FUJITSU Storage
ETERNUS SF
Express V16.0/ Storage Cruiser V16.0/ AdvancedCopy Manager V16.0

Release Notes

Preface

Purpose

This manual describes the update information of the following FUJITSU Storage ETERNUS SF products:

- FUJITSU Storage ETERNUS SF Express (hereafter referred to as "Express")

- FUJITSU Storage ETERNUS SF Storage Cruiser (hereafter referred to as "Storage Cruiser")

- FUJITSU Storage ETERNUS SF AdvancedCopy Manager (hereafter referred to as "AdvancedCopy Manager")

Intended Readers

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

Organization

This manual is composed as follows:

Chapter 1 Overview of New Features

This chapter describes the overview of new functions.

Chapter 2 Compatibility Information

This chapter describes the contents changed from the previous version.

Chapter 3 Program Fix List

This chapter describes the overview of applied fixes.

Notation

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

Operating Systems

Product Name	Notation	
Microsoft(R) Windows Server(R) 2003, Standard Edition Microsoft(R) Windows Server(R) 2003, Standard x64 Edition Microsoft(R) Windows Server(R) 2003, Enterprise Edition Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition	Windows Server 2003	Windows
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	
Microsoft(R) Windows Server(R) 2008 R2 Foundation Microsoft(R) Windows Server(R) 2008 R2 Standard	Windows Server 2008 R2	

Product Name	Notation	
Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter		
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	
Windows Vista(R) Home Basic Windows Vista(R) Home Premium Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate	Windows Vista	
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	
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) AS (v.4 for x86) Red Hat(R) Enterprise Linux(R) AS (v.4 for EM64T)	RHEL-AS4	Linux
Red Hat(R) Enterprise Linux(R) ES (v.4 for x86) Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T)	RHEL-ES4	
Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64)	RHEL5	
Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64)	RHEL6	
SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T	SUSE Linux Enterprise Server 11	
HP-UX 11i v1 HP-UX 11i v2 HP-UX 11i v3	HP-UX	
AIX(R) V6.1 AIX(R) V7.1	AIX	
VMware vSphere(R) 4 Essentials Kit VMware vSphere(R) 4 Essentials Plus Kit VMware vSphere(R) 4 Standard Edition(TM) VMware vSphere(R) 4 Standard Plus Data Recovery VMware vSphere(R) 4 Advanced Edition(TM) VMware vSphere(R) 4 Enterprise Edition(TM) VMware vSphere(R) 4 Enterprise Plus Edition(TM)	VMware vSphere 4	VMware
VMware vSphere(R) 5 Essentials Kit VMware vSphere(R) 5 Essentials Plus Kit VMware vSphere(R) 5 Standard Edition(TM) VMware vSphere(R) 5 Standard Plus Data Recovery	VMware vSphere 5	

Product Name	Notation	
VMware vSphere(R) 5 Enterprise Edition(TM) VMware vSphere(R) 5 Enterprise Plus Edition(TM)		

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

FUJITSU Storage ETERNUS

Formal Name	Abbreviation		
FUJITSU Storage ETERNUS DX60/DX60 S2 FUJITSU Storage ETERNUS DX80/DX80 S2 FUJITSU Storage ETERNUS DX90/DX90 S2	-		ETERNUS Disk storage system
FUJITSU Storage ETERNUS DX100 S3 FUJITSU Storage ETERNUS DX200 S3			
FUJITSU Storage ETERNUS DX410 FUJITSU Storage ETERNUS DX440	ETERNUS DX400 series	ETERNUS DX400/ DX400 S2 series	
FUJITSU Storage ETERNUS DX410 S2 FUJITSU Storage ETERNUS DX440 S2	ETERNUS DX400 S2 series		
FUJITSU Storage ETERNUS DX500 S3 FUJITSU Storage ETERNUS DX600 S3	-		
FUJITSU Storage ETERNUS DX8100 FUJITSU Storage ETERNUS DX8400 FUJITSU Storage ETERNUS DX8700	ETERNUS DX8000 series	ETERNUS DX8000/ DX8000 S2 series	
FUJITSU Storage ETERNUS DX8100 S2 FUJITSU Storage ETERNUS DX8700 S2	ETERNUS DX8000 S2 series		
FUJITSU Storage ETERNUS DX200F	-		

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

Software Products

Formal Name	Abbreviation
Microsoft(R) Internet Explorer(R)	Internet Explorer
Mozilla(R) Firefox(R)	Firefox
Microsoft(R) Cluster Service	MSCS
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 / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Quick Reference	ETERNUS SF Quick Reference

Formal Name	Abbreviation
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Release Notes	ETERNUS SF Release Notes
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Installation and Setup Guide	ETERNUS SF Installation and Setup Guide
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Migration Guide	ETERNUS SF Migration Guide
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Web Console Guide	ETERNUS SF Web Console Guide
FUJITSU Storage ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Cluster Environment Setup Guide	ETERNUS SF Cluster Environment Setup Guide
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Messages	ETERNUS SF Messages
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser Event Guide	ETERNUS SF Event Guide
FUJITSU Storage ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF 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

- ETERNUS SF Web Console is abbreviated as "Web Console".

- In this document, unless there is a special explanatory note, ETERNUS DX200 S3 indicates ETERNUS DX200 S3 and ETERNUS DX200F. In addition, ETERNUS Disk storage system includes ETERNUS DX200F All Flash Arrays.
  However, the following functions are not supported in ETERNUS DX200F:

    - Energy saving operation for storage device

    - NAS operation for storage device

    - 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 was described.	"Others" in Preface, 1.1.2, 1.2.3	1.1

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.

When to Read	Related Manuals (Abbreviated)	Related Products (*1)			Explanation
		EXP	SC	ACM	
During operation	Operation Guide	Yes	Yes	Yes	This manual is unique for each product. The following manuals are available: - 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) - AdvancedCopy Manager Operation Guide for Copy Control Module
	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

Please 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	- Product overview - Installation decision - Overview of the necessary tasks from installation to first use	Please 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	- Main functions - Linkable applications - Procedure overview for Advanced Copy of ETERNUS Disk storage system	
Confirming the updated contents	Release Notes	- New function overview - Incompatibilities with previous version - Fixed bugs	Please read if you want to know the updated contents from a previous version and if you perform the upgrade.

Purpose	Manual	Main Contents	How to Read
Deciding if a version upgrade is required	Migration Guide	- Notes and cautions about version upgrade - Version upgrade procedure	Please 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	- Operating environment - Installation procedure - Setup procedure - Uninstallation procedure	Please read if you want to install and setup the product.
	Cluster Environment Setup Guide	- Supported cluster software - Installation procedure for a clustered system - Setup procedure for a clustered system - Uninstallation procedure for a clustered system	Please read if you want to install and setup the product on a clustered system.
Administration and operation of the installed system	Express Operation Guide	- 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	Please read if you want to start or shutdown the system, monitor the operation status, do backup/restore operations, etc.
	Storage Cruiser Operation Guide	- 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	- 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) AdvancedCopy Manager Operation Guide (for Solaris)	- Starting and stopping the software - Data backup/restore inside the storage system	

Purpose	Manual	Main Contents	How to Read
	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	- Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
	Web Console Guide	- Operating environment - Screen layout description	Please read if you want to understand the ETERNUS SF Web Console.
Dealing with messages issued by the software	Messages	- Messages and their explanations - Parameter (variable information) description - System action - Countermeasures	Please 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	- Phenomenon of event - Countermeasures	Please 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	- Product specific terminology explanation - Explanation of important terminology appearing in the manual - Synonyms and related terms - Proper form of abbreviated terms	Please read if you want to learn the meaning of important terms, product specific terms or abbreviations used in the manuals.

Contents

Chapter 1 Overview of New Features

This chapter describes the overview of features added in this version.

1.1 New Features of Express

1.1.1 New Device Support

The following features can be used with the ETERNUS DX100 S3/DX200 S3.

- Fault monitoring (SNMP Trap receiving and analyzing, Polling monitoring using ping, Obtaining device status)

- Linkage through management window

- Performance management

Refer to the *ETERNUS SF Event Guide* for information on the event traps notified from the device.

1.1.2 NAS Management Feature

A NAS management feature will be provided to operate the ETERNUS DX100 S3/DX200 S3 as a NAS device.

Refer to "NAS Management" in the *ETERNUS SF Express Operation Guide* for details.

Note

This function cannot be used for ETERNUS DX200F.

1.1.3 Feature Improvement of Web Console

Expansion of the Range of the Automatic Screen Update

The entire screen of the three panes (overview screen) of the Web Console will automatically be updated.
An update range that is the same as previous version can be selected.

Improvement of Session Timeout

In previous version, in cases when the automatic refresh interval was shorter than the session timeout interval, session timeout did not occur. In this version, regardless of the value of the automatic refresh interval, if an operation is not performed during the time specified for the session timeout interval, a session timeout will occur. The default value of the session timeout interval is 60 minutes.

It is now possible to specify "0" as the session timeout interval. When "0" is specified, session timeout will not occur.

Refer to the *ETERNUS SF Web Console Guide* for details.

1.2 New Features of Storage Cruiser

1.2.1 New Device Support

The following features can be used with the ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3. The support level is "A".

- Fault monitoring (SNMP Trap receiving and analyzing, Polling monitoring using ping, Obtaining device status)

- Linkage through management window

- Performance management

Refer to "Support levels" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

Refer to the *ETERNUS SF Event Guide* for information on the event traps notified from the device.

1.2.2 Support of One Layer Tier Pool

An FTV created in a one layer Tier pool is equivalent to a TPV. The advantage of a one layer Tier Pool over a Thin Provisioning Pool is that the number of layers can be increased. A Thin Provisioning Pool cannot be converted to a Tier Pool.

A one layer Tier Pool does not require the ETERNUS SF Storage Cruiser Optimization Option license.

Refer to the *ETERNUS SF Storage Cruiser Operation Guide* for details.

1.2.3 NAS Management Feature

A NAS management feature will be provided to operate the ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 as a NAS device.

Refer to "NAS Management" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

🔔 Note

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This function cannot be used for ETERNUS DX200F.

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1.2.4 Extreme Cache Feature

The following features are provided for the ETERNUS DX500 S3/DX600 S3 Extreme Cache.

- Configuration of enabling / disabling Extreme Cache (device units, volume units)

- Capacity configuration of Extreme Cache

- Obtaining the performance Information of Extreme Cache

1.2.5 Reporting Feature

Information of the volume connected to servers is collected and capacity information necessary for billing can be reported.

Refer to the *ETERNUS SF Storage Cruiser Operation Guide* for details.

1.2.6 Feature Improvement of Web Console

Expansion of the Range of the Automatic Screen Update

The entire screen of the three panes (overview screen) of the Web Console will automatically be updated.
An update range that is the same as previous version can be selected.

Improvement of Session Timeout

In previous version, in cases when the automatic refresh interval was shorter than the session timeout interval, session timeout did not occur. In this version, regardless of the value of the automatic refresh interval, if an operation is not performed during the time specified for the session timeout interval, a session timeout will occur. The default value of the session timeout interval is 60 minutes.

It is now possible to specify "0" as the session timeout interval. When "0" is specified, session timeout will not occur.

Refer to the *ETERNUS SF Web Console Guide* for details.

1.3 New Features of Storage Cruiser Optimization Function

In the Storage Cruiser Optimization Function, the following features are expanded.

1.3.1 New Device Support

From this version, the ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 can be used.

1.3.2 Automated Quality of Service Feature

According to task priority, task performance can be automatically tuned. The user configures the target value (in milliseconds) as response time of each volume, and the bandwidth is automatically adjusted to match the target value.

Refer to the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

1.3.3 Feature Improvement of Tier Pool

By performing the status update of the Automated Storage Tiering, the Tier pool created in the storage device can be used. Additionally, the configuration of the Tier pool embedded in the Automated Storage Tiering can be changed. The details that may be changed are as listed below.

  - Increase the number of layers with the addition of a sub pool (the number of layers cannot be decreased)

  - Change of layer level for an already created sub pool (for example, changing from Low sub pool to High sub pool)

  - Change of the Tiering policy

  - Change of the sub pool name

Refer to "Setting of Tier Pool" in the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

1.3.4 Feature Improvement of Tiering Policy

The Tiering policy allows selection of the days of the week for evaluation. Performance data only for the days of the week specified is evaluated. Also, as in the past, specification of the evaluation time frames, narrowing of the evaluation subjects, and configuration of days to exclude from the evaluation are possible. When the specified unit for the evaluation period is "Hour", values of 2, 4, 6, 8, and 12 may be specified.

Refer to "Setting of Tiering Policy" in the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

1.3.5 Feature Improvement of Web Console

Expansion of the Range of the Automatic Screen Update

The entire screen of the three panes (overview screen) of the Web Console will automatically be updated.
An update range that is the same as previous version can be selected.

Improvement of Session Timeout

In previous version, in cases when the automatic refresh interval was shorter than the session timeout interval, session timeout did not occur. In this version, regardless of the value of the automatic refresh interval, if an operation is not performed during the time specified for the session timeout interval, a session timeout will occur. The default value of the session timeout interval is 60 minutes.

It is now possible to specify "0" as the session timeout interval. When "0" is specified, session timeout will not occur.

Refer to the *ETERNUS SF Web Console Guide* for details.

1.4 New Features of AdvancedCopy Manager

1.4.1 New Device Support

From this version, the ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 can be used.

1.4.2 Backup Operation of NAS

A backup feature, for environments where the ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 is operated as a NAS device, is provided.

Refer to "Backup of NAS environment" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for details.

1.4.3 Feature Improvement of Web Console

Expansion of the Range of the Automatic Screen Update

The entire screen of the three panes (overview screen) of the Web Console will automatically be updated.
An update range that is the same as previous version can be selected.

Improvement of Session Timeout

In previous version, in cases when the automatic refresh interval was shorter than the session timeout interval, session timeout did not occur. In this version, regardless of the value of the automatic refresh interval, if an operation is not performed during the time specified for the session timeout interval, a session timeout will occur. The default value of the session timeout interval is 60 minutes.

It is now possible to specify "0" as the session timeout interval. When "0" is specified, session timeout will not occur.

Refer to the *ETERNUS SF Web Console Guide* for details.

Chapter 2 Compatibility Information

This chapter describes the contents changed from the previous version of products.

2.1 Incompatible Information List

The contents changed from the previous version of each product are shown below.

Table 2.1 Incompatible Information List of Express

Functions and Compatibility Issues	Version Before Migration				
	14.2 or Earlier	15.0	15.1	15.2	15.3
Changes for Supported Web Browsers	I	I	I	I	I
Changes for Supported Operating Systems	I	I	I	I	I
Administrator's Belonging Group	I	C	C	C	C
Troubleshooting Information Sending Function	I	C	C	C	C
Copy Group Definition Export/Import Function	I	C	C	C	C
RAID Group Automatic Creation Function	I	C	C	C	C
Different Name Setting Function for Device Information	I	C	C	C	C
Web Console Connection Address	I	C	C	C	C
Changes License Management Operation	I	C	C	C	C
Messages and Event Logs	I	C	C	C	C
Express_diag Command	I	C	C	C	C
Storageadm Perfdata Command Path Name (for Windows)	I	C	C	C	C
Troubleshooting Information Collection Command Name and Path Name (for Windows)	I	C	C	C	C
Count Method in Extended Copy Sessions and Default Filter on Session List Screen	C	I	C	C	C
Setting Method and Minimum Value for Copy Table Size	C	I	C	C	C
Screen Refresh Interval and Display/Input Unit of Web Console	C	I	I	C	C
Help Button Design and Online Help Display Procedures of Web Console	C	I	I	C	C
Changes Communication Port Default Value	I	I	I	I	I
Sanma.conf Configuration Checking for Device Registration	C	I	I	I	I
Customizing Configuration File	C	I	I	I	I
Operations for Host Response	I	I	I	I	I
Changes Character Strings in Performance Chart Window	C	I	I	I	I
Online Manual in DVD-ROM Media	I	I	I	I	I
Online Help Feature	C	I	I	I	I
Changes Configuration File Path for Port Number	C	I	I	I	I
Name of Commands Related to Configuration Import	C	I	I	I	I

Key

C: Compatible. No known compatibility issues.

I: Incompatible. Possible compatibility issues.

Table 2.2 Incompatible Information List of Storage Cruiser

Functions and Compatibility Issues	Version Before Migration									
	13.0	13.1	13.2, 13.3	13.4	14.0, 14.1	14.2	15.0	15.1	15.2	15.3
First Argument Value to Be Handed Over to Event Linkage Function	I	I	C	C	C	C	C	C	C	C
Daemon Start/Stop Command	I	I	I	I	I	I	I	I	I	I
Cmdline Resource for Clustered Environment	I	I	I	I	I	I	I	I	I	I
Displayed Contents for LVM (for HP-UX)	I	I	I	C	C	C	C	C	C	C
Message of Communication Recovery Event	I	I	I	I	C	C	C	C	C	C
Ssmgr3228 Message	C	C	C	C	I	C	C	C	C	C
SNMP Trap Reception Program Specification	I	I	I	I	I	I	I	I	I	C
Default Installation Path of Programs (for Windows)	I	I	I	I	I	I	C	C	C	C
Troubleshooting Information Collection Command Name and Path Name	I	I	I	I	I	I	C	C	C	C
Changes for Supported Devices	I	I	I	I	I	I	I	I	I	I
Changes for Supported Operating Systems	I	I	I	I	I	I	I	I	I	I
Changes for Supported Web Browsers	C	C	C	C	C	C	I	I	I	I
Changes for Supported Agent Version	I	I	I	I	I	I	I	I	I	I
Storage Volume Configuration Navigator	C	I	I	I	I	I	C	C	C	C
Supports of GUI Client	I	I	I	I	I	I	C	C	C	C
Changes for Login Account	I	I	I	I	I	I	C	C	C	C
Memo Information Table and Revolving Light Icon	I	I	I	I	I	I	C	C	C	C
Beacon Function for Solaris Server Node	I	I	I	I	I	I	C	C	C	C
Display Information of Correlation Management	I	I	I	I	I	I	C	C	C	C
Changes for Performance Management	I	I	I	I	I	I	C	C	C	C
Information Required for ETERNUS Disk Storage System Registration	I	I	I	I	I	I	C	C	C	C
SNMP Trap Setup Function Checking at Device Registration	I	I	I	I	I	I	C	C	C	C
SNMP Trap Setup After Registering Fibre Channel Switch	I	I	I	I	I	I	C	C	C	C
Thin Provisioning Pool Threshold Monitoring Icon	C	C	C	C	I	I	C	C	C	C
Display Method of Thin Provisioning Pool Capacity Chart	C	C	C	C	I	I	C	C	C	C
Managed Server Deletion Process	I	I	I	I	I	I	C	C	C	C
VM Host Deletion Procedure if VM Guests Exist on VM Host	C	C	C	I	I	I	C	C	C	C
Displayed Contents of End to End View	I	I	I	I	I	I	I	C	C	C
Changes for Map View	I	I	I	I	I	I	I	C	C	C
Output Information of Storageadm Port Command and Storageadm Iscsiport Command	C	C	C	C	C	I	I	C	C	C

Functions and Compatibility Issues	Version Before Migration									
	13.0	13.1	13.2, 13.3	13.4	14.0, 14.1	14.2	15.0	15.1	15.2	15.3
Firmware Version Notation of ETERNUS Disk Storage System	I	I	I	I	I	I	I	I	C	C
Sanadmsh Chtraprcvip Command Format	I	I	I	I	I	I	I	I	I	I
Tiering Policy Import Command Name	C	C	C	C	C	C	C	C	I	I
Output Message of Automated Storage Tiering	C	C	C	C	C	C	I	I	I	I
Count Method in Extended Copy Sessions and Default Filter on Session List Screen	C	C	C	C	C	C	I	C	C	C
Setting Method and Minimum Value for Copy Table Size	C	C	C	C	C	C	I	C	C	C
Screen Refresh Interval and Display/Input Unit of Web Console	C	C	C	C	C	C	I	I	C	C
Help Button Design and Online Help Display Procedures of Web Console	C	C	C	C	C	C	I	I	C	C
Sanma.conf Configuration Checking for Device Registration	C	C	C	C	C	C	I	I	I	I
Customizing Configuration File	I	I	I	I	I	I	I	I	I	I
Operations for Host Response	C	C	C	C	C	C	I	I	I	I
Changes Character Strings in Performance Chart Window	C	C	C	C	C	C	I	I	I	I
Online Manual in DVD-ROM Media	I	I	I	I	I	I	I	I	I	I
Online Help Feature	C	C	C	C	C	C	I	I	I	I
Changes Configuration File Path for Port Number	C	C	C	C	C	C	I	I	I	I
Name of Commands Related to Configuration Import	C	C	C	C	C	C	I	I	I	I

Key
C: Compatible. No known compatibility issues.
I: Incompatible. Possible compatibility issues.

Table 2.3 Incompatible Information List of AdvancedCopy Manager

Functions and Compatibility Issues	Version Before Migration						
	14.0 or Earlier	14.1	14.2	15.0	15.1	15.2	15.3
Registration Method for Remote ETERNUS Disk Storage System Using AdvancedCopy Manager Copy Control Module	I	I	C	C	C	C	C
Host Affinity Group List Display Command Name of AdvancedCopy Manager Copy Control Module	I	I	C	C	C	C	C
Output Messages of AdvancedCopy Manager Copy Control Module	I	I	C	C	C	C	C
Name of Term Used with AdvancedCopy Manager Copy Control Module	I	I	I	C	C	C	C
Supports of GUI Client	I	I	I	C	C	C	C
Changes for Supported Storage Devices	I	I	I	I	I	I	I

Functions and Compatibility Issues	Version Before Migration						
	14.0 or Earlier	14.1	14.2	15.0	15.1	15.2	15.3
Changes for Supported Operating Systems	I	I	I	I	I	I	I
Changes for Supported Web Browsers	C	C	C	I	I	I	I
Changes for Supported Agent Version	I	I	I	I	I	I	I
Changes for Supported Software	I	I	I	I	I	I	I
Default Installation Path of Programs (for Windows)	I	I	I	C	C	C	C
Installation Destination Directory of Program (for Solaris, Linux)	I	I	I	C	C	C	C
Command Preview	I	I	I	C	C	C	C
Stgmgrinfobkup Command Processing at -t Option Specification	I	I	I	C	C	C	C
Output Information of Stgenvdisp Command	I	I	I	C	C	C	C
Swstbackup Command Processing (for Windows)	I	I	I	C	C	C	C
Swsrpmake Command and Swsrpcancel Command Processing (for Windows)	I	I	I	C	C	C	C
Environment Setup/Deletion Methods for PRIMECLUSTER (for Linux)	I	I	I	C	C	C	C
Troubleshooting Information Collection Command Name and Path Name	I	I	I	C	C	C	C
Swsrpmake Command Processing on Combining Cascade Copy and Concurrent OPC	C	C	C	I	C	C	C
Acopc Start Command and Acsnap Start Command Processing	C	C	C	I	C	C	C
Environment Setup/Deletion Methods for Clustered Systems (for Solaris, HP-UX)	I	I	I	I	C	C	C
AdvancedCopy Manager Copy Control Module Customization Procedure	C	C	C	I	C	C	C
Copy Progress Rate of QuickOPC	I	I	I	I	C	C	C
Information to Be Displayed If Hardware Error, etc. Occurs	I	I	I	I	I	C	C
Count Method in Extended Copy Sessions and Default Filter on Session List Screen	C	C	C	I	C	C	C
Setting Method and Minimum Value for Copy Table Size	C	C	C	I	C	C	C
Screen Refresh Interval and Display/Input Unit of Web Console	C	C	C	I	I	C	C
Help Button Design and Online Help Display Procedures of Web Console	C	C	C	I	I	C	C
Changes Communication Port Default Value	I	I	I	I	I	I	I
Sanma.conf Configuration Checking for Device Registration	C	C	C	I	I	I	I
Customizing Configuration File	C	C	C	I	I	I	I
Online Manual in DVD-ROM Media	I	I	I	I	I	I	I
Online Help Feature	C	C	C	I	I	I	I
Changes Configuration File Path for Port Number	C	C	C	I	I	I	I
Name of Commands Related to Configuration Import	C	C	C	I	I	I	I

Key

C: Compatible. No known compatibility issues.

I: Incompatible. Possible compatibility issues.

2.2 Incompatible Information of Express

This section describes the changes from the previous version of Express.

2.2.1 Changes for Supported Web Browsers

The following web browsers are no longer supported.

Version	Details
15.0 to 15.3	Internet Explorer 7 Firefox 3.5
16.0 or later	Firefox 3.6 Firefox ESR 10

📖 See

. . . .

Refer to "Supported Web Browsers" in the *ETERNUS SF Web Console Guide* for the version level of the supported web browsers.

. . . .

2.2.2 Changes for Supported Operating Systems

The following operating systems are no longer supported.

Version	Details
15.0 to 15.3	Windows Server 2003, Standard Edition (non-SP) Windows Server 2003, Standard x64 Edition (non-SP and SP2) Windows Server 2003, Enterprise Edition (non-SP) Windows Server 2003, Enterprise x64 Edition (non-SP and SP2) Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Standard x64 Edition (non-SP and SP2) Windows Server 2003 R2, Enterprise Edition (non-SP) Windows Server 2003 R2, Enterprise x64 Edition (non-SP and SP2)
16.0 or later	Windows Server 2003, Standard Edition SP2 Windows Server 2003, Enterprise Edition SP2 Windows Server 2003 R2, Standard Edition SP2 Windows Server 2003 R2, Enterprise Edition SP2 Windows Server 2008 Standard without Hyper-V (32-bit) Windows Server 2008 Enterprise without Hyper-V (32-bit) Windows Server 2008 Datacenter without Hyper-V (32-bit) Windows Server 2008 Standard SP2 without Hyper-V (32-bit) Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit) Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit) Windows Server 2008 Standard (32-bit) Windows Server 2008 Enterprise (32-bit) Windows Server 2008 Datacenter (32-bit) Windows Server 2008 Standard SP2 (32-bit) Windows Server 2008 Enterprise SP2 (32-bit) Windows Server 2008 Datacenter SP2 (32-bit) Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux 6 (for x86)

If Express is installed in the above operating systems, the upgrade to this version cannot be performed. If you wish to use Express of this version, it is necessary to install it newly in the operating systems supported by Express.

2.2.3 Administrator's Belonging Group

The administrator's belonging group has been changed.

Version	Details
14.2 or earlier	System administrator: User in the Administrators group Business administrator: User in the Administrators group
15.0 or later	System administrator: User in the ESFAdmin role group Business administrator: User in the ESFMon or ESFAdmin role group

2.2.4 Troubleshooting Information Sending Function

The function to send troubleshooting information by e-mail is no longer supported.

Version	Details
14.2 or earlier	It is possible to send the troubleshooting information to the address specified by e-mail.
15.0 or later	The function is no longer supported.

2.2.5 Copy Group Definition Export/Import Function

The copy group definition export/import function is no longer supported.

Version	Details
14.2 or earlier	It is possible to use the copy group definition export/import function, and move the local site's copy group definition to the remote site. When performing a forced cancel or forced suspend operation to the remote copy session at the remote site, it is necessary to first export the copy group definition at the local site.
15.0 or later	The copy group definition export/import function is no longer supported. Instead, perform a forced cancel or forced suspend of the remote copy session without moving the copy group definition to the remote site.

2.2.6 RAID Group Automatic Creation Function

The RAID group automatic creation function for some models is no longer supported.

Version	Details
14.2 or earlier	It is possible to be selected required disks automatically and created RAID groups with the RAID group automatic creation function.
15.0 or later	The RAID group automatic creation function is not supported for ETERNUS DX60/DX60 S2/DX80/DX90.

2.2.7 Different Name Setting Function for Device Information

The function to set different names from names on the devices is no longer supported.

Version	Details
14.2 or earlier	It is possible to set different names (alias names) from names on the devices for servers, storage devices, and volumes.
15.0 or later	It is no longer supported to set different names (alias names) from names on the devices for servers, storage devices, and volumes.

2.2.8 Web Console Connection Address

The address to connect to the Management Server has been changed as follows.

Version	Details
14.2 or earlier	https://*ipAddress*:*portNumber*/express/
15.0 or later	https://*ipAddress*:*portNumber*/

See
. . . .
Refer to "How to Start Web Console" in the *ETERNUS SF Web Console Guide* for details.
. . . .

2.2.9 Changes License Management Operation

The license management process has been changed as follows.

Version	Details
14.2 or earlier	- The Advanced Copy license is selected in install options. - For product upgrades to Storage Cruiser and AdvancedCopy Manager, it is necessary to uninstall/install each product.
15.0 or later	- The Advanced Copy license can be set from the Web Console and command. - Product upgrades to Storage Cruiser and AdvancedCopy Manager are possible only through software license registration of the relevant products.
16.0 or later	- In order to use Express, the ETERNUS SF Express license is required.

See
. . . .
Refer to "License Management" in the *ETERNUS SF Installation and Setup Guide* for details.
. . . .

2.2.10 Messages and Event Logs

The messages and event logs have been changed as follows.

Version	Details
14.2 or earlier	Output the Express unique messages and event logs.
15.0 or later	Output the messages and event logs the same as Storage Cruiser.

2.2.11 Express_diag Command

The express_diag command is no longer supported.

Version	Details
14.2 or earlier	It is possible to use express_diag command.
15.0 or later	The express_diag command is no longer supported. If a problem occurs with the Express's manager, collect the required troubleshooting information, and then contact Fujitsu Technical Support.

2.2.12 Storageadm Perfdata Command Path Name (for Windows)

The path name of the storageadm perfdata command has been changed as follows.

Version	Details
14.2 or earlier	*installDir*\Express\Manager\bin (*1)
15.0 or later	*installDir*\ESC\Manager\opt\FJSVssmgr\sbin (*2)

*1: The *installDir* is "Program Directory" specified at the Express installation.
*2: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

2.2.13 Troubleshooting Information Collection Command Name and Path Name (for Windows)

The troubleshooting information collection command name and path have been changed as follows.

Version	Details
14.2 or earlier	*installDir*\Express\Manager\bin\express_managersnap (*1)
15.0 or later	*installDir*\Common\bin\esfsnap (*2)

*1: The *installDir* is "Program Directory" specified at the Express installation.
*2: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

2.3 Incompatible Information of Storage Cruiser

This section describes the changes from the previous version of Storage Cruiser.

2.3.1 First Argument Value to Be Handed Over to Event Linkage Function

In the trouble message handed by first argument, the product name of SN200 has been changed as follows.

Version	Details
13.1 or earlier	"SilkWorm *productName*"
13.2 or later	"*productName*"

Example

- -

- For Version 13.1 or earlier:

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

- For Version 13.2 or later:

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

- -

2.3.2 Daemon Start/Stop Command

The daemon start/stop command is no longer supported.
When these commands are built in operation on the system of previous version, delete them before upgrading to this version.

For Solaris

Version	Details
13.1 or earlier	/opt/FJSVrcxmr/sbin/rcxmgrctl is provided.
13.2 to 15.3	/opt/FJSVssmgr/sbin/managerctl is provided.
16.0 or later	The daemon start/stop command is not provided.

For Linux

Version	Details
15.3 or earlier	/opt/FJSVssmgr/sbin/managerctl is provided.
16.0 or later	The daemon start/stop command is not provided.

2.3.3 Cmdline Resource for Clustered Environment

The Cmdline resource for clustered environment is no longer supported.
When these scripts are built in operation on the system of previous version, delete them before upgrading to this version.

For Solaris

Type of Script	Version	Details
Start script	13.1 or earlier	/opt/FJSVrcxmr/cluster/cmd/rcxclstartcmd is provided.
	13.2 to 15.3	/opt/FJSVssmgr/cluster/cmd/rcxclstartcmd is provided.
	16.0 or later	The Cmdline resource is not provided.
Stop script	13.1 or earlier	/opt/FJSVrcxmr/cluster/cmd/rcxclstopcmd is provided.
	13.2 to 15.3	/opt/FJSVssmgr/cluster/cmd/rcxclstopcmd is provided.
	16.0 or later	The Cmdline resource is not provided.
Check script	13.1 or earlier	/opt/FJSVrcxmr/cluster/cmd/rcxclcheckcmd is provided.
	13.2 to 15.3	/opt/FJSVssmgr/cluster/cmd/rcxclcheckcmd is provided.
	16.0 or later	The Cmdline resource is not provided.

For Linux

Type of Script	Version	Details
Start script	15.3 or earlier	/opt/FJSVssmgr/cluster/cmd/rcxclstartcmd is provided.

Type of Script	Version	Details
	16.0 or later	The Cmdline resource is not provided.
Stop script	15.3 or earlier	/opt/FJSVssmgr/cluster/cmd/rcxclstopcmd is provided.
	16.0 or later	The Cmdline resource is not provided.
Check script	15.3 or earlier	/opt/FJSVssmgr/cluster/cmd/rcxclcheckcmd is provided.
	16.0 or later	The Cmdline resource is not provided.

2.3.4 Displayed Contents for LVM (for HP-UX)

The integration icon name and basic information for LVM logical/physical volume have been changed as follows.

Item	Version	Details
Integration icon name for logical volume	13.3 or earlier	PVLink Logical Volumes(*volumeName*)
	13.4 or later	LVM Logical Volumes(*volumeName*)
Basic information of integration icon for logical volume	13.3 or earlier	PVLink Logical Volumes(*volumeName*)
	13.4 or later	LVM Logical Volumes(*volumeName*)
Basic information of integration icon for physical volume	13.3 or earlier	PVLink Physical Volumes(*volumeName*)
	13.4 or later	LVM Physical Volumes(*volumeName*)

Basic information of integration icon is displayed by clicking **Basic information** tab in property screen for the integration icon.

Example

- For Version 13.3 or earlier:

    Integration icon name for logical volume: PVLink Logical Volumes(vg01)
    Integration icon for logical volume - **Basic information** tab: PVLink Logical Volumes(vg01)
    Integration icon for physical volume - **Basic information** tab: PVLink Physical Volumes(c2t0d0-7)

- For Version 13.4 or later:

    Integration icon name for logical volume: LVM Logical Volumes(vg01)
    Integration icon for logical volume - **Basic information** tab: LVM Logical Volumes(vg01)
    Integration icon for physical volume - **Basic information** tab: LVM Physical Volumes(c2t0d0-7)

2.3.5 Message of Communication Recovery Event

For the Managed devices using the "Communication status check" polling method, the messages of communication recovery event have been changed as follows.

Version	Details
13.4 or earlier	Unit status changed: OK Unit status changed: Warning Unit status changed: Error
14.0 or later	Connection OK

See

Refer to "Device Polling" in the *ETERNUS SF Storage Cruiser Operation Guide* for information on the polling methods.

2.3.6 Ssmgr3228 Message

The ssmgr3228 message output by storage management commands has been changed as follows.

Version	Details
14.1 or earlier	The specified raid group number is used in the Thin Provisioning Pool.
14.2 or later	The specified raid group cannot operate.

2.3.7 SNMP Trap Reception Program Specification

The SNMP Trap reception program specification has been changed as follows.

For Windows

Version	Details
14.1 or earlier	- SystemWalker MpWksttr is used as the SNMP Trap monitoring service. - If in use with ServerView AlarmService, the mpmsts ON command must be executed. - If in use with Systemwalker Centric Manager, no special settings are required.
14.2 or later	- The OS standard SNMP Trap monitoring service is used. 　For Windows Server 2003: SNMP Trap Service 　For Windows Server 2008 or later: SNMP Trap - If in use with ServerView AlarmService, the mpmsts ON command need not be executed. - If in use with Systemwalker Centric Manager, the settings indicating coexistence with ServerView AlarmService are required at the Systemwalker Centric Manager side.

For Linux

Version	Details
14.1 or earlier	- FJSVswstt is used as the SNMP Trap monitoring daemon. - No special settings are required to use FJSVswstt. - If in use with ServerView AlarmService, the ServerView trap transfer program is required. - If in use with any of the Systemwalker Centric Manager versions or with ServerView Resource Coordinator VE Version 2.1.1 to 2.1.3, no special settings are required.
14.2 or later	- The snmptrapd in the OS standard net-snmp package is used as the SNMP trap monitoring daemon. - The snmptrapd settings must be changed in order to use the snmptrapd. - If in use with ServerView AlarmService, the ServerView trap transfer program (SMAWtrpsv) is not required. - If in use with any of the Systemwalker Centric Manager versions or with ServerView Resource Coordinator VE Version 2.1.1 to 2.1.3, the settings indicating use with ServerView AlarmService are required at the Systemwalker Centric Manager or ServerView Resource Coordinator VE side.

For Solaris

Version	Details
15.2 or earlier	- If in use with Systemwalker Centric Manager Version 13.5 or earlier, no special settings are required. - The coexistence with Systemwalker Centric Manager Version 13.6 or later cannot be done.
15.3 or later	- The coexistence with Systemwalker Centric Manager Version 13.5 or earlier cannot be done. - If in use with Systemwalker Centric Manager Version 13.6 or later, no special settings are required.

2.3.8 Default Installation Path of Programs (for Windows)

The default installation path for programs that include manager functions has been changed as follows.

Version	Details
14.2 or earlier	C:\Program Files\ETERNUS-SSC\Manager
15.0 or later	C:\ETERNUS_SF\ESC\Manager

📑 Example

....

When having installed a program to the default installation location, the absolute path for the shell script used with a shell linkage function is as follows:

- For Version 14.2 or earlier:

  ```
  C:\Program Files\ETERNUS-SSC\Manager\opt\FJSVssmgr\lib\sample\trapop.bat
  ```

- For Version 15.0 or later:

  ```
  C:\ETERNUS_SF\ESC\Manager\opt\FJSVssmgr\lib\sample\trapop.bat
  ```

....

2.3.9 Troubleshooting Information Collection Command Name and Path Name

The name and path name of the troubleshooting information collection command for the Storage Cruiser's manager have been changed as follows.

For Windows

Version	Details
14.2 or earlier	*installDir*\Manager\opt\FJSVssmgr\sbin\managersnap (*1)
15.0 or later	*installDir*\Common\bin\esfsnap (*2)

    *1: The *installDir* is "Program Directory" specified at the Storage Cruiser's manager installation.
    *2: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

For Solaris

Version	Details
13.1 or earlier	/opt/FJSVrcxmr/sbin/rcxmgrsnap
13.2 to 14.2	/opt/FJSVssmgr/sbin/managersnap
15.0 or later	/opt/FJSVesfcm/bin/esfsnap

For Linux

Version	Details
14.2 or earlier	/opt/FJSVssmgr/sbin/managersnap
15.0 or later	/opt/FJSVesfcm/bin/esfsnap

2.3.10 Changes for Supported Devices

The following devices are no longer supported.

Version	Details
15.0 to 15.3	ETERNUS4000 models 80 and 100 ETERNUS3000 (all models) ETERNUS6000 (all models) ETERNUS GR series ETERNUS SX300, SX300S ETERNUS VS900 ETERNUS LT120/LT130/LT160 FibreCAT SX series EMC Symmetrix DMX, Clarix HITACHI HDS (HITACHI DATA SYSTEM) Disk array
16.0 or later	ETERNUS2000 (all models) ETERNUS4000 (all models) ETERNUS8000 (all models) ETERNUS VD800 Virtual Disk Controller ETERNUS SN200MDS Cisco MDS McDATA Intrepid 6140 McDATA Sphereon 4500

🔖 See
· ·

Refer to "Supported devices" in the *ETERNUS SF Installation and Setup Guide* for information on the devices that can be managed by this version of Storage Cruiser.

· ·

2.3.11 Changes for Supported Operating Systems

The following operating systems are no longer supported.

Version	Details
15.0 to 15.3	- Storage Cruiser's manager Windows Server 2008 R2 Foundation (non-SP and SP2) Windows Server 2003, Standard Edition (non-SP) Windows Server 2003, Enterprise Edition (non-SP) Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Standard x64 Edition (non-SP and SP2) Windows Server 2003 R2, Enterprise Edition (non-SP) Windows Server 2003 R2, Enterprise x64 Edition (non-SP and SP2) - Storage Cruiser's agent Windows Server 2008 for Itanium-Based Systems (non-SP and SP2) Windows Server 2003, Standard Edition (non-SP) Windows Server 2003, Standard x64 Edition (non-SP) Windows Server 2003, Enterprise Edition (non-SP) Windows Server 2003, Enterprise x64 Edition (non-SP) Windows Server 2003, Enterprise Edition for Itanium-based Systems SP2 Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Standard x64 Edition (non-SP) Windows Server 2003 R2, Enterprise Edition (non-SP) Windows Server 2003 R2, Enterprise x64 Edition (non-SP) Solaris 8 Operating System Red Hat Enterprise Linux 5 (for Intel Itanium) Red Hat Enterprise Linux AS (v.4 for Itanium) Red Hat Enterprise Linux AS (v.3 for x86)

Version	Details
	Red Hat Enterprise Linux ES (v.3 for x86) SUSE Linux Enterprise Server 9 for EM64T
16.0 or later	- Storage Cruiser's manager Windows Server 2003, Standard Edition SP2 Windows Server 2003, Enterprise Edition SP2 Windows Server 2003 R2, Standard Edition SP2 Windows Server 2003 R2, Enterprise Edition SP2 Windows Server 2008 Standard without Hyper-V (32-bit) Windows Server 2008 Enterprise without Hyper-V (32-bit) Windows Server 2008 Datacenter without Hyper-V (32-bit) Windows Server 2008 Standard SP2 without Hyper-V (32-bit) Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit) Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit) Windows Server 2008 Standard (32-bit) Windows Server 2008 Enterprise (32-bit) Windows Server 2008 Datacenter (32-bit) Windows Server 2008 Standard SP2 (32-bit) Windows Server 2008 Enterprise SP2 (32-bit) Windows Server 2008 Datacenter SP2 (32-bit) Solaris 9 Operating System Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux 6 (for x86) - Storage Cruiser's agent HP-UX 11.0 AIX 5L 5.3 VMware Infrastructure 3 Foundation VMware Infrastructure 3 Standard VMware Infrastructure 3 Enterprise

If Storage Cruiser is installed in the above operating systems, the upgrade to this version cannot be performed. If you wish to use Storage Cruiser of this version, it is necessary to install it newly in the operating systems supported by Storage Cruiser.

See

Refer to "Operating environment of ETERNUS SF Manager" and "Operating environment of Storage Cruiser's agent" in the *ETERNUS SF Installation and Setup Guide* for the operating systems supported by this version of Storage Cruiser.

2.3.12 Changes for Supported Web Browsers

The following web browsers are no longer supported.

Version	Details
16.0 or later	Firefox 3.6 Firefox ESR 10

See

Refer to "Supported Web Browsers" in the *ETERNUS SF Web Console Guide* for the version level of the supported web browsers.

2.3.13 Changes for Supported Agent Version

Connection to the following Storage Cruiser's agents is no longer supported.

Version	Details
16.0 or later	Softek Storage Cruiser's agent (all versions) ETERNUS SF Storage Cruiser's agent Version 13.x

📑 See
....
Refer to "Combination of ETERNUS SF Manager and ETERNUS SF Agent" in the *ETERNUS SF Installation and Setup Guide* for supported manager and agent combinations.
....

2.3.14 Storage Volume Configuration Navigator

Storage Volume Configuration Navigator is no longer supported.

Version	Details
14.2 or earlier	It is possible to use the Storage Volume Configuration Navigator.
15.0 or later	Storage Volume Configuration Navigator is no longer supported.

2.3.15 Supports of GUI Client

The GUI client has been replaced with the Web Console. Uninstall the installed GUI client.

Version	Details
14.2 or earlier	When operating the Storage Cruiser function with a GUI, the operation is performed from the Storage Cruiser GUI client installed on the PC.
15.0 or later	When operating the Storage Cruiser function with a GUI, the operation is performed from a web browser.

📑 See
....
Refer to the *ETERNUS SF Web Console Guide* for information on the usable web browsers and how to use the Web Console.
....

2.3.16 Changes for Login Account

The login account has been changed as follows.

Version	Details
14.2 or earlier	In order to connect to the Management Server from the Storage Cruiser client, a dedicated Storage Cruiser account is necessary.
15.0 or later	In order to connect to the Management Server from the Web Console, a dedicated Storage Cruiser account is not necessary. The Management Server's OS account is used.

2.3.17 Memo Information Table and Revolving Light Icon

The memo information table and the revolving light icon are no longer supported.

Version	Details
14.2 or earlier	- Display and edition of memo information is possible.

Version	Details
	- The revolving light icon is displayed on the Resource view.
15.0 or later	- Display and edition of memo information is not possible. The memo information created with previous versions cannot be restored in the new version. - The revolving light icon is not displayed.

2.3.18 Beacon Function for Solaris Server Node

The beacon function for the Solaris server node has been changed as follows.

Version	Details
14.2 or earlier	The beacon function is available.
15.0 or later	The beacon function is not available.

2.3.19 Display Information of Correlation Management

The correlation management display has been changed as follows.

Version	Details
14.2 or earlier	- It is possible to display the detailed relational management configuration within the device as a separate window element.
15.0 or later	- List view is possible but not as a separate window element. - The following items relative to correlation management cannot be displayed: - Business components (application) display - DBMS display - File system (mount point) display - Mirror drive display - Multipath driver display - Raw Device display - IOB display - Router display - DE display - Battery display - Element integrated display - Connection display - Configuration information saving

2.3.20 Changes for Performance Management

The performance management processing has changed as follows.

Version	Details
14.2 or earlier	- The processing for threshold monitoring of performance management function displays the condition report. - The content displaying in the performance management graph is available to output as a JPEG file.

Version	Details
15.0 or later	- The processing for threshold monitoring of performance management function does not display the condition report. - The content displaying in the performance management graph is not available to output as a JPEG file.

2.3.21 Information Required for ETERNUS Disk Storage System Registration

The information necessary for device registration of ETERNUS Disk storage system has been changed as follows.

Version	Details
14.2 or earlier	It is not necessary to specify an account of ETERNUS Disk storage system.
15.0 or later	For the following models, it is necessary to specify an account holding ETERNUS Disk storage system Software Role privileges. - ETERNUS DX80 S2/DX90 S2 - ETERNUS DX400 S2 series - ETERNUS DX8000 S2 series For models besides those listed above, it is necessary to specify an account holding ETERNUS Disk storage system Administrator privileges.

2.3.22 SNMP Trap Setup Function Checking at Device Registration

The setup function checking of SNMP Trap for registering ETERNUS Disk storage system and Fibre Channel switch has been changed as follows.

Version	Details
14.2 or earlier	The automatic setting function for SNMP Trap destination address is checked by default.
15.0 or later	The automatic setting function for SNMP Trap destination address is not checked by default.

2.3.23 SNMP Trap Setup After Registering Fibre Channel Switch

Support for SNMP Trap setup after a Fibre Channel switch has been registered has changed as follows.

Version	Details
14.2 or earlier	SNMP Trap setup can be enabled after a Fibre Channel switch has been registered.
15.0 or later	If SNMP Trap settings are changed after a Fibre Channel switch has been registered, the device must be reregistered.

2.3.24 Thin Provisioning Pool Threshold Monitoring Icon

The icon displayed when the usage of Thin Provisioning Pool exceed "alarm threshold" has been changed as follows.

Version	Details
14.2 or earlier	Displays " ".
15.0 or later	Displays " ".

2.3.25 Display Method of Thin Provisioning Pool Capacity Chart

The display method for Capacity Chart of Thin Provisioning Pool has been changed as follows.

Version	Details

14.2 or earlier	- The following items that can be selected as the content to be displayed:
	
	  - Used capacity
	
	  - Remain capacity
	
	- The following items that can be selected as the unit:
	
	  - TB
	
	  - %
	
	- The following items that can be selected as the Duration:
	
	  - Past 1 month
	
	  - Past n year (n : 1 - 10)
	
	- Two or more graph windows of Thin Provisioning Pool can be displayed with one direction.

15.0 or later	- The content to be displayed is only "Used Capacity".
	
	- The unit is only TB.
	
	- The following items that can be selected as the Duration:
	
	  - Past 1 month
	
	  - Past 1 Year
	
	  - Past 10 years
	
	- One graph window of Thin Provisioning Pool can be displayed with one direction.

2.3.26 Managed Server Deletion Process

The process for deleting a Management Server with a set access path has been changed as follows.

Version	Details
14.2 or earlier	In the case of the access path being set when deleting the Management Server, the access path is deleted at the same time.
15.0 or later	In the case of the access path being set when deleting the Management Server, it is not possible to delete the access path at the same time.

2.3.27 VM Host Deletion Procedure if VM Guests Exist on VM Host

The process for deleting a VM host if VM guests exist under this VM host has been changed as follows.

Version	Details
14.2 or earlier	When a VM host is deleted, all the VM guests under that VM host are deleted as well from the ETERNUS SF system.
15.0 or later	If a VM host with existing VM guests is deleted, all the VM guests must be first deleted from the ETERNUS SF system. The VM guests cannot be deleted as the same time as the VM host.

2.3.28 Displayed Contents of End to End View

In the displayed contents of the End to End view, the mount points and multipath driver devices fetched from Storage Cruiser's agent are added. The same applies for CSV output.

Displayed Contents		Version of Storage Cruiser	
Category	Item	15.0 or Earlier	15.1 or Later
Server	Name	Displayed	Displayed
	Type	Displayed	Displayed
	Mount Point	Not displayed	Displayed
	Multipath Driver Device	Not displayed	Displayed
	Interface Type	Displayed	Displayed
	HBA WWPN	Displayed	Displayed
	HBA iSCSI Name / IP Address	Displayed	Displayed
Switch (connected to Server)	Name	Displayed	Displayed
	Port	Displayed	Displayed
Switch (connected to Storage)	Name	Displayed	Displayed
	Port	Displayed	Displayed
Storage	Name	Displayed	Displayed
	Port	Displayed	Displayed
	AG	Displayed	Displayed
	LUN	Displayed	Displayed
	Volume	Displayed	Displayed
	TPP	Displayed	Displayed
	RG	Displayed	Displayed
	RG (Concatenated)	Displayed	Displayed

Note

The items [Mount Point] and [Multipath Driver Device] display a hyphen ("-") when:

- The OS of the Managed Server is Windows, and the version of Storage Cruiser's agent is Version 15.0 or earlier.

2.3.29 Changes for Map View

The map view function has been changed as follows.

Version	Details
14.2 or earlier	A map (icon) display and a list display are available. The map display can display connecting lines between icons, statuses of access paths, and physical lines that are forming access paths, and allows for drag-and-drop setting of access paths.
15.0	Only a list display, but no map display is available. Settings for the map display (display of connecting lines between icons, statuses of access paths, and physical lines that are forming access paths, as well as drag-and-drop setting of access paths) are not available.
15.1 or later	A map display and a list display are available. The map display allows for display of connecting lines between icons, statuses of access paths, and physical lines that are forming access paths. Drag-and-drop setting of access paths is not available.

2.3.30 Output Information of Storageadm Port Command and Storageadm Iscsiport Command

The output information of the storageadm port command and storageadm iscsiport command for the following devices has been changed as follows.

Device Name	Number of CMs per Device	Number of ports per CM	Remarks
ETERNUS DX60/DX60 S2 ETERNUS DX80	1	2	
	2	1	
ETERNUS DX90	1	4	The storageadm port command only

Output information of the storageadm port command:

Version	Details

15.0 or earlier	Absent port information is displayed. The command execution example is as follows:
	
	`# /opt/FJSVssmgr/sbin/storageadm port info -ipaddr 1.2.3.4 -csv`
	`PORT ID,PORT NAME,STATUS,TYPE,AFFINITY,PORT ADDRESS,SUPPLEMENT INFORMATION`
	`00,CM0Port0,Online,FC-CA,On,1234567890ABCDEE,-`
	`01,CM0Port1,Undefined,FC-CA,Off,0000000000000000,-`
	`10,CM1Port0,Online,FC-CA,On,1234567890ABCDEF,-`
	`11,CM1Port1,Undefined,FC-CA,Off,0000000000000000,-`

15.1 or later	Absent port information is not displayed. The command execution example is as follows:
	
	`# /opt/FJSVssmgr/sbin/storageadm port info -ipaddr 1.2.3.4 -csv`
	`PORT ID,PORT NAME,STATUS,TYPE,AFFINITY,PORT ADDRESS,SUPPLEMENT INFORMATION`
	`00,CM0Port0,Online,FC-CA,On,1234567890ABCDEE,-`
	`10,CM1Port0,Online,FC-CA,On,1234567890ABCDEF,-`

Output information of the storageadm iscsiport command:

Version	Details

15.0 or earlier	Absent port information is displayed. The command execution example is as follows:
	
	`# /opt/FJSVssmgr/sbin/storageadm iscsiport info -ipaddr 1.2.3.4 -csv`
	`PORT ID,NAME,STATUS,TYPE,AFFINITY,ISCSI NAME,IP ADDRESS`
	`00,CM0Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-`
	`system.e2000:0000000029,172.16.4.40`
	`01,CM0Port1,Undefined,iSCSI-CA,Off, ,-`
	`10,CM1Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-`
	`system.e2000:0000000029,172.16.4.41`
	`11,CM1Port1,Undefined,iSCSI-CA,Off, ,-`

15.1 or later	Absent port information is not displayed. The command execution example is as follows:
	
	`# /opt/FJSVssmgr/sbin/storageadm iscsiport info -ipaddr 1.2.3.4 -csv`
	`PORT ID,NAME,STATUS,TYPE,AFFINITY,ISCSI NAME,IP ADDRESS`
	`00,CM0Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-`
	`system.e2000:0000000029,172.16.4.40`
	`10,CM1Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-`
	`system.e2000:0000000029,172.16.4.41`

2.3.31 Firmware Version Notation of ETERNUS Disk Storage System

The firmware version notation of ETERNUS Disk storage system has been changed as follows.

Version	Details	Remarks
15.1 or earlier	V*xx*L*yy*P*zzzz*	*xx*: Version
15.2 or later	V*xx*L*yy*-*zzzz*	*yy*: Level *zzzz*: Release

2.3.32 Sanadmsh Chtraprcvip Command Format

The values that can be specified for *DeviceID* operand of the sanadmsh chtraprcvip command have changed.

Version	Details
15.3 or earlier	The following can be specified as a device type: - -host - -storage - -library - -switch - -hub - -bridge Specify one of the following as the way to identify a device: - ip: IP address of a device - sysname: SysName name of SNMP that is set to the device - nickname: Device management name that is set for this software
16.0 or later	The following can be specified as a device type: - -all - -host - -storage - -library - -switch If "-all" is specified as a device type, it is unnecessary to specify the way to identify a device. If a value other than "-all" is specified as the device type, specify either of the following as the way to specify a device: - ip: IP address of a device - sysname: SysName name of SNMP that is set to the device

See
. . . .
Refer to "Command References" in the *ETERNUS SF Storage Cruiser Operation Guide* for information on the command.
. . . .

2.3.33 Tiering Policy Import Command Name

The Tiering policy import command name has been changed as follows.

Version	Details
15.2 to 15.3	The command name is "esfimporttierpolicy".
16.0 or later	The command name is "esfadm tierpolicy import".

2.3.34 Output Message of Automated Storage Tiering

The messages output by Automated Storage Tiering have been changed as follows.

Message ID	Version 15.3 or Earlier	Version 16.0 or Later
esast0107	Illegal internal processing has been detected.Unable to use the service ({0}) from any remote clients.	Invalid internal processing has been detected.Unable to use the service ({0}) from any remote clients.
esast0111	Illegal internal processing has been detected.Unknown remote object ({3}) has been detected in communication between client and manager.The manager address is {0}:{1}/{2}.	Invalid internal processing has been detected.Unknown remote object ({3}) has been detected in communication between client and manager.The manager address is {0}:{1}/{2}.
esast0112	Illegal internal processing has been detected on the manager.Unable to create the service ({0}).	Invalid internal processing has been detected on the manager.Unable to create the service ({0}).
esast0113	Illegal internal processing has been detected: {0}	Invalid internal processing has been detected: {0}
esast0997	Encoding string list for ({0}) is failed.	Encoding string for ({0}) failed.
esast1101	Internal error. License information is not set.	Internal error occurred in license information settings.
esast1103	The expiration date of the license ({0}) has passed.	Required license ({0}) to enable this function is expired.
esast2001	Reading the policy datafile is failed.	Loading tiering policy data file failed.
esast2002	Making backup of the policy datafile is failed.	Making backup of tiering policy data file is failed.
esast2003	The policy data ({0}) was not able to be added to the policy datafile.	Tiering policy ({0}) was not able to be added to tiering policy data file.
esast2004	The policy data ({0}) was not able to be updated to the policy datafile.	Tiering policy ({0}) was not able to be updated to tiering policy data file.
esast2005	The policy data ({0}) was not able to be removed to the policy datafile.	Tiering policy ({0}) was not able to be removed to tiering policy data file.
esast2006	The policy data ({0}) is already existed.	Tiering policy ({0}) exists.
esast2007	The policy data ({0}) does not exist.	Tiering policy ({0}) does not exist.
esast2008	The Auto tier service ({0}) has already been started. policy name={1}	The Automated Storage Tiering ({0}) has already been started. Policy Name={1}
esast2009	The number of policy data is already the maximum numbers.	The number of policy is already the maximum numbers.
esast2010	The policy data ({0}) has inaccurate the range of level. level={1}	There is error in Data Range of Tier Level in tiering policy ({0}). Data Range of Tier Level={1}
esast2011	The tier pool ({0}) used by policy data ({1}) is already existed.	Tier pool ({0}) using tiering policy ({1}) exists.
esast2012	The policy data ({0}) has inaccurate expire. type={1} expire={2}	There is error in specified Automated Storage Tiering Time Limit in tiering policy ({0}). Evaluation Period(type)={1} Automated Storage Tiering Time Limit={2}
esast2013	The policy data ({0}) has inaccurate interval. type={1} interval={2}	There is error in specified Evaluation Period in tiering policy ({0}). Evaluation Period(type)={1} Evaluation Period(interval)={2}
esast3001	Reading the tier datafile ({0}) is failed.	Loading tier pool data file ({0}) failed.
esast3002	Making backup of the tier datafile ({0}) is failed.	Making backup of tier pool data file ({0}) is failed.
esast3003	The tier data ({0}) was not able to be added to the tier datafile.	Tier pool ({0}) was not able to be added to tier pool data file.
esast3004	The tier data ({0}) was not able to be updated to the tier datafile.	Tier pool ({0}) was not able to be updated to tier pool data file.

Message ID	Version 15.3 or Earlier	Version 16.0 or Later
esast3005	The tier data ({0}) was not able to be removed to the tier datafile.	Tier pool ({0}) was not able to be removed to tier pool data file.
esast3006	The tier data ({0}) is already existed.	Tier pool ({0}) is already existed.
esast3007	The tier data ({0}) does not exist.	Tier pool ({0}) does not exist.
esast3012	Group setting of Flexible Tier Sub Pool set to the Tier pool ({0}) is not corresponding to the level setting of policy data ({1}).	Configuration of Sub Pool set to Tier pool ({0}) does not agree with level configuration of tiering policy ({1}).
esast3013	The tier data ({0}) is not exist Flexible tier sub pool number ({1}).	FTSP Number ({1}) does not exist in Tier pool ({0}).
esast3014	Ratio setting of FTV ({0}) is wrong.	FTV Quota Share setting ({0}) is wrong.
esast3015	Ratio setting of FTV ({0}) is not corresponding to the Flexible tier sub pool setting of Tier pool ({1}).	FTV Quota Share setting ({0}) is not corresponding to the sub pool setting of tier pool ({1}).
esast3016	FTV number(s) ({0}) does not exist.	FTV Number(s) ({0}) does not exist.
esast4900	The Automated storage tiering of specified Tier pool name ({0}) has already been started.	The Automated storage tiering of specified Tier Pool Name ({0}) has already been started.
esast4901	The pool name ({0}) which did not start was appointed. Please begin the Automated storage tiering.	The Tier Pool Name ({0}) which did not start was appointed. Please begin the Automated storage tiering.
esast4902	The Automated storage tiering information related to Tier pool name ({0}) does not exist.	The Automated storage tiering information related to Tier Pool Name ({0}) does not exist.
esast4903	Illegal start mode ({1}) was specified. Please confirm Tier pool definition ({0}).	Invalid Execution Mode ({1}) was specified.
esast4904	Illegal start time ({1}) was specified. Please confirm Tier pool definition ({0}).	Invalid start time ({0}) was specified.
esast4905	It failed in the acquisition of the definition that related to specified Tier pool name ({0}). Result({1})	Obtaining definition related to specified Tier Pool Name ({0}) failed. Result ({1})
esast4906	The specified number of volume is not exists in a list of reallocation. The volume reallocation is discontinued. Tier pool name={0} volume number={1} evaluation date={2}	Specified FTV Number does not exist in relocated volume list. Discontinue volume relocation. Tier Pool Name={0} FTV Number={1} Evaluation Date={2}
esast4907	The specified number of volume is not exists in a list of reallocation. The volume clear is discontinued. Tier pool name={0} volume number={1} evaluation date={2}	Specified FTV Number does not exist in relocated volume list. Discontinue volume clear. Tier Pool Name={0} FTV Number={1} Evaluation Date={2}
esast5001	Failed to extract the performance data of Tier Pool ({0}).	Extracting performance data for tier pool ({0}) failed.
esast5002	Failed to aggregate the performance data of Tier Pool ({0}).	Aggregating performance data for tier pool ({0}) failed.
esast5051	Failed to delete all the performance data of Tier Pool ({0}).	Deleting all-tier performances information of tier pool ({0}) failed.
esast5054	Failed to update the reallocate status of Tier Pool ({0}).	Failed to update the relocation status of Tier Pool ({0}).
esast5102	Failed to get all the history of tiers of Tier Pool ({0}).	Obtaining all-tier information histories of tier pool ({0}) failed.
esast5951	Inconsistency definition has occurred at Tier Pool ({0}).	Definition inconsistency occurred at tier pool ({0}).
esccs02504	Re-registration of tier policy failed because some tier policies already exist.	Re-registration of tiering policy failed because some tier policies already exist.

Message ID	Version 15.3 or Earlier	Version 16.0 or Later
esccs02505	Tier policy does not exist in the definition file.	There was no policy in tiering policy definition.

2.4 Incompatible Information of AdvancedCopy Manager

This section describes the changes from the previous version of AdvancedCopy Manager.

2.4.1 Registration Method for Remote ETERNUS Disk Storage System Using AdvancedCopy Manager Copy Control Module

In AdvancedCopy Manager Copy Control Module, the method for registering remote ETERNUS Disk storage system has been changed as follows.

OS	Version	Details
Windows	14.0 or earlier	Register by specifying a nonexistent drive letter as an access path (*1)
	14.1 or later	Register by specifying the Box ID of ETERNUS Disk storage system
Solaris, Linux	14.1 or earlier	Register by specifying a nonexistent drive letter as an access path (*1)
	14.2 or later	Register by specifying the Box ID of ETERNUS Disk storage system

*1: The term "access path" is changed to the "access volume" from Version 15.0.

2.4.2 Host Affinity Group List Display Command Name of AdvancedCopy Manager Copy Control Module

In AdvancedCopy Manager Copy Control Module, the name of the host affinity group list display command has been changed as follows.

Version	Details
14.1 or earlier	acinq hag
14.2 or later	acinq hostag

2.4.3 Output Messages of AdvancedCopy Manager Copy Control Module

The messages output by AdvancedCopy Manager Copy Control Module have been changed as follows.

Message ID	Version 14.1 or Earlier	Version 14.2 or Later
ccm1001	Input parameter is illegal.	An invalid argument was specified.
ccm1002	An invalid option is specified. option=*option*	An invalid option was specified. option=*option*
ccm1003	An invalid parameter is specified. option=*option*, parameter=*parameter*	An invalid parameter was specified. option=*option*, parameter=*parameter*
ccm1004	An invalid option is specified. copy group=*copyGroup*, copy type=*copyType*, option=*option*	An invalid option was specified for the copy type. copy group=*copyGroup*, copy type=*copyType*, option=*option*
ccm2001	This program requires administrative privileges of the operation system.	This command requires operating system's administrative privileges.
ccm3001	The disk array already exists. disk array=*arrayName*	The specified disk array is already registered. disk array=*arrayName*
ccm3002	The copy group already exists. copy group=*copyGroup*	The specified copy group is already registered. Copy group=*copyGroup*

Message ID	Version 14.1 or Earlier	Version 14.2 or Later
ccm3003	The pair already exists. copy group=*copyGroup*, pair=*copyPair*	The specified copy pair is already registered. copy group=*copyGroup*, pair=*copyPair*
ccm3004	An invalid pair is specified. pair=*copyPair*, detail=*detail*	An invalid copy pair was specified. pair=*copyPair*, detail=*detail*
ccm4001	The disk array does not exist. disk array=*arrayName*	The specified disk array does not exist. disk array=*arrayName*
ccm4002	The disk array does not exist. disk array=*boxID*	The specified disk array does not exist. disk array=*boxID*
ccm4003	The copy group is not found. copy group=*copyGroup*	The specified copy group was not found. copy group=*copyGroup*
ccm4004	The pair is not found. copy group=*copyGroup*	No copy pair was found for the specified copy group. copy group=*copyGroup*
ccm4005	The pair is not found. copy group=*copyGroup*, pair=*copyPair*	The specified copy pair was not found. copy group=*copyGroup*, pair=*copyPair*
ccm4006	The logical volume is not found. logical volume=*volumeName*	The specified logical volume was not found. logical volume=*volumeName*
ccm4007	An invalid copy group is specified. copy group=*copyGroup*, copy type=*copyType*	An invalid copy group was specified. copy group=*copyGroup*, copy type=*copyType*
ccm5005	An invalid mount point is specified. mount point=*mountPoint*	An invalid mount point was specified. mount point=*mountPoint*
ccm5006	An invalid device is specified. device=*deviceName*	An invalid device was specified. device=*deviceName*

2.4.4 Name of Term Used with AdvancedCopy Manager Copy Control Module

The name of the logical volume used to access the ETERNUS Disk storage system via SAN has been changed as follows.

Version	Details
14.2 or earlier	Access path
15.0 or later	Access volume

2.4.5 Supports of GUI Client

The GUI client has been replaced with the Web Console.

Version	Details
14.2 or earlier	When operating the AdvancedCopy Manager function with a GUI, the operation is performed from the AdvancedCopy Manager GUI client installed on the PC.
15.0 or later	When operating the AdvancedCopy Manager function with a GUI, the operation is performed from a web browser.

See
....
Refer to the *ETERNUS SF Web Console Guide* for information on the usable web browsers and how to use the Web Console.
....

2.4.6 Changes for Supported Storage Devices

The following storage devices are no longer supported.

Version	Details
15.0 to 15.3	ETERNUS4000 models 100 ETERNUS3000 (all models) ETERNUS6000 (all models) ETERNUS GR series
16.0 or later	ETERNUS2000 (all models) ETERNUS4000 (all models) ETERNUS8000 (all models)

See

. . . .

Refer to "Supported devices" in the *ETERNUS SF Installation and Setup Guide* for information on the devices that can be managed by this version of AdvancedCopy Manager.

. . . .

2.4.7 Changes for Supported Operating Systems

The following operating systems are no longer supported.

Version	Details
15.0 to 15.3	- AdvancedCopy Manager's manager Windows Server 2003, Standard Edition (SP1) Windows Server 2003, Enterprise Edition (SP1) Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Enterprise Edition (non-SP) - AdvancedCopy Manager's agent Windows Server 2008 for Itanium-Based Systems (non-SP and SP2) Windows Server 2003, Standard Edition (SP1) Windows Server 2003, Standard x64 Edition (SP1) Windows Server 2003, Enterprise Edition (non-SP) Windows Server 2003, Enterprise x64 Edition (non-SP) Windows Server 2003, Enterprise Edition for Itanium-based Systems (non-SP and SP2) Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Standard x64 Edition (non-SP) Windows Server 2003 R2, Enterprise Edition (non-SP) Windows Server 2003 R2, Enterprise x64 Edition (non-SP) Solaris 8 Operating System Red Hat Enterprise Linux 5 (for Intel Itanium) Red Hat Enterprise Linux AS (v.4 for Itanium) - AdvancedCopy Manager Copy Control Module Windows Server 2008 for Itanium-Based Systems (non-SP and SP2) Windows Server 2003, Standard Edition (SP1) Windows Server 2003, Standard x64 Edition (SP1) Windows Server 2003, Enterprise Edition (non-SP) Windows Server 2003, Enterprise x64 Edition (non-SP) Windows Server 2003, Enterprise Edition for Itanium-based Systems (non-SP and SP2) Windows Server 2003 R2, Standard Edition (non-SP) Windows Server 2003 R2, Enterprise Edition (non-SP) Windows Server 2003 R2, Standard x64 Edition (non-SP) Windows Server 2003 R2, Enterprise x64 Edition (non-SP)
16.0 or later	- AdvancedCopy Manager's manager

Version	Details
	Windows Server 2003, Standard Edition SP2 Windows Server 2003, Enterprise Edition SP2 Windows Server 2003 R2, Standard Edition SP2 Windows Server 2003 R2, Enterprise Edition SP2 Windows Server 2008 Standard without Hyper-V (32-bit) Windows Server 2008 Enterprise without Hyper-V (32-bit) Windows Server 2008 Datacenter without Hyper-V (32-bit) Windows Server 2008 Standard SP2 without Hyper-V (32-bit) Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit) Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit) Windows Server 2008 Standard (32-bit) Windows Server 2008 Enterprise (32-bit) Windows Server 2008 Datacenter (32-bit) Windows Server 2008 Standard SP2 (32-bit) Windows Server 2008 Enterprise SP2 (32-bit) Windows Server 2008 Datacenter SP2 (32-bit) Solaris 9 Operating System Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux 6 (for x86) - AdvancedCopy Manager's agent HP-UX 11.0 AIX 5L 5.1 AIX 5L 5.2 AIX 5L 5.3 - AdvancedCopy Manager Copy Control Module Windows Server 2003 R2, Standard Edition SP2 Windows Server 2003 R2, Standard x64 Edition SP2 Windows Server 2003 R2, Enterprise Edition SP2 Windows Server 2003 R2, Enterprise x64 Edition SP2 Windows Server 2003, Standard Edition SP2 Windows Server 2003, Standard x64 Edition SP2 Windows Server 2003, Enterprise Edition SP2 Windows Server 2003, Enterprise x64 Edition SP2 Windows Server 2008 Standard without Hyper-V (32-bit) Windows Server 2008 Enterprise without Hyper-V (32-bit) Windows Server 2008 Datacenter without Hyper-V (32-bit) Windows Server 2008 Standard SP2 without Hyper-V (32-bit) Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit) Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit) Windows Server 2008 Standard (32-bit) Windows Server 2008 Enterprise (32-bit) Windows Server 2008 Datacenter (32-bit) Windows Server 2008 Standard SP2 (32-bit) Windows Server 2008 Enterprise SP2 (32-bit) Windows Server 2008 Datacenter SP2 (32-bit) Red Hat Enterprise Linux 5 (for x86) Red Hat Enterprise Linux 6 (for x86)

If AdvancedCopy Manager is installed in the above operating systems, the upgrade to this version cannot be performed. If you wish to use AdvancedCopy Manager of this version, it is necessary to install it newly in the operating systems supported by AdvancedCopy Manager.

2.4.8 Changes for Supported Web Browsers

The following web browsers are no longer supported.

Version	Details
16.0 or later	Firefox 3.6 Firefox ESR 10

2.4.9 Changes for Supported Agent Version

Connection to the following AdvancedCopy Manager's agents is no longer supported.

Version	Details
15.0 to 15.3	Softek AdvancedCopy Manager's agent (all versions)
16.0 or later	ETERNUS SF AdvancedCopy Manager's agent Version 13.x

2.4.10 Changes for Supported Software

The following software is no longer supported.

Version	Details
16.0 or later	SQL Server 2000

2.4.11 Default Installation Path of Programs (for Windows)

The default install path for programs that include manager functions has been changed as follows.

Version	Details
14.2 or earlier	C:\Win32app\AdvancedCopyManager
15.0 or later	C:\ETERNUS_SF\ACM

📘 Example
. . . .

When having installed a program to the default installation location, the full path of the stgcmmodnode command is as follows:

- For Version 14.2 or earlier:

  `C:\Win32app\AdvancedCopyManager\bin\stgcmmodnode`

- For Version 15.0 or later:

  `C:\ETERNUS_SF\ACM\bin\stgcmmodnode`

. . . .

2.4.12 Installation Destination Directory of Program (for Solaris, Linux)

The installation destination directory specification for the ETERNUS SF Manager and AdvancedCopy Manager Copy Control Module has been changed as follows.

Installation Destination Directory	Version 14.2 or Earlier	Version 15.0 or Later
Program install directory (Installation destination directory of packages)	Specification is required. The default is /opt.	Cannot be specified. The /opt is a fixed directory.
Fixed configuration directory (Installation destination directory of environment setting files)	Specification is required. The default is /etc/opt.	Cannot be specified. The /etc/opt is a fixed directory.
Modifying configuration directory (Installation destination directory of files to be modified; log file, tmporary file, etc.)	Specification is required. The default is /var/opt.	Cannot be specified. The /var/opt is a fixed directory.

2.4.13 Command Preview

Command preview is no longer supported.

Version	Details
14.2 or earlier	The command preview allows checking the available task operations (command options) prior to execution.
15.0 or later	There is no command preview.

📗 See
. . . .
Refer to "Command References" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for information on the commands.
. . . .

2.4.14 Stgmgrinfobkup Command Processing at -t Option Specification

The following changes have been made when the AuthData is specified to the -t option argument of the stgmgrinfobkup command.

Version	Details
14.2 or earlier	The command backs up the authentication management file.
15.0 or later	The command terminates abnormally because of the syntax error.

2.4.15 Output Information of Stgenvdisp Command

The information displayed on the Management Server has changed as follows.

Version	Details
14.2 or earlier	Displays "Authentication feature" and "IP address for GUI".
15.0 or later	Does not display "Authentication feature" and "IP address for GUI".

2.4.16 Swstbackup Command Processing (for Windows)

For Windows, the swstbackup command processing under the following conditions has been changed.

- The -Xflush option is not specified, and

- The BufferFlushOnly parameter is not described in the transaction volume locking specification file for backups, or when the transaction volume locking specification file for backups does not exist.

Version	Details
14.2 or earlier	Locks the transaction volume.
15.0 or later	Flushes the file system buffer for the transaction volume.

Version	-Xflush Option	If BufferFlushOnly Value Is On	If BufferFlushOnly Value Is Off	If BufferFlushOnly Parameter Is Not Described	If Transaction Volume Locking Specification File for Backups Does Not Exist
14.2 or earlier	Not specify	Flush	Lock	Lock	Lock
	Specify	Flush	Flush	Flush	Flush
15.0 or later	Not specify	Flush	Lock	Flush	Flush
	Specify	Flush	Flush	Flush	Flush

Lock: Locks the transaction volume.
Flush: Flushes the file system buffer for the transaction volume.

2.4.17 Swsrpmake Command and Swsrpcancel Command Processing (for Windows)

For Windows, the swsrpmake command processing and swsrpcancel command processing under the following conditions have been changed.

- The -Xflush option is not specified, and

- The BufferFlushOnly parameter is not described in the copy source volume locking specification file, or when the copy source volume locking specification file does not exist.

Version	Details
14.2 or earlier	Locks the copy source volume.
15.0 or later	Flushes the file system buffer for the copy source volume.

Information

For Windows, the relation between the -Xflush option of the swsrpmake/swsrpcancel commands and the copy source volume locking specification file is as follows.

Version	-Xflush Option	If BufferFlushOnly Value Is On	If BufferFlushOnly Value Is Off	If BufferFlushOnly Parameter Is Not Described	If Copy Source Volume Locking Specification File Does Not Exist
14.2 or earlier	Not specify	Flush	Lock	Lock	Lock
	Specify	Flush	Flush	Flush	Flush
15.0 or later	Not specify	Flush	Lock	Flush	Flush
	Specify	Flush	Flush	Flush	Flush

Lock: Locks the copy source volume.
Flush: Flushes the file system buffer for the copy source volume.

Note

When using the server-to-server replication and AdvancedCopy Manager installed in the Management Server (where the replication source volume exists) is Version 14.2 or earlier, the processing will revert to those of Version 14.2 or earlier.

2.4.18 Environment Setup/Deletion Methods for PRIMECLUSTER (for Linux)

The methods for environment setup/deletion to PRIMECLUSTER for Linux have been changed as follows.

Version	Details
14.2 or earlier	Environment setup and deletion are performed with the following commands. - stgclset_lxprm command - stgclunset_lxprm command
15.0 or later	The above two commands are not supported. Instead, environment setup and deletion are performed by the Linux/HP-UX version cluster setup and un-setup procedures.

2.4.19 Troubleshooting Information Collection Command Name and Path Name

The name and path name of the troubleshooting information collection command for the AdvancedCopy Manager's manager have been changed as follows.

Version	Details
14.2 or earlier	- For Windows *installDir*\bin\acmcapture (*1) - For Solaris or Linux

Version	Details
	/opt/FJSVswstf/bin/acmcapture

15.0 or later	- For Windows
	
	  installDir\Common\bin\esfsnap (*2)
	
	- For Solaris or Linux
	
	  /opt/FJSVesfcm/bin/esfsnap

    *1: The *installDir* is "Program Directory" specified at the AdvancedCopy Manager's manager installation.

    *2: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

The name and path name of the troubleshooting information collection command for the AdvancedCopy Manager Copy Control Module have been changed as follows.

Version	Details

14.2 or earlier	- For Windows
	
	  installDir\bin\acmcapture (*1)
	
	- For Solaris or Linux
	
	  /opt/FJSVccm/bin/acmcapture

15.0 or later	- For Windows
	
	  installDir\Common\bin\esfsnap (*2)
	
	- For Solaris or Linux
	
	  /opt/FJSVesfcm/bin/esfsnap

    *1: The *installDir* is "Program Directory" specified at the AdvancedCopy Manager Copy Control Module installation.

    *2: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

2.4.20 Swsrpmake Command Processing on Combining Cascade Copy and Concurrent OPC

The swsrpmake command processing under the following conditions has been changed.

- A volume used by cascade copy has been specified as a copy source, and

- The -Xconcur-opc option has been specified.

Version	Details
15.0	The sequence of data updates will not be preserved across multiple volumes.
15.1 or later	The sequence of data updates will be preserved across multiple volumes.

See
....
Refer to "Notes on combining cascade copy and Concurrent OPC in operation" in "Notes on snapshot high-speed backup" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for details.
....

2.4.21 Acopc Start Command and Acsnap Start Command Processing

The acopc start command processing and acsnap start command processing under the following conditions have been changed.

- A volume used by cascade copy has been specified as a copy source, and

- The -concur option has been specified.

Version	Details
15.0	The sequence of data updates will not be preserved across multiple volumes.
15.1 or later	The sequence of data updates will be preserved across multiple volumes.

See
. . . .
Refer to "Notes on combining cascade copy and Concurrent OPC in operation" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for details.
. . . .

2.4.22 Environment Setup/Deletion Methods for Clustered Systems (for Solaris, HP-UX)

The methods for setting and deleting environments for the following clustered systems have been changed:

- For Solaris

    - SafeCLUSTER and PRIMECLUSTER

    - VERITAS Cluster Server

    - Sun Cluster

- For HP-UX

    - MC/ServiceGuard (A.11.17or earlier)

    - VERITAS Cluster Server

Version	Details
15.0 or earlier	The following commands serve to set and delete environments for clustered systems: - stgclset_safe command - stgclset_vcs command - stgclset_sun command - stgclset_mcsg command - stgclset_hpvcs command - stgclunset_safe command - stgclunset_vcs command - stgclunset_sun command - stgclunset_mcsg command - stgclunset_hpvcs command
15.1 or later	Above commands are not supported. Refer to "Applying Clusters for Solaris/Linux/HP-UX Version" in the *ETERNUS SF Cluster Environment Setup Guide* to set and delete environments for clustered systems.

2.4.23 AdvancedCopy Manager Copy Control Module Customization Procedure

The procedure of "Customization for AdvancedCopy Manager CCM" in the *ETERNUS SF Cluster Environment Setup Guide* has been changed as follows.

Version	Details
15.0	In the ".install.sys" file, modification of the value for "stxs_etcdir=" is required.
15.1 or later	In the ".install.sys" file, modification of the value for "stxs_etcdir=" is not required.

2.4.24 Copy Progress Rate of QuickOPC

The information on the copying progress rate of QuickOPC, which is displayed when executing below commands, has been changed.

- AdvancedCopy Manager commands

    - For all platforms

        - The **Execute** column of swstbackstat command

        - The **Execute** column of swsthistdisp command

        - The **Execute** column of swstexecstat command

        - The **Execute** column of swsttrkstat command

        - The **Execute** column of swsrpstat command

    - For Windows only

        - The **Execute** column of swsrpshadowadm_exchange command

        - The **Execute** column of swsrpvrq advcopy query command

- AdvancedCopy Manager Copy Control Module command

    - The **Progress** column of acopc query command

Version	Details
15.0 or earlier	If you write data onto a copy source volume while physical copying of QuickOPC is in progress, the displayed progress rate will not reach 100% after completing physical copying.
15.1 or later	In the following ETERNUS Disk storage systems, if you write data onto a copy source volume while physical copying of QuickOPC is in progress, a progress rate of 100% will be displayed after completing physical copying. - ETERNUS DX80 S2/DX90 S2 (Firmware version is V10L30 or later) - ETERNUS DX400 S2 series (Firmware version is V10L30 or later) - ETERNUS DX8000 S2 series (Firmware version is V10L30 or later)

2.4.25 Information to Be Displayed If Hardware Error, etc. Occurs

In the following commands, the information to be displayed if a hardware error, etc. occurs has been changed.

- "Status" column of the swstbackstat command

- "Status" column of the swstrestore command

- "Status" column of the swsthistdisp command

- "Status" column of the swstsyncstat command

- "Execute" column of the swstexecstat command

- "Status" column of the swsttrkstat command

Version	Details
15.1 or earlier	If a hardware error, etc. occurs, an error message is displayed.
15.2 or later	If a hardware error, etc. occurs, "?????" is displayed.

Refer to "Troubleshooting: Hardware error during backup" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for details.

2.5 Incompatible Information of Common for All Products

This section describes the changes from the previous version of common for all products.

2.5.1 Count Method in Extended Copy Sessions and Default Filter on Session List Screen

On the Advanced Copy Overview screen of the Web Console, the counting method for the number of copy sessions in the **Session** and **Local Copy Session Count** columns has been changed as follows.

Also, on the session list screen, the filter item for Copy Type that is selected by default when opening the screen has been changed as follows.

Version	Details
15.0	- The Extended Copy sessions are included in the **Sessions** and **Local Copy Session Count** columns. - On the session list screen, "All" is selected as the filter item for Copy Type by default when opening the screen.
15.1 or later	- The Extended Copy sessions are not included in the **Sessions** and **Local Copy Session Count** columns. - On the session list screen, "All Local or REC" is selected as the filter item for Copy Type by default when opening the screen.

Information

How to Display the Advanced Copy Overview Screen

1. On the global navigation tab, click **Storage**.

2. On the Main pane, click the target ETERNUS Disk storage system name.

3. On the Category pane, click **Advanced Copy**.

How to Display the Session List Screen

1. On the global navigation tab, click **Storage**.

2. On the Main pane, click the target ETERNUS Disk storage system name.

3. On the Category pane, click **Advanced Copy**.
   The items of the Category pane change into the items concerning Advanced Copy.

4. On the Category pane, click **Copy Sessions**.

2.5.2 Setting Method and Minimum Value for Copy Table Size

On the Advanced Copy Configuration Wizard screen of Web Console, the method for specifying the custom Copy Table Size and the minimum value to be set in the custom Copy Table Size are changed.

In addition, on the Remote Copy Configuration wizard screen, the minimum value to be set in the Copy Table Size is changed.

Version	Details
15.0	The custom Copy Table Size can be specified by a pull-down list. The minimum value that can be set is 0.
15.1 or later	The custom Copy Table Size can be specified by a spin button or direct input. The minimum value that can be set is 8.

> 📖 **Information**
>
> How to Display the Advanced Copy Configuration Wizard Screen
>
>   1. On the global navigation tab, click **Storage**.
>
>   2. On the Main pane, click the target ETERNUS Disk storage system name.
>
>   3. On the Category pane, click **Advanced Copy**.
>   The items of the Category pane change into the items concerning Advanced Copy.
>
>   4. On the Category pane, click **Configuration**.
>
>   5. On the Action pane, click **Advanced Copy** under **Wizard**.
>
> How to Display the Remote Copy Configuration Wizard Screen
>
>   1. On the global navigation tab, click **Storage**.
>
>   2. On the Main pane, click the target ETERNUS Disk storage system name.
>
>   3. On the Category pane, click **Advanced Copy**.
>   The items of the Category pane change into the items concerning Advanced Copy.
>
>   4. On the Category pane, click **REC Path** or **REC Buffer**.
>
>   5. On the Action pane, click **Remote Copy Conf.** under **Wizard**.

2.5.3 Screen Refresh Interval and Display/Input Unit of Web Console

The screen refresh interval of Web Console and its display/input unit have been changed.

Version	Details
15.1 or earlier	- The shortest screen refresh interval is 1 minute. - Display/input unit of the screen refresh interval is "minute".
15.2 or later	- The shortest screen refresh interval is 30 seconds. - Display/input unit of the screen refresh interval is "second".

2.5.4 Help Button Design and Online Help Display Procedures of Web Console

For the Web Console, the design of Help button in the menu area and online help display procedures have been changed.

Version	Details
15.1 or earlier	- The "Help" link to display the online help exists in the menu area. - To display the online help, click "**?**" icon or the "Help" link in the menu area.
15.2 to 15.3	- The "Help" link to display the online help does not exist in the menu area. - To display the online help, click "**?**" icon in the menu area, and click **Help** displayed in drop-down list.

2.5.5 Changes Communication Port Default Value

In Express and AdvancedCopy Manager Copy Control Module, the port number communicating with the following storage devices for performing the Advanced Copy has been changed.

- ETERNUS DX80 S2/DX90 S2

- ETERNUS DX400 S2 series (only for AdvancedCopy Manager Copy Control Module)

- ETERNUS DX8000 S2 series (only for AdvancedCopy Manager Copy Control Module)

Version	Details
15.3 or earlier	The port number to be used is 50002/tcp.
16.0 or later	The port number to be used is 32002/tcp.

2.5.6 Sanma.conf Configuration Checking for Device Registration

The **Use existing settings from file: sanma.conf** checkbox when the following devices are registered has been deleted.

- ETERNUS Disk storage systems

- Fibre Channel switches (Storage Cruiser only)

Version	Details
15.3 or earlier	The checkbox is displayed.
16.0 or later	The checkbox is not displayed.

2.5.7 Customizing Configuration File

The parameters that are able to be customized with the sanma.conf file have been changed.

Version	Details
15.3 or earlier	The following parameters can be customized with the sanma.conf file. - AUTODISCOVER_SUBNET - SNMP_COMMUNITY_NAME_FOR_IP - SNMP_COMMUNITY_NAME_FOR_AUTODISCOVER - LOG_CYCLE (Storage Cruiser only) - LOG_MAX_SIZE (Storage Cruiser only) - SNMPTH_LOG_COUNT (Storage Cruiser only) - SNMPTH_LOG_LIMIT (Storage Cruiser only)
16.0 or later	The above-mentioned parameters cannot be customized with the sanma.conf file. Customize the Storage Cruiser log file settings with LOG_COUNT and LOG_LIMIT parameters of the ssmgr.conf file.

See
. . . .
Refer to "Customization" in the *ETERNUS SF Storage Cruiser Operation Guide* for information on the customizing the configuration file.
. . . .

2.5.8 Operations for Host Response

In the Web Console, operations related to host response (full-listed view, detailed view, add, change, delete) are no longer supported.

Version	Details
15.3 or earlier	The following operations related to host response can be performed with the Web Console. - Full-listed view / Detailed view of host response - Add / Change / Delete host response

Version	Details
	- Detailed view of host response, by clicking on the displayed link in the **Host Response** column of the access path full-listed view screen
16.0 or later	The above operations related to host response cannot be performed with the Web Console.

2.5.9 Changes Character Strings in Performance Chart Window

The character strings displayed in the **Series** column in the Performance Chart window of ETERNUS Disk storage systems and switches have been changed.

Performance Chart Window of ETERNUS Disk storage systems

Version 15.3 or Earlier	Version 16.0 or Later
Read IOPS Read Data Transfer Throughput Read Response Time Read Cache Hit Rate	Read
Sum of Read IOPS Sum of Read Data Transfer Throughput Sum of Read Response Time Sum of Read Cache Hit Rate	Sum of Read
Write IOPS Write Data Transfer Throughput Write Response Time Write Cache Hit Rate	Write
Sum of Write IOPS Sum of Write Data Transfer Throughput Sum of Write Response Time Sum of Writed Cache Hit Rate	Sum of Write
Pre-fectch Cache Hit Rate	Pre-fectch
Sum of Pre-fetch Cache Hit Rate	Sum of Pre-fetch

Performance Chart Window of Switches

Version 15.3 or Earlier	Version 16.0 or Later
Transfer Throughput of Send Data	Send Data
Transfer Throughput of Receive Data	Receive Data
Sum of Transfer Throughput of Send Data	Sum of Send Data
Sum of Transfer Throughput of Receive Data	Sum of Receive Data
Number of CRC Errors	Number of Errors
Sum of Number of CRC Errors	Sum of Number of Errors

2.5.10 Online Manual in DVD-ROM Media

The online manual included in the DVD-ROM media has been changed as follows.

Version	Details
15.3 or earlier	The manuals included in the DVD-ROM media are provided in both PDF and HTML format.. A PDF portfolio which has combined the online manuals of Express, Storage Cruiser, and AdvancedCopy Manager is provided (only for Version 15.0 or later).

Version	Details

16.0 or later	The manuals included in the DVD-ROM media are only available in PDF format. However, as in the past, the manuals are available in HTML format online at the following our company's manual publication website.
	
	`http://www.fujitsu.com/global/support/software/manual/`
	
	A PDF portfolio is no longer provided. For a text search crossing multiple manuals, please use the features of the Adobe(R) Reader(R) listed at the following URL of Adobe Systems Incorporated.
	
	`http://helpx.adobe.com/acrobat.html`

2.5.11 Online Help Feature

In the Web Console, the online help is no longer provided.

Version	Details
15.3 or earlier	In the drop down list displayed by clicking ⑦▾ in the menu area, **Help** is displayed. By clicking **Help**, the online help is displayed.
16.0 or later	The **Help** entry of the drop down list displayed by clicking ⑦▾ in the menu area was changed to **Manual**. By clicking **Manual**, the manual index screen in HTML format is displayed.

2.5.12 Changes Configuration File Path for Port Number

The path name of the configuration file to be edited for changing the port number has been changed as follows.

Version	Details
15.3 or earlier	*installDir*\Common\sys\tomcat\webapps\esfv15\WEB-INF\config\database.yml
16.0	*installDir*\Common\sys\tomcat\webapps\esf\WEB-INF\config\database.yml

*1: The *installDir* is "Program Directory" specified at the ETERNUS SF Manager installation.

2.5.13 Name of Commands Related to Configuration Import

The name of the following commands has been changed.

- Configuration import command

- Configuration import status display command

Version	Details
15.0 to 15.3	The configuration import command name is "esfimportdevconf". The configuration import status display command name is "esfimportdisplay".
16.0 or later	The configuration import command name is "esfadm devconf import". The configuration import status display command name is "esfadm devconf importstatus".

Chapter 3 Program Fix List

This version fixes the following problems that occurred in previous versions.

No.	Version Problem Reported	Problem Report Number	Problem	Product Name		
				EXP	SC	ACM
1	14.0	PG97123	The Emulex FC HBA device driver (Storport Miniport Driver V2.74.9.1) for Windows can be used.	-	Yes	-
2	14.2	PG95158	The backup management function commands may output the swst3648 message and terminate abnormally.	-	-	Yes
3	15.0	PG97249	The stgdbloginf command may display the incorrect usage rate.	-	-	Yes
4		PG98347	The REC path status may be displayed incorrectly.	Yes	Yes	Yes
5		PG98348	The access path status may be displayed incorrectly.	Yes	Yes	-
6		PG98768	In the linkage function with Systemwalker Service Quality Coordinator, the performance management for NetApp FAS Series might not be able to be used.	-	Yes	-
7	15.2	PG96354	When **Execute** is clicked on the "Checking the backup information" screen of the Backup Wizard, the detailed error information is not displayed. The esgui04014 message is displayed.	-	-	Yes
8		PG97074	When only WSV and/or concatenation volumes exist in a RAID group, the Eco-mode **Enable** button for the RAID group is not active (button is not clickable) in the Web Console.	Yes	Yes	-
9		PG99268	The operation executed with the Web Console might not be reflected in the displayed information.	Yes	Yes	Yes
10	15.3	PG97250	When an error occurs during the server registration/change operation, an error message might not be displayed in the Web Console.	-	-	Yes
11		PG97629	When ETERNUS SF Manager is installed in a Solaris environment, "ERROR: Failed to create a RDB dictionary and RDB directory file" may be output and the installation may fail.	Yes	Yes	Yes
12		PG98554	The restore processing by the automated backup/restoration scripts of the VMware virtual machine may terminate abnormally.	-	-	Yes
13		PG99121	It is able to backup and replicate SDX objects that exceed 2TB in units of slices.	-	-	Yes

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