

FUJITSU Storage

ETERNUS SF

Express V16.5 / Storage Cruiser V16.5 /

AdvancedCopy Manager V16.5

Migration Guide

Preface

Purpose

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 *ETERNUS SF Installation and Setup Guide*.

Organization

This manual is composed as follows:

[Chapter 1 Overview](#)

This chapter provides an overview of upgrade.

[Chapter 2 Upgrade from Express Version 14.x](#)

This chapter describes the upgrade procedure from Express Version 14.x.

[Chapter 3 Upgrade from Express Version 15.x](#)

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

[Chapter 4 Upgrade from Express Version 16.x](#)

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

[Chapter 5 Upgrade from Storage Cruiser Version 14.x](#)

This chapter describes the upgrade procedure from Storage Cruiser Version 14.x.

[Chapter 6 Upgrade from Storage Cruiser Version 15.x](#)

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

[Chapter 7 Upgrade from Storage Cruiser Version 16.x](#)

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

[Chapter 8 Upgrade from AdvancedCopy Manager Version 14.x](#)

This chapter describes the upgrade procedure from AdvancedCopy Manager Version 14.x.

[Chapter 9 Upgrade from AdvancedCopy Manager Version 15.x](#)

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

[Chapter 10 Upgrade from AdvancedCopy Manager Version 16.x](#)

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

[Chapter 11 Collecting Troubleshooting Information](#)

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

[Chapter 12 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.

Notation

The names, abbreviations, and symbols shown below are used in this manual.

Operating Systems

Formal Name	Abbreviation	
Microsoft(R) Windows Server(R) 2008 Standard (32-bit) (64-bit) Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM) (32-bit) (64-bit) Microsoft(R) Windows Server(R) 2008 Enterprise (32-bit) (64-bit) Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM) (32-bit) (64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter (32-bit) (64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter without Hyper-V(TM) (32-bit) (64-bit)	Windows Server 2008	Windows
Microsoft(R) Windows Server(R) 2008 R2 Foundation Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter	Windows Server 2008 R2	
Microsoft(R) Windows Server(R) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter	Windows Server 2012	
Microsoft(R) Windows Server(R) 2012 R2 Standard Microsoft(R) Windows Server(R) 2012 R2 Datacenter	Windows Server 2012 R2	
Microsoft(R) Windows Server(R) 2016 Standard Microsoft(R) Windows Server(R) 2016 Datacenter	Windows Server 2016	
Windows(R) 7 Home Basic Windows(R) 7 Home Premium Windows(R) 7 Professional Windows(R) 7 Enterprise Windows(R) 7 Ultimate	Windows 7	
Windows(R) 8 Windows(R) 8 Pro	Windows 8	
Windows(R) 8.1 Windows(R) 8.1 Pro	Windows 8.1	
Windows(R) 10 Home Windows(R) 10 Pro Windows(R) 10 Mobile	Windows 10	
Solaris(TM) 9 Operating System	Solaris 9	Solaris or Solaris OS
Oracle Solaris 10	Solaris 10	
Oracle Solaris 11	Solaris 11	
Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64)	RHEL5	Linux

Formal Name	Abbreviation	
Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64)	RHEL6	
Red Hat(R) Enterprise Linux(R) 7 (for Intel64)	RHEL7	
SUSE(R) Linux Enterprise Server 12 for AMD64 & Intel64	SUSE Linux Enterprise Server 12	
HP-UX 11i v3	HP-UX	
AIX(R) V6.1 AIX(R) V7.1	AIX	
VMware vSphere(R) 5	VMware vSphere 5	VMware
VMware vSphere(R) 6	VMware vSphere 6	

Oracle Solaris might be described as Solaris, Solaris Operating System, or Solaris OS.

FUJITSU Storage ETERNUS

Formal Name	Abbreviation		
FUJITSU Storage ETERNUS DX60	-	-	ETERNUS DX series or ETERNUS Disk storage system
FUJITSU Storage ETERNUS DX410 FUJITSU Storage ETERNUS DX440	ETERNUS DX400 series		
FUJITSU Storage ETERNUS DX8100 FUJITSU Storage ETERNUS DX8400 FUJITSU Storage ETERNUS DX8700	ETERNUS DX8000 series		
FUJITSU Storage ETERNUS DX60 S2 FUJITSU Storage ETERNUS DX80 S2 FUJITSU Storage ETERNUS DX90 S2	-	ETERNUS DX S2 series	
FUJITSU Storage ETERNUS DX410 S2 FUJITSU Storage ETERNUS DX440 S2	ETERNUS DX400 S2 series		
FUJITSU Storage ETERNUS DX8100 S2 FUJITSU Storage ETERNUS DX8700 S2	ETERNUS DX8000 S2 series		
FUJITSU Storage ETERNUS DX60 S3 FUJITSU Storage ETERNUS DX100 S3 FUJITSU Storage ETERNUS DX200 S3	-	ETERNUS DX S3 series	
FUJITSU Storage ETERNUS DX500 S3 FUJITSU Storage ETERNUS DX600 S3	-		
FUJITSU Storage ETERNUS DX8700 S3 FUJITSU Storage ETERNUS DX8900 S3	ETERNUS DX8000 S3 series		
FUJITSU Storage ETERNUS DX60 S4 FUJITSU Storage ETERNUS DX100 S4 FUJITSU Storage ETERNUS DX200 S4	-	ETERNUS DX S4 series	
FUJITSU Storage ETERNUS AF250 FUJITSU Storage ETERNUS AF650	ETERNUS AF series		ETERNUS All-Flash Arrays
FUJITSU Storage ETERNUS DX200F	-		

Each individual device name in this document is listed with "FUJITSU Storage" omitted from it.

Software Products

Formal Name	Abbreviation
Windows(R) Internet Explorer(R)	Internet Explorer
Mozilla(R) Firefox(R)	Firefox
Google Chrome(TM)	Chrome
Microsoft(R) Windows Server(R) Failover Clustering	WSFC
Microsoft(R) Exchange Server	Exchange Server
Microsoft(R) SQL Server(R)	SQL Server
VMware(R) ESX(R)	VMware ESX
VMware(R) ESXi(TM)	VMware ESXi
VMware(R) vCenter(TM) Server	VMware vCenter Server or vCenter Server
FUJITSU Software PRIMECLUSTER Global Disk Services	GDS
FUJITSU Software PRIMECLUSTER Global File Services	GFS
FUJITSU Software Symfoware Server Enterprise Extended Edition FUJITSU Software Symfoware Server Enterprise Edition	Symfoware

Manuals

Formal Name	Abbreviation
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Quick Reference	ETERNUS SF Quick Reference
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Release Notes	ETERNUS SF Release Notes
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Installation and Setup Guide	ETERNUS SF Installation and Setup Guide
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Migration Guide	ETERNUS SF Migration Guide
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Web Console Guide	ETERNUS SF Web Console Guide
FUJITSU Storage ETERNUS SF Storage Cruiser / AdvancedCopy Manager Cluster Environment Setup Guide	ETERNUS SF Cluster Environment Setup Guide
FUJITSU Storage ETERNUS SF Storage Cruiser / AdvancedCopy Manager Operation Guide for VMware vSphere Virtual Volumes	ETERNUS SF Operation Guide for VMware vSphere Virtual Volumes
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Messages	ETERNUS SF Messages
FUJITSU Storage ETERNUS SF Express / Storage Cruiser Event Guide	ETERNUS SF Event Guide
FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Glossary	ETERNUS SF Glossary

Besides the above-mentioned, each individual manual name in this document is listed with "FUJITSU Storage" omitted from it.

Others

- In this manual, the following products are collectively described as "Windows Server 2008 or later".
 - Windows Server 2008
 - Windows Server 2008 R2
 - Windows Server 2012

- Windows Server 2012 R2
- Windows Server 2016
- In this manual, the following products are collectively described as "Windows Server 2012 or later".
 - Windows Server 2012
 - Windows Server 2012 R2
 - Windows Server 2016
- In this manual, unless there is a special disclaimer, ETERNUS Disk storage system includes the ETERNUS All-Flash Arrays. However, the following functions are not supported in the ETERNUS All-Flash Arrays:
 - Energy saving operation for storage device
 - NAS operation for storage device

The following function is not supported in the ETERNUS DX200F All-Flash Arrays:

- Automated Storage Tiering operation at multiple tiers (two or more)

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Notes

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Update History

Content of Update	Updated Section	Revision
The information related to ETERNUS DX200F is described.	"Others" in Preface	1.1
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	
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	

Content of Update	Updated Section	Revision
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 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 ETERNUS DX8700 S3/DX8900 S3 is added.	"Notation" in Preface	3.2
The title of the reference destination section is modified.	8.2.5	
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	
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 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	
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	
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 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	

Content of Update	Updated Section	Revision
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.	11.3.1	6.1

Manual Organization and Reading Suggestions

Manual Organization

The following table describes the Manual organization of Express, Storage Cruiser, and AdvancedCopy Manager.

When to Read	Related Manuals (Abbreviated)	Related Products (*1)			Explanation
		EXP	SC	ACM	
Before installation	Quick Reference	Yes	Yes	Yes	This manual is common for all products.
	Release Notes	Yes	Yes	Yes	This manual is common for all products.
	Overview	-	-	Yes	This manual is unique for the product.
During installation	Installation and Setup Guide	Yes	Yes	Yes	This manual is common for all products.
	Cluster Environment Setup Guide	-	Yes	Yes	This manual is common for Storage Cruiser and AdvancedCopy Manager.
	Migration Guide	Yes	Yes	Yes	This manual is common for all products.
During operation	Operation Guide	Yes	Yes	Yes	<p>This manual is unique for each product. The following manuals are available:</p> <ul style="list-style-type: none"> - Express Operation Guide - Storage Cruiser Operation Guide - Storage Cruiser Operation Guide for Optimization Function - AdvancedCopy Manager Operation Guide (for Windows) - AdvancedCopy Manager Operation Guide (for Solaris) - AdvancedCopy Manager Operation Guide (for Linux) - AdvancedCopy Manager Operation Guide (for HP-UX) - AdvancedCopy Manager Operation Guide (for AIX)

When to Read	Related Manuals (Abbreviated)	Related Products (*1)			Explanation
		EXP	SC	ACM	
					<ul style="list-style-type: none"> - AdvancedCopy Manager Operation Guide for Copy Control Module - Storage Cruiser / AdvancedCopy Manager Operation Guide for VMware vSphere Virtual Volumes
	Web Console Guide	Yes	Yes	Yes	This manual is common for all products.
Anytime	Event Guide	Yes	Yes	-	This manual is common for Express and Storage Cruiser.
	Messages	Yes	Yes	Yes	This manual is common for all products.
	Glossary	Yes	Yes	Yes	This manual is common for all products.

*1: "EXP" indicates Express, "SC" indicates Storage Cruiser, and "ACM" indicates AdvancedCopy Manager.

How to Read Manuals

Use the following table to find the most useful information in the Express, Storage Cruiser, and AdvancedCopy Manager manuals to answer your inquiry.

Purpose	Manual	Main Contents	How to Read
Acquiring a product overview and basic operation knowledge	Quick Reference	<ul style="list-style-type: none"> - Product overview - Installation decision - Overview of the necessary tasks from installation to first use 	Read if you want to acquire a fundamental knowledge of the product and its operation in order to decide to install it or not.
	AdvancedCopy Manager Overview	<ul style="list-style-type: none"> - Main functions - Linkable applications - Procedure overview for Advanced Copy of ETERNUS Disk storage system 	
Confirming the updated contents	Release Notes	<ul style="list-style-type: none"> - New function overview - Incompatibilities with previous version - Fixed bugs 	Read if you want to know the updated contents from a previous version and if you perform the upgrade.
Deciding if an upgrade is required	Migration Guide	<ul style="list-style-type: none"> - Notes and cautions about the upgrade - Upgrade procedure 	Read if you want to upgrade from a previous version.
Installing and correctly operating the product Setting up operating environment depending on purpose	Installation and Setup Guide	<ul style="list-style-type: none"> - Operating environment - Installation procedure - Setup procedure - Uninstallation procedure 	Read if you want to install and setup the product.
	Cluster Environment Setup Guide	<ul style="list-style-type: none"> - Supported cluster software - Installation procedure for a clustered system 	Read if you want to install and setup the product on a clustered system.

Purpose	Manual	Main Contents	How to Read
		<ul style="list-style-type: none"> - Setup procedure for a clustered system - Uninstallation procedure for a clustered system 	
Administration and operation of the installed system	Express Operation Guide	<ul style="list-style-type: none"> - Starting and stopping the software - Device monitoring - Data copy inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance 	Read if you want to start or shutdown the system, monitor the operation status, do backup/restore operations, etc.
	Storage Cruiser Operation Guide	<ul style="list-style-type: none"> - Starting and stopping the software - Device monitoring - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference 	
	Storage Cruiser Operation Guide for Optimization Function	<ul style="list-style-type: none"> - Operating environment construction - Operating status monitoring - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference 	
	AdvancedCopy Manager Operation Guide (for Windows)	<ul style="list-style-type: none"> - Starting and stopping the software - Data backup/restore inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference 	
	AdvancedCopy Manager Operation Guide (for Solaris)		
	AdvancedCopy Manager Operation Guide (for Linux)		
AdvancedCopy Manager Operation Guide (for HP-UX)			
AdvancedCopy Manager Operation Guide (for AIX)			
AdvancedCopy Manager Operation Guide for Copy Control Module			
Storage Cruiser / AdvancedCopy Manager Operation Guide for VMware vSphere Virtual Volumes	<ul style="list-style-type: none"> - Operating environment construction - Virtual machine operation using a virtual volume 		

Purpose	Manual	Main Contents	How to Read
		<ul style="list-style-type: none"> - Backup/restore of the virtual machine - Necessary tasks after an architectural modification of the system as well as product maintenance 	
	Web Console Guide	<ul style="list-style-type: none"> - Operating environment - Screen layout description 	Read if you want to understand the ETERNUS SF Web Console.
Dealing with messages issued by the software	Messages	<ul style="list-style-type: none"> - Messages and their explanations - Parameter (variable information) description - System action - Countermeasures 	Read if you want a practical way of investigating and dealing with messages issued by the software.
Dealing with events issued by the software	Event Guide	<ul style="list-style-type: none"> - Phenomenon of event - Countermeasures 	Read if you need to find a practical way of investigating and dealing with events.
Researching the meaning of specific terms related to the products and other important terms	Glossary	<ul style="list-style-type: none"> - Product specific terminology explanation - Explanation of important terminology appearing in the manual - Synonyms and related terms - Proper form of abbreviated terms 	Read if you want to learn the meaning of important terms, product specific terms or abbreviations used in the manuals.

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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 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	-	-	-	<ul style="list-style-type: none"> - When upgrading from Express Version 14.x: "Chapter 2 Upgrade from Express Version 14.x"
Y	-	Y	-	
Y	-	-	Y	
Y	-	Y	Y	<ul style="list-style-type: none"> - When upgrading from Express Version 15.x: "Chapter 3 Upgrade from Express Version 15.x" - When upgrading from Express Version 16.x: "Chapter 4 Upgrade from Express Version 16.x"
-	Y	-	-	<ul style="list-style-type: none"> - When upgrading from Storage Cruiser Version 14.x: "Chapter 5 Upgrade from Storage Cruiser Version 14.x"
-	Y	Y	-	
-	Y	-	Y	
-	Y	Y	Y	<ul style="list-style-type: none"> - When upgrading from Storage Cruiser Version 15.x: "Chapter 6 Upgrade from Storage Cruiser Version 15.x" - When upgrading from Storage Cruiser Version 16.x: "Chapter 7 Upgrade from Storage Cruiser Version 16.x"
-	-	Y	-	<ul style="list-style-type: none"> - When upgrading from AdvancedCopy Manager Version 14.x:

Combination of Products				Reference
Express	Storage Cruiser	AdvancedCopy Manager	AdvancedCopy Manager Copy Control Module	
-	-	Y	Y	<p>"Chapter 8 Upgrade from AdvancedCopy Manager Version 14.x"</p> <ul style="list-style-type: none"> - When upgrading from AdvancedCopy Manager Version 15.x: "Chapter 9 Upgrade from AdvancedCopy Manager Version 15.x" - When upgrading from AdvancedCopy Manager Version 16.x: "Chapter 10 Upgrade from AdvancedCopy Manager Version 16.x"
-	-	-	Y	<ul style="list-style-type: none"> - When upgrading from AdvancedCopy Manager Version 14.x: "8.3 Upgrading AdvancedCopy Manager Copy Control Module" - When upgrading from AdvancedCopy Manager Version 15.x: <ul style="list-style-type: none"> - "9.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)" - "9.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)" - When upgrading from AdvancedCopy Manager Version 16.x: <ul style="list-style-type: none"> - "10.6 Upgrading AdvancedCopy Manager Copy Control Module (for Windows)" - "10.7 Upgrading AdvancedCopy Manager Copy Control Module (for Solaris, Linux)"

Y: Product installed
-: Product not installed

1.2 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.

1.3 Products Which Can Be Upgraded with Upgrade Installation

The products which can be upgraded with the Upgrade Installation are as follows.

For Windows

Products Which Can Use Upgrade Installation	Product After Upgrade
ETERNUS SF Express Version 14.x ETERNUS SF Express Version 15.x ETERNUS SF Express Version 16.x	ETERNUS SF Express Version 16.5
ETERNUS SF Storage Cruiser Version 14.x (*1) ETERNUS SF Storage Cruiser Version 15.x ETERNUS SF Storage Cruiser Version 16.x	ETERNUS SF Storage Cruiser Version 16.5
ETERNUS SF AdvancedCopy Manager Version 14.x (*2) ETERNUS SF AdvancedCopy Manager Version 15.x ETERNUS SF AdvancedCopy Manager Version 16.x	ETERNUS SF AdvancedCopy Manager Version 16.5

*1: The Upgrade Installation can be used for the Storage Cruiser's manager only.

*2: The Upgrade Installation can be used for AdvancedCopy Manager's manager and AdvancedCopy Manager Copy Control Module.

For Solaris

Products Which Can Use Upgrade Installation	Product After Upgrade
ETERNUS SF Storage Cruiser Version 14.x (*1) ETERNUS SF Storage Cruiser Version 15.x ETERNUS SF Storage Cruiser Version 16.x	ETERNUS SF Storage Cruiser Version 16.5
ETERNUS SF AdvancedCopy Manager Version 14.x (*2) ETERNUS SF AdvancedCopy Manager Version 15.x ETERNUS SF AdvancedCopy Manager Version 16.x	ETERNUS SF AdvancedCopy Manager Version 16.5

*1: The Upgrade Installation can be used for the Storage Cruiser's manager only.

*2: The Upgrade Installation can be used for AdvancedCopy Manager's manager and AdvancedCopy Manager Copy Control Module.

For Linux

Products Which Can Use Upgrade Installation	Product After Upgrade
ETERNUS SF Express Version 15.x ETERNUS SF Express Version 16.x	ETERNUS SF Express Version 16.5
ETERNUS SF Storage Cruiser Version 14.x (*1) ETERNUS SF Storage Cruiser Version 15.x ETERNUS SF Storage Cruiser Version 16.x	ETERNUS SF Storage Cruiser Version 16.5
ETERNUS SF AdvancedCopy Manager Version 14.x (*2) ETERNUS SF AdvancedCopy Manager Version 15.x ETERNUS SF AdvancedCopy Manager Version 16.x	ETERNUS SF AdvancedCopy Manager Version 16.5

*1: The Upgrade Installation can be used for the Storage Cruiser's manager only.

*2: The Upgrade Installation can be used for AdvancedCopy Manager's manager and AdvancedCopy Manager Copy Control Module.



Note

For Upgrading from Previous Version Products That Are Not Listed in Table Above and That Installed in HP-UX or AIX Environment:

It is not possible to use the Upgrade Installation provided in this manual.

Uninstall the previous version product and install this version product. Afterwards, perform as new all necessary setup and customization operations for this version.

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 *ETERNUS SF Installation and Setup Guide* for information on the operating system versions supported by the product.

Migration to IPv6 Environment

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 *ETERNUS SF 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 *ETERNUS SF 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.x Session Timeout

When a time longer than the screen refresh interval is configured for the session timeout value, in Version 15.x, 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 *ETERNUS SF Web Console Guide* for information on how to change the session timeout value.

Concerning Mounting of DVD-ROM Media (For Linux 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. Also, for RHEL5 (Intel64), specify "exec" for the mount option. The following is a description example of the /etc/fstab file for RHEL5 (Intel64).

```
/dev/cdrom    /mnt          iso9660 exec    0 0
```

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.
- If the automatic mount of the DVD-ROM was performed using the auto mount daemon (autofs) in RHEL5 (Intel64), "noexec" is set for the mount option. Therefore, it is not possible to execute the command on the DVD-ROM.

Chapter 2 Upgrade from Express Version 14.x

To upgrade Express Version 14.x to this version, install the ETERNUS SF Manager.

Point

- The Upgrade Installation is available for Express.
- If upgrading Express, the following information cannot be imported from the previous version:
 - Event log history
 - Login/Logout history
 - Configuration modification history
 - User account for the Express Web GUI
- If upgrading AdvancedCopy Manager, the following information cannot be imported from the previous version:
 - User account for GUI client
- 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 *ETERNUS SF Installation and Setup Guide* for information on the supported devices in this version.

2.1 Preparing for Upgrade

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.
 - Administrator information
Record the "contact information for troubleshooting" that is registered in Express.
 - Server information and HBA information
Record the server setting information that is registered in Express.
In addition, check the IP address of the server and record it.

See

Refer to the *ETERNUS SF Express User's Guide* for the previous version for information on how to check the configuration information.

2. Back up the Express operational environment of the previous version.
Refer to "[A.23 Backup of Express Operational Environment](#)" for information on performing a backup.
3. If AdvancedCopy Manager is installed, back up the AdvancedCopy Manager operational environment of the previous version.
Refer to the following table to back up the operational environment.

Server Type	Reference
Storage Management Server	"A.1 Backing Up Repository Data (for Windows)"

Server Type	Reference
Storage Management Server which also serves as a Storage Server	Perform the steps of "A.1 Backing Up Repository Data (for Windows)", and then perform the steps of "A.3 Backing Up Management Information (for Windows)".

- If AdvancedCopy Manager Copy Control Module is installed, back up the AdvancedCopy Manager Copy Control Module operational environment of the previous version.

Refer to "A.6 Backing Up Environment Setting Files" for information on performing a backup.

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 *ETERNUS SF 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 Express.

Refer to the *ETERNUS SF Express User's Guide* for the relevant previous version for information on the required disk space.

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.



See

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

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.



See

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

2.1.5 Preparing for Uninstallation

If AdvancedCopy Manager is installed, in order to start the upgrade, perform the DB unsetup before uninstalling the previous version.



See

Refer to "A.7 Unsetting Up Database" for information on the DB unsetup procedure.

2.2 Performing Upgrade

Refer to "[C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 15.x \(for Windows\)](#)" to perform the upgrade. Note the following points when you upgrade:

- When requested to restart the computer, click **No**.
If **Yes** is clicked, the upgrade is interrupted. When re-executing the installation after a restart of the computer, the installation is treated as new one.
- When the uninstallation completes successfully, the **Uninstallation was completed successfully** page may be displayed. Although the instruction on the page indicates the deletion of files and folders, do not delete files and folders when performing 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 "[2.3 Tasks to Be Performed After Upgrade](#)".
-

2.3 Tasks to Be Performed After Upgrade

2.3.1 Restoring Operational Environment from Previous Version

With the following procedure, restore the operational environment that was backed up in steps 2 to 4 of "[2.1.1 Backing Up Operational Environment of Previous Version](#)":

1. Restore the Express operational environment.

Refer to "[A.24 Restoring of Express Operational Environment](#)" for information on performing a restore.

2. If AdvancedCopy Manager had been installed, restore the AdvancedCopy Manager operational environment.

Refer to the following table to restore the operational environment.

For restoring the operational environment, start a new window for command execution, and then perform the procedure on the window.

Server Type	Reference
Management Server	" A.9 Restoring Repository Data (for Windows) "
Management Server which also serves as a Managed Server	Perform the steps of " A.9 Restoring Repository Data (for Windows) ", and then perform the steps of " A.11 Restoring Management Information (for Windows) ".

3. If AdvancedCopy Manager Copy Control Module had been installed, restore the AdvancedCopy Manager Copy Control Module operational environment.

Refer to "[A.14 Restoring Environment Setting Files](#)" for information on performing a restore.

Note

Do not restore the information that was backed up in step 1 of "[2.1.1 Backing Up Operational Environment of Previous Version](#)" now, for it is restored in "[2.3.7 Redefining Operational Environment](#)".

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.


```
programDir\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 "[12.2 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.

2.3.3 Setting Up User Account

Set up a user account in order to use the ETERNUS SF Manager functions.

Refer to "Setting Up User Account" in the *ETERNUS SF Installation and Setup Guide* for this version for information on setup.

2.3.4 Setting Up Web Console

If firewalls are used between the PC on which Web Console is launched and the Management Server, perform firewall settings to allow transmission.

Refer to "Setting Up for Using Web Console" in the *ETERNUS SF Installation and Setup Guide* for this version for information on firewall setup.



When upgrading Express Version 14.2, if operating Web Console from the same web browser as before the upgrade, delete the web browser's cache prior to operation.

2.3.5 Setting Account Information for Access to ETERNUS Disk Storage System

Set the account information, user name and password to access the ETERNUS Disk storage system.

Refer to "Set/Change Information of Account That Can Access ETERNUS Disk Storage System" in the *ETERNUS SF Web Console Guide* for this version for information on setup.

2.3.6 Registering License

Register the appropriate licenses.

Refer to "License Management" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the license settings.

2.3.7 Redefining Operational Environment

- Redefining the administrator information

Based on the information that was backed up in step 1 of "[2.1.1 Backing Up Operational Environment of Previous Version](#)", define the administrator information.

Refer to "Display/Change Contact Information" in the *ETERNUS SF Web Console Guide* for this version for information on how to define the administrator information.

- Re-registering the server information and the HBA information

Based on the information that was backed up in step 1 of "[2.1.1 Backing Up Operational Environment of Previous Version](#)", register the server information and the HBA information registered on Express.

If AdvancedCopy Manager was installed in the previous version and the Management Server served as the Managed Server, register the server as the Management Server with the following procedure:

1. Log in to Web Console.
2. On the global navigation tab, click **Server**.
3. To register the server, click **Register** under **Server** on the Action pane.
If the server is registered successfully, the server is displayed in the server list of the Main pane.
4. After checking the target server checkbox on the Main pane, click **Reload Conf.** under **Server** on the Action pane.



Refer to the following sections in the *ETERNUS SF Web Console Guide* for this version for details on the above operations:

- "Register Server"
- "Add HBA"
- "Reload Server Configuration Information"

- 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 *ETERNUS SF Express Operation Guide* for information on how to restart the performance monitoring.

- Reconfiguring the AdvancedCopy Manager Copy Control Module configuration information

If Advanced Copy function was used with Express of the previous version or AdvancedCopy Manager Copy Control Module of the previous version was used, reconfigure the device information with the following procedure.



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for this version for information on the commands.

1. Confirm the registered ETERNUS Disk storage system by executing the `acarray list` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray list
Name  BOX-ID                               IP Address
-----
ET01  00ETERNUSDXL##ET09E24B####LH4311015511## 192.0.2.10
```

2. Confirm the detailed information of the registered ETERNUS Disk storage system by executing the `acarray detail` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray detail -a ET01
Disk Array Name : ET01
BOX-ID : 00ETERNUSDXL##ET09E24B####LH4311015511##
IP Address : 192.0.2.10
Admin User : ****
Access Volume : X:
```

3. Remove all of the registered ETERNUS Disk storage system by executing the `acarray remove` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray remove -a ET01
Successful completion.
```

4. Re-register all of the ETERNUS Disk storage systems that were removed in step 3 by executing the `acarray add` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray add -a ET01 -ip 192.0.2.10 -user **** -password **** -path X:
Successful completion.
```

Point

When the ETERNUS Disk storage system was registered by specifying a nonexistent drive letter or device name to the access volume (previously called "access path") in the previous version, re-register its ETERNUS Disk storage system as a remote device.

5. 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 *ETERNUS SF Web Console Guide* for this version for information on reloading the configuration information.

2.3.8 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.

2.3.9 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 *ETERNUS SF Express Operation Guide* for this version and configure your operational environment.

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

Chapter 3 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 *ETERNUS SF Installation and Setup Guide* for information on the supported devices in this version.

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. 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.

3.1.1.1 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.33 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.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Stop the ETERNUS SF Manager service
Execute the following batch file:

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

- d. Implement backup of the previous version.

Execute the following batch file. 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, execute the batch file again.

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.

3.1.1.2 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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the relevant previous version for information on the required disk space.

3.1.1.3 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 *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

3.1.1.4 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 *ETERNUS SF Installation and Setup Guide* for this version for details.

3.1.1.5 Preparing for Uninstallation

Refer to "A.7 Unsetting Up Database" to perform the repository database unsetup of the previous version:

3.1.2 Performing Upgrade

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "3.1.3 Tasks to Be Performed After Upgrade".

3.1.3 Tasks to Be Performed After Upgrade

3.1.3.1 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 SCI/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Implement restoration of the previous version.

Execute the following batch file. 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, execute the batch again.



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. Restart the service of ETERNUS SF Manager
Execute the following batch file:

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

3.1.3.2 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.

```
programDir\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 "12.2 What to Do When Error Occurs" to take the corrective action.



- 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.

3.1.3.3 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 *ETERNUS SF 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.

3.1.3.4 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 "3.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

3.1.3.5 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.

3.1.4 Resuming Operation

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



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 *ETERNUS SF Express Operation Guide* for this version and configure your operational environment.

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

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. 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.

3.2.1.1 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.33 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 SCI/ACM/Express Mediapack for Linux 64bit (Manager Program) (2/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- c. Mount the DVD-ROM.

```
# mount /mnt/dvd
```

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

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

- e. Implement backup of the previous version.

Execute the following command. 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*.

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

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

 **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.

3.2.1.2 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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the relevant previous version for information on the required disk space.

3.2.1.3 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.

 **See**

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

3.2.1.4 Estimating Database Size

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

 **See**

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

3.2.1.5 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.



See

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

3.2.1.6 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 *ETERNUS SF Installation and Setup Guide* for this version for information on port numbers.

3.2.1.7 Preparing for Uninstallation

Refer to "[A.8 Cancelling Repository Settings](#)" to unsetup the repository database of the previous version.

3.2.2 Performing Upgrade

Refer to "[C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "[3.2.3 Tasks to Be Performed After Upgrade](#)".

3.2.3 Tasks to Be Performed After Upgrade

3.2.3.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Implement restoration of the previous version.
Execute the following command. 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*.

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

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

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.

Example:

```
# umount /mnt/dvd
```

6. Eject the DVD-ROM.

7. Restart the daemon of ETERNUS SF Manager.

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

3.2.3.2 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 "12.2 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.

3.2.3.3 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 *ETERNUS SF 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.

3.2.3.4 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 "3.2.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

3.2.3.5 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.
```

3.2.4 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 *ETERNUS SF 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"

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 *ETERNUS SF Express Operation Guide* for this version and configure your operational environment.

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

Chapter 4 Upgrade from Express Version 16.x

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

4.1 Upgrading Express (for Windows)

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. 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to stop the service.
4. Stop the ETERNUS SF Manager service.
Execute the following batch file.

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

The \$INS_DIR is 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.

4.1.2 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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" and return the system to a normal state.

4.1.3 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to start the service.
3. Restart the service of ETERNUS SF Manager
Execute the following batch file:

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

The \$INS_DIR is 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 "[11.3.1 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 stgxfwcmmodsrv 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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

4.1.4 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 *ETERNUS SF 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 *ETERNUS SF 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)

4.2 Upgrading Express (for Linux)

4.2.1 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 ETERNUS SF Manager daemon.

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

4.2.2 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.

4.2.3 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.



See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 ETERNUS SF Manager daemon.

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

4.2.4 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 5 Upgrade from Storage Cruiser Version 14.x

Point

- For Storage Cruiser programs, the Upgrade Installation can be performed for the Storage Cruiser's manager only.
For upgrading the Storage Cruiser's agent, perform uninstallation and then perform a new installation of this version. Refer to "5.2 Upgrading Storage Cruiser's Agent" for details.
- 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 Different Versions" of the *ETERNUS SF Release Guide*.
- If upgrading Storage Cruiser, the following information cannot be imported from the previous version:
 - Event log history
 - User account for the GUI client
- If upgrading AdvancedCopy Manager, the following information cannot be imported from the previous version:
 - User account for the GUI client
- 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 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.
- 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 *ETERNUS SF Installation and Setup Guide* for information on the supported devices in this version.

Note

The GUI client has been replaced with Web Console.
If the GUI client is installed, uninstall it.

5.1 Upgrading Storage Cruiser's Manager

To upgrade the Storage Cruiser's manager to this version, install the ETERNUS SF Manager.

5.1.1 Preparing for Upgrade

5.1.1.1 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.

- iSCSI HBA information

If the iSCSI HBA is managed, record the iSCSI HBA information.

For information on how to check the iSCSI HBA information, refer to the iSCSI port property information in the resource view of Storage Cruiser in the previous version.

- Performance monitoring

If the performance monitoring was performed with the previous version, refer to the following information related to the performance monitoring with the GUI client 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)

- Threshold monitoring

If the threshold monitoring was performed with the previous version, refer to the following information related to the threshold monitoring with the GUI client of the previous version and record the configuration information of the previous version.

- Settings for the Threshold Monitoring time
Threshold Monitoring time (Start Time/Stop Time), Alarm Display time (Start Time/Stop Time), Alarm Display frequency
- Settings for the Threshold Monitoring
Threshold Monitoring target, Threshold, Unit of the Threshold Monitoring time, Alarm allowable range, Alarm allowable time, Lower limit

- Administrator information

If the administrator was set, record the "contact information for troubleshooting" that is registered in the Storage Cruiser's manager.

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

Refer to the following sections for information on performing a backup according to OS environment.

- [A.25 Backup of Manager Operation Environment \(for Windows\)](#)
- [A.26 Backup of Windows Version Manager Operation Environment \(for Cluster Environment\)](#)
- [A.27 Backup of Manager Operation Environment \(for Solaris, Linux\)](#)
- [A.28 Backup of Solaris/Linux Version Manager Operation Environment \(for Cluster Environment\)](#)

3. If AdvancedCopy Manager is installed, back up the AdvancedCopy Manager operational environment of the previous version.

Refer to the following table to back up the operational environment.

Server Type	OS	Reference
Storage Management Server	Windows	"A.1 Backing Up Repository Data (for Windows)"
	Solaris, Linux	"A.2 Backing Up Repository Data (for Solaris, Linux)"
Storage Management Server which also serves as a Storage Server	Windows	Perform the steps of "A.1 Backing Up Repository Data (for Windows)" , and then perform the steps of "A.3 Backing Up Management Information (for Windows)" .
	Solaris, Linux	Perform the steps of "A.2 Backing Up Repository Data (for Solaris, Linux)" , and then perform the steps of "A.4 Backing Up Management Information (for Solaris, Linux)" .

4. If AdvancedCopy Manager Copy Control Module is installed, back up the AdvancedCopy Manager Copy Control Module operational environment of the previous version.

Refer to ["A.6 Backing Up Environment Setting Files"](#) for information on performing a backup.

5. If AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module are installed, back up the definition of the license information.

Back up the license management database of ETERNUS SF License Manager by executing the esflm backup command. Refer to the *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide* for the previous version for information on the command.

Example of executing the command is shown below. The file specified for *backupFileName* is created as a backup file.

```
> esflm backup backupFileName
Backup of license database was performed successfully
```

5.1.1.2 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 *ETERNUS SF 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 Storage Cruiser's manager. Refer to the *ETERNUS SF Storage Cruiser Installation Guide* for the relevant previous version for information on the required disk space.

5.1.1.3 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 *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

5.1.1.4 Estimating Database Size

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



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

5.1.1.5 Tuning Kernel Parameters (for Solaris, Linux)

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.



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

5.1.1.6 Confirming Port Number for Communication Service (for Solaris, Linux)

This version of the AdvancedCopy Manager's manager uses additional ports. Therefore, ensure the new ports are available before starting the upgrade.



See

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

5.1.1.7 Preparing for Uninstallation

If AdvancedCopy Manager is installed, before starting the upgrade, the following preparation is necessary before uninstalling the previous version.

1. Stop the daemon (for Solaris or Linux).

Execute the following command to stop the daemon of AdvancedCopy Manager on the Management Server (Storage Management Server).

```
# /opt/swstorage/bin/stopacm
```

2. Execute the DB unsetup.

Refer to the following sections to perform the repository database unsetup of the previous version:

- For Windows
"A.7 Unsetting Up Database"
- For Solaris or Linux
"A.8 Cancelling Repository Settings"

For Clustered Systems

For clustered systems, execute cluster unsetup before uninstallation.

Refer to "Cluster environment deletion" in the *ETERNUS SF Storage Cruiser Installation Guide* for the relevant previous version for information on the cluster unsetup procedure.

5.1.2 Performing Upgrade (for Windows)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 15.x (for Windows)" to perform the upgrade. Note the following points when you upgrade.

- When requested to restart the computer, click **No**.
If **Yes** is clicked, the upgrade is interrupted. When re-executing the installation after a restart of the computer, the installation is treated as new one.
- When the uninstallation completes successfully, the **Uninstallation was completed successfully** page may be displayed. Although the instruction on the page indicates the deletion of files and folders, do not delete files and folders when performing 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 "5.1.4 Tasks to Be Performed After Upgrade".

For non-clustered systems, perform "5.1.4 Tasks to Be Performed After Upgrade" afterwards.

Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for this version for clustered systems. Then, perform "5.1.4 Tasks to Be Performed After Upgrade" afterwards.

5.1.3 Performing Upgrade (for Solaris, Linux)

Refer to "[C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "[5.1.4 Tasks to Be Performed After Upgrade](#)".

For non-clustered systems, perform "[5.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for this version for clustered systems. Then, perform "[5.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

5.1.4 Tasks to Be Performed After Upgrade

5.1.4.1 Restoring Operational Environment from Previous Version

With the following procedure, restore the operational environment that was backed up in steps 2 to 5 of "[5.1.1.1 Backing Up Operational Environment of Previous Version](#)".

1. Restore the Storage Cruiser operational environment.

Refer to the following for information on performing a restore according to OS environment.

- "[A.29 Restoring of Manager Operation Environment \(for Windows\)](#)"
- "[A.30 Restoring of Windows Version Manager Operation Environment \(for Cluster Environment\)](#)"
- "[A.31 Restoring of Manager Operation Environment \(for Solaris, Linux\)](#)"
- "[A.32 Restoring of Solaris/Linux Version Manager Operation Environment \(for Cluster Environment\)](#)"

2. If AdvancedCopy Manager was installed, restore the AdvancedCopy Manager operational environment.

Refer to the following table to restore the operational environment.

For the operational environment restore, start a new window for command execution, and then perform the procedure on the window.

Server Type	OS	Reference
Management Server	Windows	"A.9 Restoring Repository Data (for Windows)"
	Solaris, Linux	"A.10 Restoring Repository Data (for Solaris, Linux)"
Management Server which also serves as a Managed Server	Windows	Perform the steps of " A.9 Restoring Repository Data (for Windows) ", and then perform the steps of " A.11 Restoring Management Information (for Windows) ".
	Solaris, Linux	Perform the steps of " A.10 Restoring Repository Data (for Solaris, Linux) ", and then perform the steps of " A.12 Restoring Management Information (for Solaris, Linux) ".

3. If AdvancedCopy Manager Copy Control Module was installed, restore the AdvancedCopy Manager Copy Control Module operational environment.

Refer to "[A.14 Restoring Environment Setting Files](#)" for information on performing a restore.

4. If AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module was installed, restore the definition of the license information.

Restore the license management database of ETERNUS SF License Manager by executing the `esflm restore` command. Refer to the *ETERNUS SF Installation and Setup Guide* for this version for information on the command.

Example of executing the command is shown below. The `backupFileName` is the file name specified when the backup data was created.

```
> esflm restore backupFileName
Restoration of license database was performed successfully
```

5.1.4.2 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.

- For Windows (DOS prompt)

```
programDir\Common\bin\esfadm devconf import -all
```

- For Solaris or Linux

```
# /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 "12.2 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.
.....

5.1.4.3 Setting Up User Account

Set up a user account in order to use the ETERNUS SF Manager functions.

Refer to "Setting Up User Account" in the *ETERNUS SF Installation and Setup Guide* for this version for information on setup.

5.1.4.4 Setting Up Web Console

If firewalls are used between the PC on which Web Console is launched and the Management Server, perform firewall settings to allow transmission.

Refer to "Setting Up for Using Web Console" in the *ETERNUS SF Installation and Setup Guide* for this version for information on firewall setup.

5.1.4.5 Setting Account Information for Access to ETERNUS Disk Storage System

Set the account information, user name and password to access the ETERNUS Disk storage system.

Refer to "Set/Change Information of Account That Can Access ETERNUS Disk Storage System" in the *ETERNUS SF Web Console Guide* for information on setup.

5.1.4.6 Registering License

Register the appropriate licenses.

Refer to "License Management" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the license settings.

5.1.4.7 Redefining Operational Environment

- Re-registering the server information

If AdvancedCopy Manager was installed in the operational environment of the previous version, take the following procedure:

- When the Managed Servers of AdvancedCopy Manager is not managed by Storage Cruiser's manager

The servers that are not managed by Storage Cruiser's manager may not be migrated. For this reason, take the following action:

1. Log in to Web Console.
2. On the Server List screen, check whether the Managed Servers of AdvancedCopy Manager are registered. If they are registered, what you have to do is finished at this step. If they are not registered, go to step 3.
3. Click **Register** under **Server** on the Action pane in the Server List screen to register the target server. If the server is registered successfully, the server is displayed in the Server List screen.
4. After checking the target server checkbox in the Server List screen, click **Reload Conf.** under **Server** on the Action pane.

- When the Managed Server of AdvancedCopy Manager is a VM guest

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.

- When the Management Server of AdvancedCopy Manager is managed by Storage Cruiser's manager and serves as a Managed Server, as well

When the Management Server serves as a Managed Server, AdvancedCopy Manager is registered with the unused state. For this reason, take the following action:

1. Log in to Web Console.
2. On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
3. On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.
4. 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.



See

Refer to the following sections in the *ETERNUS SF Web Console Guide* for this version for details on the above operations:

- "Register Server"
- "Change Server Information"
- "Reload Server Configuration Information"

- Reconfiguring the iSCSI HBA information

If iSCSI was defined before the upgrade, based on the information that was backed up in step 1 of "[5.1.1.1 Backing Up Operational Environment of Previous Version](#)", perform the following procedure:

1. Log in to Web Console.
2. Select the server featuring the iSCSI HBA, click **Add** under **HBA** on the Action pane and then enter the HBA information. Refer to "Add HBA" in the *ETERNUS SF Web Console Guide* for this version for information on how to add HBA.

- Restarting the performance monitoring and/or the threshold monitoring

If the performance monitoring and/or the threshold monitoring was performed with the previous version, based on the information that was backed up in step 1 of "[5.1.1.1 Backing Up Operational Environment of Previous Version](#)", restart the performance monitoring and/or the threshold monitoring.

1. Start the performance monitoring.
2. Start the threshold monitoring If it was performed.



See

Refer to the following sections in the *ETERNUS SF Storage Cruiser Operation Guide* for this version for details on the above operations:

- "Instruction for Performance Management"
- "Setting Monitoring Intervals"
- "Instruction for Threshold Management"
- "Setting Threshold Monitoring Hours"
- "Setting Threshold Monitoring Information"



Note

If the performance monitoring fails to start when you restart ETERNUS SF Manager after resuming operations, use the following procedure for recovery:

1. Confirm the output error message and remove the cause of the failure.
2. On the Action pane, click **Reload Conf.** to reload the device information.
3. If performance monitoring is being performed, stop the performance monitoring once and restart it. Refer to "Instruction for Stopping Performance Management" in the *ETERNUS SF Storage Cruiser Operation Guide* for details on the performance monitoring stopping.

- Redefining the administrator information

Based on the information that was backed up in step 1 of "[5.1.1.1 Backing Up Operational Environment of Previous Version](#)", define the administrator information.

Refer to "Display/Change Contact Information" in the *ETERNUS SF Web Console Guide* for this version for information on how to define the administrator information.

- Reconfiguring the AdvancedCopy Manager Copy Control Module configuration information

To use the AdvancedCopy Manager Copy Control Module, set the device information again in accordance with the following procedure:



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for this version for information on the commands.

1. Confirm the registered ETERNUS Disk storage system by executing the `acarray list` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray list
Name   BOX-ID                                     IP Address
-----
ET01   00ETERNUSDXL##ET09E24B####LH4311015511## 192.0.2.10
```

2. Confirm the detailed information of the registered ETERNUS Disk storage system by executing the `acarray detail` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray detail -a ET01
Disk Array Name : ET01
BOX-ID : 00ETERNUSDXL##ET09E24B####LH4311015511##
IP Address : 192.0.2.10
Admin User : ****
Access Volume : X:
```

3. Remove all of the registered ETERNUS Disk storage system by executing the `acarray remove` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray remove -a ET01
Successful completion.
```

4. Re-register all of the ETERNUS Disk storage systems that were removed in step 3 by executing the `acarray add` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray add -a ET01 -ip 192.0.2.10 -user **** -password **** -path X:
Successful completion.
```



When the ETERNUS Disk storage system was registered by specifying a nonexistent drive letter or device name in the previous version of AdvancedCopy Manager CCM, re-register its ETERNUS Disk storage system as a remote device.

5. 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**.



Refer to "Reload ETERNUS Disk Storage System Configuration Information" in the *ETERNUS SF Web Console Guide* for this version for details on the above operations.

5.1.4.8 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.

For Windows

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.

For Solaris or Linux

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 the Solaris environment).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

5.1.5 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.

Point

When upgrading as well as changing the setting in SELinux to "enforcing" in the Linux environment, install the SELinux policy module for `snmptrapd` and then restart the operation.

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

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

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 *ETERNUS SF Storage Cruiser Operation Guide* for this version and configure your operational environment.

5.2 Upgrading Storage Cruiser's Agent

The upgrade is performed as follows:

1. Back up the Storage Cruiser's agent settings information.

- For Windows

No.	Settings Information to Be Backed Up	File to Be Backed Up
1	SNMP Trap sending destination address	<code>\$OLD_TMP_DIR\Agent\var\sanm.ip</code> (<code>\$OLD_TMP_DIR</code> is "Work Directory" specified at the previous Storage Cruiser's agent installation.)
2	Agent definition file	All files under <code>\$OLD_ENV_DIR\Agent\etc</code> directory (<code>\$OLD_ENV_DIR</code> is "Environment Directory" specified at the previous Storage Cruiser's agent installation.)
3	User definition information	<code>\$OLD_INS_DIR\Agent\lib\defusr.dat</code> (<code>\$OLD_INS_DIR</code> is "Program Directory" specified at the previous Storage Cruiser's agent installation.) Note: If there is no file present, backup is not required.

- For Solaris, Linux, or HP-UX

No.	Settings Information to Be Backed Up	File to Be Backed Up
1	SNMP Trap sending destination address	<code>/var/opt/FJSVssage/sanm.ip</code>
2	Agent definition file	All files under the <code>/etc/opt/FJSVssage</code> directory
3	User definition information	<code>/opt/FJSVssage/lib/defusr.dat</code> Note: If there is no file present, backup is not required.

2. Uninstall the previous version of the Storage Cruiser's agent.

Refer to the *ETERNUS SF Storage Cruiser Installation Guide* for the relevant previous version for information on uninstallation.

3. Install this version of the Storage Cruiser's agent.

Refer to "Installation of Storage Cruiser's Agent" in the *ETERNUS SF Installation and Setup Guide* for this version for information on installation.

4. Set up this version of the Storage Cruiser's agent.

- For Windows

No actions are necessary.

- For Solaris, Linux, or HP-UX

Refer to "Port Number Setting" in the "Setup of Storage Cruiser's Agent" in the *ETERNUS SF Installation and Setup Guide* for this version for information on setup.

5. Restore the Storage Cruiser's agent settings information that was backed up in step 1.

- For Windows

Refer to the table above and perform steps as follows:

- Copy the file of No. 1 and create \$TMP_DIR\ESCAgent\var\sanm.ip.

(\$TMP_DIR is "Work Directory" specified at the Storage Cruiser's agent installation.)

- Refer to each file of No. 2 and reflect the definitions which have been changed from the installation of the previous version of the Storage Cruiser's agent to the \$ENV_DIR\ESCAgent\etc directory.

(\$ENV_DIR is "Environment Directory" specified at the Storage Cruiser's agent installation.)

Migration is not required for files whose definitions have not been changed. Use the new definition files.

- Copy the file of No. 3 and create \$INS_DIR\ESCAgent\lib\defusr.dat.

(\$INS_DIR is "Program Directory" specified at the Storage Cruiser's agent installation.)

This is not required if the file was not backed up in step 1.

- For Solaris, Linux, or HP-UX

Refer to the table above and perform steps as follows:

- Copy the file of No. 1 and create /var/opt/FJSVssage/sanm.ip.

- Refer to each file of No. 2 and reflect the definitions which have been changed from the installation of the previous version of the 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 and create /opt/FJSVssage/lib/defusr.dat.

This is not required if the file was not backed up in step 1.

6. Start the service / daemon of Storage Cruiser's agent.

- For Windows

- a. Start the service

Click **Control Panel > Administrative Tools > Services**.

- b. Select "ETERNUS SF Storage Cruiser Agent".

For "Started" the state of the service of the Storage Cruiser's agent:

Click **Restart Service**.

For "Blank Space (Stopped)" the state of the service of the Storage Cruiser's agent:

Click **Start Service**.

- For Solaris, Linux, or HP-UX

Restart the system. Daemon of the Storage Cruiser's agent starts automatically.

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**.

Chapter 6 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 Different Versions" of the *ETERNUS SF Release Guide*.
- 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 *ETERNUS SF Installation and Setup Guide* for information on the supported devices in this version.

6.1 Upgrading Storage Cruiser'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 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.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- c. Stop the ETERNUS SF Manager service
Execute the following batch file:

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

- d. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the relevant 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 *ETERNUS SF 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 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 *ETERNUS SF Installation and Setup Guide* for this version for details.

6.1.1.1.5 Preparing for Uninstallation

Refer to "A.7 Unsetting Up Database" to unsetup the repository database of the previous version.

6.1.1.2 Performing Upgrade (for Windows)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 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 SCI/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

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 *ETERNUS SF 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\ESCManager\etc\opt\FJSVsmgr\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 *ETERNUS SF 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\ESCManager\etc\opt\FJSSmgr\current\polling\pollingService.xml

- Restart the service of ETERNUS SF Manager
Execute the following batch file:

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

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.

```
programDir\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 "12.2 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.

6.1.1.3.3 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:

- Log in to Web Console.
- 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.
- On the Server List screen, after checking the checkbox of the server using AdvancedCopy Manager, click **Modify** under **Server** on the Action pane.
- On the Server Change screen, select "Yes" for **Use AdvancedCopy Manager** and click **Modify**.
- 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 "6.1.1.1.1 Backing Up Operational Environment of Previous Version", restart the performance monitoring.

Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *ETERNUS SF 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 "[6.1.1.1.1 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 "[6.1.1.1.1 Backing Up Operational Environment of Previous Version](#)", after entering the necessary information, click **Confirm**.

6.1.1.3.4 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.

6.1.1.3.5 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 "[6.1.1.1.1 Backing Up Operational Environment of Previous Version](#)" maybe deleted.

6.1.1.3.6 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.

6.1.1.4 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.



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



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 *ETERNUS SF Storage Cruiser Operation Guide* for this version and configure your operational environment.

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.
\$ETC_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

6.1.2.1 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".

6.1.2.2 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 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. 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.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - c. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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/ACW/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- 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. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.



- 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 *ETERNUS SF 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 *ETERNUS SF 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.



Refer to "Operating Environment of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF Storage Cruiser Installation Guide* for the relevant previous version to delete the service resources, the cluster resources and unnecessary resources.



- Do not uninstall the ETERNUS SF Manager.
- 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.

6.1.2.3 Performing Upgrade (Primary Node)

Refer to "[C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 15.x \(for Windows\)](#)" to perform the upgrade.



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 "[6.1.2.4 Performing Upgrade \(Secondary Node\)](#)".

6.1.2.4 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 "[6.1.2.3 Performing Upgrade \(Primary Node\)](#)".



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 *ETERNUS SF Cluster Environment Setup Guide* for this version for information on the cluster setup.

6.1.2.5 Tasks to Be Performed After Upgrade (Primary Node)

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

1. Stop the 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.
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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - c. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

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 *ETERNUS SF 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\ESCManager\etc\opt\FJSSmgr\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 *ETERNUS SF 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\ESCManager\etc\opt\FJSSmgr\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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

Note

Do not change anything other than the version information.

4. Start the ETERNUS SF Manager services.
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.

```
programDir\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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

6. Import the 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.

```
programDir\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 "12.2 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.

6.1.2.6 Tasks to Be Performed After Upgrade (Secondary Node)

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

1. Check that the ETERNUS SF Manager services 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - 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. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

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.

6.1.2.7 Starting ETERNUS SF Manager

After performing "6.1.2.5 Tasks to Be Performed After Upgrade (Primary Node)" and "6.1.2.6 Tasks to Be Performed After Upgrade (Secondary Node)", perform the following procedure:

1. Check that start ETERNUS SF Manager services 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. Start the local transactions on all the nodes, perform the following procedure:
 - 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 12-d of "6.1.2.2 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 *ETERNUS SF Storage Cruiser Operation Guide* for this version and configure your operational environment.

6.1.2.8 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 "[6.1.2.1 Manual Backing Up Operational Environment](#)", restart the performance monitoring.

Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *ETERNUS SF 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 "[6.1.2.1 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 "[6.1.2.1 Manual Backing Up Operational Environment](#)", after entering the necessary information, click **Confirm**.

6.2 Upgrading Storage Cruiser'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 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.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

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

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

- e. Implement backup of the previous version.

Execute the following command. 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*.

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

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



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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the relevant 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.



See

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

6.2.1.1.6 Confirming Port Number for Communication Service (for Solaris, Linux)

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



See

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

6.2.1.1.7 Preparing for Uninstallation

1. Perform the DB unsetup.
Refer to "[A.8 Cancelling Repository Settings](#)" to unsetup the repository database of the previous version.
2. When upgrading from Version 15.3 on the 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
```

6.2.1.2 Performing Upgrade (for Solaris, Linux)

Refer to "[C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Implement restoration of the previous version.

Execute the following command. 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*.

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

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

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.

Example:

```
# umount /mnt/dvd
```

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 *ETERNUS SF 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 *ETERNUS SF 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 only).

Only when the FJSVswstt package is installed using the procedure described in the step 2 of "6.2.1.1.7 Preparing for Uninstallation", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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. 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 "12.2 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.

6.2.1.3.3 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 "[6.2.1.1.1 Backing Up Operational Environment of Previous Version](#)", restart the performance monitoring.

Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *ETERNUS SF 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 "[6.2.1.1.1 Backing Up Operational Environment of Previous Version](#)", after entering the necessary information, click **Confirm**.

6.2.1.3.4 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 "[6.2.1.1.1 Backing Up Operational Environment of Previous Version](#)" maybe deleted.

6.2.1.3.5 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 the Solaris environment).
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



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 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.

6.2.2.2 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 *ETERNUS SF 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.33 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. Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- c. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

d. Implement backup of the previous version.

Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.

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.

Example:

```
# umount /mnt/dvd
```

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 *ETERNUS SF 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 *ETERNUS SF 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.



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

8. When upgrading from Version 15.3 on the 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.



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

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

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



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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. Log in 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

- 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. Implement backup of the previous version.

Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.



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.

Example:

```
# umount /mnt/dvd
```

- 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 *ETERNUS SF 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 *ETERNUS SF 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.



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

15. When upgrading from Version 15.3 on the 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF Storage Cruiser Installation Guide* for the relevant previous version to delete unnecessary resources.



- Do not uninstall the ETERNUS SF Manager.

- In cases when Managed Server transactions coexist, do not release the configurations of these Managed Server transactions.

6.2.2.3 Performing Upgrade (Primary Node)

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "6.2.2.4 Performing Upgrade (Secondary Node)".

6.2.2.4 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 "6.2.2.3 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 *ETERNUS SF 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 "6.2.2.2 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.

6.2.2.5 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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

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. Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- d. Implement restoration of the previous version.
Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.

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.

Example:

```
# umount /mnt/dvd
```

- 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 *ETERNUS SF 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/snmph

- 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 *ETERNUS SF 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 only).

Only when the FJSVswstt package is installed using the procedure described in the step 8 of "6.2.2.2 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF 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.

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 "12.2 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 the Solaris environment).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

6.2.2.6 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- 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. Implement restoration of the previous version.
Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.



-
- 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.

Example:

```
# umount /mnt/dvd
```

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 the Solaris environment).

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 only).

Only when the FJSVswstt package is installed using the procedure described in the step 15 of "6.2.2.2 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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"

6.2.2.7 Starting Managed Server Transactions

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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on starting 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 "6.2.2.2 Preparing for Upgrade" maybe deleted.

6.2.2.8 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 "6.2.2.1 Manual Backing Up Operational Environment", restart the performance monitoring.
Refer to "Instruction for Performance Management" and "Setting Monitoring Intervals" in the *ETERNUS SF 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 "[6.2.2.1 Manual Backing Up Operational Environment](#)", after entering the necessary information, click **Confirm**.

Subsequently, go to "[6.2.3 Resuming Operation](#)".

6.2.3 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 *ETERNUS SF 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 *ETERNUS SF Storage Cruiser Operation Guide* for this version and configure your operational environment.

6.3 Upgrading Storage Cruiser's Agent (for Windows)

6.3.1 Preparing for Upgrade

6.3.1.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Stop the Storage Cruiser's agent service.
Open the Service Control Manager and stop the ETERNUS SF Storage Cruiser Agent service.
4. Start the command prompt with "Run as administrator".
5. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch again.

Point

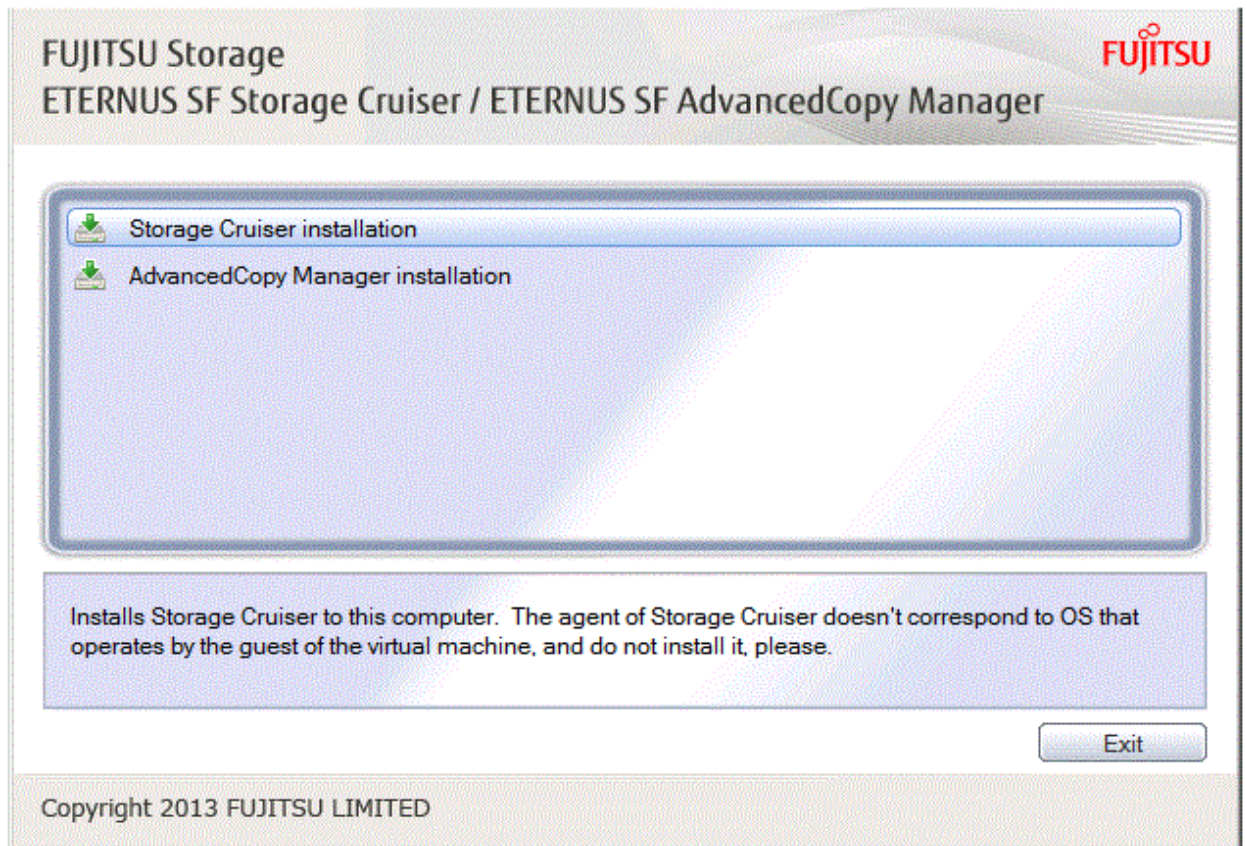
- The characters " | : * ? / . < > , % & ^ = ! ; " are not supported for directory name.
- If the directory name contains any spaces, they should be surrounded by double quote characters.

6. Back up the operating system.

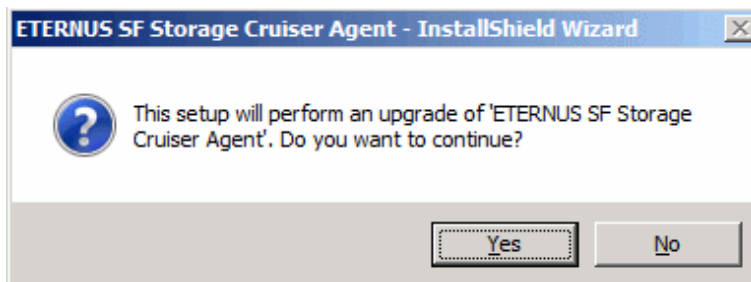
6.3.2 Performing Upgrade

1. Execute autorun.exe in the DVD-ROM of this version "ETERNUS SF SC/ACM/Express Media Pack Agent Program & Manual".

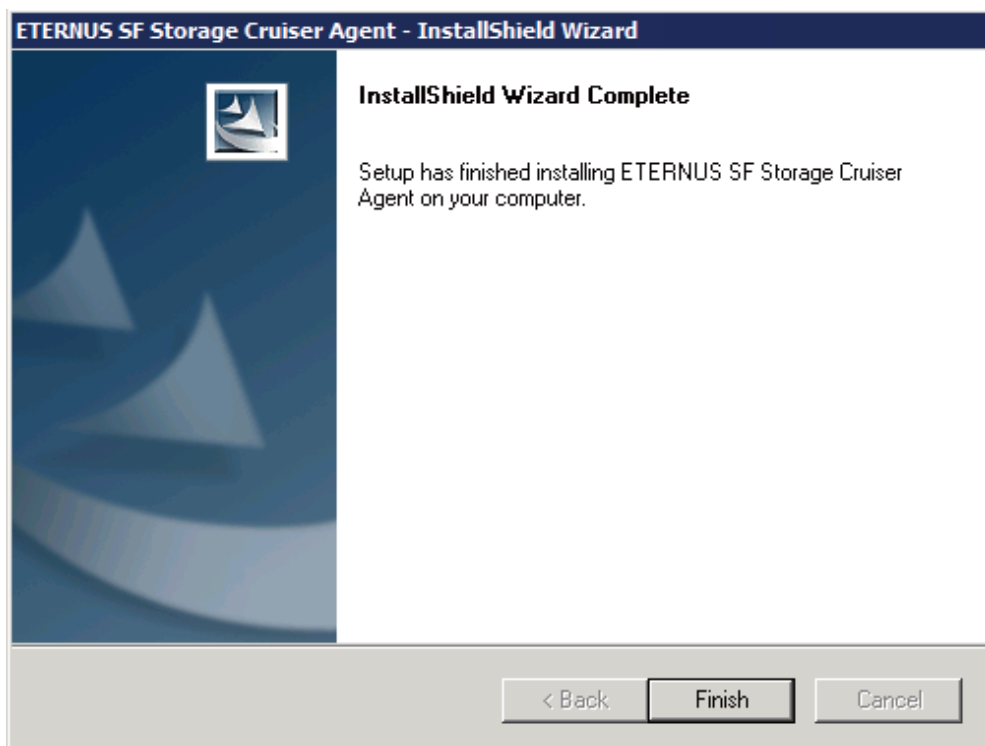
2. The following window is displayed. Click **Storage Cruiser installation**.



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.

6.3.3 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. Restore of the Storage Cruiser's Agent Configured Information
Where there has been customization of "Correlation.ini Parameter" of the *ETERNUS SF 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 "6.3.1.1 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on customizing Correlation.ini parameters.

2. Activate the Storage Cruiser Agent Service.
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 *ETERNUS SF 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 "6.3.1.1 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 "6.3.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

6.4 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
```

6.4.1 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 "11.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" 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 "6.4.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

6.4.1.1 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 and mount the DVD-ROM.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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

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

5. Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. 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, execute the shell script again.

6.4.2 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 16.5
Copyright FUJITSU LIMITED 2013-2017
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 : "ETERNUS SF Storage Cruiser" Agent cannot be installed in non-global zone.
or
ERROR : Upgrading FJSVssage was failed.
```

5. Eject the DVD-ROM.

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

6.4.3 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/snmpt* directory to an arbitrary location.
 - b. Prepare the SNMP Trap XML definition file for this version in the */etc/opt/FJSVssage/snmpt* 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 *ETERNUS SF 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.

6.5 Upgrading Storage Cruiser's Agent (for RHEL5/RHEL6, SUSE Linux Enterprise Server 11)

6.5.1 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 "[11.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)](#)" 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 "[6.5.1.1 Backing Up Operational Environment of Previous Version](#)" maybe deleted.

6.5.1.1 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 SCI/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD ROM drive and mount the DVD-ROM.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
In command example, the device name of the DVD-ROM drive is mounted as `/dev/cdrom`. The device name of the DVD-ROM drive may differ depending on the device.

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

5. Implement backup of the previous version.
Execute the following shell script included in the DVD-ROM. 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, execute the shell script again.

6.5.2 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 16.5  
Copyright FUJITSU LIMITED 2013-2017
```

```
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. Eject the DVD-ROM.

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

5. In RHEL6 environments, add the following line to any row of /etc/opt/FJSVssage/Correlation.ini:

```
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.

6.6 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 `/var/opt/FJSVssage/sanm.ip`.
 - 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 `/opt/FJSVssage/lib/defusr.dat`.
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 *ETERNUS SF Storage Cruiser Operation Guide*:

- For HP-UX, refer to "Changing IP Address of Server Node" in "[HP-UX Version] Maintenance of Agent"
 - For AIX, refer to "Changing IP Address of Server Node" in "[AIX Version] Maintenance of Agent"
-

Chapter 7 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 Different Versions" of the *ETERNUS SF Release Guide*.
- 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 2008 or later
 - Solaris
 - Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Red Hat Enterprise Linux 7, and SUSE Linux Enterprise Server 11

7.1 Upgrading Storage Cruiser'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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to stop the service.
4. Execute the following batch to stop the ETERNUS SF Manager services.

```
$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 (for Windows)

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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" to recover the system to the 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, Symfaware 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 Symfaware Server.
 - a. Confirm that other products are not utilizing the Symfaware. If Symfaware is in use by another product, refrain from uninstalling Symfaware.
 - b. Uninstall Symfaware from the **Add or Remove Programs** or **Programs and Features** page.
 If Symfaware Server and Symfaware Client are both installed, uninstall the Symfaware 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 *ETERNUS SF 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\ESCM\Manager\etc\opt\FJSVssmgr\current\snmpth

\$ENV_DIR is the "Environment Directory" of when ETERNUS SF Manager has been installed to a new environment.

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 *ETERNUS SF 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\ESCM\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

\$ENV_DIR is the "Environment Directory" of when ETERNUS SF Manager has been installed to a new environment.

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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to start the service.
5. Execute the following batch to restart the ETERNUS SF Manager services.

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

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

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.

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 "11.3.1 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 stgxfwcmdisprv 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 *ETERNUS SF 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

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 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.
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 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.
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 *ETERNUS SF 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.

7.1.2.2 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 *ETERNUS SF 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:

- *environmentDir*\ESCManager\etc
- *workDir*\ESCManager\var

Examples to change the directory name are shown below:

- C:\ETERNUS_SF\ESCManager\etc_original
- C:\ETERNUS_SF\ESCManager\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)
<i>environmentDir</i> \ESCManager\etc	<i>sharedDisk</i> \ESCManager\etc
<i>workDir</i> \ESCManager\var	<i>sharedDisk</i> \ESCManager\var

Execute the following command for all directories:

```
>mklink /d srcDir dstDir<RETURN>
```

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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" to recover the system to the normal state.

7.1.2.3 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 "[7.1.2.2 Performing Upgrade \(Primary Node\)](#)".
3. The shared disk for shared data of ETERNUS SF Manager must be offline.

7.1.2.4 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, Symfaware 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 Symfaware Server.
 - a. Confirm that other products are not utilizing the Symfaware. If Symfaware is in use by another product, refrain from uninstalling Symfaware.
 - b. Uninstall Symfaware from the **Add or Remove Programs** or **Programs and Features** page.
 If Symfaware Server and Symfaware Client are both installed, uninstall the Symfaware 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 "[7.1.2.2 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 "[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 *ETERNUS SF 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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **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 *ETERNUS SF 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

\$ENV_DIR is the "Environment Directory" of when ETERNUS SF Manager has been installed to a new environment.

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 *ETERNUS SF 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

\$ENV_DIR is the "Environment Directory" of when ETERNUS SF Manager has been installed to a new environment.

7.1.2.5 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, Symfaware 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 Symfaware Server.
 - a. Confirm that other products are not utilizing the Symfaware. If Symfaware is in use by another product, refrain from uninstalling Symfaware.
 - b. Uninstall Symfaware from the **Add or Remove Programs** or **Programs and Features** page.
If Symfaware Server and Symfaware Client are both installed, uninstall the Symfaware Client first.
2. Check that the ETERNUS SF Manager services 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 "[7.1.2.3 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 "[7.1.2.3 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 *ETERNUS SF 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 start ETERNUS SF Manager services 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 *ETERNUS SF 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 "11.3.1 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 stgxfwcmmodsrv 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 *ETERNUS SF 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 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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)

7.2 Upgrading Storage Cruiser'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.
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.
```

- Execute the following command to stop the ETERNUS SF Manager daemon.

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

- When upgrading from Version 16.2 or earlier on the 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

```
# systemctl stop startsc-snmpttrapd.service
# systemctl disable startsc-snmpttrapd.service
# rm /usr/lib/systemd/system/startsc-snmpttrapd.service
# rpm -e FJSVswstt
```

- For Red Hat Enterprise Linux 5 or Red Hat Enterprise Linux 6

```
# rpm -e FJSVswstt
```

7.2.1.2 Performing Upgrade (for Solaris, Linux)

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.

- 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.

- Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.
- Start the uninstaller of Symfoware to delete the Symfoware package.

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

- 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.
l: Base function (Server function, Client function)
Separate multiple selections with ",". (Example: 1, 2)
[all:l,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 *ETERNUS SF 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 *ETERNUS SF 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 only).

Only when the FJSVswstt package is installed using the procedure described in the step 4 of "[7.2.1.1 Preparing for Upgrade](#)", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for this version for information on tuning.

- 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/FJVSvesfcm/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

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

- 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.
- 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.
```

- 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 *ETERNUS SF 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 the 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

```
# systemctl stop startsc-snmpttrapd.service
# systemctl disable startsc-snmpttrapd.service
# rm /usr/lib/systemd/system/startsc-snmpttrapd.service
# rpm -e FJSVswstt
```

- For Red Hat Enterprise Linux 5 or Red Hat Enterprise Linux 6

```
# rpm -e FJSVswstt
```

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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **Note**

Do not change anything other than the version information.

4. Recover the activation suspension script of Management Server tasks saved during "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 evacuated of "7.2.2.1 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 *ETERNUS SF 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 *ETERNUS SF 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 only).

Only when the FJSVswstt package is installed using the procedure described in the step 10 of "7.2.2.1 Preparing for Upgrade", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 evacuated during "[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 evacuated of "[7.2.2.1 Preparing for Upgrade](#)".
4. As required, perform the SNMP Trap configuration (for Linux only).

Only when the FJSVswstt package is installed using the procedure described in the step 10 of "[7.2.2.1 Preparing for Upgrade](#)", perform the operation described in the following section in "Setup of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF 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.

7.2.2.6 Starting Managed Server Transactions

After performing "[7.2.2.4 Tasks to Be Performed After Upgrade \(Primary Node\)](#)" and "[7.2.2.5 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for this version for information on starting the daemon.

Subsequently, go to "[7.2.3 Resuming Operation](#)".

7.2.3 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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)

7.3 Upgrading Storage Cruiser's Agent (for Windows)

7.3.1 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.

7.3.1.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
3. Stop the Storage Cruiser's agent service.
Open the Service Control Manager and stop the ETERNUS SF Storage Cruiser Agent service.
4. Start the command prompt with "Run as administrator".
5. Implement backup of the previous version.
Execute the following batch file. 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
```

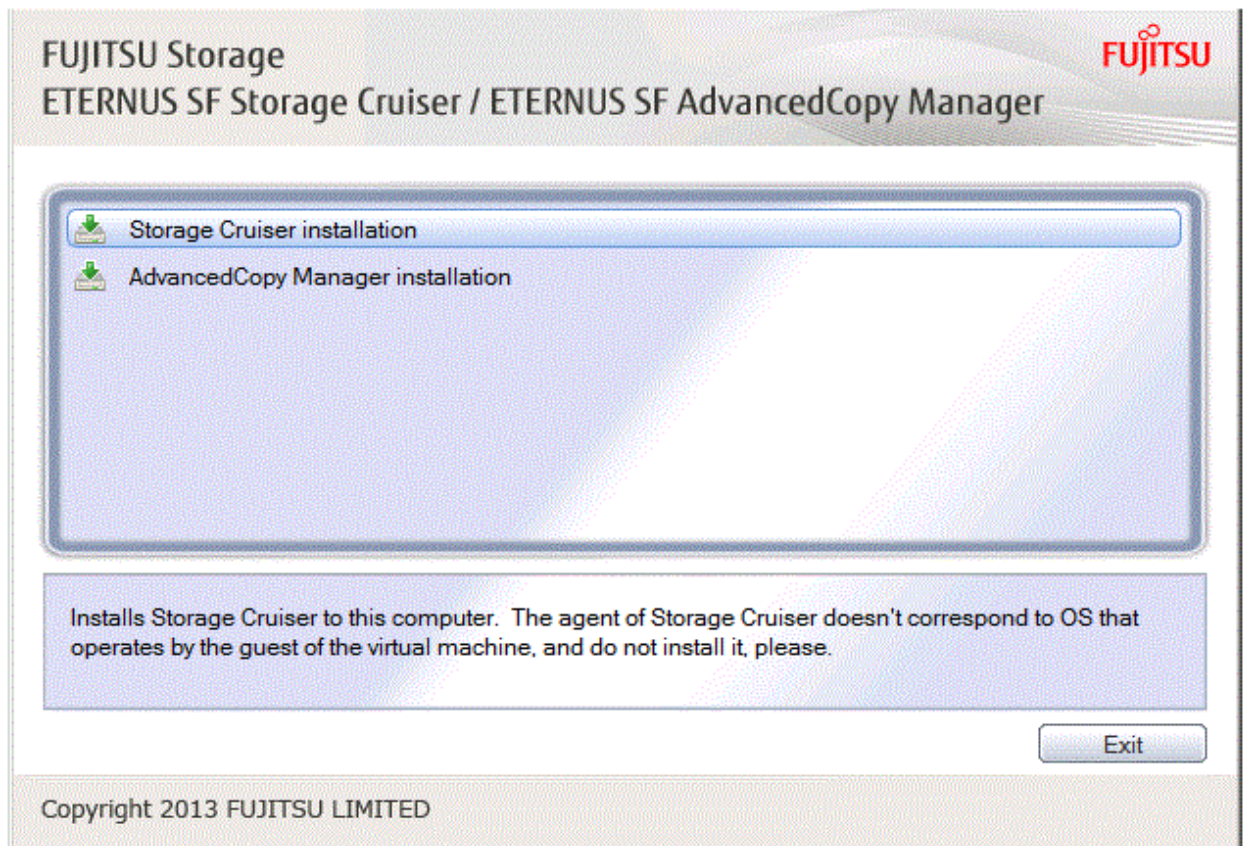
When the backup fails, after confirming the output error message and removing the cause of the failure, execute the batch again.

 **Point**

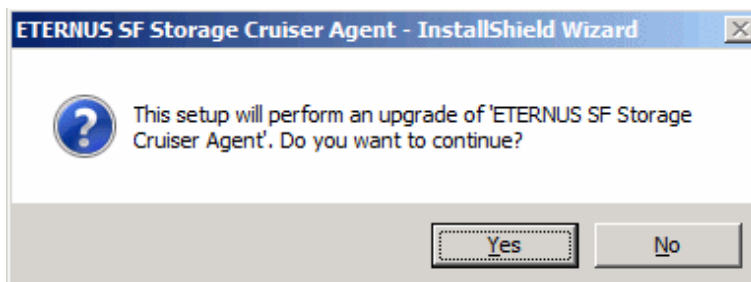
- The characters " | : * ? / . < > , % & ^ = ! ; are not supported for directory name.
- If the directory name contains any spaces, they should be surrounded by double quote characters.

7.3.2 Performing Upgrade

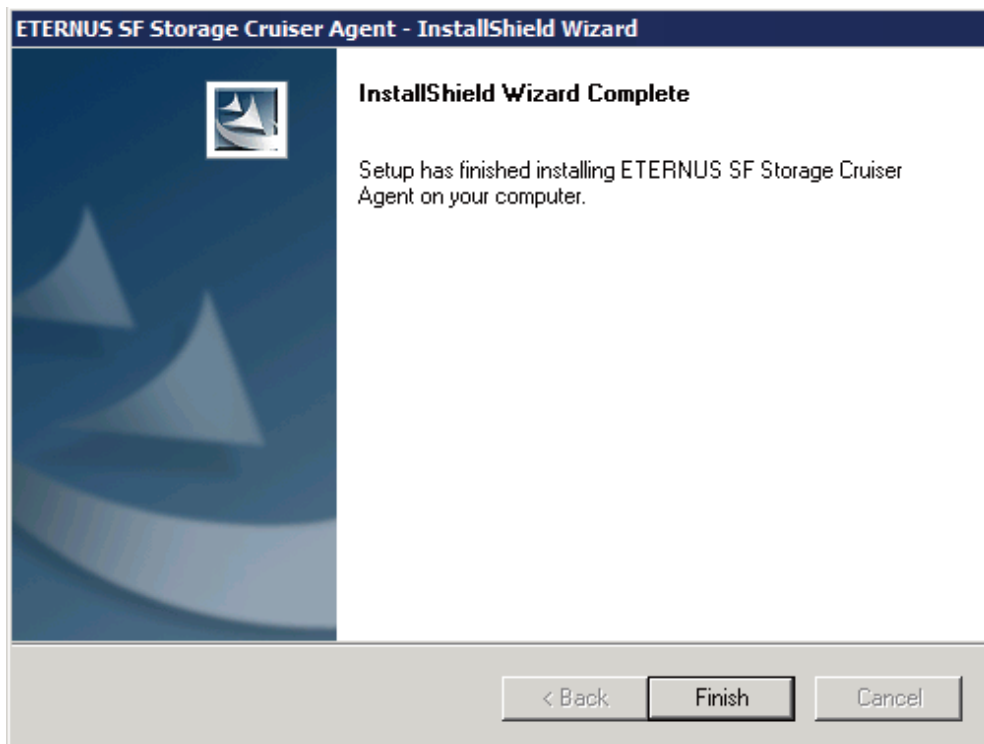
1. Execute autorun.exe in the DVD-ROM of this version "ETERNUS SF SC/ACM/Express Media Pack Agent Program & Manual".
2. The following window is displayed. Click **Storage Cruiser installation**.



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 "[7.3.4 Tasks to Be Performed After Upgrade](#)" to set up the Storage Cruiser's agent.

Point

.....
If the upgrade was terminated abnormally, refer to "[11.3.3 In Case of Problem During Upgrade of Storage Cruiser's Agent \(for Windows\)](#)" to recover the system to the normal state.
.....

7.3.3 Upgrade with Silent Installation Tasks

These tasks can be utilized in an environment of Windows Server 2008 and above.

The upgrade is performed as follows:

1. [7.3.3.1 Performing Upgrade with Silent Installation Procedure](#)
2. [7.3.3.2 Confirming Results of Upgrade with Silent Installation](#)

7.3.3.1 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".

- 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.

- On completion of installation, a command prompt is displayed.
Eject the DVD-ROM.

7.3.3.2 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 *ETERNUS SF 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 "[11.3.3 In Case of Problem During Upgrade of Storage Cruiser's Agent \(for Windows\)](#)" to recover the system to the normal state.

7.3.4 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. Restore of the Storage Cruiser's Agent Configured Information

Where there has been customization of "Correlation.ini Parameter" of the *ETERNUS SF 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 "7.3.1.1 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\ESCAgent\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 *ETERNUS SF Storage Cruiser Operation Guide* for information on customizing Correlation.ini parameters.

2. Restore of the Storage Cluster Controller Configured Information

Where there has been customization of "TFOConfig.ini Parameter" of the *ETERNUS SF 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 "7.3.1.1 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\ESCAgent\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 *ETERNUS SF Storage Cruiser Operation Guide* for information on customizing TFOConfig.ini parameters.

3. Activate the Storage Cruiser Agent Service.

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 *ETERNUS SF 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 "7.3.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

7.4 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
```

7.4.1 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.

7.4.1.1 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 and mount the DVD-ROM.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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

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

5. Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. 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, execute the shell script again.

7.4.2 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 16.5
Copyright FUJITSU LIMITED 2013-2017
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 : "ETERNUS SF Storage Cruiser" Agent cannot be installed in non-global zone.
or
ERROR : Upgrading FJSVssage was failed.
```

5. Eject the DVD-ROM.

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

The Storage Cruiser's agent upgrade is completed.

Refer to "7.4.4 Tasks to Be Performed After Upgrade" to set up the Storage Cruiser's agent.

Point

- If the upgrade was terminated abnormally, refer to "11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" 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 "7.4.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

7.4.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. [7.4.3.1 Performing Upgrade with Silent Installation Procedure](#)
2. [7.4.3.2 Confirming Results of Upgrade with Silent Installation](#)

7.4.3.1 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.

7.4.3.2 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 *ETERNUS SF 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 "11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" to recover the system to the normal state.
.....

7.4.4 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/FJSSVssage/snmph directory to an arbitrary location.
 - b. Prepare the SNMP Trap XML definition file for this version in the /etc/opt/FJSSVssage/snmph 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 *ETERNUS SF 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/FJSSVssage/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.

7.5 Upgrading Storage Cruiser's Agent (for RHEL5/RHEL6/RHEL7, SUSE Linux Enterprise Server 11)

7.5.1 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.
.....

7.5.1.1 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 and mount the DVD-ROM.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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

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

5. Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. 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, execute the shell script again.

7.5.2 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 16.5  
Copyright FUJITSU LIMITED 2013-2017  
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.
```

- Eject the DVD-ROM.

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

The Storage Cruiser's agent upgrade is completed.

Refer to ["7.5.4 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 ["11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)"](#) 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 ["7.5.1.1 Backing Up Operational Environment of Previous Version"](#) may be deleted.

7.5.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

- [7.5.3.1 Performing Upgrade with Silent Installation Procedure](#)
- [7.5.3.2 Confirming Results of Upgrade with Silent Installation](#)

7.5.3.1 Performing Upgrade with Silent Installation Procedure

- Execute the following command.

```
dvdromMountPoint/Agent_unix/Storage_Cruiser/Linux/scagtsilentinstall.sh [-l <installLogFile >]
```

- On completion of installation, a command prompt is displayed.
- 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.

7.5.3.2 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 *ETERNUS SF 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 "11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" to recover the system to the normal state.

7.5.4 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

1. In RHEL6 environments and if the previous version is Version 16.1 or earlier, add the following line to any row of `/etc/opt/FJSVssage/Correlation.ini`:

```
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.

7.6 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	<code>/var/opt/FJSVssage/sanm.ip</code>
2	Agent definition file	All files under the <code>/etc/opt/FJSVssage</code> directory
3	User definition information	<code>/opt/FJSVssage/lib/defusr.dat</code> *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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 `/var/opt/FJSVssage/sanm.ip`.
- 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 `/opt/FJSVssage/lib/defusr.dat`.

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 *ETERNUS SF Storage Cruiser Operation Guide*:

- For HP-UX, refer to "Changing IP Address of Server Node" in "[HP-UX Version] Maintenance of Agent"
 - For AIX, refer to "Changing IP Address of Server Node" in "[AIX Version] Maintenance of Agent"
-

Chapter 8 Upgrade from AdvancedCopy Manager Version 14.x

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

- For AdvancedCopy Manager programs, the Upgrade Installation can be performed for the AdvancedCopy Manager's manager and AdvancedCopy Manager Copy Control Module.

The AdvancedCopy Manager's agent cannot be upgraded by using the Upgrade Installation.

For upgrading the AdvancedCopy Manager's agent, perform uninstallation and then perform a new installation of this version. Refer to "[8.2 Upgrading AdvancedCopy Manager's Agent](#)" for details.

- 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 Different Versions" of the *ETERNUS SF Release Guide*.
- When upgrading AdvancedCopy Manager, the following information cannot be imported from the previous version:
 - User account for the GUI client
- 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.

Note

The GUI client has been replaced with Web Console.
If the GUI client is installed, uninstall it.

8.1 Upgrading AdvancedCopy Manager's Manager

To upgrade the AdvancedCopy Manager's manager to this version, install the ETERNUS SF Manager.

8.1.1 Preparing for Upgrade

8.1.1.1 Backing Up Operational Environment of Previous Version

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

1. Back up the AdvancedCopy Manager's manager operational environment of the previous version.

Refer to the following table to back up the operational environment.

Server Type	OS	Reference
Storage Management Server	Windows	"A.1 Backing Up Repository Data (for Windows)"
	Solaris, Linux	"A.2 Backing Up Repository Data (for Solaris, Linux)"

Server Type	OS	Reference
Storage Management Server which also serves as a Storage Server	Windows	Perform the steps of "A.1 Backing Up Repository Data (for Windows)", and then perform the steps of "A.3 Backing Up Management Information (for Windows)".
	Solaris, Linux	Perform the steps of "A.2 Backing Up Repository Data (for Solaris, Linux)", and then perform the steps of "A.4 Backing Up Management Information (for Solaris, Linux)".

- When AdvancedCopy Manager Copy Control Module is installed, back up the AdvancedCopy Manager Copy Control Module operational environment.

Refer to "A.6 Backing Up Environment Setting Files" for information on performing a backup.

- When AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module are installed, backup the definition of the license information.

Backup the license management database of ETERNUS SF License Manager by executing the `esflm backup` command. Refer to the *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide* for the previous version for information on the command.

Example of executing the command is shown below. The file specified for `backupFileName` is created as a backup file.

```
> esflm backup backupFileName
Backup of license database was performed successfully
```

8.1.1.2 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 *ETERNUS SF 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 AdvancedCopy Manager's manager.

Refer to the relevant *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide* for the previous version for information on the required disk space.

8.1.1.3 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 *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

8.1.1.4 Estimating Database Size

A database is necessary to operate AdvancedCopy Manager of this version.

The database size must be estimated before starting the upgrade.



See

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

8.1.1.5 Tuning Kernel Parameters (for Solaris, Linux)

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.



See

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

8.1.1.6 Confirming Port Number for Communication Service (for Solaris, Linux)

This version of the AdvancedCopy Manager's manager uses additional ports. Therefore, ensure the new ports are available before starting the upgrade.



See

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

8.1.1.7 Preparing for Uninstallation

Before starting the upgrade, the following preparation is necessary before uninstalling the previous version.

1. Stop the daemon (for Solaris or Linux).

Execute the following command to stop the daemon of AdvancedCopy Manager on the Management Server (Storage Management Server).

```
# /opt/swstorage/bin/stopacm
```

2. Execute the DB unsetup.

Refer to the following sections to perform the repository database unsetup of the previous version:

- For Windows
"A.7 Unsetting Up Database"
- For Solaris or Linux
"A.8 Cancelling Repository Settings"

For Clustered Systems

For clustered systems, execute cluster unsetup before uninstallation.

Refer to "Deleting Storage Management Server Transactions and Storage Server Transactions" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide for Cluster Environment* for the relevant previous version for information on the cluster unsetup procedure.

8.1.2 Performing Upgrade (for Windows)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 15.x (for Windows)" to perform the upgrade. Note the following points when you upgrade.

- When requested to restart the computer, click **No**. If **Yes** is clicked, the upgrade is interrupted. When re-executing the installation after a restart of the computer, the installation is treated as new one.
- When the uninstallation completes successfully, the **Uninstallation was completed successfully** page may be displayed. Although the instruction on the page indicates the deletion of files and folders, do not delete files and folders when performing 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 "[8.1.4 Tasks to Be Performed After Upgrade](#)".

For non-clustered systems, perform "[8.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for this version for clustered systems. Then, perform "[8.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

8.1.3 Performing Upgrade (for Solaris, Linux)

Refer to "[C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "[8.1.4 Tasks to Be Performed After Upgrade](#)".

For non-clustered systems, perform "[8.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

Refer to "Preparations for Customizing Management Server Transactions" and "Customization for Management Server Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for this version for clustered systems. Then, perform "[8.1.4 Tasks to Be Performed After Upgrade](#)" afterwards.

8.1.4 Tasks to Be Performed After Upgrade

8.1.4.1 Restoring Environment from Previous Version

With the following procedure, restore the operational environment that was backed up in "[8.1.1.1 Backing Up Operational Environment of Previous Version](#)":

1. Execute the following command to start the ETERNUS SF Manager services.

- For Windows

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

- For Solaris or Linux

```
/opt/FJSSvesfcm/bin/startesf.sh
```

2. Restore the AdvancedCopy Manager operational environment.

Refer to the following table to restore the operational environment.

For the operational environment restore, start a new window for command execution, and then perform the procedure on the window.

Server Type	OS	Reference
Management Server	Windows	" A.9 Restoring Repository Data (for Windows) "
	Solaris, Linux	" A.10 Restoring Repository Data (for Solaris, Linux) "
Management Server which also serves as a Managed Server	Windows	Perform the steps of " A.9 Restoring Repository Data (for Windows) ", and then perform the steps of " A.11 Restoring Management Information (for Windows) ".
	Solaris, Linux	Perform the steps of " A.10 Restoring Repository Data (for Solaris, Linux) ", and then perform the steps of " A.12 Restoring Management Information (for Solaris, Linux) ".

3. When AdvancedCopy Manager Copy Control Module was installed, restore the AdvancedCopy Manager Copy Control Module operational environment.

Refer to "[A.14 Restoring Environment Setting Files](#)" for information on performing a restore.

4. When AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module was installed, restore the definition of the license information.

Restore the license management database of ETERNUS SF License Manager by executing the `esflm restore` command. Refer to the *ETERNUS SF Installation and Setup Guide* for this version for information on the command.

Example of executing the command is shown below. The `backupFileName` is the file name specified when the backup data was created.

```
> esflm restore backupFileName
Restoration of license database was performed successfully
```

8.1.4.2 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.

- For Windows (DOS prompt)

```
programDir\Common\bin\esfadm devconf import -all
```

- For Solaris or Linux

```
# /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 "[12.2 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.

8.1.4.3 Setting Up User Account

Set up a user account in order to use the ETERNUS SF Manager functions.

Refer to "Setting Up User Account" in the *ETERNUS SF Installation and Setup Guide* for this version for information on setup.

8.1.4.4 Setting Up Web Console

If firewalls are used between the PC on which Web Console is launched and the Management Server, perform firewall settings to allow transmission.

Refer to "Setting Up for Using Web Console" in the *ETERNUS SF Installation and Setup Guide* for this version for information on firewall setup.

8.1.4.5 Registering License

Register the appropriate licenses.

Refer to "License Management" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the license settings.

8.1.4.6 Redefining Operational Environment

- Re-registering the server information

When the Management Server serves as a Managed Server, register the Management Server with the following procedure:

1. Log in to Web Console.
2. Click **Register** under **Server** on the Action pane in the Server List screen to register the target server.
If the server is registered successfully, the server is displayed in the Server List screen.
3. After checking the target server checkbox in the Server List screen, click **Reload Conf.** under **Server** on the Action pane.



See

Refer to the following sections in the *ETERNUS SF Web Console Guide* for this version for details on the above operations:

- "Register Server"
- "Reload Server Configuration Information"

- Reconfiguring the AdvancedCopy Manager Copy Control Module configuration information

To use the AdvancedCopy Manager Copy Control Module, set the device information again in accordance with the following procedure:



See

Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for this version for information on the commands.

1. Confirm the registered ETERNUS Disk storage system by executing the `acarray list` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray list
Name   BOX-ID                               IP Address
-----
ET01   00ETERNUSDXL##ET09E24B####LH4311015511## 192.0.2.10
```

2. Confirm the detailed information of the registered ETERNUS Disk storage system by executing the `acarray detail` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray detail -a ET01
Disk Array Name : ET01
BOX-ID : 00ETERNUSDXL##ET09E24B####LH4311015511##
IP Address : 192.0.2.10
```

```
Admin User : ****
Access Volume : X:
```

3. Remove all of the registered ETERNUS Disk storage system by executing the `acarray remove` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray remove -a ET01
Successful completion.
```

4. Re-register all of the ETERNUS Disk storage systems that were removed in step 3 by executing the `acarray add` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray add -a ET01 -ip 192.0.2.10 -user **** -password **** -path
X:
Successful completion.
```

Point

When the ETERNUS Disk storage system was registered by specifying a nonexistent drive letter or device name in the previous version of AdvancedCopy Manager CCM, re-register its ETERNUS Disk storage system as a remote device.

8.1.4.7 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.

For Windows

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.

For Solaris or Linux

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 the Solaris environment). Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

8.1.5 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.

8.2 Upgrading AdvancedCopy Manager's Agent

The upgrade is performed as follows:

1. [8.2.1 Backing Up Repository Data](#)
2. [8.2.2 Backing Up Management Information](#)
3. [8.2.3 Releasing Backup and Restore in Exchange Server Database \(for Windows\)](#)
4. [8.2.4 Uninstalling Previous Version](#)
5. [8.2.5 Installing This Version](#)
6. [8.2.6 Restoring Repository Data](#)
7. [8.2.7 Changing Server Information](#)
8. [8.2.8 Restoring Management Information](#)
9. [8.2.9 Setting Backup and Restore in Exchange Server Database \(for Windows\)](#)
10. [8.2.10 Updating Version Information](#)

8.2.1 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)

8.2.2 Backing Up Management Information

Refer to the following sections to back up the management information on the Managed Server.

OS Type of Managed Server	Reference
Windows	A.3 Backing Up Management Information (for Windows)
Solaris, Linux	A.4 Backing Up Management Information (for Solaris, Linux)
HP-UX, AIX	A.5 Backing Up Management Information (for HP-UX, AIX)

8.2.3 Releasing Backup and Restore in Exchange Server Database (for Windows)

When the backup and the restoration function of the Exchange Server database are used, release the setting in reference to the manual of the previous version.

"Backup and restore of Exchange Server database" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide (for Windows)*, do the following:

- Stopping backup copy process
- Delete source and replica volumes
- Cancel the hardware provider registration

8.2.4 Uninstalling Previous Version

Uninstall the previous version in reference to the previous version manual.

For Non-clustered Systems



.....
In the course of the following procedures, be careful not to perform the procedure "Deletion of all storage servers".
.....

- For Windows
Perform the procedures following "Uninstall procedure" in "Windows Platform" in "Uninstall of Agent" in the *ETERNUS SF AdvancedCopy Manager Installation Guide* or *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide*.
- For Solaris, Linux, HP-UX, or AIX
Perform the procedures following "Daemon deactivation" in "Solaris/Linux/HP-UX/AIX Platform" in "Uninstall of Agent" in the *ETERNUS SF AdvancedCopy Manager Installation Guide* or *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide*.

For Clustered Systems

If cluster operations are used for Managed Servers as Managed Server transactions, perform the unsetup of cluster settings before performing uninstallation.



.....
Refer to "Deleting Storage Management Server transactions and Storage Server transactions" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide for Cluster Environment* for the previous version for information on the procedures for the unsetup of cluster settings.
.....

8.2.5 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for this version to install the AdvancedCopy Manager's agent.

However, if the system environment is Red Hat Enterprise Linux 5 (for Intel64), in step 3 of the following sections in the *ETERNUS SF Installation and Setup Guide*, select the installation directory that is stated for "OS type - Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function", even if you are actually using the Symfoware linkage function.

- "Interactive Installation Procedure of AdvancedCopy Manager's Agent (for Linux)"
- "Running Silent Installation" in "Silent Installation Procedure of AdvancedCopy Manager's Agent (for Linux)"

Setting Up Operating Environment

- For non-clustered systems:
Refer to "Setup of AdvancedCopy Manager's Agent" in the *ETERNUS SF 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Managed Server for information on the start procedure.
- For clustered systems:
Refer to "Customization of Managed Server Transactions" in the *ETERNUS SF Cluster Environment Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

8.2.6 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

```
programDir\ACM\bin\stgrepocnv -d backupDir
```

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgrepocnv -d backupDir
```



- For restoration of the repository data, start a new window for command execution, and then perform the procedure on the window.
- For Solaris, add `/opt/FSUNrdb2b/lib` to the value of the environment variable `LD_LIBRARY_PATH_64` of the terminal on which the command is executed.



See

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

8.2.7 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.



Note

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

- When the Management Server OS is Windows

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

- When the Management Server OS is Solaris or Linux

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



See

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

8.2.8 Restoring Management Information

Refer to the following sections to restore the management information on the Managed Server.

OS Type of Managed Server	Reference
Windows	A.11 Restoring Management Information (for Windows)
Solaris, Linux	A.12 Restoring Management Information (for Solaris, Linux)
HP-UX, AIX	A.13 Restoring Management Information (for HP-UX, AIX)

8.2.9 Setting Backup and Restore in Exchange Server Database (for Windows)

Reconfigure the backup and restoration functions of the Exchange Server database for which the setting has been released in reference to the manual of this version.

"Backup and Restore of Exchange Server Database" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)*, do the following:

- Installing and registering VSSHP
- Configuring the source volume and replica volume
- Registering the hardware provider copy set
- Registering copy sets in a batch
- Registering database information

8.2.10 Updating Version Information

If not using cluster operation, 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

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

- 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 *ETERNUS SF 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 *ETERNUS SF Web Console Guide* for information on reloading the server information using Web Console.

8.3 Upgrading AdvancedCopy Manager Copy Control Module

8.3.1 Preparing for Upgrade

8.3.1.1 Selecting Install Program

There are two methods of performing the upgrade for the AdvancedCopy Manager Copy Control Module, as follows:

- **[Method 1]** Install the ETERNUS SF Manager program and use the AdvancedCopy Manager Copy Control Module included with the ETERNUS SF Manager.
- **[Method 2]** Install and use the AdvancedCopy Manager Copy Control Module.



Point

For **Method 1**, in addition to the command line interface, it is also possible to perform the AdvancedCopy Manager Copy Control Module operations from Web Console. However, this approach has the following drawbacks:

- The disk space required for installation is greater than that for **Method 2**.
- There are more incompatible software issues when compared to **Method 2**.

- Estimating the database size estimation is necessary.

Using the information provided above, select the appropriate program to install.

8.3.1.2 Backing Up Environment Setting Files

Back up the operational environment for the previous version.

Refer to "[A.6 Backing Up Environment Setting Files](#)" for information on the backup method.

License Information

When AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module are installed, back up the definition of the license information.

Back up the license management database of ETERNUS SF License Manager by executing the esflm backup command. Refer to the *ETERNUS SF AdvancedCopy Manager Installation and Setup Guide* for the previous version for information on the command.

Example of executing the command is shown below. The file specified with *backupFileName* is created as a backup file.

```
> esflm backup backupFileName
Backup of license database was performed successfully
```

8.3.1.3 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 *ETERNUS SF 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 this version of the AdvancedCopy Manager Copy Control Module of the previous version.

Refer to "Operating Environment" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide for Copy Control Module* for the relevant previous version for information on the required disk space.

8.3.1.4 Uninstalling Incompatible Software

Check if any incompatible software for AdvancedCopy Manager Copy Control Module of this version 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" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

8.3.1.5 Estimating Database Size

For installing the ETERNUS SF Manager, a database is necessary.

The database size must be estimated before starting the upgrade.



See

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

8.3.2 Performing Upgrade (for Windows)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 15.x (for Windows)" to perform the upgrade. Note the following points when you upgrade.

- When requested to restart the computer, click **No**.
If **Yes** is clicked, the upgrade is interrupted. When re-executing the installation after a restart of the computer, the installation is treated as new one.
- Do not delete files and folders that are output after uninstallation completes successfully.



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 "8.3.4 Tasks to Be Performed After Upgrade".

8.3.3 Performing Upgrade (for Solaris, Linux)

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "8.3.4 Tasks to Be Performed After Upgrade".

8.3.4 Tasks to Be Performed After Upgrade

8.3.4.1 Restoring Environment Setting Files

Restore the environment setup file that was backed up in "8.3.1.2 Backing Up Environment Setting Files".

Refer to "A.14 Restoring Environment Setting Files" for information on performing a restore.

License Information

When AdvancedCopy Manager and/or AdvancedCopy Manager Copy Control Module are installed, restore the definition of the license information.

Restore the license management database of ETERNUS SF License Manager by executing the `esflm restore` command. Refer to the *ETERNUS SF Installation and Setup Guide* for this version for information on the command.

Example of executing the command is shown below. The *backupFileName* is the file name specified when the backup data was created.

```
> esflm restore backupFileName
Restoration of license database was performed successfully
```

8.3.4.2 Reconfiguring Device Information

The following procedure is required to reconfigure the ETERNUS Disk storage system information. Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for this version for information on the commands.

1. Confirm the registered ETERNUS Disk storage system by executing the `acarray list` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray list

Name   BOX-ID                               IP Address
-----
E4000  00E4000M3#####E450S20A#####KD4030639004## 192.0.2.10
E8000  00E8000M9#####E890S20A#####KO4070639003## 192.0.2.11
```

2. Confirm the detailed information of the registered ETERNUS Disk storage system by executing the `acarray detail` command.

```
C:\>acarray detail -a E4000

Disk Array Name : E4000
BOX-ID          : 00E4000M3#####E450S20A#####KD4030639004##
IP Address      : 192.0.2.10
Admin User      : ****
Access Volume   : X:

C:\>C:\ETERNUS_SF\CCM\bin\acarray detail -a E8000

Disk Array Name : E8000
BOX-ID          : 00E8000M9#####E890S20A#####KO4070639003##
IP Address      : 192.0.2.11
Admin User      : ****
Access Volume   : Y:
```

3. Remove all of the registered ETERNUS Disk storage system by executing the `acarray remove` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray remove -a E4000
Successful completion.

C:\>acarray remove -a E8000
Successful completion.
```

4. Re-register all of the ETERNUS Disk storage systems that were removed in step 3 by executing the `acarray add` command.

```
C:\>C:\ETERNUS_SF\CCM\bin\acarray add -a E4000 -ip 192.0.2.10 -user **** -password **** -path X:
Successful completion.

C:\>C:\ETERNUS_SF\CCM\bin\acarray add -a E8000 -ip 192.0.2.11 -user **** -password **** -path Y:
Successful completion.
```

Point

When the ETERNUS Disk storage system was registered by specifying a nonexistent drive letter or device name in the previous version of AdvancedCopy Manager CCM, re-register its ETERNUS Disk storage system as a remote device.

8.3.4.3 Registering License

Register the appropriate licenses. Refer to "License Management" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the license settings.

8.3.4.4 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.

For Windows

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.

For Solaris or Linux

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 the Solaris environment).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

8.3.5 Resuming Operation

When the tasks described above have been performed, the upgrade of AdvancedCopy Manager Copy Control Module is complete. The task below is the reconstruction of the managed environment in AdvancedCopy Manager. Refer to "Setup of AdvancedCopy Manager CCM" in the *ETERNUS SF Installation and Setup Guide* for this version.

Chapter 9 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 Different Versions" of the *ETERNUS SF Release Guide*.
- 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.

9.1 Upgrading AdvancedCopy Manager's Manager (for Windows)

9.1.1 Upgrading on Non-clustered Systems

9.1.1.1 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.

9.1.1.1.1 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.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Stop the ETERNUS SF Manager service.
Execute the following batch file.

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

4. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch again.

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.

9.1.1.1.2 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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the previous version for information on the required disk space.

9.1.1.1.3 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 *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

9.1.1.1.4 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 *ETERNUS SF Installation and Setup Guide* for this version for details.

9.1.1.1.5 Preparing for Uninstallation

Refer to "A.7 Unsetting Up Database" to unsetup the repository database of the previous version:

9.1.1.2 Performing Upgrade (for Windows)

Refer to "C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "9.1.1.3 Tasks to Be Performed After Upgrade".

9.1.1.3 Tasks to Be Performed After Upgrade

9.1.1.3.1 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 SCI/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.



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. Restart the service of ETERNUS SF Manager
Execute the following batch file:

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

The \$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.

9.1.1.3.2 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.

```
programDir\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 "12.2 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.

9.1.1.3.3 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.

9.1.1.3.4 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 "9.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

9.1.1.3.5 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.

9.1.2 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.
\$ETC_DIR	"Environment Directory" specified at the ETERNUS SF Manager installation.

9.1.2.1 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. 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 AdvancedCopy Manager's manager.
Refer to "[A.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - c. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- 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. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF Storage Cruiser Installation 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.
- 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.

9.1.2.2 Performing Upgrade (Primary Node)

Refer to "[C.1 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "[9.1.2.3 Performing Upgrade \(Secondary Node\)](#)".

9.1.2.3 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 "[9.1.2.2 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 *ETERNUS SF Cluster Environment Setup Guide* of this version for information on the cluster setup.

9.1.2.4 Tasks to Be Performed After Upgrade (Primary Node)

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

1. Stop the 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.

- 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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

Note

Do not change anything other than the version information.

- 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.
 - Log on to the server using Administrator privileges.
 - Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

Point

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

- Eject the DVD-ROM.

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

```
programDir\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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

6. Import the 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.

```
programDir\Common\bin\esfadm devconf import -all
```

After executing the `esfadm devconf import` command, confirm that the **IMPORTSTATUS** 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 "12.2 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.

9.1.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

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

1. Check that the ETERNUS SF Manager services 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- 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. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

 **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.

9.1.2.6 Starting ETERNUS SF Manager

Perform the following procedure:

1. Check that ETERNUS SF Manager services 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. Start the local transactions on all the nodes, perform the following procedure:
 - 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 "9.1.2.1 Preparing for Upgrade" maybe deleted.

9.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)

9.2.1 Upgrading on Non-clustered Systems

9.2.1.1 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.

9.2.1.1.1 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.33 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

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

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

5. Implement backup of the previous version.
Execute the following command. 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*.

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

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

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.

9.2.1.1.2 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 *ETERNUS SF 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 *ETERNUS SF Installation and Setup Guide* for the previous version for information on the required disk space.

9.2.1.1.3 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 *ETERNUS SF Installation and Setup Guide* for this version for information on the incompatible software.

9.2.1.1.4 Estimating Database Size

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

See

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

9.2.1.1.5 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.



See

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

9.2.1.1.6 Confirming Port Number for Communication Service (for Solaris, Linux)

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



See

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

9.2.1.1.7 Preparing for Uninstallation

Refer to "A.8 Cancelling Repository Settings" to unsetup the repository database of the previous version.

9.2.1.2 Performing Upgrade

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "9.2.1.3 Tasks to Be Performed After Upgrade".

9.2.1.3 Tasks to Be Performed After Upgrade

9.2.1.3.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Implement restoration of the previous version.

Execute the following command. 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*.

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

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

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.

Example:

```
# umount /mnt/dvd
```

6. Eject the DVD-ROM.

7. Restart the daemon of ETERNUS SF Manager.

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

9.2.1.3.2 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/FJVSesfcm/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 "12.2 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.

9.2.1.3.3 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 "9.2.1.1.1 Backing Up Operational Environment of Previous Version" maybe deleted.

9.2.1.3.4 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 the Solaris environment).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

Subsequently, go to "9.2.3 Resuming Operation".

9.2.2 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.

9.2.2.1 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 *ETERNUS SF 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.33 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.
 Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - c. Mount the DVD-ROM.
 Example:

```
# mount /mnt/dvd
```

- d. Implement backup of the previous version.
 Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.

 **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.

Example:

```
# umount /mnt/dvd
```

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 *ETERNUS SF 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 *ETERNUS SF 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.



Refer to "Operating Environment of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents

- c. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

- 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. Implement backup of the previous version.

Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.



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.
Example:

```
# umount /mnt/dvd
```

- 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 *ETERNUS SF 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 *ETERNUS SF 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.



Refer to "Operating Environment of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 *ETERNUS SF Storage Cruiser Installation 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.

9.2.2.2 Performing Upgrade (Primary Node)

Refer to "C.2 Procedures for Upgrade Installation of Manager Feature of Express / Storage Cruiser / AdvancedCopy Manager Version 14.x and 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 "9.2.2.3 Performing Upgrade (Secondary Node)".

9.2.2.3 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 "9.2.2.2 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 *ETERNUS SF 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 "9.2.2.1 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.

9.2.2.4 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). 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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

 **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. Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- d. Implement restoration of the previous version.
Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.

 **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.
Example:

```
# umount /mnt/dvd
```

- g. Eject the DVD-ROM.

4. 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.

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 *ETERNUS SF 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.

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 "[12.2 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 the Solaris environment).
Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

9.2.2.5 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- 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. Implement restoration of the previous version.
Execute the following command. 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*.

```
# /mnt/dvd/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, execute the command again.

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.
Example:

```
# umount /mnt/dvd
```

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 the Solaris environment). Delete after confirming that this package function is used only by ETERNUS SF Manager.

```
# pkgrm FSUNiconv
```

9.2.2.6 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for this version for information on starting the daemon.

Subsequently, go to "9.2.3 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 "9.2.2.1 Preparing for Upgrade" maybe deleted.

9.2.3 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.

9.3 Upgrading AdvancedCopy Manager's Agent (for Windows)

This section describes the upgrade procedure for the AdvancedCopy Manager's agent for Windows Server 2008 or later.

9.3.1 Upgrading on Non-clustered Systems

9.3.1.1 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to stop the service.
3. Stop the service of AdvancedCopy Manager's agent.

Perform the following procedure:

- a. Select **Control Panel > Administrative Tools > Services** to open the Windows Services screen.
 - b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.
4. Implement 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 environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
 - "For Windows environment" under "Required disk space for operation" in the *ETERNUS SF Installation and Setup Guide*
-

The procedure is shown below:

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

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
- b. Confirm the architecture of the AdvancedCopy Manager's agent that has been installed.
Select **Control Panel > Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent.
 - 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. Implement backup of the previous version.

Execute the following batch file. 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, execute the batch file again.

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.

9.3.1.2 Performing Upgrade

Note that if step 1 and step 2 have already been performed, it is unnecessary to perform these again.

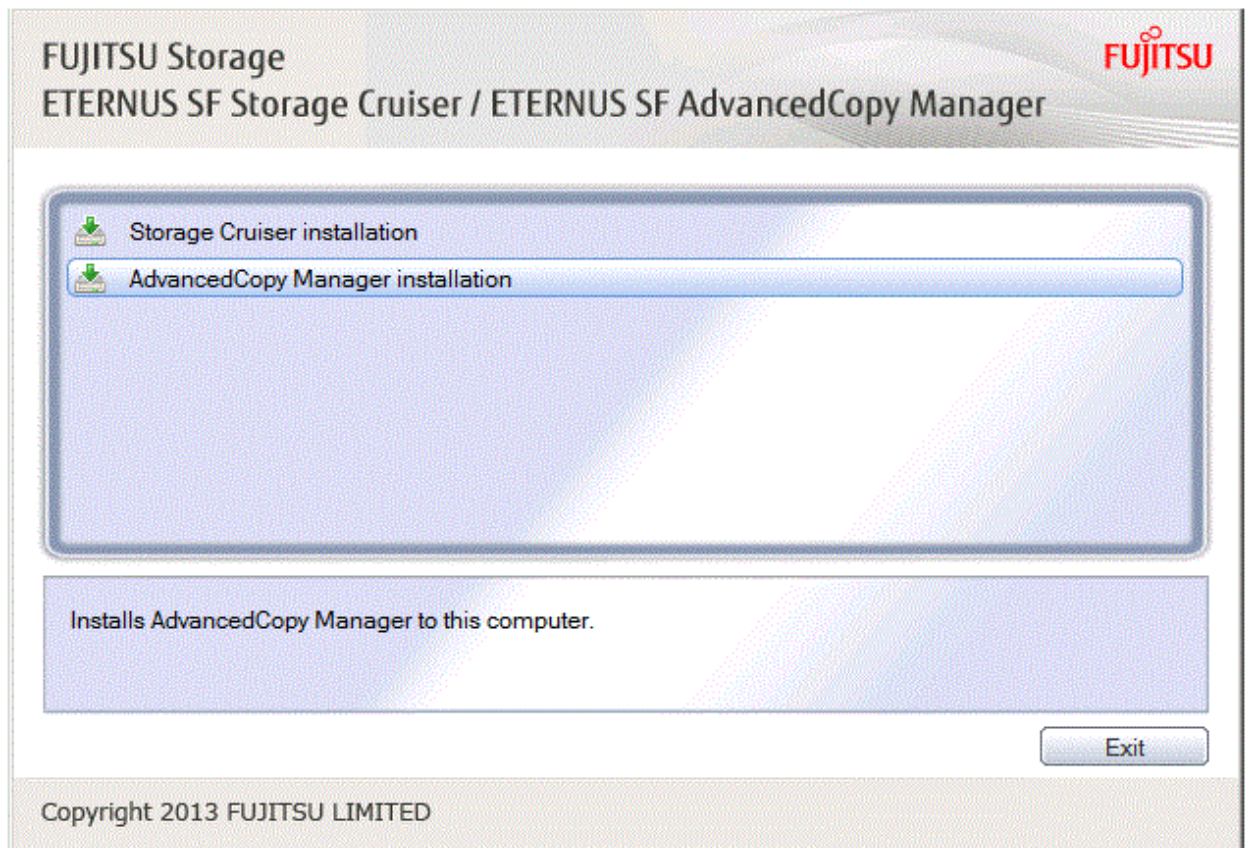
Note

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 for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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:

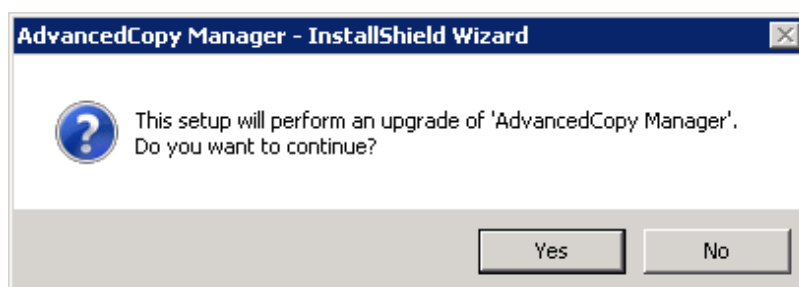
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

- For 64 bit version:

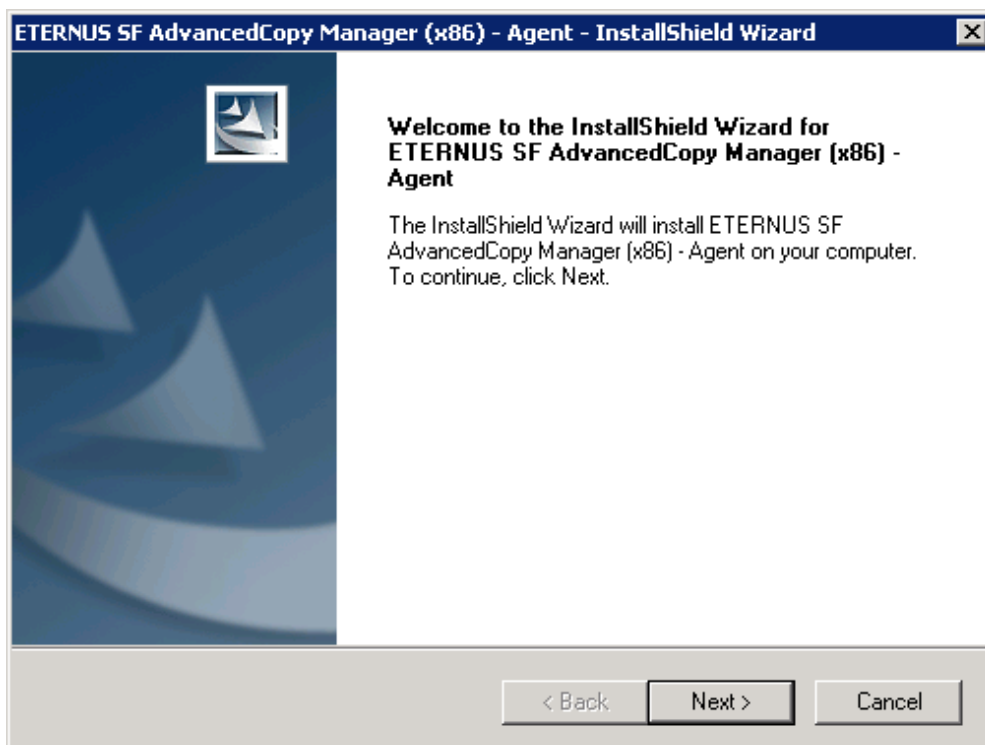
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

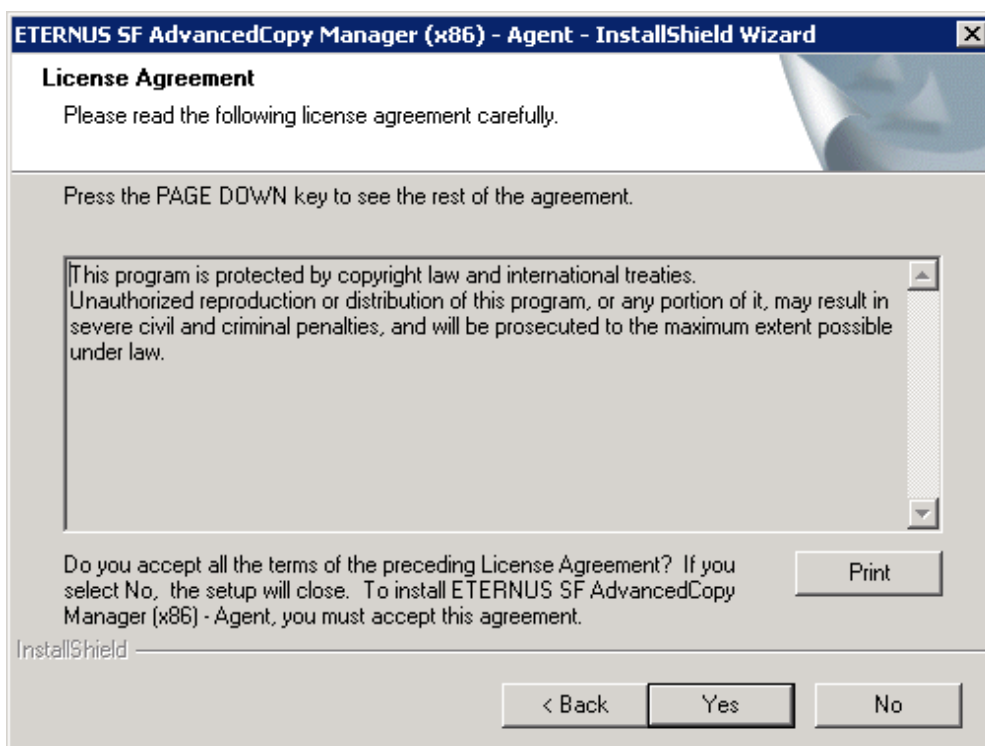
5. The following dialog box is displayed. Click **Yes**.



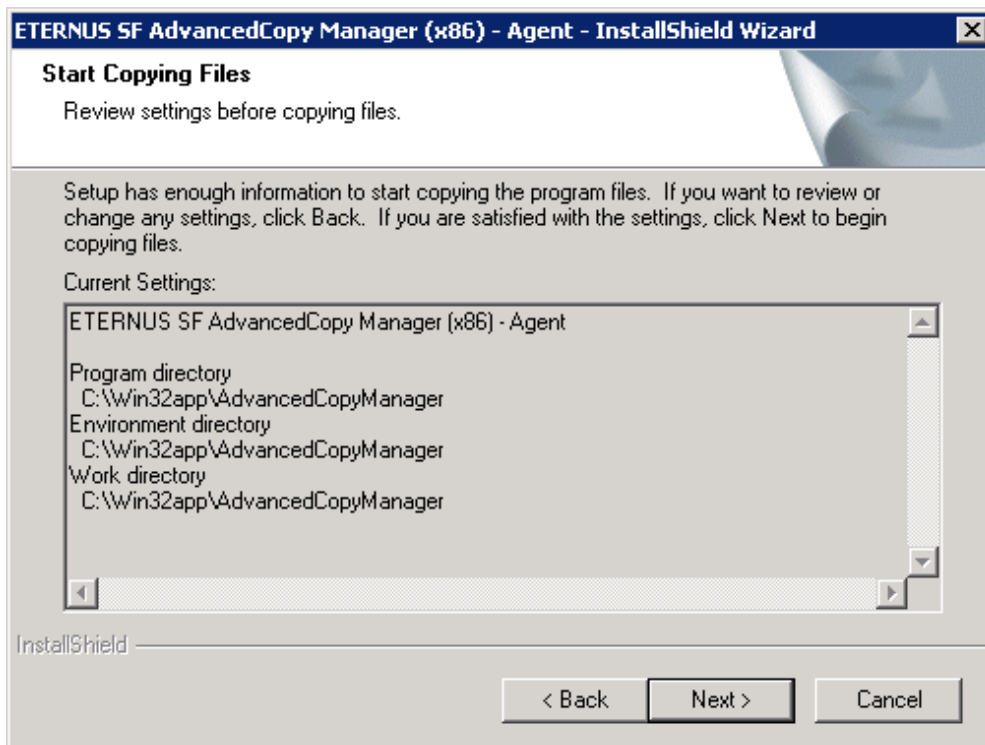
6. The installation wizard page is displayed. Click **Next**.



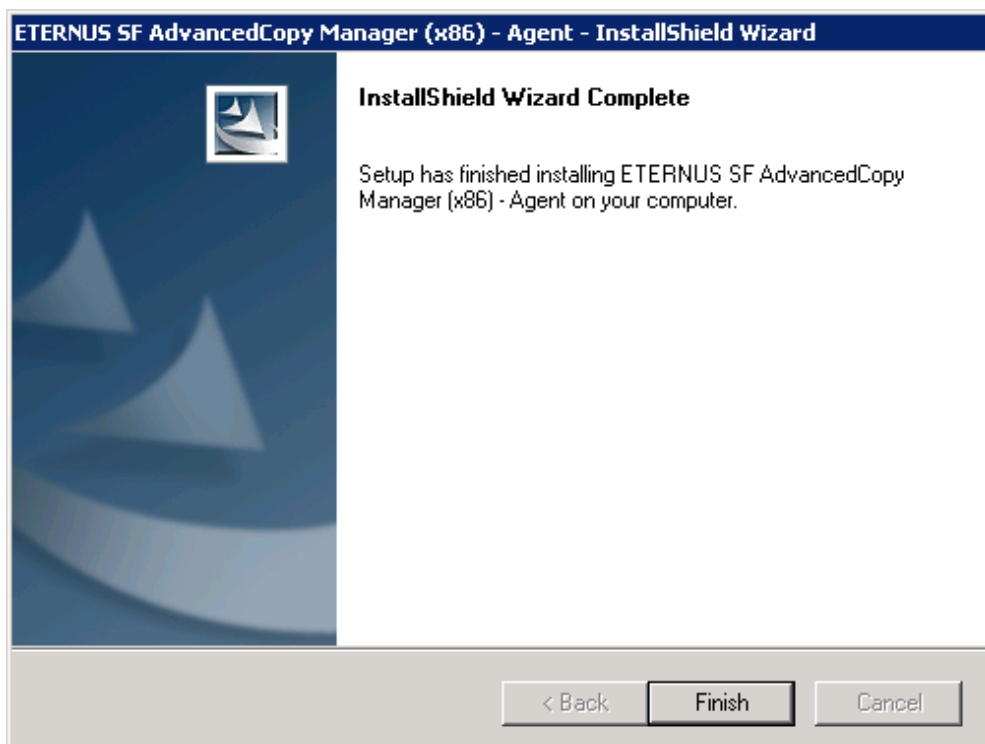
7. Read the terms and conditions of the **License Agreement** page. If the conditions are agreeable, click **Yes**.



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.

9.3.1.3 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to start the service.
2. Starting the service of AdvancedCopy Manager's agent

Perform the following procedure:

- 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

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

- When the Management Server OS is Solaris or Linux

```
/opt/FJJSVswstf/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 *ETERNUS SF 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 "9.3.1.1 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 "9.3.1.1 Preparing for Upgrade".

9.3.2 Upgrading on Clustered Systems

9.3.2.1 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 *ETERNUS SF 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:
 - a. Select **Control Panel > Administrative Tools > Services** to open the Windows Services screen.
 - b. Select "AdvancedCopy Manager COM Service" and then click **Stop**.
6. Implement 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, implement 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 environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Windows environment" under "Required disk space for operation" in the *ETERNUS SF 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 *ETERNUS SF 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
- b. Confirm the architecture of the AdvancedCopy Manager's agent that has been installed.
Select **Control Panel > Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent.
 - 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. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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.

9.3.2.2 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.

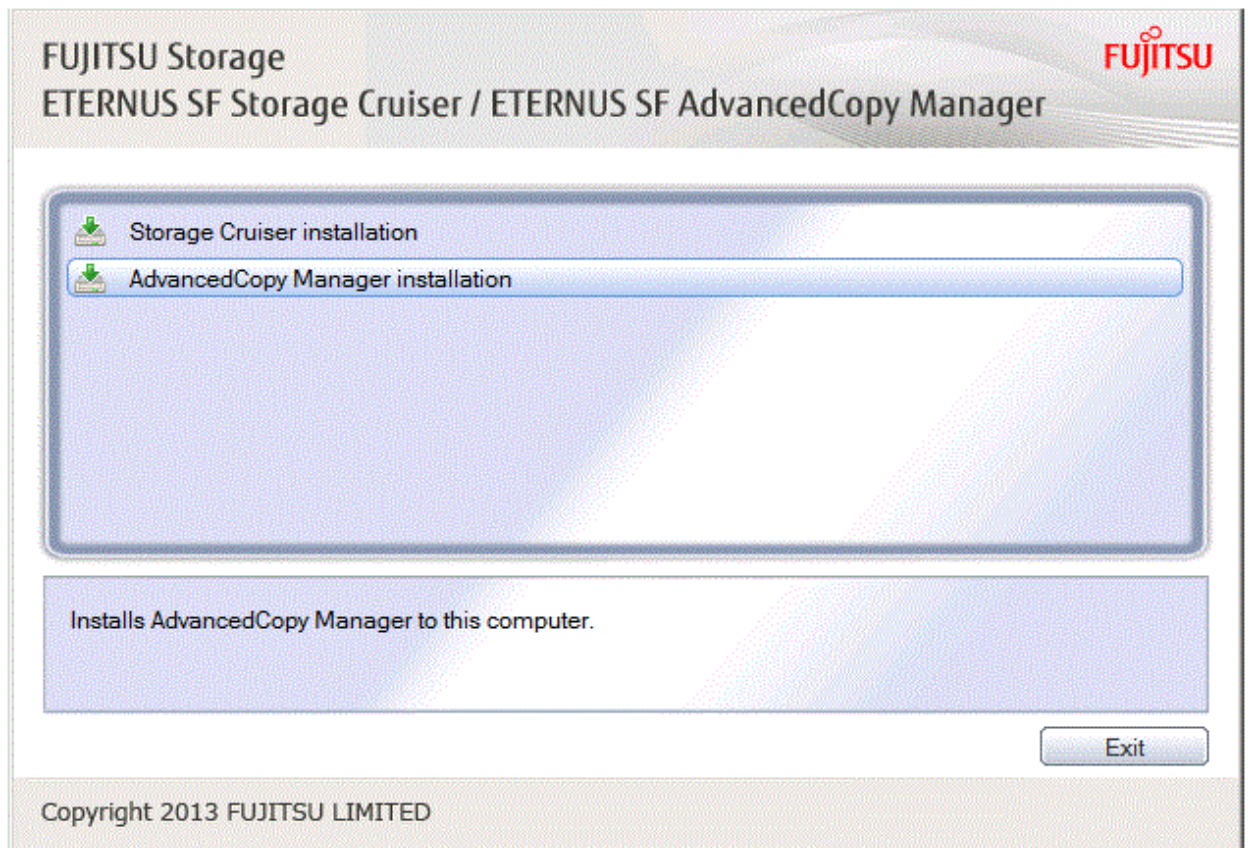
 **Note**

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 SCI/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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:

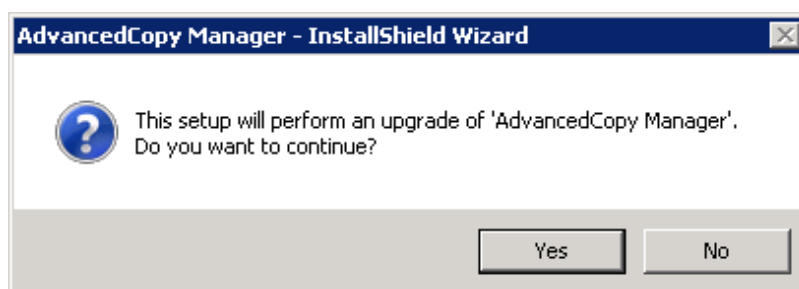
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

- For 64 bit version:

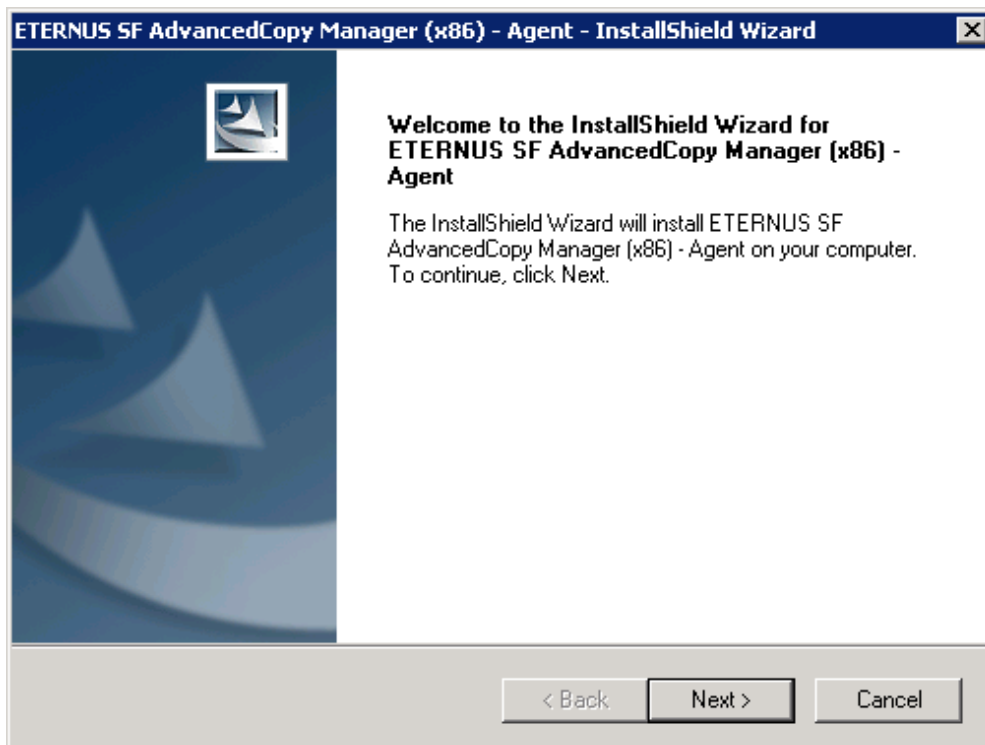
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

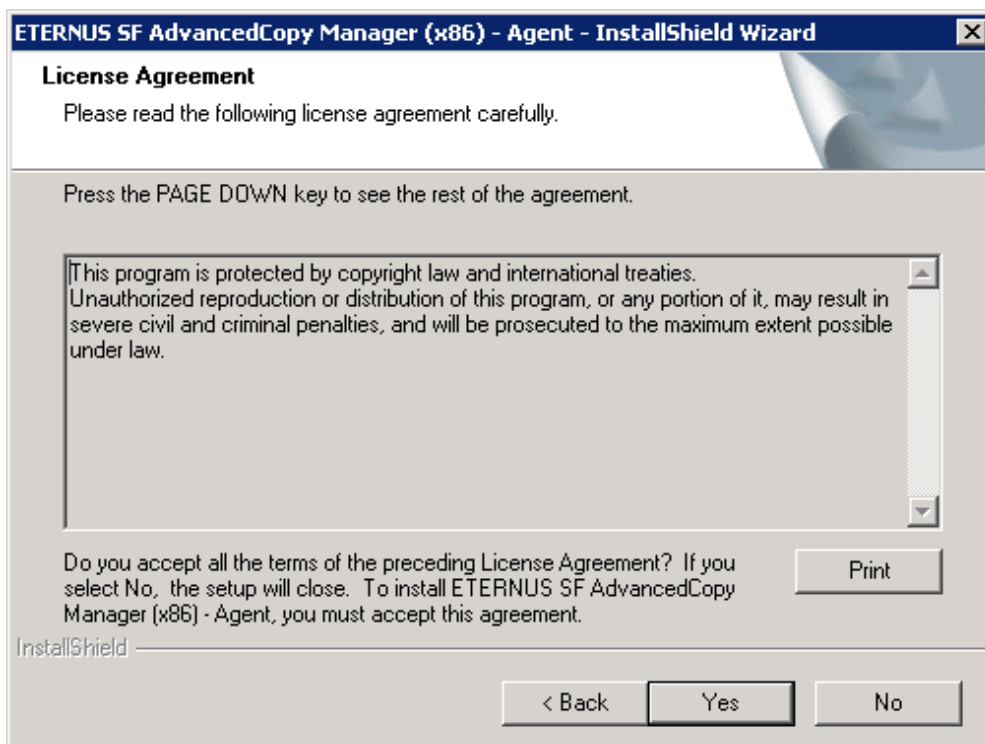
5. The following dialog box is displayed. Click **Yes**.



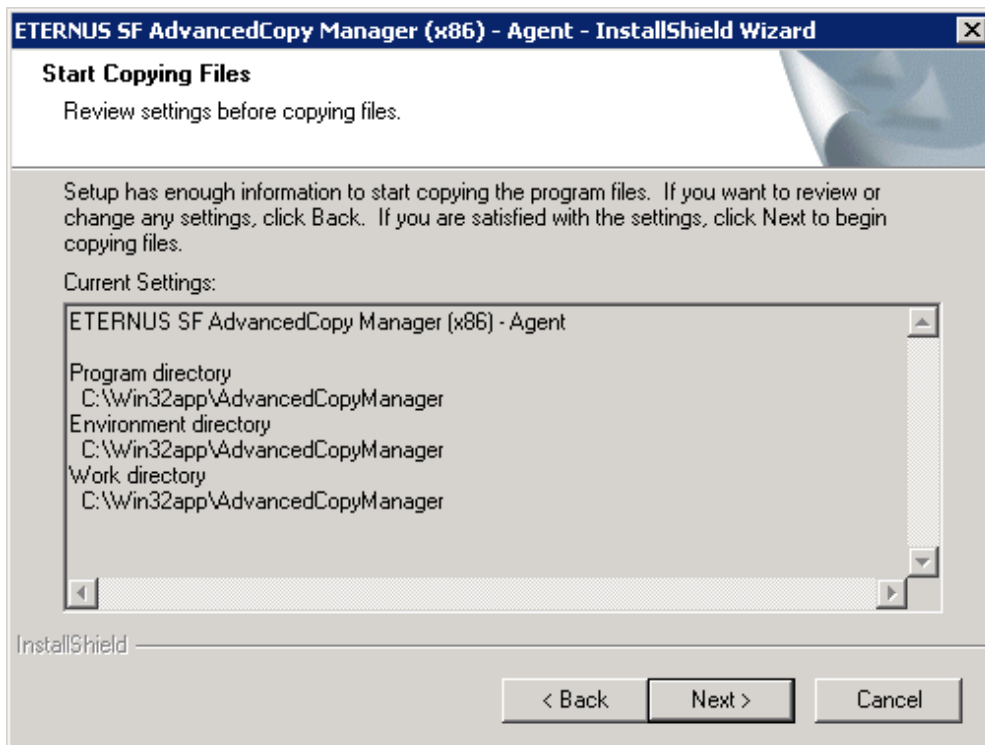
6. The following installation wizard page is displayed. Click **Next**.



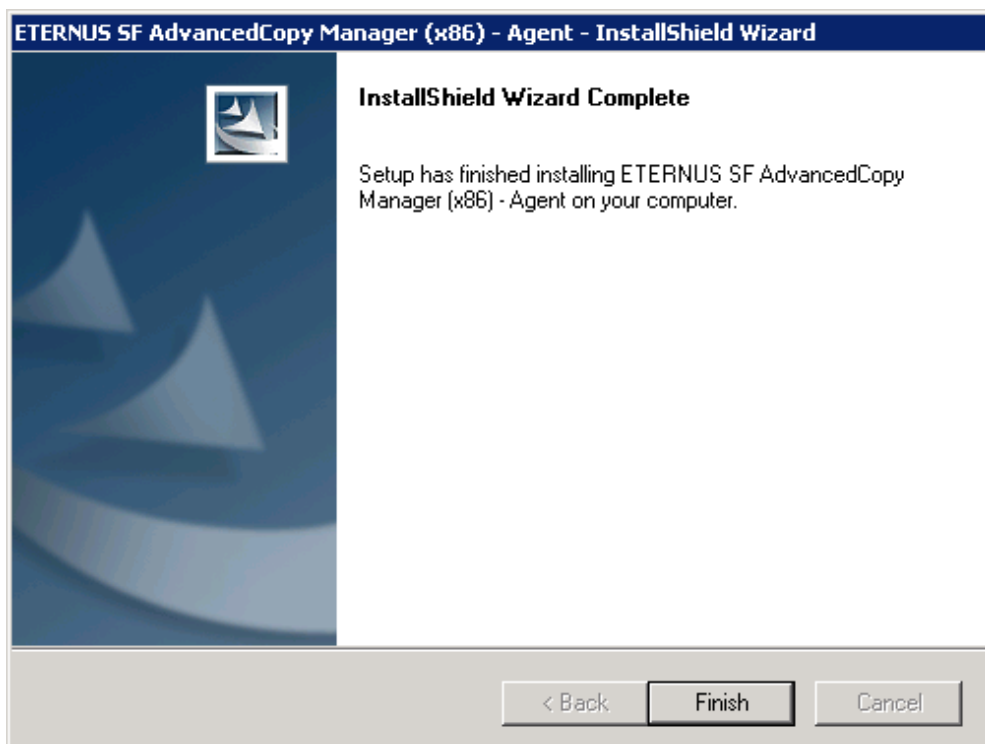
7. Read the terms and conditions of the **License Agreement** page.
If the conditions are agreeable, click **Yes**.



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.

9.3.2.3 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:

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

 **Note**

Do not change anything other than the version information.

9.3.2.4 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 "9.3.2.2 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.

9.3.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

There is no further action required after the upgrade for the secondary node.

9.3.2.6 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 *ETERNUS SF 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:
 - 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

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

- 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 *ETERNUS SF 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 "9.3.2.1 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 "9.3.2.1 Preparing for Upgrade".

9.4 Upgrading AdvancedCopy Manager's Agent (for Solaris, RHEL5/RHEL6, SUSE Linux Enterprise Server 11)

9.4.1 Upgrading on Non-clustered Systems

9.4.1.1 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).

- Execute the following command to stop the daemon of AdvancedCopy Manager's agent.

```
# /opt/swstorage/bin/stopacm
```

- Implement 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 environment" or "For Linux environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Solaris, Linux, HP-UX or AIX environment" under "Required disk space for operation" in the *ETERNUS SF Installation and Setup Guide*

The procedure is shown below:

- Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- Mount the DVD-ROM.

- Example for Solaris

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

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

- Example for RHEL5/RHEL6 and SUSE Linux Enterprise Server 11

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

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

- In the case of Red Hat Enterprise Linux 5 (for Intel64), execute file command and confirm the architecture of AdvancedCopy Manager's agent that has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
```

For example, when "ELF 32-bit" is included in the contents of the command as shown below, the 32 bit version of AdvancedCopy Manager's agent (RHEL5 x86 version Agent) has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
/opt/FJSVswstf/bin/stgenvdisp: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), for
GNU/
Linux 2.6.9, dynamically linked (uses shared libs), for GNU/Linux 2.6.9, not stripped
```

When "ELF 32-bit" is not included in the contents of the command shown, the 64 bit version of AdvancedCopy Manager's agent (RHEL5 x64 version Agent) has been installed.

- Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

[When using the RHEL5 x86 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL5 x64 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64/esfacmapreinst.sh backupDir
```

[When using the RHEL6 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

[When using the Solaris Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

[When using the SUSE Linux Enterprise Server 11 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86/esfacmapreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, execute the shell script again.

9.4.1.2 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

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

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

- Example for RHEL5/RHEL6 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows:

OS Type	Directory
Solaris	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris</i>
Red Hat Enterprise Linux 5 (for x86)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86</i>
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64</i>
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86</i>

OS Type	Directory
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<i>dvdrom/MountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86</i>

5. The installation information is displayed.

```
swsetup: Installer is preparing for installation...

+-----+
|           ETERNUS SF AdvancedCopy Manager           |
|                   16.5                               |
|           Copyright FUJITSU LIMITED 2013-2017       |
+-----+

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
```



.....
 If the upgrade was terminated abnormally, refer to "11.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" to recover the system to the normal state.

9.4.1.3 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

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

- When the Management Server OS is Solaris or Linux

```
/opt/FJVSwsstf/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 *ETERNUS SF 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 "9.4.1.1 Preparing for Upgrade" maybe deleted.

9.4.2 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.

9.4.2.1 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.

- Execute the following command to stop the local transactions on all the nodes.

```
# /opt/swstorage/bin/stopacm
```

- Implement 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, implement 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 environment" or "For Linux environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Solaris, Linux, HP-UX or AIX environment" under "Required disk space for operation" in the *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide*

The procedure is shown below:

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

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- Mount the DVD-ROM.

- Example for Solaris

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

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

- Example for RHEL5/RHEL6 and SUSE Linux Enterprise Server 11

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

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

- In the case of Red Hat Enterprise Linux 5 (for Intel64), execute file command and confirm the architecture of AdvancedCopy Manager's agent that has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
```

For example, when "ELF 32-bit" is included in the contents of the command as shown below, the 32 bit version of AdvancedCopy Manager's agent (RHEL5 x86 version Agent) has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
/opt/FJSVswstf/bin/stgenvdisp: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), for GNU/Linux 2.6.9, dynamically linked (uses shared libs), for GNU/Linux 2.6.9, not stripped
```

When "ELF 32-bit" is not included in the contents of the command shown, the 64 bit version of AdvancedCopy Manager's agent (RHEL5 x64 version Agent) has been installed.

d. Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

[When using the RHEL5 x86 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL5 x64 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64/esfacmapreinst.sh backupDir
```

[When using the RHEL6 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

[When using the Solaris Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

[When using the SUSE Linux Enterprise Server 11 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86/esfacmapreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, execute the shell script again.

e. Execute the following commands, and then eject the DVD-ROM.

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

f. 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.

9.4.2.2 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

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

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

- Example for RHEL5/RHEL6 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows:

OS Type	Directory
Solaris	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris</i>
Red Hat Enterprise Linux 5 (for x86)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86</i>
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64</i>
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86</i>
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86</i>

- The installation information is displayed.

```
swsetup: Installer is preparing for installation...

+-----+
|                ETERNUS SF AdvancedCopy Manager                |
|                16.5                                           |
|                Copyright FUJITSU LIMITED 2013-2017           |
+-----+

Welcome to Setup.
This program will install "AdvancedCopy Manager" on your system.
```

- 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]:
```

- 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.
```

- Execute the following commands, and then eject the DVD-ROM.

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



.....
 If the upgrade was terminated abnormally, refer to "[11.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)](#)" to recover the system to the normal state.

9.4.2.3 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 15.0B to 16.5	Version=V15.0	Version=V16.5
Version 15.1 to 16.5	Version=V15.1	
Version 15.2 to 16.5	Version=V15.2	
Version 15.3 to 16.5	Version=V15.3	

Note

Do not change anything other than the version information.

2. For the ETERNUS SF Manager Version 15.0B installed environment, perform the following procedure.

Edit the line starting with "System=" in /opt/FJSVswstf/cluster/swcluster.ini as follows:

```
System=GEN
```

Note

Do not change anything other than the line starting with "System=".

9.4.2.4 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 "9.4.2.2 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.

9.4.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

For the ETERNUS SF Manager Version 15.0B installed environment, perform the following procedure.

Edit the line starting with "System=" in /opt/FJSVswstf/cluster/swcluster.ini as follows:

```
System=GEN
```

Note

Do not change anything other than the line starting with "System=".

9.4.2.6 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

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

- 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 *ETERNUS SF 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 "9.4.2.1 Preparing for Upgrade" maybe deleted.

9.5 Upgrading AdvancedCopy Manager's agent (for HP-UX, AIX)

This section describes the upgrade procedure for AdvancedCopy Manager's agent.

1. [9.5.1 Backing Up Repository Data](#)
2. [9.5.2 Backing Up Management Information](#)
3. [9.5.3 Uninstalling Previous Version](#)
4. [9.5.4 Installing This Version](#)
5. [9.5.5 Restoring Repository Data](#)
6. [9.5.6 Changing Server Information](#)
7. [9.5.7 Restoring Management Information](#)
8. [9.5.8 Updating Version Information](#)

9.5.1 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)

9.5.2 Backing Up Management Information

Refer to "[A.5 Backing Up Management Information \(for HP-UX, AIX\)](#)" to back up the management information on the Managed Server.

9.5.3 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for the previous version for information on the unsetup of cluster settings.

9.5.4 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

9.5.5 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

```
programDir\ACM\bin\stgrepocnv -d backupDir
```

- When the Management Server OS is Solaris or Linux

```
/opt/FJSVswstf/bin/stgrepocnv -d backupDir
```



For restoration of the repository data, start a new window for command execution, and then perform the procedure on the window.



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

9.5.6 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

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


- When the Management Server OS is Solaris or Linux

```
/opt/FJVSswstf/bin/stgxfwcmmosrv -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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

9.5.7 Restoring Management Information

Refer to "A.13 Restoring Management Information (for HP-UX, AIX)" to restore the management information on the Managed Server.

9.5.8 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 `stgxfwcmmosrv` command to update the version information for the Managed Server. The `stgxfwcmmosrv` command must be executed on the Management Server.

When executing the `stgxfwcmmosrv` command, specify the Managed Server name for the `-n` option.

- When the Management Server OS is Windows

```
programDir\ACM\bin\stgxfwcmmosrv -n serverName
```

- When the Management Server OS is Solaris or Linux

```
/opt/FJVSswstf/bin/stgxfwcmmosrv -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 *ETERNUS SF 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 *ETERNUS SF Web Console Guide* for information on reloading the server information using Web Console.

9.6 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 "9.1 Upgrading AdvancedCopy Manager's Manager (for Windows)" to perform the upgrade.

9.6.1 Upgrading on Non-clustered Systems

9.6.1.1 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.
.....

9.6.1.1.1 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 SCI/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Implement backup of the previous version.
Execute the following batch file. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
dvdrromDrive:\Manager_windows\vuptools\esfccmpreinst.bat backupDir
```

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

Point

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

9.6.1.1.2 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 *ETERNUS SF 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 *ETERNUS SF 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"

9.6.1.2 Performing Upgrade (for Windows)

Refer to "[C.5 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 14.x and 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 "[9.6.1.3 Tasks to Be Performed After Upgrade](#)".

9.6.1.3 Tasks to Be Performed After Upgrade

9.6.1.3.1 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 SCI/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. Implement restoration of the previous version.
Execute the following batch file. 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, execute the batch again.

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.

9.6.1.3.2 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 "9.6.1.1.1 Backing Up Environment Setting Files" maybe deleted.

9.6.2 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.

9.6.2.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- c. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF 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.

- Log on to the server using Administrator privileges.
If already logged on as the Administrator privileges, this step is unnecessary.
- Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

 **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 *ETERNUS SF 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 *ETERNUS SF 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



Refer to "Deletion of Cluster Environments for CCM Server Transactions" in the *ETERNUS SF Cluster Environment Setup Guide* for the previous version for information.

9.6.2.2 Performing Upgrade (Primary Node)

Refer to "C.5 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 14.x and 15.x (for Windows)" to perform the upgrade.



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 "9.6.2.3 Performing Upgrade (Secondary Node)".

9.6.2.3 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 "9.6.2.2 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 *ETERNUS SF Cluster Environment Setup Guide* for this version.

9.6.2.4 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
 - c. Implement restoration of the previous version.
Execute the following batch file. Execute the following batch file. 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, execute the batch again.

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.

9.6.2.5 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Implement restoration of the previous version.

Execute the following batch file. 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, execute the batch again.

 **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.

9.6.2.6 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 "9.6.2.1 Preparing for Upgrade" maybe deleted.

9.7 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 "9.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)" to perform the upgrade.

9.7.1 Upgrading on Non-clustered Systems

9.7.1.1 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.

9.7.1.1.1 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.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Implement a backup of the previous version.

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

```
# /mnt/dvd/Manager_unix/vuptools/esfccmpreinst.sh backupDir
```

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

 **Point**

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

9.7.1.1.2 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 *ETERNUS SF 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 *ETERNUS SF 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"

9.7.1.2 Performing Upgrade (for Solaris, Linux)

Refer to "[C.6 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 14.x and 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 "9.7.1.3 Tasks to Be Performed After Upgrade".

9.7.1.3 Tasks to Be Performed After Upgrade

9.7.1.3.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Implement restoration of the previous version.

Execute the following command. For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

```
# /mnt/dvd/Manager_unix/vuptools/esfccmpostinst.sh backupDir
```

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

Point

- Spaces and the characters "/`*?\" data-bbox="149 506 707 542"/>

5. Unmount the DVD-ROM.

Example:

```
# umount /mnt/dvd
```

6. Eject the DVD-ROM.

9.7.1.3.2 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 "9.7.1.1.1 Backing Up Environment Setting Files" maybe deleted.

9.7.2 Upgrading on Clustered Systems

The section describes the upgrade of clustered systems.

9.7.2.1 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- d. Implement backup of the previous version.
Execute the following command. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

```
# /mnt/dvd/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, execute the batch file again.

 **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.
Example:

```
# umount /mnt/dvd
```

- 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 *ETERNUS SF 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 *ETERNUS SF 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

- d. Implement backup of the previous version.

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

```
# /mnt/dvd/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, execute the batch file again.



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.

Example:

```
# umount /mnt/dvd
```

- 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for the previous version for information.

9.7.2.2 Performing Upgrade (Primary Node)

Refer to "[C.6 Procedures for Upgrade Installation of AdvancedCopy Manager Copy Control Module Version 14.x and 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 "[9.7.2.3 Performing Upgrade \(Secondary Node\)](#)".

9.7.2.3 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 "[9.7.2.2 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 *ETERNUS SF Cluster Environment Setup Guide* for this version.

9.7.2.4 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- c. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

- d. Implement restoration of the previous version.

Execute the following batch file. For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

```
# /mnt/dvd/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, execute the batch again.



- 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.

Example:

```
# umount /mnt/dvd
```

- g. Eject the DVD-ROM.

9.7.2.5 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.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
- c. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

- d. Implement restoration of the previous version.
Execute the following batch file. For *backupDir*, specify the directory in which the backup data is stored with an absolute path.

```
# /mnt/dvd/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, execute the batch again

 **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.
Example:

```
# umount /mnt/dvd
```

- g. Eject the DVD-ROM.

9.7.2.6 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 "9.7.2.1 Preparing for Upgrade" maybe deleted.

9.7.3 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 10 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 2008 or later
- Solaris
- Red Hat Enterprise Linux 5, Red Hat Enterprise Linux 6, Red Hat Enterprise Linux 7, and SUSE Linux Enterprise Server 11

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 Different Versions" of the *ETERNUS SF Release Guide*.
- 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.

10.1 Upgrading AdvancedCopy Manager's Manager (for Windows)

10.1.1 Upgrading on Non-clustered Systems

10.1.1.1 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to stop the service.

- Execute the following batch to stop the ETERNUS SF Manager services.

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

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

- When using the ETERNUS VASA Provider, stop the Provider function.
With the Windows services screen, stop the ETERNUS Information Provider.
- 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.

10.1.1.2 Performing Upgrade (for Windows)

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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" and return the system to a normal state.

10.1.1.3 Tasks to Be Performed After Upgrade

The tasks below need to be performed.

- 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.
 - Confirm that other products are not utilizing the Symfoware. If Symfoware is in use by another product, refrain from uninstalling Symfoware.
 - 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.
- 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 *ETERNUS SF Storage Cruiser Operation Guide* for information on how to start the service.
- Execute the following batch to start the ETERNUS SF Manager services.

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

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

- When using the ETERNUS VASA Provider, start the Provider function.
With the Windows services screen, start the ETERNUS Information Provider.
- 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 "11.3.1 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 stgxfwcmdisprv 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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "10.1.3 Resuming Operation"

10.1.2 Upgrading on Clustered Systems

10.1.2.1 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 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.
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 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.
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 *ETERNUS SF 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.

10.1.2.2 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 ETERNUS SF 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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" and return the system to a normal state.
.....

10.1.2.3 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 "[10.1.2.2 Performing Upgrade \(Primary Node\)](#)".

10.1.2.4 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 "[10.1.2.2 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 "[10.1.2.2 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 *ETERNUS SF 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

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.

10.1.2.5 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, Symfaware 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 Symfaware Server.
 - a. Confirm that other products are not utilizing the Symfaware. If Symfaware is in use by another product, refrain from uninstalling Symfaware.
 - b. Uninstall Symfaware from the **Add or Remove Programs** or **Programs and Features** page.
If Symfaware Server and Symfaware Client are both installed, uninstall the Symfaware Client first.
2. Check that the ETERNUS SF Manager services 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 "[10.1.2.3 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 "[10.1.2.4 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 *ETERNUS SF Cluster Environment Setup Guide* of the appropriate earlier version.

10.1.2.6 Starting ETERNUS SF Manager

After performing "[10.1.2.4 Tasks to Be Performed After Upgrade \(Primary Node\)](#)" and "[10.1.2.5 Tasks to Be Performed After Upgrade \(Secondary Node\)](#)", perform the following procedure:

1. Check that ETERNUS SF Manager services 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 *ETERNUS SF 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 "[11.3.1 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 stgxfwcmmodsrv 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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the commands.

Subsequently, go to "10.1.3 Resuming Operation".

10.1.3 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.

10.2 Upgrading AdvancedCopy Manager's Manager (for Solaris, Linux)

10.2.1 Upgrading on Non-clustered Systems

10.2.1.1 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/FJVSesfcm/bin/stopesf.sh
```

10.2.1.2 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.

10.2.1.3 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.



Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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 4, execute the following command to start the ETERNUS SF Manager daemon.

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

Subsequently, go to "[10.2.3 Resuming Operation](#)".

10.2.2 Upgrading on Clustered Systems

10.2.2.1 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 *ETERNUS SF 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.

10.2.2.2 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.
.....

10.2.2.3 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.
.....

10.2.2.4 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.4 to 16.5	Version=V16.4	

 **Note**

Do not change anything other than the version information.

- 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **Note**

Do not change anything other than the version information.

- Recover the activation suspension script of Management Server tasks saved in "10.2.2.1 Preparing for Upgrade".
- 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 "10.2.2.1 Preparing for Upgrade".
- Perform the kernel parameter tuning.

 **See**

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

10.2.2.5 Tasks to Be Performed After Upgrade (Secondary Node)

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

- In the version level of this ETERNUS SF Manager, Symfaware 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 Symfaware Server.
 - Confirm that other products are not utilizing the Symfaware. If Symfaware is in use by another product, refrain from uninstalling Symfaware.

- 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 "[10.2.2.1 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 "[10.2.2.1 Preparing for Upgrade](#)".
4. Perform the kernel parameter tuning.



See

Refer to "Before Installation" in "Installation of ETERNUS SF Manager" in the *ETERNUS SF 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).

10.2.2.6 Starting ETERNUS SF Manager

After performing "10.2.2.4 Tasks to Be Performed After Upgrade (Primary Node)" and "10.1.2.5 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for this version for information on starting the daemon.

Subsequently, go to "10.2.3 Resuming Operation".

10.2.3 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.



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

10.3 Upgrading AdvancedCopy Manager's Agent (for Windows)

This section describes the upgrade procedure for the AdvancedCopy Manager's agent for Windows Server 2008 or later.

10.3.1 Upgrading on Non-clustered Systems

10.3.1.1 Preparing for Upgrade



.....
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 *ETERNUS SF 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. Implement 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 environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Windows environment" under "Required disk space for operation" in the *ETERNUS SF Installation and Setup Guide*

The procedure is shown below:

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

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
- Confirm the architecture of the AdvancedCopy Manager's agent that has been installed. Select **Control Panel > Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent.
 - 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.
- Start the command prompt with "Run as administrator".
- Implement backup of the previous version.

Execute the following batch file. 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, execute the batch file again.

Point

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

10.3.1.2 Performing Upgrade

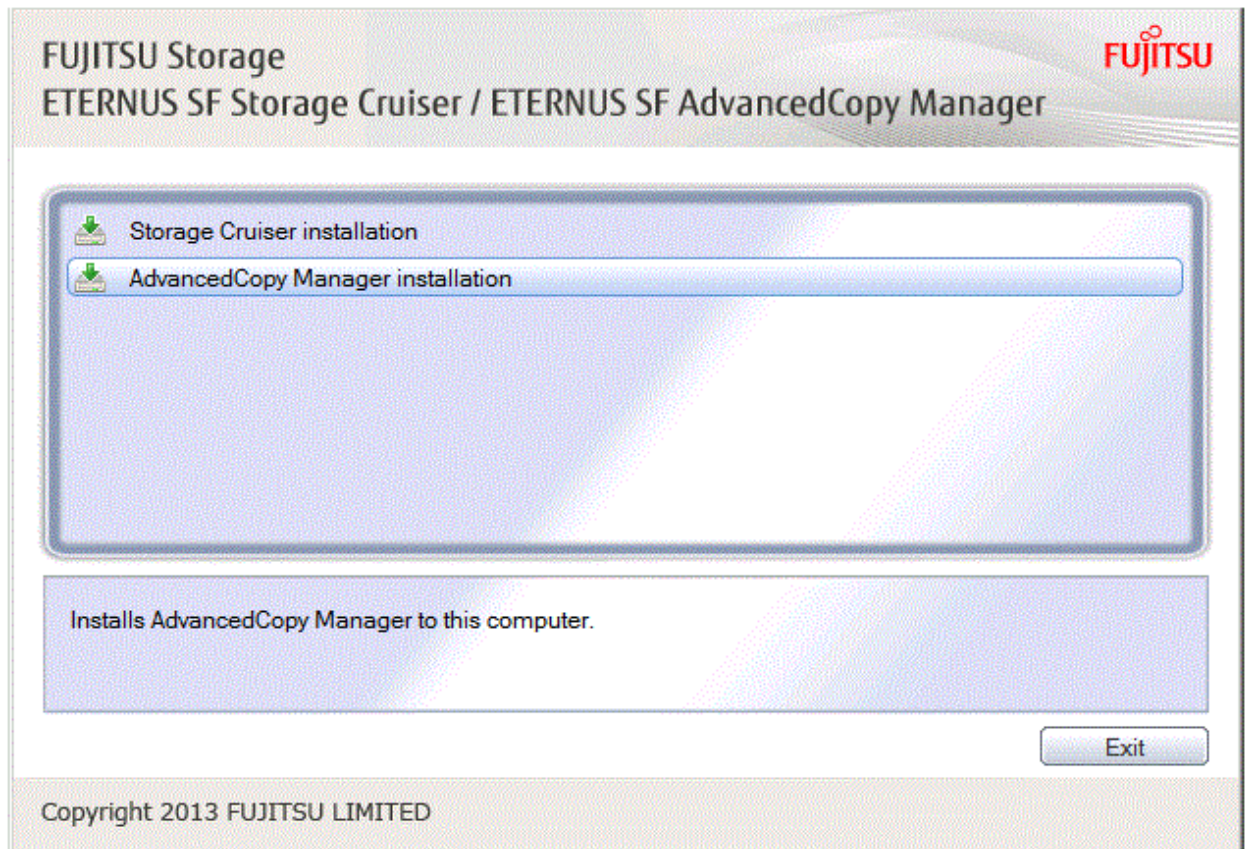
Note that if step 1 and step 2 have already been performed, perform from step 3.

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.

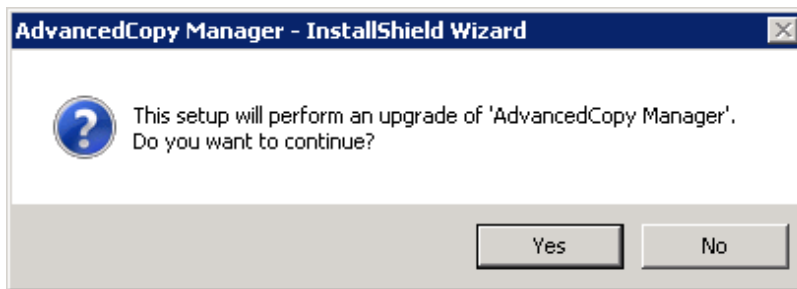
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.
3. The following window is displayed.
For the Upgrade Installation, this window is not used. Click **Exit**.



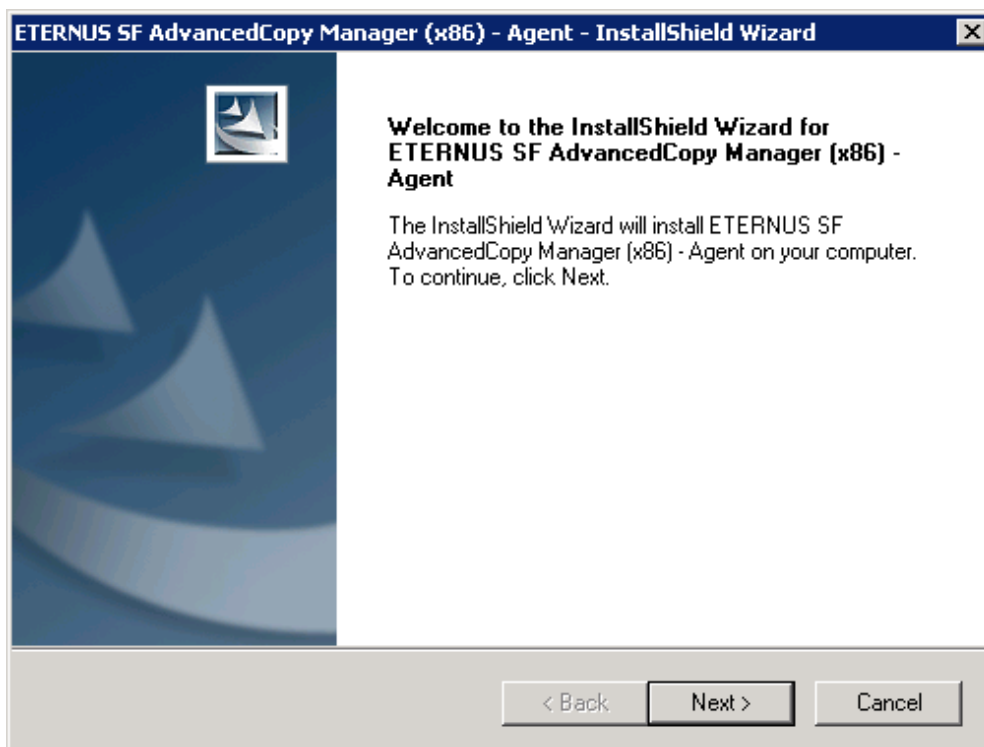
4. Start the following installation wizard corresponding to the architecture of AdvancedCopy Manager's agent checked in preparing for the upgrade:
 - For 32 bit version:
`dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe`
 - For 64 bit version:
`dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe`

The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

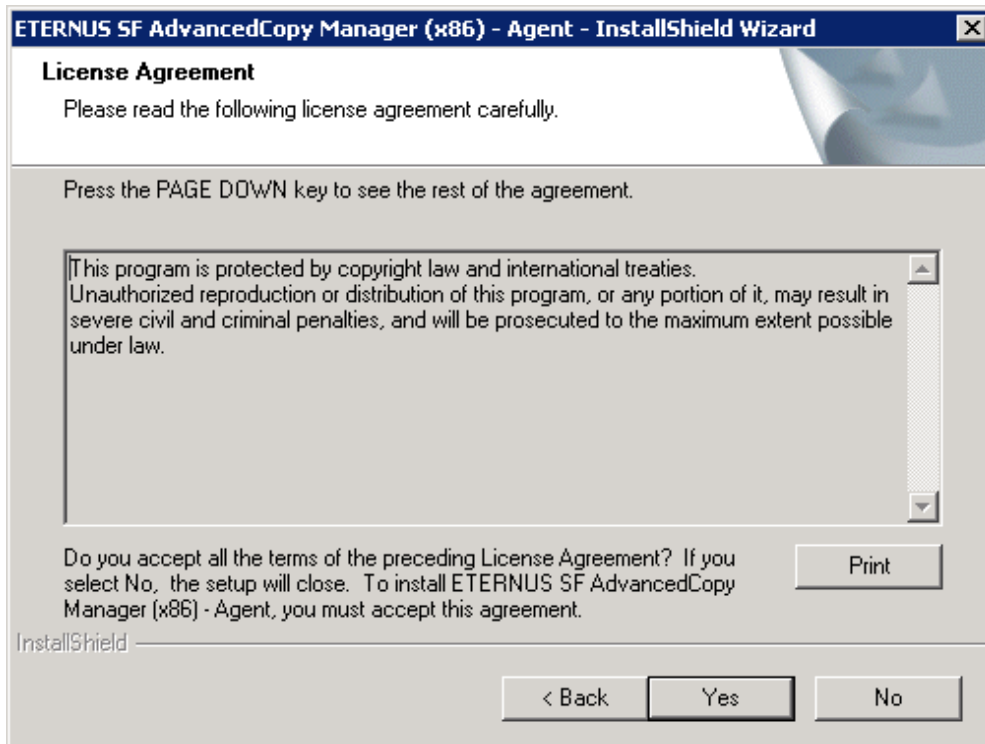
5. The following dialog box is displayed. Click **Yes**.



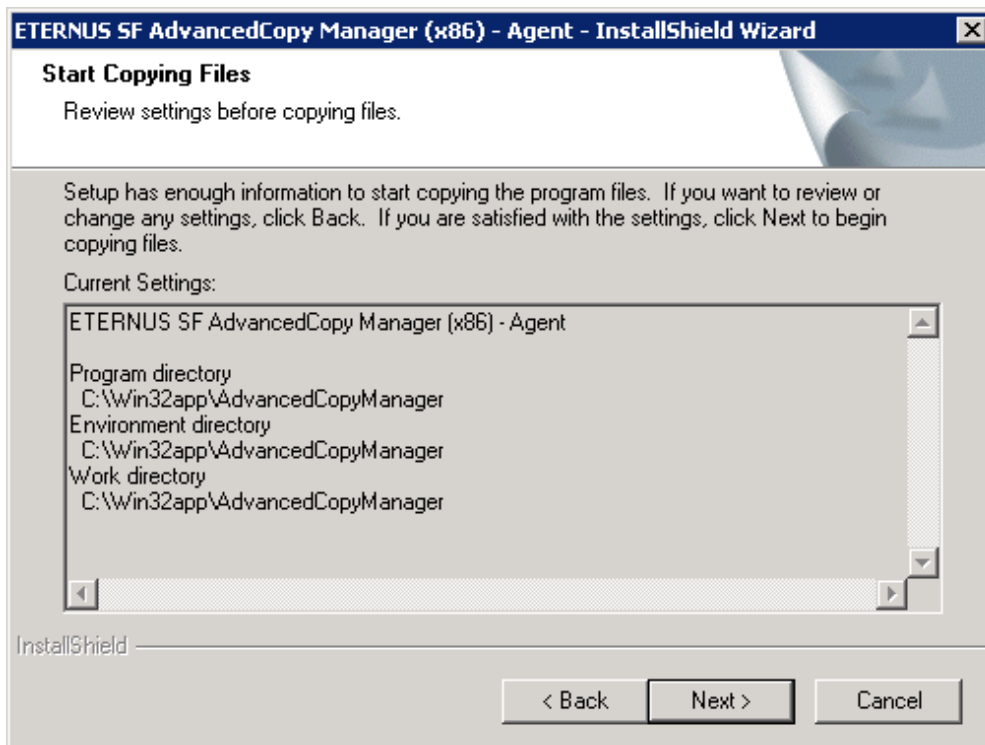
6. The installation wizard page is displayed. Click **Next**.



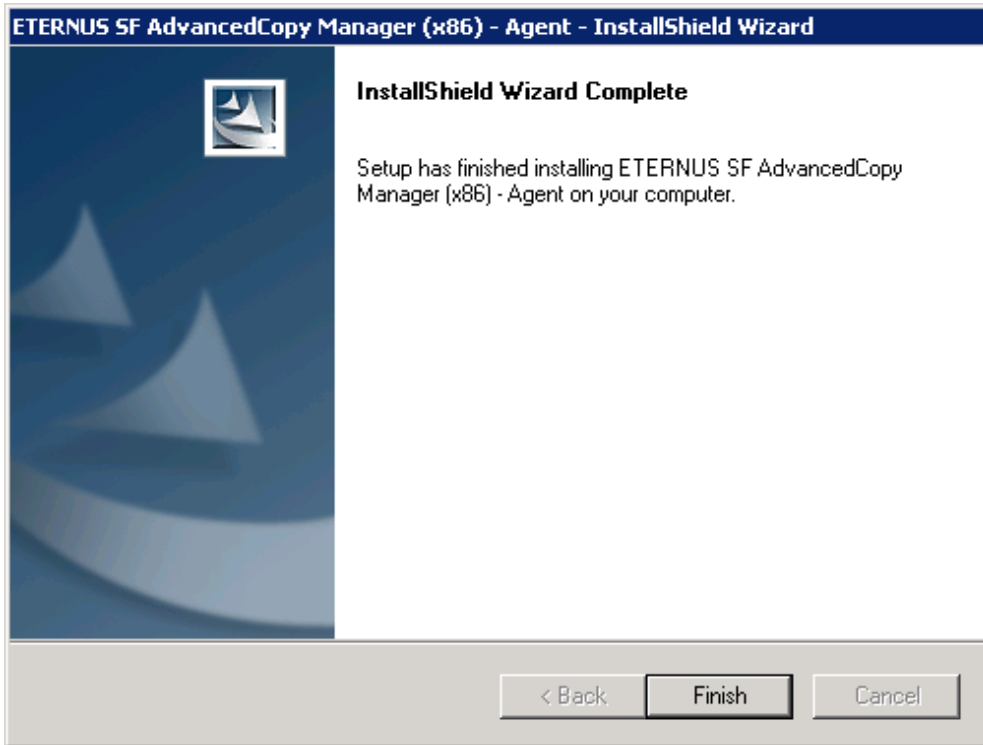
7. Read the terms and conditions of the **License Agreement** page.
If the conditions are agreeable, click **Yes**.



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 "[10.3.1.4 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 "[11.3.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Windows\)](#)" and return the system to a normal state.
.....

10.3.1.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. [10.3.1.3.1 Performing Upgrade with Silent Installation Procedure](#)
2. [10.3.1.3.2 Confirming Results of Upgrade with Silent Installation](#)

10.3.1.3.1 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.

10.3.1.3.2 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 *ETERNUS SF 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 "[11.3.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Windows\)](#)" and return the system to a normal state.

10.3.1.4 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 *ETERNUS SF 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

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

- 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 *ETERNUS SF 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 "10.3.1.1 Preparing for Upgrade" may be deleted.

10.3.2 Upgrading on Clustered Systems

10.3.2.1 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 *ETERNUS SF 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. Implement 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, implement 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 environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Windows environment" under "Required disk space for operation" in the *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide*

The procedure is shown below:

- a. Insert the DVD-ROM "ETERNUS SF SCI/ACM/Express Mediapack (Agent Program and Manual)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents. Furthermore, if the Installer screen is displayed by autorun, exit the installer.
- b. Confirm the architecture of the AdvancedCopy Manager's agent that has been installed.
Select **Control Panel > Programs and Functions** and confirm the architecture of the AdvancedCopy Manager's agent.
 - 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. Implement backup of the previous version.
Execute the following batch file. 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, execute the batch file again.

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.

10.3.2.2 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.

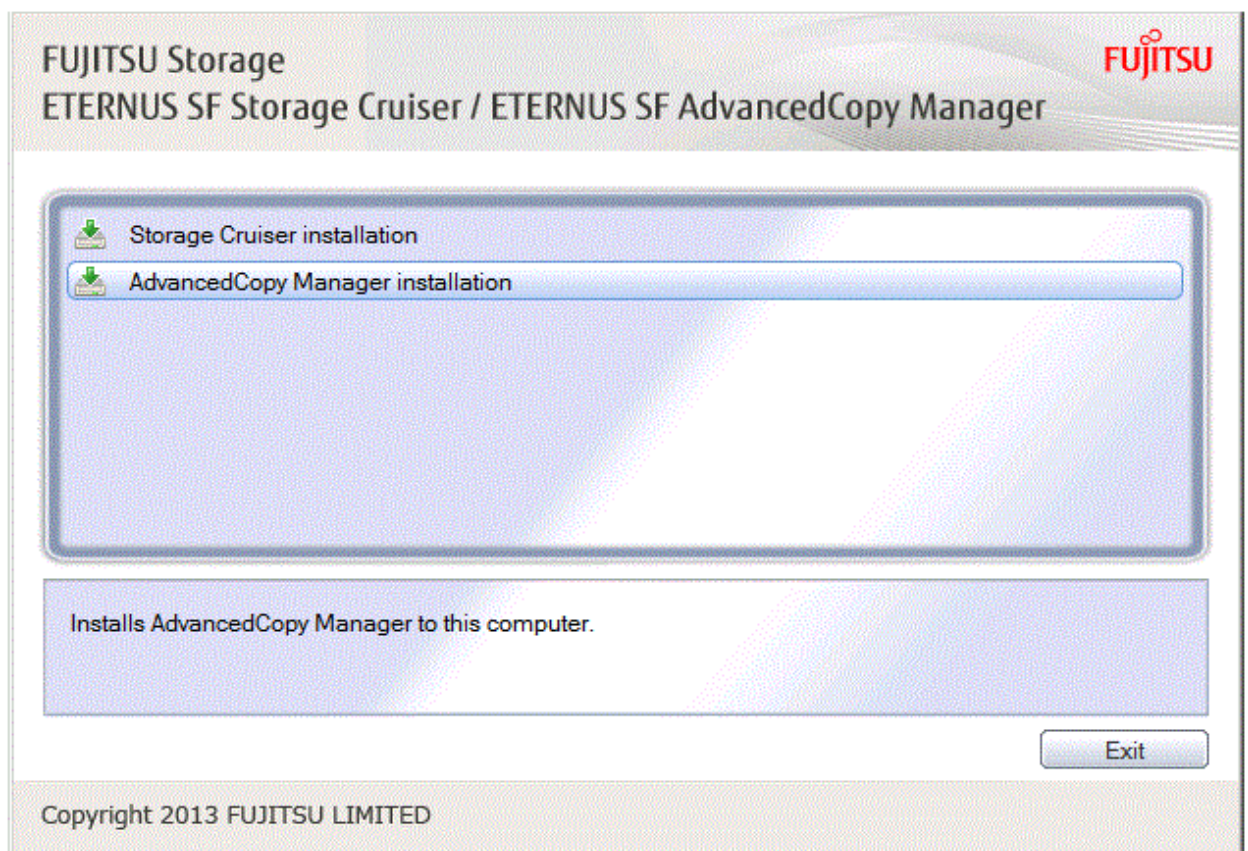
Note

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 SCI/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

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:

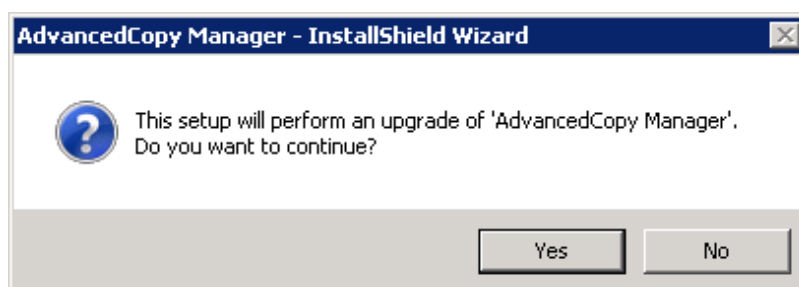
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\setup.exe

- For 64 bit version:

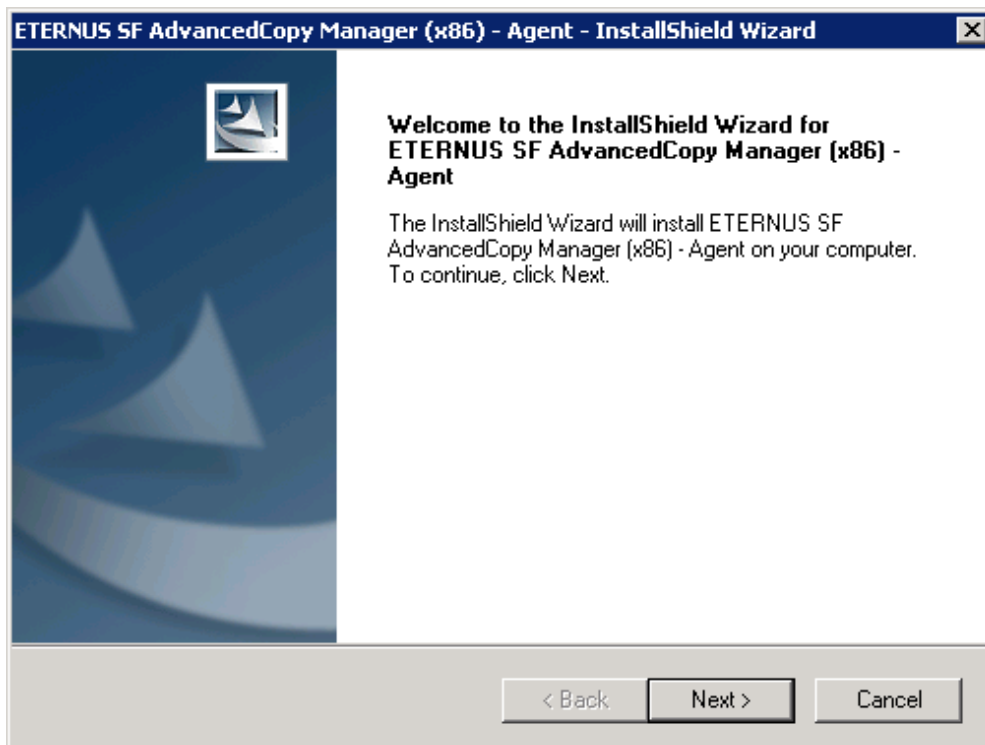
dvdromDrive:\Agent_windows\AdvancedCopy_Manager\agent\windows_x64\setup.exe

The following steps are explained using screen examples when the installation wizard of the 32 bit version agent is started.

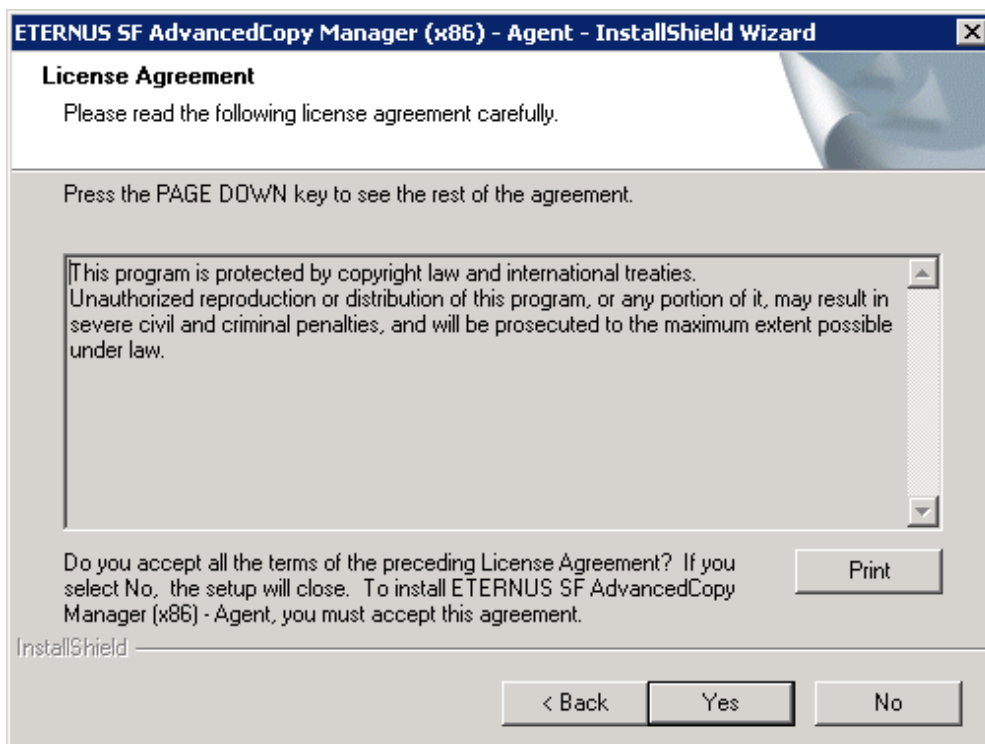
5. The following dialog box is displayed. Click **Yes**.



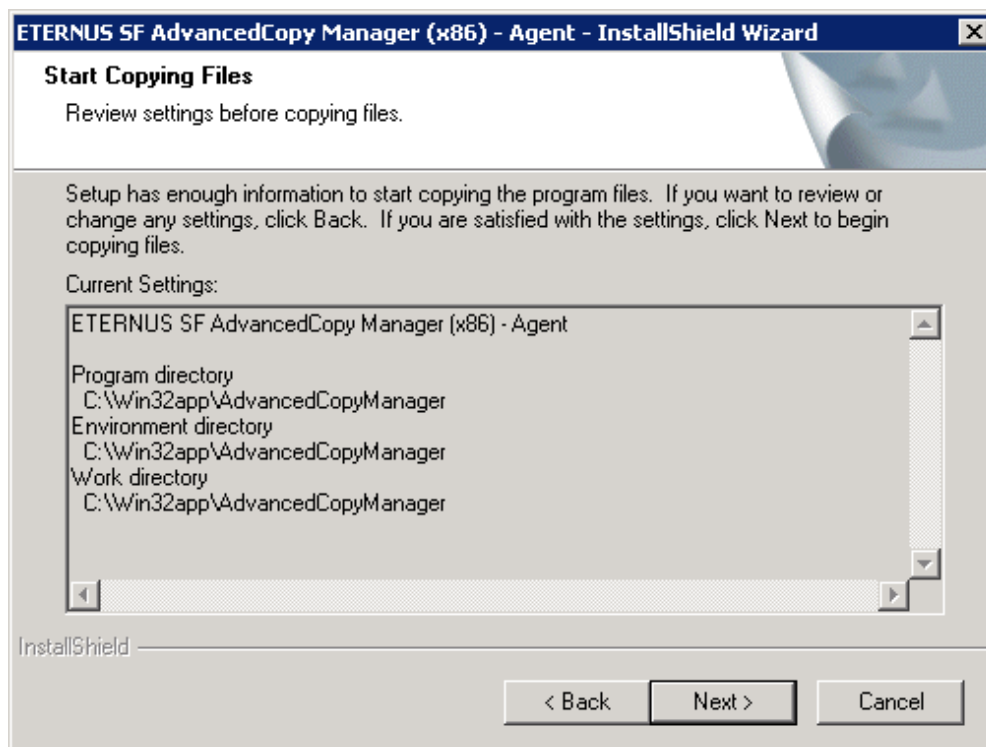
6. The following installation wizard page is displayed. Click **Next**.



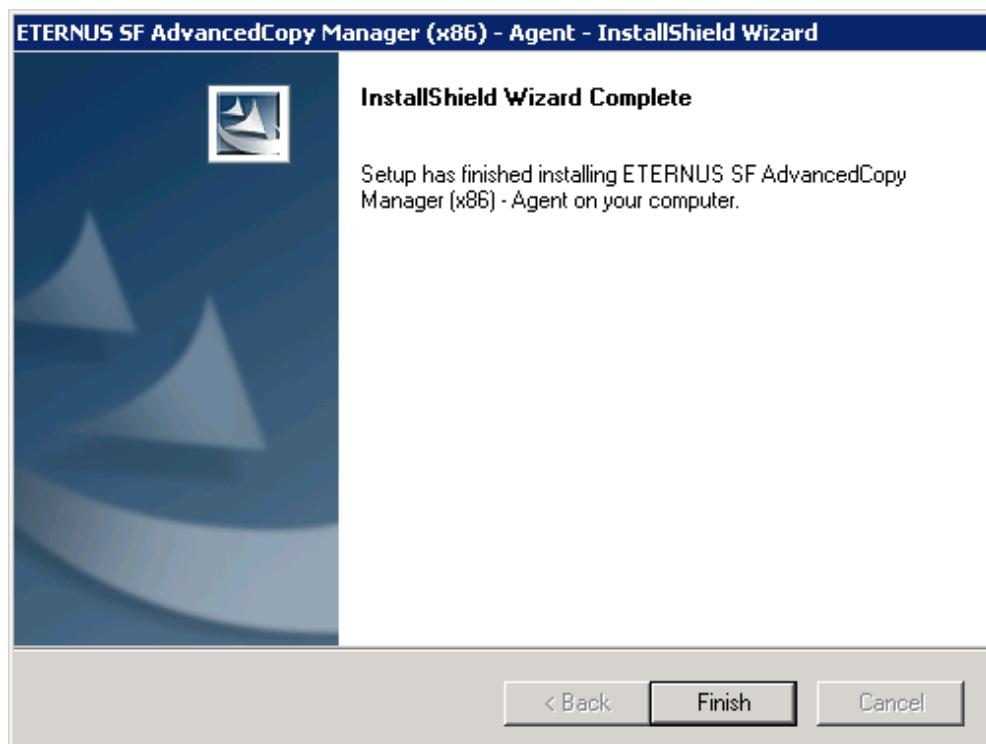
7. Read the terms and conditions of the **License Agreement** page.
If the conditions are agreeable, click **Yes**.



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 "[10.3.2.4 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 "10.3.2.7 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 "11.3.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Windows)" and return the system to a normal state.
.....

10.3.2.3 Upgrade with Silent Installation Tasks (Primary Node)

The upgrade is performed as follows:

1. [10.3.2.3.1 Upgrade with Silent Installation Tasks \(Primary Node\)](#)
2. [10.3.2.3.2 Confirming Results of Upgrade with Silent Installation \(Primary Node\)](#)

10.3.2.3.1 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.

10.3.2.3.2 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 *ETERNUS SF 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 "[11.3.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Windows\)](#)" and return the system to a normal state.

10.3.2.4 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

Note

Do not change anything other than the version information.

10.3.2.5 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 "[10.3.2.2 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.
.....

10.3.2.6 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 "[10.3.2.3 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.
.....

10.3.2.7 Tasks to Be Performed After Upgrade (Secondary Node)

There is no further action required after the upgrade for the secondary node.

10.3.2.8 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 *ETERNUS SF 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

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

- 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 *ETERNUS SF 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 "10.3.2.1 Preparing for Upgrade" maybe deleted.

10.4 Upgrading AdvancedCopy Manager's Agent (for Solaris, RHEL5/RHEL6/RHEL7, SUSE Linux Enterprise Server 11)

10.4.1 Upgrading on Non-clustered Systems

10.4.1.1 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. Implement 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 environment" or "For Linux environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Solaris, Linux, HP-UX or AIX environment" under "Required disk space for operation" in the *ETERNUS SF Installation and Setup Guide*

The procedure is shown below:

- Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

- Mount the DVD-ROM.

- Example for Solaris

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

- In the case of Red Hat Enterprise Linux 5 (for Intel64), execute file command and confirm the architecture of AdvancedCopy Manager's agent that has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
```

For example, when "ELF 32-bit" is included in the contents of the command as shown below, the 32 bit version of AdvancedCopy Manager's agent (RHEL5 x86 version Agent) has been installed.

```
# file /opt/FJSVswstf/bin/stgenvdisp
/opt/FJSVswstf/bin/stgenvdisp: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), for GNU/Linux 2.6.9, dynamically linked (uses shared libs), for GNU/Linux 2.6.9, not stripped
```

When "ELF 32-bit" is not included in the contents of the command shown, the 64 bit version of AdvancedCopy Manager's agent (RHEL5 x64 version Agent) has been installed.

- Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

[When using the RHEL5 x86 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL5 x64 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64/esfacmapreinst.sh backupDir
```

[When using the RHEL6 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL7 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapreinst.sh backupDir
```

[When using the Solaris Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

[When using the SUSE Linux Enterprise Server 11 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86/esfacmapreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, execute the shell script again.

10.4.1.2 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

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows.

OS Type	Directory
Solaris	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris</i>
Red Hat Enterprise Linux 5 (for x86)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86</i>
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64</i>
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86</i>
Red Hat Enterprise Linux 7 (for Intel64)	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86</i>
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<i>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86</i>

5. The installation information is displayed.

```
swsetup: Installer is preparing for installation...
```

```
+-----+
```



```
|          ETERNUS SF AdvancedCopy Manager          |
|                      16.5                      |
|          Copyright FUJITSU LIMITED 2013-2017          |
+-----+
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 "10.4.1.4 Tasks to Be Performed After Upgrade" to setup the AdvancedCopy Manager's agent.

Point

.....
If the upgrade was terminated abnormally, refer to "11.3.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" to recover the system to the normal state.
.....

10.4.1.3 Upgrade with Silent Installation Tasks

The upgrade is performed as follows:

1. [10.4.1.3.1 Performing Upgrade with Silent Installation Procedure](#)
2. [10.4.1.3.2 Confirming Results of Upgrade with Silent Installation](#)

10.4.1.3.1 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

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

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	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris</code>
Red Hat Enterprise Linux 5 (for x86)	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86</code>
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64</code>
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86</code>
Red Hat Enterprise Linux 7 (for Intel64)	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86</code>
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<code>dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86</code>

 **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
```

10.4.1.3.2 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 *ETERNUS SF 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 "11.3.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" to recover the system to the normal state.
.....

10.4.1.4 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

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

- 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 *ETERNUS SF 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 "10.4.1.1 Preparing for Upgrade" maybe deleted.
-

10.4.2 Upgrading on Clustered Systems

10.4.2.1 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. Implement 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, implement 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 environment" or "For Linux environment" under "Required disk space for installation" in the *ETERNUS SF Installation and Setup Guide*
- "For Solaris, Linux, HP-UX or AIX environment" under "Required disk space for operation" in the *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide*
-

The procedure is shown below:

- a. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Agent Program and Manual)" for this version into the DVD-ROM drive.
Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

b. Mount the DVD-ROM.

- Example for Solaris

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

c. In the case of Red Hat Enterprise Linux 5 (for Intel64), execute file command and confirm the architecture of AdvancedCopy Manager's agent that has been installed.

```
# file /opt/FJVSvswstf/bin/stgenvdisp
```

For example, when "ELF 32-bit" is included in the contents of the command as shown below, the 32 bit version of AdvancedCopy Manager's agent (RHEL5 x86 version Agent) has been installed.

```
# file /opt/FJVSvswstf/bin/stgenvdisp
/opt/FJVSvswstf/bin/stgenvdisp: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV), for GNU/Linux 2.6.9, dynamically linked (uses shared libs), for GNU/Linux 2.6.9, not stripped
```

When "ELF 32-bit" is not included in the contents of the command shown, the 64 bit version of AdvancedCopy Manager's agent (RHEL5 x64 version Agent) has been installed.

d. Implement backup of the previous version.

Execute the following shell script included in the DVD-ROM. For *backupDir*, specify the directory in which to store the backup data with an absolute path.

[When using the RHEL5 x86 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL5 x64 Edition Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64/esfacmapreinst.sh backupDir
```

[When using the RHEL6 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapreinst.sh backupDir
```

[When using the RHEL7 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapreinst.sh backupDir
```

[When using the Solaris Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapreinst.sh backupDir
```

[When using the SUSE Linux Enterprise Server 11 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86/esfacmapreinst.sh backupDir
```

When the backup fails, after confirming the output error message and removing the cause of the failure, execute the shell script again.

e. Execute the following commands, and then eject the DVD-ROM.

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

- f. 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.

10.4.2.2 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

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

Execute the following commands to install the AdvancedCopy Manager's agent.

```
# cd environmentDir
# ./swsetup
```

The *environmentDir* is as follows.

OS Type	Directory
Solaris	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 5 (for x86)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel5_x86
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel5_x64
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel6_x86
Red Hat Enterprise Linux 7 (for Intel64)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel7_x86
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/sles11_x86

5. The installation information is displayed.

```
swsetup: Installer is preparing for installation...
```

```
+-----+
|           ETERNUS SF AdvancedCopy Manager           |
|                   16.5                               |
|           Copyright FUJITSU LIMITED 2013-2017       |
+-----+
```

```
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 "[10.4.2.4 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 "[10.4.2.7 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 "[11.3.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)](#)" to recover the system to the normal state.
.....

10.4.2.3 Upgrade with Silent Installation Tasks (Primary Node)

The upgrade is performed as follows:

1. [10.4.2.3.1 Performing Upgrade with Silent Installation Procedure \(Primary Node\)](#)
2. [10.4.2.3.2 Confirming Results of Upgrade with Silent Installation \(Primary Node\)](#)

10.4.2.3.1 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

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

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

- Example for RHEL5/RHEL6/RHEL7 and SUSE Linux Enterprise Server 11

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

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

4. Install the AdvancedCopy Manager's agent.

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	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/Solaris
Red Hat Enterprise Linux 5 (for x86)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel5_x86
Red Hat Enterprise Linux 5 (for Intel64), using the Symfoware linkage function	
Red Hat Enterprise Linux 5 (for Intel64), not using the Symfoware linkage function	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel5_x64
Red Hat Enterprise Linux 6 (for x86) Red Hat Enterprise Linux 6 (for Intel64)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel6_x86
Red Hat Enterprise Linux 7 (for Intel64)	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/rhel7_x86
SUSE Linux Enterprise Server 11 for x86 SUSE Linux Enterprise Server 11 for EM64T	<i>dvdromMountPoint</i> /Agent_unix/AdvancedCopy_Manager/sles11_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
```

10.4.2.3.2 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 *ETERNUS SF 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 "[11.3.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)](#)" to recover the system to the normal state.

10.4.2.4 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.

Upgrade Patterns	Descriptive Contents of Version Information	
	Before	After
Version 16.0 to 16.5	Version=V16.0	Version=V16.5
Version 16.1 to 16.5	Version=V16.1	
Version 16.2 to 16.5	Version=V16.2	
Version 16.3 to 16.5	Version=V16.3	
Version 16.4 to 16.5	Version=V16.4	

 **Note**

.....
 Do not change anything other than the version information.

10.4.2.5 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 "[10.4.2.2 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.

10.4.2.6 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 "[10.4.2.3 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.

10.4.2.7 Tasks to Be Performed After Upgrade (Secondary Node)

No operation is required after upgrade at the secondary node.

10.4.2.8 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

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

- When the Management Server OS is Solaris or Linux

```
/opt/FJVSvswstf/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 *ETERNUS SF 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 "10.4.2.1 Preparing for Upgrade" maybe deleted.

10.5 Upgrading AdvancedCopy Manager's agent (for HP-UX, AIX)

This section describes the upgrade procedure for AdvancedCopy Manager's agent.

1. [10.5.1 Backing Up Repository Data](#)
2. [10.5.2 Backing Up Management Information](#)
3. [10.5.3 Uninstalling Previous Version](#)
4. [10.5.4 Installing This Version](#)
5. [10.5.5 Restoring Repository Data](#)
6. [10.5.6 Changing Server Information](#)
7. [10.5.7 Restoring Management Information](#)
8. [10.5.8 Updating Version Information](#)

10.5.1 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)

10.5.2 Backing Up Management Information

Refer to "[A.5 Backing Up Management Information \(for HP-UX, AIX\)](#)" to back up the management information on the Managed Server.

10.5.3 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for the previous version for information on the unsetup of cluster settings.

10.5.4 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF 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 *ETERNUS SF Cluster Environment Setup Guide* for this version to setup the AdvancedCopy Manager's agent.

10.5.5 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

```
programDir\ACM\bin\stgrepocnv -d backupDir
```

- 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

```
programDir\ACM\bin\stgrepocnv -d repositoryDataBackupFile
```

- 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

10.5.6 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

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

- 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

10.5.7 Restoring Management Information

Refer to "[A.13 Restoring Management Information \(for HP-UX, AIX\)](#)" to restore the management information on the Managed Server.

10.5.8 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

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

- 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* relevant to the OS of the Management Server for information on the command.

10.6 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 "[10.1 Upgrading AdvancedCopy Manager's Manager \(for Windows\)](#)" to perform the upgrade.

10.6.1 Upgrading on Non-clustered Systems

10.6.1.1 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.
```

10.6.1.2 Performing Upgrade (for Windows)

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 "11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager (for Windows)" and return the system to a normal state.
.....

10.6.2 Upgrading on Clustered Systems

10.6.2.1 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.

10.6.2.2 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 ETERNUS SF 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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" and return the system to a normal state.
.....

10.6.2.3 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 "[10.6.2.2 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 "[11.3.1 In Case of Problem During Upgrade of ETERNUS SF Manager \(for Windows\)](#)" and return the system to a normal state.
.....

10.6.2.4 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 "[10.6.2.2 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 "[10.6.2.2 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 *ETERNUS SF Cluster Environment Setup Guide* of the appropriate earlier version.

10.6.2.5 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 "[10.6.2.4 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.

10.6.2.6 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.

10.7 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 "[10.2 Upgrading AdvancedCopy Manager's Manager \(for Solaris, Linux\)](#)" to perform the upgrade.

10.7.1 Upgrading on Non-clustered Systems

10.7.1.1 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.
```

10.7.1.2 Performing Upgrade (for Solaris, Linux)

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.

10.7.2 Upgrading on Clustered Systems

10.7.2.1 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.

10.7.2.2 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.

10.7.2.3 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.
.....

10.7.2.4 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 "[10.7.2.1 Preparing for Upgrade](#)".

The shared disk for shared data of AdvancedCopy Manager Copy Control Module must be mounted.

10.7.2.5 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 "[10.7.2.1 Preparing for Upgrade](#)".

10.7.2.6 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.

10.7.3 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 11 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.

11.1 In Case of Problem During Upgrade from Version 14.x

11.1.1 In Case of Problem During Uninstallation of Previous Version

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" in the <i>ETERNUS SF Express User's Guide</i>
Storage Cruiser	<i>ETERNUS SF Storage Cruiser Message Guide</i>
AdvancedCopy Manager	<i>ETERNUS SF AdvancedCopy Manager Message Guide</i>
AdvancedCopy Manager Copy Control Module	"Messages for AdvancedCopy Manager CCM" in the <i>ETERNUS SF AdvancedCopy Manager Operator's Guide for Copy Control Module</i>

- 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 <i>ETERNUS SF Express User's Guide</i> for the previous version
Storage Cruiser	"Troubleshooting information" in the <i>ETERNUS SF Storage Cruiser User's Guide</i> for the previous version
AdvancedCopy Manager	"Collecting maintenance information" in the <i>ETERNUS SF AdvancedCopy Manager Operator's Guide</i> for the previous version
AdvancedCopy Manager Copy Control Module	"How to Collect Data" in the <i>ETERNUS SF AdvancedCopy Manager Operator's Guide for Copy Control Module</i> for the previous version

11.1.2 In Case of Problem During Installation of This Version

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	<i>ETERNUS SF Messages</i>
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 <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

11.2 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.

11.2.1 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 Upgrade	Reference (*1)
Express	"Trouble analysis" in the <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Troubleshooting information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting maintenance information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"How to collect data" in the <i>ETERNUS SF Operation Guide for Copy Control Module</i>

*1: Refer to the applicable manual of the previous version.

- In Case of problem during installation of this version:

Target for Upgrade	Reference (*1)
Express	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>

Target for Upgrade	Reference (*1)
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

*1: Refer to the manual of this version.

11.2.2 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 *ETERNUS SF Storage Cruiser Operation Guide* to collect the troubleshooting information and then contact Fujitsu Technical Support.

11.2.3 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)

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 Linux]

```
# rpm -e FJSVssage
```

[For Solaris]

```
# pkgrm 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 Linux]

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

[For Solaris]

```
# dvdromMountPoint/Agent_unix/Storage_Cruiser/Solaris/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/snmph directory to an arbitrary location.
 - b. Prepare the SNMP Trap XML definition file for this version in the /etc/opt/FJSVssage/snmph 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 *ETERNUS SF 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.

11.2.4 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 *ETERNUS SF AdvancedCopy Manager Operation Guide* to collect the troubleshooting information and then contact Fujitsu Technical Support.

11.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)

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 environment, 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 environment, recheck the following matters before performing the actions:

- AdvancedCopy Manager communication daemon should be stopped.
- The user should be a root user.

For cluster environment, in addition to non-cluster environment, 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 *ETERNUS SF 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 *ETERNUS SF 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 RHEL5 x86 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x86/esfacmapostinst.sh backupDir
```

[For RHEL5 x64 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel5_x64/esfacmapostinst.sh backupDir
```

[For RHEL6 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel6_x86/esfacmapostinst.sh backupDir
```

[For RHEL7 Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/rhel7_x86/esfacmapostinst.sh backupDir
```

[For Solaris Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/Solaris/esfacmapostinst.sh backupDir
```

[For SUSE Agent]

```
# dvdromMountPoint/Agent_unix/AdvancedCopy_Manager/sles11_x86/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 environment, 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 environment:
["9.4.1.3 Tasks to Be Performed After Upgrade"](#)

- For primary node in cluster environment:
"9.4.2.3 Tasks to Be Performed After Upgrade (Primary Node)"
- For secondary node in cluster environment:
"9.4.2.5 Tasks to Be Performed After Upgrade (Secondary Node)"

11.2.6 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	<i>ETERNUS SF Messages</i>
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 <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Troubleshooting information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting maintenance information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"How to collect data" in the <i>ETERNUS SF Operation Guide for Copy Control Module</i>

11.2.7 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	<i>ETERNUS SF Messages</i>
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 <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

11.3 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.

11.3.1 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 environment, 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

- 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 your 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
```

- Restart the system.

- Install the product of this version.

For the installation procedure, refer to this version of the *ETERNUS SF 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.

- 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 your Fujitsu Technical Support.

- 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 environment, 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.

11.3.2 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 Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

11.3.3 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 ETERNUS 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:

[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}
```

[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:

[32 bit operating system]

```
<Windows Install Drive>\Program Files\InstallShield Installation Information\{A2B5B274-
C29C-44C5-86A2-5CB89EA96AB9}
```

[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.

For the configuration and contents of the DVD-ROM, see "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide*.

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 "[7.3.4 Tasks to Be Performed After Upgrade](#)".

11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)

In case of problem during upgrade of Storage Cruiser's agent, refer to "[11.3.4 In Case of Problem During Upgrade of Storage Cruiser's Agent \(for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11\)](#)" to action.

11.3.5 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 environment, 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 *ETERNUS SF Storage Cruiser Operation Guide* to stop the services.
- For non-cluster environment, recheck the following matters before performing the actions:
 - The user should be with Administrator privileges.
- For cluster environment, in addition to non-cluster environment, 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 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 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 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.
For the configuration and contents of the DVD-ROM, see "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide*.
If already inserted, this step is unnecessary.
- b. Execute the following batch file in the DVD-ROM to restore the previous version.

[When AdvancedCopy Manager's agent is a 32 bit version:]

```
<DVD-ROM Drive>:\Agent_windows\AdvancedCopy_Manager\agent\windows_x86\esfacmapostinst.bat
backupDir
```

[When 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.



.....
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 environment:
"10.3.1.4 Tasks to Be Performed After Upgrade"
- For primary node in cluster environment:
"10.3.2.4 Tasks to Be Performed After Upgrade (Primary Node)"
- For secondary node in cluster environment:
"10.3.2.7 Tasks to Be Performed After Upgrade (Secondary Node)"

11.3.6 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)

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.
"11.2.5 In Case of Problem During Upgrade of AdvancedCopy Manager's Agent (for Solaris, Red Hat Enterprise Linux, SUSE Linux Enterprise Server 11)" 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 environment:
"10.4.1.4 Tasks to Be Performed After Upgrade"
 - For primary node in cluster environment:
"10.4.2.4 Tasks to Be Performed After Upgrade (Primary Node)"
 - For secondary node in cluster environment:
"10.4.2.7 Tasks to Be Performed After Upgrade (Secondary Node)"

11.3.7 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	<i>ETERNUS SF Messages</i>
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 your Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Express Operation Guide</i>

Target for Upgrade	Reference
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

11.3.8 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	<i>ETERNUS SF Messages</i>
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 your Fujitsu Technical Support.

Target for Upgrade	Reference
Express	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Express Operation Guide</i>
Storage Cruiser	"Collecting Troubleshooting Information" in the <i>ETERNUS SF Storage Cruiser Operation Guide</i>
AdvancedCopy Manager	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide</i>
AdvancedCopy Manager Copy Control Module	"Collecting Troubleshooting Information" in the <i>ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module</i>

Chapter 12 Configuration Import

This chapter describes the configuration import.

12.1 Command References

12.1.1 esfadm devconf import (Configuration Import Command)

NAME

esfadm devconf import - import the configuration information from the previous version

SYNOPSIS

Windows Environment

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

(\$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.)

Solaris or Linux Environment

```
/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

Windows Environment

```
> C:\ETERNUS_SF\Common\bin\esfadm devconf import -all  
esfadm90000 Operation is accepted.
```

Solaris or Linux Environment

```
# /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 *ETERNUS SF 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.

12.1.2 esfadm devconf importstatus (Configuration Import Status Display Command)

NAME

esfadm devconf importstatus - displays the import status of configuration information of the previous version

SYNOPSIS

Windows Environment

```
$INS_DIR\Common\bin\esfadm devconf importstatus -detail
```

(\$INS_DIR is the program directory specified at the ETERNUS SF Manager installation.)

Solaris or Linux Environment

```
/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 fswitch : fibre channel switch server : server library : tape library
DEVICE NAME	Name of the device When the CATEGORY is "tierpolicy", "-" is displayed.

Title	Displayed Contents
IP ADDRESS	IP address of the device When the CATEGORY is "tierpolicy", "-" is displayed.
REGISTER MODE	Device registration mode Auto : Automatic registration Manual : Manual registration When the CATEGORY is "tierpolicy", "-" 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

Windows Environment

```
> 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  
-----
```

12.2 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).

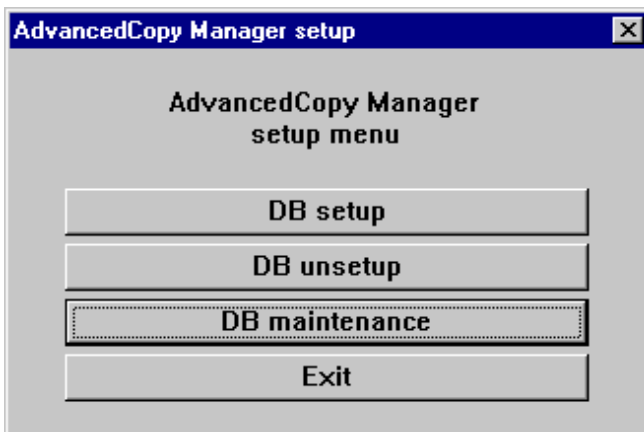
Pre-Upgrade Environment Is Version 16.0 or Earlier



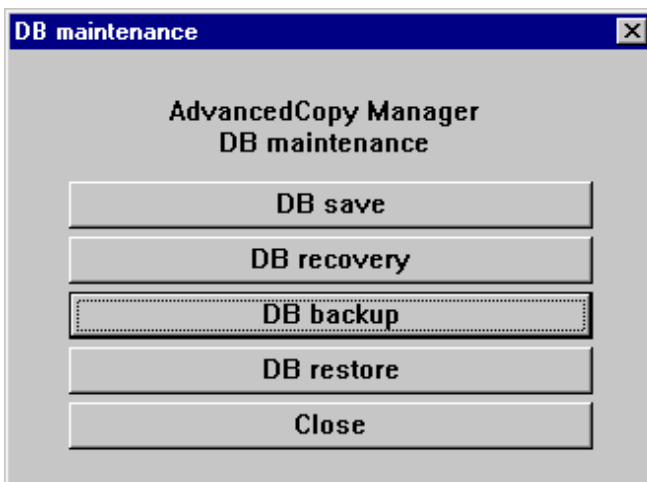
- Create a directory in which data is saved in advance.
- Do not use the telnet server service.
This operation fails when issued from the telnet server service.

The procedure is shown below:

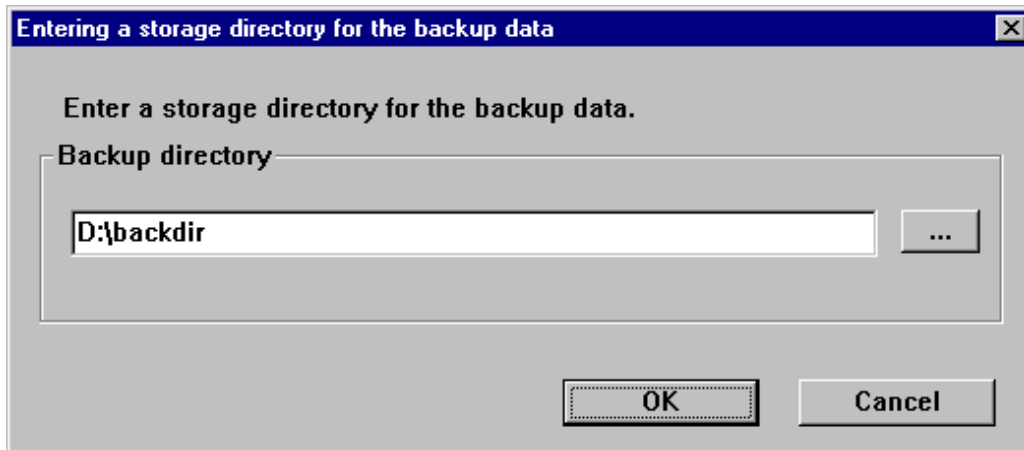
1. Click **Start > Programs > AdvancedCopy Manager** or **ETERNUS SF Manager > DB Setup**.
2. The following screen is displayed.
Click **DB maintenance**.



3. The following screen is displayed.
Click **DB backup**.



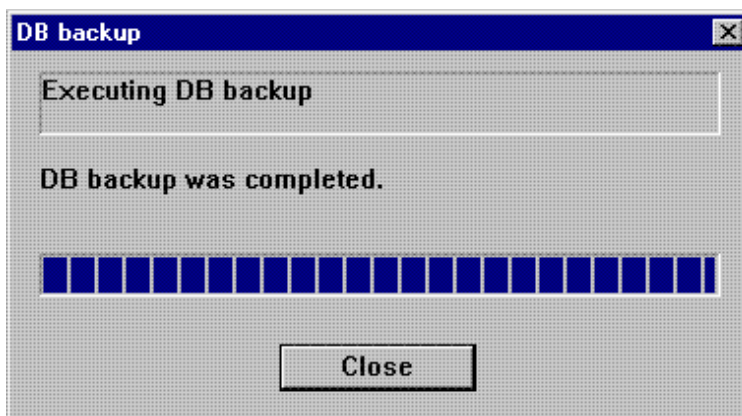
- The following screen is displayed.
Enter a backup directory and click **OK**.



- The following screen is displayed.
Check that the displayed information is correct and click **Start**.



- The following screen is displayed after the process is completed.
Click **Close**.



- Click **Close** displayed in step 3 to complete the DB maintenance.
- Click **Exit** displayed in step 2 to complete the DB backup.
- Check that the backup of database has been completed successfully.
Make sure that the file with ".unl" extension is created in the specified directory.

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).

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.

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 Windows)

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
environmentDir\etc\backup\data
- If the Managed Server is in a cluster environment
<Drive letter of shared disk for shared data for AdvancedCopy Manager>\etc\opt\swstorage\etc\backup\data

If you were backing up Symfoware databases, also check the file sizes in the target directory for output of the recovery control file.

2. Save the device.ini file.

Save the following file by using the copy command.

For Non-clustered Systems

File for Save	File Name
device.ini	<i>environmentDir\etc\device.ini</i>

For Clustered Systems

File for Save	File Name
device.ini	<shared disk>\etc\opt\swstorage\etc\device.ini

3. Save the backup management list.

Specify the directory which can store the data size checked in step 1 and execute the following command:

```
C:\> programDir\bin\swstresback saveDir
```



Refer to the manuals according to the previous operating environment's version for information on the command.

- In the case of Version 14.2 or earlier
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide*.
- In the case of Version 15.0 or later
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operation Guide*.

4. Save pre-processing and post-processing scripts and specification files.

Save the following files by using the copy command:

- Pre-processing and post-processing scripts for backup management function
- Transaction volume locking specification file for backups
- Backup volume locking specification file for backups
- Backup-restored volume locking specification file



The volume locking specification files might not exist according to the environment. In this case, it is unnecessary to save them.

For Non-clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for backup management function	<i>environmentDir</i> \etc\backup\scripts\OpcBackupPre.js <i>environmentDir</i> \etc\backup\scripts\OpcBackupPost.js <i>environmentDir</i> \etc\backup\scripts\OpcRestorePre.js <i>environmentDir</i> \etc\backup\scripts\OpcRestorePost.js
Transaction volume locking specification file for backups	<i>environmentDir</i> \etc\backup\data\BTRANLOCK.INI
Backup volume locking specification file for backups	<i>environmentDir</i> \etc\backup\data\BBACKLOCK.INI
Backup-restored volume locking specification file	<i>environmentDir</i> \etc\backup\data\RDSTLOCK.INI

For Clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for backup management function	<shared disk>:\etc\opt\swstorage\etc\backup\scripts\OpcBackupPre.js <shared disk>:\etc\opt\swstorage\etc\backup\scripts\OpcBackupPost.js <shared disk>:\etc\opt\swstorage\etc\backup\scripts\OpcRestorePre.js <shared disk>:\etc\opt\swstorage\etc\backup\scripts\OpcRestorePost.js
Transaction volume locking specification file for backups	<shared disk>:\etc\opt\swstorage\etc\backup\data\BTRANLOCK.INI
Backup volume locking specification file for backups	<shared disk>:\etc\opt\swstorage\etc\backup\data\BBACKLOCK.INI
Backup-restored volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\backup\data\RDSTLOCK.INI

If Replication Operation Has Been Done

1. Save the device.ini file.

Save the following file by using the copy command.

For Non-clustered Systems

File for Save	File Name
device.ini	<i>environmentDir</i> \etc\device.ini

For Clustered systems

File for Save	File Name
device.ini	<shared disk>:\etc\opt\swstorage\etc\device.ini

2. Save the replication management list.

The replication management list is stored in the repository on the 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 Windows environment
["A.1 Backing Up Repository Data \(for Windows\)"](#)
- If the Management Server is in Solaris, Linux environment
["A.2 Backing Up Repository Data \(for Solaris, Linux\)"](#)

3. Save pre-processing and post-processing scripts and specification files.

Save the following files by using the copy command:

- Pre-processing and post-processing scripts for replication management function
- Copy source volume locking specification file
- Copy destination volume locking specification file
- Timeout value setting file for the concurrent suspend function

 **Information**

The volume locking specification files might not exist according to the environment. In this case, it is unnecessary to save them.

For Non-clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for replication management function	<i>environmentDir</i> \etc\repl\scripts\RepSrcPre.js <i>environmentDir</i> \etc\repl\scripts\RepDstPre.js <i>environmentDir</i> \etc\repl\scripts\RepSrcPost.js <i>environmentDir</i> \etc\repl\scripts\RepDstPost.js
Copy source volume locking specification file	<i>environmentDir</i> \etc\repl\data\SRLOCK.INI
Copy destination volume locking specification file	<i>environmentDir</i> \etc\repl\data\DSTLOCK.INI
Timeout value setting file for the concurrent suspend function	<i>environmentDir</i> \etc\repl\data\DEFAULT\check.ini

For Clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for replication management function	<shared disk>:\etc\opt\swstorage\etc\repl\scripts\RepSrcPre.js <shared disk>:\etc\opt\swstorage\etc\repl\scripts\RepDstPre.js <shared disk>:\etc\opt\swstorage\etc\repl\scripts\RepSrcPost.js <shared disk>:\etc\opt\swstorage\etc\repl\scripts\RepDstPost.js
Copy source volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\repl\data\SRLOCK.INI
Copy destination volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\repl\data\DSTLOCK.INI
Timeout value setting file for the concurrent suspend function	<shared disk>:\etc\opt\swstorage\etc\repl\data\DEFAULT\check.ini

 **Note**

There is incompatibility in the copy source volume locking specification file between Version 14.2 or earlier and this version. If the previous environment's version is 14.2 or earlier, change the settings of file by referring to "Swsrpmake command and swsrpcancel command processing (for Windows)" in the *ETERNUS SF Release Notes*, and then perform the backup.

4. If using the backup and the restoration function of the Exchange Database, save the following management information:

- Drive letter map file

File for Save	File Name
Drive letter map file	<i>environmentDir\etc\repl\data\EXDMAP.INI</i>
Device definition file	<i>environmentDir\etc\eternus_hardope.def</i>

A.4 Backing Up Management Information (for Solaris, Linux)

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/logical/NodeName/data

If you were backing up Symfoware databases, also check the file sizes in the target directory for output of the recovery control file.

Point

When you use the directory which has been saved as the save directory before, at least three times greater than the size calculated above is required.

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 the manuals according to the previous operating environment's version for information on the command.

- In the case of Version 14.2 or earlier
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide*.
- In the case of Version 15.0 or later
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operation Guide*.

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	<i>/etc/opt/FJSVswsts/sh/OpcBackup.pre</i> <i>/etc/opt/FJSVswsts/sh/OpcBackup.post</i> <i>/etc/opt/FJSVswsts/sh/OpcRestore.pre</i> <i>/etc/opt/FJSVswsts/sh/OpcRestore.post</i>

For Clustered Systems

File for Save	File Name
Pre-processing and post-processing scripts for backup management function	/etc/opt/FJSVswsts/ <i>logicalNodeName</i> /sh/OpcBackup.pre /etc/opt/FJSVswsts/ <i>logicalNodeName</i> /sh/OpcBackup.post /etc/opt/FJSVswsts/ <i>logicalNodeName</i> /sh/OpcRestore.pre /etc/opt/FJSVswsts/ <i>logicalNodeName</i> /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 Windows environment
"A.1 Backing Up Repository Data (for Windows)"
- If the Management Server is in Solaris, 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/ <i>logicalNodeName</i> /sh/RepSrc.pre /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepDst.pre /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepSrc.post /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepDst.post
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /data/DEFAULT/check.ini

A.5 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/logical/NodeName/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
```



Refer to the manuals according to the previous operating environment's version for information on the command.

- In the case of Version 14.2 or earlier
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operator's Guide*.
- In the case of Version 15.0 or later
"swstresback (Resource backup command)" in the *ETERNUS SF AdvancedCopy Manager Operation Guide*.

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/logical/NodeName/sh/OpcBackup.pre /etc/opt/FJSVswsts/logical/NodeName/sh/OpcBackup.post /etc/opt/FJSVswsts/logical/NodeName/sh/OpcRestore.pre /etc/opt/FJSVswsts/logical/NodeName/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 Windows environment
["A.1 Backing Up Repository Data \(for Windows\)"](#)
- If the Management Server is in Solaris, 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/ <i>logicalNodeName</i> /sh/RepSrc.pre /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepDst.pre /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepSrc.post /etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /sh/RepDst.post
Timeout value setting file for the concurrent suspend function	/etc/opt/FJSVswsrp/ <i>logicalNodeName</i> /data/DEFAULT/check.ini

A.6 Backing Up Environment Setting Files

Save the environment setting files for AdvancedCopy Manager Copy Control Module.

It is unnecessary to save files which are not listed in the following table.

For Non-clustered Systems

Copy the following files to any directory.

For Windows

[AdvancedCopy Manager Copy Control Module Version 14.2 or earlier]

File Name	Remarks
- \$INS_DIR\etc\db\eternus.xml - All files under \$INS_DIR\etc\db\cg directory	
- \$INS_DIR\etc\prop\user.properties - \$INS_DIR\etc\stxc.alias - \$INS_DIR\etc\stxcvolinf	Only when files exist.
- \$INS_DIR\var\micc\database\DeviceRegList.xml	

\$INS_DIR is the "Program Directory" as specified during AdvancedCopy Manager CCM installation.

[AdvancedCopy Manager Copy Control Module Version 15.0 or later]

File Name	Remarks
- \$ENV_DIR\CCM\etc\db\eternus.xml - All files under \$ENV_DIR\CCM\etc\db\cg directory	
- \$ENV_DIR\CCM\etc\prop\user.properties - \$ENV_DIR\CCM\etc\stxc.alias - \$ENV_DIR\CCM\etc\stxc_ext.alias	Only when files exist.

File Name	Remarks
- \$ENV_DIR\CCM\etc\stxcvolinf	
- \$TMP_DIR\CCM\var\micc\database\DeviceRegList.xml	

\$ENV_DIR is the "Environment Directory" as specified during AdvancedCopy Manager CCM installation.
 \$TMP_DIR is the "Work Directory" as specified during AdvancedCopy Manager CCM installation.

For Solaris or Linux

[AdvancedCopy Manager Copy Control Module Version 14.2 or earlier]

File Name	Remarks
- /etc/opt/FJSVccm/db/eternus.xml	
- All files under /etc/opt/FJSVccm/db/cg directory	
- /etc/opt/FJSVccm/prop/user.properties	Only when files exist.
- /etc/opt/FJSVccm/acc/et/stxc.alias	
- /etc/opt/FJSVccm/acc/et/stxcvolinf	
- /var/opt/FJSVccm/micc/database/DeviceRegList.xml	

[AdvancedCopy Manager Copy Control Module Version 15.0 or later]

File Name	Remarks
- /etc/opt/FJSVccm/db/eternus.xml	
- All files under /etc/opt/FJSVccm/db/cg directory	
- /etc/opt/FJSVccm/prop/user.properties	Only when files exist.
- /etc/opt/FJSVccm/acc/et/stxc.alias	
- /etc/opt/FJSVccm/acc/et/stxc_ext.alias	
- /etc/opt/FJSVccm/acc/et/stxcvolinf	
- /var/opt/FJSVccm/micc/database/DeviceRegList.xml	

For Clustered Systems

Copy the following files to any directory.

For Windows

File Name	Remarks
- \$SHARE_DL:\$SHARE_TOP\etc\db\eternus.xml	
- All files under \$SHARE_DL:\$SHARE_TOP\etc\db\cg directory	
- \$SHARE_DL:\$SHARE_TOP\etc\prop\user.properties	Only when files exist.
- \$SHARE_DL:\$SHARE_TOP\etc\stxc.alias	
- \$SHARE_DL:\$SHARE_TOP\etc\stxc_ext.alias	
- \$SHARE_DL:\$SHARE_TOP\etc\stxcvolinf	
- \$SHARE_DL:\$SHARE_TOP\var\micc\database\DeviceRegList.xml	
- \$INS_DIR\micc\sys\install.sys	Do not restore using the procedure described at "Restoring environment settings files" or "Changing the cluster
- \$INS_DIR\bin\stxc_install.sys	

File Name	Remarks
<ul style="list-style-type: none"> - \$INS_DIR\sys\sys.properties - \$INS_DIR\noncluster\micc\sys\install.sys - \$INS_DIR\noncluster\bin\stxc_install.sys - \$INS_DIR\noncluster\sys\sys.properties 	environment" in the <i>ETERNUS SF Operation Guide for Copy Control Module</i> .

\$SHARE_DL is the drive letter of the shared disk for AdvancedCopy Manager CCM shared data.

\$SHARE_TOP is the directory that contains "Environment Directory" and "Work Directory" of the shared disk for AdvancedCopy Manager CCM shared data.

\$INS_DIR is the "Program Directory" as specified during AdvancedCopy Manager CCM installation.

For Solaris or Linux

File Name	Remarks
<ul style="list-style-type: none"> - \$SHARE_MNT/etc/opt/FJSVccm/db/eternus.xml - All files under \$SHARE_MNT/etc/opt/FJSVccm/db/cg directory 	
<ul style="list-style-type: none"> - \$SHARE_MNT/etc/opt/FJSVccm/prop/user.properties - \$SHARE_MNT/etc/opt/FJSVccm/accc/etc/stxc.alias - \$SHARE_MNT/etc/opt/FJSVccm/accc/etc/stxc_ext.alias - \$SHARE_MNT/etc/opt/FJSVccm/accc/etc/stxcvolinf 	Only when files exist.
<ul style="list-style-type: none"> - \$SHARE_MNT/var/opt/FJSVccm/micc/database/DeviceRegList.xml 	
<ul style="list-style-type: none"> - /opt/FJSVccm/micc/sys/install.sys - /opt/FJSVccm/bin/stxc_install.sys - /opt/FJSVccm/sys/sys.properties - /opt/FJSVccm/noncluster/micc/sys/install.sys - /opt/FJSVccm/noncluster/bin/stxc_install.sys - /opt/FJSVccm/noncluster/sys/sys.properties 	Do not restore using the procedure described at "Restoring environment settings files" or "Changing the cluster environment" in the <i>ETERNUS SF Operation Guide for Copy Control Module</i> .

\$SHARE_MNT is the mount point of the shared disk for AdvancedCopy Manager CCM shared data.

A.7 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.

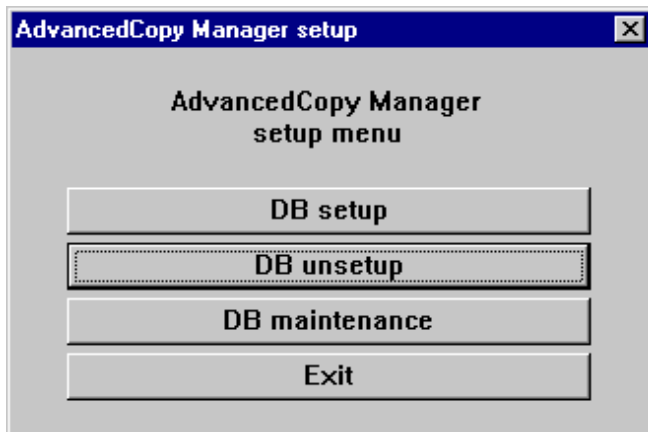
The procedure is shown below:

1. Login to the server where the database unsetup is performed.

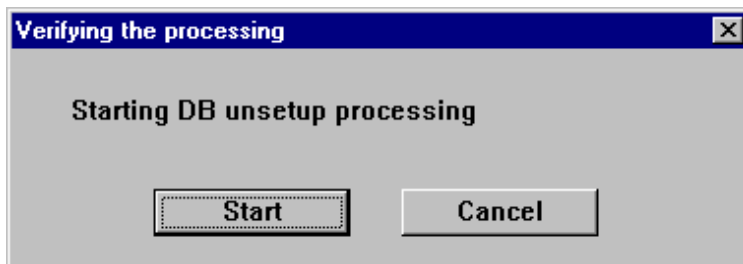
For installing AdvancedCopy Manager of the previous version, login to the server as the user that has been specified when setting the database information.

If you login to the server with another user, this operation may fail.

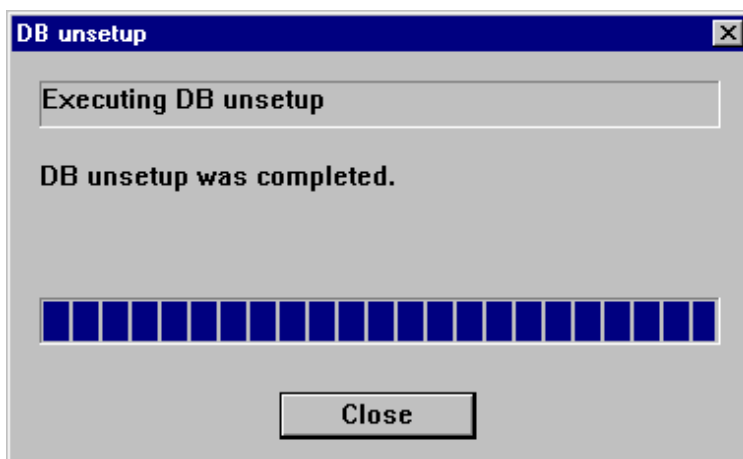
2. Click **Start > Programs > AdvancedCopy Manager** or **ETERNUS SF Manager > DB Setup**.
3. The following screen is displayed.
Click **DB unsetup**.



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.8 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.9 Restoring Repository Data (for Windows)

Restore the repository data from the specified directory.
Perform this operation on the Management Server.

The procedure is shown below:

1. Restore the repository data.

Execute the `stgrepocnv` command to recover the migration target repository data to the current version repository.

```
C:\> programDir\ACM\bin\stgrepocnv -d saveDir
```

 See

.....
Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.
.....

2. Change the server information.

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.

```
C:\> programDir\ACM\bin\stgxfwcmmodsrv -n ManagementServerName
```

 See

.....
Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.
.....

A.10 Restoring Repository Data (for Solaris, Linux)

Restore the repository data from the specified directory.
Perform this operation on the Management Server.

The procedure is shown below:

1. Restore the repository data.

Execute the `stgrepcnv` command to recover the migration target repository data to the current version repository.

```
# /opt/FJSVswstf/bin/stgrepcnv -d saveDir
```



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.



For Solaris, add `"/opt/FJSVswstf/bin/stgrepcnv"` to the value of the environment variable `LD_LIBRARY_PATH_64` of the terminal on which the command is executed.

2. Change the server information.

To ensure data consistency, execute the `stgxfwcmmosrv` command to perform the server information change processing. Specify the Management Server name to the `-n` option and execute the `stgxfwcmmosrv` command.

Check **Server** column of the `stgxfwcmmosrv` command execution result for the Management Server name specified to the `-n` option.

```
# /opt/FJSVswstf/bin/stgxfwcmmosrv -n ManagementServerName
```



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

A.11 Restoring Management Information (for Windows)

Restore the management information which exists in the Managed Server.

If Backup Operation Has Been Done

1. Restore the device.ini file.

Restore the device.ini file saved in "[A.3 Backing Up Management Information \(for Windows\)](#)" by executing the copy command.

For Non-clustered Systems on Management Server Which Also Serves as Managed Server

File for Restoration	Full Path Name for Restoration Destination
device.ini	<i>environmentDir</i> \ACM\etc\device.ini

For Non-clustered Systems on Managed Server

File for Restoration	Full Path Name for Restoration Destination
device.ini	<i>environmentDir</i> \etc\device.ini

For Clustered Systems

File for Restoration	Full Path Name for Restoration Destination
device.ini	<shared disk>:\etc\opt\swstorage\etc\device.ini

2. Restore the backup management list.

Specify the directory saved in "A.3 Backing Up Management Information (for Windows)" and execute the following command:

For Management Server Which Also Serves as Managed Server

```
C:\> programDir\ACM\bin\swstresrst saveDir
```

For Managed Server

```
C:\> programDir\bin\swstresrst saveDir
```



See

Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

3. Restore specification files.



Information

The volume locking specification files might not exist according to the environment. If they were not backed up in "A.3 Backing Up Management Information (for Windows)", this step is not needed.

Restore the following files saved in "A.3 Backing Up Management Information (for Windows)" by executing the copy command:

- Transaction volume locking specification file for backups
- Backup volume locking specification file for backups
- Backup-restored volume locking specification file

For Non-clustered Systems on Management Server Which Also Serves as Managed Server

File for Restoration	Full Path Name for Restoration Destination
Transaction volume locking specification file for backups	<i>environmentDir</i> \ACM\etc\backup\data\BTRANLOCK.INI
Backup volume locking specification file for backups	<i>environmentDir</i> \ACM\etc\backup\data\BBACKLOCK.INI
Backup-restored volume locking specification file	<i>environmentDir</i> \ACM\etc\backup\data\RDSTLOCK.INI

For Non-clustered Systems on Managed Server

File for Restoration	Full Path Name for Restoration Destination
Transaction volume locking specification file for backups	<i>environmentDir</i> \etc\backup\data\BTRANLOCK.INI
Backup volume locking specification file for backups	<i>environmentDir</i> \etc\backup\data\BBACKLOCK.INI
Backup-restored volume locking specification file	<i>environmentDir</i> \etc\backup\data\RDSTLOCK.INI

For Clustered Systems

File for Restoration	Full Path Name for Restoration Destination
Transaction volume locking specification file for backups	<shared disk>:\etc\opt\swstorage\etc\backup\data\BTRANLOCK.INI
Backup volume locking specification file for backups	<shared disk>:\etc\opt\swstorage\etc\backup\data\BBACKLOCK.INI
Backup-restored volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\backup\data\RDSTLOCK.INI

 **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 device.ini file. No need to restore this file if you have already restored it in "If Backup Operation Has Been Done". Restore the device.ini file saved in "A.3 Backing Up Management Information (for Windows)" by executing the copy command.

For Non-clustered Systems on Management Server Which Also Serves as Managed Server

File for Restoration	Full Path Name for Restoration Destination
device.ini	environmentDir\ACM\etc\device.ini

For Non-clustered Systems on Managed Server

File for Restoration	Full Path Name for Restoration Destination
device.ini	environmentDir\etc\device.ini

For Clustered Systems

File for Restoration	Full Path Name for Restoration Destination
device.ini	<shared disk>:\etc\opt\swstorage\etc\device.ini

2. Restore the replication management list.

The replication management list is stored in the repository on the Management Server. Execute the following command:

For Management Server Which Also Serves as Managed Server

```
C:\> programDir\ACM\bin\swsrprecoverres -r
```

For Managed Server

```
C:\> programDir\bin\swsrprecoverres -r
```

 **See**

Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

3. Restore specification files.

Restore the following files saved in "A.3 Backing Up Management Information (for Windows)" by executing the copy command:

- Copy source volume locking specification file

- Copy destination volume locking specification file
- Timeout value setting file for the concurrent suspend function

Information

The volume locking specification files might not exist according to the environment. If they were not backed up in "A.3 Backing Up Management Information (for Windows)", this step is not needed.

For Non-clustered Systems on Management Server Which Also Serves as Managed Server

File for Restoration	Full Path Name for Restoration Destination
Copy source volume locking specification file	<i>environmentDir</i> \ACM\etc\rep\data\SRLOCK.INI
Copy destination volume locking specification file	<i>environmentDir</i> \ACM\etc\rep\data\DSTLOCK.INI
Timeout value setting file for the concurrent suspend function	<i>environmentDir</i> \ACM\etc\rep\data\DEFAULT\check.ini

For Non-clustered Systems on Managed Server

File for Restoration	Full Path Name for Restoration Destination
Copy source volume locking specification file	<i>environmentDir</i> \etc\rep\data\SRLOCK.INI
Copy destination volume locking specification file	<i>environmentDir</i> \etc\rep\data\DSTLOCK.INI
Timeout value setting file for the concurrent suspend function	<i>environmentDir</i> \etc\rep\data\DEFAULT\check.ini

For Clustered Systems

File for Restoration	Full Path Name for Restoration Destination
Copy source volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\rep\data\SRLOCK.INI
Copy destination volume locking specification file	<shared disk>:\etc\opt\swstorage\etc\rep\data\DSTLOCK.INI
Timeout value setting file for the concurrent suspend function	<shared disk>:\etc\opt\swstorage\etc\rep\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.

- If using the backup and the restoration function of the Exchange Database, restore the following management information:
 - Drive letter map file

File for Restoration	Full Path Name for Restoration Destination
Drive letter map file	<i>environmentDir</i> \etc\rep\data\EXDMAP.INI

File for Restoration	Full Path Name for Restoration Destination
Device definition file	<i>environmentDir</i> \etc\eternus_hardope.def

A.12 Restoring Management Information (for Solaris, Linux)

Restore the management information which exists in the Managed Server.



Note

Caution about AdvancedCopy Manager's Agent in Linux Environment

For environments in which udev devices exist, prioritize and use the following udev device names after upgrade.

- Normal device
- PRIMECLUSTER GDS SDX object (operating time of slice unit only)

Refer to "Managing Device on AdvancedCopy Manager" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Linux)* for information on udev device names.

If you had used compatible device names before the upgrade, perform the following actions depending on the device names using after the upgrade:

- For operations that use compatible device names:

Execute the `stgxfwcmsetmode` command to change the information collection mode such that udev device names are not used.

Refer to "Managing Device on AdvancedCopy Manager" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Linux)* for information on changing the information collection mode.

- For operations that use udev device names:

Delete the backup management definition information and replication management definition information, and fetch the udev device names. Then, it is necessary to redefine the backup and replication using udev device names.

Refer to "Changing Device Configuration" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Linux)* for the procedures.

If Backup Operation Has Been Done

1. Restore the backup management list.

Specify the directory saved in "[A.4 Backing Up Management Information \(for Solaris, Linux\)](#)" and execute the following command.

```
# /opt/FJSSVswsts/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
```



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

2. Restore specification files.

Restore the following files saved in "A.4 Backing Up Management Information (for Solaris, Linux)" by executing the copy 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



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.13 Restoring Management Information (for HP-UX, AIX)

Restore the management information which exists in the Managed Server.



Caution about AdvancedCopy Manager's Agent in HP-UX Environment

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.5 Backing Up Management Information (for HP-UX, AIX)" and execute the following command.

```
# /opt/FJSVswsts/bin/swstresrst saveDir
```



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.



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
```



Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for this version for information on the command.

2. Restore specification files.

Restore the following files saved in "A.5 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.14 Restoring Environment Setting Files

Restore the environment setting files for AdvancedCopy Manager Copy Control Module saved in "[A.6 Backing Up Environment Setting Files](#)".

For Non-clustered Systems

Restore the environment setting files according to the following procedure.

1. Delete the following files.

- For Windows

File Name	Remarks
- All files under \$ENV_DIR\CCM\etc\db\cg directory	
- \$ENV_DIR\CCM\etc\prop\user.properties	Only when files exist.
- \$ENV_DIR\CCM\etc\stxc.alias	
- \$ENV_DIR\CCM\etc\stxc_ext.alias	
- \$ENV_DIR\CCM\etc\stxcvolinf	

\$ENV_DIR is the "Environment Directory" as specified during AdvancedCopy Manager CCM installation.

- For Solaris or Linux

File Name	Remarks
- All files under /etc/opt/FJSVccm/db/cg directory	
- /etc/opt/FJSVccm/prop/user.properties	Only when files exist.
- /etc/opt/FJSVccm/acc/etc/stxc.alias	
- /etc/opt/FJSVccm/acc/etc/stxc_ext.alias	
- /etc/opt/FJSVccm/acc/etc/stxcvolinf	

2. Copy the files which are saved in "[A.6 Backing Up Environment Setting Files](#)" to the following files and directories:

- For Windows

File Name	Remarks
- \$ENV_DIR\CCM\etc\db\eternus.xml	
- All files under \$ENV_DIR\CCM\etc\db\cg directory	
- \$ENV_DIR\CCM\etc\prop\user.properties	Only when files were backed up.

File Name	Remarks
- \$ENV_DIR\CCM\etc\stxc.alias - \$ENV_DIR\CCM\etc\stxc_ext.alias - \$ENV_DIR\CCM\etc\stxcvolinf	
- \$TMP_DIR\CCM\var\micc\database\DeviceRegList.xml	

\$ENV_DIR is the "Environment Directory" as specified during AdvancedCopy Manager CCM installation.
\$TMP_DIR is the "Work Directory" as specified during AdvancedCopy Manager CCM installation.

- For Solaris or Linux

File Name	Remarks
- /etc/opt/FJsvccm/db/eternus.xml - All files under /etc/opt/FJsvccm/db/cg directory	
- /etc/opt/FJsvccm/prop/user.properties - /etc/opt/FJsvccm/accc/etc/stxc.alias - /etc/opt/FJsvccm/accc/etc/stxc_ext.alias - /etc/opt/FJsvccm/accc/etc/stxcvolinf	Only when files were backed up.
- /var/opt/FJsvccm/micc/database/DeviceRegList.xml	

The restoration for the environment setting files is completed.

For Clustered Systems

Restore the environment setting files according to the following procedure.

1. Delete the following files.

- For Windows

File Name	Remarks
- All files under \$SHARE_DL:\$SHARE_TOP\etc\db\cg directory	
- \$SHARE_DL:\$SHARE_TOP\etc\prop\user.properties - \$SHARE_DL:\$SHARE_TOP\etc\stxc.alias - \$SHARE_DL:\$SHARE_TOP\etc\stxc_ext.alias - \$SHARE_DL:\$SHARE_TOP\etc\stxcvolinf	Only when files exist.

\$SHARE_DL is the drive letter of the shared disk for AdvancedCopy Manager CCM shared data.

\$SHARE_TOP is the directory that contains "Environment Directory" and "Work Directory" of the shared disk for AdvancedCopy Manager CCM shared data.

- For Solaris or Linux

File Name	Remarks
- All files under \$SHARE_MNT/etc/opt/FJsvccm/db/cg directory	
- \$SHARE_MNT/etc/opt/FJsvccm/prop/user.properties - \$SHARE_MNT/etc/opt/FJsvccm/accc/etc/stxc.alias - \$SHARE_MNT/etc/opt/FJsvccm/accc/etc/stxc_ext.alias	Only when files exist.

File Name	Remarks
- \$SHARE_MNT/etc/opt/FJSVccm/acc/et/stxcvolinf	

\$SHARE_MNT is the mount point of the shared disk for AdvancedCopy Manager CCM shared data.

2. Copy the files which are saved in "A.6 Backing Up Environment Setting Files" to the following files and directories:

- For Windows

File Name	Remarks
- \$SHARE_DL:\$SHARE_TOP\etc\db\eternus.xml	
- All files under \$SHARE_DL:\$SHARE_TOP\etc\db\cg directory	
- \$SHARE_DL:\$SHARE_TOP\etc\prop\user.properties - \$SHARE_DL:\$SHARE_TOP\etc\stxc.alias - \$SHARE_DL:\$SHARE_TOP\etc\stxc_ext.alias - \$SHARE_DL:\$SHARE_TOP\etc\stxcvolinf	Only when files were backed up.
- \$SHARE_DL:\$SHARE_TOP\var\micc\database\DeviceRegList.xml	

\$SHARE_DL is the drive letter of the shared disk for AdvancedCopy Manager CCM shared data.

\$SHARE_TOP is the directory that contains "Environment Directory" and "Work Directory" of the shared disk for AdvancedCopy Manager CCM shared data.

- For Solaris or Linux

File Name	Remarks
- \$SHARE_MNT/etc/opt/FJSVccm/db/eternus.xml	
- All files under \$SHARE_MNT/etc/opt/FJSVccm/db/cg directory	
- \$SHARE_MNT/etc/opt/FJSVccm/prop/user.properties - \$SHARE_MNT/etc/opt/FJSVccm/acc/et/stxc.alias - \$SHARE_MNT/etc/opt/FJSVccm/acc/et/stxc_ext.alias - \$SHARE_MNT/etc/opt/FJSVccm/acc/et/stxcvolinf	Only when files were backed up.
- \$SHARE_MNT/var/opt/FJSVccm/micc/database/DeviceRegList.xml	

\$SHARE_MNT is the mount point of the shared disk for AdvancedCopy Manager CCM shared data.

The restoration for the environment setting files is completed.

A.15 Backing Up Common Control Repository (for Windows)

Save the common control repository.



Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.

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.

1. Using Explorer, create the following backup directories:

- \$BAK_DIR\Common

2. 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 *backupFileName*.

```
$INS_DIR\Common\sys\postgres\bin\pg_dump -U esfpostgres -C --attribute-inserts -p
portNumber -f $BAK_DIR\Common\backupFileName esfdb
```

3. 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.16 Backing Up Common Control Repository (for Solaris, Linux)

Save the common control repository.

Information

Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

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.

1. Create the following backup directories.

```
mkdir -p $BAK_DIR/Common
```

2. 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 *backupFileName*.

```
/opt/FJSVesfcm/postgres/bin/pg_dump -U esfpostgres -C --attribute-inserts -p
portNumber -f $BAK_DIR/Common/backupFileName esfdb
```

3. 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.17 Backing Up License Management Database (for Windows)

Save the license management database.

Information

Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.

1. Using Explorer, create the following backup directories:

- \$BAK_DIR\LM

2. From a user with OS Administrator privilege, execute the following command to create backup data. The file name of the created backup data is *backupFileName*.

```
$INS_DIR\LM\bin\esflm backup $BAK_DIR\LM\backupFileName
```

A.18 Backing Up License Management Database (for Solaris, Linux)

Save the license management database.

Information

Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

1. Create the following backup directories.

```
mkdir -p $BAK_DIR/LM
```

2. From a user with OS Administrator privilege, execute the following command to create backup data. The file name of the created backup data is *backupFileName*.

```
/opt/FJSVesflm/bin/esflm backup $BAK_DIR/LM/backupFileName
```

A.19 Restoring Common Control Repository (for Windows)

Restore the common control repository.

Information

Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.

1. Stop the ETERNUS SF Express Tomcat service.

Open Service Control Manager to stop the following service.

- ETERNUS SF Manager Tomcat Service

2. Restore the backup data. The following procedure must be implemented by a user with administrator privileges for the operating system.

1. Execute the following command.

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*.

```
$INS_DIR\Common\sys\postgres\bin\psql -U esfpostgres -p portNumber postgres
```

2. The prompt is displayed, and waiting for input. Input the following strings in order.

```
master01!  
drop database esfdb;  
\q
```

3. Execute the following command to restore the 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 *backupFileName* is the file name specified when the backup data was created.

```
$INS_DIR\Common\sys\postgres\bin\psql -U esfpostgres -p portNumber -f $BAK_DIR\Common  
\backupFileName postgres
```

4. 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

Note

After restoring the shared control repository, it takes approximately 2 minutes before Web Console becomes available.

A.20 Restoring Common Control Repository (for Solaris, Linux)

Restore the common control repository.

Information

Notation in Procedure:

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

1. Stop the ETERNUS SF Manager Web service.

Execute the following shell script to stop the service.

```
/opt/FJSVesfcm/bin/stop-webservice.sh
```

2. Restore the backup data. The following procedure must be implemented by a user with administrator privileges for the operating system.
3. Execute the following command.

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 *<port number>*.

```
/opt/FJSVesfcm/postgres/bin/psql -U esfpostgres -p portNumber postgres
```

1. The prompt is displayed, and waiting for input. Input the following strings in order.

```
master01!
drop database esfdb;
\q
```

2. Execute the following command to restore the 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 *backupFileName* is the file name specified when the backup data was created.

```
/opt/FJSVesfcm/postgres/bin/psql -U esfpostgres -p portNumber -f $BAK_DIR/Common/
backupFileName postgres
```

3. The prompt is displayed, and waiting for input. Input the following strings.

```
master01!
```

4. Start the ETERNUS SF Manager Web service.

Execute the following shell script to start the service.

```
/opt/FJSVesfcm/bin/start-webservice.sh
```



Note

After restoring the shared control repository, it takes approximately 2 minutes before Web Console becomes available.

A.21 Restoring License Management Database (for Windows)

Restore the license management database.



Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	"Program Directory" specified at the ETERNUS SF Manager installation.

Execute the following command with administrator privileges for the operating system. The *backupFileName* is the file name specified when the backup data was created.

```
$INS_DIR\LM\bin\esflm restore $BAK_DIR\LM\backupFileName
```

A.22 Restoring License Management Database (for Solaris, Linux)

Restore the license management database.

Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

Execute the following command with administrator privileges for the operating system. The *backupFileName* is the file name specified when the backup data was created.

```
/opt/FJSVesflm/bin/esflm restore $BAK_DIR/LM/backupFileName
```

A.23 Backup of Express Operational Environment

Follow the procedure below to save the environment for the Express's manager.

Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	The directory in which the Express's manager has been installed

1. Stop the service.
With the Windows services screen, stop the following 4 services:
 - ETERNUS SF Express Manager
 - ETERNUS SF Express Apache Service
 - ETERNUS SF Express Tomcat Service
 - ETERNUS SF Storage Cruiser Manager
2. Backup the administration information of the disk array.
Using Explorer, create the following backup directories:
 - \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current
 - \$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\opencimom\logr

Copy the subdirectories and files belonging to the following directory from their backup directory.

Copy Source Directory	Backup Destination Directory
\$INS_DIR\Storage Cruiser\Manager\var\opt\FJSVssmgr\current\opencimom\logr	\$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\opencimom\logr

Copy the following file of the backup source to the directory of the backup destination.

Copy Source File	Backup Destination Directory
\$INS_DIR\Storage Cruiser\Manager\etc\opt\FJSVssmgr\current\sanma.conf	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current

3. Back up the files related to the performance management function.
This step can be skipped if you are not using the performance management function.
Using Explorer, create the following backup directories:

- \$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\perf

Copy the following file and sub-directory under the backup source directory to the backup destination directory.

Backup Source Directory	Backup Destination Directory
\$INS_DIR\Storage Cruiser\Manager\var\opt\FJSVssmgr\current\perf	\$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\perf

4. Back up the files related to the Advanced Copy function.
This step can be skipped if you are not using the Advanced Copy function. In addition, this step can be skipped if AdvancedCopy Manager Copy Control Module is installed.

Using Explorer, create the following backup directories:

- \$BAK_DIR\CCM\etc
- \$BAK_DIR\CCM\etc\db
- \$BAK_DIR\CCM\etc\db\cg
- \$BAK_DIR\CCM\etc\prop
- \$BAK_DIR\CCM\var\micc\database

Copy the following file and sub-directory under the backup source directory to the backup destination directory. This copy can be skipped if the following file and sub-directory do not exist.

Backup Source Directory	Backup Destination Directory
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\db\cg	\$BAK_DIR\CCM\etc\db\cg

Copy the following files to the backup destination directory. This copy can be skipped if the following files do not exist.

Backup Source Files	Backup Destination Directory
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\stxc.alias	\$BAK_DIR\CCM\etc
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\stxc_ext.alias	\$BAK_DIR\CCM\etc
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\stxcvlinf	\$BAK_DIR\CCM\etc
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\db\eternus.xml	\$BAK_DIR\CCM\etc\db
\$INS_DIR\AdvancedCopy Manager Copy Control Module\etc\prop\user.properties	\$BAK_DIR\CCM\etc\prop
\$INS_DIR\AdvancedCopy Manager Copy Control Module\var\micc\database\DeviceRegList.xml	\$BAK_DIR\CCM\var\micc\database

A.24 Restoring of Express Operational Environment

Follow the procedure below to restore the environment for the Express's manager.

Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$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.

1. Execute the following batch to stop the ETERNUS SF Manager services.

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

2. Restore the device administration information.

Using Explorer or a similar program, delete the files belonging to the following restore destination directory.

However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

- \$TMP_DIR\ESCManager\var\opt\FJSVsmgr\current\opencimom\logr

Using Explorer or a similar program, copy the files belonging to the following directory from their backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\ESCManager\var\opt\FJSVsmgr\current\opencimom\logr	\$TMP_DIR\ESCManager\var\opt\FJSVsmgr\current\opencimom\logr

3. Restore the files related to the performance management function.

This step can be skipped if you are not using the performance management function or the files related to the performance management function are not backed up.

Using Explorer or a similar program, delete the subdirectories and files belonging to the following restore destination directory. However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

- \$TMP_DIR\ESCManager\var\opt\FJSVsmgr\current\perf

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directory from their backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\ESCManager\var\opt\FJSVsmgr\current\perf	\$TMP_DIR\ESCManager\var\opt\FJSVsmgr\current\perf

4. Restore the other files which can be customized.

This restoration is unnecessary for the files or the directories which have not been backed up.

Using Explorer or a similar program, copy the following files from the backup locations.

Copy Source File	Copy Destination Directory
\$BAK_DIR\ESCManager\etc\opt\FJSVsmgr\current\sanma.conf	\$ENV_DIR\ESCManager\etc\opt\FJSVsmgr\current

5. Restore the files related to the Advanced Copy function.

This step can be skipped if you are not using the Advanced Copy function or the files related to the Advanced Copy function are not backed up.

Using Explorer or a similar program, delete the subdirectories and files belonging to the following restore destination directory. However, be sure not to delete the restore destination directory itself.

- \$ENV_DIR\CCM\etc\db\cg

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directory from their backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\CCM\etc\db\cg	\$ENV_DIR\CCM\etc\db\cg

Using Explorer or a similar program, delete the files belonging to the following restore destination directory. However, be sure not to delete the restore destination directory itself.

- \$ENV_DIR\CCM\etc\stxc.alias
- \$ENV_DIR\CCM\etc\stxc_ext.alias
- \$ENV_DIR\CCM\etc\stxcv\lolinf
- \$ENV_DIR\CCM\etc\db\eternus.xml
- \$ENV_DIR\CCM\etc\prop\user.properties
- \$TMP_DIR\CCM\var\micc\database\DeviceRegList.xml

Using Explorer or a similar program, copy the files from their backup location.

Copy Source File	Copy Destination Directory
\$BAK_DIR\CCM\etc\stxc.alias	\$ENV_DIR\CCM\etc
\$BAK_DIR\CCM\etc\stxc_ext.alias	\$ENV_DIR\CCM\etc
\$BAK_DIR\CCM\etc\stxcv\lolinf	\$ENV_DIR\CCM\etc
\$BAK_DIR\CCM\etc\db\eternus.xml	\$ENV_DIR\CCM\etc\db
\$BAK_DIR\CCM\etc\prop\user.properties	\$ENV_DIR\CCM\etc\prop
\$BAK_DIR\CCM\var\micc\database\DeviceRegList.xml	\$TMP_DIR\CCM\var\micc\database

6. Execute the following batch to start ETERNUS SF Manager services.

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

A.25 Backup of Manager Operation Environment (for Windows)

Follow the procedure below to back up the environment for the Storage Cruiser's manager.



Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$INS_DIR	The "Program Directory" when the manager was installed
\$ENV_DIR	The "Environment Directory" when the manager was installed

Directory Name	Explanation
\$TMP_DIR	The "Work Directory" when the manager was installed

1. Stop the Storage Cruiser's manager.
With the Windows services screen, stop the following service:
 - ETERNUS SF Storage Cruiser Manager
2. Backup the device administration information.
Create the following directory for the backup data in Explorer or a similar program.
 - \$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\opencimom\logr

Using Explorer or a similar program, copy the files belonging to the following directories to their backup locations.

Copy Source Directory	Copy Destination Directory
\$TMP_DIR\Manager\var\opt\FJSVssmgr\current\opencimom\logr	\$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\opencimom\logr

3. Back up the files related to the performance management function.
This step can be skipped if you are not using the performance management function. Backup is not required if there are no subdirectories or files.

Note

If a pile of files related to the performance management function exists, calculate the backup time according to the amount of files.

Using Explorer, create the following backup directories:

- \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current
- \$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\perf

Using Explorer or a similar program, copy the following file to the backup location.

Copy Source File	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\perf.conf	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directories to their backup locations.

Copy Source Directory	Copy Destination Directory
\$TMP_DIR\Manager\var\opt\FJSVssmgr\current\perf	\$BAK_DIR\ESC\Manager\var\opt\FJSVssmgr\current\perf

4. Back up the other files which can be customized.
It is unnecessary to back up the files or the directories which are not existed.
Create the following backup directories in Explorer or a similar program.
 - \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current
 - \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\eventmail

Using Explorer or a similar program, copy the following files to their backup locations.

Copy Source File	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\sanma.conf	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\ssmgr.conf	
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\trapop.bat	
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\traprm.bat	

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directory to their backup location.

Copy Source Directory	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\eventmail	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\eventmail

5. Back up the SNMP Trap XML definition files.

This step can be skipped if you are not customizing the SNMP Trap XML definition files.

Below is an example for if the SNMP Trap XML definition file 1_3_6_1_1588_2_1_1_1.xml has been customized. As shown in this example, back up each file one at a time.

Create the following backup directory in Explorer or a similar program.

- \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

Using Explorer or a similar program, copy the following file to its backup location.

Copy Source File	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\snmpth\1_3_6_1_1588_2_1_1_1.xml	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

6. Back up the device polling setting files.

This step can be skipped if you are not customizing the device polling setting files.

Below is an example for if the device polling setting file DP_config.xml is being customized. As in this example, back up each file one at a time.

Create the following backup directory in Explorer or a similar program.

- \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\devicepolling

Using Explorer or a similar program, copy the following file to its backup location.

Copy Source File	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\devicepolling\DP_config.xml	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\devicepolling

7. Back up the polling service setting file.

This step can be skipped if you are not customizing the polling service setting file.

If customizing the polling service setting file pollingService.xml, follow the step below to back it up.

Create the following backup directory in Explorer or a similar program.

- \$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling

Using Explorer or a similar program, copy the following file to its backup location.

Copy Source File	Copy Destination Directory
\$ENV_DIR\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml	\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling

A.26 Backup of Windows Version Manager Operation Environment (for Cluster Environment)

For cluster environment, follow the procedure below to back up the environment for the Storage Cruiser's manager.

1. Stop all cluster services to which the Manager belongs.
Refer to "Cluster Transaction and Local Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for details of cluster transaction.
2. Mount the shared disk on the primary node.
3. Perform step 2 to 7 of "A.25 Backup of Manager Operation Environment (for Windows)" on the primary node.
Directory description in "A.25 Backup of Manager Operation Environment (for Windows)" are replaced to the following directories.
 - \$BAK_DIR means the backup destination directory.
 - \$INS_DIR means "Program Directory" specified at the manager installation.
 - \$ENV_DIR means "Environment Directory" specified at the ETERNUS SF Manager installation.
 - \$TMP_DIR means "Work Directory" as specified during installation.
4. Unmount the shared disk mounted in step 2.
5. Start all cluster transactions to which the Manager belongs.

A.27 Backup of Manager Operation Environment (for Solaris, Linux)

Follow the procedure below to back up the environment for the Storage Cruiser's manager.



Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

1. Stop the Storage Cruiser's manager.
Execute the following command:

```
/opt/FJSVssmgr/sbin/managerctl stop
```
2. Backup the device administration information.
Create the f backup directories.

```
mkdir -p $BAK_DIR/var/opt/FJSVssmgr/current/opencimom/logr
```


Copy the file to the backup location.

```
cp -Rp /var/opt/FJSVssmgr/current/opencimom/logr/* $BAK_DIR/var/opt/FJSVssmgr/current/opencimom/logr/
```
3. Back up the files related to the performance management function.
This step can be skipped if you are not using the performance management function. Backup is not required if there are no subdirectories or files.



Note

If a pile of files related to the performance management function exists, calculate the backup time according to the amount of files.

Create the directories for the backup data.

```
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current
mkdir -p $BAK_DIR/var/opt/FJSVssmgr/current/perf
```

Copy the subdirectories and files to the backup locations.

```
cp -p /etc/opt/FJSVssmgr/current/perf.conf $BAK_DIR/etc/opt/FJSVssmgr/current/
cp -Rp /var/opt/FJSVssmgr/current/perf/* $BAK_DIR/var/opt/FJSVssmgr/current/perf/
```

4. Back up the other files which can be customized.

It is unnecessary to back up the files or the directories which are not existed.

Create the directories for the backup data.

```
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current/eventmail
```

Copy the subdirectories and files to the backup locations.

```
cp -p /etc/opt/FJSVssmgr/current/sanma.conf $BAK_DIR/etc/opt/FJSVssmgr/current/
cp -p /etc/opt/FJSVssmgr/current/ssmgr.conf $BAK_DIR/etc/opt/FJSVssmgr/current/
cp -p /etc/opt/FJSVssmgr/current/trapop.sh $BAK_DIR/etc/opt/FJSVssmgr/current/
cp -p /etc/opt/FJSVssmgr/current/traprm.sh $BAK_DIR/etc/opt/FJSVssmgr/current/
cp -Rp /etc/opt/FJSVssmgr/current/eventmail/* $BAK_DIR/etc/opt/FJSVssmgr/current/eventmail/
```

5. Back up the SNMP Trap XML definition files.

This step can be skipped if you are not customizing the SNMP Trap XML definition files.

Below is an example for if the SNMP Trap XML definition file 1_3_6_1_1588_2_1_1_1.xml has been customized. As shown in this example, back up each customized file one at a time.

Create the directories for the backup data.

```
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current/snmpth
```

Copy the file to the backup location.

```
cp -p /etc/opt/FJSVssmgr/current/snmpth/1_3_6_1_1588_2_1_1_1.xml
$BAK_DIR/etc/opt/FJSVssmgr/current/snmpth/
```

6. Back up the device polling setting files.

This step can be skipped if you are not customizing the device polling setting files.

Below is an example for if the device polling setting file, DP_config.xml, has been customized. As shown in this example, back up each customized file one at a time.

Create the directories for the backup data.

```
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current/devicepolling
```

Copy the file to the backup location.

```
cp -p /etc/opt/FJSVssmgr/current/devicepolling/DP_config.xml $BAK_DIR/etc/opt/FJSVssmgr/current/
devicepolling/
```

7. Back up the polling service setting file.

This step can be skipped if you are not customizing the polling service setting file.

If you have customized the polling service setting file pollingService.xml, back up this file using the step shown below.

Create the directories for the backup data.

```
mkdir -p $BAK_DIR/etc/opt/FJSVssmgr/current/polling
```

Copy the file to the backup location.

```
cp -p /etc/opt/FJSVssmgr/current/polling/pollingService.xml $BAK_DIR/etc/opt/FJSVssmgr/current/polling/
```

A.28 Backup of Solaris/Linux Version Manager Operation Environment (for Cluster Environment)

For cluster environment, follow the procedure below to back up the environment for the Storage Cruiser's manager.

1. Stop all cluster services to which the Manager belongs.
Refer to "Cluster Transaction and Local Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for details of cluster transaction.
2. Mount the shared disk on the primary node.
3. Perform step 2 to 7 of "A.27 Backup of Manager Operation Environment (for Solaris, Linux)" on the primary node.
4. Unmount the shared disk mounted in step 2.
5. Start all cluster transactions to which the Manager belongs.

A.29 Restoring of Manager Operation Environment (for Windows)

Follow the procedure below to restore the environment for the Storage Cruiser's manager.



Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.
\$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.

1. Execute the following batch to stop the ETERNUS SF Manager services.

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

2. Restore the device administration information
Using Explorer or a similar program, delete the files belonging to the following restore destination directory. However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

- \$TMP_DIR\ESCManager\var\opt\FJSVssmgr\current\opencimom\logr

Using Explorer or a similar program, copy the following subdirectories and files from its backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\ESCManager\var\opt\FJSVssmgr\current\opencimom\logr	\$TMP_DIR\ESCManager\var\opt\FJSVssmgr\current\opencimom\logr

3. Restore the files related to the performance management function.
This step can be skipped if you are not using the performance management function or the files related to the performance management function are not backed up.
Using Explorer or a similar program, delete the subdirectories and files belonging to the following restore destination directory.

However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

- \$TMP_DIR\ESCManger\var\opt\FJSVssmgr\current\perf

Using Explorer or a similar program, copy the following file from its backup location.

Copy Source File	Copy Destination Directory
\$BAK_DIR\ESCManger\etc\opt\FJSVssmgr\current\perf.conf	\$ENV_DIR\ESCManger\etc\opt\FJSVssmgr\current

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directory from their backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\ESCManger\var\opt\FJSVssmgr\current\perf	\$TMP_DIR\ESCManger\var\opt\FJSVssmgr\current\perf

After copying, edit perf.conf (performance management definition file).

What is edited is as follows:

MONITORING_SIZE

The number of devices whose performance is being monitored is specified in decimal format.
Set the MONITORING_SIZE parameter to 0 (zero).

MONITORING_NUMBER

The information for the device whose performance is being monitored and the valid/invalid values for threshold monitoring are set up.
Delete all the lines of MONITORING_number parameters.

[Before editing]

```
#Tue Nov 05 20:11:02 JST 2013
PERF_DATA_KEEP_DAYS=7;
LOG_ROTATION=2;
MONITORING_SIZE=1
MONITORING_0=1.3.6.1.4.1.211.1.21.1.100@00ETERNUSDXMS0ET410SA#####KP1234567890##:
30,0,63,Thresholds_Enable
```

[After editing]

```
#Tue Nov 05 20:11:02 JST 2013
PERF_DATA_KEEP_DAYS=7;
LOG_ROTATION=2;
MONITORING_SIZE=0
```

Note

If there is no ENABLED_ECO_MODE or ENABLED_PORT_ISCSI parameter definition in the perf.conf file, add the definition after migration.

Refer to "perf.conf Parameter" in the *ETERNUS SF Storage Cruiser Operation Guide* for details of customizing the parameter of the perf.conf file.

4. Restore the other files which can be customized.

This restoration is unnecessary for the files or the directories which have not been backed up.

Using Explorer or a similar program, copy the following files from the backup locations.

Copy Source File	Copy Destination Directory
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\sanma.conf	\$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\ssmgr.conf	
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\trapop.bat	
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\traprm.bat	

Using Explorer or a similar program, copy the subdirectories and files belonging to the following directory from their backup location.

Copy Source Directory	Copy Destination Directory
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\eventmail	\$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\eventmail

5. Customization of the SNMP Trap XML Definition file is executed again.
This restoration is unnecessary for the files which have not been backed up.
Refer to "SNMP Trap XML Definition File" of the *ETERNUS SF Storage Cruiser Operation Guide* and customize the SNMP trap XML definition file for the use of this version level. For the contents of customization, refer to the SNMP Trap XML Definition file for the use of the previous version located below.

Backup File Location Directory
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\snmpth

6. Restore the device polling setting files.
This restoration is unnecessary for the files which have not been backed up.
Using Explorer or a similar program, copy the device polling setting file from its backup location.

Copy Source File	Copy Destination Directory
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\devicepolling\DP_config.xml	\$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\devicepolling

7. Customization of the Polling Service Setting file is executed again.
This restoration is unnecessary for the files which have not been backed up.
Refer to "Polling Service Setting File" of the *ETERNUS SF Storage Cruiser Operation Guide* and customize the Polling Service Setting file for the use of this version level. For the contents of customization, refer to the Polling Service Setting file for the use of the previous version shown below.

Backup file
\$BAK_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\polling\pollingService.xml

8. Execute the following batch to start the ETERNUS SF Manager services.

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

A.30 Restoring of Windows Version Manager Operation Environment (for Cluster Environment)

For cluster environment, follow the procedure below to restore the environment for the Storage Cruiser's manager.

1. Stop all cluster services to which the Manager belongs.
Refer to "Cluster Transaction and Local Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for details of cluster transaction.
2. Mount the shared disk on the primary node.

3. Perform steps step 2 to 7 of "[A.29 Restoring of Manager Operation Environment \(for Windows\)](#)" on the primary node. Directory description in "[A.29 Restoring of Manager Operation Environment \(for Windows\)](#)" are replaced to the following directories.
 - \$BAK_DIR means the backup destination directory.
 - \$INS_DIR means "Program Directory" specified at the ETERNUS SF Manager installation.
 - \$ENV_DIR means "Environment Directory" specified at the ETERNUS SF Manager installation.
 - \$TMP_DIR means "Work Directory" as specified during installation.
4. Unmount the shared disk mounted in step 2.
5. Start all cluster transactions to which the Manager belongs.

A.31 Restoring of Manager Operation Environment (for Solaris, Linux)

Follow the procedure below to restore the environment for the Storage Cruiser's manager.

Information

Notation in Procedure

Directory Name	Explanation
\$BAK_DIR	Backup destination directory.

1. Execute the following shell script to stop ETERNUS SF Manager services.
An error occurs if the shell script is executed before the ETERNUS SF manager service activation completes. It was automatically activated by the installation process. In the case that an error does occur, execute the script again after a 30 seconds.

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

2. Restore the device administration information.
Delete the files belonging to the restore destination directory.
However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

```
rm -rf /var/opt/FJSVssmgr/current/opencimom/logr/*
```

Copy the files from their backup locations.

```
cp -Rp $BAK_DIR/var/opt/FJSVssmgr/current/opencimom/logr/* /var/opt/FJSVssmgr/current/opencimom/logr/
```

3. Restore the files related to the performance management function.
This step can be skipped if you are not using the performance management function or the files related to the performance management function are not backed up.
Delete the subdirectories and files belonging to the restore destination directory.
However, be sure not to delete the restore destination directory itself. If the restore destination directory itself does not exist, create it.

```
rm -f /etc/opt/FJSVssmgr/current/perf.conf
rm -rf /var/opt/FJSVssmgr/current/perf/*
```

Copy the subdirectories and files from the backup location.

```
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/perf.conf /etc/opt/FJSVssmgr/current/
cp -Rp $BAK_DIR/var/opt/FJSVssmgr/current/perf/* /var/opt/FJSVssmgr/current/perf/
```

After copying, edit perf.conf(performance management definition file).

What is edited is as follows:

MONITORING_SIZE

The number of devices whose performance is being monitored is specified in decimal format.
Set the MONITORING_SIZE parameter to 0 (zero).

MONITORING_NUMBER

The information for the device whose performance is being monitored and the valid/invalid values for threshold monitoring are set up.

Delete all the lines of MONITORING_number parameters.

[Before editing]

```
#Tue Nov 05 20:11:02 JST 2013
PERF_DATA_KEEP_DAYS=7;
LOG_ROTATION=2;
MONITORING_SIZE=1
MONITORING_0=1.3.6.1.4.1.211.1.21.1.100@00ETERNUSDXMS0ET410SA#####KP1234567890##:
30,0,63,Thresholds_Enable
```

[After editing]

```
#Tue Nov 05 20:11:02 JST 2013
PERF_DATA_KEEP_DAYS=7;
LOG_ROTATION=2;
MONITORING_SIZE=0
```

Note

If there is no ENABLED_ECO_MODE or ENABLED_PORT_ISCSI parameter definition in the perf.conf file, add the definition after migration.

Refer to "perf.conf Parameter" in the *ETERNUS SF Storage Cruiser Operation Guide* for details of customizing the parameter of the perf.conf file.

4. Restore the other files which can be customized.

This restoration is unnecessary for the files or the directories which have not been backed up.
Copy the subdirectories and files from the backup location.

```
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/sanma.conf /etc/opt/FJSVssmgr/current/
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/ssmgr.conf /etc/opt/FJSVssmgr/current/
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/trapop.sh /etc/opt/FJSVssmgr/current/
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/traprm.sh /etc/opt/FJSVssmgr/current/
cp -Rp $BAK_DIR/etc/opt/FJSVssmgr/current/eventmail/* /etc/opt/FJSVssmgr/current/eventmail/
```

5. Customization of the SNMP Trap XML Definition file is executed again.

This restoration is unnecessary for the files which have not been backed up.

Refer to "SNMP Trap XML Definition File" of the *ETERNUS SF Storage Cruiser Operation Guide* and customize the SNMP trap XML definition file for the use of this version level. For the contents of customization, refer to the SNMP Trap XML Definition file for the use of the previous version located below.

Backup File Location Directory
/etc/opt/FJSVssmgr/current/snmpth

6. Restore the device polling setting files.

This restoration is unnecessary for the files which have not been backed up.
Copy the files from the backup location.

```
cp -p $BAK_DIR/etc/opt/FJSVssmgr/current/devicepolling/*.xml /etc/opt/FJSVssmgr/current/
devicepolling/
```

7. Customization of the Polling Service Setting file is executed again.

This restoration is unnecessary for the files which have not been backed up.

Refer to "Polling Service Setting File" of the *ETERNUS SF Storage Cruiser Operation Guide* and customize the Polling Service Setting file for the use of this version level. For the contents of customization, refer to the Polling Service Setting file for the use of the previous version shown below.

Backup file
/etc/opt/FJSVssmgr/current/polling/pollingService.xml

8. Execute the following shell script to start ETERNUS SF Manager services.

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

A.32 Restoring of Solaris/Linux Version Manager Operation Environment (for Cluster Environment)

For cluster environment, follow the procedure below to restore the environment for the Storage Cruiser's manager.

1. Stop all cluster transaction to which the Manager belongs.
Refer to "Cluster Transaction and Local Transaction" in the *ETERNUS SF Cluster Environment Setup Guide* for details of cluster transaction.
2. Mount the shared disk on the primary node.
3. Perform and step 2 to 7 of "[A.31 Restoring of Manager Operation Environment \(for Solaris, Linux\)](#)" on the primary node.
4. Unmount the shared disk mounted in step 2.
5. Start all cluster transactions to which the Manager belongs.

A.33 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

#-----#
# Repository database setup
#   Repository_data_size: Min. 65
#   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/FJVSvswstf/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 *ETERNUS SF 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 *ETERNUS SF 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 14.x and 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).

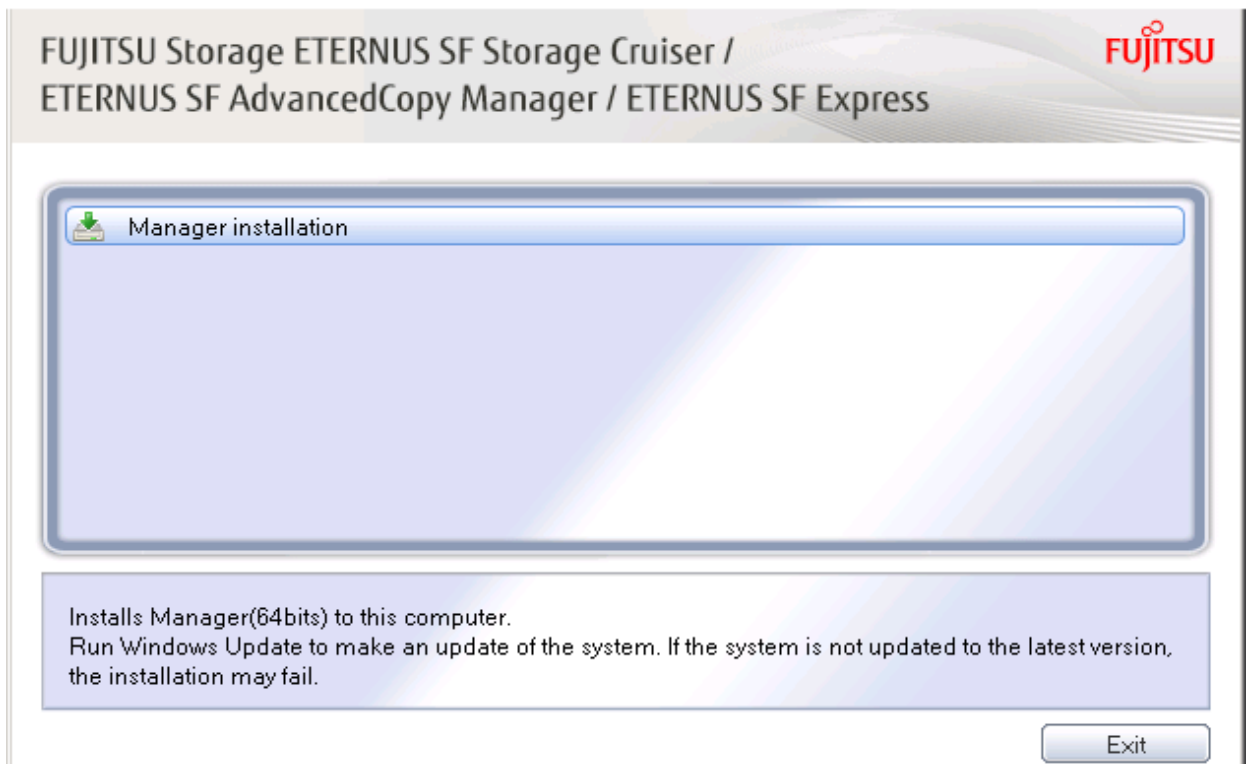
The upgrade procedure is as follows:

Note that if step 1 and step 2 have already been performed, perform from step 3.

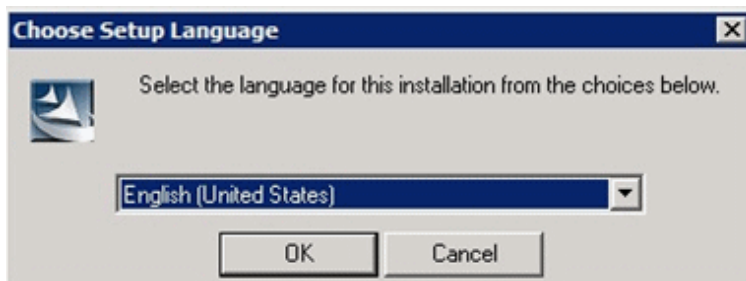
1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

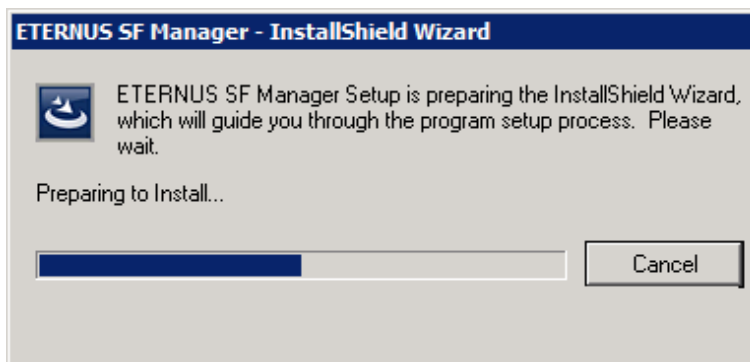
3. The following window is displayed. Click **Manager installation**.
To cancel the upgrade at this point, click **Exit**.



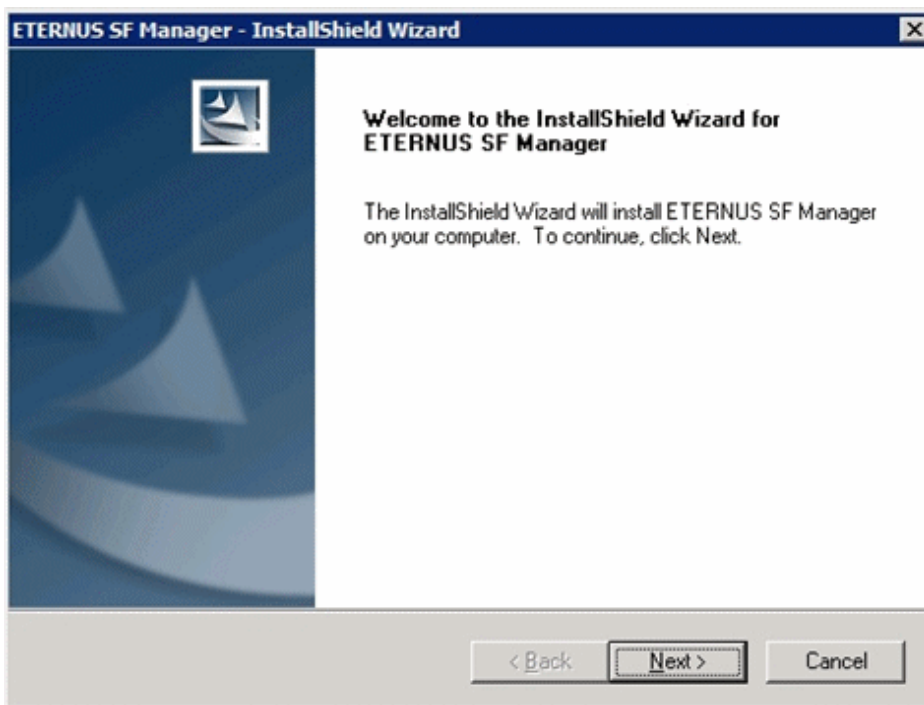
4. The **Choose Setup Language** dialog box is displayed. Select the appropriate language and click **OK**.
The language selected in this dialog box is used during installation and uninstallation.



5. The following progress bar is displayed. To cancel the upgrade, click **Cancel**.

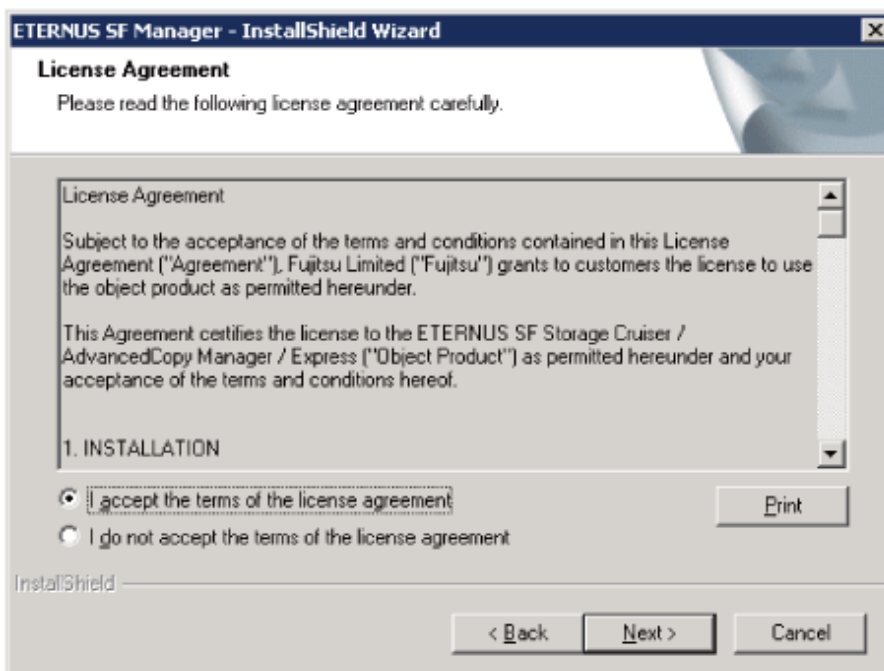


6. The installation wizard page is displayed. Click **Next**.

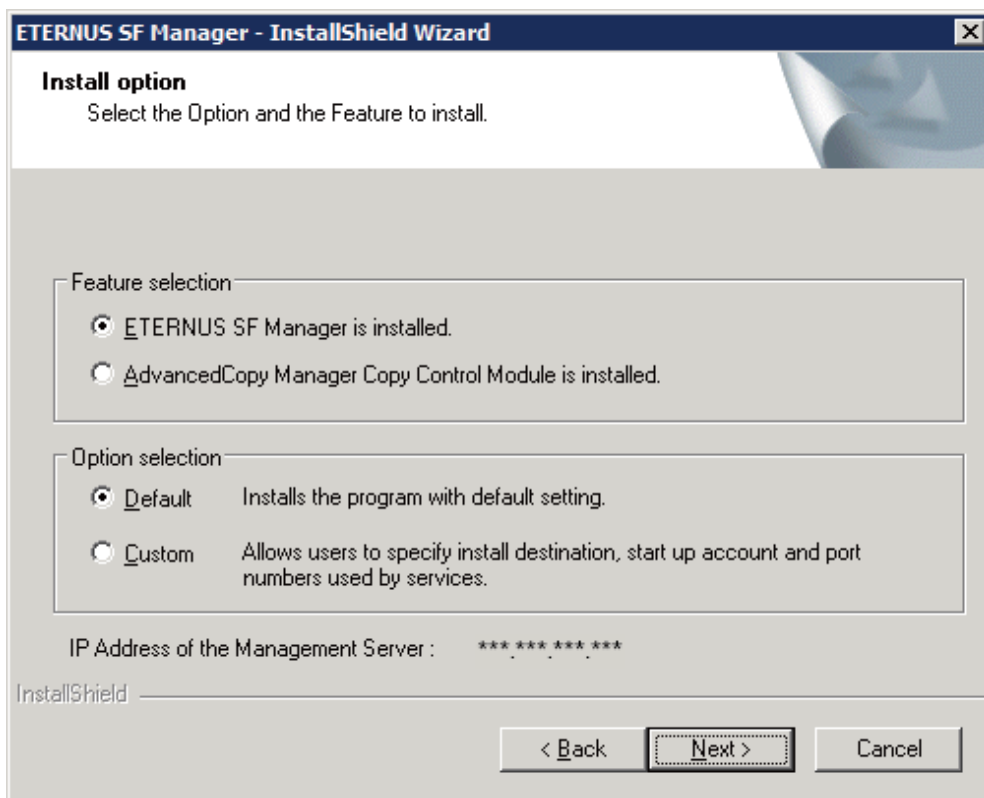


7. Read the terms and conditions of the **License Agreement** page.

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	<p>Changing values in the Installation Destination page and Port Registration page is optional. In this case, steps 9 and 10 can be skipped.</p> <p>For this installation method, the following checks are automatically performed relating to the information provided by default:</p> <ul style="list-style-type: none"> - Is there enough disk space for the installation in the default directory? - Are the default port numbers available? <p>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.</p>
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.

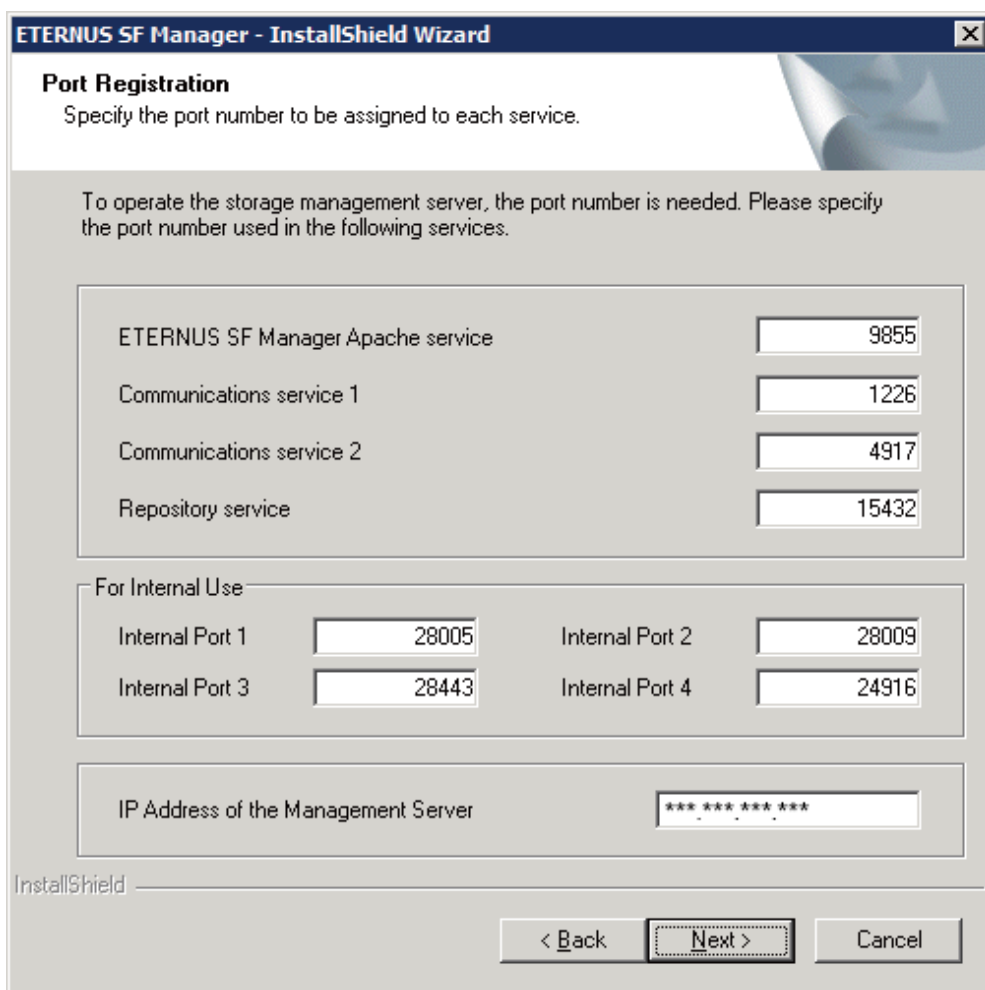
If installing to a directory other than the default directory, click **Browse** and change the install destination. After designating all of the directories, click **Next**.



P Point

- 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 *ETERNUS SF 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 *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for this version for information on the command.

Point

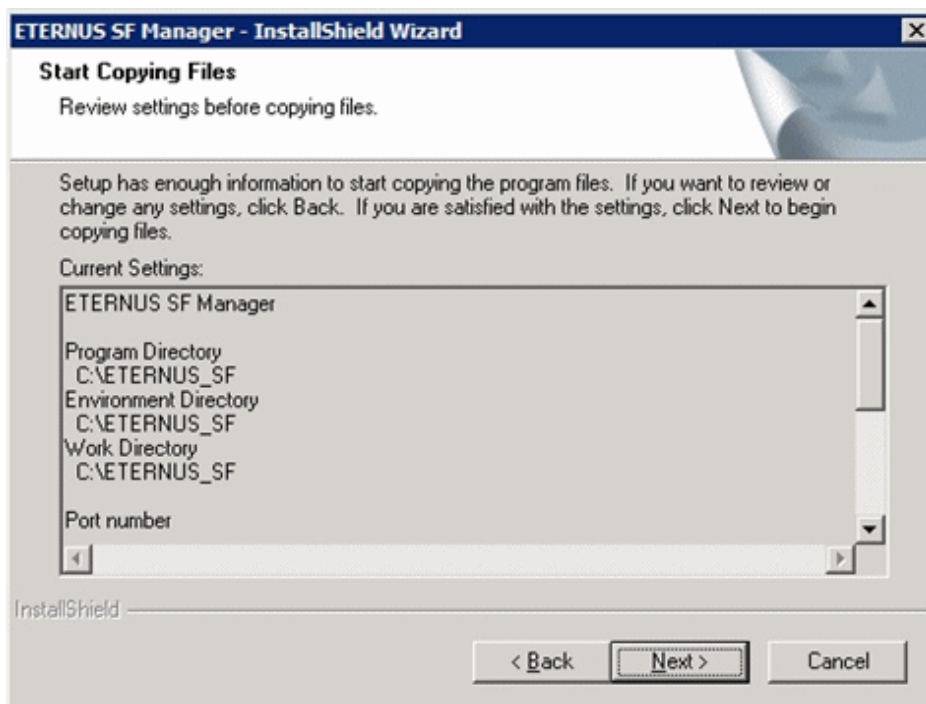
When the Management Server has multiple IP addresses, specify an IP address that can communicate with the Management Server from all of the AdvancedCopy Manager's agents.

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.

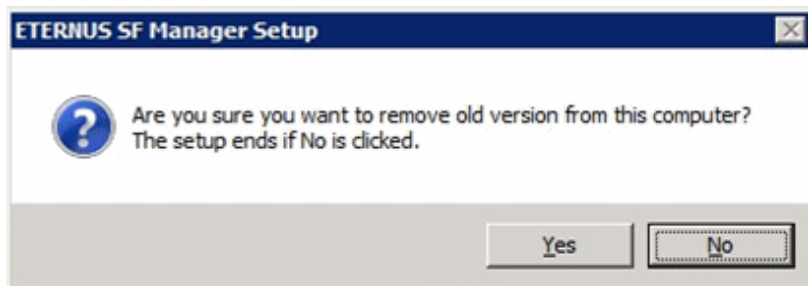
If the settings are correct, click **Next**.

To change a setting, click **Back**.



12. The following dialog box is displayed. To proceed with the uninstallation, click **Yes**.

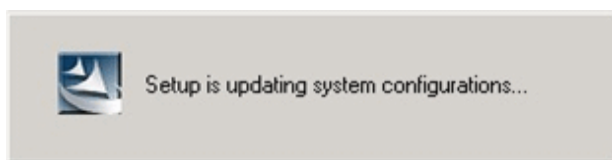
If the previous program version is Version 14.x, the uninstallation page is displayed by clicking **Yes**. Uninstall the previous program version according to the instructions on the page.



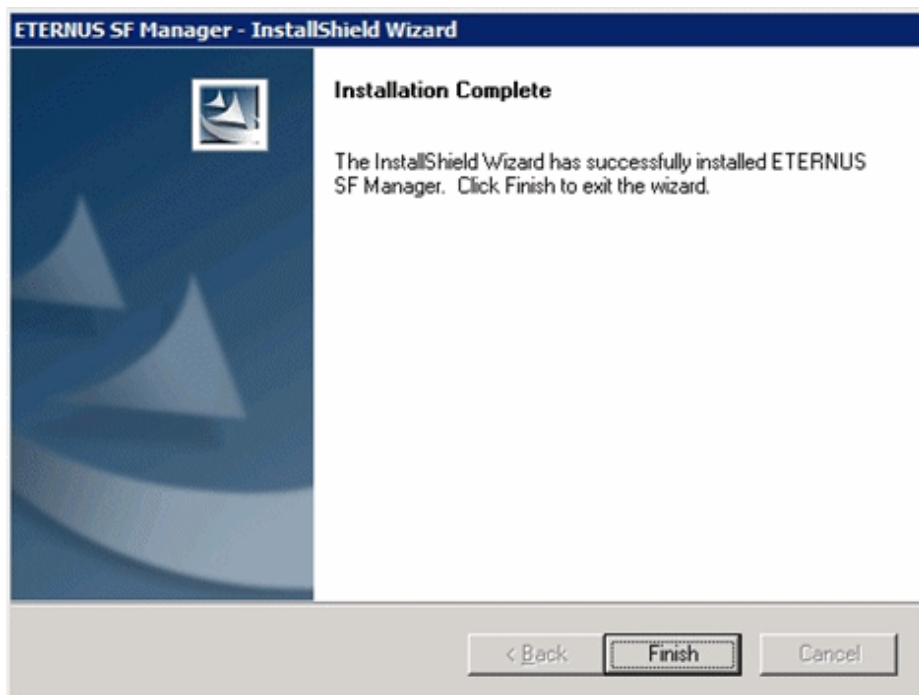
13. When the uninstallation is completed, the copying of the files for the new version is started.

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.

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 14.x and 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
	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.

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 *ETERNUS SF AdvancedCopy Manager Operation Guide* for the operating system of the Management Server for information on changing the IP address.



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.

Refer to "DVD-ROM Contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

4. Change the directory on the DVD-ROM where the installation shell script is stored.

Example:

```
# cd /mnt/dvd/Manager_unix
```

5. Execute the following installation shell script.

Example of a default installation:

```
# ./esfinstall.sh
```

Example of 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 V16.5      |
|                                     |
| All Rights Reserved, Copyright (C) FUJITSU LIMITED 2013-2017 |
+-----+

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 procedure described in the applicable documentation.

4. NO ASSIGNMENT

You may not rent, lease, sublicense, assign, transfer or create lien against the Object Product.

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, and 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 will be corrected. However, if within ninety (90) days following your acquisition of the Object Product you notify the reseller from which you have acquired the Object Product of physical defects of the media containing the Object Product, Fujitsu will, at its sole discretion, correct the non-conformance or provide you with information necessary to correct the non-conformance, or replace the defective media with a new media. Only if you inform such reseller of your problem with the Object Product during the above mentioned warranty period and provide satisfactory evidence of the date you acquired the Object Product will Fujitsu 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 MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT OF THIRD PARTIES' RIGHTS. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO LIMITATION MAY NOT APPLY TO YOU. NO FUJITSU RESELLER, AGENT, EMPLOYEE IS AUTHORIZED TO MAKE ANY MODIFICATIONS, EXTENSIONS, OR ADDITIONS TO THIS WARRANTY. IF ANY MODIFICATIONS ARE MADE TO THE OBJECT 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 SHALL IMMEDIATELY BE TERMINATED.

(c) LIMITATION OF LIABILITY. UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, TORT, CONTRACT, OR OTHERWISE, SHALL FUJITSU BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, OR LOSS OF DATA, OR FOR ANY DAMAGES IN EXCESS OF THE LIST PRICE TO THE PRODUCT, EVEN IF FUJITSU SHALL HAVE BEEN INFORMED OF THE POSSIBILITY 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 PROHIBITS SUCH LIMITATION. FURTHERMORE, SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION 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, performance 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 license 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-Restricted 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)

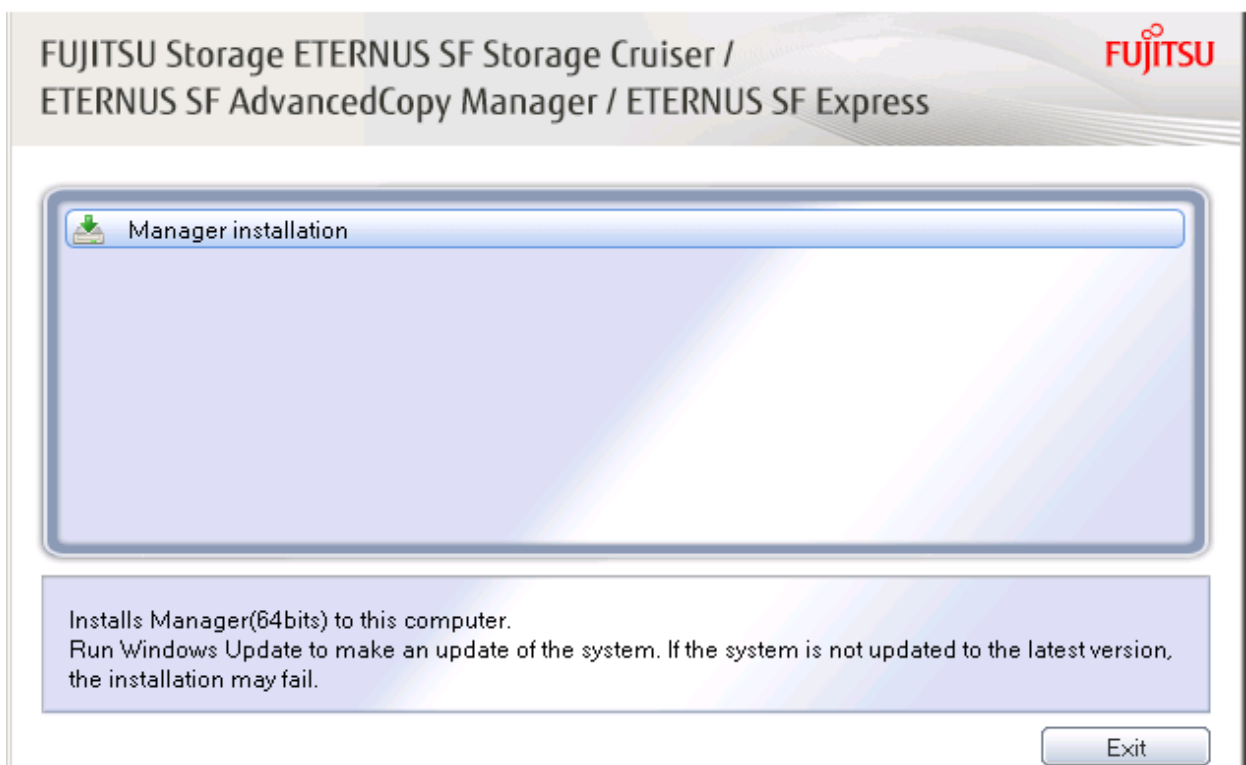
For the Upgrade Installation, there is an installation method where required information is entered interactively and a method where no questions are asked (silent upgrade installation).

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

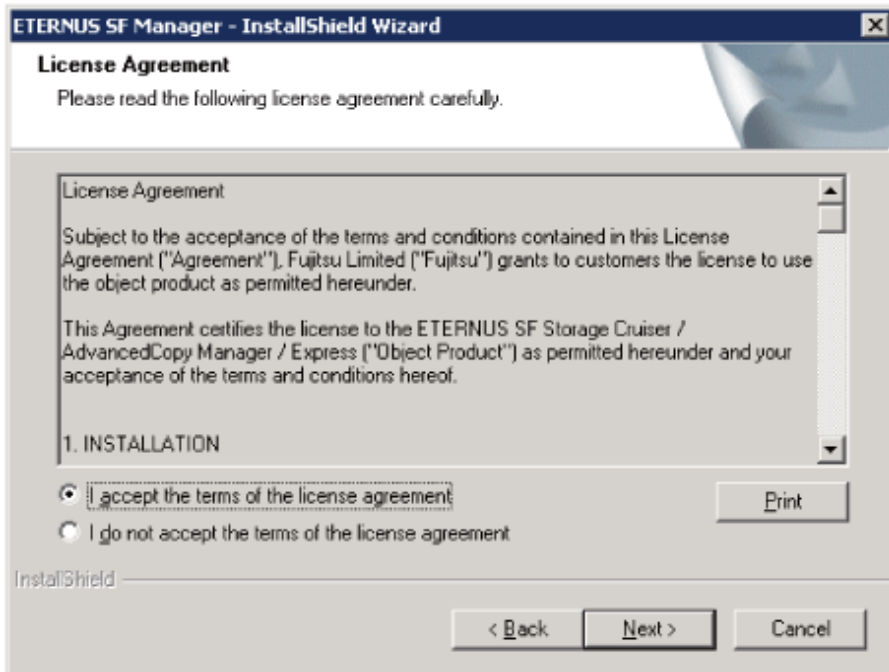
The upgrade procedure is as follows:

1. Insert the "ETERNUS SF SC / ACM / Express Media Pack (Windows 64bit Edition) Manager Program (1/2)" DVD-ROM of this version level into the DVD-ROM drive.
2. The following initial screen is displayed. Click on **Manager installation**.
If you abort the Upgrade Installation, click **Exit**.



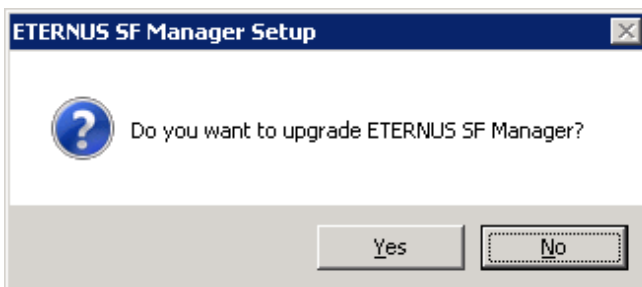
3. Read the terms and conditions of the **License Agreement** page.

If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.

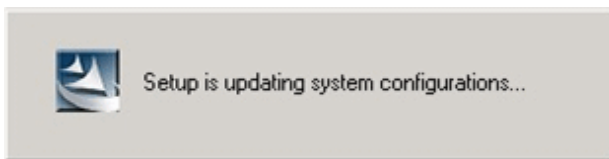


4. The following screen is displayed. Click **Yes**.

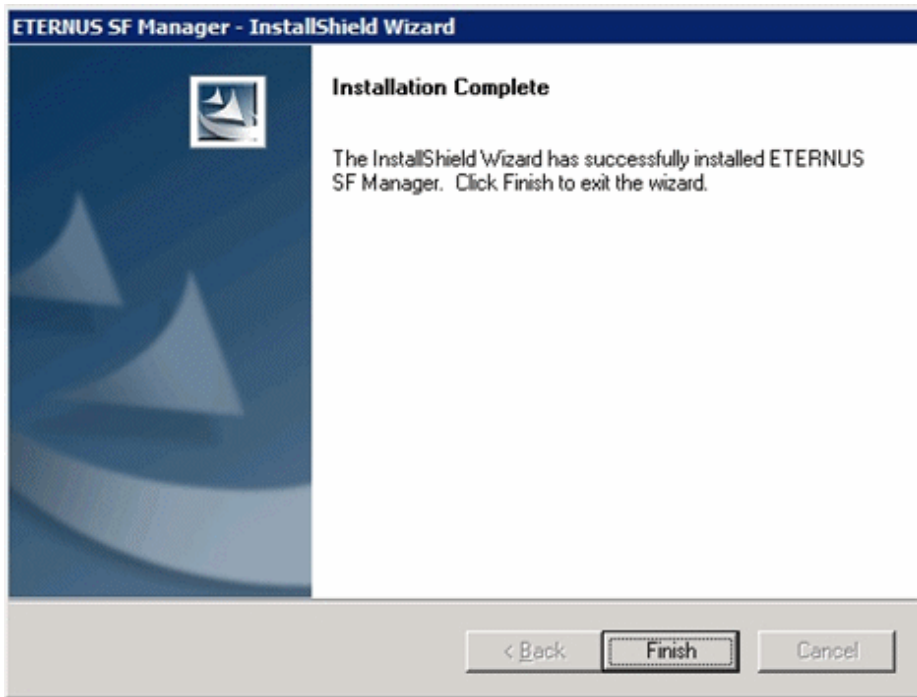
If you abort the Upgrade Installation, click **No**.



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.

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)" of 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.
Remove the DVD-ROM media used for installation out of 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 *ETERNUS SF 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 "ETERNUS SF SC / ACM Media Pack (Solaris Edition) Manager Program (2/2)" or "ETERNUS SF SC / ACM / Express Media Pack (Linux 64bit Edition) Manager Program (2/2)" DVD-ROM of this version level into the DVD-ROM drive.
Refer to "Configuration of the DVD-ROM" of the *ETERNUS SF Installation and Setup Guide* for the configuration and the stored contents of the DVD-ROM.

2. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

3. Change the directory on the DVD-ROM where the installation shell script is stored.

Example:

```
# cd /mnt/dvd/Manager_unix
```

- Execute the shell script.
Execute the following installation shell script.

```
# ./esfinstall.sh
```

- 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]:
```

- 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]:
```

- If the upgrade completes successfully, the following message is displayed.

```
INFO: ETERNUS SF was installed successfully.
```

- Change to a directory other than the DVD-ROM.
Example:

```
# cd
```

- Unmount the DVD-ROM.
Example:

```
# umount /mnt/dvd
```

- Remove 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 "ETERNUS SF SC / ACM Media Pack (Solaris Edition) Manager Program (2/2)" or "ETERNUS SF SC / ACM / Express Media Pack (Linux 64bit Edition) Manager Program (2/2)" DVD-ROM of this version level into the DVD-ROM drive.
Refer to "Configuration of the DVD-ROM" of the *ETERNUS SF Installation and Setup Guide* for the configuration and the stored contents of the DVD-ROM.

2. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

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*.

```
# <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. Remove the DVD-ROM media used for installation out of the device.
- Example:

```
# umount /mnt/dvd
```

6. Eject the DVD-ROM.

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 *ETERNUS SF 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 14.x and 15.x (for Windows)

If use the AdvancedCopy Manager Copy Control Module included in the ETERNUS SF Manager

Refer to "[8.1.2 Performing Upgrade \(for Windows\)](#)" 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 *ETERNUS SF 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).

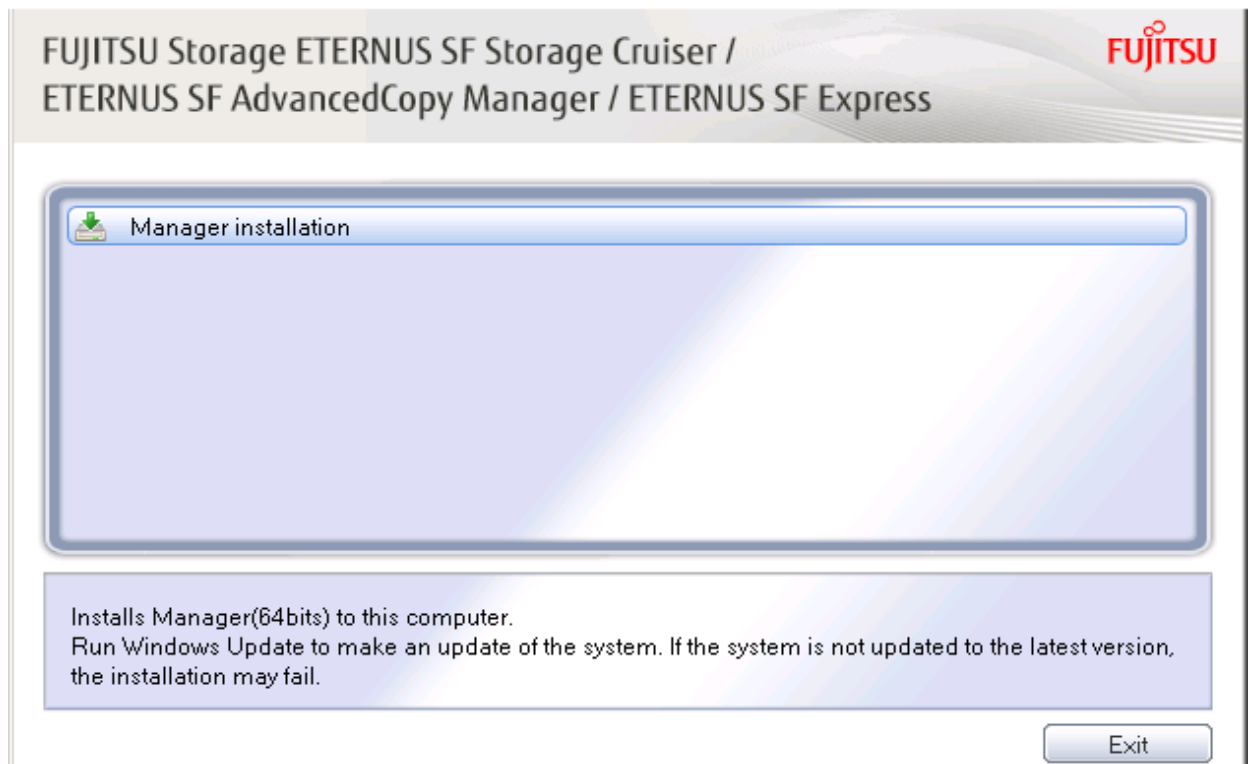
The upgrade procedure is as follows:

Note that if step 1 and step 2 have already been performed, perform from step 3.

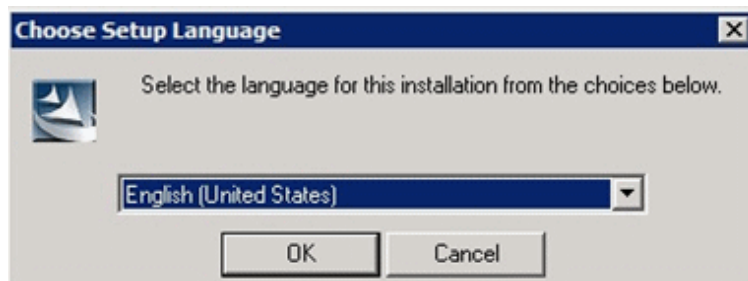
1. Log on to the server using Administrator privileges.
2. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

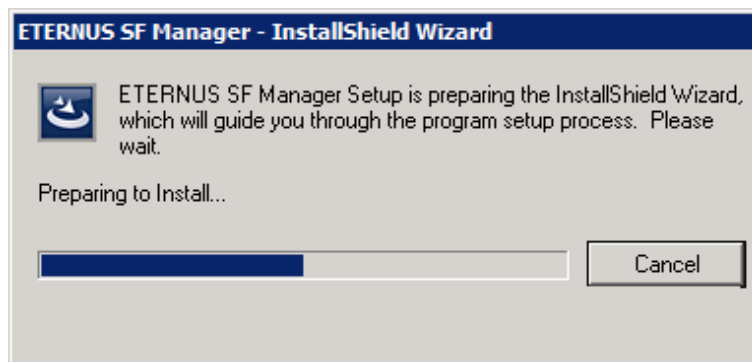
3. The following window is displayed. Click **Manager installation**.
To cancel the upgrade at this point, click **Exit**.



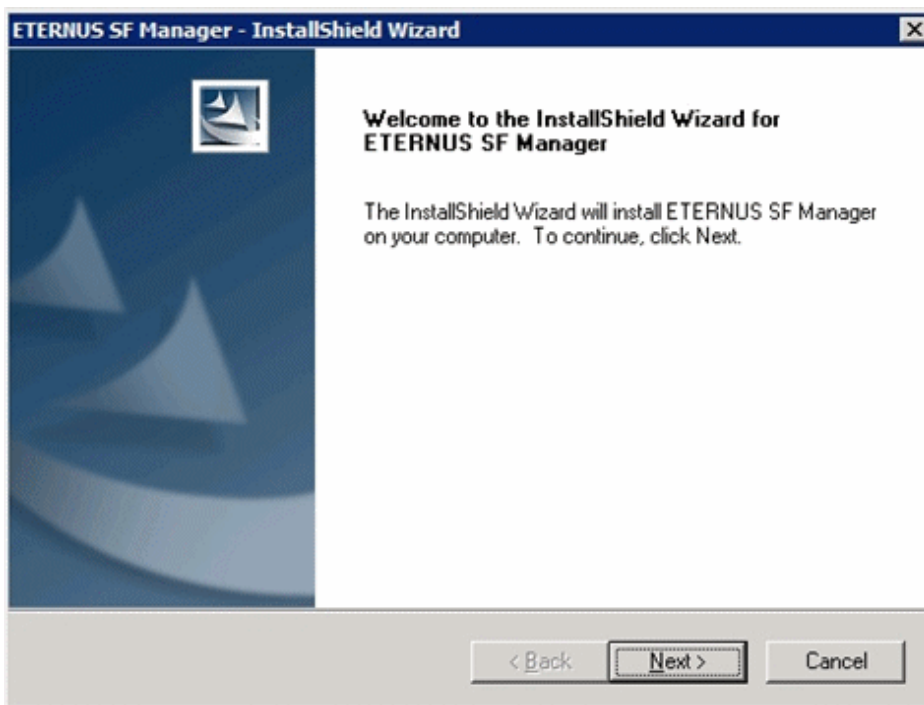
4. The **Choose Setup Language** dialog box is displayed. Select the appropriate language and click **OK**.
The language selected in this dialog box is used during installation and uninstallation.



5. The following progress bar is displayed. To cancel the upgrade, click **Cancel**.

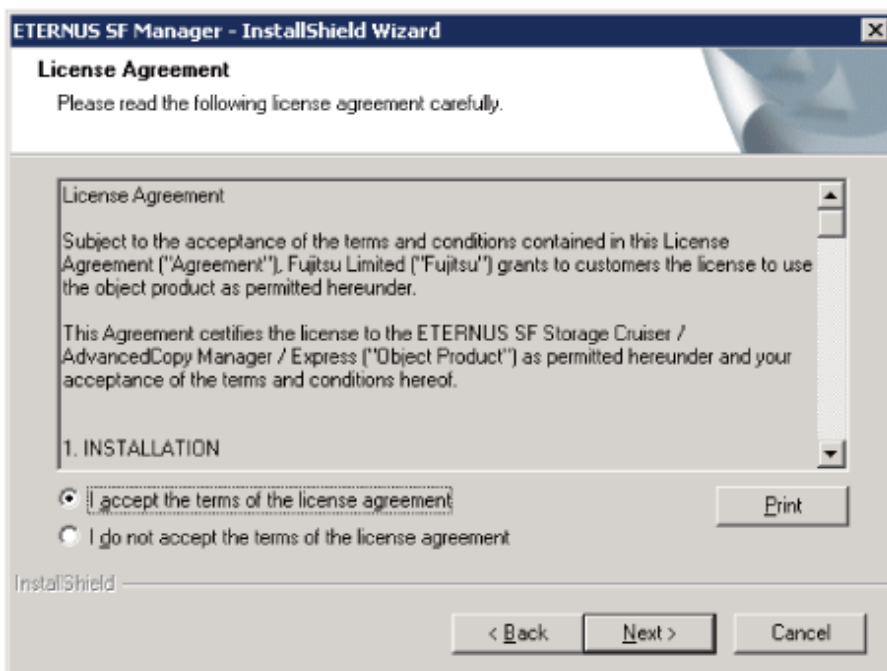


6. The installation wizard page is displayed. Click **Next**.

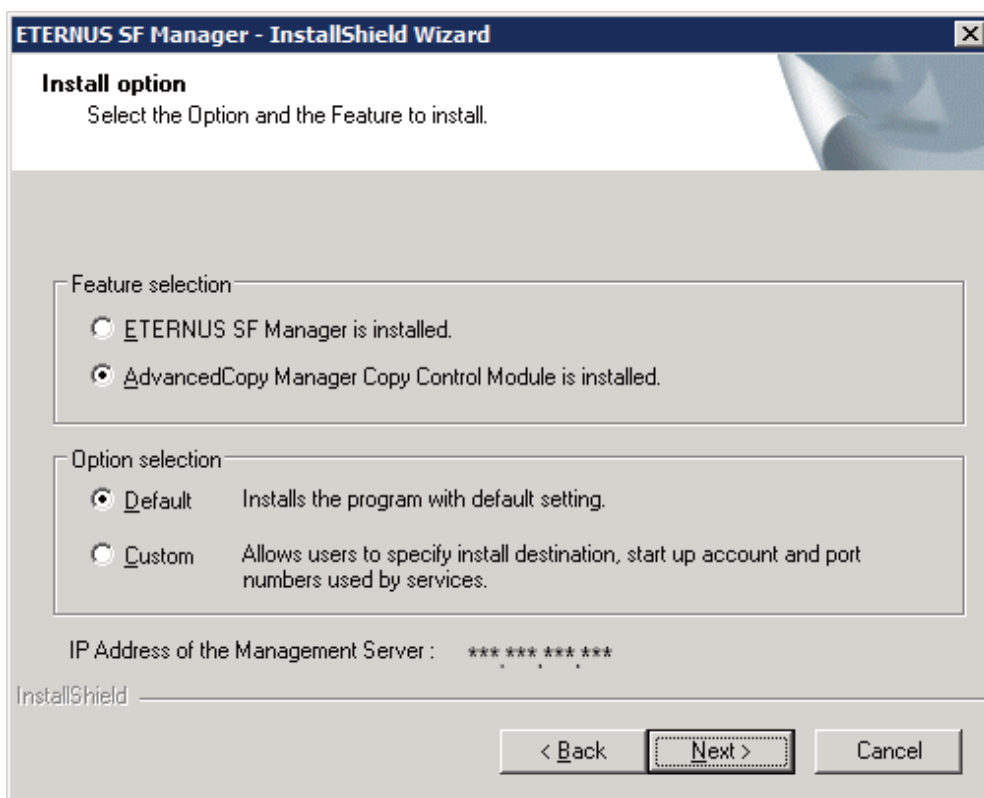


7. Read the terms and conditions of the **License Agreement** page.

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.].

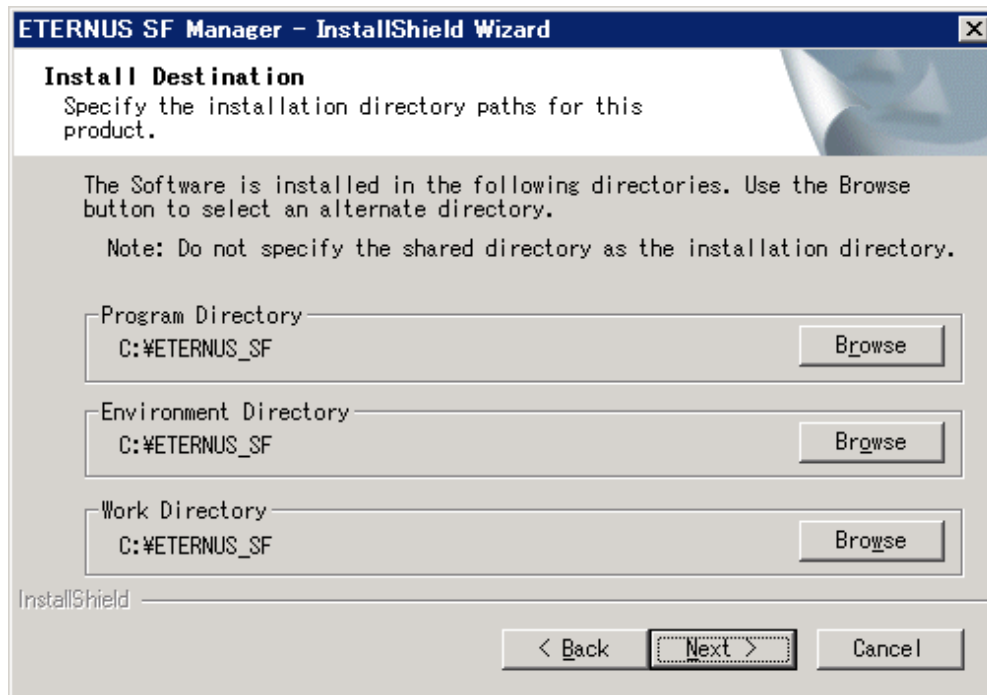
Option selection

Select the desired options according to the following information.

Install option	Explanation
Default	<p>Changing values in the Installation Destination page is optional. In this case, step 9 can be skipped.</p> <p>For this installation method, the following checks are automatically performed relating to the information provided by default:</p> <ul style="list-style-type: none"> - Is there enough disk space for the installation in the default directory? <p>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.</p>
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**.



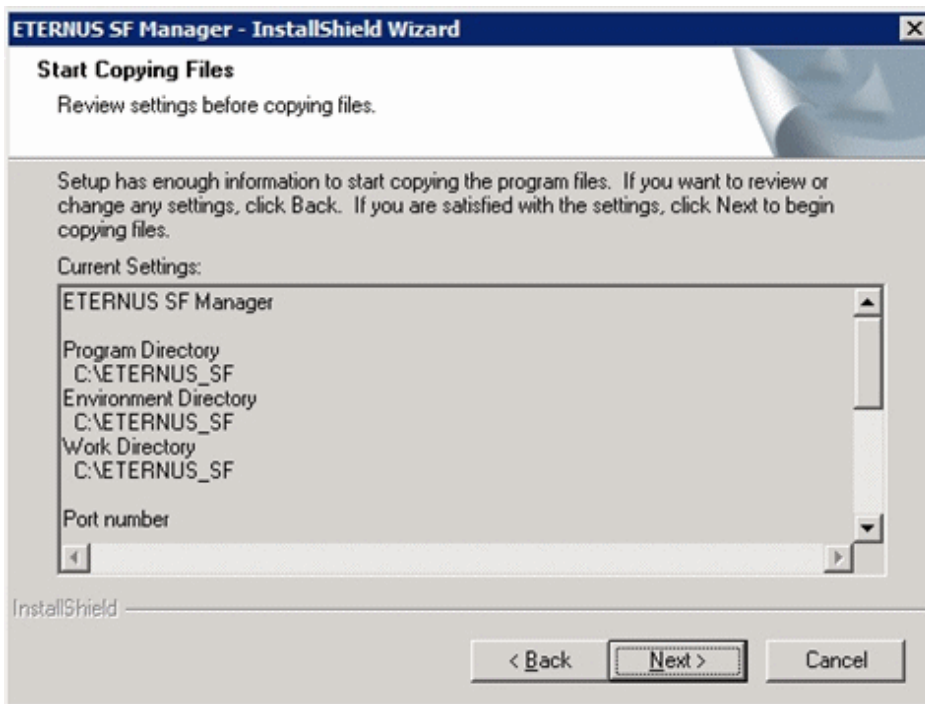
P Point

- Spaces and the characters " | : * ? / . < > , % & ^ = ! ; # ' @ () + are not supported for directory names.
- The number of characters in a directory name must be between 4 and 70.

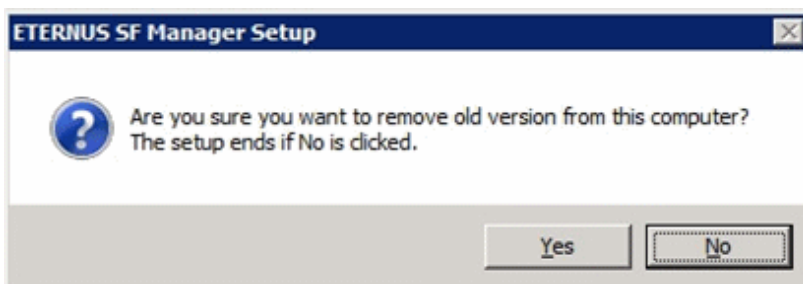
10. Check the settings information in the **Start Copying Files** page.

If the settings are correct, click **Next**.

To change a setting, click **Back**.



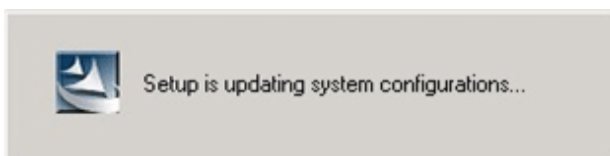
11. The following dialog box is displayed. To proceed with the uninstallation, click **Yes**.



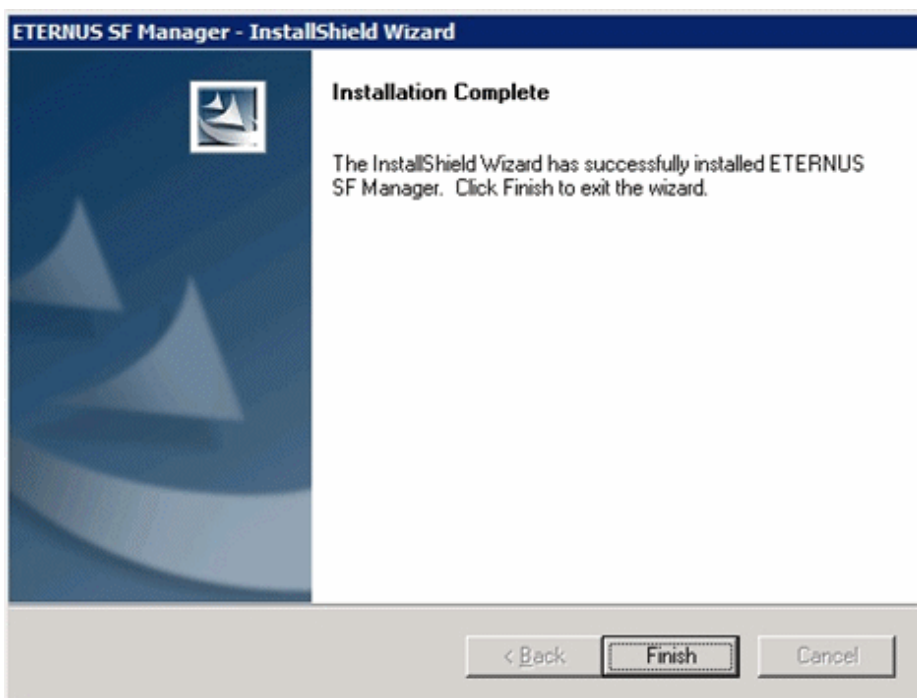
12. When the uninstallation is completed, the copying of the files for the new version is started.

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 14.x and 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.

Refer to "DVD-ROM contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

3. Mount the DVD-ROM.
Example:

```
# mount /mnt/dvd
```

4. Change the directory on the DVD-ROM where the installation shell script is stored.
Example:

```
# cd /mnt/dvd/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 /mnt/dvd/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 V16.5                |
|                |                                |
| All Rights Reserved, Copyright (C) FUJITSU LIMITED 2013-2017 |
+-----+
```

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 object product as permitted hereunder.

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1. INSTALLATION
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2. ARCHIVAL COPY
You may make one (1) archival copy of the Object Product.

3. EMBEDDING
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4. NO ASSIGNMENT
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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, and 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 will be corrected. However, if within ninety (90) days following your acquisition of the Object Product you notify the reseller from which you have acquired the Object Product of physical defects of the media containing the Object Product, Fujitsu will, at its sole discretion, correct the non-conformance or provide you with information necessary to correct the non-conformance, or replace the defective media with a new media. Only if you inform such reseller of your problem with the Object Product during the above mentioned warranty period and provide satisfactory evidence of the date you acquired the Object Product will Fujitsu be obligated to honor this warranty.

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(d) The above states the entire liability of Fujitsu in connection with the use, performance 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 license between the parties and supersede all prior or contemporaneous oral and written communications 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-Restricted 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](#)".

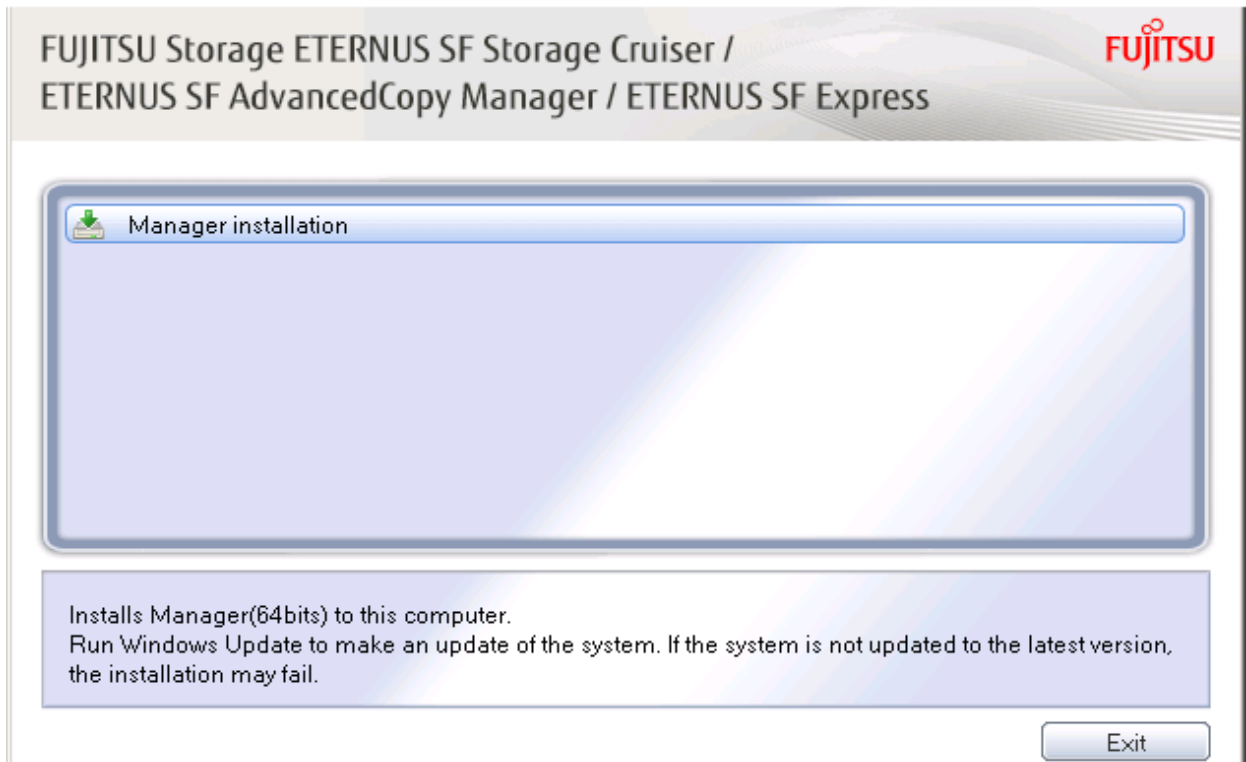
C.7.1 Performing Upgrade

The procedure of the Upgrade Installation of AdvancedCopy Manager Copy Control Module is as follows:

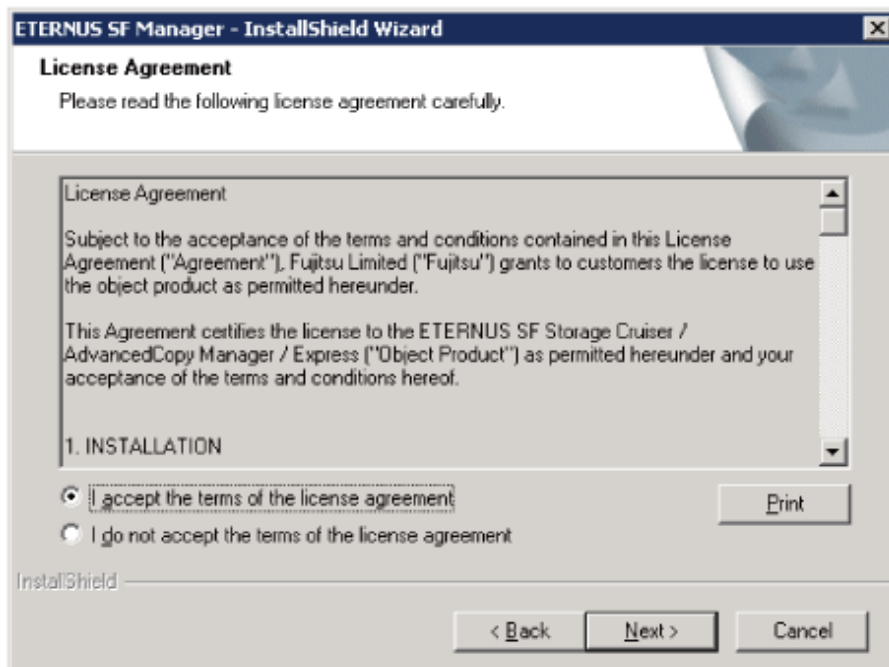
1. Insert the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" for this version into the DVD-ROM drive.

Refer to "DVD-ROM contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

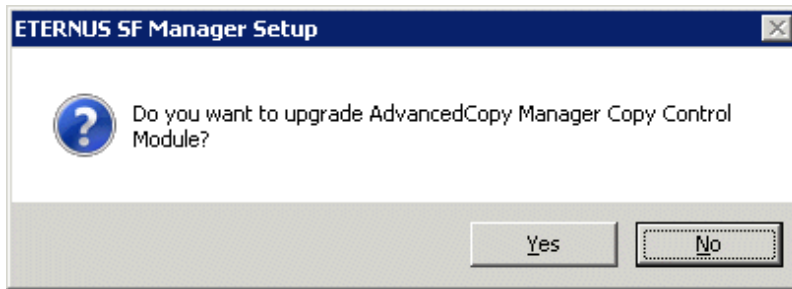
- The following window is displayed. Click **Manager installation**.
To cancel the upgrade at this point, click **Exit**.



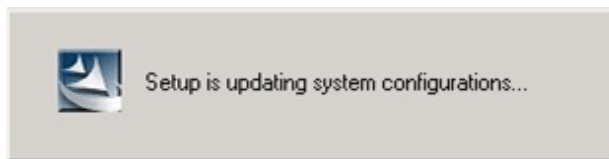
- Read the terms and conditions of the **License Agreement** page.
If the conditions are agreeable, select [I accept the terms of the license agreement] and then click **Next**.



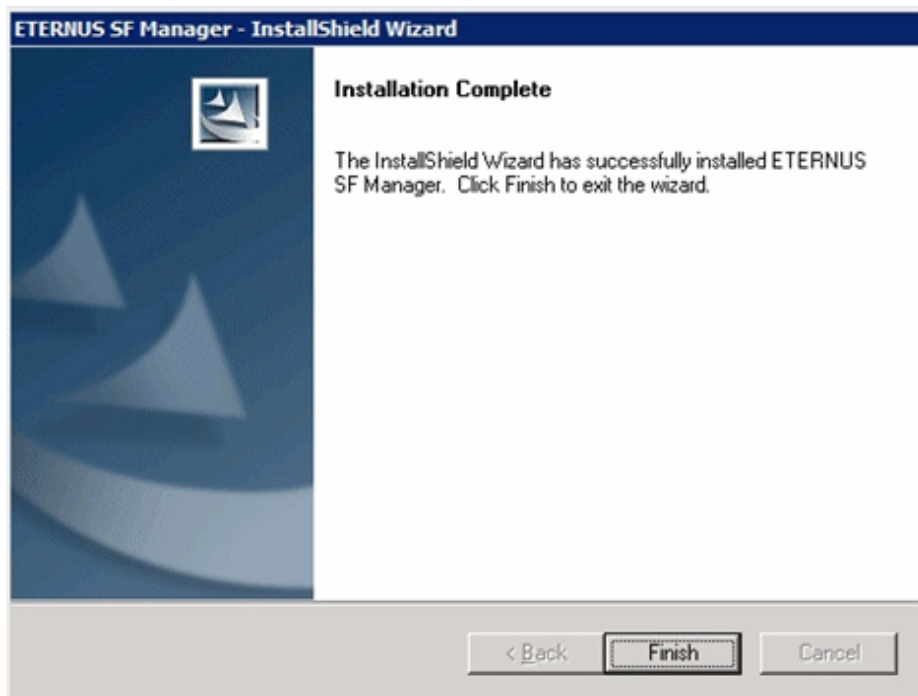
- The following screen is displayed. Click **Yes**.
If you abort the Upgrade Installation, click **No**.



- The system configuration is updated. Wait for the configuration update process to complete.



- The following installation wizard page is displayed. The upgrade process is completed. Click **Finish**.



- Eject the DVD-ROM.

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:

- Install the DVD-ROM "ETERNUS SF SC/ACM/Express Mediapack for Windows (Manager Program) (1/2)" of this version into the DVD-ROM drive. If the Installer screen is displayed by autorun, exit the installer.
- 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.
Remove the DVD-ROM media used for installation out of 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 *ETERNUS SF 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.

Refer to "DVD-ROM contents" in the *ETERNUS SF Installation and Setup Guide* for this version for information on the DVD-ROM structure and detailed contents.

2. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

3. Change the directory on the DVD-ROM where the installation shell script is stored.

Example:

```
# cd /mnt/dvd/Manager_unix
```

4. Execute the shell script.

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 "Software"), 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 thereof.

(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 collateral to a third party.

4. Warranty range

Fujitsu warrants that the Media will be free from defects in materials and manufacture under normal use for a period of 90 days from the date of delivery to you. Your sole and exclusive remedy and the entire liability of Fujitsu under this Condition of Use will be, at Fujitsu'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.

Example:

```
# umount /mnt/dvd
```

10. Remove 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 "ETERNUS SF SC / ACM Media Pack (Solaris Edition) Manager Program (2/2)" or "ETERNUS SF SC / ACM / Express Media Pack (Linux 64bit Edition) Manager Program (2/2)" DVD-ROM of this version level into the DVD-ROM drive. Refer to "Configuration of the DVD-ROM" of the *ETERNUS SF Installation and Setup Guide* for the configuration and the stored contents of the DVD-ROM.

2. Mount the DVD-ROM.

Example:

```
# mount /mnt/dvd
```

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*.

```
# <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. Remove the DVD-ROM media used for installation out of the device.
Example:

```
# umount /mnt/dvd
```

6. Eject the DVD-ROM.

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 *ETERNUS SF 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.