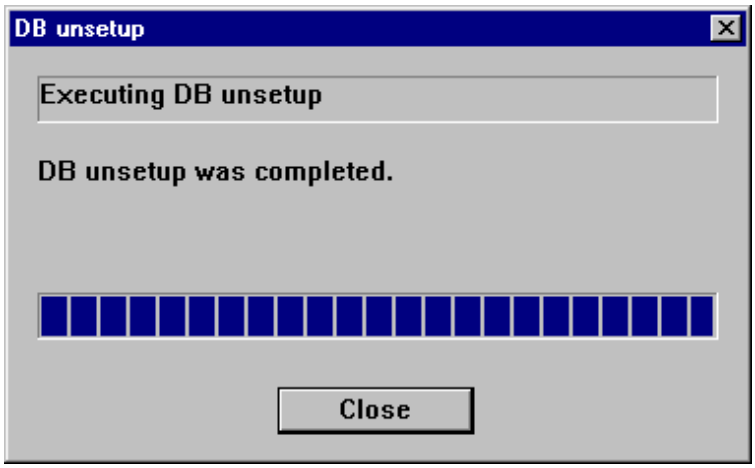
3. The following screen is displayed.
   Click **DB unsetup**.



4. The following screen is displayed.
   Click **Start**.



5. When the processing is completed, the following screen is displayed.
   Click **Close**.



6. Finish the database unsetup by clicking **Exit** on the screen displayed in step 3.

A.5 Cancelling Repository Settings

Delete the database and its environment to cancel the repository configurations.

Note

- Perform this operation as a root user.

- When the Management Server (Storage Management Server) is operated on the clustered system, the repository configurations are cancelled by deleting the Management Server transaction. Therefore, it is unnecessary to carry out this operation.
- Perform this operation with the locale specified when you installed the Management Server. If Symfoware has been installed in advance, perform this operation with the locale specified at the time of installing Symfoware.
- When another software is monitoring Symfoware, stop Symfoware monitoring before cancelling the repository settings.
  During Symfoware monitoring, cancelling the repository settings may fail.
  The monitoring of Symfoware must restart after the operation of the upgrade restarts.

The procedure is shown below:

1. Execute the following command.

   ```
   # /opt/swstorage/bin/stgdbunset
   ```

2. The following message is displayed.
   To continue processing, enter "y". To stop processing, enter "n".

   ```
   ////////////////////////////////////////////////////////////////////
         AdvancedCopy Manager Storage management server ( **** )
                              Database unsetup
   ////////////////////////////////////////////////////////////////////

     +-----------------------------------------------------------------+
     |                                                                 |
     |   All of database environments of AdvancedCopy Manager          |
     |   will be deleted.                                              |
     |                                                                 |
     |  [Notes]                                                        |
     |    Once processing has started, all stored data is discarded.   |
     |    Make sure that the environment allows execution              |
     |    before proceeding.                                           |
     |                                                                 |
     +-----------------------------------------------------------------+

            Do you want to continue with processing? [y/n] ==>
   ```

3. Deletion of the Management Server database is executed and the execution results are displayed on the screen.
   The following example is for the execution result.

   Point

   If an RDA-SV definition file overwrite confirmation message is displayed on the screen during processing, enter "y".

   ```
   ////// AdvancedCopy Manager database unsetup //////

   Activation of RDB is complete.
   ====================================================================
   The replication management will be deleted.
   ====================================================================

   ====================================================================
   Clearing of database will start. (replication management)
   ====================================================================
   .
   Tables have been deleted. (replication management)
   ====================================================================
   Clearing of database is complete. (replication management)
   ====================================================================

   ====================================================================
   ```

```
The replication management has been deleted.
================================================================

            :

================================================================
Clearing of database environment is complete.
================================================================

================================================================
The basic section has been deleted.
================================================================

Database unsetup ended normally.
```

A.6 Restoring Management Information (for HP-UX, AIX)

Restore the management information which exists in the Managed Server.

Note

Caution about AdvancedCopy Manager's Agent in HP-UX Environments

AdvancedCopy Manager supports device names in both the legacy format and the new format. Refer to "Managing Device on AdvancedCopy Manager" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for HP-UX)* for information on device names. Depending on the device format, perform the procedure below.

- If using a different format device name before and after upgrade:

  Before upgrading, set the device format executing the stgxfwcmsetmode command, and then delete the definition for the backup management and replication management. After that, set the device format used after upgrading executing the stgxfwcmsetmode command, and then fetch the device information and redefine the backup management and replication management.
  Refer to "Configuration Management Commands" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for HP-UX)* for information on setting the information collection mode.

  Refer to "Changing Device Configuration" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for HP-UX)* for information on backup management and replication management.

- If using the same format device name before and after upgrade:

  Even if using the same format device name as before upgrade, always set up the device format being used by executing the stgxfwcmsetmode command.
  Refer to "Configuration Management Commands" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for HP-UX)* for information on setting the information collection mode.

If Backup Operation Has Been Done

1. Restore the backup management list.

   Specify the directory saved in "A.3 Backing Up Management Information (for HP-UX, AIX)" and execute the following command.

   ```
   # /opt/FJSVswsts/bin/swstresrst saveDir
   ```

   See

   Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

2. Restore pre-processing and post-processing scripts.

Note

Do not restore pre-processing and post-processing scripts for backup management function by using copy command.

The sample of pre-processing and post-processing scripts may be changed when upgrading a version. If you have customized pre-processing and post-processing scripts before the upgrade, re-customize it in reference to pre-processing and post-processing scripts which has been saved before the upgrade.

If Replication Operation Has Been Done

1. Restore the replication management list.

   The replication management list is stored in the repository on the Management Server. Execute the following command.

   ```
   # /opt/FJSVswsrp/bin/swsrprecoverres -r
   ```

   ### See

   Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

   ### Point

   If a server-to-server replication is performed, restore the replication management list in the associated server as well.

2. Restore specification files.

   Restore the following files saved in "A.3 Backing Up Management Information (for HP-UX, AIX)" by executing the cp command:

   - Timeout value setting file for the concurrent suspend function

   For Non-clustered Systems

File for Restoration	Full Path Name for Restoration Destination
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/data/DEFAULT/check.ini

   For Clustered Systems

File for Restoration	Full Path Name for Restoration Destination
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/*logicalNodeName*/data/DEFAULT/check.ini

   ### Note

   Do not restore pre-processing and post-processing scripts for replication management function by using copy command.

   The sample of pre-processing and post-processing scripts may be changed when upgrading a version. If you have customized pre-processing and post-processing scripts before the upgrade, re-customize it in reference to pre-processing and post-processing scripts which has been saved before the upgrade.

A.7 Capacity Necessary for Backup of Previous Version

The formula for estimation of the capacity required in order to backup a previous version is listed below.

According to the number of registered storage devices, servers, switches and users (number of user accounts) using Web Console, add the following capacity:

```
Capacity (MB) = 125 + devicesToBeManaged * 4.1 + users
```

According to the number of registered storage devices add the total of the following capacity to the abovementioned capacity:

- When using an ETERNUS DX80 S2/DX90 S2 (firmware version V10L40 or later)

```
Capacity (MB) = devicesToBeManaged * 4
```

- When using an ETERNUS DX400 S2 series (firmware version V10L40 or later)

```
Capacity (MB) = devicesToBeManaged * 6
```

- When using an ETERNUS DX8000 S2 series (firmware version V10L40 or later)

```
Capacity (MB) = devicesToBeManaged * 23
```

- In cases other than those listed above

```
Capacity (MB) = 0
```

Appendix B Installation parameter

This appendix explains the installation parameter file and the details of each installation parameter.

B.1 Installation Parameter File (for ETERNUS SF Manager)

The sample of the installation parameter file is provided on the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version.

- Stored location

  dvdromMountPoint/Manager_unix/install_parameter.txt

For changing installation parameters, copy the form of the installation parameter file in a convenient location and modify the installation information.

The following is the form of the installation parameter file.

Refer to "B.2 Installation Parameters (for ETERNUS SF Manager)" for the description of each parameter.

```
#------------------------------------------------#
# Installation function
#     1: ETERNUS SF Manager
#     2: ETERNUS SF AdvancedCopy Manager CCM
#------------------------------------------------#
Installation_function: 1


#------------------------------------------------#
# Port number
#     range: 1024 - 65535
#------------------------------------------------#
ETERNUS_SF_Manager_apache_service: 9855
Communications_service_1: 1226
Communications_service_2: 4917
Repository_service: 15432
Internal_port_1: 28005
Internal_port_2: 28009
Internal_port_3: 28443
Internal_port_4: 24916
Internal_port_5: 24917

#------------------------------------------------#
# Management_server_IP_address: format xxx.xxx.xxx.xxx
#------------------------------------------------#
Management_server_IP_address:

#------------------------------------------------#
# esfpostgres UID
#    For primecluster system:
#        NULL: System allocate
#        integer : range 100-59999
#------------------------------------------------#
esfpostgres_UID:

#------------------------------------------------#
# Start Service Control
#------------------------------------------------#
StartService: yes
```

Note

- Only LF is permitted for linefeed code.
  Do not use CR+LF or CR.
- Do not use double-byte character such as double-byte space.

B.2 Installation Parameters (for ETERNUS SF Manager)

The explanation of the installation parameters described below.

Parameter Name	Description	Default Value
Installation_function	When installing ETERNUS SF Manager, set to [1].	1
ETERNUS_SF_Manager_apache_service	Web Console service port number	9855
Communications_service_1	Communications service 1 port number	1226
Communications_service_2	Communications service 2 port number	4917
Repository_service	Repository service 2 port number	15432
Internal_port_1	Port numbers for various internal services	28005
Internal_port_2		28009
Internal_port_3		28443
Internal_port_4		24916
Internal_port_5		24917
Management_server_IP_address	Management Server IP address (*1,*3)	None
esfpostgres_UID	User ID which ETERNUS SF Manager internally uses on installation of PRIMECLUSTER (*2)	None
StartService	Automatic starting of ETERNUS SF Manager services	yes

*1: When the Management Server has two or more IP addresses, specify the IP address which is available for communicating with the Management Server from all of the AdvancedCopy Manager's agents. (For upgrading Storage Cruiser)

*2: On installation in PRIMECLUSTER environments, specify an unregistered user ID for the system by using integer number from 100 to 59999. Specify a blank in other cases.

*3: The value set to Management_Server_IP_address is as follows.

- When you use only the IPv4 address with the Management Server:
  Set the IPv4 address used.
- When you use only the IPv6 address with the Management Server:
  Set a temporary IPv4 address (127.0.0.1 for instance).
  The following operations are executed after the Upgrade Installation is completed and the IP address version of the Management Server is changed to IPv6.

  1. Create a server information change instruction file on the Management Server. Describe only the IPv6 address as the IP address after it changes in the server information change instruction file.
  2. Execute the stgxfwcmmodsrv command with the -f option.

     ```
     /opt/FJSVswstf/bin/stgxfwcmmodsrv -f serverInformationChangeInstructionFileName
     ```

- When you use both the IPv4 and IPv6 addresses with the Management Server:
  Set the IPv4 address used.

The following operations are executed after the Upgrade Installation is completed and the IPv6 address is added as the IP address of the Management Server.

1. Create a server information change instruction file on the Management Server. Describe both the IPv4 and the IPv6 addresses as the IP address after it changes in the server information change instruction file.
2. Execute the stgxfwcmmodsrv command with the -f option.

```
/opt/FJSVswstf/bin/stgxfwcmmodsrv -f serverInformationChangeInstructionFileName
```

Information

- Refer to "Changing IP Address of Management Server" in the *AdvancedCopy Manager Operation Guide* at this version corresponding to OS of the Management Server for the update procedure of IP address information.
- Refer to "Command References" in the *AdvancedCopy Manager Operation Guide* at this version corresponding to OS of the Management Server for this version for information on the command.

B.3 Installation Parameter File (for AdvancedCopy Manager Copy Control Module)

The sample of the installation parameter file is provided on the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version.

- Stored location

```
dvdromMountPoint/Manager_unix/install_parameter_ccm.txt
```

The following is the form of the installation parameter file.

```
#-----------------------------------------------#
# Installation function
#     1: ETERNUS SF Manager
#     2: ETERNUS SF AdvancedCopy Manager CCM
#-----------------------------------------------#
Installation_function: 2
```

Appendix C Performing Upgrading

C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)

There are two methods of performing the upgrade, as follows:

- Default installation

  The following configuration is used without the need to input any values.

  - Installation destination

    The "*systemDrive*:\ETERNUS_SF" directory is used as the root location for the Program Directory, Environment Directory and Work Directory.

  - Port numbers for the various communication services

    9 port numbers are used, as follows.

Service	[Port Registration] Display Name	Port Number
Web Console service	ETERNUS SF Manager Apache service	9855
communication service 1	Communications service 1	1226
communication service 2	Communications service 2	4917
Repository service	Repository service	15432
Internal use	Internal Port 1	28005
	Internal Port 2	28009
	Internal Port 3	28443
	Internal Port 4	24916
	Internal Port 5 (No screen display)	24917

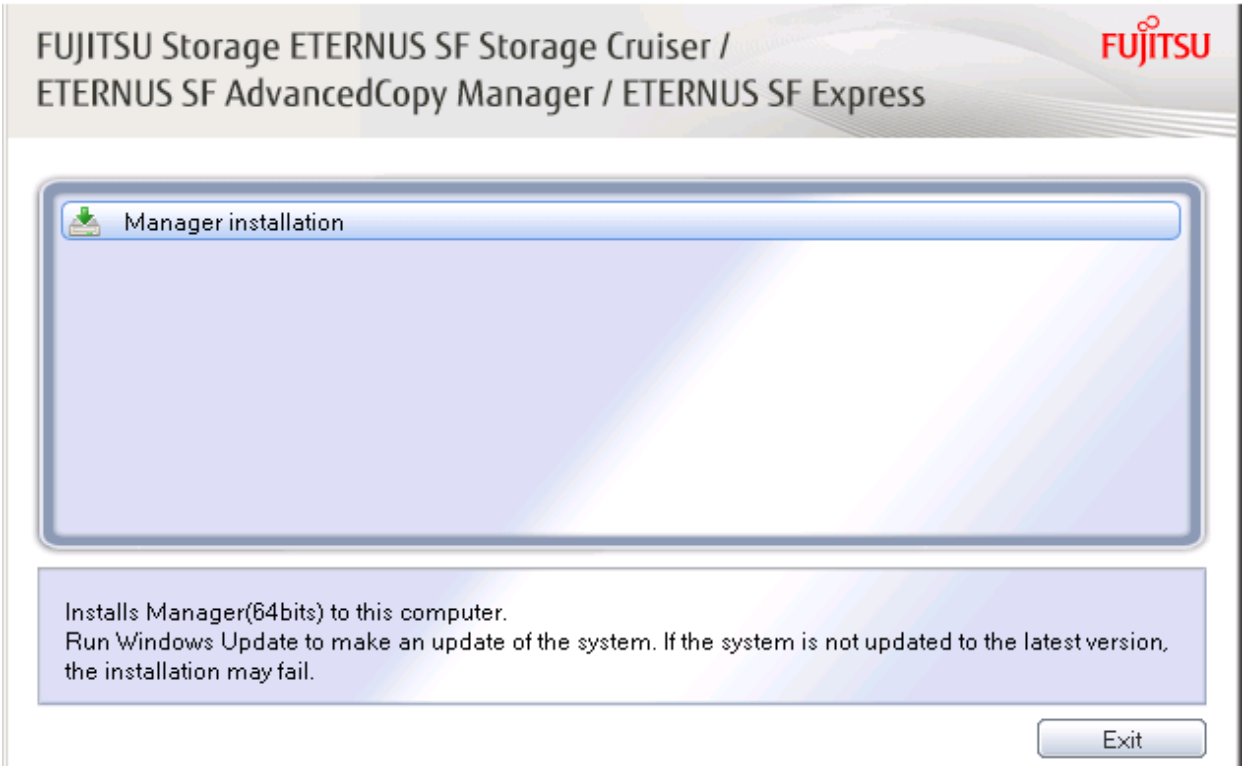
- Custom installation

  The upgrade is performed by manually entering the configuration information into the interface (installation destination and communication service port numbers).

The upgrade procedure is as follows:
Note that if step 1 and step 2 have already been performed, perform from step 3.

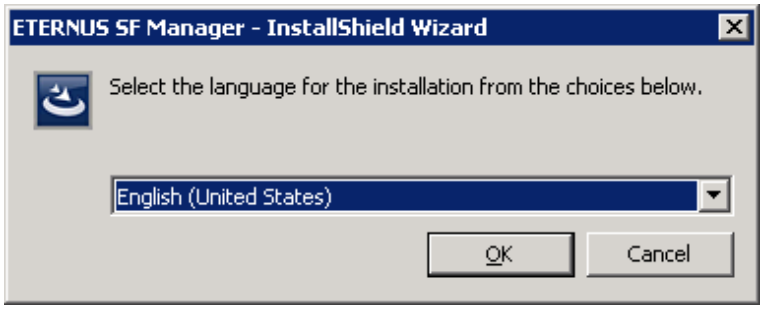
1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

3. The following window is displayed. Click **Manager installation**.
   To cancel the upgrade at this point, click **Exit**.

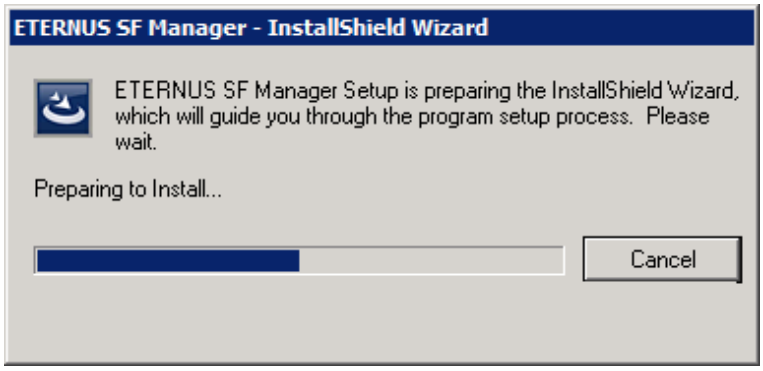


4. The following dialog box is displayed. Select the appropriate language and click **OK**.

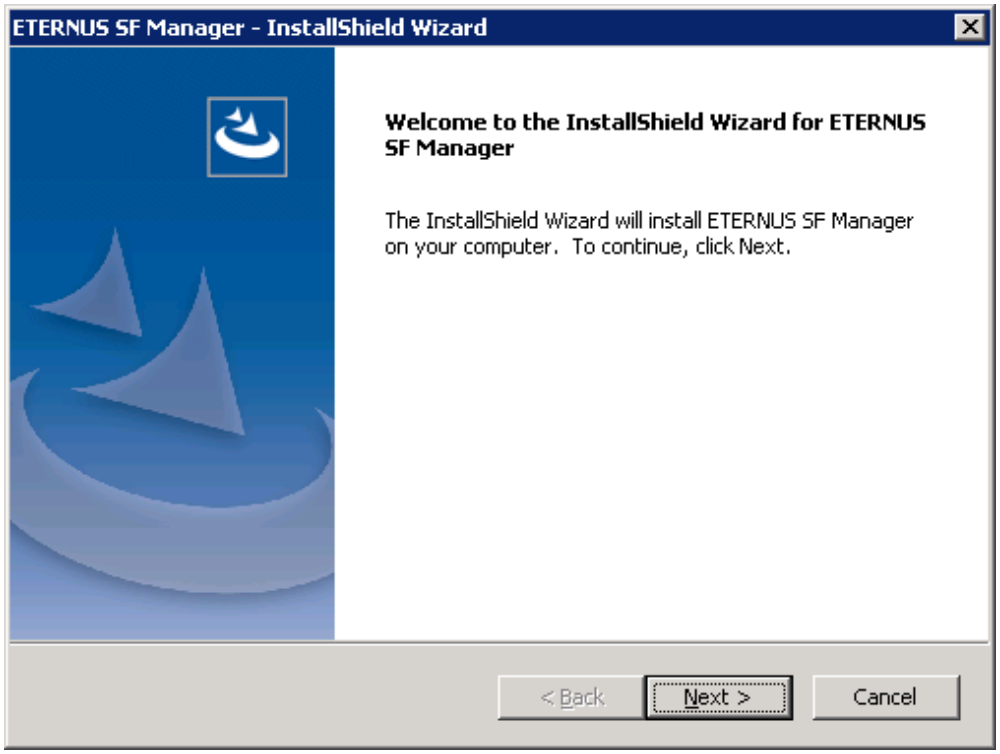
   The language selected in this dialog box is used during installation and uninstallation.



5. The following progress bar is displayed. To cancel the upgrade, click **Cancel**.

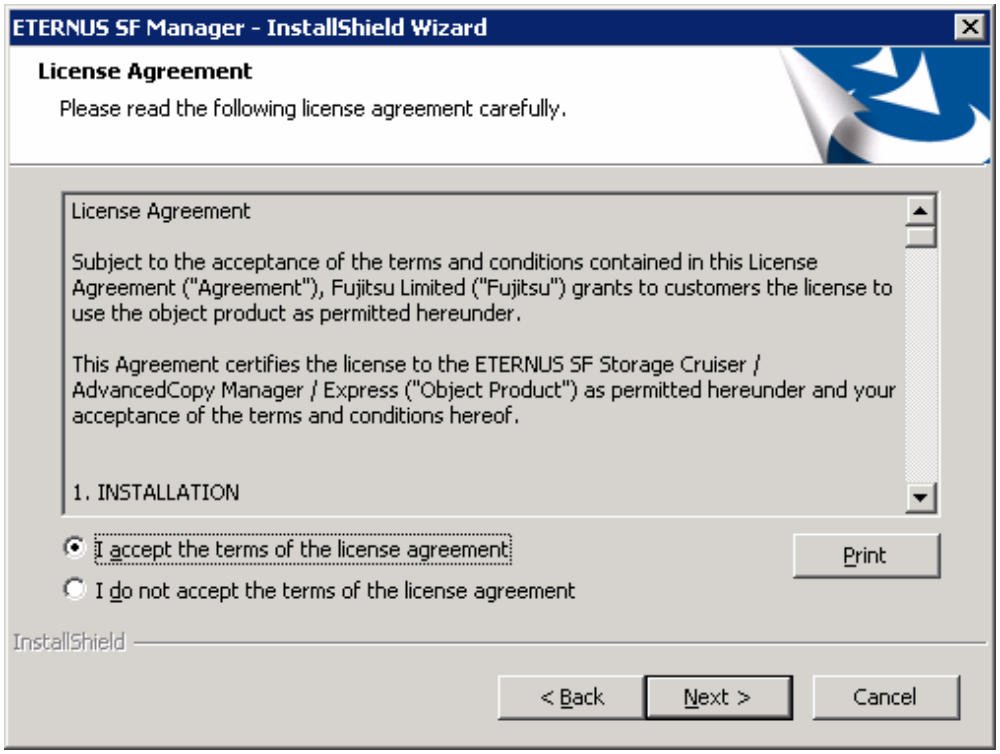


6. The installation wizard page is displayed. Click **Next**.

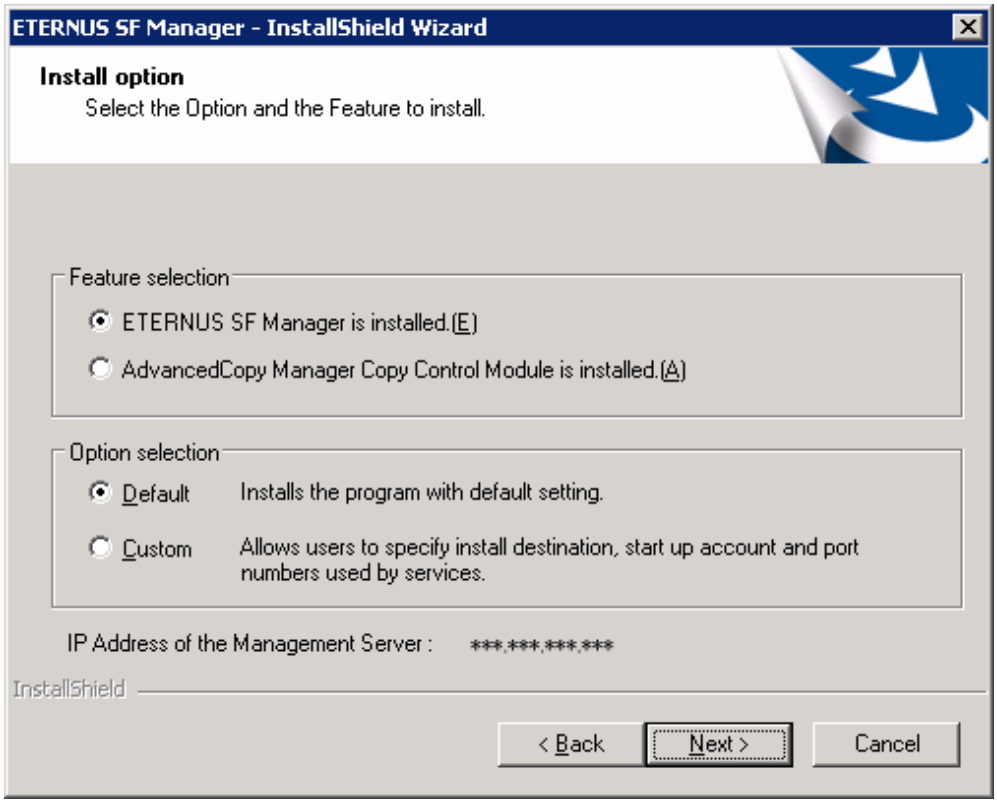


7. Read the terms and conditions of the **License Agreement** page.

   If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.



8. Select the features and options to install from the **Install option** page. Confirm the IP address of the Management Server that is displayed and perform a customized installation if it is necessary to make changes.



Feature selection

Select [ETERNUS SF Manager is installed.].

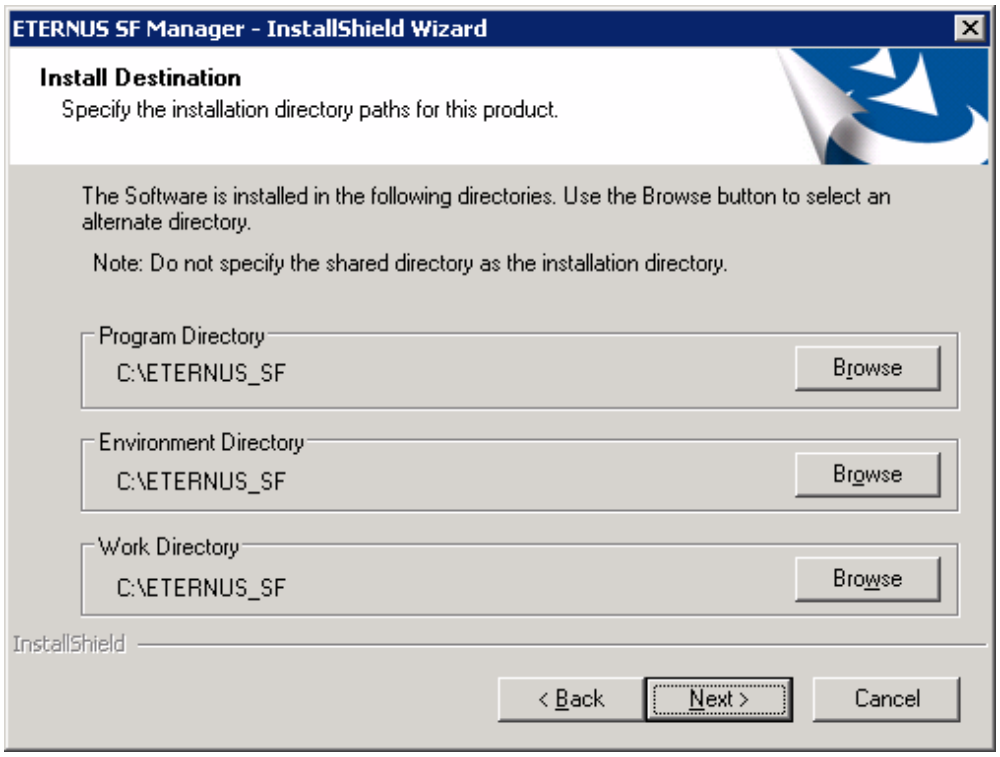
Option selection

Select the desired options according to the following information.

Install Option	Explanation
Default	Changing values in the **Installation Destination** page and **Port Registration** page is optional. In this case, steps 9 and 10 can be skipped. For this installation method, the following checks are automatically performed relating to the information provided by default: - Is there enough disk space for the installation in the default directory? - Are the default port numbers available? If an error is detected at this stage, a warning dialog box is displayed. If no error is detected, the **Start Copying Files** page is displayed.
Custom	The installation information must be manually entered in the pages for step 9 and later.

9. Specify the installation directory in the **Installation Destination** page.

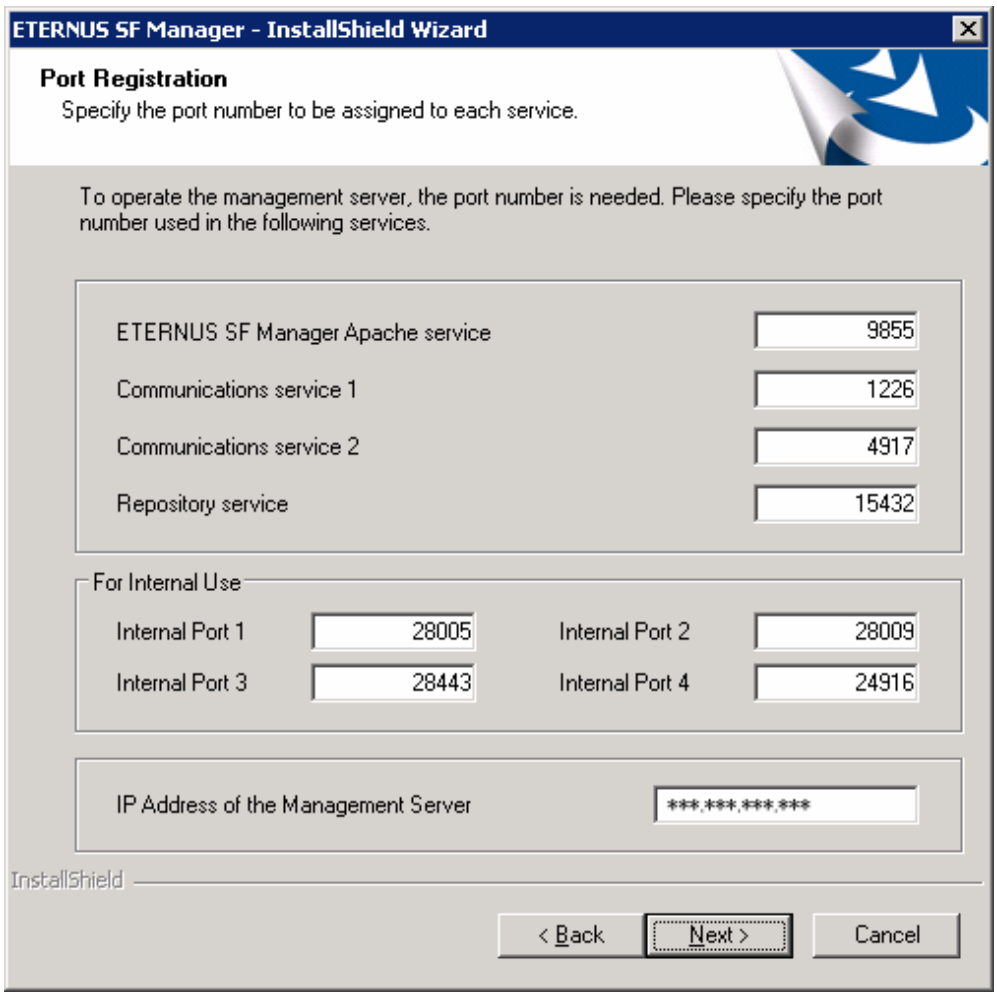
   If installing to a directory other than the default directory, click **Browse** and change the install destination. After designating all of the directories, click **Next**.



Point

- Do not specify the shared directory as the installation directory.
- Spaces and the characters " | : * ? / . < > , % & ^ = ! ; # ' @ ( ) + are not supported for directory names.
- The number of characters in a directory name must be between 4 and 70.

10. Specify the port number for the services in the **Port Registration** page.



Port number

The default values are displayed. If necessary, enter alternative port numbers suitable for your environment. Values between 1024 and 65,535 are valid.

To change the port number of Internal Port 5, edit the %SystemRoot%\system32\drivers\etc\services file by manual and define the unused port number under the following service name and in the range of 1024 - 65535.

Service Name	Receive Port	Purpose
astm	24917/tcp	Use for internal communication.

IP address

Enter the IP address of the Management Server (local system).
Specify Internet Protocol address referring to the following.

- When you use only the IPv4 address with the Management Server:
  Set the IPv4 address used.
- When you use only the IPv6 address with the Management Server:
  Set a temporary IPv4 address (127.0.0.1 for instance).
  The following operations are executed after the Upgrade Installation is completed and the IP address version of the Management Server is changed to IPv6.

  a. Create a server information change instruction file on the Management Server. Describe only the IPv6 address as the IP address after it changes in the server information change instruction file.

b. Execute the stgxfwcmmodsrv command with the -f option.

```
programDir\ACM\bin\stgxfwcmmodsrv -f serverInformationChangeInstructionFileName
```

- When you use both the IPv4 and IPv6 addresses with the Management Server:
  Set the IPv4 address used.
  The following operations are executed after the Upgrade Installation is completed and the IPv6 address is added as the IP address of the Management Server.

  a. Create a server information change instruction file on the Management Server. Describe both the IPv4 and the IPv6 addresses as the IP address after it changes in the server information change instruction file.

  b. Execute the stgxfwcmmodsrv command with the -f option.

```
programDir\ACM\bin\stgxfwcmmodsrv -f serverInformationChangeInstructionFileName
```

Information

- Refer to "Changing the IP address of Management Server" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for the update procedure of IP address information.
- Refer to "stgxfwcmmodsrv (Server information change command)" in the *AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

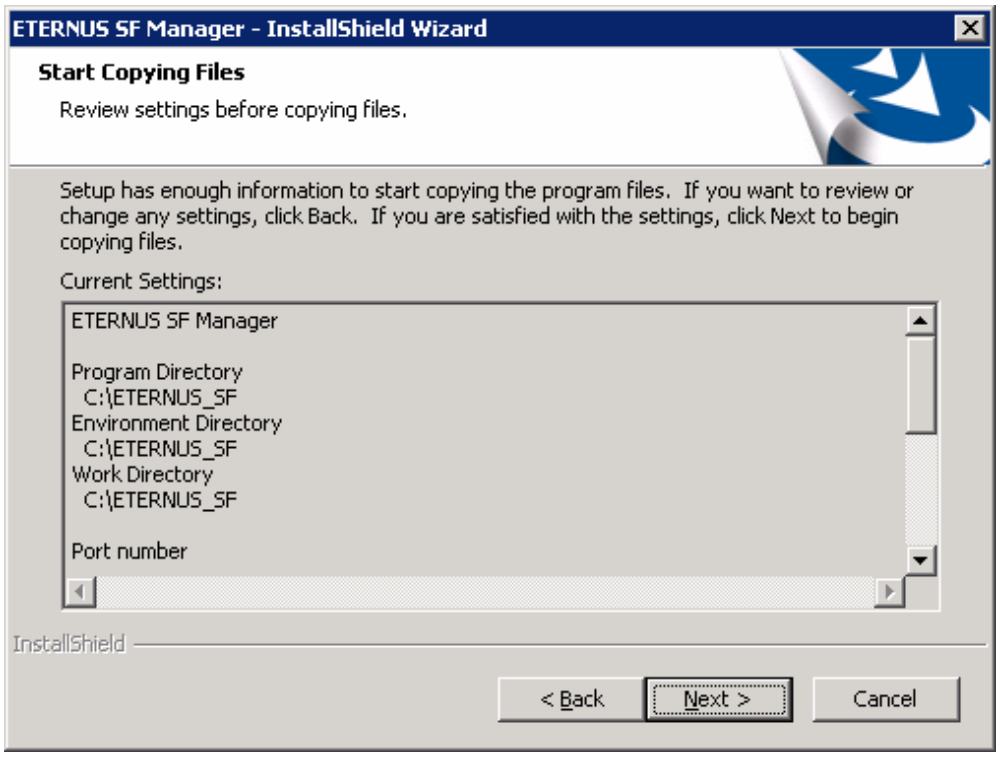
Point

When the Management Server has multiple IP addresses, specify an IP address that can communicate with the Management Server from all of the AdvancedCopy Manager's agents.

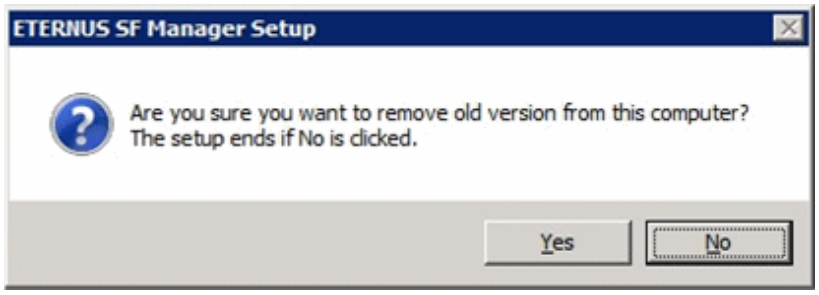
Then, click **Next**. If an entered value is already being used, the page is displayed again.

11. Check the settings information in the **Start Copying Files** page.

    If the settings are correct, click **Next**.
    To change a setting, click **Back**.



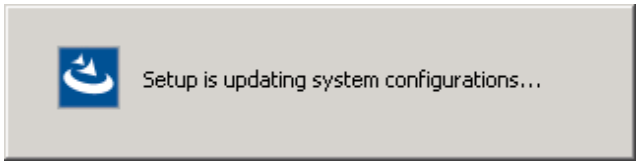
12. The following dialog box is displayed. To proceed with the uninstallation, click **Yes**.



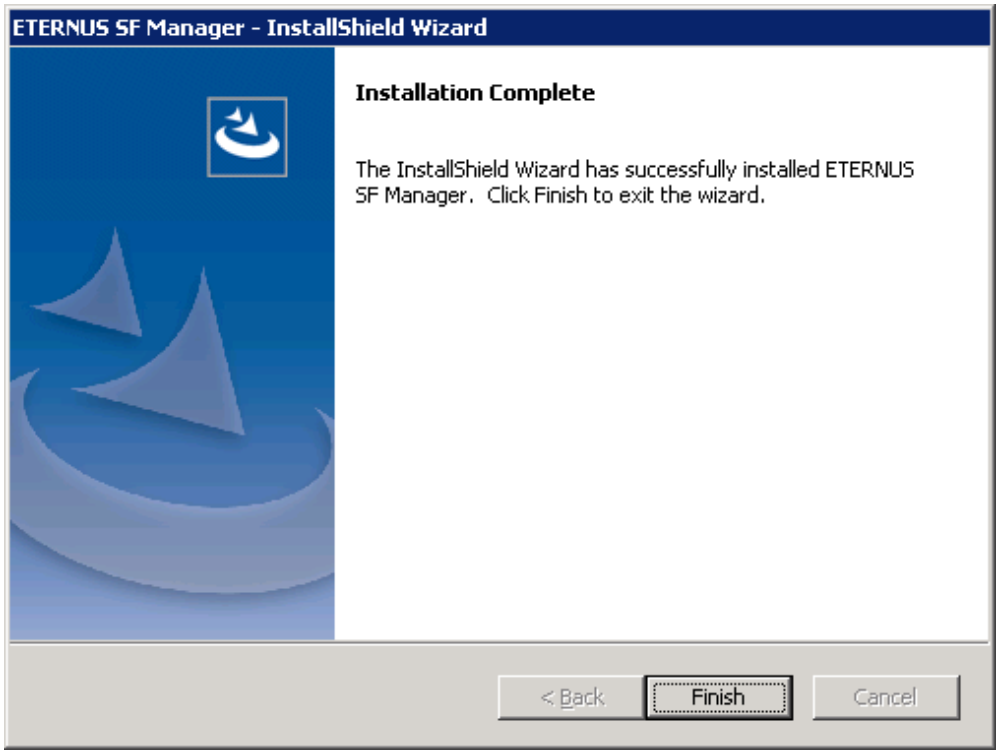
13. When the uninstallation is completed, the copying of the files for the new version is started.

    During this process, the file copy completion status is displayed in the **Setup Status** page.

14. When the copying process is completed, the system configuration is updated. Wait for the configuration update process to complete.



15. The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



16. Eject the DVD-ROM used for the Upgrade Installation from the device.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Solaris, Linux)

There are two methods of performing the upgrade, as follows:

- Default installation

  The following configuration is used without the need to input any values.

  - Installation destination

    The installation destination directories (/opt, /etc/opt/, /var/opt) cannot be modified.

  - Port numbers for the various communication services

    The following ports are used.

Service	Service Name	Used Port Number	Installation Parameter Name
Web Console service	esfmanagerweb	9855/tcp	ETERNUS_SF_Manager_apache_service
communication service 1	stgxfws	1226/tcp	Communications_service_1
communication service 2	sscruisera	4917/tcp	Communications_service_2
Repository service	esfpostgres	15432/tcp	Repository_service
Internal use	esfmanagertomcat1	28005/tcp	Internal_port_1
	esfmanagertomcat2	28009/tcp	Internal_port_2

Service	Service Name	Used Port Number	Installation Parameter Name
	esfmanagertomcat3	28443/tcp	Internal_port_3
	sscruiserm	24916/tcp	Internal_port_4
	astm	24917/tcp	Internal_port_5

- Custom installation

  The upgrade is performed by manually entering the configuration information into the interface (communication service port number and so on).

  Define the installation information in the installation parameter file. Specify the installation parameter file for which the installation information has been defined when executing the install shell script.

  Refer to "B.1 Installation Parameter File (for ETERNUS SF Manager)" for information on the installation parameter file.

Note

- You cannot change these install directories: /opt, /etc/opt, /var/opt.
- Perform the custom installation when the previous version of AdvancedCopy Manager has been installed and the Management Server has multiple IP addresses.

Point

If an IP address for the Management Server is not specified in the installation parameter "Management_server_IP_address", the IP address is set automatically during installation. Change the IP address, if required, after the installation has completed. Refer to "Changing IP Address of Management Server" in the *AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for information on changing the IP address.

Point

When Symfoware has already been installed, perform the following procedure:

1. Stop the processes of Symfoware/RDB, WebDBtools, and RDA-SV temporarily.
2. Perform the upgrade.

The upgrade procedure is as follows:
Note that if step 1 through step 3 have already been performed, perform from step 4.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Change the directory on the DVD-ROM where the installation shell script is stored.

```
# cd dvdromMountPoint/Manager_unix
```

5. Execute the following installation shell script.

   - For a default installation

```
# ./esfinstall.sh
```

   - For a custom installation

```
# ./esfinstall.sh -s installParamFile
```

   Specify the full path name of the installation parameter file edited in advance for *installParamFile*.

6. The license agreement information is displayed. Display example is mentioned below.
   If the conditions are agreeable, enter "y".

```
+-------------------------------------------------------------+
|                       ETERNUS SF V16.8                      |
|                                                             |
| All Rights Reserved, Copyright (C) FUJITSU LIMITED 2013-2019 |
+-------------------------------------------------------------+


License Agreement

Subject to the acceptance of the terms and conditions contained in this License Agreement
("Agreement"), Fujitsu Limited ("Fujitsu") grants to customers the license to use the obje
ct product as permitted hereunder.

This Agreement certifies the license to the ETERNUS SF Storage Cruiser / AdvancedCopy Mana
ger / Express ("Object Product") as permitted hereunder and your acceptance of the terms a
nd conditions hereof.


1. INSTALLATION
You are allowed to install and use manager module and agent module of the Object Product o
n any computer connected to the Storage Device directly or through network and you are als
o allowed to install and use client module of the Object Product on any computer.

2. ARCHIVAL COPY
You may make one (1) archival copy of the Object Product.

3. EMBEDDING
If the Object Product is expected to be used as embedded in another program, you may embed
the Object Product, in whole or in part, in such other program, in accordance with the pr
ocedure described in the applicable documentation.

4. NO ASSIGNMENT
You may not rent, lease, sublicense, assign, transfer or create lien against the Object Pr
oduct.

5. MODIFICATION
You may not modify or, except to the extent expressly permitted by applicable law, reverse
engineer (including, without limitation, decompile and disassemble) the Object Product, a
nd you may not permit others to do so.

6. LIMITED WARRANTY
(a) You acknowledge that Fujitsu cannot guarantee that your use of the Object Product will
be uninterrupted, that the Object Product will be error free or that all Product errors w
```

```
ill be corrected. However, if within ninety (90) days following your acquisition of the Ob
ject Product you notify the reseller from which you have acquired the Object Product of ph
ysical defects of the media containing the Object Product, Fujitsu will, at its sole discr
etion, correct the non-conformance or provide you with information necessary to correct th
e non-conformance, or replace the defective media with a new media. Only if you inform suc
h reseller of your problem with the Object Product during the above mentioned warranty per
iod and provide satisfactory evidence of the date you acquired the Object Product will Fuj
itsu be obligated to honor this warranty.

(b) THIS IS A LIMITED WARRANTY AND IT IS THE ONLY WARRANTY MADE BY FUJITSU. FUJITSU MAKES
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OR IMPROPER USE, OR IF YOU VIOLATE THE TERMS AND CONDITIONS HEREOF, THEN THIS WARRANTY SH
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ECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING, WITHOUT LIMITATIO
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ESS OF THE LIST PRICE TO THE PRODUCT, EVEN IF FUJITSU SHALL HAVE BEEN INFORMED OF THE POSS
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SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONNEL INJURY TO THE EXTENT APPLICABLE LAW P
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MITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION AND EXCLUSION MAY NOT
APPLY TO YOU.

(d) The above states the entire liability of Fujitsu in connection with the use, performan
ce or non-performance of the Object Product.

(e) Even if a part of the Object Product has been developed by a third party, the warranty
and remedy for that part of the Object Product are limited to those provided for in this
Section, and the third party developer shall have no liability in connection with the use,
performance or non-conformance of the Object Product.

7. MISCELLANEOUS
(a) The terms and conditions hereof represent the complete agreement concerning this licen
se between the parties and supersede all prior or contemporaneous oral and written communi
cations between them. In the event that any additional terms or conditions are provided in
 the accompanied documentation, you must also comply with such terms and conditions.

(b) You agree to comply with all applicable export laws and regulations.

(c) Use, duplication or disclosure of the Object Product by the U.S. Government is subject
to restrictions set forth in subparagraph (a) through (b) of the Commercial Computer-Rest
ricted Rights clause at FAR 52.227 - 19 when applicable, or in subparagraphs (c)(1) and (2
) of the Rights in Technical Data and Computer Software clause at DFAR 252.227 - 7013, and
in similar clauses in the NASA FAR Supplement. Contractor/manufacturer is Fujitsu Limited
, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken 211-8588, Japan.


Do you accept the terms of the above License Agreement? (default: n) [y,n]:
```

7. A confirmation message is displayed containing the installation information. To continue, enter "y". To cancel, enter "q". Press **Enter** to proceed.

```
  Setting of installation parameter file.

    Installation_function:   ETERNUS SF Manager
    Port number
```

```
      ETERNUS_SF_Manager_Apache_service: 9855
      Communications_service_1:          1226
      Communications_service_2:          4917
      Repository_service:                15432
      Internal_port_1:                   28005
      Internal_port_2:                   28009
      Internal_port_3:                   28443
      Internal_port_4:                   24916
      Internal_port_5:                   24917
    Management_server_IP_address:
    esfpostgres_UID:
    StartService: no

Do you want to continue the installation? [y,q]:
```

8. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

```
An old version is installed in this system.
Do you want to remove old version from this system? [y,q]:
```

Point

For confirmation of uninstallation of the previous version, enter "y" to continue the uninstallation. If the uninstallation is cancelled, the upgrade process is interrupted. When re-executing the installation after restart of the computer, the installation is treated as new one.

9. If the upgrade completes successfully, the following message is displayed.

```
INFO: ETERNUS SF was installed successfully.
```

10. Change to a directory other than the DVD-ROM.

    Example:

```
# cd
```

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.3 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Windows)

For the Upgrade Installation, there is an installation method where required information is entered interactively and a method where no questions are asked (silent upgrade installation).

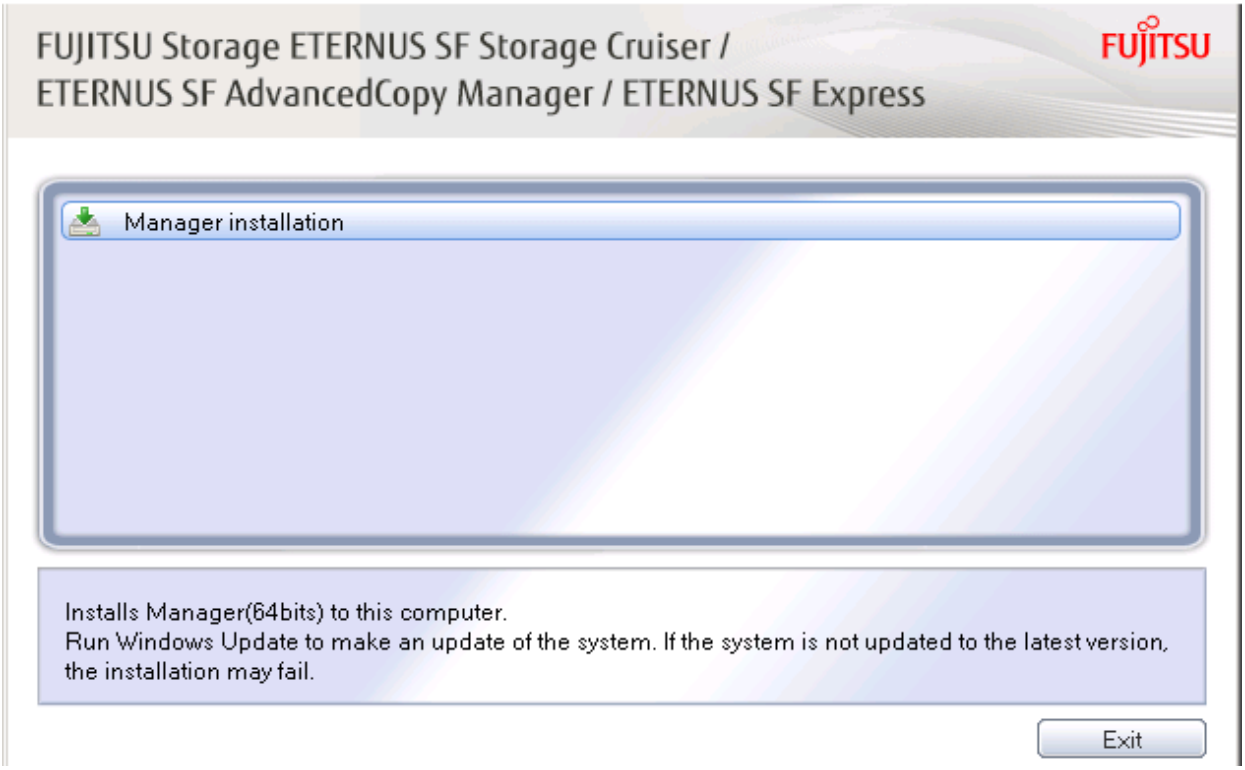
If you perform the interactive method, refer to "C.3.1 Performing Upgrade" and if you perform the silent method, refer to "C.3.2 Performing Upgrade with Silent Installation Procedure".

C.3.1 Performing Upgrade

The upgrade procedure is as follows:

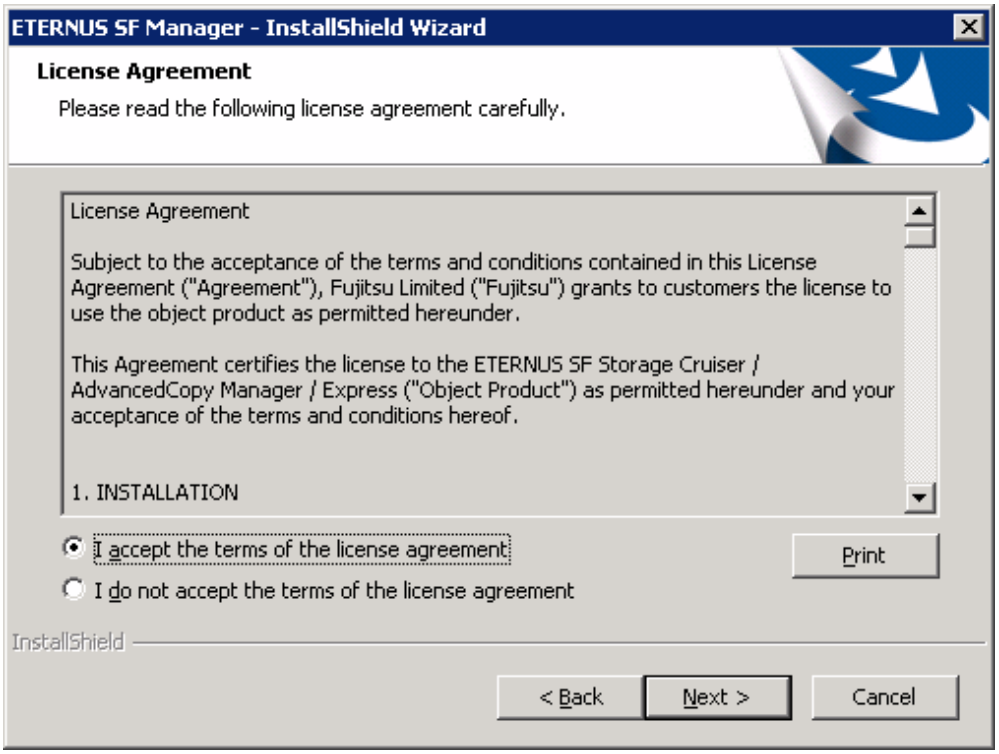
1. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

2. The following initial screen is displayed. Click on **Manager installation**.
   If you abort the Upgrade Installation, click **Exit**.

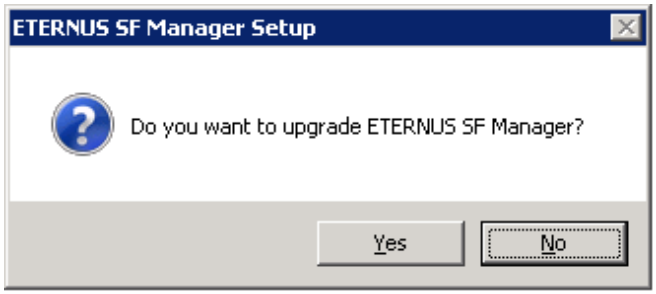


3. Read the terms and conditions of the **License Agreement** page.

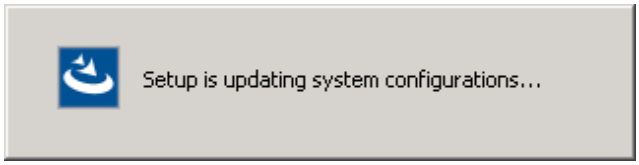
   If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.



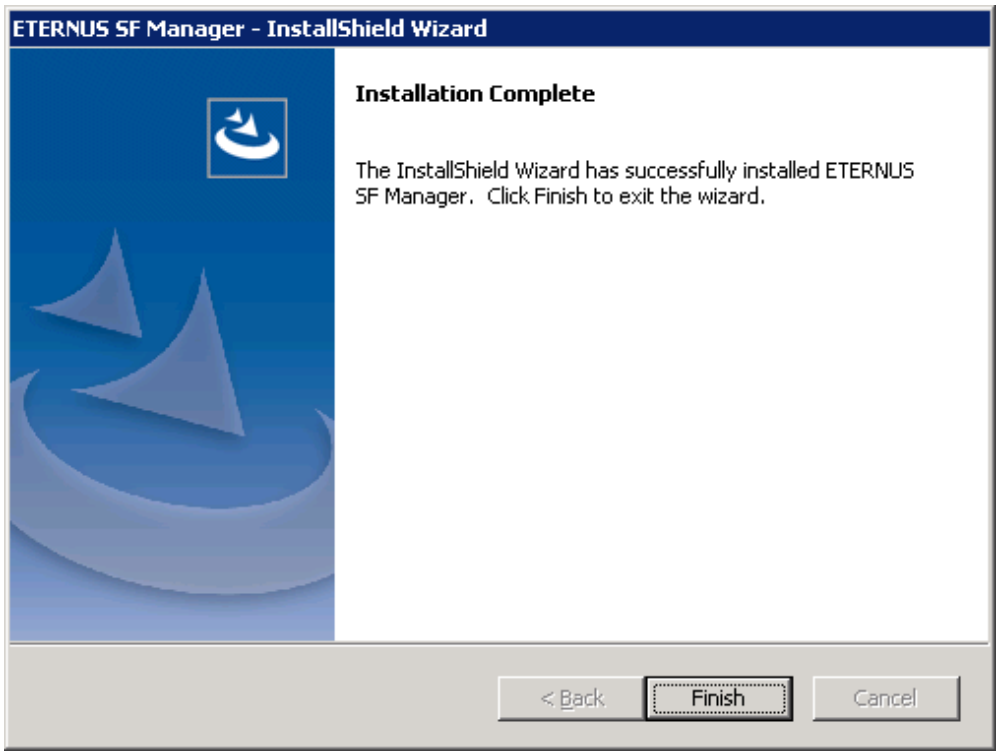
4. The following screen is displayed. Click **Yes**.
   If you abort the Upgrade Installation, click **No**.



5. The system configuration is updated. Wait for the configuration update process to complete.



6. The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



7. Eject the DVD-ROM used for the Upgrade Installation from the device.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.3.2 Performing Upgrade with Silent Installation Procedure

The procedure of the silent upgrade installation are as listed below.

1. Install the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive. If the Installer screen is displayed by autorun, exit the installer.
2. Start the command prompt.

3. Execute the following silent installation command.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

```
dvdromDrive:\Manager_windows\esfsilentinstall.bat -eula agreed [-l installLogFile]
```

Point

- The -eula option is specified to agree to licensing. Only when "agreed" is specified for option parameter is installation enabled. The -eula option must be specified before other options.
- If nothing is specified for *installLogFile*, an install log file named "esfsilentinstall.log" is created in the working directory specified by the environment variable TEMP.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
- If the paths to the install log file contain any spaces, they should be surrounded by double quote characters.
- The characters " | : * ? / . < > , % & ^ ; ! are not supported for path name for install log file.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

4. On completion of installation, a command prompt is displayed.
   Eject the DVD-ROM used for the Upgrade Installation from the device.

Confirming the Results of the Silent Upgrade Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for ETERNUS SF Manager, AdvancedCopy Manager CCM)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.4 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 16.x (for Solaris, Linux)

For the Upgrade Installation, there is an installation method where required information is entered interactively and a method where no questions are asked (silent upgrade installation).

If you perform the interactive method, refer to "C.4.1 Performing Upgrade" and if you perform the silent method, refer to "C.4.2 Performing Upgrade with Silent Installation Procedure".

C.4.1 Performing Upgrade

The upgrade procedure is as follows:

1. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
2. Mount the DVD-ROM.

   - Example for Solaris environments

   ```
   # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

   ```
   # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
   ```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

3. Change the directory on the DVD-ROM where the installation shell script is stored.

   ```
   # cd dvdromMountPoint/Manager_unix
   ```

4. Execute the following installation shell script.

   ```
   # ./esfinstall.sh
   ```

5. The license agreement information is displayed. Display example is mentioned below.
   If the conditions are agreeable, enter "y".

   ```
   Notes
   Thank you for purchasing media which contains Fujitsu software program (hereafter referred
   to as "Media"). Fujitsu provides the Media to you subject to agreement to "Conditions of
   Use" below.
   This document will not be reissued and please keep it in a secure place.
   Conditions of Use
   1. Using programs
   In order to use the software program contained in the Media (hereafter referred to as "Sof
   tware"), in addition to the Media itself, you shall purchase a license which grants you a
   right to use the Software.
   2. Backup
   (1) You may duplicate a Media for backup purpose.
   (2) When you duplicate the Media for backup purpose in accordance with Section 2. (1), you
   must copy the copyright notice that appears on the original Media on the duplication ther
   eof.
   (3) The duplication of the Media shall be treated as the Media under this Condition of Use
   .
   3. Transfer to a third party
   You may not transfer, loan, sublicense the Media to third parties, or provide it as collat
   eral to a third party.
   4. Warranty range
   Fujitsu warrants that the Media will be free from defects in materials and manufacture und
   er normal use for a period of 90 days from the date of delivery to you. Your sole and excl
   usive remedy and the entire liability of Fujitsu under this Condition of Use will be, at F
   ujitsu's option,replacement of the Media or refund of the money paid by you for the Media.
   Do you accept the terms of the above License Agreement? (default: n) [y,n]:
   ```

6. A confirmation message is displayed containing the installation information. To continue, enter "y". To cancel, enter "q". Press Enter to proceed.

   ```
   Do you want to upgrade? [y,q]:
   ```

7. If the upgrade completes successfully, the following message is displayed.

```
INFO: ETERNUS SF was installed successfully.
```

8. Change to a directory other than the DVD-ROM.

   Example:

```
# cd
```

9. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

10. Eject the DVD-ROM used for the Upgrade Installation from the device.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.4.2 Performing Upgrade with Silent Installation Procedure

The procedure of the silent upgrade installation are as listed below.

1. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
2. Mount the DVD-ROM.
   - Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

3. Execute the following silent installation shell script.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

```
# dvdromMountPoint/Manager_unix/esfsilentinstall.sh -eula agreed [-l installLogFile]
```

Point

- The -eula option is specified to agree to licensing. Only when "agreed" is specified for option parameter is installation enabled. The -eula option must be specified before other options.
- If nothing is specified for *installLogFile*, an install log file named "esfsilentinstall.log" is created in the /var/tmp directory.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
- If the paths to the install log file contain any spaces, they should be surrounded by double quote characters.
- The characters " ! $ are not supported for path name for install log file.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

4. On completion of installation, a command prompt is displayed.
5. Unmount the DVD-ROM.

```
# umount / dvdromMountPoint
```

6. Eject the DVD-ROM used for the Upgrade Installation from the device.

Confirming the Results of the Silent Upgrade Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for ETERNUS SF Manager, AdvancedCopy Manager CCM)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.5 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Windows)

If use the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 15.x (for Windows)" to perform the upgrade.

After the upgrade has completed, refer to the following manual for this version and set up the AdvancedCopy Manager Copy Control Module.

- "Setup of AdvancedCopy Manager CCM" in the *Installation and Setup Guide*

If install and use the AdvancedCopy Manager Copy Control Module

There are two methods of performing the upgrade, as follows:

- Default installation

  The following configuration is used without the need to input any values.

  - Installation destination

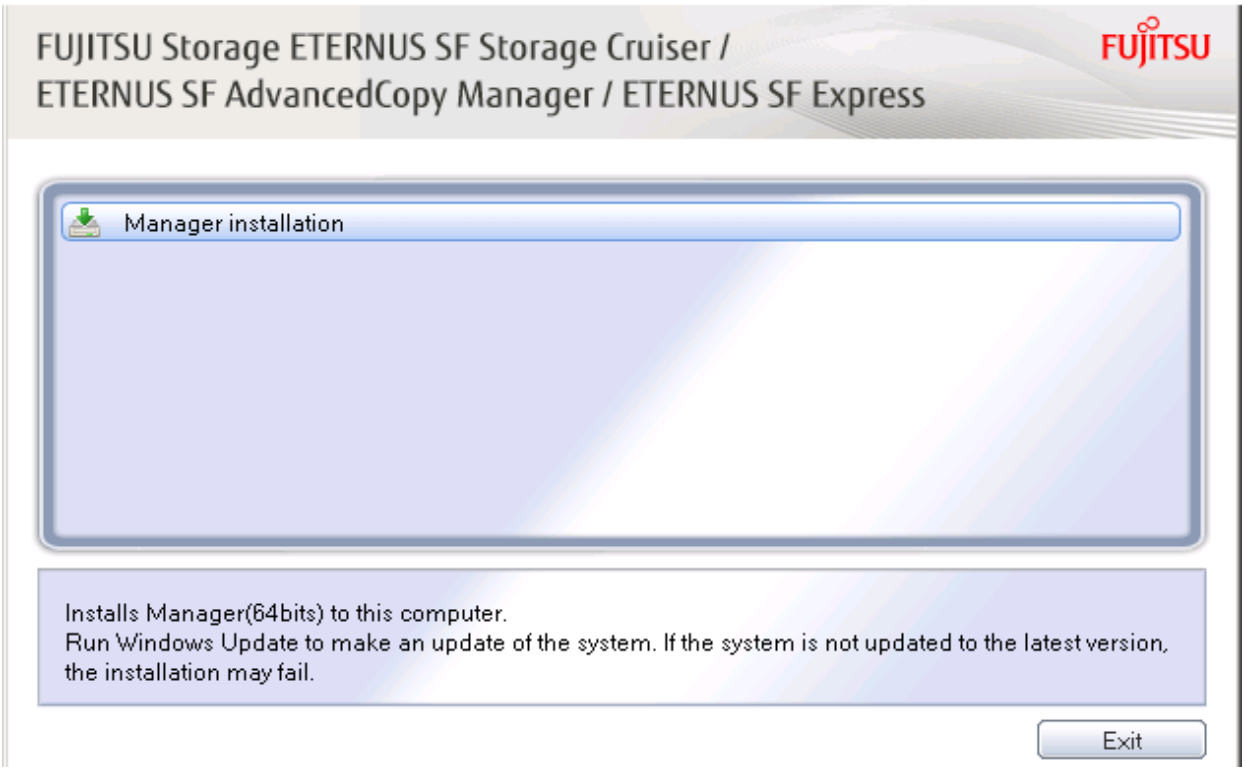
    The "*systemDrive*:\ETERNUS_SF" directory is used as the root location for the Program Directory, Environment Directory and Work Directory.

- Custom installation

  The upgrade is performed by manually entering the configuration information into the interface (installation destination).

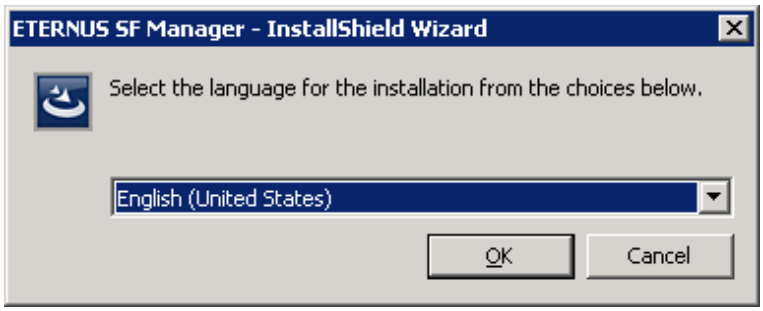
The upgrade procedure is as follows:
Note that if step 1 and step 2 have already been performed, perform from step 3.

1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
3. The following window is displayed. Click **Manager installation**.
   To cancel the upgrade at this point, click **Exit**.

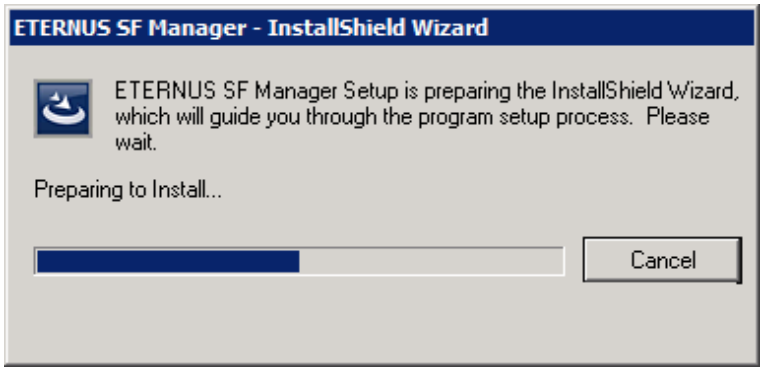


4. The following dialog box is displayed. Select the appropriate language and click **OK**.

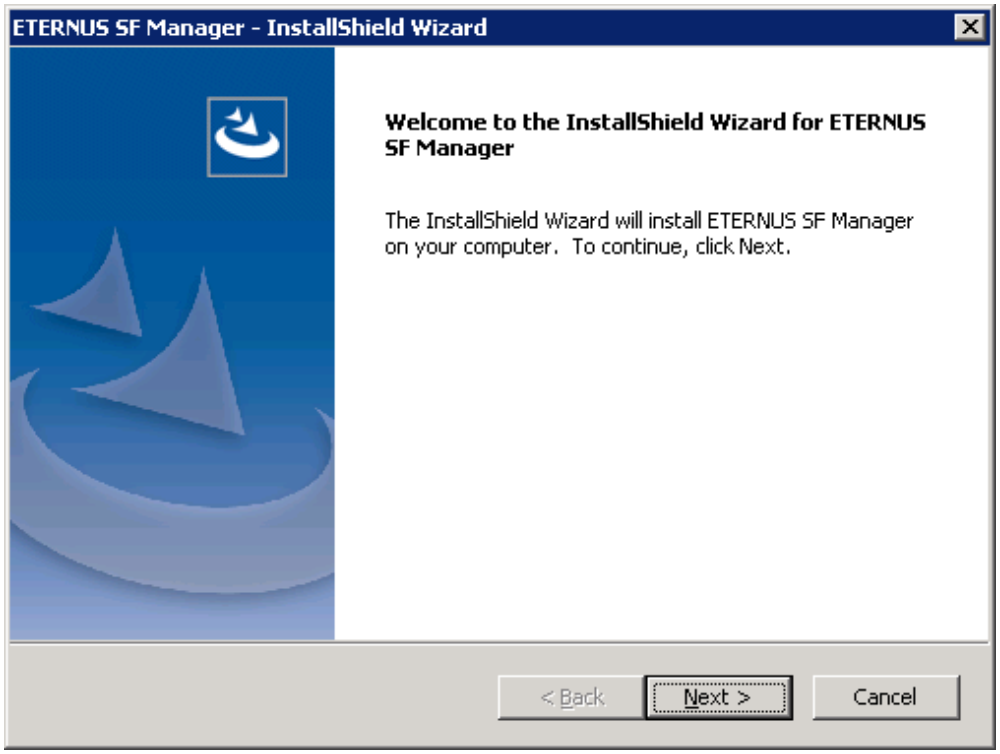
   The language selected in this dialog box is used during installation and uninstallation.



5. The following progress bar is displayed. To cancel the upgrade, click **Cancel**.

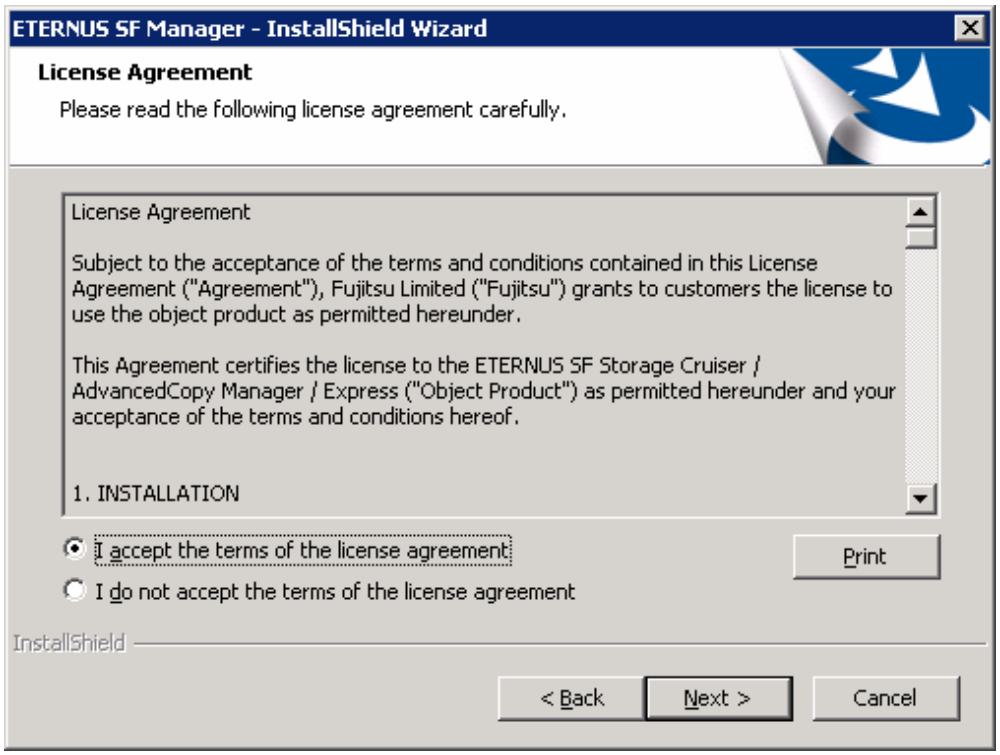


6. The installation wizard page is displayed. Click **Next**.

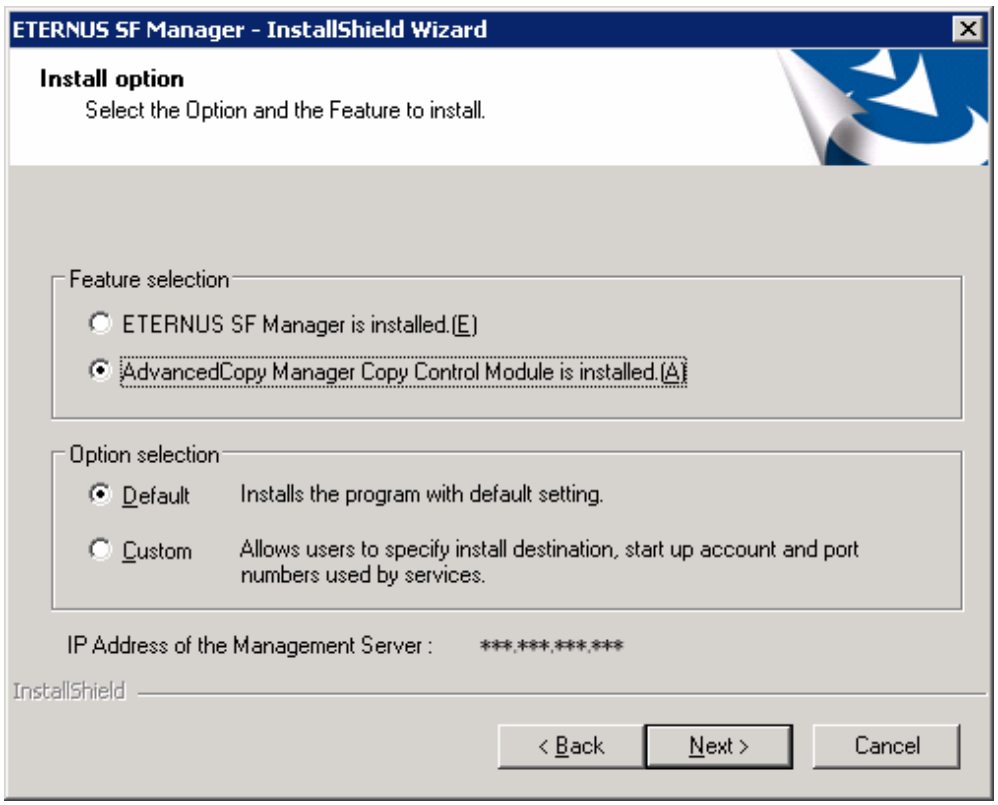


7. Read the terms and conditions of the **License Agreement** page.

   If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.



8. Select the features and options to install from the **Install option** page.



Feature selection

Select [AdvancedCopy Manager Copy Control Module is installed.].

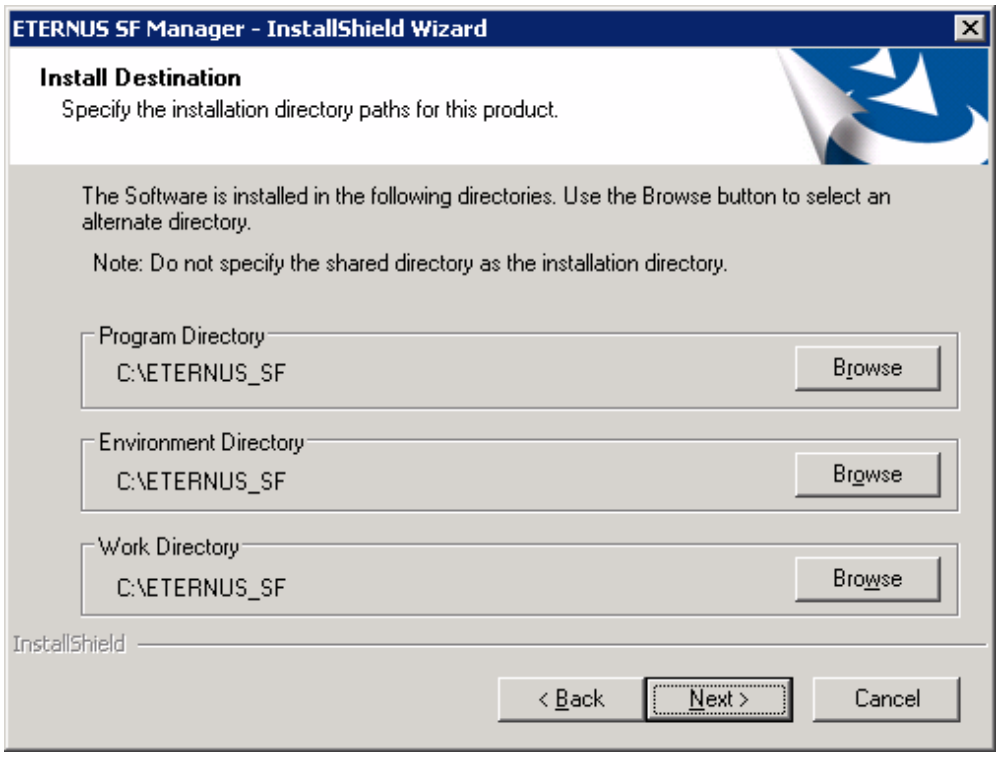
Option selection

Select the desired options according to the following information.

Install option	Explanation
Default	Changing values in the **Installation Destination** page is optional. In this case, step 9 can be skipped. For this installation method, the following checks are automatically performed relating to the information provided by default: - Is there enough disk space for the installation in the default directory? If an error is detected at this stage, a warning dialog box is displayed. If no error is detected, the **Start Copying Files** page is displayed.
Custom	The installation information must be manually entered in the pages of step 9.

9. Specify the installation directory in the **Installation Destination** page.

   If installing to a directory other than the default directory, click **Browse** and change the install destination. After designating all of the directories, click **Next**.

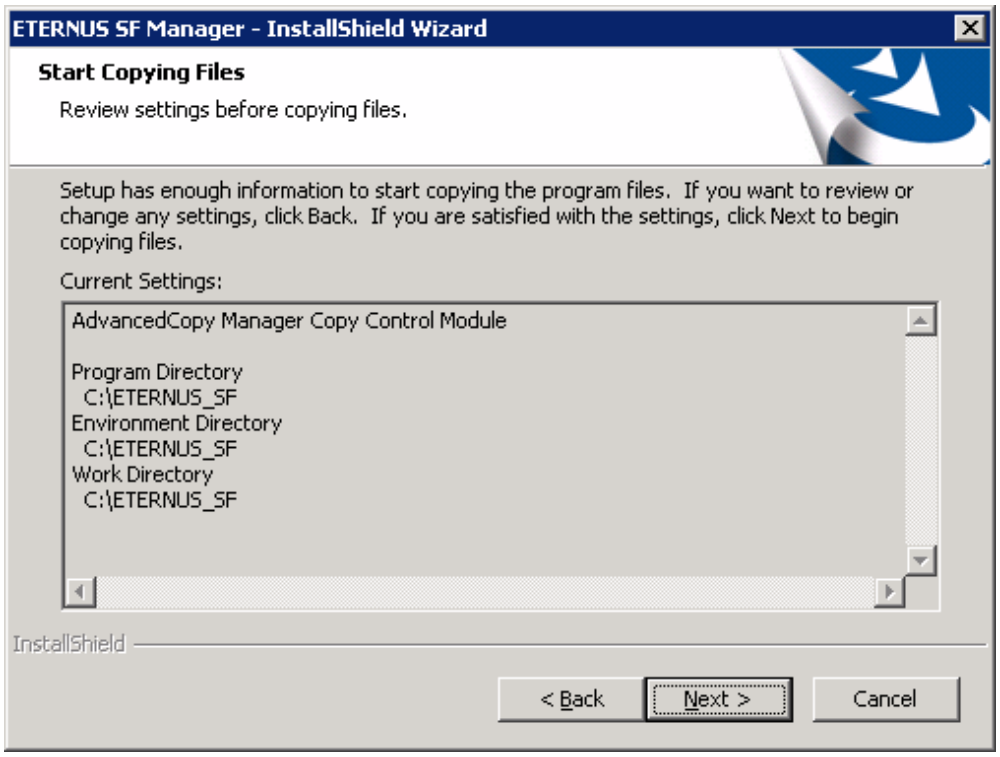


Point

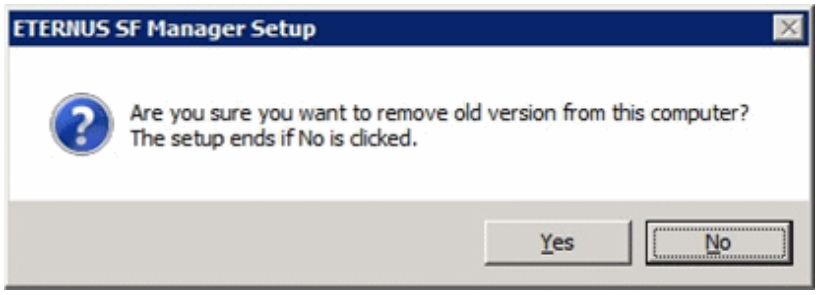
- Do not specify the shared directory as the installation directory.
- Spaces and the characters " | : * ? / . < > , % & ^ = ! ; # ' @ ( ) + are not supported for directory names.
- The number of characters in a directory name must be between 4 and 70.

10. Check the settings information in the **Start Copying Files** page.

    If the settings are correct, click **Next**.
    To change a setting, click **Back**.



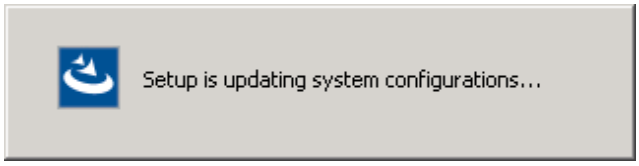
11. The following dialog box is displayed. To proceed with the uninstallation, click **Yes**.



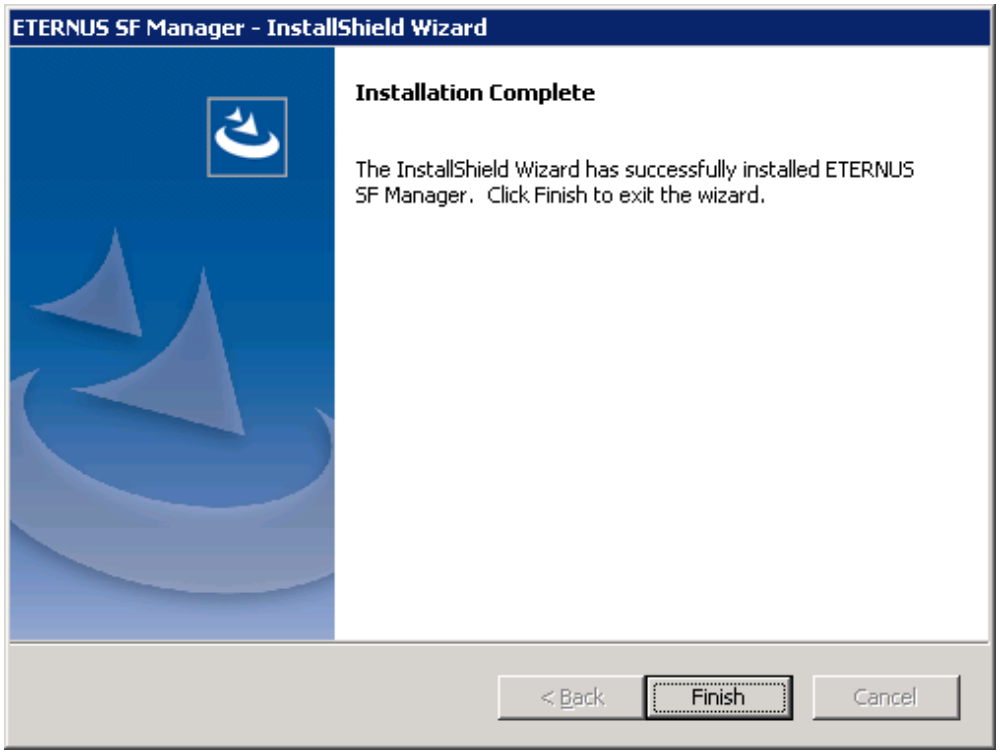
12. When the uninstallation is completed, the copying of the files for the new version is started.

    During this process, the file copy completion status is displayed in the **Setup Status** page.

13. When the copying process is completed, the system configuration is updated. Wait for the configuration update process to complete.



14. The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.6 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 15.x (for Solaris, Linux)

There are two methods of performing the upgrade, as follows.
Note that if step 1 through step 3 have already been performed, perform from step 4.

Point

There is no need to modify the installation parameter file for AdvancedCopy Manager Copy Control Module.
Refer to "B.3 Installation Parameter File (for AdvancedCopy Manager Copy Control Module)" for information on the installation parameter file.

1. Login to the server on which to perform the tasks. Perform operations after logging in with root (superuser).
2. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
3. Mount the DVD-ROM.
   - Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

   The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

- Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

4. Change the directory on the DVD-ROM where the installation shell script is stored.

```
# cd dvdromMountPoint/Manager_unix
```

5. Specify the installation parameter file and execute the following installation shell script.
Although the installation parameter file exists in the same directory as the installation shell script, it must be specified by using the full path name.

Example:

```
# ./esfinstall.sh -s dvdromMountPoint/Manager_unix/install_parameter_ccm.txt
```

6. The license agreement information is displayed. Display example is mentioned below.
If the conditions are agreeable, enter "y".

```
+-------------------------------------------------------------+
|                       ETERNUS SF V16.8                      |
|                                                             |
| All Rights Reserved, Copyright (C) FUJITSU LIMITED 2013-2019 |
+-------------------------------------------------------------+


License Agreement

Subject to the acceptance of the terms and conditions contained in this License Agreement
("Agreement"), Fujitsu Limited ("Fujitsu") grants to customers the license to use the obje
ct product as permitted hereunder.

This Agreement certifies the license to the ETERNUS SF Storage Cruiser / AdvancedCopy Mana
ger / Express ("Object Product") as permitted hereunder and your acceptance of the terms a
nd conditions hereof.


1. INSTALLATION
You are allowed to install and use manager module and agent module of the Object Product o
n any computer connected to the Storage Device directly or through network and you are als
o allowed to install and use client module of the Object Product on any computer.

2. ARCHIVAL COPY
You may make one (1) archival copy of the Object Product.

3. EMBEDDING
If the Object Product is expected to be used as embedded in another program, you may embed
the Object Product, in whole or in part, in such other program, in accordance with the pr
ocedure described in the applicable documentation.

4. NO ASSIGNMENT
You may not rent, lease, sublicense, assign, transfer or create lien against the Object Pr
oduct.

5. MODIFICATION
You may not modify or, except to the extent expressly permitted by applicable law, reverse
engineer (including, without limitation, decompile and disassemble) the Object Product, a
nd you may not permit others to do so.

6. LIMITED WARRANTY
(a) You acknowledge that Fujitsu cannot guarantee that your use of the Object Product will
```

```
be uninterrupted, that the Object Product will be error free or that all Product errors w
ill be corrected. However, if within ninety (90) days following your acquisition of the Ob
ject Product you notify the reseller from which you have acquired the Object Product of ph
ysical defects of the media containing the Object Product, Fujitsu will, at its sole discr
etion, correct the non-conformance or provide you with information necessary to correct th
e non-conformance, or replace the defective media with a new media. Only if you inform suc
h reseller of your problem with the Object Product during the above mentioned warranty per
iod and provide satisfactory evidence of the date you acquired the Object Product will Fuj
itsu be obligated to honor this warranty.

(b) THIS IS A LIMITED WARRANTY AND IT IS THE ONLY WARRANTY MADE BY FUJITSU. FUJITSU MAKES
NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTY OF MER
CHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT OF THIRD PARTIES' RIGHTS
. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO LIMITATION MAY N
OT APPLY TO YOU. NO FUJITSU RESELLER, AGENT, EMPLOYEE IS AUTHORIZED TO MAKE ANY MODIFICATI
ONS, EXTENSIONS, OR ADDITIONS TO THIS WARRANTY. IF ANY MODIFICATIONS ARE MADE TO THE OBJEC
T PRODUCT BY YOU DURING THE WARRANTY PERIOD, IF THE MEDIA IS SUBJECTED TO ACCIDENT, ABUSE,
OR IMPROPER USE, OR IF YOU VIOLATE THE TERMS AND CONDITIONS HEREOF, THEN THIS WARRANTY SH
ALL IMMEDIATELY BE TERMINATED.

(c) LIMITATION OF LIABILITY. UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, TORT, CONTR
ACT, OR OTHERWISE, SHALL FUJITSU BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY INDIRECT, SP
ECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING, WITHOUT LIMITATIO
N, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, OR LOSS OF DATA, OR FOR ANY DAMAGES IN EXC
ESS OF THE LIST PRICE TO THE PRODUCT, EVEN IF FUJITSU SHALL HAVE BEEN INFORMED OF THE POSS
IBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY. THIS LIMITATION OF LIABILITY
SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONNEL INJURY TO THE EXTENT APPLICABLE LAW P
ROHIBITS SUCH LIMITATION. FURTHERMORE, SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LI
MITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION AND EXCLUSION MAY NOT
APPLY TO YOU.

(d) The above states the entire liability of Fujitsu in connection with the use, performan
ce or non-performance of the Object Product.

(e) Even if a part of the Object Product has been developed by a third party, the warranty
and remedy for that part of the Object Product are limited to those provided for in this
Section, and the third party developer shall have no liability in connection with the use,
performance or non-conformance of the Object Product.

7. MISCELLANEOUS
(a) The terms and conditions hereof represent the complete agreement concerning this licen
se between the parties and supersede all prior or contemporaneous oral and written communi
cations between them. In the event that any additional terms or conditions are provided in
 the accompanied documentation, you must also comply with such terms and conditions.

(b) You agree to comply with all applicable export laws and regulations.

(c) Use, duplication or disclosure of the Object Product by the U.S. Government is subject
to restrictions set forth in subparagraph (a) through (b) of the Commercial Computer-Rest
ricted Rights clause at FAR 52.227 - 19 when applicable, or in subparagraphs (c)(1) and (2
) of the Rights in Technical Data and Computer Software clause at DFAR 252.227 - 7013, and
in similar clauses in the NASA FAR Supplement. Contractor/manufacturer is Fujitsu Limited
, 1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki-shi, Kanagawa-ken 211-8588, Japan.


Do you accept the terms of the above License Agreement? (default: n) [y,n]:
```

7. A confirmation message is displayed containing the installation information. To continue, enter "y". To cancel, enter "q". Press **Enter** to proceed.

```
Setting of installation parameter file.

    Installation_function:       ETERNUS SF AdvancedCopy Manager CCM
```

```
Do you want to continue the installation? [y,q]:
```

8. A confirmation message is displayed before uninstalling the previous version. To uninstall the previous version and proceed with the new installation, enter "y". To cancel the installation, enter "q". Press **Enter**.

```
An old version is installed in this system.
Do you want to remove old version from this system? [y,q]:
```

Point

For confirmation of uninstallation of the previous version, enter "y" to continue the uninstallation. If the uninstallation is cancelled, the upgrade process is interrupted. When re-executing the installation after restart of the computer, the installation is treated as new one.

9. If the upgrade completes successfully, the following message is displayed.

```
INFO: ETERNUS SF was installed successfully.
```

10. Change to a directory other than the DVD-ROM.

    Example:

```
# cd
```

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.7 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Windows)

For the Upgrade Installation, there is an installation method where required information is entered interactively and a method where no questions are asked (silent upgrade installation).

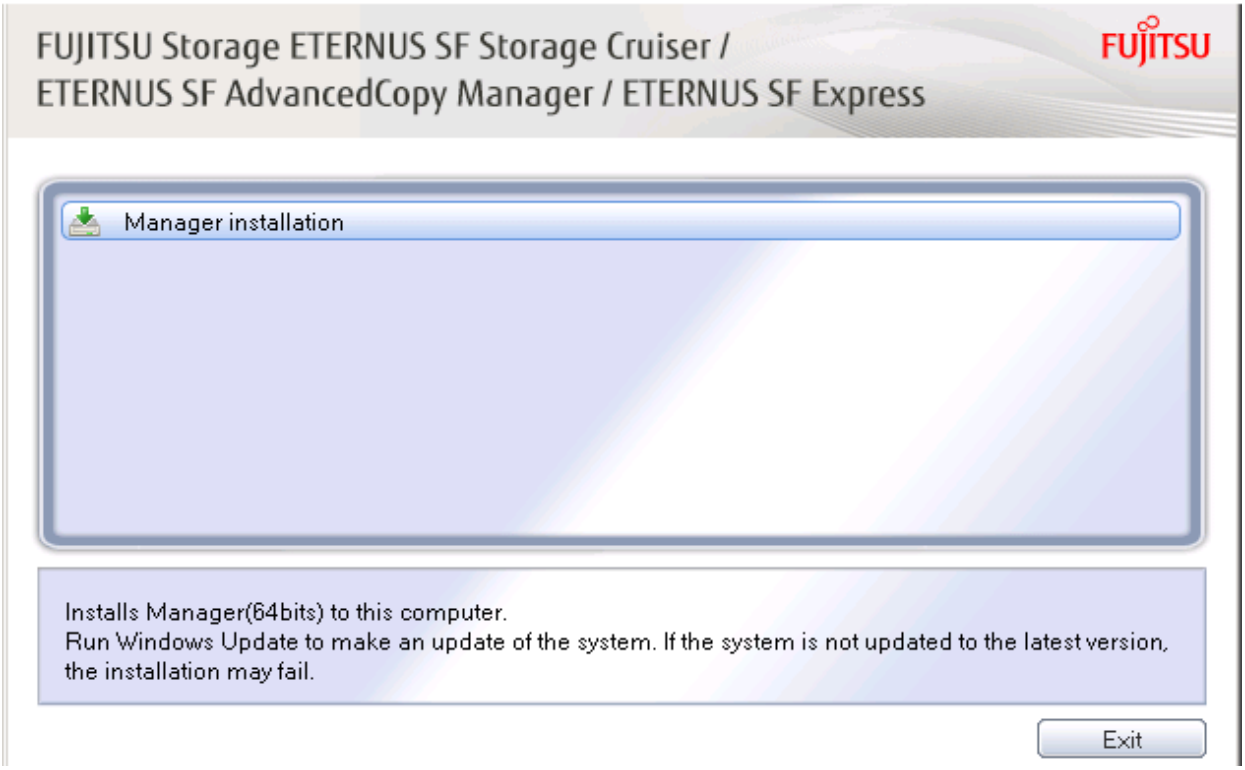
If you perform the interactive method, refer to "C.7.1 Performing Upgrade" and if you perform the silent method, refer to "C.7.2 Performing Upgrade with Silent Installation Procedure".

C.7.1 Performing Upgrade

The procedure of the Upgrade Installation of AdvancedCopy Manager Copy Control Module is as follows:

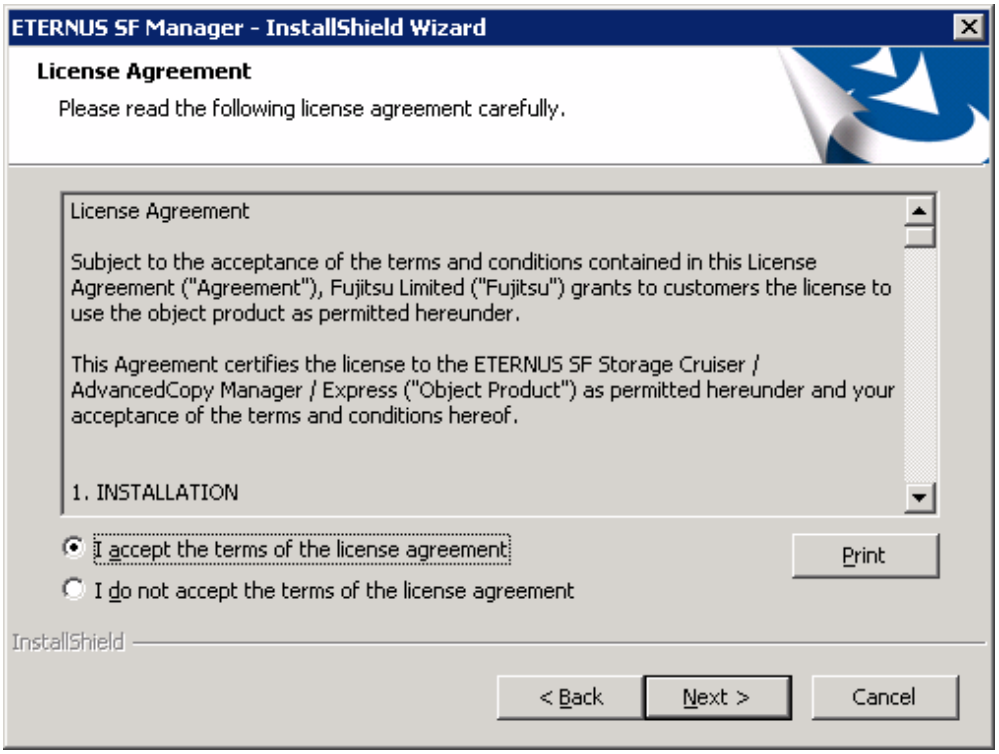
1. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

2. The following window is displayed. Click **Manager installation**.
   To cancel the upgrade at this point, click **Exit**.

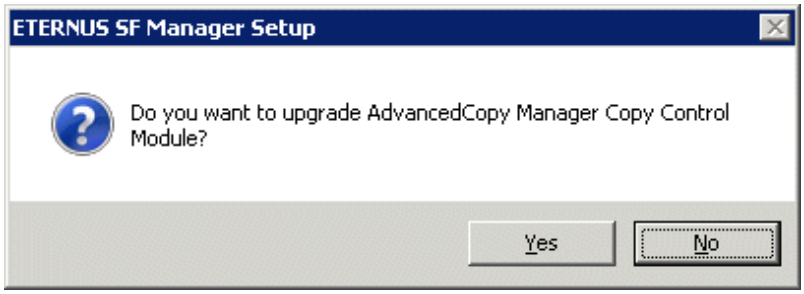


3. Read the terms and conditions of the **License Agreement** page.

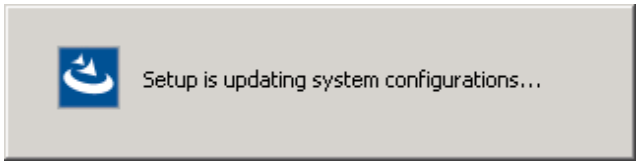
   If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.



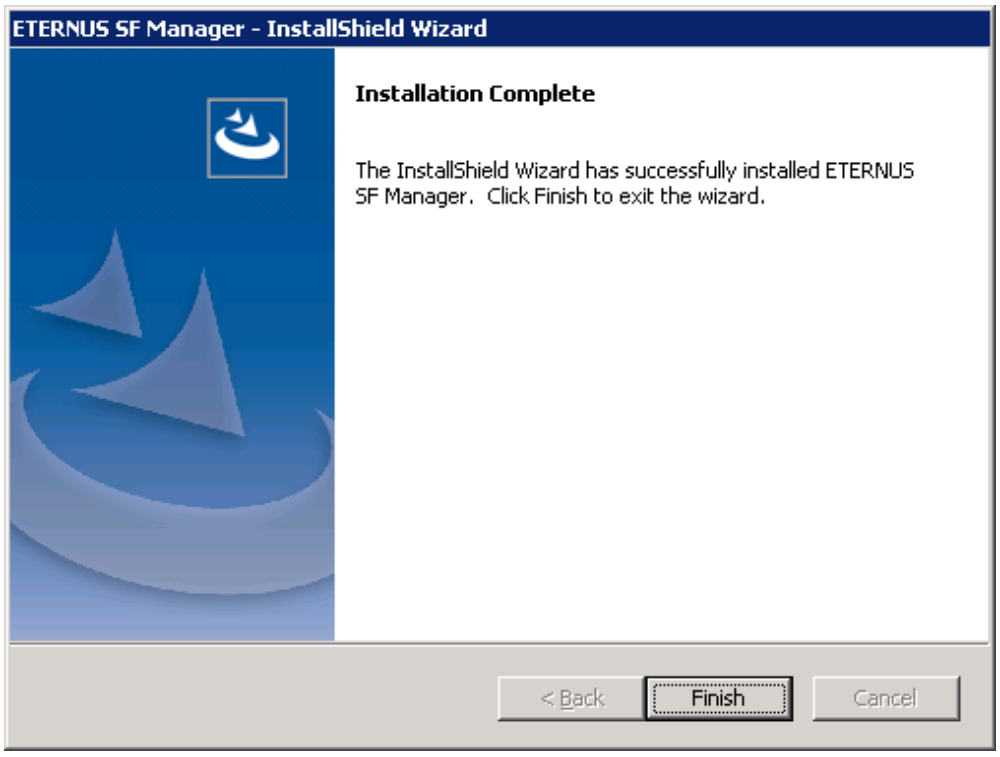
4. The following screen is displayed. Click **Yes**.
   If you abort the Upgrade Installation, click **No**.



5. The system configuration is updated. Wait for the configuration update process to complete.



6. The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



7. Eject the DVD-ROM used for the Upgrade Installation from the device.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.7.2 Performing Upgrade with Silent Installation Procedure

The procedure of the silent upgrade installation of AdvancedCopy Manager Copy Control Module are as follows:

1. Install the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive. If the Installer screen is displayed by autorun, exit the installer.
2. Start the command prompt.

3. Execute the following silent installation command.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

```
dvdromDrive:\Manager_windows\esfsilentinstall_ccm.bat -eula agreed [-l installLogFile]
```

Point

- The -eula option is specified to agree to licensing. Only when "agreed" is specified for option parameter is installation enabled. The -eula option must be specified before other options.
- If nothing is specified for *installLogFile*, an install log file named "esfsilentinstall.log" is created in the working directory specified by the environment variable TEMP.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.
- If the paths to the install log file contain any spaces, they should be surrounded by double quote characters.
- The characters " | : * ? / . < > , % & ^ ; ! are not supported for path name for install log file.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.
- During an update, it is not possible to specify an installation parameter file for the command. In the case that a file has been specified, the command terminates in an error.

4. On completion of installation, a command prompt is displayed.
   Eject the DVD-ROM used for the Upgrade Installation from the device.

Confirming the Results of the Silent Upgrade Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for ETERNUS SF Manager, AdvancedCopy Manager CCM)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.8 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 16.x (for Solaris, Linux)

For the Upgrade Installation, there is an installation method where required information is entered interactively and a method where no questions are asked (silent upgrade installation).

If you perform the interactive method, refer to "C.8.1 Performing Upgrade" and if you perform the silent method, refer to "C.8.2 Performing Upgrade with Silent Installation Procedure".

C.8.1 Performing Upgrade

The procedure of the Upgrade Installation of Solaris / Linux Edition AdvancedCopy Manager Copy Control Module are explained below.

The upgrade procedure is as follows:

1. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
2. Mount the DVD-ROM.
   - Example for Solaris environments

     ```
     # mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

     ```
     # mount -t iso9660 -r /dev/cdrom dvdromMountPoint
     ```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".
3. Change the directory on the DVD-ROM where the installation shell script is stored.

   ```
   # cd dvdromMountPoint/Manager_unix
   ```
4. Execute the following installation shell script.

   ```
   # ./esfinstall.sh
   ```
5. The license agreement information is displayed. Display example is mentioned below.
   If the conditions are agreeable, enter "y".

   ```
   Notes
   Thank you for purchasing media which contains Fujitsu software program (hereafter referred
   to as "Media"). Fujitsu provides the Media to you subject to agreement to "Conditions of
   Use" below.
   This document will not be reissued and please keep it in a secure place.
   Conditions of Use
   1. Using programs
   In order to use the software program contained in the Media (hereafter referred to as "Sof
   tware"), in addition to the Media itself, you shall purchase a license which grants you a
   right to use the Software.
   2. Backup
   (1) You may duplicate a Media for backup purpose.
   (2) When you duplicate the Media for backup purpose in accordance with Section 2. (1), you
   must copy the copyright notice that appears on the original Media on the duplication ther
   eof.
   (3) The duplication of the Media shall be treated as the Media under this Condition of Use
   .
   3. Transfer to a third party

   You may not transfer, loan, sublicense the Media to third parties, or provide it as collat
   eral to a third party.
   4. Warranty range
   Fujitsu warrants that the Media will be free from defects in materials and manufacture und
   er normal use for a period of 90 days from the date of delivery to you. Your sole and excl
   usive remedy and the entire liability of Fujitsu under this Condition of Use will be, at F
   ujitsu's option,replacement of the Media or refund of the money paid by you for the Media.
   Do you accept the terms of the above License Agreement? (default: n) [y,n]:
   ```

6. A confirmation message is displayed containing the installation information. To continue, enter "y". To cancel, enter "q". Press Enter to proceed.

```
Do you want to upgrade? [y,q]:
```

7. If the upgrade completes successfully, the following message is displayed.

```
INFO: ETERNUS SF was installed successfully.
```

8. Change to a directory other than the DVD-ROM.

   Example:

```
# cd
```

9. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

10. Eject the DVD-ROM used for the Upgrade Installation from the device.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.

C.8.2 Performing Upgrade with Silent Installation Procedure

The procedure of the silent upgrade installation of Solaris / Linux Edition AdvancedCopy Manager Copy Control Module are as listed below.

1. Insert the DVD-ROM "ETERNUS SF SC/ACM Mediapack for Solaris (Manager Program) (2/2)" or "ETERNUS SF SC/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
2. Mount the DVD-ROM.
   - Example for Solaris environments

```
# mount -F hsfs -o ro /dev/dsk/c0t4d0s0 dvdromMountPoint
```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/dsk/c0t4d0s0".

   - Example for Linux environments

```
# mount -t iso9660 -r /dev/cdrom dvdromMountPoint
```

     The device name of the DVDROM drive may differ depending on the device. In this example, the device name of the DVD-ROM drive is mounted as "/dev/cdrom".

3. Execute the following silent installation shell script.
   For *installLogFile*, specify the file in which to output installation log with an absolute path. It is optional to specify for *installLogFile*.

```
# dvdromMountPoint/Manager_unix/esfsilentinstall_ccm.sh -eula agreed [-l installLogFile]
```

Point

- The -eula option is specified to agree to licensing. Only when "agreed" is specified for option parameter is installation enabled. The -eula option must be specified before other options.
- If nothing is specified for *installLogFile*, an install log file named "esfsilentinstall.log" is created in the /var/tmp directory.
- If there is any file of the same name as the specified install log file, it is overwritten.
- It is required to specify an existing directory with write permission for the directory in which to store the install log file. If it has no write permission, no error message is output in the command prompt or screen and the process terminates with error.

- If the paths to the install log file contain any spaces, they should be surrounded by double quote characters.
- The characters " ! $ are not supported for path name for install log file.

Note

- If an invalid option is specified, its corresponding error message is output in the install log file and the process exits. No error message is output in the command prompt or screen.
- Do not execute multiplexly the command for silent installation. If it is multiplexly executed, the command executed after that terminates abnormally. At this time, an install log file is not created.

4. On completion of installation, a command prompt is displayed.
5. Unmount the DVD-ROM.

```
# umount dvdromMountPoint
```

6. Eject the DVD-ROM used for the Upgrade Installation from the device.

Confirming the Results of the Silent Upgrade Installation

Check the return value from the silent installation command. If necessary, check the install log file. However, if the return value from the silent installation command is 3 or 9, an install log file is not created. For details, refer to "Return Values for Silent Installation (for ETERNUS SF Manager, AdvancedCopy Manager CCM)" in the *Installation and Setup Guide*.

The installation result can be viewed in the install log file, too.
Open the install log file to see "ResultCode" in the **ResponseResult** section. In "ResultCode" is written the return value from the silent installation command.

The upgrade is complete above.
Return to the section where this item was referenced to continue tasks.