FUJITSU

# FUJITSU Storage
# ETERNUS SF
## Express V16.1 / Storage Cruiser V16.1 / AdvancedCopy Manager V16.1

# 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<br>Microsoft(R) Windows Server(R) 2003, Standard x64 Edition<br>Microsoft(R) Windows Server(R) 2003, Enterprise Edition<br>Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition<br>Microsoft(R) Windows Server(R) 2003 R2, Standard Edition<br>Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition<br>Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition<br>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)<br>Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM) (32-bit) (64-bit)<br>Microsoft(R) Windows Server(R) 2008 Enterprise (32-bit)(64-bit)<br>Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM) (32-bit) (64-bit)<br>Microsoft(R) Windows Server(R) 2008 Datacenter (32-bit)(64-bit)<br>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<br>Microsoft(R) Windows Server(R) 2008 R2 Standard<br>Microsoft(R) Windows Server(R) 2008 R2 Enterprise<br>Microsoft(R) Windows Server(R) 2008 R2 Datacenter | Windows Server 2008 R2 | |

| Product Name | Notation | |
|---|---|---|
| Microsoft(R) Windows Server(R) 2012 Standard<br>Microsoft(R) Windows Server(R) 2012 Datacenter | Windows Server 2012 | |
| Microsoft(R) Windows Server(R) 2012 R2 Standard<br>Microsoft(R) Windows Server(R) 2012 R2 Datacenter | Windows Server 2012 R2 | |
| Windows Vista(R) Home Basic<br>Windows Vista(R) Home Premium<br>Windows Vista(R) Business<br>Windows Vista(R) Enterprise<br>Windows Vista(R) Ultimate | Windows Vista | |
| Windows(R) 7 Home Basic<br>Windows(R) 7 Home Premium<br>Windows(R) 7 Professional<br>Windows(R) 7 Enterprise<br>Windows(R) 7 Ultimate | Windows 7 | |
| Windows(R) 8<br>Windows(R) 8 Pro | Windows 8 | |
| Windows(R) 8.1<br>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)<br>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)<br>Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T) | RHEL-ES4 | |
| Red Hat(R) Enterprise Linux(R) 5 (for x86)<br>Red Hat(R) Enterprise Linux(R) 5 (for Intel64) | RHEL5 | |
| Red Hat(R) Enterprise Linux(R) 6 (for x86)<br>Red Hat(R) Enterprise Linux(R) 6 (for Intel64) | RHEL6 | |
| SUSE(R) Linux Enterprise Server 11 for x86<br>SUSE(R) Linux Enterprise Server 11 for EM64T | SUSE Linux Enterprise Server 11 | |
| HP-UX 11i v1<br>HP-UX 11i v2<br>HP-UX 11i v3 | HP-UX | |
| AIX(R) V6.1<br>AIX(R) V7.1 | AIX | |
| VMware vSphere(R) 4 Essentials Kit<br>VMware vSphere(R) 4 Essentials Plus Kit<br>VMware vSphere(R) 4 Standard Edition(TM)<br>VMware vSphere(R) 4 Standard Plus Data Recovery<br>VMware vSphere(R) 4 Advanced Edition(TM)<br>VMware vSphere(R) 4 Enterprise Edition(TM)<br>VMware vSphere(R) 4 Enterprise Plus Edition(TM) | VMware vSphere 4 | VMware |
| VMware vSphere(R) 5 Essentials Kit<br>VMware vSphere(R) 5 Essentials Plus Kit<br>VMware vSphere(R) 5 Standard Edition(TM)<br>VMware vSphere(R) 5 Standard Plus Data Recovery | VMware vSphere 5 | |

| Product Name | Notation | |
|---|---|---|
| VMware vSphere(R) 5 Enterprise Edition(TM)<br>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<br>FUJITSU Storage ETERNUS DX80/DX80 S2<br>FUJITSU Storage ETERNUS DX90/DX90 S2 | - | | ETERNUS Disk storage system |
| FUJITSU Storage ETERNUS DX100 S3<br>FUJITSU Storage ETERNUS DX200 S3 | | | |
| FUJITSU Storage ETERNUS DX410<br>FUJITSU Storage ETERNUS DX440 | ETERNUS DX400 series | ETERNUS DX400/DX400 S2 series | |
| FUJITSU Storage ETERNUS DX410 S2<br>FUJITSU Storage ETERNUS DX440 S2 | ETERNUS DX400 S2 series | | |
| FUJITSU Storage ETERNUS DX500 S3<br>FUJITSU Storage ETERNUS DX600 S3 | - | | |
| FUJITSU Storage ETERNUS DX8100<br>FUJITSU Storage ETERNUS DX8400<br>FUJITSU Storage ETERNUS DX8700 | ETERNUS DX8000 series | ETERNUS DX8000/ DX8000 S2 series | |
| FUJITSU Storage ETERNUS DX8100 S2<br>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 |

Manuals

| Formal Name | Abbreviation |
|---|---|
| FUJITSU Storage ETERNUS SF Express / Storage Cruiser / AdvancedCopy Manager Quick Reference | ETERNUS SF Quick Reference |

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

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

Others

- 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)

  - Storage Cluster function

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**Notes**

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# Update History

| Content of Update | Updated Section | Revision |
|---|---|---|
| The information related to ETERNUS DX200F is described. | "Others" in Preface, 1.1.2, 1.2.3 | 1.1 |
| The overview of new features supported with this version is described. | Chapter 1 | 2 |
| The incompatible information from previous version is described. | 2.2.4, 2.2.15, 2.3.33, 2.3.34, 2.3.36 to 2.3.41, 2.4.10, 2.4.26 to 2.4.34, 2.5.14 to 2.5.16 | |
| The program bugs fixed with this version are described. | Chapter 3 | |
| Incompatible information is modified. | 2.4.34 | 2.1 |

# 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. |

| When to Read | Related Manuals (Abbreviated) | Related Products (*1) | | | Explanation |
|---|---|---|---|---|---|
| | | EXP | SC | ACM | |
| During installation | Installation and Setup Guide | Yes | Yes | Yes | This manual is common for all products. |
| | Cluster Environment Setup Guide | - | Yes | Yes | This manual is common for Storage Cruiser and AdvancedCopy Manager. |
| | Migration Guide | Yes | Yes | Yes | This manual is common for all products. |
| During operation | Operation Guide | Yes | Yes | Yes | This manual is unique for each product. The following manuals are available:<br><br>- Express Operation Guide<br><br>- Storage Cruiser Operation Guide<br><br>- Storage Cruiser Operation Guide for Optimization Function<br><br>- AdvancedCopy Manager Operation Guide (for Windows)<br><br>- AdvancedCopy Manager Operation Guide (for Solaris)<br><br>- AdvancedCopy Manager Operation Guide (for Linux)<br><br>- AdvancedCopy Manager Operation Guide (for HP-UX)<br><br>- AdvancedCopy Manager Operation Guide (for AIX)<br><br>- 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<br><br>- Installation decision<br><br>- 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<br><br>- Linkable applications<br><br>- Procedure overview for Advanced Copy of ETERNUS Disk storage system | |

| Purpose | Manual | Main Contents | How to Read |
|---------|--------|---------------|-------------|
| Confirming the updated contents | Release Notes | - New function overview<br>- Incompatibilities with previous version<br>- Fixed bugs | Please read if you want to know the updated contents from a previous version and if you perform the upgrade. |
| Deciding if a version upgrade is required | Migration Guide | - Notes and cautions about version upgrade<br>- Version upgrade procedure | Please read if you want to upgrade from a previous version. |
| Installing and correctly operating the product<br><br>Setting up operating environment depending on purpose | Installation and Setup Guide | - Operating environment<br>- Installation procedure<br>- Setup procedure<br>- Uninstallation procedure | Please read if you want to install and setup the product. |
| | Cluster Environment Setup Guide | - Supported cluster software<br>- Installation procedure for a clustered system<br>- Setup procedure for a clustered system<br>- 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<br>- Device monitoring<br>- Data copy inside the storage system<br>- 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<br>- Device monitoring<br>- Necessary tasks after an architectural modification of the system as well as product maintenance<br>- Command reference | |
| | Storage Cruiser Operation Guide for Optimization Function | - Operating environment construction<br>- Operating status monitoring<br>- Necessary tasks after an architectural modification of the system as well as product maintenance | |

| Purpose | Manual | Main Contents | How to Read |
|---|---|---|---|
|  |  | - Command reference |  |
|  | AdvancedCopy Manager Operation Guide (for Windows) | - Starting and stopping the software |  |
|  | AdvancedCopy Manager Operation Guide (for Solaris) | - Data backup/restore inside the storage system |  |
|  | AdvancedCopy Manager Operation Guide (for Linux) | - Necessary tasks after an architectural modification of the system as well as product maintenance |  |
|  | AdvancedCopy Manager Operation Guide (for HP-UX) |  |  |
|  | AdvancedCopy Manager Operation Guide (for AIX) | - Command reference |  |
|  | AdvancedCopy Manager Operation Guide for Copy Control Module |  |  |
|  | Web Console Guide | - Operating environment<br>- 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<br>- Parameter (variable information) description<br>- System action<br>- 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<br>- 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<br>- Explanation of important terminology appearing in the manual<br>- Synonyms and related terms<br>- 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 Common for All Products

### 1.1.1  Patch Management

In the Web Console, the following functions are provided for Consolidated Patch which aggregates patches of the ETERNUS SF Manager program.

- Application of Consolidated Patch

- Confirmation of Consolidated Patch applied

- Deletion of all patches applied on the ETERNUS SF Manager program

Refer to "Consolidated Patch" in the *ETERNUS SF Installation and Setup Guide* and "Patch Management" in the *ETERNUS SF Web Console Guide* for details.

### Point
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This function is only available if the operating system with the ETERNUS SF Manager program installed is Windows.
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### 1.1.2  Feature Improvement of Web Console

**Holding of Checks Placed in Table Checkboxes and Table Radio Buttons**

When the following operations have been performed, the checks placed in the table checkboxes and table radio buttons will be maintained. The checks would disappear in previous version.

- Click **Filter** or **Clear** in **Filter Setting**.

- Click the links (**<<, <, >, >>**) for the displayed page in **Page Setting**.

- Click **Go** in **Page Setting**.

- Change the pull-down menu in **Display *xxx* records** of **Displayed Record Setting**.

- Click on the column of the table (sort the table).

In addition, even when checks are placed in the checkboxes of the full listing screen (the screen on which the Category pane, Main pane, and Action pane exist), automatic update will not be stopped. Automatic update would be partially stopped in previous version.

**Configuration of Default Record Count in Table**

The default record count in the table can be configured to 10, 25, 50, or 100. It was fixed to 10 in previous version. Refer to "Main Pane" in the *ETERNUS SF Web Console Guide* for details.

## 1.2  New Features of Express

### 1.2.1  Compatibility with New Functions of ETERNUS Disk Storage System

Express functions added for ETERNUS DX100 S3/DX200 S3.

- Use of a new RAID type

  RAID6-FR can be used in addition to the traditional RAID type.

- Model upgrades

  The following model upgrades are available:

  - ETERNUS DX100 S3 to DX200 S3

- Eco-mode power control

  For the RAID group Eco-mode operation, the disk drive power supply can be controlled in addition to the traditional spindle rotation control of the disk drive.

**P** **Point**

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To use the above functions, the firmware of the storage device must be V10L20 or later.

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**Note**

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The above functions cannot be used for ETERNUS DX200F.

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## 1.2.2 NAS Management Function

Regarding the NAS management functions for operating ETERNUS DX100 S3/DX200 S3 as NAS device, the following functions are provided.

- Port bonding of NAS ports

- VLAN ID settings of NAS interface

- Settings of DNS server

- Change in NAS server name

- Capacity expansion of NAS volume

- Inter-box backup/restore of NAS volumes

- Automatic collection function of NAS volume snapshots

- Capacity limit function (Quota management) of NAS volumes

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

**Note**

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The above functions cannot be used for ETERNUS DX200F.

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# 1.3 New Features of Storage Cruiser

## 1.3.1 Storage Cluster Function

A feature is provided in which between two storage devices connected to a server, switching is performed transparently in order to enable continuation of business even in cases when the Primary Storage is down. Refer to "Storage Cluster Function" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

## 1.3.2 Compatibility with New Functions of ETERNUS Disk Storage System

Storage Cruiser functions added for ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3.

- Use of a new RAID type

  RAID6-FR can be used in addition to the traditional RAID type.

- Model upgrades

  The following model upgrades are available:

  - ETERNUS DX100 S3 to DX200 S3

  - ETERNUS DX500 S3 to DX600 S3

- Eco-mode power control

  For the RAID group Eco-mode operation, the disk drive power supply can be controlled in addition to the traditional spindle rotation control of the disk drive.

- Use of the following functions of ETERNUS DX100 S3

  - Set Up REC path

  - Acquire REC path information

  - Collect REC Device Information

  - Measure REC Response Delay Time

  - Set Up REC Multiplicity

  - Set Up REC Buffer

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To use the above functions, the firmware of the storage device must be V10L20 or later.

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The above functions cannot be used for ETERNUS DX200F.

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## 1.3.3   New Device Support

The following features can be used with Brocade VDX 6740/VDX 6740T. 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

In addition, the following features can be used with Brocade VDX 8770-4/VDX 8770-8. The support level is "B".

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

- Linkage through management window

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.

## 1.3.4   SSH Connection Between Storage Cruiser's Manager and Managed Switches

SSH connection is supported as a communication method between the Storage Cruiser's manager and Fibre Channel switches that version is Fabric OS v6.3 or later. Refer to "Supported Devices" in the *ETERNUS SF Installation and Setup Guide* for details.

## 1.3.5  Call Management Software of Switch

The management software of a switch can be specified with the switch registration screen of the Web Console. Refer to "Register FC Switch" in the *ETERNUS SF Web Console* for details about the switch registration screen.

In addition, the management software of a switch can be called from the Map View. Refer to "Call Management Software from Overview" or "Call Management Software from Logical Path View Screen" in the *ETERNUS SF Web Console* for information on how to call the management software of a switch.

## 1.3.6  Display of Capacity Graph of One Layer Tier Pool

The total capacity and the used capacity for one layer Tier pool can be displayed as a graph. Refer to "Capacity Management of One Layer Tier Pool" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

## 1.3.7  NAS Management Function

Regarding the NAS management functions for operating ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 as NAS device, following functions are provided.

- Port bonding of NAS ports

- VLAN ID settings of NAS interface

- Settings of DNS server

- Change in NAS server name

- Capacity expansion of NAS volume

- Inter-box backup/restore of NAS volumes

- Automatic collection function of NAS volume snapshots

- Capacity limit function (Quota management) of NAS volumes

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

## 📝 Note
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The above functions cannot be used for ETERNUS DX200F.
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# 1.4  New Features of Storage Cruiser Optimization Function

## 1.4.1  Display of Capacity Graph of Tier Pool

The total capacity and the used capacity for Tier pool can be displayed as a graph. Refer to "Capacity Management of Tier Pool" in the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

## 1.4.2  Evaluation Day for Automated Storage Tiering

When creating a Tiering policy of Automated Storage Tiering with the Web Console, it is possible to execute the evaluations on any day of a week by specifying "Week" with **Evaluation Period** and specifying the **Evaluation Day**. Refer to "Tiering Policies" in the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

## 1.4.3  Providing of Command Line Interface for Automated Storage Tiering

The Command Line Interface for the following operations will be provided. Refer to "Command References" in the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for information on the commands.

| Operation | Command Name |
|---|---|
| Start Automated Storage Tiering | esfast autotier start |
| Stop Automated Storage Tiering | esfast autotier stop |
| Start evaluation of Automated Storage Tiering | esfast evaluate start |
| Configure volume allocation ratio of Automated Storage Tiering | esfast ftvshare set |
| Display list of relocation history information of Automated Storage Tiering | esfast relocation history |
| Display list of relocation target volumes information of Automated Storage Tiering | esfast relocation status |
| Start Relocation of Automated Storage Tiering | esfast relocation start |
| Stop Relocation of Automated Storage Tiering | esfast relocation stop |

## 1.4.4   Feature Improvement of Automated QoS (Quality of Service)

The following functions are provided. Refer to the *ETERNUS SF Storage Cruiser Operation Guide for Optimization Function* for details.

### Simplification of Configurations of Automated QoS Feature

By configuring an Automated QoS priority in relation to the volume the user will be utilizing, a performance target will be automatically calculated based on the priority and automated tuning will be performed in order to achieve the calculated target.

### Coordination of Automated Storage Tiering and Automated QoS Feature

By configuring an Automated QoS priority or target response time, automated tuning of the performance will be performed with the Automated QoS feature or Automated Storage Tiering. For this reason, it will not be necessary to separate the use of the Automated QoS feature and Automated Storage Tiering.

### Visualization of Effects of Performance Improvements

It is possible to confirm the effects of the installation of the Automated QoS feature with the Web Console.

# 1.5   New Features of AdvancedCopy Manager

## 1.5.1   Backup Operation of Storage Cluster Enabled Volumes

AdvancedCopy Manager Copy Control Module provides the backup function of volumes on which the Storage Cluster function is enabled. Refer to "Advanced Copy Operation Using TFOV" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* for details.

## 1.5.2   Feature Improvement of Backup Management Function and Replication Management Function

### Automatic Configuration of Maintenance Mode of MSCS or WSFC

In clustered operation with MSCS or WSFC, in cases involving a configuration with one partition per disk or copying in LUN units, it is possible to automatically configure the maintenance mode of the corresponding physical disk resource.
Refer to "Notes on Backup in Clustered System" or "Notes on Replication in Clustered System" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for details.

## 1.5.3   Backup Wizard and Restore Wizard for SQL Server

The Backup Wizard for SQL Server is provided to enable easy the backup settings and operations for SQL Server. Both of which require complex procedures. This wizard provides a simple easy to use interface, and does not require the user to have specialist knowledge. In addition, the Restore Wizard for SQL Server is provided to enable easy restore of the SQL Server database from the Web Console.

Refer to "Backup and Restore Using Wizard for SQL Server" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for details.

## Information
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
To use the Restore Wizard for SQL Server, ETERNUS SF AdvancedCopy Manager for Microsoft SQL Server license is required.
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

## 1.5.4 Scheduler

Provides a function to schedule and run scripts to back up databases of Exchange Server and SQL Server. This function allows backup schedules to be registered easily using a wizard. Refer to the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for details.

## 1.5.5 New Feature of VMware Virtual Machine Automatic Backup/Restore (Script)

The following features are provided.

- Script behaviors on Windows Server 2012

- Script behaviors with the following functions of VMware vSphere enabled:

  - vSphere HA

  - vSphere DRS

  - vMotion

  - Storage DRS

  - Storage vMotion

- Backup/Restore of the system area of a virtual machine to which the RDM data area is connected

Refer to "VMware Virtual Machine Automatic Backup/Restore (Script)" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module* 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 | 16.0 |
| Changes for Supported Web Browsers | I | I | I | I | I | C |
| Changes for Supported Operating Systems | I | I | I | I | I | C |
| Administrator's Belonging Group | I | C | C | C | C | C |
| Specification of FQDN (Fully Qualified Domain Name) | I | C | C | C | C | C |
| Troubleshooting Information Sending Function | I | C | C | C | C | C |
| Copy Group Definition Export/Import Function | I | C | C | C | C | C |
| RAID Group Automatic Creation Function | I | C | C | C | C | C |
| Different Name Setting Function for Device Information | I | C | C | C | C | C |
| Web Console Connection Address | I | C | C | C | C | C |
| Changes License Management Operation | I | C | C | C | C | C |
| Messages and Event Logs | I | C | C | C | C | C |
| Express_diag Command | I | C | C | C | C | C |
| Storageadm Perfdata Command Path Name (for Windows) | I | C | C | C | C | C |
| Troubleshooting Information Collection Command Name and Path Name (for Windows) | I | C | C | C | C | C |
| Response Time Displayed by Performance Management | I | I | I | I | I | I |
| Count Method in Extended Copy Sessions and Default Filter on Session List Screen | C | I | C | C | C | C |
| Setting Method and Minimum Value for Copy Table Size | C | I | C | C | C | C |
| Screen Refresh Interval and Display/Input Unit of Web Console | C | I | I | C | C | C |
| Help Button Design and Online Help Display Procedures of Web Console | C | I | I | C | C | C |
| Changes Communication Port Default Value | I | I | I | I | I | C |
| Sanma.conf Configuration Checking for Device Registration | C | I | I | I | I | C |
| Customizing Configuration File | C | I | I | I | I | C |
| Operations for Host Response | I | I | I | I | I | C |
| Changes Character Strings in Performance Chart Window | C | I | I | I | I | C |
| Online Manual in DVD-ROM Media | I | I | I | I | I | C |
| Online Help Feature | C | I | I | I | I | C |
| Changes Configuration File Path for Port Number | C | I | I | I | I | C |
| Name of Commands Related to Configuration Import | C | I | I | I | I | C |

| Functions and Compatibility Issues | Version Before Migration | | | | | |
|---|---|---|---|---|---|---|
| | 14.2 or Earlier | 15.0 | 15.1 | 15.2 | 15.3 | 16.0 |
| Holding of Checks Placed in Table Checkboxes and Table Radio Buttons | I | I | I | I | I | I |
| Displayed Strings for CA Type Information | C | C | C | C | C | I |
| Category Pane Related to NAS Management Operation in Web Console | C | C | C | C | C | I |

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

Table 2.2 Incompatible Information List of Storage Cruiser (When Version Before Migration is 14.0 or Later)

| Functions and Compatibility Issues | Version Before Migration | | | | | | |
|---|---|---|---|---|---|---|---|
| | 14.0, 14.1 | 14.2 | 15.0 | 15.1 | 15.2 | 15.3 | 16.0 |
| First Argument Value to Be Handed Over to Event Linkage Function | C | C | C | C | C | C | C |
| Daemon Start/Stop Command | I | I | I | I | I | I | C |
| Cmdline Resource for Clustered Environment | I | I | I | I | I | I | C |
| Displayed Contents for LVM (for HP-UX) | C | C | C | C | C | C | C |
| Message of Communication Recovery Event | C | C | C | C | C | C | C |
| Ssmgr3228 Message | I | C | C | C | C | C | C |
| SNMP Trap Reception Program Specification | I | I | I | I | I | C | C |
| Default Installation Path of Programs (for Windows) | I | I | C | C | C | C | C |
| Troubleshooting Information Collection Command Name and Path Name | I | I | C | C | C | C | C |
| Changes for Supported Devices | I | I | I | I | I | I | C |
| Changes for Supported Operating Systems | I | I | I | I | I | I | C |
| Changes for Supported Web Browsers | C | C | I | I | I | I | C |
| Changes for Supported Agent Version | I | I | I | I | I | I | C |
| Storage Volume Configuration Navigator | I | I | C | C | C | C | C |
| Supports of GUI Client | I | I | C | C | C | C | C |
| Changes for Login Account | I | I | C | C | C | C | C |
| Memo Information Table and Revolving Light Icon | I | I | C | C | C | C | C |
| Beacon Function for Solaris Server Node | I | I | C | C | C | C | C |
| Display Information of Correlation Management | I | I | C | C | C | C | C |
| Changes for Performance Management | I | I | C | C | C | C | C |
| Information Required for ETERNUS Disk Storage System Registration | I | I | C | C | C | C | C |
| SNMP Trap Setup Function Checking at Device Registration | I | I | C | C | C | C | C |
| SNMP Trap Setup After Registering Fibre Channel Switch | I | I | C | C | C | C | C |
| Thin Provisioning Pool Threshold Monitoring Icon | I | I | C | C | C | C | C |
| Display Method of Thin Provisioning Pool Capacity Chart | I | I | C | C | C | C | C |
| Managed Server Deletion Process | I | I | C | C | C | C | C |

| Functions and Compatibility Issues | Version Before Migration | | | | | | |
|---|---|---|---|---|---|---|---|
| | 14.0, 14.1 | 14.2 | 15.0 | 15.1 | 15.2 | 15.3 | 16.0 |
| VM Host Deletion Procedure if VM Guests Exist on VM Host | I | I | C | C | C | C | C |
| Displayed Contents of End to End View | I | I | I | C | C | C | C |
| Changes for Map View | I | I | I | C | C | C | C |
| Output Information of Storageadm Port Command and Storageadm Iscsiport Command | C | I | I | C | C | C | C |
| Firmware Version Notation of ETERNUS Disk Storage System | I | I | I | I | C | C | C |
| Sanadmsh Chtraprcvip Command Format | I | I | I | I | I | I | C |
| Changes Connection Method Between Storage Cruiser's Manager and Managed Switches | I | I | I | I | I | I | I |
| Response Time Displayed by Performance Management | I | I | I | I | I | I | I |
| Tiering Policy Import Command Name | C | C | C | C | I | I | C |
| Output Message ID of Storage Cruiser | I | I | I | I | I | I | C |
| Output Message of Automated Storage Tiering | C | C | I | I | I | I | I |
| Item Name of Tiering Policy | C | C | C | C | C | C | I |
| Action Name of Tier Pool | C | C | C | C | C | C | I |
| Item Name of Tier Pool | C | C | C | C | C | I | I |
| Item Name of FTV | C | C | C | C | C | C | I |
| Count Method in Extended Copy Sessions and Default Filter on Session List Screen | C | C | I | C | C | C | C |
| Setting Method and Minimum Value for Copy Table Size | C | C | I | C | C | C | C |
| Screen Refresh Interval and Display/Input Unit of Web Console | C | C | I | I | C | C | C |
| Help Button Design and Online Help Display Procedures of Web Console | C | C | I | I | C | C | C |
| Sanma.conf Configuration Checking for Device Registration | C | C | I | I | I | I | C |
| Customizing Configuration File | I | I | I | I | I | I | C |
| Operations for Host Response | C | C | I | I | I | I | C |
| Changes Character Strings in Performance Chart Window | C | C | I | I | I | I | C |
| Online Manual in DVD-ROM Media | I | I | I | I | I | I | C |
| Online Help Feature | C | C | I | I | I | I | C |
| Changes Configuration File Path for Port Number | C | C | I | I | I | I | C |
| Name of Commands Related to Configuration Import | C | C | I | I | I | I | C |
| Holding of Checks Placed in Table Checkboxes and Table Radio Buttons | I | I | I | I | I | I | I |
| Displayed Strings for CA Type Information | C | C | C | C | C | C | I |
| Category Pane Related to NAS Management Operation in Web Console | C | C | C | C | C | C | I |

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

Table 2.3 Incompatible Information List of Storage Cruiser (When Version Before Migration is 13.4 or Earlier)

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

| Functions and Compatibility Issues | Version Before Migration | | | | |
|---|---|---|---|---|---|
| | 13.0 | 13.1 | 13.2 | 13.3 | 13.4 |
| Tiering Policy Import Command Name | C | C | C | C | C |
| Output Message ID of Storage Cruiser | C | C | C | I | I |
| Output Message of Automated Storage Tiering | C | C | C | C | C |
| Item Name of Tiering Policy | C | C | C | C | C |
| Action Name of Tier Pool | C | C | C | C | C |
| Item Name of Tier Pool | C | C | C | C | C |
| Item Name of FTV | C | C | C | C | C |
| Count Method in Extended Copy Sessions and Default Filter on Session List Screen | C | C | C | C | C |
| Setting Method and Minimum Value for Copy Table Size | C | C | C | C | C |
| Screen Refresh Interval and Display/Input Unit of Web Console | C | C | C | C | C |
| Help Button Design and Online Help Display Procedures of Web Console | C | C | C | C | C |
| Sanma.conf Configuration Checking for Device Registration | C | C | C | C | C |
| Customizing Configuration File | I | I | I | I | I |
| Operations for Host Response | C | C | C | C | C |
| Changes Character Strings in Performance Chart Window | C | C | C | C | C |
| Online Manual in DVD-ROM Media | I | I | I | I | I |
| Online Help Feature | C | C | C | C | C |
| Changes Configuration File Path for Port Number | C | C | C | C | C |
| Name of Commands Related to Configuration Import | C | C | C | C | C |
| Holding of Checks Placed in Table Checkboxes and Table Radio Buttons | I | I | I | I | I |
| Displayed Strings for CA Type Information | C | C | C | C | C |
| Category Pane Related to NAS Management Operation in Web Console | C | C | C | C | C |

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

Table 2.4 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 | 16.0 |
| Registration Method for Remote ETERNUS Disk Storage System Using AdvancedCopy Manager Copy Control Module | I | I | C | 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 | C |
| Output Messages of AdvancedCopy Manager Copy Control Module | I | I | C | C | C | C | C | C |
| Name of Term Used with AdvancedCopy Manager Copy Control Module | I | I | I | C | C | C | C | C |
| Supports of GUI Client | I | I | I | C | C | C | C | C |

| Functions and Compatibility Issues | Version Before Migration | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 14.0 or Earlier | 14.1 | 14.2 | 15.0 | 15.1 | 15.2 | 15.3 | 16.0 |
| Changes for Supported Storage Devices | I | I | I | I | I | I | I | C |
| Changes for Supported Operating Systems | I | I | I | I | I | I | I | C |
| Changes for Supported Web Browsers | C | C | C | I | I | I | I | C |
| Changes for Supported Agent Version | I | I | I | I | I | I | I | C |
| Changes for Supported Software | I | I | I | I | I | I | I | I |
| Default Installation Path of Programs (for Windows) | I | I | I | C | C | C | C | C |
| Installation Destination Directory of Program (for Solaris, Linux) | I | I | I | C | C | C | C | C |
| Command Preview | I | I | I | C | C | C | C | C |
| Stgmgrinfobkup Command Processing at -t Option Specification | I | I | I | C | C | C | C | C |
| Output Information of Stgenvdisp Command | I | I | I | C | C | C | C | C |
| Swstbackup Command Processing (for Windows) | I | I | I | C | C | C | C | C |
| Swsrpmake Command and Swsrpcancel Command Processing (for Windows) | I | I | I | C | C | C | C | C |
| Environment Setup/Deletion Methods for PRIMECLUSTER (for Linux) | I | I | I | C | C | C | C | C |
| Troubleshooting Information Collection Command Name and Path Name | I | I | I | C | C | C | C | C |
| Swsrpmake Command Processing on Combining Cascade Copy and Concurrent OPC | C | C | C | I | C | C | C | C |
| Acopc Start Command and Acsnap Start Command Processing | C | C | C | I | C | C | C | C |
| Environment Setup/Deletion Methods for Clustered Systems (for Solaris, HP-UX) | I | I | I | I | C | C | C | C |
| AdvancedCopy Manager Copy Control Module Customization Procedure | C | C | C | I | C | C | C | C |
| Copy Progress Rate of QuickOPC | I | I | I | I | C | C | C | C |
| Information to Be Displayed If Hardware Error, etc. Occurs | I | I | I | I | I | C | C | C |
| Automatic Configuration of Maintenance Mode of MSCS or WSFC | I | I | I | I | I | I | I | I |
| Database Backup/Restore Method | I | I | I | I | I | I | I | I |
| Database Save/Recovery Method | I | I | I | I | I | I | I | I |
| Target of Management Information Package Backup of AdvancedCopy Manager | I | I | I | I | I | I | I | I |
| Commands/Services/Daemons Related to AdvancedCopy Manager Database | I | I | I | I | I | I | I | I |
| Items Displayed by Stgenvdisp Command | I | I | I | I | I | I | I | I |
| Meaning of -d Option of Stgrepocnv Command | I | I | I | I | I | I | I | I |
| Meaning of -b Option of Stgforcedelsrv Command | I | I | I | I | I | I | I | I |
| Name of NAS Backup Volume and Copy Group Created by Setting of NAS Backup | C | C | C | C | C | C | C | I |

| Functions and Compatibility Issues | Version Before Migration | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 14.0 or Earlier | 14.1 | 14.2 | 15.0 | 15.1 | 15.2 | 15.3 | 16.0 |
| Count Method in Extended Copy Sessions and Default Filter on Session List Screen | C | C | C | I | C | C | C | C |
| Setting Method and Minimum Value for Copy Table Size | C | C | C | I | C | C | C | C |
| Screen Refresh Interval and Display/Input Unit of Web Console | C | C | C | I | I | C | C | C |
| Help Button Design and Online Help Display Procedures of Web Console | C | C | C | I | I | C | C | C |
| Changes Communication Port Default Value | I | I | I | I | I | I | I | C |
| Sanma.conf Configuration Checking for Device Registration | C | C | C | I | I | I | I | C |
| Customizing Configuration File | C | C | C | I | I | I | I | C |
| Online Manual in DVD-ROM Media | I | I | I | I | I | I | I | C |
| Online Help Feature | C | C | C | I | I | I | I | C |
| Changes Configuration File Path for Port Number | C | C | C | I | I | I | I | C |
| Name of Commands Related to Configuration Import | C | C | C | I | I | I | I | C |
| Holding of Checks Placed in Table Checkboxes and Table Radio Buttons | I | I | I | I | I | I | I | I |
| Displayed Strings for CA Type Information | C | C | C | C | C | C | C | I |
| Category Pane Related to NAS Management Operation in Web Console | C | C | C | C | C | C | C | 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<br>Firefox 3.5 |
| 16.0 or later | Firefox 3.6<br>Firefox ESR 10 |

## See

Refer to "Supported Web Browsers" in the *ETERNUS SF Web Console Guide* for the version 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)<br>Windows Server 2003, Standard x64 Edition (non-SP and SP2)<br>Windows Server 2003, Enterprise Edition (non-SP)<br>Windows Server 2003, Enterprise x64 Edition (non-SP and SP2)<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Standard x64 Edition (non-SP and SP2)<br>Windows Server 2003 R2, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Enterprise x64 Edition (non-SP and SP2) |
| 16.0 or later | Windows Server 2003, Standard Edition SP2<br>Windows Server 2003, Enterprise Edition SP2<br>Windows Server 2003 R2, Standard Edition SP2<br>Windows Server 2003 R2, Enterprise Edition SP2<br>Windows Server 2008 Standard without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter without Hyper-V (32-bit)<br>Windows Server 2008 Standard SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Standard (32-bit)<br>Windows Server 2008 Enterprise (32-bit)<br>Windows Server 2008 Datacenter (32-bit)<br>Windows Server 2008 Standard SP2 (32-bit)<br>Windows Server 2008 Enterprise SP2 (32-bit)<br>Windows Server 2008 Datacenter SP2 (32-bit)<br>Red Hat Enterprise Linux 5 (for x86)<br>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.

## See
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Refer to "Operating Environment of ETERNUS SF Manager" in the *ETERNUS SF Installation and Setup Guide* for the operating systems supported by this version of 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<br>Business administrator: User in the Administrators group |
| 15.0 or later | System administrator: User in the ESFAdmin role group<br>Business administrator: User in the ESFMon or ESFAdmin role group |

## 2.2.4 Specification of FQDN (Fully Qualified Domain Name)

The specification of FQDN has been changed as follows:

| Version | Details |
|---|---|
| 14.2 or earlier | On the Web Console, the following operations can specify FQDN. <br><br> - Registering or changing ETERNUS Disk storage system <br><br> - SMTP server setting in Contacts information settings |
| 15.0 or later | On the Web Console, the following operations cannot specify FQDN. <br><br> - Registering or changing ETERNUS Disk storage system <br><br> - SMTP server setting in Contacts information settings |

## 2.2.5 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. |

## 2.2.6 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. <br><br> 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. <br><br> Instead, perform a forced cancel or forced suspend of the remote copy session without moving the copy group definition to the remote site. |

### 🔖 See
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Refer to the following manuals for information on the forced cancel or forced suspend of remote copy sessions on this version:

  - "Display/Forcible Suspend/Forcible Cancel Copy Session" in the *ETERNUS SF Web Console Guide*

  - "Forcibly Stopping Copy Sessions" and "Forcibly Suspending REC Sessions" in the *ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module*

. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

## 2.2.7 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. |

## 2.2.8 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. |

## 2.2.9 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.

## 2.2.10 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.<br><br>- 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.<br><br>- 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.

## 2.2.11 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. |

## 2.2.12 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 contact Fujitsu Technical Support. |

## 2.2.13 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.

## 2.2.14 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.

## 2.2.15 Response Time Displayed by Performance Management

The response time of volumes and RAID groups has been changed as follows:

| Version | Details |
|---|---|
| 16.0 or earlier | The response time of volumes and RAID groups is a value influenced by I/O generated by operations of Advanced Copy. |
| 16.1 or later | The response time of volumes and RAID groups is a value not influenced by I/O generated by operations of Advanced Copy.<br>If Advanced Copy operates, it may be higher than values displayed on Version 16.0 or earlier. |

# 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. |

| Type of Script | Version | Details |
|---|---|---|
| | 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. |
| | 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)

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## 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<br>Unit status changed: Warning<br>Unit status changed: Error |

| Version | Details |
|---|---|
| 14.0 or later | Connection OK |

See

 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.<br><br>- If in use with ServerView AlarmService, the mpmsts ON command must be executed.<br><br>- 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.<br><br>For Windows Server 2003: SNMP Trap Service<br>For Windows Server 2008 or later: SNMP Trap<br><br>- If in use with ServerView AlarmService, the mpmsts ON command need not be executed.<br><br>- 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.<br><br>- No special settings are required to use FJSVswstt.<br><br>- If in use with ServerView AlarmService, the ServerView trap transfer program is required.<br><br>- 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.<br><br>- The snmptrapd settings must be changed in order to use the snmptrapd.<br><br>- If in use with ServerView AlarmService, the ServerView trap transfer program (SMAWtrpsv) is not required. |

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

### See

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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.

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## 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<br><br>Windows Server 2008 R2 Foundation (non-SP and SP2)<br>Windows Server 2003, Standard Edition (non-SP)<br>Windows Server 2003, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Standard x64 Edition (non-SP and SP2) |

| Version | Details |
|---|---|
|  | Windows Server 2003 R2, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Enterprise x64 Edition (non-SP and SP2)<br><br>- Storage Cruiser's agent<br><br>Windows Server 2008 for Itanium-Based Systems (non-SP and SP2)<br>Windows Server 2003, Standard Edition (non-SP)<br>Windows Server 2003, Standard x64 Edition (non-SP)<br>Windows Server 2003, Enterprise Edition (non-SP)<br>Windows Server 2003, Enterprise x64 Edition (non-SP)<br>Windows Server 2003, Enterprise Edition for Itanium-based Systems SP2<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Standard x64 Edition (non-SP)<br>Windows Server 2003 R2, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Enterprise x64 Edition (non-SP)<br>Solaris 8 Operating System<br>Red Hat Enterprise Linux 5 (for Intel Itanium)<br>Red Hat Enterprise Linux AS (v.4 for Itanium)<br>Red Hat Enterprise Linux AS (v.3 for x86)<br>Red Hat Enterprise Linux ES (v.3 for x86)<br>SUSE Linux Enterprise Server 9 for EM64T |
| 16.0 or later | - Storage Cruiser's manager<br><br>Windows Server 2003, Standard Edition SP2<br>Windows Server 2003, Enterprise Edition SP2<br>Windows Server 2003 R2, Standard Edition SP2<br>Windows Server 2003 R2, Enterprise Edition SP2<br>Windows Server 2008 Standard without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter without Hyper-V (32-bit)<br>Windows Server 2008 Standard SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Standard (32-bit)<br>Windows Server 2008 Enterprise (32-bit)<br>Windows Server 2008 Datacenter (32-bit)<br>Windows Server 2008 Standard SP2 (32-bit)<br>Windows Server 2008 Enterprise SP2 (32-bit)<br>Windows Server 2008 Datacenter SP2 (32-bit)<br>Solaris 9 Operating System<br>Red Hat Enterprise Linux 5 (for x86)<br>Red Hat Enterprise Linux 6 (for x86)<br><br>- Storage Cruiser's agent<br><br>HP-UX 11.0<br>AIX 5L 5.3<br>VMware Infrastructure 3 Foundation<br>VMware Infrastructure 3 Standard<br>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.

## 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<br>Firefox ESR 10 |

## 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)<br>ETERNUS SF Storage Cruiser's agent Version 13.x |

## 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. |

## 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.<br><br>- 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.<br><br>- 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.<br><br>- The following items relative to correlation management cannot be displayed:<br><br>    - Business components (application) display<br><br>    - DBMS display<br><br>    - File system (mount point) display<br><br>    - Mirror drive display<br><br>    - Multipath driver display |

| Version | Details |
|---|---|
|  | - 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.<br><br>- The content displaying in the performance management graph is available to output as a JPEG file. |
| 15.0 or later | - The processing for threshold monitoring of performance management function does not display the condition report.<br><br>- 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.<br><br>- ETERNUS DX80 S2/DX90 S2<br><br>- ETERNUS DX400 S2 series<br><br>- ETERNUS DX8000 S2 series<br><br>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:<br><br>    - Used capacity<br><br>    - Remain capacity<br><br>- The following items that can be selected as the unit:<br><br>    - TB<br><br>    - %<br><br>- The following items that can be selected as the Duration:<br><br>    - Past 1 month<br><br>    - Past $n$ year ($n$: 1 - 10)<br><br>- 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".<br><br>- The unit is only TB.<br><br>- The following items that can be selected as the Duration:<br><br>    - Past 1 month<br><br>    - Past 1 Year<br><br>    - Past 10 years<br><br>- 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 |

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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.

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## 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.<br>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.<br>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.<br>The map display allows for display of connecting lines between icons, statuses of access paths, and physical lines that are forming access paths.<br>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:<br><br>`# /opt/FJSVssmgr/sbin/storageadm port info -ipaddr 1.2.3.4 -csv`<br>`PORT ID,PORT NAME,STATUS,TYPE,AFFINITY,PORT ADDRESS,SUPPLEMENT INFORMATION`<br>`00,CM0Port0,Online,FC-CA,On,1234567890ABCDEE,-`<br>`01,CM0Port1,Undefined,FC-CA,Off,0000000000000000,-`<br>`10,CM1Port0,Online,FC-CA,On,1234567890ABCDEF,-`<br>`11,CM1Port1,Undefined,FC-CA,Off,0000000000000000,-` |
| 15.1 or later | Absent port information is not displayed. The command execution example is as follows:<br><br>`# /opt/FJSVssmgr/sbin/storageadm port info -ipaddr 1.2.3.4 -csv`<br>`PORT ID,PORT NAME,STATUS,TYPE,AFFINITY,PORT ADDRESS,SUPPLEMENT INFORMATION`<br>`00,CM0Port0,Online,FC-CA,On,1234567890ABCDEE,-`<br>`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:<br><br>```<br># /opt/FJSVssmgr/sbin/storageadm iscsiport info -ipaddr 1.2.3.4 -csv<br>PORT ID,NAME,STATUS,TYPE,AFFINITY,ISCSI NAME,IP ADDRESS<br>00,CM0Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-<br>system.e2000:0000000029,172.16.4.40<br>01,CM0Port1,Undefined,iSCSI-CA,Off, ,-<br>10,CM1Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-<br>system.e2000:0000000029,172.16.4.41<br>11,CM1Port1,Undefined,iSCSI-CA,Off, ,-<br>``` |
| 15.1 or later | Absent port information is not displayed. The command execution example is as follows:<br><br>```<br># /opt/FJSVssmgr/sbin/storageadm iscsiport info -ipaddr 1.2.3.4 -csv<br>PORT ID,NAME,STATUS,TYPE,AFFINITY,ISCSI NAME,IP ADDRESS<br>00,CM0Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-<br>system.e2000:0000000029,172.16.4.40<br>10,CM1Port0,Online,iSCSI-CA,On,iqn.2000-09.com.fujitsu:storage-<br>system.e2000:0000000029,172.16.4.41<br>``` |

## 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, *yy*: Level, *zzzz*: Release |
| 15.2 or later | V*xx*L*yy*-*zzzz* | |

## 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:<br><br>- -host<br><br>- -storage<br><br>- -library<br><br>- -switch<br><br>- -hub<br><br>- -bridge<br><br>Specify one of the following as the way to identify a device:<br><br>- ip: IP address of a device<br><br>- sysname: SysName name of SNMP that is set to the device<br><br>- nickname: Device management name that is set for this software |
| 16.0 or later | The following can be specified as a device type:<br><br>- -all<br><br>- -host<br><br>- -storage |

| Version | Details |
|---|---|
| |   -  -library<br><br>  -  -switch<br><br>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:<br><br>  -  ip: IP address of a device<br><br>  -  sysname: SysName name of SNMP that is set to the device |

 See
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Refer to "Command References" in the *ETERNUS SF Storage Cruiser Operation Guide* for information on the command.
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## 2.3.33 Changes Connection Method Between Storage Cruiser's Manager and Managed Switches

The communication method between the Storage Cruiser's manager and Fibre Channel switch has changed.

| Version | Details |
|---|---|
| 16.0 or earlier | Telnet communication is used. |
| 16.1 or later | Telnet communication is used for Fibre Channel switches with Fabric OS v6.2 or earlier.<br>SSH communication is used for Fibre Channel switches with Fabric OS v6.3 or later. |

## 2.3.34 Response Time Displayed by Performance Management

The response time of volumes and RAID groups has been changed as follows:

| Version | Details |
|---|---|
| 16.0 or earlier | The response time of volumes and RAID groups is a value influenced by I/O generated by operations of Advanced Copy. |
| 16.1 or later | The response time of volumes and RAID groups is a value not influenced by I/O generated by operations of Advanced Copy.<br>If Advanced Copy operates, it may be higher than values displayed on Version 16.0 or earlier. |

## 2.3.35 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". |

## 2.3.36 Output Message ID of Storage Cruiser

The IDs of messages output by Storage Cruiser have been changed as follows:

| Message ID | Version | Details |
|---|---|---|
| ssmgr3210 | 13.3 to 15.3 | The ssmgr3210 is output. |
| | 16.0 or later | The ssmgr3210 or ssmgr3400 is output. |

| Message ID | Version | Details |
|---|---|---|
| ssmgr3219 | 13.3 to 15.3 | The ssmgr3219 is output. |
| | 16.0 or later | The ssmgr3219 or ssmgr3405 is output. |
| ssmgr3401 | 13.4 to 15.3 | The ssmgr3401 is output. |
| | 16.0 or later | The ssmgr3021, ssmgr3401, or ssmgr3402 is output. |
| ssmgr3450 | 14.0 to 15.3 | The ssmgr3450 is output. |
| | 16.0 or later | The ssmgr3450 or ssmgr3490 is output. |
| ssmgr7003 | 14.0 to 15.3 | The ssmgr7003 is output. |
| | 16.0 or later | The ssmgr7003 or swsag0187 is output. |

## 2.3.37   Output Message of Automated Storage Tiering

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

| Message ID | Version | Details |
|---|---|---|
| esast0107 | 15.3 or earlier | Illegal internal processing has been detected. Unable to use the service ({0}) from any remote clients. |
| | 16.0 or later | Invalid internal processing has been detected. Unable to use the service ({0}) from any remote clients. |
| esast0111 | 15.3 or earlier | 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}. |
| | 16.0 or later | 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 | 15.3 or earlier | Illegal internal processing has been detected on the manager. Unable to create the service ({0}). |
| | 16.0 or later | Invalid internal processing has been detected on the manager. Unable to create the service ({0}). |
| esast0113 | 15.3 or earlier | Illegal internal processing has been detected: {0} |
| | 16.0 or later | Invalid internal processing has been detected: {0} |
| esast0997 | 15.3 or earlier | Encoding string list for ({0}) is failed. |
| | 16.0 or later | Encoding string for ({0}) failed. |
| esast1101 | 15.3 or earlier | Internal error. License information is not set. |
| | 16.0 or later | Internal error occurred in license information settings. |
| esast1103 | 15.3 or earlier | The expiration date of the license ({0}) has passed. |
| | 16.0 or later | Required license ({0}) to enable this function is expired. |
| esast2001 | 15.3 or earlier | Reading the policy datafile is failed. |
| | 16.0 | Loading tiering policy data file failed. |
| | 16.1 or later | Loading Tiering policy data file failed. |
| esast2002 | 15.3 or earlier | Making backup of the policy datafile is failed. |
| | 16.0 | Making backup of tiering policy data file is failed. |
| | 16.1 or later | Making backup of Tiering policy data file failed. |
| esast2003 | 15.3 or earlier | The policy data ({0}) was not able to be added to the policy datafile. |
| | 16.0 | Tiering policy ({0}) was not able to be added to tiering policy data file. |
| | 16.1 or later | Tiering policy ({0}) was not able to be added to Tiering policy data file. |

| Message ID | Version | Details |
|---|---|---|
| esast2004 | 15.3 or earlier | The policy data ({0}) was not able to be updated to the policy datafile. |
| | 16.0 | Tiering policy ({0}) was not able to be updated to tiering policy data file. |
| | 16.1 or later | Tiering policy ({0}) was not able to be updated to Tiering policy data file. |
| esast2005 | 15.3 or earlier | The policy data ({0}) was not able to be removed to the policy datafile. |
| | 16.0 | Tiering policy ({0}) was not able to be removed to tiering policy data file. |
| | 16.1 or later | Tiering policy ({0}) was not able to be removed from Tiering policy data file. |
| esast2006 | 15.3 or earlier | The policy data ({0}) is already existed. |
| | 16.0 or later | Tiering policy ({0}) exists. |
| esast2007 | 15.3 or earlier | The policy data ({0}) does not exist. |
| | 16.0 or later | Tiering policy ({0}) does not exist. |
| esast2008 | 15.3 or earlier | The Auto tier service ({0}) has already been started. policy name={1} |
| | 16.0 | The Automated Storage Tiering ({0}) has already been started. Policy Name={1} |
| | 16.1 or later | Automated Storage Tiering ({0}) has already been started. Policy Name={1} |
| esast2009 | 15.3 or earlier | The number of policy data is already the maximum numbers. |
| | 16.0 | The number of policy is already the maximum numbers. |
| | 16.1 or later | The number of Tiering policies has reached maximum. |
| esast2010 | 15.3 or earlier | The policy data ({0}) has inaccurate the range of level. level={1} |
| | 16.0 | There is error in Data Range of Tier Level in tiering policy ({0}). Data Range of Tier Level={1} |
| | 16.1 or later | There is error in Data Range of Layer in Tiering policy ({0}). Data Range of Layer={1} |
| esast2011 | 15.3 or earlier | The tier pool ({0}) used by policy data ({1}) is already existed. |
| | 16.0 | Tier pool ({0}) using tiering policy ({1}) exists. |
| | 16.1 or later | Tier pool ({0}) using Tiering policy ({1}) exists. |
| esast2012 | 15.3 or earlier | The policy data ({0}) has inaccurate expire. type={1} expire={2} |
| | 16.0 | There is error in specified Automated Storage Tiering Time Limit in tiering policy ({0}). Evaluation Period(type)={1} Automated Storage Tiering Time Limit={2} |
| | 16.1 or later | 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 | 15.3 or earlier | The policy data ({0}) has inaccurate interval. type={1} interval={2} |
| | 16.0 | There is error in specified Evaluation Period in tiering policy ({0}). Evaluation Period(type)={1} Evaluation Period(interval)={2} |
| | 16.1 or later | There is error in specified Evaluation Period in Tiering policy ({0}). Evaluation Period(type)={1} Evaluation Period(interval)={2} |
| esast2999 | 16.0 or earlier | PolicyFileService is internal error occurred. |
| | 16.1 or later | Internal error occurred in PolicyFileService. |
| esast3001 | 15.3 or earlier | Reading the tier datafile ({0}) is failed. |
| | 16.0 | Loading tier pool data file ({0}) failed. |
| | 16.1 or later | Loading Tier pool data file ({0}) failed. |
| esast3002 | 15.3 or earlier | Making backup of the tier datafile ({0}) is failed. |
| | 16.0 | Making backup of tier pool data file ({0}) is failed. |

| Message ID | Version | Details |
|---|---|---|
| | 16.1 or later | Making backup of Tier pool data file ({0}) failed. |
| esast3003 | 15.3 or earlier | The tier data ({0}) was not able to be added to the tier datafile. |
| | 16.0 | Tier pool ({0}) was not able to be added to tier pool data file. |
| | 16.1 or later | Tier pool ({0}) was not able to be added to Tier pool data file. |
| esast3004 | 15.3 or earlier | The tier data ({0}) was not able to be updated to the tier datafile. |
| | 16.0 | Tier pool ({0}) was not able to be updated to tier pool data file. |
| | 16.1 or later | Tier pool ({0}) was not able to be updated to Tier pool data file. |
| esast3005 | 15.3 or earlier | The tier data ({0}) was not able to be removed to the tier datafile. |
| | 16.0 | Tier pool ({0}) was not able to be removed to tier pool data file. |
| | 16.1 or later | Tier pool ({0}) was not able to be removed from Tier pool data file. |
| esast3006 | 15.3 or earlier | The tier data ({0}) is already existed. |
| | 16.0 | Tier pool ({0}) is already existed. |
| | 16.1 or later | Tier pool ({0}) already exists. |
| esast3007 | 15.3 or earlier | The tier data ({0}) does not exist. |
| | 16.0 or later | Tier pool ({0}) does not exist. |
| esast3012 | 15.3 or earlier | Group setting of Flexible Tier Sub Pool set to the Tier pool ({0}) is not corresponding to the level setting of policy data ({1}). |
| | 16.0 | Configuration of Sub Pool set to Tier pool ({0}) does not agree with level configuration of tiering policy ({1}). |
| | 16.1 or later | Tiering policy ({1}) is not applicable to the number of sub-pools set to Tier pool ({0}). |
| esast3013 | 15.3 or earlier | The tier data ({0}) is not exist Flexible tier sub pool number ({1}). |
| | 16.0 or later | FTSP Number ({1}) does not exist in Tier pool ({0}). |
| esast3014 | 15.3 or earlier | Ratio setting of FTV ({0}) is wrong. |
| | 16.0 or later | FTV Quota Share setting ({0}) is wrong. |
| esast3015 | 15.3 or earlier | Ratio setting of FTV ({0}) is not corresponding to the Flexible tier sub pool setting of Tier pool ({1}). |
| | 16.0 | FTV Quota Share setting ({0}) is not corresponding to the sub pool setting of tier pool ({1}). |
| | 16.1 or later | FTV Quota Share setting ({0}) is not corresponding to sub-pool setting of Tier pool ({1}). |
| esast3016 | 15.3 or earlier | FTV number(s) ({0}) does not exist. |
| | 16.0 or later | FTV Number(s) ({0}) does not exist. |
| esast3017 | 16.0 or earlier | FTV Quota Share setting is not allowed in tier pool ({0}). |
| | 16.1 or later | FTV Quota Share setting is not allowed in Tier pool ({0}). |
| esast3018 | 16.0 or earlier | The groups of tier pool ({0}) is not set at the {1} level. |
| | 16.1 or later | The groups of Tier pool ({0}) are not set at the {1} level. |
| esast3020 | 16.0 or earlier | Tier pool ({0}) does not agree with tier pool ({1}) in the storage, in information. |
| | 16.1 or later | ETERNUS SF information for Tier pool ({0}) is different from storage device information for Tier pool ({1}). |
| esast3100 | 16.0 or earlier | Import tier pool terminated normally. |
| | 16.1 or later | Import Tier pool terminated normally. |

| Message ID | Version | Details |
|---|---|---|
| esast3101 | 16.0 or earlier | Warning occurred in Import tier pool.({0}={1},{0}={1},...) |
| | 16.1 or later | Warning occurred in Import Tier pool.({0}={1},{0}={1},...) |
| esast3102 | 16.0 or earlier | Error occurred with Import tier pool. ({0}={1},{0}={1},...) |
| | 16.1 or later | Error occurred with Import Tier pool. ({0}={1},{0}={1},...) |
| esast4900 | 15.3 or earlier | The Automated storage tiering of specified Tier pool name ({0}) has already been started. |
| | 16.0 | The Automated storage tiering of specified Tier Pool Name ({0}) has already been started. |
| | 16.1 or later | Automated Storage Tiering of specified Tier Pool Name ({0}) has already been started. |
| esast4901 | 15.3 or earlier | The pool name ({0}) which did not start was appointed. Please begin the Automated storage tiering. |
| | 16.0 | The Tier Pool Name ({0}) which did not start was appointed. Please begin the Automated storage tiering. |
| | 16.1 or later | Tier pool whose Operating Status is not Start was specified. Start Automated Storage Tiering for the Tier pool ({0}). |
| esast4902 | 15.3 or earlier | The Automated storage tiering information related to Tier pool name ({0}) does not exist. |
| | 16.0 | The Automated storage tiering information related to Tier Pool Name ({0}) does not exist. |
| | 16.1 or later | Automated Storage Tiering information related to Tier Pool Name ({0}) does not exist. |
| esast4903 | 15.3 or earlier | Illegal start mode ({1}) was specified. Please confirm Tier pool definition ({0}). |
| | 16.0 or later | Invalid Execution Mode ({1}) was specified. |
| esast4904 | 15.3 or earlier | Illegal start time ({1}) was specified. Please confirm Tier pool definition ({0}). |
| | 16.0 or later | Invalid start time ({0}) was specified. |
| esast4905 | 15.3 or earlier | It failed in the acquisition of the definition that related to specified Tier pool name ({0}). Result({1}) |
| | 16.0 or later | Obtaining definition related to specified Tier Pool Name ({0}) failed. Result ({1}) |
| esast4906 | 15.3 or earlier | 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} |
| | 16.0 or later | Specified FTV Number does not exist in relocated volume list. Discontinue volume relocation. Tier Pool Name={0} FTV Number={1} Evaluation Date={2} |
| esast4907 | 15.3 or earlier | 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} |
| | 16.0 | Specified FTV Number does not exist in relocated volume list. Discontinue volume clear. Tier Pool Name={0} FTV Number={1} Evaluation Date={2} |
| | 16.1 or later | Specified FTV Number does not exist in relocated volume list. Discontinue volume deletion. Tier Pool Name={0} FTV Number={1} Evaluation Date={2} |
| esast4999 | 16.0 or earlier | Automated storage tiering method failed. ({0}) CAUSE({1}) |
| | 16.1 or later | Automated Storage Tiering failed. ({0}) CAUSE({1}) |
| esast5000 | 16.0 or earlier | Failed to collect the performance data of the device ({0}). |
| | 16.1 or later | Failed to collect performance data of device ({0}). |
| esast5001 | 15.3 or earlier | Failed to extract the performance data of Tier Pool ({0}). |
| | 16.0 | Extracting performance data for tier pool ({0}) failed. |
| | 16.1 or later | Extracting performance data for Tier pool ({0}) failed. |

| Message ID | Version | Details |
|---|---|---|
| esast5002 | 15.3 or earlier | Failed to aggregate the performance data of Tier Pool ({0}). |
| | 16.0 | Aggregating performance data for tier pool ({0}) failed. |
| | 16.1 or later | Aggregating performance data for Tier pool ({0}) failed. |
| esast5003 | 16.0 or earlier | Unable to find the performance data of Tier Pool ({0}). |
| | 16.1 or later | Unable to find performance data of Tier pool ({0}). |
| esast5004 | 16.0 or earlier | Failed to delete all the performance data of Tier Pool ({0}). |
| | 16.1 or later | Failed to delete all the performance data of Tier pool ({0}). |
| esast5050 | 16.0 or earlier | Failed to evaluate the performance data of Tier Pool ({0}). |
| | 16.1 or later | Failed to evaluate performance data of Tier pool ({0}). |
| esast5051 | 15.3 or earlier | Failed to delete all the performance data of Tier Pool ({0}). |
| | 16.0 | Deleting all-tier performances information of tier pool ({0}) failed. |
| | 16.1 or later | Deleting all-tier performance information of Tier pool ({0}) failed. |
| esast5052 | 16.0 or earlier | Failed to get the summary of evaluation of Tier Pool ({0}). |
| | 16.1 or later | Failed to get evaluation summary of Tier pool ({0}). |
| esast5053 | 16.0 or earlier | Failed to get the details of evaluation of Tier Pool ({0}). |
| | 16.1 or later | Failed to get details of evaluation of Tier pool ({0}). |
| esast5054 | 15.3 or earlier | Failed to update the reallocate status of Tier Pool ({0}). |
| | 16.0 | Failed to update the relocation status of Tier Pool ({0}). |
| | 16.1 or later | Failed to update relocation status of Tier pool ({0}). |
| esast5100 | 16.0 or earlier | Failed to create the history of tiers of Tier Pool ({0}). |
| | 16.1 or later | Failed to create tier history of Tier pool ({0}). |
| esast5101 | 16.0 or earlier | Failed to delete the history of tiers of Tier Pool ({0}). |
| | 16.1 or later | Failed to delete tier history of Tier pool ({0}). |
| esast5102 | 15.3 or earlier | Failed to get all the history of tiers of Tier Pool ({0}). |
| | 16.0 | Obtaining all-tier information histories of tier pool ({0}) failed. |
| | 16.1 or later | Obtaining all-tier information history of Tier pool ({0}) failed. |
| esast5950 | 16.0 or earlier | Failed to initialize the performance management process. |
| | 16.1 or later | Failed to initialize performance management process. |
| esast5951 | 15.3 or earlier | Inconsistency definition has occurred at Tier Pool ({0}). |
| | 16.0 | Definition inconsistency occurred at tier pool ({0}). |
| | 16.1 or later | Definition inconsistency occurred at Tier pool ({0}). |
| esccs02504 | 15.3 or earlier | Re-registration of tier policy failed because some tier policies already exist. |
| | 16.0 or later | Re-registration of tiering policy failed because some tier policies already exist. |
| esccs02505 | 15.3 or earlier | Tier policy does not exist in the definition file. |
| | 16.0 or later | There was no policy in tiering policy definition. |

## 2.3.38   Item Name of Tiering Policy

Name of items in Tiering policy of Automated Storage Tiering has been changed as follows:

| Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|
| Configuration of Days to exclude from Evaluation | Configure Evaluation Excluded Day |
| Data Range of Tier Level | Data Range of Layer |

## 2.3.39   Action Name of Tier Pool

Name of actions related to Tier pool of Automated Storage Tiering has been changed as follows:

| Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|
| Create(One Tier) | Create(One Layer) |
| Modify Tier | Modify Layer |

## 2.3.40   Item Name of Tier Pool

Name of items related to Tier pool of Automated Storage Tiering has been changed as follows:

| Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|
| Number of Tiers | Number of Layers |

| Name in Version 15.3 | Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|---|
| CM | CM | Assigned CM |
| | Specify a CM | Specify Assigned CM |
| Assigned CM | Master CM | Assigned CM |
| | Specify a Master CM | Specify Assigned CM |

| Name in Version 15.3 or Earlier | Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|---|
| Used Capacity | Usage Capacity | Used Capacity |

## 2.3.41   Item Name of FTV

Name of an item in FTV of Automated Storage Tiering has been changed as follows:

| Name in Version 15.3 or Earlier | Name in Version 16.0 | Name in Version 16.1 or Later |
|---|---|---|
| Used Capacity | Usage Capacity | Used Capacity |

# 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) |

| OS | Version | Details |
|---|---|---|
| | 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* |
| 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* |

| Message ID | Version 14.1 or Earlier | Version 14.2 or Later |
|---|---|---|
| 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<br>ETERNUS3000 (all models)<br>ETERNUS6000 (all models)<br>ETERNUS GR series |
| 16.0 or later | ETERNUS2000 (all models)<br>ETERNUS4000 (all models)<br>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<br><br>Windows Server 2003, Standard Edition (SP1)<br>Windows Server 2003, Enterprise Edition (SP1)<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Enterprise Edition (non-SP)<br><br>- AdvancedCopy Manager's agent<br><br>Windows Server 2008 for Itanium-Based Systems (non-SP and SP2)<br>Windows Server 2003, Standard Edition (SP1)<br>Windows Server 2003, Standard x64 Edition (SP1)<br>Windows Server 2003, Enterprise Edition (non-SP)<br>Windows Server 2003, Enterprise x64 Edition (non-SP)<br>Windows Server 2003, Enterprise Edition for Itanium-based Systems (non-SP and SP2)<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Standard x64 Edition (non-SP)<br>Windows Server 2003 R2, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Enterprise x64 Edition (non-SP)<br>Solaris 8 Operating System<br>Red Hat Enterprise Linux 5 (for Intel Itanium)<br>Red Hat Enterprise Linux AS (v.4 for Itanium)<br><br>- AdvancedCopy Manager Copy Control Module<br><br>Windows Server 2008 for Itanium-Based Systems (non-SP and SP2)<br>Windows Server 2003, Standard Edition (SP1)<br>Windows Server 2003, Standard x64 Edition (SP1)<br>Windows Server 2003, Enterprise Edition (non-SP)<br>Windows Server 2003, Enterprise x64 Edition (non-SP)<br>Windows Server 2003, Enterprise Edition for Itanium-based Systems (non-SP and SP2)<br>Windows Server 2003 R2, Standard Edition (non-SP)<br>Windows Server 2003 R2, Enterprise Edition (non-SP)<br>Windows Server 2003 R2, Standard x64 Edition (non-SP)<br>Windows Server 2003 R2, Enterprise x64 Edition (non-SP) |
| 16.0 or later | - AdvancedCopy Manager's manager<br><br>Windows Server 2003, Standard Edition SP2<br>Windows Server 2003, Enterprise Edition SP2<br>Windows Server 2003 R2, Standard Edition SP2<br>Windows Server 2003 R2, Enterprise Edition SP2<br>Windows Server 2008 Standard without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter without Hyper-V (32-bit)<br>Windows Server 2008 Standard SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Enterprise SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Datacenter SP2 without Hyper-V (32-bit)<br>Windows Server 2008 Standard (32-bit)<br>Windows Server 2008 Enterprise (32-bit)<br>Windows Server 2008 Datacenter (32-bit)<br>Windows Server 2008 Standard SP2 (32-bit)<br>Windows Server 2008 Enterprise SP2 (32-bit)<br>Windows Server 2008 Datacenter SP2 (32-bit)<br>Solaris 9 Operating System |

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

## See
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

Refer to the following sections in the *ETERNUS SF Installation and Setup Guide* for the operating systems supported by this version of AdvancedCopy Manager:

- "Operating Environment of ETERNUS SF Manager"

- "Operating Environment of AdvancedCopy Manager's Agent"

- "Operating Environment of AdvancedCopy Manager CCM"

. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

## 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<br>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 |
| 16.1 or later | Exchange Server 2003 |

## 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<br>(Installation destination directory of packages) | Specification is required.<br>The default is /opt. | Cannot be specified.<br>The /opt is a fixed directory. |
| Fixed configuration directory<br>(Installation destination directory of environment setting files) | Specification is required.<br>The default is /etc/opt. | Cannot be specified.<br>The /etc/opt is a fixed directory. |
| Modifying configuration directory<br>(Installation destination directory of files to be modified; log file, temporary file, etc.) | Specification is required.<br>The default is /var/opt. | Cannot be specified.<br>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. |

### Information

After the change, when using the policy file settings and executing the stgmgrinfobkup command, even if the key name [AuthData] is at "Yes", the authentication management file will not be backed up.

## 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. |

### Information
.......................................................................................................

For Windows, the relation between the -Xflush option of the swstbackup command and the transaction volume locking specification file for backups is as follows:

| 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.<br><br>- stgclset_lxprm command<br><br>- stgclunset_lxprm command |
| 15.0 or later | The above two commands are not supported.<br>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:<br><br>   *installDir*\bin\acmcapture (*1)<br><br>- For Solaris or Linux:<br><br>   /opt/FJSVswstf/bin/acmcapture |
| 15.0 or later | - For Windows:<br><br>   *installDir*\Common\bin\esfsnap (*2)<br><br>- For Solaris or Linux:<br><br>   /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:<br><br>  *installDir*\bin\acmcapture (*1)<br><br>- For Solaris or Linux:<br><br>  /opt/FJSVccm/bin/acmcapture |
| 15.0 or later | - For Windows:<br><br>  *installDir*\Common\bin\esfsnap (*2)<br><br>- For Solaris or Linux:<br><br>  /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:<br><br>- stgclset_safe, stgclset_vcs, stgclset_sun, stgclset_mcsg, stgclset_hpvcs<br><br>- stgclunset_safe, stgclunset_vcs, stgclunset_sun, stgclunset_mcsg, stgclunset_hpvcs |
| 15.1 or later | Above commands are not supported.<br>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.<br><br>- ETERNUS DX80 S2/DX90 S2 (Firmware version is V10L30 or later)<br><br>- ETERNUS DX400 S2 series (Firmware version is V10L30 or later)<br><br>- 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.

- The **Status** column of the swstbackstat command

- The **Status** column of the swstrestore command

- The **Status** column of the swsthistdisp command

- The **Status** column of the swstsyncstat command

- The **Execute** column of the swstexecstat command

- The **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. |

 See
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
Refer to "Troubleshooting: Hardware Error During Backup" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for details.
. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .

## 2.4.26   Automatic Configuration of Maintenance Mode of MSCS or WSFC

In cluster operations using MSCS or WSFC, actions for when one disk holds one partition or when copy is performed on a per LUN basis have been changed as follows:

| Version | Details |
|---|---|
| 16.0 or earlier | The maintenance mode of physical disk resources is not automatically configured. |
| 16.1 or later | The maintenance mode of physical disk resources is automatically configured. |

However, if either one of the following conditions is met, the maintenance mode is not automatically configured.

- The maintenance mode of physical disk resources has been configured in advance.

- "ClusterResourceMaint=off" is described in the volume lock operation specification file.

Refer to "Notes on Backup in Clustered System" or "Notes on Replication in Clustered System" in the *ETERNUS SF AdvancedCopy Manager Operation Guide (for Windows)* for details.

## 2.4.27   Database Backup/Restore Method

The backup/restore method of AdvancedCopy Manager database has been changed as follows:

| Version | Details |
|---------|---------|
| 16.0 or earlier | - Backup<br><br>Use "DB Setup Tool" for Windows environment or the stgdbbackup command for Solaris/Linux environment to perform backup.<br><br>- Restore<br><br>Use "DB Setup Tool" for Windows environment or the stgdbrcv command for Solaris/Linux environment to perform restore. |
| 16.1 or later | - Backup<br><br>Perform backup in the steps described in "Backup of Common Control and AdvancedCopy Manager Repository" in the *ETERNUS SF AdvancedCopy Manager Operation Guide*.<br><br>- Restore<br><br>Perform restore in the steps described in "Restore of Common Control and AdvancedCopy Manager Repository" in the *ETERNUS SF AdvancedCopy Manager Operation Guide*. |

## 2.4.28  Database Save/Recovery Method

The save/recovery method of AdvancedCopy Manager database is no longer supported.

| Version | Details |
|---------|---------|
| 16.0 or earlier | - Save<br><br>Use "DB Setup Tool" for Windows environment or the stgdbdmp command for Solaris/Linux environment to perform save.<br><br>- Recovery<br><br>Use "DB Setup Tool" for Windows environment or the stgdbrcv command for Solaris/Linux environment to perform recovery. |
| 16.1 or later | The AdvancedCopy Manager database save/recovery method is not provided. |

## 2.4.29  Target of Management Information Package Backup of AdvancedCopy Manager

The target of management information package backup of AdvancedCopy Manager has been changed as follows:

| Version | Details |
|---------|---------|
| 16.0 or earlier | The AdvancedCopy Manager repository is included. |
| 16.1 or later | The AdvancedCopy Manager repository is not included.<br>After executing the stgmgrinfobkup command, the steps in "Restore of Common Control and AdvancedCopy Manager Repository" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* must be performed. |

## 2.4.30  Commands/Services/Daemons Related to AdvancedCopy Manager Database

The commands, services, and daemons related to AdvancedCopy Manager database are no longer supported.

**For Windows**

| Version | Details |
|---------|---------|
| 16.0 or earlier | The following tool, services, and commands are provided.<br><br>  - DB Seup Tool |

| Version | Details |
|---|---|
|  | - AdvancedCopy Manager GUI Service service |
|  | - SymfoWARE RDA RDBSWSTF service |
|  | - SymfoWARE RDB RDBSWSTF service |
|  | - stgdbdmp (Database save command) |
|  | - stgdbloginf (Repository update area busy rate check command) |
|  | - stguserset (Repository access user change command) |
| 16.1 or later | The above tool, services, and commands are not provided. |

**For Solaris or Linux**

| Version | Details |
|---|---|
| 16.0 or earlier | The following commands and daemons are provided. |
|  | - stgdbdmp (Database save command) |
|  | - stgdbrcv (Database recovery command) |
|  | - stgdbbackup (Database backup command) |
|  | - stgdbrestore (Database restoration command) |
|  | - stgdbset (Database integrated setup command) |
|  | - stgdbunset (Database integrated unsetup command) |
|  | - stgdbloginf (Repository update area busy rate check command) |
|  | - stgdbcom (RDB daemon start/stop command) |
|  | - stgrmicom (RMI daemon start/stop command) |
|  | - stguserset (Repository access user change command) |
|  | - RDB daemon |
|  | - RMI daemon |
| 16.1 or later | The above commands and daemons are not provided. |

## 2.4.31   Items Displayed by Stgenvdisp Command

The items displayed by the stgenvdisp command have been changed as follows:

**For Windows**

| Version | Details |
|---|---|
| 16.0 or earlier | The following items are displayed. |
|  | - Repository user |
|  | - DB log file |
|  | - DB dictionary file |
|  | - Repository database |
|  | - Database size |
|  | - Remote access |

| Version | Details |
|---------|---------|
| | - Exclusive control |
| | - Repository |
| 16.1 or later | The above items are not displayed. |

**For Solaris**

| Version | Details |
|---------|---------|
| 16.0 or earlier | The following items are displayed. |
| | - Repository user |
| | - DB file |
| | - RDB dictionary |
| | - RDB log file |
| | - Database space |
| | - Remote access |
| | - Exclusive control |
| | - Repository |
| | - Code |
| 16.1 or later | The above items are not displayed. |

**For Linux**

| Version | Details |
|---------|---------|
| 16.0 or earlier | The following items are displayed. |
| | - Repository user |
| | - DB file |
| | - RDB dictionary |
| | - RDB log file |
| | - Database space |
| | - Database size |
| | - Remote access |
| | - Exclusive control |
| | - Code |
| 16.1 or later | The above items are not displayed. |

## 2.4.32   Meaning of -d Option of Stgrepocnv Command

The meaning of the -d option of the stgrepocnv command has been changed as follows:

| Version | Details |
|---------|---------|
| 16.0 or earlier | Specify a directory that stores the migration target repository data with an absolute path. |

| Version | Details |
|---|---|
| 16.1 or later | Specify a directory that stores the migration target repository data of Version 16.0 or earlier with an absolute path, or specify the migration target repository data file of Version 16.1 or later with an absolute path. |

## 2.4.33　Meaning of -b Option of Stgforcedelsrv Command

The meaning of the -b option of the stgforcedelsrv command has been changed as follows:

| Version | Details |
|---|---|
| 16.0 or earlier | Specify a directory which has a backup of the database with a full path. |
| 16.1 or later | Specify a file which has a backup of the database with a full path. |

## 2.4.34　Name of NAS Backup Volume and Copy Group Created by Setting of NAS Backup

The name of NAS backup volume and copy group created by the "Set NAS Backup" (creation of NAS backup volume) operation has been changed as follows:

**NAS Backup Volume Name**

| Version | Details | |
|---|---|---|
| | Name | Naming Rule |
| 16.0 | *nasVolumeName*$bak*N* | "*nasVolumeName*" is a name of NAS volume. "N" is set automatically by the sequential number from 0. When the length of whole characters exceeds 16 characters, the end of the "nasVolumeName" is deleted so that the length of whole characters may become 16 characters. |
| 16.1 or later | *nasVolumeName*$bak_*N* | "*nasVolumeName*" is a name of NAS volume. "*N*" is a sequential number from 0. The number of digits varies. |

**Copy Group Name**

| Version | Details | |
|---|---|---|
| | Name | Naming Rule |
| 16.0 | NAS_QuickOPC_*N* | "*N*" is set automatically by the sequential number from 0. |
| 16.1 or later | NAS_QuickOPC_*nasVolumeName_N* | "*N*" is a sequential number from 0. The number of digits varies. |

# 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.<br><br>- 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.<br><br>- On the session list screen, "All Local or REC" is selected as the filter item for Copy Type by default when opening the screen. |

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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.<br>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.<br>The minimum value that can be set is 8. |

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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. <br><br> - Display/input unit of the screen refresh interval is "minute". |
| 15.2 or later | - The shortest screen refresh interval is 30 seconds. <br><br> - 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. <br><br> - 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. <br><br> - 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 (AdvancedCopy Manager Copy Control Module only)

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

| 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.<br><br>  - AUTODISCOVER_SUBNET<br><br>  - SNMP_COMMUNITY_NAME_FOR_IP<br><br>  - SNMP_COMMUNITY_NAME_FOR_AUTODISCOVER<br><br>  - LOG_CYCLE (Storage Cruiser only)<br><br>  - LOG_MAX_SIZE (Storage Cruiser only)<br><br>  - SNMPTH_LOG_COUNT (Storage Cruiser only)<br><br>  - SNMPTH_LOG_LIMIT (Storage Cruiser only) |
| 16.0 or later | The above-mentioned parameters cannot be customized with the sanma.conf file.<br>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.<br><br>  - Full-listed view / Detailed view of host response<br><br>  - Add / Change / Delete host response<br><br>  - 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<br>Read Data Transfer Throughput<br>Read Response Time<br>Read Cache Hit Rate | Read |
| Sum of Read IOPS<br>Sum of Read Data Transfer Throughput | Sum of Read |

| Version 15.3 or Earlier | Version 16.0 or Later |
|---|---|
| Sum of Read Response Time<br>Sum of Read Cache Hit Rate | |
| Write IOPS<br>Write Data Transfer Throughput<br>Write Response Time<br>Write Cache Hit Rate | Write |
| Sum of Write IOPS<br>Sum of Write Data Transfer Throughput<br>Sum of Write Response Time<br>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.<br><br>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). |
| 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.<br><br>`http://www.fujitsu.com/global/support/software/manual/`<br><br>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.<br><br>`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  in the menu area, **Help** is displayed.<br>By clicking **Help**, the online help is displayed. |

| Version | Details |
|---|---|
| 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 or later | *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". |

## 2.5.14  Holding of Checks Placed in Table Checkboxes and Table Radio Buttons

In the Web Console, the operation of table checkboxes and table radio buttons has been changed as follows:

| Version | Details |
|---|---|
| 16.0 or earlier | When operating the table (*1) that a checkbox or a radio button is checked, the check turns off. Therefore, checks of records that are not displayed on screen due to table operations are not processed. |
| 16.1 or later | When operating the table (*1) that a checkbox or a radio button is checked, the check is held. Therefore, checks of records that are not displayed on screen due to table operations are also processed. |

*1: Refers to the following operations:

   - Click **Filter** or **Clear** in **Filter Setting**.

   - Click the links (**<<, <, >, >>**) for the displayed page in **Page Setting**.

   - Click **Go** in **Page Setting**.

   - Change the pull-down menu in **Display *xxx* records** of **Displayed Record Setting**.

   - Click on the column of the table (sort the table).

## 2.5.15  Displayed Strings for CA Type Information

In the Web Console, strings displayed in **Type** column of CA in the Controller Enclosure screen for ETERNUS DX100 S3/DX200 S3, DX500 S3/DX600 S3 with FC16G-CA have been changed as follows:

| Version | Details |
|---|---|
| 16.0 | "16GFC-2ports" or "16GFC-4ports" is displayed. |
| 16.1 or later | "FC-2ports" or "FC-4ports" is displayed. |

## 2.5.16   Category Pane Related to NAS Management Operation in Web Console

In the Web Console, the contents of Category pane related to operations under the NAS management page (*1) have been changed as follows:

| Operations | Version | |
|---|---|---|
| | 16.0 | 16.1 or Later |
| Configure Authentication Server | NAS Interface | Environment Setting |
| Set NAS Backup (Creation of NAS backup volume) | Shared Folder | Backup Management |
| Backup of NAS Volume | | |
| Restore to NAS Volume | | |
| Mount Backup Destination | | |
| Unmount Backup Destination | | |

*1: The page is displayed by the following procedures.

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

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

3. On the Category pane, click **NAS Management**.

# 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 | 13.0 | PH00435 | Improved response time values and QoS delay time displayed in the performance management function.<br><br>(Express applies from the first version) | Yes | Yes | - |
| 2 | | PH01118 | If communication with a storage device fails, performance monitoring may stop.<br><br>(Express applies from the first version) | Yes | Yes | - |
| 3 | 13.4 | PH01456 | The registration of a server or "Reload Conf." operation for the server may fail. | - | Yes | - |
| 4 | 14.0 | PH01056 | Plot points on capacity graphs (1-month graphs) of Thin Provisioning Pools may not be displayed.<br><br>(Express applies from the first version) | Yes | Yes | - |
| 5 | 15.0 | PG94114 | The login to the Web Console may fail with the esccs10100 message. | Yes | Yes | Yes |
| 6 | | PG95798 | HBAs cannot be added to servers specified on **Server** tab of the Web Console. | Yes | Yes | - |
| 7 | | PG97628 | In the Web Console, the following operations may output the ccm5004 message and terminate abnormally.<br><br>- Reload ETERNUS Disk Storage System Configuration Information<br><br>- Configure Connection Type for ETERNUS Disk Storage System | Yes | Yes | Yes |
| 8 | | PG99541 | In the Web Console, the reloading configuration operation may output the ssmgr8025 message and terminate abnormally. | Yes | Yes | Yes |
| 9 | 15.1 | PH00932 | Improved the Overview display performance on the Map View. | - | Yes | - |
| 10 | | PH01655 | Improved the Logical Path View display performance on the Map View. | - | Yes | - |
| 11 | 15.2 | PH01115 | In Windows Server 2012, the acgetvolinfo command may terminate abnormally. | - | - | Yes |
| 12 | 15.3 | PH00360 | The backup processing by the automated backup/restoration scripts of the VMware virtual machine may terminate abnormally. | - | - | Yes |
| 13 | | PH00568 | In the web console, copy pairs that pair an encrypted volume and an unencrypted volume cannot be created. | Yes | - | Yes |
| 14 | | PH00981 | If the AdvancedCopy Manager's agent and the Java library apache log4j are applied on the system, launch of the Storage Cruiser's agent may fail. | - | Yes | - |
| 15 | 16.0 | PH00026 | The storageadm zone command which operates host affinity and zoning may output the ssmgr3000 message and terminate abnormally. | - | Yes | - |

| No. | Version Problem Reported | Problem Report Number | Problem | Product Name | | |
|---|---|---|---|---|---|---|
| | | | | EXP | SC | ACM |
| 16 | | PH00432 | In Automated Storage Tiering, the evaluation/relocation may be about the same as ETERNUS DX S2 series. | - | Yes | - |
| 17 | | PH00582 | Results of the storageadm zone delete command which deletes host affinity and zoning may not be reflected on results of the storageadm zone info command which displays host affinity and zoning. | - | Yes | - |
| 18 | | PH00586 | The status of manual embedded devices may display values that are different from the actual status. | - | Yes | - |
| 19 | | PH00927 | In the Tiering policy creation screen of Automated Storage Tiering, past dates may be selected in the calendar which sets date of "Configuration of Evaluation Excluded Day". | - | Yes | - |
| 20 | | PH01953 | When the storageadm zone command is concurrently executed from multiple terminals, the command may terminate abnormally. | - | Yes | - |
| 21 | | PH01954 | When an event for performance management function occurs, a PostgreSQL error message may be output in the system log and PostgreSQL process may increase in number. | Yes | Yes | - |

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