ETERNUS SF

ETERNUS SF
Express V15.3/
Storage Cruiser V15.3/
AdvancedCopy Manager V15.3

Web Console Guide

Windows

Preface

Purpose

This manual describes the ETERNUS SF Web Console (hereafter referred to as "Web Console") used by the following Storage Management Software ETERNUS SF products (hereafter referred to as "ETERNUS SF series"):

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

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

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

Intended Readers

This manual is intended for operators and system administrators using Express, Storage Cruiser or AdvancedCopy Manager for their storage management.

Organization

This manual is composed as follows:

Chapter 1 Operating Environment

This chapter describes the browsers supported by Web Console and the required environment settings.

Chapter 2 Starting and Stopping Web Console

This chapter explains how to start and stop the Web Console.

Chapter 3 Web Console Screen Layout

This chapter explains the screen layout of the Web Console.

Chapter 4 Web Console Operation Method

This chapter describes the procedure to call up the each screen of the Web Console.

Chapter 5 HTTPS Connection

This chapter explains the HTTPS connection.

Chapter 6 Notes

This chapter describes notes for the Web Console operations.

Notation

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

Operating systems

Product name	Notation	
Microsoft(R) Windows Server(R) 2003, Standard Edition Microsoft(R) Windows Server(R) 2003, Standard x64 Edition Microsoft(R) Windows Server(R) 2003, Enterprise Edition Microsoft(R) Windows Server(R) 2003, Enterprise x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Standard Edition Microsoft(R) Windows Server(R) 2003 R2, Standard x64 Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise Edition Microsoft(R) Windows Server(R) 2003 R2, Enterprise x64 Edition	Windows Server 2003	Windows
Microsoft(R) Windows Server(R) 2008 Standard (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Standard without Hyper-V(TM) (32-bit)	Windows Server 2008	

Product name	Notation	
(64-bit) Microsoft(R) Windows Server(R) 2008 Enterprise (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Enterprise without Hyper-V(TM) (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter (32-bit)(64-bit) Microsoft(R) Windows Server(R) 2008 Datacenter without Hyper-V(TM) (32-bit)(64-bit)		
Microsoft(R) Windows Server(R) 2008 R2 Foundation Microsoft(R) Windows Server(R) 2008 R2 Standard Microsoft(R) Windows Server(R) 2008 R2 Enterprise Microsoft(R) Windows Server(R) 2008 R2 Datacenter	Windows Server 2008 R2	
Microsoft(R) Windows Server(R) 2012 Standard Microsoft(R) Windows Server(R) 2012 Datacenter	Windows Server 2012	
Microsoft(R) Windows(R) XP Professional Edition Microsoft(R) Windows(R) XP Home Edition	Windows XP	
Windows Vista(R) Home Basic Windows Vista(R) Home Premium Windows Vista(R) Business Windows Vista(R) Enterprise Windows Vista(R) Ultimate	Windows Vista	
Windows(R) 7 Home Basic Windows(R) 7 Home Premium Windows(R) 7 Professional Windows(R) 7 Enterprise Windows(R) 7 Ultimate	Windows 7	
Windows(R) 8 Windows(R) 8 Pro	Windows 8	
Solaris(TM) 9 Operating system	Solaris 9	Solaris or Solaris OS
Oracle Solaris 10	Solaris 10	
Oracle Solaris 11	Solaris 11	
Red Hat(R) Enterprise Linux(R) AS (v.4 for x86) Red Hat(R) Enterprise Linux(R) AS (v.4 for EM64T)	RHEL-AS4	Linux
Red Hat(R) Enterprise Linux(R) ES (v.4 for x86) Red Hat(R) Enterprise Linux(R) ES (v.4 for EM64T)	RHEL-ES4	
Red Hat(R) Enterprise Linux(R) 5 (for x86) Red Hat(R) Enterprise Linux(R) 5 (for Intel64)	RHEL5	
Red Hat(R) Enterprise Linux(R) 6 (for x86) Red Hat(R) Enterprise Linux(R) 6 (for Intel64)	RHEL6	
SUSE(R) Linux Enterprise Server 11 for x86 SUSE(R) Linux Enterprise Server 11 for EM64T	SUSE Linux Enterprise Server 11	
HP-UX 11.0 HP-UX 11i v1 HP-UX 11i v2 HP-UX 11i v3	HP-UX	
AIX 5L(TM) V5.1 AIX 5L(TM) V5.2 AIX 5L(TM) V5.3 AIX(R) V6.1 AIX(R) V7.1	AIX	

Product name	Notation	
VMware(R) Infrastructure 3 Foundation VMware(R) Infrastructure 3 Standard VMware(R) Infrastructure 3 Enterprise	VMware Infrastructure 3	VMware
VMware vSphere(R) 4 Essentials Kit VMware vSphere(R) 4 Essentials Plus Kit VMware vSphere(R) 4 Standard Edition(TM) VMware vSphere(R) 4 Standard Plus Data Recovery VMware vSphere(R) 4 Advanced Edition(TM) VMware vSphere(R) 4 Enterprise Edition(TM) VMware vSphere(R) 4 Enterprise Plus Edition(TM)	VMware vSphere 4	
VMware vSphere(R) 5 Essentials Kit VMware vSphere(R) 5 Essentials Plus Kit VMware vSphere(R) 5 Standard Edition(TM) VMware vSphere(R) 5 Standard Plus Data Recovery VMware vSphere(R) 5 Enterprise Edition(TM) VMware vSphere(R) 5 Enterprise Plus Edition(TM)	VMware vSphere 5	

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

Related products with Fujitsu Storage System ETERNUS and Storage Management Software ETERNUS SF

Formal name	Abbreviation			
ETERNUS DX60/DX60 S2 ETERNUS DX80/DX80 S2 ETERNUS DX90/DX90 S2	-		ETERNUS DX series	ETERNUS Disk storage system
ETERNUS DX410 ETERNUS DX440	ETERNUS DX400 series	ETERNUS DX400/DX400 S2 series		
ETERNUS DX410 S2 ETERNUS DX440 S2	ETERNUS DX400 S2 series			
ETERNUS DX8100 ETERNUS DX8400 ETERNUS DX8700	ETERNUS DX8000 series	ETERNUS DX8000/DX8000 S2 series		
ETERNUS DX8100 S2 ETERNUS DX8700 S2	ETERNUS DX8000 S2 series			
ETERNUS2000 ETERNUS4000 ETERNUS8000	-			
Web GUI of ETERNUS DX series	ETERNUS Web GUI			
ETERNUSmgr				
ETERNUS LT20/LT20 S2 ETERNUS LT40/LT40 S2 ETERNUS LT60/LT60 S2 ETERNUS LT200 ETERNUS LT210 ETERNUS LT220 ETERNUS LT230 ETERNUS LT250 ETERNUS LT270/LT270 S2	ETERNUS Tape library			

Software products

Formal name	Abbreviation
Microsoft(R) Internet Explorer(R) 8 Microsoft(R) Internet Explorer(R) 9 Microsoft(R) Internet Explorer(R) 10	Internet Explorer
Mozilla(R) Firefox(R) 3.6 Mozilla(R) Firefox(R) ESR 10 Mozilla(R) Firefox(R) ESR 17	Firefox
VMware(R) vCenter(TM) Server	VMware vCenter Server or vCenter Server

Manuals

Formal name	Abbreviation
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Release Notes	ETERNUS SF Release Notes
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Installation and Setup Guide	ETERNUS SF Installation and Setup Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Migration Guide	ETERNUS SF Migration Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Web Console Guide	ETERNUS SF Web Console Guide
ETERNUS SF Express / ETERNUS SF AdvancedCopy Manager Operation Guide for Copy Control Module	ETERNUS SF Operation Guide for Copy Control Module
ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Cluster Environment Setup Guide	ETERNUS SF Cluster Environment Setup Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Messages	ETERNUS SF Messages
ETERNUS SF Express / ETERNUS SF Storage Cruiser Event Guide	ETERNUS SF Event Guide
ETERNUS SF Express / ETERNUS SF Storage Cruiser / ETERNUS SF AdvancedCopy Manager Glossary	ETERNUS SF Glossary

Others

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

    - Windows Server 2008

    - Windows Server 2008 R2

    - Windows Server 2012

Export Administration Regulation Declaration

This document may contain specific technologies that are covered by International Exchange and International Trade Control Laws. In the event that such technology is contained, when exporting or providing the document to non-residents, authorization based on the relevant law is required.

Trademarks

- Microsoft, Windows, Windows Server, Windows Vista and Internet Explorer are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.

- UNIX is a registered trademark of The Open Group in the United States and other countries.

- Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

- Linux is a registered trademark of Linus Torvalds.

- Red Hat and RPM are registered trademarks of Red Hat, Inc. in the U.S. and other countries.

- SUSE is a registered trademark of Novell, Inc., in the United States and other countries.

- HP-UX is a trademark of Hewlett-Packard Company in the United States and other countries.

- AIX and AIX 5L are trademarks or registered trademarks of International Business Machines Corporation in the United States and other countries.

- VMware, VMware logo, Virtual SMP, and VMotion are the registered trademarks or trademarks of VMware, Inc. in the United States and other countries.

- All other brand and product names are trademarks or registered trademarks of their respective owners.

Shipment date and revision history

Shipment date	Revision	Manual code
January 2012	1	B1FW-5955-01ENZ0(00) / B1FW-5955-01ENZ2(00)
February 2012	1.1	B1FW-5955-01ENZ0(01) / B1FW-5955-01ENZ2(01)
February 2012	1.2	B1FW-5955-01ENZ0(02) / B1FW-5955-01ENZ2(02)
March 2012	1.3	B1FW-5955-01ENZ0(03) / B1FW-5955-01ENZ2(03)
April 2012	2	B1FW-5955-02ENZ0(00) / B1FW-5955-02ENZ2(00)
May 2012	2.1	B1FW-5955-02ENZ0(01) / B1FW-5955-02ENZ2(01)
August 2012	3	B1FW-5955-03ENZ0(00) / B1FW-5955-03ENZ2(00)
December 2012	4	B1FW-5955-04ENZ0(00) / B1FW-5955-04ENZ2(00)
February 2013	4.1	B1FW-5955-04ENZ0(01) / B1FW-5955-04ENZ2(01)
June 2013	5	B1FW-5955-05ENZ0(00) / B1FW-5955-05ENZ2(00)

Notes

- No part of this manual may be reproduced without permission.

- This manual is subject to change without advance notice.

Copyright

Copyright 2012-2013 FUJITSU LIMITED

Update history

Content of update	Updated section	Revision
Added the operation on Model upgrade for ETERNUS Disk storage system.	6.2	2.1
Added Oracle Solaris 11, AIX V6.1 and AIX V7.1 in the operating systems.	Notation in Preface	3
Added Firefox ESR 10 for the supported Web browsers.	1.1, 1.2, 1.3, 5.2	
Added the explanation of the setting for Internet Explorer 8 or 9.	1.4	
Added the explanation of Map View.	3.1, 3.3, 4.20	
Added the note of the **SNMP Trap Setting** checkbox.	4.3.1	

Content of update	Updated section	Revision
Added the note related to the volume assignment accompanied by zoning settings.	4.3.9	
Added the explanation related to the displaying of the volume assigned to multiple Affinity/LUN groups.	4.10.2, 4.14.13, 4.14.15	
Added the note related to the change of the port mode.	4.14.3, 4.14.5	
Added the note related to the FC switch registration.	4.16.2	
Added the procedure to reload the FC switch configuration information.	4.16.7	
Added Windows Server 2012 and Windows 8 in the operating systems.	Notation in Preface	4
Added Internet Explorer 10 for the supported Web browsers, and added the note for using Internet Explorer 10.	1.1	
Described the item name displayed in the dialog box of Internet Explorer 10.	1.4	
Added the explanation about Job Status pane.	3.1, 3.5, 4.1.1, 4.3.1, 4.3.10, 4.5.1, 4.5.4, 4.17.1	
Added the note related to server information.	4.7.9, 4.17.2	
Added notes.	4.8.1, 4.9.1, 4.9.3, 4.12.1	
Added the explanation about access path inheritance	4.10.7, 4.17.8	
Added procedure to create an Exchange Server backup script using a wizard.	4.13.23	
Changed the design and action at clicking for the Help button in the menu area.	2.2, Chapter 3, 3.1	4.1
Described the firmware version of devices with an unnecessary update operation of device information.	4.1.1, 4.3.10	
Added the note for an environment where BS2000 is connected to an ETERNUS Disk storage system.	4.3.9, 4.14.13, 4.14.16, 4.14.20, 4.14.23	
Corrected the procedure.	From 4.10.1 to 4.10.6	
Modified the method to confirm the transaction log file.	4.13.23	
Added procedure to display FCoE port information.	4.14.8	
Described that 1GbE RJ45 port is not displayed.	4.16.5	
Added procedure to display the server detail information.	4.17.3	
Changed the highlighted component from FC port to physical port.	4.20.7	
Modified the note for the FCoE port.	6.4.5	
Added Firefox ESR 17 for the supported Web browsers.	1.1	5
Described the IPv6 specification method.	2.1	
Described the notes related to IPv6.	4.3.1, 4.3.4, 4.4.1, 4.4.4, 4.5.1, 4.6.1, 4.7.5, 4.13.17, 4.14.11, 4.16.2, 4.17.1, 4.17.8, 6.4.10	
Added ETERNUS LT270 S2.	4.5, 4.6	
Added procedure to restore an Exchange Server database using a wizard.	4.13.24	
Added the notes for iSCSI setting.	4.14.5, 4.14.11	
Added the note related to displaying the Host Response.	4.14.20	
Updated the contents of [Point].	4.16.7	
Deleted the default value for input items.	5.1	

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 unique for each product. The following manuals are available: - Express Quick Reference - Storage Cruiser Quick Reference - AdvancedCopy Manager Quick Reference
	Release Notes	Yes	Yes	Yes	This manual is common for all products.
	Overview	-	-	Yes	This manual is unique for each product.
During installation	Installation and Setup Guide	Yes	Yes	Yes	This manual is common for all products.
	Cluster Environment Setup Guide	-	Yes	Yes	This manual is common for Storage Cruiser and AdvancedCopy Manager.
	Migration Guide	Yes	Yes	Yes	This manual is common for all products.
During operation	Operation Guide	Yes	Yes	Yes	This manual is unique for each product. The following manuals are available: - Express Operation Guide - Storage Cruiser Operation Guide - Storage Cruiser Operation Guide for Optimization Option - AdvancedCopy Manager Operation Guide (for Windows) - AdvancedCopy Manager Operation Guide (for Solaris) - AdvancedCopy Manager Operation Guide (for Linux) - AdvancedCopy Manager Operation Guide (for HP-UX) - AdvancedCopy Manager Operation Guide (for AIX) - AdvancedCopy Manager for Exchange Server Operation Guide
	Operation Guide for Copy Control Module	Yes	-	Yes	This manual is common for Express and AdvancedCopy Manager.
	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	Related products (*1)	Manual	Main contents	How to read
Acquiring a product overview and basic operation knowledge	EXP	- Express Quick Reference	- Product overview - Installation decision - Overview of the necessary tasks from installation to first use	Please read if you want to acquire a fundamental knowledge of the product and its operation in order to decide to install it or not.
	SC	- Storage Cruiser Quick Reference		
	ACM	- AdvancedCopy Manager Quick Reference		
		- AdvancedCopy Manager Overview	- Main functions - Linkable applications - Procedure overview for Advanced Copy of ETERNUS Disk storage system	
Confirming the updated contents	common	- ETERNUS SF Release Notes	- New function overview - Incompatibilities with previous version - Fixed bugs	Please read if you want to know the updated contents from a previous version and if you perform the upgrade.
Deciding if a version upgrade is required	common	- ETERNUS SF Migration Guide	- Notes and cautions about version upgrade - Version upgrade procedure	Please read if you want to upgrade from a previous version.
Installing and correctly operating the product Setting up operating environment depending on purpose	common	- ETERNUS SF Installation and Setup Guide	- Operating environment - Installation procedure - Setup procedure - Uninstallation procedure	Please read if you want to install and setup the product.
	SC, ACM	- ETERNUS SF Cluster Environment Setup Guide	- Supported cluster software - Installation procedure for a clustered system - Setup procedure for a clustered system - Uninstallation procedure for a clustered system	Please read if you want to install and setup the product on a clustered system.
Administration and operation of the installed system	EXP	- Express Operation Guide	- Starting and stopping the software - Device monitoring - Data copy inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance	Please read if you want to start or shutdown the system, monitor the operation status, do backup/restore operations, etc.

Purpose	Related products (*1)	Manual	Main contents	How to read
	SC	- Storage Cruiser Operation Guide	- Starting and stopping the software - Device monitoring - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
		- Storage Cruiser Operation Guide for Optimization Option	- Operating environment construction - Operating status monitoring - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
	EXP, ACM	- ETERNUS SF Operation Guide for Copy Control Module	- Starting and stopping the software - Data backup/restore inside the storage system - Necessary tasks after an architectural modification of the system as well as product maintenance - Command reference	
	ACM	- AdvancedCopy Manager Operation Guide (for Windows) - AdvancedCopy Manager Operation Guide (for Solaris) - AdvancedCopy Manager Operation Guide (for Linux) - AdvancedCopy Manager Operation Guide (for HP-UX) - AdvancedCopy Manager Operation Guide (for AIX)		
		- AdvancedCopy Manager for Exchange Server Operation Guide	- Restoring the Exchange Server database using the Restore Wizard	
	common	- ETERNUS SF Web Console Guide	- Operating environment - Screen layout description	Please read if you want to understand the ETERNUS SF Web Console.
Dealing with messages issued by the software	common	- ETERNUS SF Messages	- Messages and their explanations - Parameter (variable information) description - System action - Countermeasures	Please read if you want a practical way of investigating and dealing with messages issued by the software.

Purpose	Related products (*1)	Manual	Main contents	How to read
Dealing with events issued by the software	EXP, SC	- ETERNUS SF Event Guide	- Phenomenon of event - Countermeasures	Please read if you need to find a practical way of investigating and dealing with events.
Researching the meaning of specific terms related to the products and other important terms	common	- ETERNUS SF Glossary	- Product specific terminology explanation - Explanation of important terminology appearing in the manual - Synonyms and related terms - Proper form of abbreviated terms	Please read if you want to learn the meaning of important terms, product specific terms or abbreviations used in the manuals.

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

Contents

Chapter 1 Operating Environment

This chapter describes the Web Console operating environment.

1.1 Supported web browsers

The following browsers are supported by the Web Console:

Web browser	Screen resolution
Internet Explorer 8 Internet Explorer 9 Internet Explorer 10	1024x786 pixels or more is recommended.
Firefox 3.6 Firefox ESR 10 Firefox ESR 17	

🖐 Note

- If you use Internet Explorer 8, please install KB976662 update.

- When using Internet Explorer 10, use a desktop version of Internet Explorer 10. A modern UI version of Internet Explorer 10 is not available.

1.2 JavaScript settings

The Web Console needs JavaScript to be enabled in the web browser.

For Internet Explorer:

1. Click the **Tools** menu, and then click **Internet Options**.
   The **Internet Options** dialog box is displayed.

2. On the **Security** tab, select **Trusted sites**. Then, click the **Sites** button.
   The **Trusted sites** dialog box is displayed.

3. Enter the Management Server IP address, and then click **Add**. If the addition is finished, click **Close** to close the **Trusted sites** dialog box.
   The **Internet Options** dialog box is displayed again.

4. Click the **Custom level** button with **Trusted sites** selected.
   The **Security Settings** dialog box is displayed.

5. Scroll down the **Security Settings** list until you reach the **Scripting** section. Under the **Active scripting**, select **Enable**.

For Firefox:

1. Click the **Tools** menu, and then click **Options**.
   The **Options** dialog box is displayed.

2. Click the **Content** button.

3. Check the **Enable JavaScript** checkbox.

1.3 Cookie settings

The Web Console needs cookies to be enabled in the web browser.

For Internet Explorer:

1. Click the **Tools** menu, and then click **Internet Options**.
    The **Internet Options** dialog box is displayed.

2. On the **Privacy** tab, click the **Advanced** button.
    The **Advanced Privacy Settings** dialog box is displayed.

3. Check the **Override automatic cookie handling** checkbox, and check **Accept** in the First-party Cookies.

For Firefox:

1. Click the **Tools** menu, and then click **Options**.
    The **Options** dialog box is displayed.

2. Click the **Privacy** button.

3. Select "Remember history" or "Use custom settings for history" from the **Firefox will:** drop-down menu.

4. If "Use custom settings for history" is selected, check the "Accept cookies from sites".

1.4 Compatibility View settings of Internet Explorer

When using Internet Explorer, disable Compatibility View.
The procedure to disable it is as follows.

1. On the Internet Explorer, check that Compatibility View is enabled.

    a. Start the Web Console.
        For the starting method, refer to "2.1 How to start Web Console".

    b. On the Internet Explorer, click the **Tools** menu and then click **Developer Tools** (**F12 developer tools** for Internet Explorer 9 or Internet Explorer 10).
        For Internet Explorer 9 or Internet Explorer 10, press the **Alt** key to display the menu bar and use the **Tools** menu.

    c. Check if "IE8 Compat View", "IE9 Compat View", or "IE10 Compat" is displayed in the **Browser Mode** menu on the **Developer Tools** window. If not displayed, Compatibility View is disabled and no setting is required.

2. On the Internet Explorer, click the **Tools** menu and then click **Compatibility View Settings**.
    For Internet Explorer 9 or Internet Explorer 10, press the **Alt** key to display the menu bar and use the **Tools** menu.

3. Perform the following settings on the **Compatibility View Settings** dialog box.

    a. If the address of the Management Server is displayed in **Website added to Compatibility View**, select the address and then click **Delete**.

    b. Execute step 1 and check if Compatibility View is enabled.
        If disabled, any further settings are not required.

    c. Uncheck the **Display all Websites in Compatibility View** checkbox.

    d. Execute step 1 and check if Compatibility View is enabled.
        If disabled, any further settings are not required.

e. Uncheck the **Display intranet sites in Compatibility view** checkbox.

Note

- On the **Compatibility View Settings** dialog box, the following checkbox is Internet site configuration and no setting is required.

    - Internet Explorer 10: "Download updated compatibility lists from Microsoft"

    - Internet Explorer 8 and Internet Explorer 9: "Include updated Website lists from Microsoft"

- Performing the above step c. and step e. setting may disable a Compatibility View enabled site and change its screen view. For a site whose screen view is changed, causing a trouble to operation, add URL separately on the **Compatibility View Settings** window to enable Compatibility View.

Chapter 2 Starting and Stopping Web Console

This chapter explains how to start and stop the Web Console.

📒 Note
....
- The Web Console is optimized for a screen size of 1024x768 and the browser default font. If the web browser window settings differ significantly from these values, the Web Console may be displayed incorrectly.

- The Web Console uses JavaScript and Cookies. Please setup the web browser beforehand to enable both these features.
....

2.1 How to start Web Console

The Web Console is started according by the following procedure:

1. Start Internet Explorer or Firefox on a PC connected to the Management Server.

   ### 📖 Information
   ....
   Refer to "1.1 Supported web browsers" for the supported browser versions.
   ....

2. Enter the address of the Management Server in the web browser address bar.
   The connection with the Management Server is done through the HTTPS protocol.

   - For specifying the IPv4 address:

   ```
   https://ipv4Address:portNumber/
   ```

   For *ipv4Address*, specify the IPv4 address or Fully Qualified Domain Name (FQDN) of Management Server.
   For *portNumber*, specify the port number of "Web Console service (ETERNUS SF Manager Apache service)" that is entered during the installation. The default port number is 9855.

   ### 📝 Example
   ....
   The following example specifies "10.20.30.40" to *ipv4Address* and "9855" to *portNumber*.

   ```
   https://10.20.30.40:9855/
   ```
   ....

   - For specifying the IPv6 address (only when Storage Cruiser or AdvancedCopy Manager is being used):

   ```
   https://[ipv6Address]:portNumber/
   ```

   For *ipv6Address*, specify the IPv6 address or Fully Qualified Domain Name (FQDN) of Management Server. When Firefox ESR 10 or Firefox ESR 17 is used, you cannot specify the IPv6 address. Therefore, specify the FQDN.
   For *portNumber*, specify the port number of "Web Console service (ETERNUS SF Manager Apache service)" that is entered during the installation. The default port number is 9855.

   ### 📝 Example
   ....
   The following example specifies "2001:db8::1" to *ipv6Address* and "9855" to *portNumber*.

   ```
   https://[2001:db8::1]:9855/
   ```
   ....

See

Refer to "Chapter 5 HTTPS Connection" for details about the HTTPS connection between Web Browser and Management Server.

Note

Note 1

If the login screen does not appear, check the following points:

- Error in the URL

- Web browser proxy settings

- Management Server firewall settings

Note 2

When the web browser is started, a warning message about the security certificate is displayed upon establishing the connection for the first time. In Internet Explorer, a dialog box showing the "There is a problem with this website's security certificate." message is displayed. This is due to the fact that the product uses a self-signed certificate for the HTTPS (SSL) protocol.
The software generates a different self-signed security certificate for each Management Server during the ETERNUS SF Manager installation.
As the network is isolated from the intranet by a firewall, the communication with the neighboring devices is safe and using a self-signed certificate is not a problem. Therefore it is possible to acknowledge the warning and proceed safely to the next screen. For Internet Explorer, select "Continue to this website (not recommended)." to display the login screen.

Note 3

When connecting with Internet Explorer, the Address bar turns red and a "Certificate Error" message displays in the Security Status bar. Moreover, a warning icon of a possible phishing attempt is displayed in the Security Status bar.
These display warnings are caused by the self-signed certificate described in [Note 2] and as such do not constitute a problem.

Note 4

To remove the warning and error notifications about the security certificate, a certificate corresponding to the Management Server IP address or host name must be created and installed in the web browser.
Refer to "Chapter 5 HTTPS Connection" for details.

Note 5

When already logged in a browser window on a client PC, the login screen may not be displayed and the login may be automatically performed when opening another browser window on the same client.

Note 6

When Internet Explorer Information bar displays the following message, a file download has been blocked.

```
To help protect your security, Internet Explorer blocked this site from downloading files to your
computer. Click here for more options...
```

In the above case, the file can be downloaded by performing the following procedure.

1. Click the Information bar to display **Option**.

2. Click the "Download Software" on the **Option** screen.

3. The dialog box which contains the following message is displayed. Click **Cancel**.

   ```
   To display the webpage again, Internet Explorer Need to resend the information...
   ```

4. Execute the blocked operation again.

2.2 How to login to Web Console

Once "2.1 How to start Web Console" has been done, the login screen below is displayed. Enter a valid user name and password, and then click **Login**.

The following screen is displayed when the user authentication has been successfully completed.
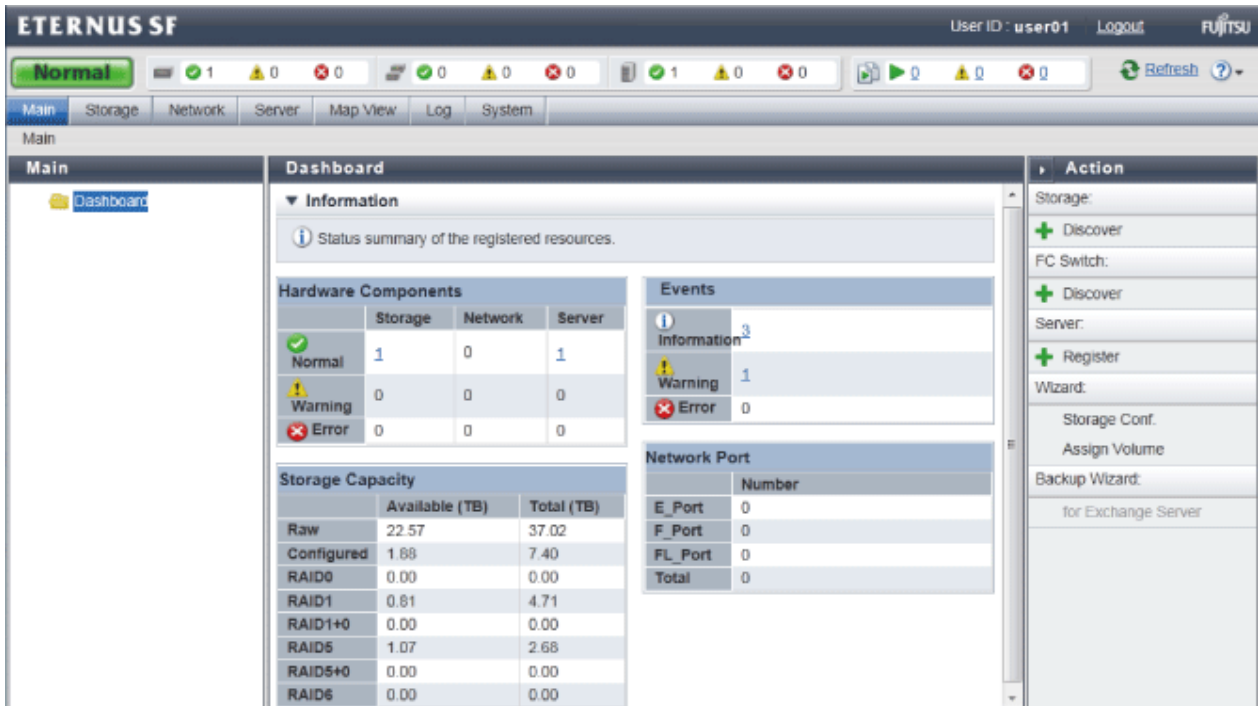
📛 Note

· ·

A different user cannot login concurrently from the same computer.

· ·

2.3 How to logout from Web Console

To logout from the Web Console, click **Logout** on the top right of the screen.
Once the logout has been done, the screen returns to the login screen below:
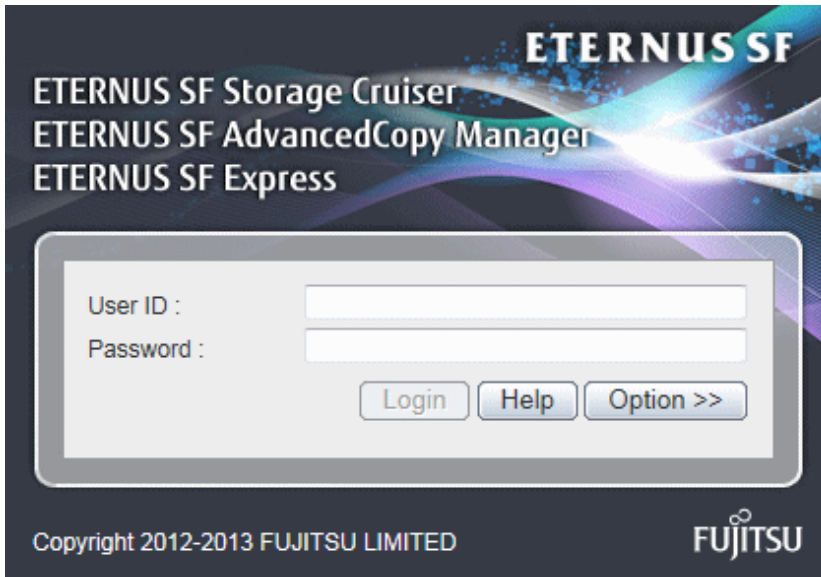
🖐 Note

. . . .

After finishing using the Web Console, please always logoff.

If the web browser is closed while still logged in, the user authentication will not be performed correctly on the next login procedure and might lead to an unintended automatic login.

. . . .

2.4 How to stop Web Console

Close the web browser to stop the Web Console.

Chapter 3 Web Console Screen Layout

The Web Console screen structure is described below.

Figure 3.1 Web Console screen layout
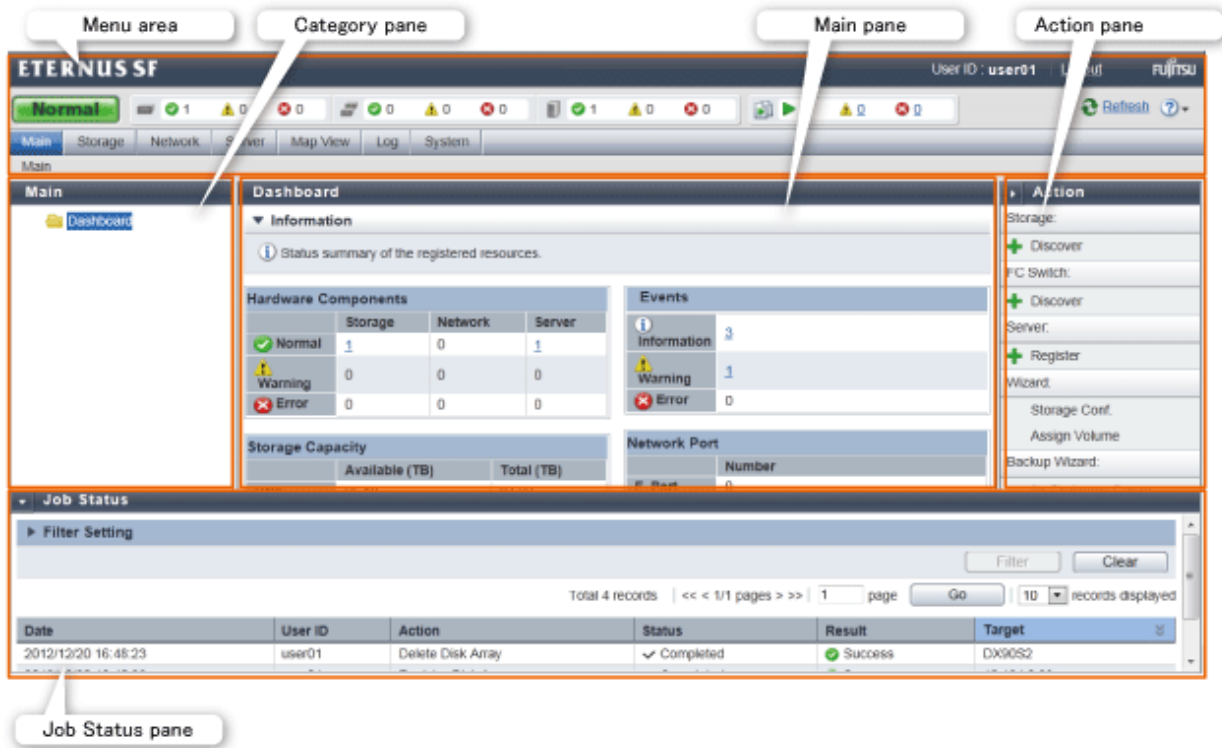
Map View structure is described below.

Figure 3.2 Map View structure (for the Overview screen)
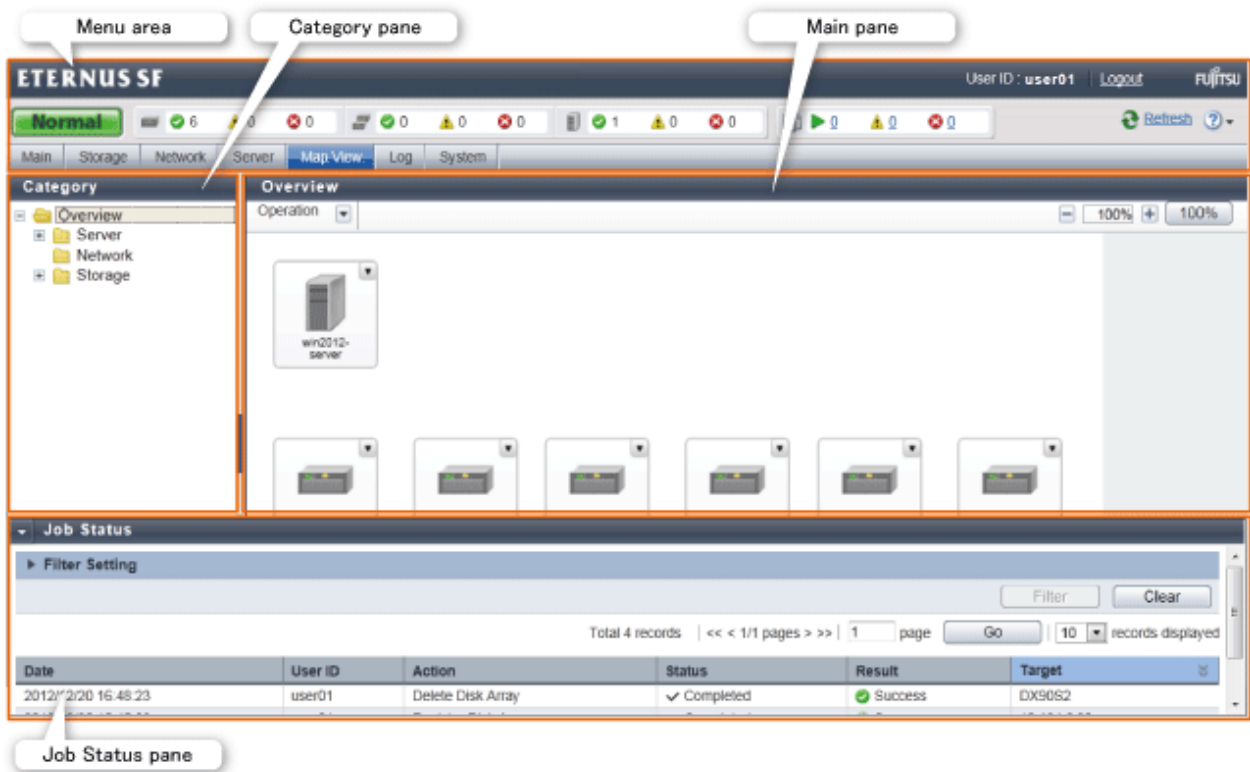
Figure 3.3 Map View structure (for the Logical Path View screen)
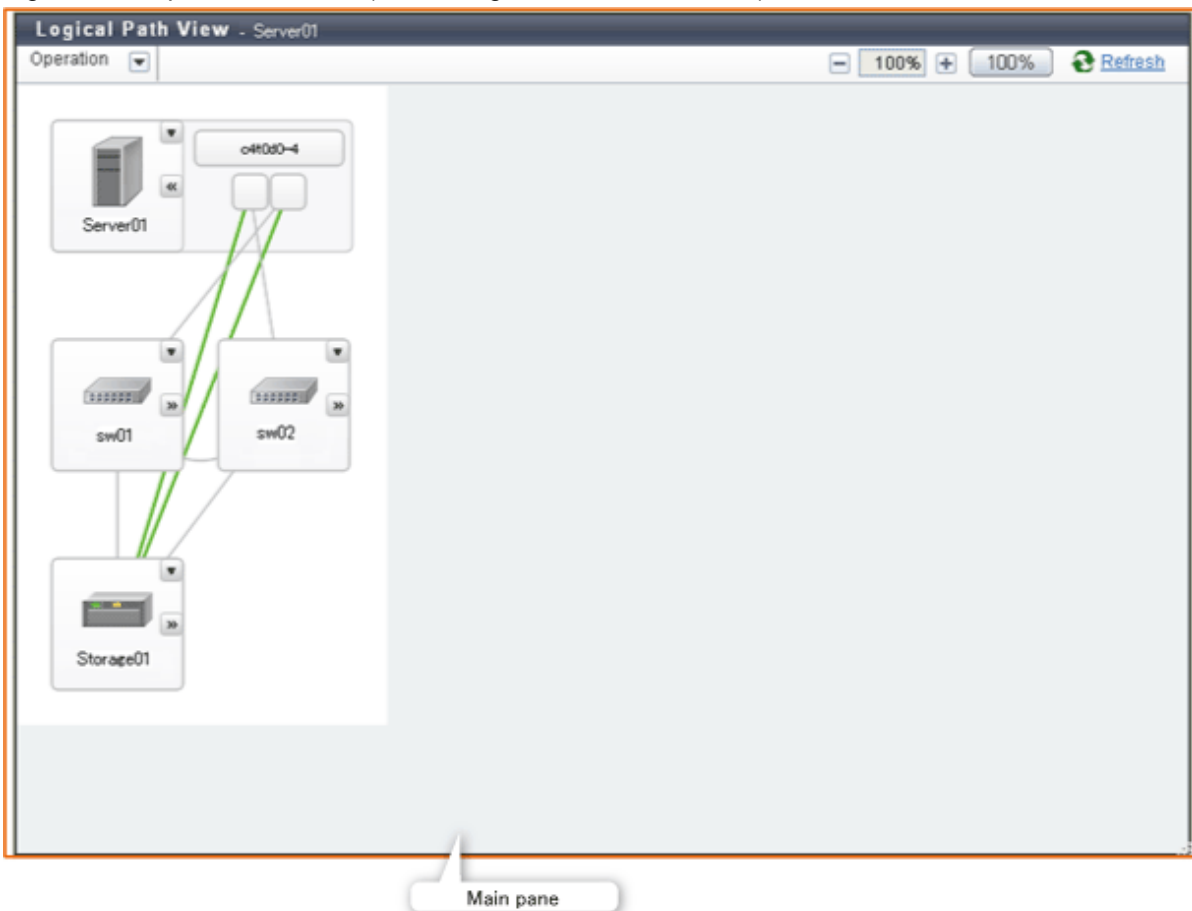
Each component of the Web Console screen is described hereinafter.

3.1 Menu area

Total status

Displays the total status of storage, network and server as following icons.

Icon	Explanation
Normal	All devices are running normally.
Warning	Some devices require the attention.
Error	The error has occurred in some devices.

Device status

Displays the status of storage, network and server.
The device type is displayed as following icons.

Icon	Explanation
	Storage devices
	Network devices
	Servers

The three icons to the right side of each device icon indicate the following information.

Icon	Explanation
✔	The number of normal status devices.
⚠	The number of alarming status devices.
✖	The number of abnormal status devices.

Operation status

Displays the operation information as following icons.
If clicking any icon or number, the **Operation History** screen is displayed.

Icon	Explanation
▶	The number of the processing in progress.
⚠	The number of warning messages not confirmed processing results in the **Operation History** screen.

Icon	Explanation
❌	The number of error messages not confirmed processing results in the **Operation History** screen.

Refresh

Reloads the latest information from the Management Server.

Help

Clicking Help displays a drop-down list to select displayed information from. The following contents can be checked.

Selectable items	Explanation
Help	The online help for the current screen is displayed.
Version	The product version is displayed.
License Agreement	The License Agreement is displayed.

Global navigation tab

If a category on the global navigation tab is clicked, the top menu of the selected category is displayed on the category pane.

Breadcrumb list

Indicates where the current page is.

🅿 Point

- If an Error or Warning level event is reported, perform the appropriate action, and then update the corresponding storage system element status manually. Also, when the storage system is recovered, update the corresponding storage system element status manually. Refer to "4.3.10 Reload ETERNUS Disk storage system configuration information" about updating the configuration information.

- Information of Total status, Device status and Operation status are updated at intervals set in the Screen Refresh Interval (Default is 30 seconds) or by clicking " 🔄 Refresh ".

- Clicking " 🔄 Refresh " resets the following setting values in the Main pane to the default value. Refer to "3.3 Main pane" for respective setting.

    - Filter setting

    - Page setting

    - Displayed records setting

- Clicking " 🔄 Refresh " does not reset values in the Filter Setting on the Job Status pane.

- When the information screen is displaying multiple tabs, clicking " 🔄 Refresh " displays the leftmost tab information on the Main pane regardless of the current tab.

3.2 Category pane
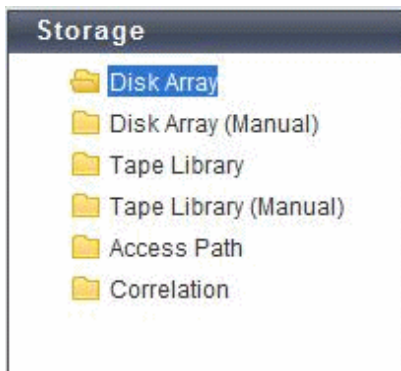
This pane displays selectable categories list.
The title bar indicates the current category. The "Storage" is the current category in the above screen.

Clicking an item displays information on the Main pane.

3.3 Main pane
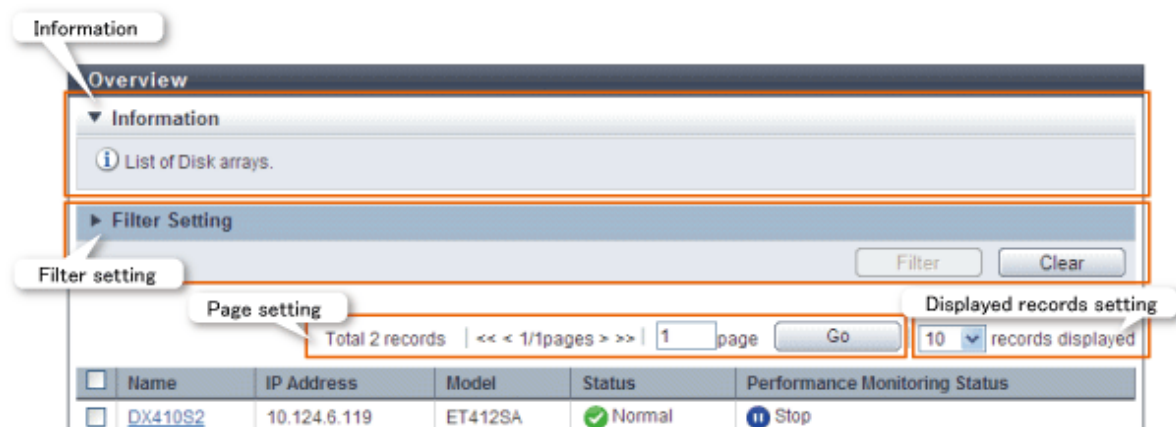
Information

Displays explanation for the current Main pane.

Filter setting

Narrows down and displays the information on the Main pane.

Clicking the **Filter setting** displays the filter screen as follows.

Click **Filter** after entering filter criteria. Information matching the criteria specified is displayed in the information display area.
Clicking **Clear** cancels filter setting.

Note

- The text field filtering is by partial match. All information including typed characters is displayed.

- On the Web Console, the capacity is displayed with a rounded value. Specify the range including the capacity to detect in the capacity field. For example, specify the range from 9GB to 11GB to detect 10GB.

Page setting

Information may be divided into several pages.
To display the information on page two and subsequent pages, click **>** or **>>**. Also, you can type a page number and click **Go**.

Displayed records setting

From the pull down menu, select the number of lines to display per screen.
The selectable values are 10, 25, 50 or 100.

For Map View (the Overview screen)
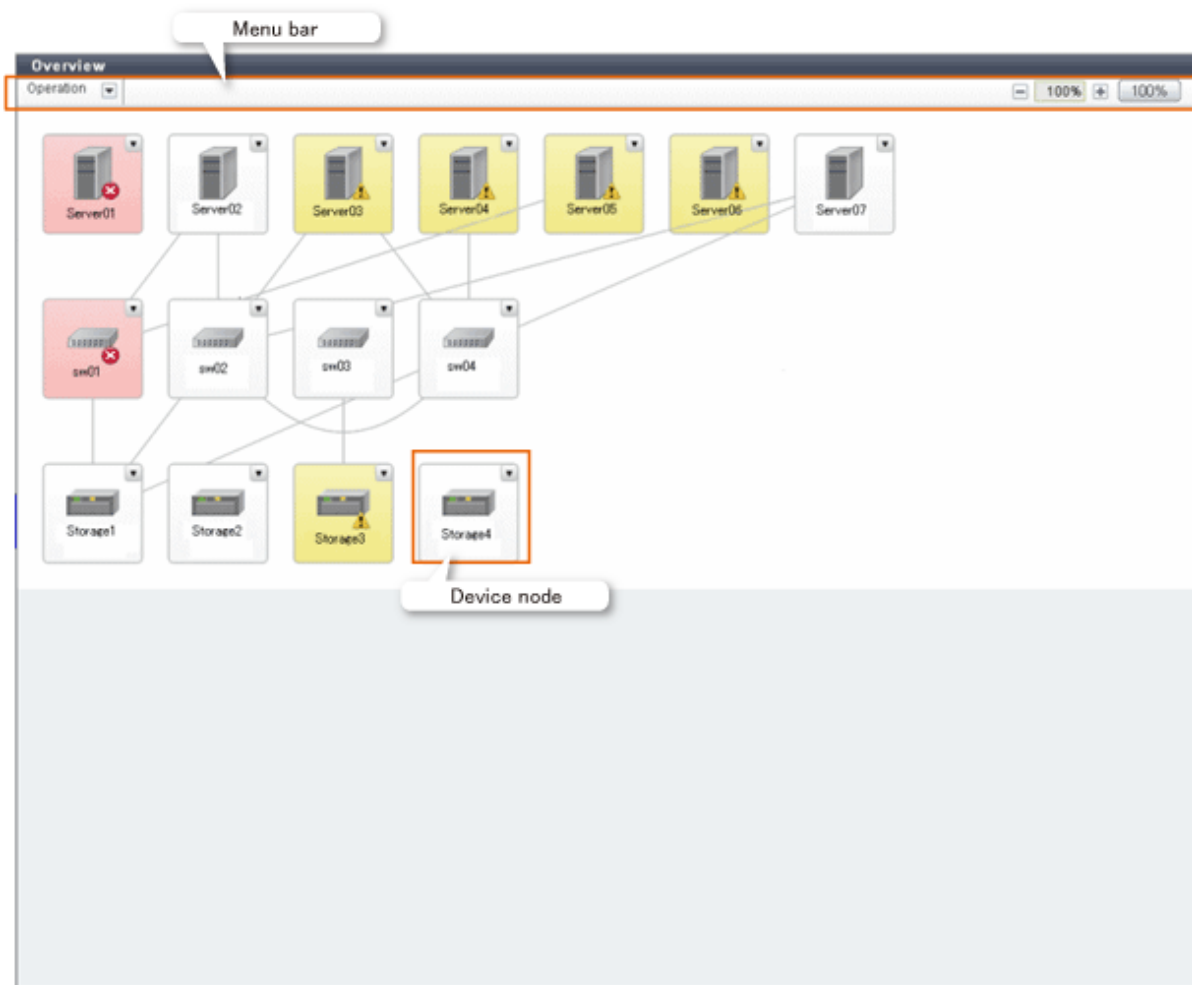
Menu bar

The Zoom In/Out button and a pull-down menu icon are displayed.
If you click the pull-down menu icon, pull-down menu is displayed.
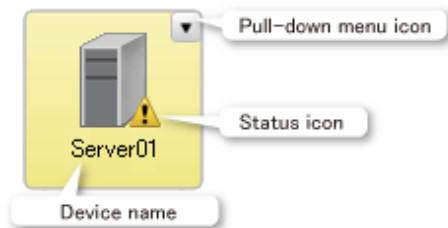
Device node

For Map View (the Logical Path View screen)
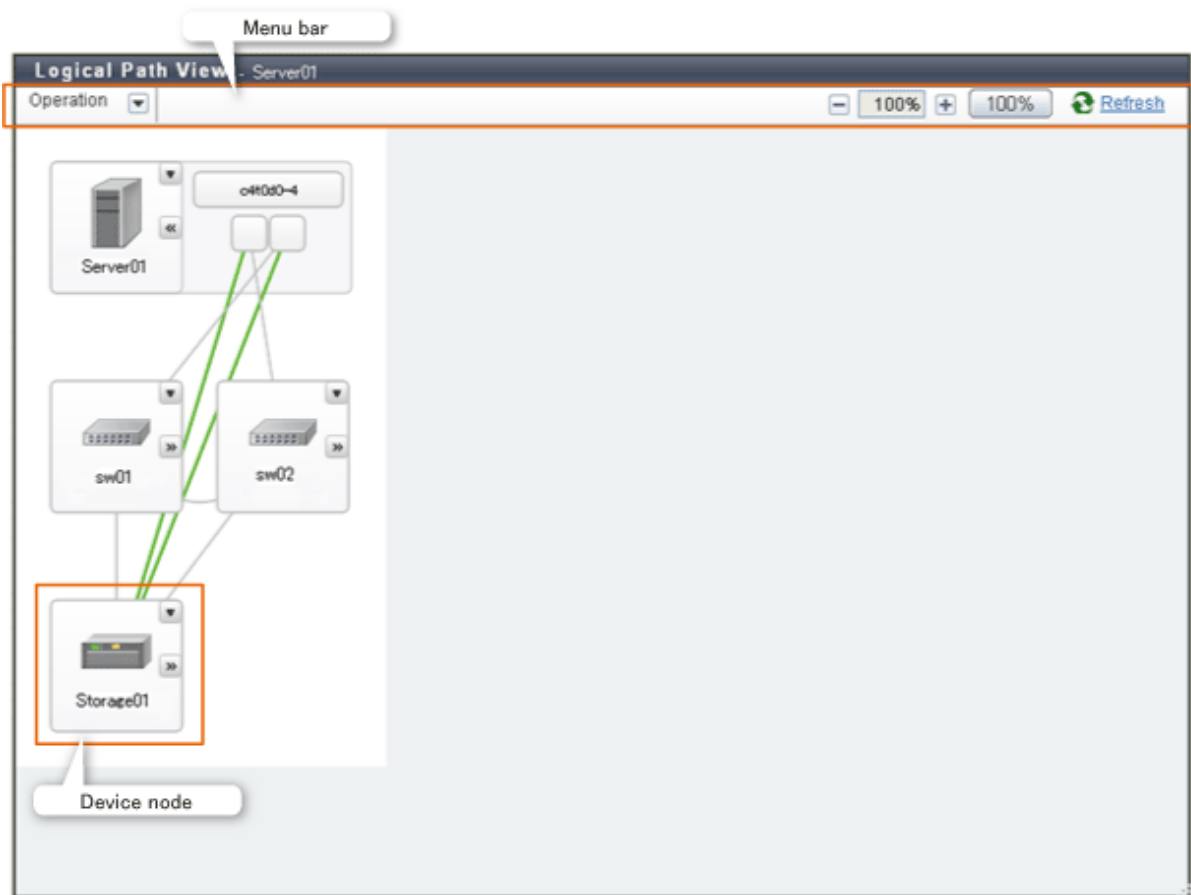
Menu bar

    The Zoom In/Out button and a pull-down menu icon are displayed.
    If you click the pull-down menu icon, pull-down menu is displayed.

Device node
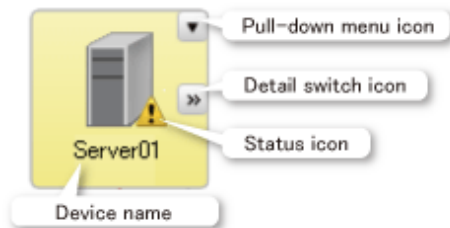
3.4 Action pane
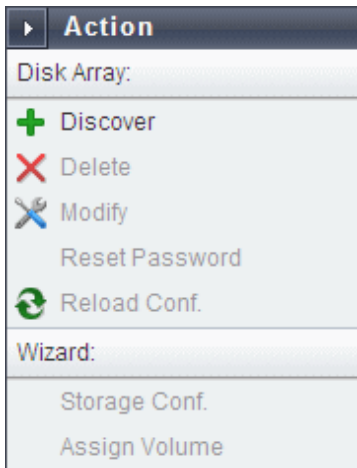
This pane displays an executable action list for an item displayed on the Main pane. However, this pane is not displayed on Map View.

Point

Not executable actions are grayed out.
Click an action grayed out to display an executing condition for them.

3.5 Job Status pane

This section describes the Job Status pane.

Displayed items

The current processing status information for each processing device is displayed. The displayed items are as follows:

Displayed items	Explanation
Date	Update time and date of the processing status information (*1)
User ID	User that executed processing
Action	Action name
Status	Processing status. One of the following is displayed: - Waiting - Executing - Completed
Result	Processing result
Target	Target to be processed. The names of ETERNUS Disk storage system, server, switch, etc. are displayed.

*1: If **Status** column is "Waiting", since **Date** column indicates the time processing was accepted, it may be different from the time and date output in the Operation History.

Displayed items are updated to the latest status when triggered by any of the following:

- Automatic updating

   Displayed items are automatically updated at intervals set in the Screen Refresh Interval (Default is 30 seconds).

- Manual updating

   Click " Refresh " in the menu area.

- Opening/closing this pane

   Opening this pane always displays the latest updated information.

 Note

. . . .

- In the following cases, the recorded information is automatically deleted and no longer displayed on this pane.

   - 24 hours has passed since **Status** column was changed to "Completed".

   - ETERNUS SF system services on the Management Server are restarted.

- On this pane, you can check the processing status of the operation performed on the Web Console that resulted in the dialog box being displayed as shown below. This pane does not display Command Line Interface (CLI) operations.

. . . .
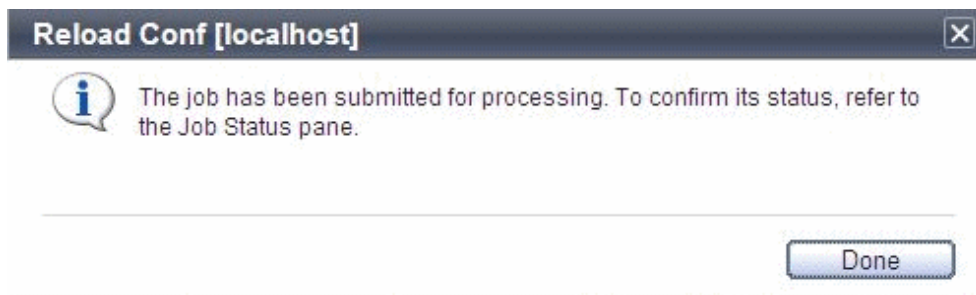
How to open/close the Job Status pane
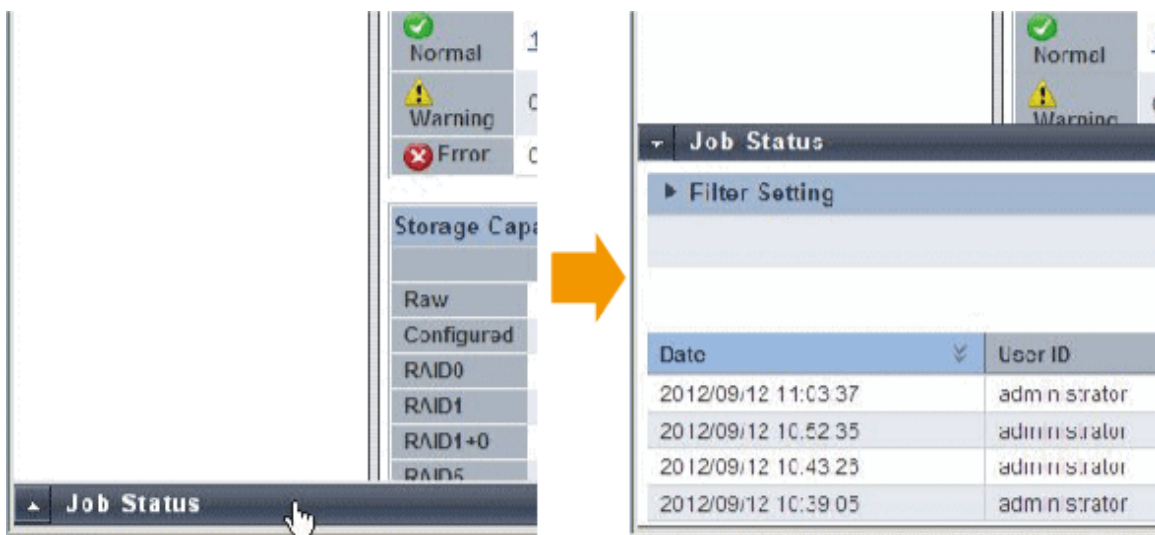
Left-click on the bar that opens/closes this pane.
The above figure shows the screen transition when opening this pane.

Information

Opening this pane displays the latest updated information.

How to resize the Job Status pane (vertically only)
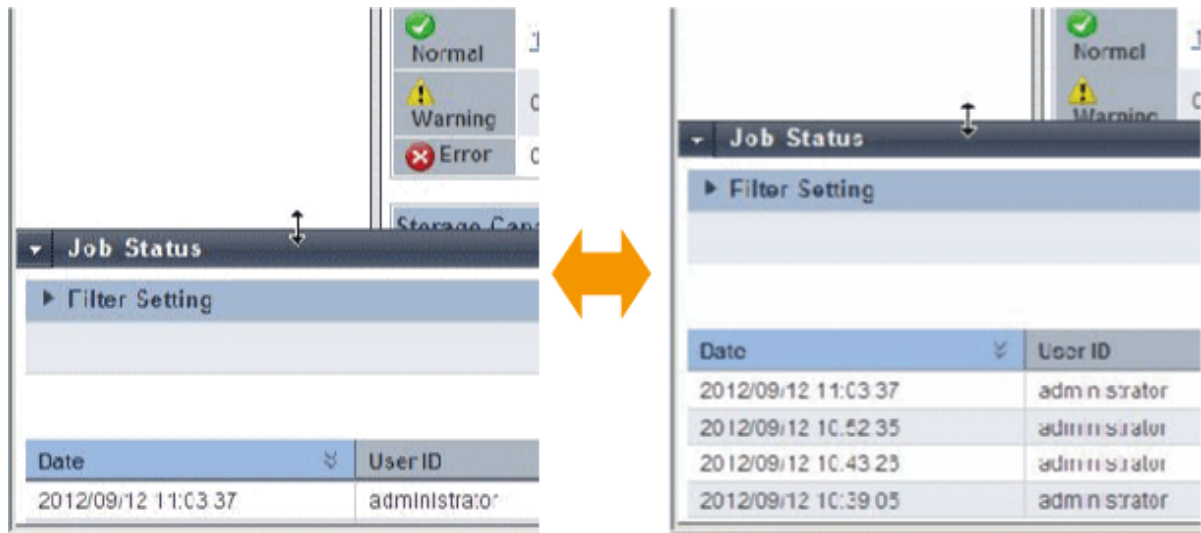
Resize this pane vertically as follows:

1. With the Job Status pane opened, place the mouse pointer on the bar that opens/closes this pane.

2. When the mouse pointer changes as shown in the above figure, drag it vertically.

Note

- The resize range has upper and lower limits.

- You cannot resize this pane horizontally.

Chapter 4 Web Console Operation Method

This chapter describes the procedure to call up the each screen of the Web Console.

4.1 Display the information

4.1.1 Update the information (Refresh the screen)

The information updated by the Screen Refresh Interval (Default is 30 seconds) is the information of each status in the Menu area and the information of the Job Status pane only. To update all information displayed on the Web Console (including the information displayed on the Main pane) to the information that ETERNUS SF system maintains, it is necessary to click " 🔄 Refresh " in the menu area.

📚 See
....
Refer to "4.22.3 Change the value for screen refresh interval" for how to change the Screen Refresh Interval.
....

📒 Note
....
- Clicking " 🔄 Refresh " resets the following setting values in the Main pane to the default value. Refer to "3.3 Main pane" for respective setting.

    - Filter setting

    - Page setting

    - Displayed records setting

    In addition, when information screen has tabs, clicking " 🔄 Refresh " displays the leftmost tab information on the Main pane regardless of the current tab.

- Clicking " 🔄 Refresh " does not reset values in the Filter Setting on the Job Status pane.

- Clicking " 🔄 Refresh " displays the existing information held by ETERNUS SF system. It does not acquire updated information from the devices. Clicking **Reload Conf.** or **Refresh** in an Action pane obtains updated information from the device.
  Device information excluding system information, device configuration status and performance management configuration information is automatically collected for the following devices. Clicking " 🔄 Refresh " displays the automatically collected information.

    - ETERNUS DX80 S2/DX90 S2 (firmware version: V10L40 or later)

    - ETERNUS DX400 S2 series (firmware version: V10L40 or later)

    - ETERNUS DX8000 S2 series (firmware version: V10L40 or later)
....

4.1.2 Display the history information

The procedure to display the history information (Operation History, Events, Login/Logout History and Threshold Monitoring Alarms) is as follows:

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

2. On the **Log** pane, click the history information to display.
   The selected history information is displayed on the Main pane.

4.2 User management operations

This section describes the operation related to user management.

4.2.1 Display and change the contact information

The procedure to display or change the setting values of the Contact information (Mail Settings, Business Administrator, System Administrator and Hardware Administrator) is as follows:

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

2. On the **System** pane, click **Contacts**.
   The current set value is displayed on the Main pane.

3. On the Action pane, click **Modify** under **Contacts**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Modify**.

4.2.2 Send the test e-mail

Regardless of the status of [Send Event Notification Mail] in "4.2.1 Display and change the contact information", the test mail is sent to the following users. By sending test mails, you can confirm whether the destination addresses are correctly configured or not.

- System Administrator

- Business Administrator.

The procedure to send test mails is as follows:

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

2. On the **System** pane, click **Contacts**.

3. On the Action pane, click **Send Test Email** under **Contacts**.

4.2.3 Set the maximum number of jobs in queue

The procedure to set the maximum number of jobs in queue is as follows:

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

2. On the **System** pane, click **User Management**.

3. On the Main pane, check the checkbox to select a user that can set the maximum number of jobs in the queue.

4. On the Action pane, click **Set Max. Jobs in Queue** under **Session Management**.
   The information input screen is displayed.

5. Enter the necessary information, and then click **Modify**.

4.2.4 Forcible logout

A forcible logout is executed to a user by the system administrator.

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

2. On the **System** pane, click **User Management**.

3. On the Main pane, check the checkbox to select a user that can execute forcible logout.

4. On the Action pane, click **Force Logout** under **Session Management**.

4.3 Operations for ETERNUS Disk storage system

This section describes the operation methods related to ETERNUS Disk storage system.

4.3.1 Register ETERNUS Disk storage system

There are two ways to register an ETERNUS Disk storage system.

- Using "sanma.conf" file.

- Searching subnet or IP address, and entering the necessary information.

The procedure to register an ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The current registered ETERNUS Disk storage systems are displayed on the Main pane.

2. On the Action pane, click **Discover** under **Disk Array**.
   The information input screen is displayed.

3. Add an ETERNUS Disk storage system.

   Registration using sanma.conf file:

       a. Check the **Use existing settings from file: sanma.conf** checkbox.

       b. Click **Discover**.

   Registration by searching subnet:

       a. Click the **Search on Subnet** radio button.

       b. Enter **Subnet Address**.

       c. Click **Discover**.

   Registration by searching IP address:

       a. Click the **IP Address** radio button.

       b. Enter **IP Address**.

       c. Enter **SNMP Community Name**.

       d. Click **Discover**.

4. Check the target ETERNUS Disk storage system checkbox.

5. Enter the user name and password of the checked ETERNUS Disk storage system.

6. Check the **SNMP Trap Setting** checkbox as needed basis.

🖙 Note
. . . .

Please do not check the **SNMP Trap Setting** checkbox if the target ETERNUS Disk storage system is managed by the Management Server that operates AdvancedCopy Manager's manager only.
. . . .

7. Click **Register**.

Note

- In the case of "Searching subnet", both the specified subnet and the Management Server subnet are searched.

- When using "Searching subnet", "public" will be used for SNMP Community Name. If SNMP Community Name other than "public" need to be specified, use "sanma.conf" instead. How to customize sanma.conf is described in "6.5.1 Customizing sanma.conf".

- The registration processing of ETERNUS Disk storage system may take from a few minutes to over 10 minutes depending on the device configuration. The Job Status pane allows you to confirm the completion of ETERNUS Disk storage system registration processing. However, since the information in the Job Status pane is automatically deleted 24 hours after processing is completed, check deleted information in "4.21.1 Display the operation history". The ETERNUS Disk storage system registration processing has completed when the displayed items of the **Operation History** screen is as follows:

    - Action : Register Disk Array

    - State : Complete

    - Result : Success

    - Target : IP address of the registered ETERNUS Disk storage system

  Please do not perform any operation for this ETERNUS Disk storage system until the registration processing has been completed.

- If the ETERNUS Disk storage system is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

- For IPv6 network environment, the ETERNUS Disk storage system cannot be registered by using sanma.conf file and searching subnets. Register it by searching IP address.

- If the ETERNUS Disk storage system is already registered with IPv6 address, to prevent registration in a dual stack configuration, it cannot be registered with IPv4 address by using sanma.conf file and searching subnets.

4.3.2 Display ETERNUS Disk storage system

When clicking **Storage** on the global navigation tab, the registered ETERNUS Disk storage systems are displayed on the Main pane.

4.3.3 Delete ETERNUS Disk storage system

The procedure to delete the registered ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Delete** under **Storage**.
   The information confirmation screen is displayed.

4. When releasing the Host Affinity setting related to the ETERNUS Disk storage system, check the **Remove Access Path** checkbox. In case of uncheck this checkbox, delete the access path manually.

5. Click **Delete**.

4.3.4 Change ETERNUS Disk storage system information

The procedure to change the registered ETERNUS Disk storage system information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Modify** under **Storage**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Modify**.

📝 Note
. . . .

This procedure does not include instructions for:

- Changing any registered IPv4 address to IPv6 address.

- Changing any registered IPv6 address to IPv4 address.

To change the IP address version of any registered ETERNUS Disk storage system, delete the registered ETERNUS Disk storage system first and then register the ETERNUS Disk storage system again.
. . . .

4.3.5 Set and change the information of the account that can access ETERNUS Disk storage system

The procedure to register the information of the account that can access ETERNUS Disk storage system into this product and the procedure to change the account information registered in this product are as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Reset Password** under **Storage**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Reset**.

📝 Note
. . . .

- This procedure does not include instructions for:

  - Registering the account information into ETERNUS Disk storage system

  - Changing the account information registered in ETERNUS Disk storage system

- If account information in ETERNUS Disk storage system is registered or changed, execute this procedure immediately to match the account information in ETERNUS Disk storage system and this product.

  When account information in ETERNUS Disk storage system and this product is not matched, communication from this product to ETERNUS Disk storage system fails because of the authentication error. If the authentication error occurs, the Web Console cannot display the correct information.
. . . .

4.3.6 Change the storage system name for ETERNUS Disk storage system

The procedure to change the ETERNUS Disk storage system name managed by this product is as follows:

1. Delete the target ETERNUS Disk storage system. Refer to "4.3.3 Delete ETERNUS Disk storage system" for details.

2. Re-register the target ETERNUS Disk storage system. Refer to "4.3.1 Register ETERNUS Disk storage system" for details.

3. When you were using Advanced Copy function before changing the name, re-configure the connection conditions of ETERNUS Disk storage system. Refer to "4.13.2 Configure the connection type for ETERNUS Disk storage system" for details.

![Note icon] Note

....

This procedure does not include instructions for:

- Changing the storage system name of ETERNUS Disk storage system itself

....

4.3.7 Change the Box ID for ETERNUS Disk storage system

The procedure to change the ETERNUS Disk storage system Box ID managed by this product is as follows:

1. Delete the target ETERNUS Disk storage system. Refer to "4.3.3 Delete ETERNUS Disk storage system" for details.

2. Re-register the target ETERNUS Disk storage system. Refer to "4.3.1 Register ETERNUS Disk storage system" for details.

3. When you were using Advanced Copy function before changing the Box ID, re-configure the connection conditions of ETERNUS Disk storage system. Refer to "4.13.2 Configure the connection type for ETERNUS Disk storage system" for details.

![Note icon] Note

....

This procedure does not include instructions for:

- Changing the Box ID of ETERNUS Disk storage system itself

....

4.3.8 Configure ETERNUS Disk storage system

The procedure to configure ETERNUS Disk storage system is as follows:

a. Add a server.

b. Create a new RAID group.

c. Create new volumes.

d. Assign volumes to a server.

The procedure to configure ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Storage Conf.** under **Wizard**.

4. Click **Next**.

5. Enter and select **Server Information** and **Host Bus Adapter Information**.

6. Click **Add**.

7. Enter and select the detailed information of the new RAID group.

8. Click **Create** or **Skip**.

9. Enter and select the information of the new volume.

10. Click **Create** or **Skip**.

11. Click **Assign**.

 Note

. . . .

Even if this operation is interrupted, the new resources (server, volume and RAID group) added or created during this operation are not deleted.

To delete the new resources added or created during this operation, perform the following operations.

- "4.17.4 Delete the server"

- "4.9.3 Delete the volume"

- "4.11.4 Delete the RAID group"

. . . .

4.3.9 Assign ETERNUS Disk storage system volumes to a server

The procedure to assign volumes of ETERNUS Disk storage system to a server is as follows:

    a. Select Server

    b. Select HBA and Port

    c. Assign Volumes to the Server

The procedure to assign volumes of ETERNUS Disk storage system to a server is as follows:

1. On the global navigation tab, click **Storage**.
    The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Assign Volume** under **Wizard**.

4. Click **Next**.

5. Click the target server radio button.

6. Click **Next**.

7. If you set the zoning, check "Yes" of the **Zoning Setting** radio button.
    Only when the license of ETERNUS SF Storage Cruiser Standard Edition is registered, the **Zoning Setting** radio button can be checked.

8. Click the target HBA checkbox.

9. Click **Connect** to select a port of the ETERNUS Disk storage system to be connected.

10. Click **Next**.

11. Select a volume to be assigned in either of the following tabs.

    - **Select Volume** tab

    - **Select Affinity/LUN Group** tab
      Only when the license of ETERNUS SF Storage Cruiser Standard Edition is registered, this tab can be clicked.

    When using the [Select Volume] tab:

        1. Check the target volume checkbox to be added from the volume list.

        2. Click **Add**.

    When using the [Select Affinity/LUN Group] tab:

        1. Check the target Affinity/LUN Group radio button to be assigned from the Affinity/LUN Group list.

12. Click **Assign**.

Note

- If volume assignment fails, it is possible that the zoning was partially successful. The failure may be due to a temporary communication problem. Retry the volume assignment.

- In an environment where BS2000 is connected to an ETERNUS Disk storage system, do not change the affinity group for BS2000.

4.3.10 Reload ETERNUS Disk storage system configuration information

The procedure to reload the ETERNUS Disk storage system configuration information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Action pane, click **Reload Conf.** under **Storage**.

Point

ETERNUS SF Manager updates the displayed information, obtaining the information from the ETERNUS Disk storage system section by section. If any of the situations below have occurred, perform the above-described operation to display the up-to-date information.

- Changed the configuration using ETERNUS Web GUI. (*1)

- Changed the configuration using CLI. (*1)

- Check the status of the constituted elements because of trouble in the ETERNUS Disk storage system.

- Clear the Error status after the recovery because of trouble in the ETERNUS Disk storage system.

*1: For the following devices with firmware version V10L40 or later, the configuration information is automatically reflected, so the above-mentioned operation is not needed.
ETERNUS DX80 S2/DX90 S2, ETERNUS DX400 S2 series, ETERNUS DX8000 S2 series

Note

The reloading of ETERNUS Disk storage system configuration information may take from a few minutes to over 10 minutes depending on the device configuration. The Job Status pane allows you to confirm the completion of ETERNUS Disk storage system configuration information reloading. However, since the information in the Job Status pane is automatically deleted 24 hours after processing is completed, check deleted information in "4.21.1 Display the operation history". The ETERNUS Disk storage system configuration information reloading has completed when the displayed items of the **Operation History** screen is as follows:

- Action : Reload Configuration on Disk Array

- State : Complete

- Result : Success

- Target : Name of the registered ETERNUS Disk storage system

Please do not perform any operation for this ETERNUS Disk storage system until the configuration information reloading has been completed.

4.4 Operations for storage devices (other than ETERNUS Disk storage system)

This section describes the operation methods related to storage devices other than ETERNUS Disk storage system.

4.4.1 Register the storage device

The procedure to register the storage device other than ETERNUS Disk storage system is as follows:

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

2. On the **Storage** pane, click **Disk Array (Manual)**.

3. On the Action pane, click **Register** under **Storage**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Register**.

Note

If the storage device is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

4.4.2 Display the storage device

The procedure to display the storage device other than ETERNUS Disk storage system is as follows:

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

2. On the **Storage** pane, click **Disk Array (Manual)**.
   The registered storages are displayed on the Main pane.

4.4.3 Delete the storage device

The procedure to delete the storage device other than ETERNUS Disk storage system is as follows:

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

2. On the **Storage** pane, click **Disk Array (Manual)**.
   The registered storage devices are displayed on the Main pane.

3. On the Main pane, check the target storage device checkbox.

4. On the Action pane, click **Delete** under **Storage**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Delete**.

4.4.4 Change the storage device information

The procedure to change the storage device other than ETERNUS Disk storage system is as follows:

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

2. On the **Storage** pane, click **Disk Array (Manual)**.
   The registered storage devices are displayed on the Main pane.

3. On the Main pane, check the target storage device checkbox.

4. On the Action pane, click **Modify** under **Storage**.
   The information input screen is displayed.

5. Enter the necessary information, and then click **Modify**.

![Note icon] **Note**

. . . .

This procedure does not include instructions for:

- Changing any registered IPv4 address to IPv6 address.

- Changing any registered IPv6 address to IPv4 address.

To change the IP address version of any registered storage device, delete the registered storage device first and then register the storage device again.

. . . .

4.4.5 Display the port information for the storage device

The procedure to display the port information for the storage device other than ETERNUS Disk storage system is as follows:

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

2. On the **Storage** pane, click **Disk Array (Manual)**.
   The registered storage devices are displayed on the Main pane.

3. On the Main pane, click the target storage device name.

4. On the **Storage** pane, click **Port**.
   The port information for target storage device is displayed on the Main pane.

4.5 Operations for ETERNUS LT250/LT270

This section describes the operation methods related to ETERNUS LT250/LT270.

Refer to "4.6 Operations for tape library (other than ETERNUS LT250/LT270)" for operation methods related to the following ETERNUS Tape libraries.

- ETERNUS LT20/LT20 S2

- ETERNUS LT40/LT40 S2

- ETERNUS LT60/LT60 S2

- ETERNUS LT200/LT210/LT220/LT230

- ETERNUS LT270 S2

![Note icon] **Note**

. . . .

- The Web Console cannot change the tape library information. In the Web Console, the actions which change the tape library information are always grayed out.

- If you have changed the IP address of the registered tape library, it is necessary to delete and then reregister the tape library.

. . . .

4.5.1 Register the tape library

The procedure to register a tape library is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

3. On the Action pane, click **Discover** under **Tape Library**.
   The information input screen is displayed.

4. Enter the IP address and SNMP community name, and then click **Discover**.

5. Confirm the information, and then click **Register**.

Note

- An IP address that has been already used in the tape library registered in the ETERNUS SF system cannot be specified.

- The Web Console cannot set the SNMP Trap transmission place address for tape library. In the Web Console, the **SNMP Trap setting** checkbox is always grayed out. Therefore, it is necessary to set the SNMP Trap transmission place address on the tape library separately.

- The registration processing of tape library may take from a few minutes to over 10 minutes depending on the device configuration. The Job Status pane allows you to confirm the completion of tape library registration processing. However, since the information in the Job Status pane is automatically deleted 24 hours after processing is completed, check deleted information in "4.21.1 Display the operation history". The tape library registration processing has completed when the displayed items of the **Operation History** screen is as follows:

  - Action : Register Tape Library

  - State : Complete

  - Result : Success

  - Target : IP address of the registered tape library

  Please do not perform any operation for this tape library until the registration processing has been completed.

- If the tape library is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

4.5.2 Display the tape library

The procedure to display tape libraries is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

4.5.3 Delete the tape library

The procedure to delete the registered tape library is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, check the target tape library checkbox.

4. On the Action pane, click **Delete** under **Tape Library**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Delete**.

4.5.4 Reload the tape library configuration information

The procedure to reload the tape library configuration information is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, check the target tape library checkbox.

4. On the Action pane, click **Reload Conf.** under **Tape Library**.

P Point
. . . .

If any of the situations below have occurred, perform the above-described operation to display the up-to-date information.

- Changed the tape library configuration.

- Check the status of the constituted elements because of trouble in the tape library.

- Clear the Error status after the recovery because of trouble in the tape library.
. . . .

Note
. . . .

The reloading of tape library configuration information may take from a few minutes to over 10 minutes depending on the device configuration. The Job Status pane allows you to confirm the completion of tape library configuration information reloading. However, since the information in the Job Status pane is automatically deleted 24 hours after processing is completed, check deleted information in "4.21.1 Display the operation history". The tape library configuration information reloading has completed when the displayed items of the **Operation History** screen is as follows:

- Action : Reload Configuration on Tape Library

- State : Complete

- Result : Success

- Target : Name of the registered tape library

Please do not perform any operation for this tape library until the configuration information reloading has been completed.
. . . .

4.5.5 Display the device in the tape library

The procedure to display devices in the tape library is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices in the tape library are displayed on the Main pane.

4.5.6 Display the port in the tape library

The procedure to display ports in the tape library is as follows:

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

2. On the Category pane, click **Tape Library**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Port**.
   The ports in the tape library are displayed on the Main pane.

4.6 Operations for tape library (other than ETERNUS LT250/LT270)

This section describes the operation methods related to tape libraries other than ETERNUS LT250/LT270.

In the ETERNUS Tape libraries, the following models are included.

- ETERNUS LT20/LT20 S2

- ETERNUS LT40/LT40 S2

- ETERNUS LT60/LT60 S2

- ETERNUS LT200/LT210/LT220/LT230

- ETERNUS LT270 S2

4.6.1 Register the tape library

The procedure to register a tape library other than ETERNUS LT250/LT270 is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Action pane, click **Register** under **Tape Library**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Register**.

Note

- An IP address that has already been registered as a tape library cannot be specified.

- A name that has already been registered as a tape library other than ETERNUS LT250/LT270 cannot be specified.

- Make URL set to the Management Software either following formats. If the format does not differ from which format, an unexpected action may be done.

```
http://
https://
```

- If the tape library is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

4.6.2 Display the tape library

The procedure to display tape libraries other than ETERNUS LT250/LT270 is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

4.6.3 Delete the tape library

The procedure to delete the tape library other than ETERNUS LT250/LT270 is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, check the target tape library checkbox.

4. On the Action pane, click **Delete** under **Tape Library**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Delete**.

Information

When a tape library is deleted, the device and port information registered manually are deleted at the same time.

4.6.4 Change the tape library status

The procedure to change the status of tape library other than ETERNUS LT250/LT270 is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, check the target tape library checkbox.

4. On the Action pane, click **Modify** under **Tape Library**.
   The information input screen is displayed.

5. Enter the necessary information, and then click **Modify**.

Note

- The Web Console can only change the status of the tape library.
  The tape library information cannot be changed using the Web Console. In the Web Console, input fields of the tape library information are always grayed out.

- If you have changed the IP address of a tape library, it is necessary to register a tape library again after deleting it.

4.6.5 Add the device in the tape library

The procedure to add the device to the registered tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices registered in the tape library are displayed on the Main pane.

5. On the Action pane, click **Add** under **Device**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Add**.

4.6.6 Display the device in the tape library

The procedure to display devices registered in the tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices registered in the tape library are displayed on the Main pane.

4.6.7 Delete the device in the tape library

The procedure to delete the device registered in the tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices registered in the tape library are displayed on the Main pane.

5. On the Main pane, check the target device checkbox.

6. On the Action pane, click **Delete** under **Device**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

 Information
....
When a device is deleted, the port information registered in the device is deleted at the same time.
....

4.6.8 Add the port in the tape library

The procedure to add the port to the registered tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices registered in the tape library are displayed on the Main pane.

5. On the Main pane, click the device to add the port.
   The detailed information of the device registered in the tape library is displayed.

6. On the Action pane, click **Add** under **Port**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Add**.

P Point
. . . .

Only FC ports can be added.
. . . .

4.6.9 Display the port in the tape library

The procedure to display ports registered in the tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Port**.
   The ports registered in the tape library are displayed on the Main pane.

4.6.10 Delete the port in the tape library

The procedure to delete the port registered in the tape library is as follows:

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

2. On the Category pane, click **Tape Library (Manual)**.
   The registered tape libraries are displayed on the Main pane.

3. On the Main pane, click the target tape library.

4. On the Category pane, click **Device**.
   The devices registered in the tape library are displayed on the Main pane.

5. On the Main pane, click the device that has the port to be deleted.
   The detailed information of the device registered in the tape library is displayed.

6. On the Main pane, check the target port checkbox.

7. On the Action pane, click **Delete** under **Port**.
The information confirmation screen is displayed.

8. Confirm the information, and then click **Delete**.

4.7 Correlation management operations

This section describes the correlation management operations for storage device.

📎 **Note**
. . . .
The **End to End View (Hyper-V)** in the Category pane can be selected only if the operating system of the Management Server is Windows.
. . . .

4.7.1 Display the End to End view list

The procedure to display the End to End view list is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

2. On the **Storage** pane, click **Correlation**.
The End to End view list is displayed on the Main pane.

4.7.2 Display the End to End view details

The procedure to display the End to End view details is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the Main pane, check the target End to End view checkbox.

5. On the Action pane, click **Display Details** under **End to End View**.
The detailed End to End view is displayed.

4.7.3 Export End to End view information

The procedure to export the End to End view information is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the Main pane, check the target End to End view checkbox.

5. On the Action pane, click **Download** under **End to End View**.

6. Specify the location to save the file, and then click **OK**.

7. Click **Save**.

Note

. . . .

Even if Filter setting is enabled on the Web Console, all data is exported.

. . . .

4.7.4 Display the VMware End to End view list

The procedure to display the VMware End to End view list is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (VMware)**.

5. On the Main pane, click the IP address to display the detailed information.

6. Click the **VMware Host** tab, **VMware Guest** tab, **Partition** tab, **Raw Device Mapping** tab, or **Datastore** tab to display on the Main pane.

7. When reference the detailed information on the **Datastore** tab, click the Datastore name.

Note

. . . .

Information for a VMware Guest is not fully displayed if VMware Tools are not installed in it.

. . . .

4.7.5 Register/reload of VMware vCenter/vSphere server

The procedure of server registration/re-loading of the VMware vCenter/vSphere is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (VMware)**.

5. On the Action pane, click **Register/Reload** under **VMware vCenter/vSphere Server**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Confirm**.

Note

. . . .

If the VMware vCenter/vSphere server is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

. . . .

4.7.6 Delete the VMware vCenter/vSphere server

The procedure to delete the VMware vCenter/vSphere server is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (VMware)**.

5. Check the target checkbox on the Main pane.

6. On the Action pane, click **Delete** under **VMware vCenter/vSphere Server**.
   VMware vCenter/vSphere is displayed in a pop-up window.

7. Click the button at the lower right in the pop-up window.

4.7.7 Register/reload of Hyper-V host

The procedure of server registration/re-loading of the Hyper-V host is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. On the Main pane, check the target server checkbox to register as a Hyper-V host.

6. On the Action pane, click **Register/Reload** under **Hyper-V Host**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Confirm**.

P Point

- To register the server as a Hyper-V host, it is required that the server has already been registered in this product.
  Refer to "4.17.1 Register the server" for the server registration method.

- The Hyper-V configuration information is not automatically updated. If you have changed the configuration information, perform the above procedure to reload the Hyper-V host configuration information.

- For a multipath configuration, the End to End list for Hyper-V displays only one path.

- When the Hyper-V host information is reloaded on a multipath configuration, the using path information is displayed.

- If initiator IP address is not set to the iSCSI initiator when connecting it, the correlation management of Hyper-V is not supported.

4.7.8 Display the Hyper-V host details

The procedure to display the Hyper-V host details is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. On the Main pane, click the target Hyper-V host.

6. On the Main pane, click the **Hyper-V Host** tab, **Hyper-V Guest** tab, **Partition** tab, **Pass-through Disk** tab, or **Virtual Hard Disk** tab.

P Point
. . . .

- To display information, it is required that the Hyper-V host has already been registered.

- When the Data Exchange service of Integration Services is not running on the Hyper-V host, a part of Hyper-V guest information is not displayed.

- When the operating system of Hyper-V guest is not Windows, a part of Hyper-V guest information might be not displayed even if the Data Exchange service of Integration Services is running.
. . . .

4.7.9 Display the Hyper-V host End to End view list

The procedure to display the Hyper-V host End to End view list is as follows:

1. On the global navigation tab, click **Storage**.
    The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. If you click the **End to End View (Hyper-V) - Pass-through Disk** tab on the Main pane, the End to End view list related to the pass-through disk is displayed on the Main pane.
    If you click the **End to End View (Hyper-V) - Virtual Hard Disk** tab on the Main pane, the End to End view list related to the virtual hard disk is displayed on the Main pane.

P Point
. . . .

- To display information, it is required that the Hyper-V host has already been registered.

- When the Data Exchange service of Integration Services is not running on the Hyper-V host, a part of Hyper-V guest information is not displayed.

- When the operating system of Hyper-V guest is not Windows, a part of Hyper-V guest information might be not displayed even if the Data Exchange service of Integration Services is running.
. . . .

Note
. . . .

The information of virtual HBA on the Hyper-V guest is not displayed.
. . . .

4.7.10 Display the Hyper-V host End to End view details

The procedure to display the Hyper-V host End to End view details is as follows:

1. On the global navigation tab, click **Storage**.
    The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. On the Main pane, click either of the following tabs.

    - **End to End View (Hyper-V) - Pass-through Disk** tab

    - **End to End View (Hyper-V) - Virtual Hard Disk** tab

6. On the Main pane, check the target radio button.

7. On the Action pane, click **Display Details** under **End to End View (Hyper-V)**.
   The detailed End to End view is displayed.

P Point
. . . .

- When the Data Exchange service of Integration Services is not running on the Hyper-V host, a part of Hyper-V guest information is not displayed.

- When the operating system of Hyper-V guest is not Windows, a part of Hyper-V guest information might be not displayed even if the Data Exchange service of Integration Services is running.

. . . .

4.7.11 Export the Hyper-V End to End view information

The procedure to export the Hyper-V host End to End view information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. On the Main pane, click either of the following tabs.

    - **End to End View (Hyper-V) - Pass-through Disk** tab

    - **End to End View (Hyper-V) - Virtual Hard Disk** tab

6. On the Action pane, click **Download** under **End to End View (Hyper-V)**.

7. Specify the location to save the file, and then click **OK**.

8. Click **Save**.

4.7.12 Delete the Hyper-V host

The procedure to delete the Hyper-V host is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Correlation**.

4. On the **Correlation** pane, click **End to End View (Hyper-V)**.

5. On the Main pane, click the target Hyper-V host checkbox.

6. On the Action pane, click **Delete** under **Hyper-V Host**.
   The Hyper-V host is displayed in a pop-up window.

7. Click the button at the lower right in the pop-up window.

4.8 System management operations

This section describes the system management operations for storage device.

4.8.1 Register the license

The procedure to register a license is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **License Management**.
   The registered and registerable license list is displayed on the Main pane.

5. On the Main pane, check the target license checkbox.

6. On the Action pane, click **Register** under **License**.
   The information input screen is displayed.

7. Enter the license key, and then click **Register**.

Note

Enable the following settings for the interface to ETERNUS Disk storage systems before registering a license:

Model name	Interface settings
ETERNUS DX60/DX60 S2/DX80/DX90	Telnet connection
ETERNUS DX80 S2/DX90 S2 ETERNUS DX400 S2 series ETERNUS DX8000 S2 series	SSH connection or telnet connection

4.8.2 Display the license

The procedure to display the registered and registerable licenses is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **License Management**.
   The registered and registerable license list is displayed on the Main pane.

4.8.3 Delete the license

The procedure to delete a license is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **License Management**.
   The registered and registerable license list is displayed on the Main pane.

5. On the Main pane, check the target license checkbox.

6. On the Action pane, click **Delete** under **License**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

4.8.4 Enable the encryption mode

The procedure to enable the encryption mode of ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **Encryption**.

5. On the Action pane, click **Enable** under **Encryption Mode**.

4.8.5 Disable the encryption mode

To disable the encryption mode of ETERNUS Disk storage system, it is necessary to delete all encrypted volumes.
The procedure to disable the encryption mode of ETERNUS Disk storage system is as follows:

1. Refer to "4.9.3 Delete the volume" to delete all encrypted volumes.

2. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

4. On the Category pane, click **System**.

5. On the **System** pane, click **Encryption**.

6. On the Action pane, click **Disable** under **Encryption Mode**.

📒 Note

⋯⋯⋯

- Encryption mode can be changed only in the following ETERNUS Disk storage systems:

    - ETERNUS DX80 S2/DX90 S2

    - ETERNUS DX400 S2 series

    - ETERNUS DX8000 S2 series

- If the encryption mode is changed to "disable", it is necessary to restart the ETERNUS Disk storage system.
  Refer to ETERNUS Disk storage system manual for more information.

⋯⋯⋯

4.8.6 Display the Eco-mode

The procedure to display the ETERNUS Disk storage system Eco-mode is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **ECO Mode**.
   The current Eco-mode is displayed on the Main pane.

4.8.7 Configure the Eco-mode

The procedure to enable/disable ETERNUS Disk storage system Eco-mode is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **System**.

4. On the **System** pane, click **ECO Mode**.
   The current Eco-mode is displayed on the Main pane.

5. On the Action pane, click **Enable** (or **Disable**) under **ECO Mode**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Enable** (or **Disable**).

4.9 Volume operations

This section describes the volume operations.

4.9.1 Create the volume

The procedure to create volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.

4. On the Action pane, click **Create** under **Volume**.
   The information input screen is displayed.

5. Enter the necessary information, and then click **Next**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Create**.

Note

- The maximum capacity of volume that can be created is the largest contiguous free space in the RAID group. When fragmentation has occurred in the RAID group, the largest contiguous free space is less than the total free capacity of the RAID group.
  If the volume cannot be created because of insufficient free capacity of the RAID group, even though you specified capacity less than the total free capacity of RAID group, use the ETERNUS Web GUI to verify the free space of the RAID group.

- In the following cases, the maximum number of volumes cannot be created.

  - There is a Thin Provisioning Pool in the storage device.

  - There is a concatenation volume in the storage device.

  - There is a REC Disk buffer in the storage device.

  - There is a volume which is executing RAID Migration.

  - There is a volume which is executing Thin Provisioning Volume balancing.

- When creating a volume to the RAID group using Self Encrypting Drive (SED) disk, specify "No" for volume encryption.

- Volume creation may take several minutes to several hours depending on the device configuration. When creating a number of volumes at one time, consider the processing time to carry it out.

4.9.2 Display the volume

The procedure to display volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

   In addition, clicking the number of the volume on the Main pane displays the basic information of the volume.

4.9.3 Delete the volume

The procedure to delete volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, click the target volume checkbox.

5. On the Action pane, click **Delete** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Delete**.

Note

Volume deletion may take several minutes to several hours depending on the device configuration. When deleting a number of volumes at one time, consider the processing time to carry it out.

4.9.4 Delete the reserved volume

The procedure to delete the reserved volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target volume checkbox.

5. On the Action pane, click **Reserve Delete** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Reserve Delete**.

4.9.5 Forcible delete the volume

The procedure to delete the volume forcibly is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target volume checkbox.

5. On the Action pane, click **Force Delete** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Force Delete**.

4.9.6　Format the volume

The procedure to format the volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target volume checkbox.

5. On the Action pane, click **Format** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Format**.

4.9.7　Expand the Thin Provisioning Volume capacity

The procedure to expand the Thin Provisioning Volume capacity is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Volume checkbox.

5. On the Action pane, click **Expand (TPV)** under **Volume**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Expand**.

4.9.8　Start the Thin Provisioning Volume restriping

The procedure to start the Thin Provisioning Volume restriping is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Volume checkbox.

5. On the Action pane, click **Start Restriping (TPV)** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Start**.

4.9.9　Stop the Thin Provisioning Volume restriping

The procedure to stop the Thin Provisioning Volume restriping is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Volume**.
   The volume list is displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Volume checkbox.

5. On the Action pane, click **Stop Restriping (TPV)** under **Volume**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Stop**.

4.10 Access path operations

4.10.1 Display the access path

The procedure to display the access path is as follows:

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

2. On the Category pane, click **Access Path**.
   The connecting information for a server and storage devices is displayed on the Main pane.

P Point
....
Only the access path set to an ETERNUS Disk storage system is displayed.
....

4.10.2 Add the access path to ETERNUS Disk storage system

The procedure to add an access path to ETERNUS Disk storage system is as follows:

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

2. On the Category pane, click **Access Path**.
   The connection information for a server and storage devices is displayed on the Main pane.

3. On the Action pane, click **Add (ETERNUS)** under **Access Path**.

4. Click the target server radio button on the **Select Server** screen.
   Enter the necessary information, and then click **Next**.

5. Click the target storage device radio button on the **Select Storage** screen.
   Enter the necessary information, and then click **Next**.

6. Click the target Affinity Group on the **Select Affinity Group** screen.
   Enter the necessary information, and then click **Next**.

7. Confirm the information, and then click **Add**.

Note
....
Even if this operation is interrupted, the new Affinity/LUN group created during this operation is not deleted.
To delete the new Affinity/LUN group created during this operation, perform the operation "4.14.15 Delete the Affinity/LUN group".
....

Information

If you create a new Affinity/LUN group, you can check by **Assigned** column of the volume list whether the selected volume is assigned to other Affinity/LUN group.

Displayed strings	Explanation
Assigned	Volumes assigned to other Affinity/LUN groups.
No use	Volumes not assigned to other Affinity/LUN groups.

4.10.3 Add the access path (other than ETERNUS Disk storage system)

The procedures to add an access path to a device other than ETERNUS Disk storage system is as follows:

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

2. On the Category pane, click **Access Path**.
   The connection information for a server and storage devices is displayed on the Main pane.

3. On the Action pane, click **Add (Other)** under **Access Path**.

4. Click the target server radio button on the **Select Server** screen.
   Enter the necessary information, and then click **Next**.

5. Click the target storage device radio button on the **Select Storage** screen.
   Enter the necessary information, and then click **Next**.

6. Confirm the information, and then click **Add**.

Note

This operation for devices other than ETERNUS Disk storage system executes only the WWPN zoning setting to the FC switch because it cannot set the host affinity for devices other than ETERNUS Disk storage system.
Set WWPN zoning information can be confirmed with the zoning list screen.
Devices for which host affinity cannot be set are not displayed in the screen displaying access path information.

4.10.4 Delete the access path

The procedure to delete an access path is as follows:

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

2. On the Category pane, click **Access Path**.
   The connection information for a server and storage devices is displayed on the Main pane.

3. On the Main pane, check the target access path checkbox.

4. On the Action pane, click **Delete** under **Access Path**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Delete**.

4.10.5 Change the access path

The procedure to change an access path is as follows:

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

2. On the Category pane, click **Access Path**.
   The connection information for a server and storage devices is displayed on the Main pane.

3. On the Main pane, check the target access path checkbox.

4. On the Action pane, click **Modify** under **Access Path**.

5. Click the target HBA radio button on the **Select Server HBA** screen.
   Enter the necessary information, and then click **Next**.

6. Confirm the information, and then click **Modify**.

4.10.6 Display the details of access path status

The procedure to display the details of access path status is as follows:

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

2. On the Category pane, click **Access Path**.
   The connection information for a server and storage devices is displayed on the Main pane.

3. On the Main pane, click the **Status** field (icon or text part) of the target access path to display the status.
   The detailed information of the access path status is displayed.

4.10.7 Inherit the access path

The procedure to inherit an access path is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Main pane, click the target server name.
   The detailed information of the server and information about HBAs installed in the server are displayed on the Main pane.

3. On the Main pain, check the checkbox of the post-replaced HBA.

4. On the Action pane, click **Inherit** under **Access Path**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Inherit**.

 Note

- Basic conditions under which an ETERNUS SF system can recognize HBA replacement on a server node are as follows:

    - Storage Cruiser's agent is installed in the server node.

    - HBA is replaced in the same slot on the server node.

    - The server node is registered in the ETERNUS SF system.

    - Access path is configured for pre-replaced HBA.

  Even if HBA is replaced with the above basic conditions met, HBA replacement may not be recognized in the following cases:

    - When hot swapping HBA on Linux

    - When replacing HBA on the Solaris OS

- When the zoning settings intended for access path inheritance is as follows, access path cannot be inherited:

    - Port zoning

- Not one-to-one WWPN zoning

- The zoning of tape library devices or other storage devices than ETERNUS Disk storage systems cannot be inherited.

- In the host registration information, host number cannot be inherited. Host name can be inherited.

- If inheritance processing is done on any access path to which no zoning is set, zoning creation is skipped, and host registration and affinity settings alone are performed.

4.11 RAID group operations

This section describes the operations related to RAID Group.

4.11.1 Create the RAID group

The create modes for RAID groups are automatic and manual.
In the case of automatic, appropriate disks are automatically selected based on specified RAID type, disk type, and RAID group capacity. The Stripe Depth is 64 KB.

The automatic mode and Stripe Depth can be only selected for the following models:

- ETERNUS DX80 S2/DX90 S2

- ETERNUS DX400 S2 series

- ETERNUS DX8000 S2 series

How to create the RAID group automatically

The procedure to create the RAID group within ETERNUS Disk storage system automatically is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.

4. On the Action pane, click **Create** under **RAID Group**.
   The information input screen is displayed.

5. Enter the necessary information in the **Name**, **RAID Type**, and **Disk Type** fields.

6. Click the **Automatic** radio button in the **Create Mode**.

7. Enter the number of RAID groups and RAID group capacity, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the configuration of the RAID groups to be created, and then click **Create**.
   The creation of the RAID groups is started.

How to create the RAID group manually

The procedure to create the RAID group within ETERNUS Disk storage system manually is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.

4. On the Action pane, click **Create** under **RAID Group**.
   The information input screen is displayed.

5. Enter the necessary information in the **Name**, **RAID Type**, and **Disk Type** fields.

6. Click the **Manual** radio button in the **Create Mode**.

7. Select the Stripe Depth and disks to be used, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the configuration of the RAID groups to be created, and then click **Create**.
   The creation of the RAID groups is started.

⚑ Note
....
The **Name** field cannot be input for the model that cannot give a name to the RAID group.
....

4.11.2 Display the RAID group

The procedure to display RAID Groups created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.
   The RAID groups in ETERNUS Disk storage system are displayed on the Main pane.

4.11.3 Display the RAID group details

The procedure to display the detailed information of RAID Groups created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.
   The RAID groups in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, click the target RAID group number.

5. Selected RAID group detailed information is displayed on the Main pane. When switching the tabs on the Main pane, displays the information below.

Tab name	Description
Basic	Be able to confirm the RAID type, total capacity, spare capacity, etc.
Volume layout	Be able to confirm the volume information created in the RAID group.
Disks	Be able to confirm the physical disk information which configures the RAID group.

4.11.4 Delete the RAID group

The procedure to delete a RAID group created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.
   The RAID groups in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target RAID group checkbox.

5. On the Action pane, click **Delete** under **RAID Group**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Delete**.

4.11.5 Configure the RAID group Eco-mode

The procedure to enable/disable RAID group Eco-mode is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.

4. On the **RAID Group** pane, click **ECO Mode**.
   The RAID groups in ETERNUS Disk storage system are displayed on the Main pane.

5. On the Main pane, check the target RAID group checkbox.

6. On the Action pane, click **Enable** (or **Disable**) under **ECO Mode**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Enable** (or **Disable**).

4.11.6 Start and stop the disk drive which configures RAID group

The procedure to start and stop the disk drive which configures RAID Group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **RAID Group**.

4. On the **RAID Group** pane, click **ECO Mode**.
   The RAID groups in ETERNUS Disk storage system are displayed on the Main pane.

5. On the Main pane, check the target RAID group checkbox.

6. On the Action pane, click **Start** (or **Stop**) under **Disk Drive**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Start** (or **Stop**).

4.12 Thin Provisioning operations

This section describes the operations related to Thin Provisioning.

4.12.1 Create the Thin Provisioning Pool

The procedure to create Thin Provisioning Pool within ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.

4. On the Action pane, click **Create** under **Thin Provisioning Pool**.
   The information input screen is displayed. (Specify Pool Information)

5. Enter the necessary information, and then click **Next**.
   The information input screen is displayed. (Specify disks to create RAID Groups)

6. Enter the necessary information, and then click **Next**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Create**.

Note
. . . .
If you use the Self Encryption Drive (SED) for a disk in a Thin Provisioning Pool, specify "No" for Encryption of the pool.
. . . .

4.12.2 Display the Thin Provisioning Pool

The procedure to display Thin Provisioning Pools created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4.12.3 Display the Thin Provisioning Pool status

The procedure to display the status of Thin Provisioning Pool is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, click the target Thin Provisioning Pool number.

5. Selected Thin Provisioning Pool detailed information is displayed on the Main pane. When switching the tabs on the Main pane, displays the information below.

Tab name	Description
Basic	Be able to confirm the total capacity, usage rate, threshold value, etc.
RAID Group	Be able to confirm the information of RAID group which configures Thin Provisioning Pool.
Volume	Be able to confirm the information of Thin Provisioning volumes.

4.12.4 Display the Thin Provisioning Pool capacity graph

The procedure to display the capacity graph of the Thin Provisioning Pool created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Pool checkbox.

5. On the Action pane, click **Capacity Chart** under **Charts**.

6. On the Capacity Chart window, enter the necessary information, and then click **Plot**.
   The capacity information is displayed as graph.

P Point

- The total capacity and used capacity of the specified Thin Provisioning Pool are displayed as graphs.

- The Thin Provisioning Pool that can be displayed in one Capacity Chart window is only one.

- When "1 Month" is specified in the Duration, the data of every one day is plotted from present to 1 month ago (for 31 days).
  When "1 Year" or "10 Years" is specified in the Duration, the data of every one month is plotted for one year or ten years.

- The threshold value is not displayed in the Capacity Chart window.

4.12.5 Expand the Thin Provisioning Pool capacity

The procedure to expand Thin Provisioning Pool capacity created in ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Pool checkbox.

5. On the Action pane, click **Expand** under **Thin Provisioning Pool**.
   The information input screen is displayed. (Specify Pool Information)

6. Enter the necessary information, and then click **Next**.

7. If selected "Yes" in the **Manually Name RAID Groups** radio button in step 6, then enter the new RAID group name and check the target checkbox in the disk list.

8. Click **Create**.

9. Check a created RAID group checkbox from the **RAID Group List**, scrolling down as needed.

10. Click **Next**.

11. Confirm the information, and then click **Expand**.

4.12.6 Format the Thin Provisioning Pool

The procedure to format Thin Provisioning Pool is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Pool checkbox.

5. On the Action pane, click **Format** under **Thin Provisioning Pool**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Format**.

4.12.7 Change the Thin Provisioning Pool threshold value

The procedure to change the threshold value of Thin Provisioning Pool is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Pool checkbox.

5. On the Action pane, click **Modify Threshold** under **Thin Provisioning Pool**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Modify**.

4.12.8 Delete the Thin Provisioning Pool

The procedure to delete Thin Provisioning Pool created in the ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Thin Provisioning**.
   Thin Provisioning Pools in ETERNUS Disk storage system are displayed on the Main pane.

4. On the Main pane, check the target Thin Provisioning Pool checkbox.

5. On the Action pane, click **Delete** under **Thin Provisioning Pool**.
   The information confirmation screen is displayed.

6. Confirm the information, and then click **Delete**.

4.13 Advanced Copy operations

This section describes the operations related to Advanced Copy.

4.13.1 Configure the copy table size for Advanced Copy

The procedure to configuration the copy table size for Advanced Copy is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Configuration**.
   The current set value is displayed on the Main pane.

5. On the Action pane, click **Modify** under **Copy Table Size**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Modify**.

4.13.2 Configure the connection type for ETERNUS Disk storage system

The procedure to configure the connection type for ETERNUS Disk storage system is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Configuration**.
   The current set value is displayed on the Main pane.

5. On the Action pane, click **Set** under **Copy Control Type**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Set**.

4.13.3 Create the copy group

The procedure to create a copy group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Action pane, click **Create** under **Copy Group**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Create**.

4.13.4 Display the copy group

The procedure to display the copy groups is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

4.13.5 Delete the copy group

The procedure to delete a copy group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Main pane, check the target copy group checkbox.

6. On the Action pane, click **Delete** under **Copy Group**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

4.13.6 Create the copy pair

The procedure to create a copy pair is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the Action pane, click **Create Copy Pair** under **Copy Group**.
   The screen to select the copy type is displayed.

5. Enter the necessary information, and then click **Next**.
   The screen to set the copy group is displayed.

6. Select the existing copy group or enter the new created copy group name, and then click **Next**.
   The screen to set the copy pair is displayed.

7. Configure the copy pair selecting the copy source volume and copy destination volume, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Create**.

4.13.7 Add the copy pair

The procedure to add a copy pair is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Main pane, check the target copy group checkbox.

6. On the Action pane, click **Add** under **Copy Pair**.
   The screen to set the copy pair is displayed.

7. Enter the necessary information, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Add**.

4.13.8 Display the copy pair

The procedure to display the copy pairs is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Main pane, click the target copy group name.
   The created copy pairs are displayed on the Main pane.

4.13.9 Delete the copy pair

The procedure to delete a copy pair is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Main pane, check the target copy group checkbox.

6. On the Action pane, click **Remove** under **Copy Pair**.
   The screen to select a copy pair is displayed.

7. Check the target copy pair checkbox, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Remove**.

4.13.10 Perform the Advanced Copy

The procedure to perform Advanced Copy is as follows:

Perform for each copy group

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy group list is displayed on the Main pane.

5. On the Main pane, check the target copy group checkbox.

6. When copying in forward direction, click **Start Forward Copy** under **Copy Group Operations** on the Action pane. When copying in backward direction, click **Start Backward Copy** under **Copy Group Operations** on the Action pane.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Start**.

Perform for each Copy Pair

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Group**.
   The created copy groups are displayed on the Main pane.

5. On the Main pane, click the target copy group name.
   The created copy pair list is displayed on the Main pane.

6. On the Main pane, check the target copy pair checkbox.

7. When copying in forward direction, click **Start Forward Copy** under **Copy Pair Operations** on the Action pane. When copying in backward direction, click **Start Backward Copy** under **Copy Pair Operations** on the Action pane.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Start**.

P Point
. . . .

The selectable copy operations on the Action pane for each copy type of Advanced Copy is as follows:

Copy type	Selectable action						
	Start Forward Copy	Start Backward Copy	Suspend	Resume	Reverse	Change Mode	Cancel
OPC	Y	Y	N	N	N	N	Y
QuickOPC	Y	Y	N	N	N	N	Y
SnapOPC+	Y	Y	N	N	N	N	Y
EC	Y	Y	Y	Y	Y	N	Y
REC	Y	Y	Y	Y	Y	Y	Y

Y : Selectable
N : Not selectable
. . . .

4.13.11 Display the copy session

The procedure to display the copy sessions is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Sessions**.
   The running copy session list is displayed on the Main pane.

4.13.12 Forcible suspend the copy session

The procedure to suspend the copy session forcibly is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Sessions**.
   The running copy session list is displayed on the Main pane.

5. On the Main pane, check the target copy session checkbox.

6. On the Action pane, click **Force Suspend** under **Copy Session**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Suspend**.

4.13.13 Forcible cancel the copy session

The procedure to cancel the copy session forcibly is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Copy Sessions**.
   The running copy session list is displayed on the Main pane.

5. On the Main pane, check the target copy session checkbox.

6. On the Action pane, click **Force Cancel** under **Copy Session**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Cancel Copy**.

4.13.14 Display the Snap Data Pool information

The procedure to display the Snap Data Pool information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Snap Data Pool**.
   The registered Snap Data Pool list is displayed on the Main pane.

4.13.15 Change the Snap Data Pool policy

The procedure to change the Snap Data Pool policy is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Snap Data Pool**.
   The registered Snap Data Pool list is displayed on the Main pane.

5. On the Action pane, click **Modify** under **Policy of Snap Data Pool**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Modify**.

4.13.16 Change the Advanced Copy settings using a wizard

The procedure to change the Advanced Copy settings using a wizard is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **Configuration**.
   The Advanced Copy setting information is displayed on the Main pane.

5. On the Action pane, click **Advanced Copy** under **Wizard**.
   The Advanced Copy setting wizard screen is displayed, and then click **Next**.

6. The copy table size setting screen for Advanced Copy is displayed.
   Click the target radio button, and specify the new value.
   When selecting "Custom", specify **Resolution** and **Table Size**, and then click **Next**.

7. The Snap Data Pool policy change screen is displayed.
   Enter the necessary information, and then click **Next**.

8. The confirmation screen is displayed. Click **Finish** when the information is correct.

4.13.17 Set the REC path

The procedure to set REC path is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Path**.
   The created REC path list is displayed on the Main pane.

5. On the Action pane, click **Set** under **REC Path**.
   The screen to select remote partner is displayed.

6. Select the remote copy destination ETERNUS Disk storage system, and then click **Next**.
   The REC path setting screen is displayed.

7. Select remote copy route and connection type between ETERNUS Disk storage systems, and then click **Set**.

📝 **Note**

- The settings of the line speed and the compression ratio of REC path is enabled only when the one or more REC paths have been added.

- When the deletion of the existed REC path is only executed, the specified line speed and compression ratio are not set.

- The copy destination device should have the same IP address version as the copy source device (both should have either IPv4 or IPv6).

4.13.18 Display the REC path

The procedure to display REC path is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Path**.
   The created REC path list is displayed on the Main pane.

4.13.19 Measure the round trip time for REC path

The procedure to measure the round trip time for REC path is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Path**.
   The created REC path list is displayed on the Main pane.

5. On the Action pane, click **Measure** under **Round Trip Time**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Measure**.

4.13.20 Change the REC transfer buffer

The procedure to change the REC transfer buffer setting is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Buffer**.
   The created REC transfer buffer list is displayed on the Main pane.

5. On the Action pane, click **Modify** under **REC Buffer**.
   The screen to select remote partner is displayed.

6. Select the remote partner, and then click **Next**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

Note

. . . .

The REC transfer buffer will be set to both of REC copy source and destination ETERNUS Disk storage systems when using ETERNUS SF system. Therefore, free space more than specified as Size is required on both of them.

As for maximum REC transfer buffer capacity of each ETERNUS Disk storage system, please refer to the hardware manual.

. . . .

4.13.21 Display the REC transfer buffer

The procedure to display REC transfer buffer is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Buffer**.
   The created REC transfer buffer list is displayed on the Main pane.

4.13.22 Set the Remote Advanced Copy using a wizard

The procedure to set remote Advanced Copy using a wizard is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

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

4. On the **Advanced Copy** pane, click **REC Path** or **REC Buffer**.
   The created REC path list or REC transfer buffer list is displayed on the Main pane.

5. On the Action pane, click **Remote Copy Conf.** under **Wizard**.
   Remote Advanced Copy setting wizard screen is displayed, and then click **Next**.

6. The screen to select the remote partner is displayed.
   Select an ETERNUS Disk storage system which is the copy destination of Remote Advanced Copy, and then click **Next**.

7. The screen to setup the copy table size is displayed.
   Set the copy parameters to both source and destination ETERNUS Disk storage systems, and then click **Next**.

8. The screen to set REC path is displayed.
   Select remote copy route and connection type between ETERNUS Disk storage systems, and then click **Next**.

9. The screen to select REC transfer buffer is displayed.
   When using in the Asynchronous Consistency mode, select both local and remote REC transfer buffer, and then click **Next**.

10. The confirmation screen of settings is displayed. Click **Finish** when the information is correct.

> **📌 Note**
> ....
>
> - The settings of the line speed and the compression ratio of REC path is enabled only when the one or more REC paths have been added. When the deletion of the existed REC path is only executed, the specified line speed and compression ratio are not set.
>
> - The REC transfer buffer will be set to both of REC copy source and destination ETERNUS Disk storage systems when using ETERNUS SF system. Therefore, free space more than specified as Size is required on both of them.
>   As for maximum REC transfer buffer capacity of each ETERNUS Disk storage system, please refer to the hardware manual.
>
> ....

4.13.23 Create an Exchange Server backup script and script execution environment setting using a wizard

The procedure to create an Exchange Server backup script using a wizard is as follows:

1. Immediately after login, on the Action pane in which the Dashboard is displayed, click **for Exchange Server** under **Backup Wizard**. A list of servers is displayed by selecting **Server** on the global navigation tab, click **for Exchange Server** under **Backup Wizard** on the Action pane.

2. Check the message displayed in the Information area, and then click **Next**.

3. Check the selected backup configuration, and then click **Next**.

4. Select a Mailbox Server for the backup source, and then click **Next**.

> **📖 Information**
> ....
>
> The servers that meet all the following conditions are displayed as a list of selectable servers on the backup source Mailbox Server selection screen:
>
>   - It is registered on the ETERNUS SF system as a Managed Server of AdvancedCopy Manager.
>
>   - It does not serve as a Management Server, as well.
>
>   - The server operating system is Windows Server 2008 or later.
> ....

5. Select the database to be backed up within the Mailbox Server, and then click **Next**.

6. Check the backup destination volume name, and then click **Next**.
   If you want to change the backup destination volume, check the **change destination volume** checkbox to change the backup destination volume using the drop-down menu.

7. Check the set contents displayed, and then click **Execute**.

> **📖 Information**
> ....
>
> The transaction log file (.log) registered as backups by executing the backup wizard can be checked with swsrpdevdisp_exchange command.
>
> In addition, performing backup with the backup execution script backs up all the transaction log files and checkpoint files in the selected database, which exist in the backup source volume.
> ....

8. Check that the following message is displayed in the Information area, and then click **Close**.

```
Backup setting for Exchange Server is complete.
To backup databases automatically, register the script in a scheduler such as Task Scheduler of
Windows.
```

When the wizard completes, the script file to execute backup is stored in the backup source Mailbox Server under the file name shown below. Copy this script file to the folder in use and execute backup manually or alternatively register the script in the operating system scheduler.

```
installDir\Wizard\bat\execute_backup_dbName_date.bat
```

installDir : The program directory specified at the AdvancedCopy Manager's agent installation.
dbName : The name of the Mailbox database within the Mailbox Server selected in the wizard or public folder database name
date : The date for executing the wizard (yyyymmddhhmmss format)

In addition, along with the execute backup script file, the script file to delete the registered volume configuration set up by the Backup Wizard is stored in the backup source Mailbox Server under the file name shown below. Copy this script file to the folder in use, and if a volume configuration is changed, manually delete the registered volume configuration.

```
installDir\Wizard\bat\delete_backup_dbName_date.bat
```

installDir : The program directory specified at the AdvancedCopy Manager's agent installation.
dbName : The name of the Mailbox database within the Mailbox Server selected in the wizard or public folder database name
date : The date for executing the wizard (yyyymmddhhmmss format)

When a backup script is being created (after clicking **Execute**), other processing may be kept waiting. Therefore, when any backup script is being created, do not perform any other processing.

Clicking **Next** on the database selection screen performs fetching device information (*1) for Mailbox Server and Backup server. Therefore, if you cancel the backup wizard after clicking **Next** on the database selection screen, newly found device information by the backup wizard is kept reflected to AdvancedCopy Manager management information.
Though newly found device information exists in AdvancedCopy Manager management information, it does not affect the use of the backup wizard. However, to delete the device information from AdvancedCopy Manager management information, execute the stgxfwcmdeldev command. Refer to "stgxfwcmdeldev (Device information deletion command)" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for information on the command.

*1: Refer to "Fetching device information on a Managed Server" in "Replication" in the *ETERNUS SF AdvancedCopy Manager Operation Guide* for information on fetching device information.

4.13.24 Restore an Exchange Server database using a wizard

The procedure to restore an Exchange Server database using a wizard is as follows:

1. Immediately after login, on the Action pane in which the Dashboard is displayed, click **for Exchange Server** under **Restore Wizard**. A list of servers is displayed by selecting **Server** on the global navigation tab, click **for Exchange Server** under **Restore Wizard** on the Action pane.

2. The welcome page is displayed. Check the message displayed in the Information area, and then click **Next**.

3. The **Select of Mailbox Server** page is displayed. From the displayed Mailbox Servers, select one to be restored with the radio button, and then click **Next**.

4. The **Select of Mailbox Database** page is displayed. Select one database to be restored with the radio button. Also select a restoration method (Roll forward or Point-in-time) for the selected database. Then, click **Next**.

Roll forward restoration is performed by the use of a transaction log. This is available only when nothing is missing from the log file. This can restore database to the latest point recorded in the log.

Point-in-time restoration is performed by the use of backup data. This can restore database to the point in time when its backup was taken.

- A database that is in use is not displayed. In the case of Database Availability Group (DAG) configuration, any database in use on servers other than the selected server is not displayed, either.
  To restore a database that is in use, exit the restore wizard, dismount the database and restart the restore wizard.

- Selecting passive in DAG configuration switches to active when the wizard is completed.

5. The Input of Authentication page is displayed. Enter the domain name, user name and password of the backup server which belongs to the Exchanger Server management role group "Organization Management" and Domain Admins. Then, click **Next**.

6. The **Checking the restore information** page is displayed. The displayed information is as follows:

   - Restore Method

   - Mailbox Server

   - Restore Information

   - Backup Information

   Check the displayed information, and then click **Execute**.

7. The confirmation message about the restore processes is displayed in the **Confirm** dialog box. If no problem about the restore for the displayed database exists, click **OK**.

8. The **Restore of Exchange Server** dialog box (dialog box to notify of having accepted restore execution) is displayed. Clicking **Done** transits to the Main screen or Server Overview screen (returns to the wizard's starting point).

4.14 Storage device connectivity operations

This section describes the operation related to storage device connectivity.

The range of possible values may be restricted depending on the hardware specifications.
Perform the settings according to the hardware specifications.

4.14.1 Display the storage port list

The procedure to display the port list of storages is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4.14.2 Display the FC port Information

The procedure to display the FC port list is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for FC port.
   The FC port list is displayed on the Main pane.

4.14.3 Change the FC port settings

The procedure to change FC ports settings is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for FC port.
   The FC port list is displayed on the Main pane.

5. On the Main pane, check the target port checkbox.

6. When changing a FC port, click **Modify FC Port** under **Port** on the Action pane. When changing FC port mode, click **Modify FC Port Mode** under **Port** on the Action pane.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

Note

- The deletion and preservation information when the FC port mode is changed are as follows:

Port mode before it changes	Port mode after change		
	CA	RA	CA/RA
CA	-	- Host Affinity/LUN Mapping information is deleted	- Host Affinity/LUN Mapping information is preserved
RA	- REC path information is deleted	-	- REC path information is preserved
CA/RA	- Host Affinity/LUN Mapping information is preserved - REC path information is deleted	- Host Affinity/LUN Mapping information is deleted - REC path information is preserved	-

- When the FC port mode is changed, FC port setting returns to initial value.

- -

4.14.4 Display the iSCSI port information

The procedure to display iSCSI port information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for iSCSI port.
   The iSCSI port list is displayed on the Main pane.

4.14.5 Change the iSCSI port settings

The procedure to change iSCSI port settings is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for iSCSI port.
   The iSCSI port list is displayed on the Main pane.

5. On the Main pane, check the target port checkbox.

6. When changing iSCSI port, click **Modify iSCSI Port** under **Port** on the Action pane. When changing iSCSI port mode, click **Modify iSCSI Port Mode** under **Port** on the Action pane.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

Note

- -

- If the port is iSCSI-RA, Transfer Rate and iSCSI Name cannot be changed by the Web Console.
  If it needs to be changed, use the ETERNUS Web GUI.

- The deletion and preservation information when the iSCSI port mode is changed are as follows:

Port mode before it changes	Port mode after change		
	CA	RA	CA/RA
CA	-	- Host Affinity/LUN Mapping information is deleted	- Host Affinity/LUN Mapping information is preserved
RA	- REC path information is deleted	-	- REC path information is preserved
CA/RA	- Host Affinity/LUN Mapping information is preserved	- Host Affinity/LUN Mapping information is deleted - REC path information is preserved	-

Port mode before it changes	Port mode after change		
	CA	RA	CA/RA
	- REC path information is deleted		

- When the iSCSI port mode is changed, iSCSI port setting returns to initial value.

- Setting the IP address, link local IP address, connection IP address, iSCSI name, or iSCSI alias name of an iSCSI port the same as another iSCSI port may not be allowed. Refer to [Note] in "Connectivity Management" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

4.14.6 Display the SAS port information

The procedure to display SAS port information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for SAS port.
   The SAS port list is displayed on the Main pane.

4.14.7 Change the SAS port settings

The procedure to change SAS port settings is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for SAS port.
   The SAS port list is displayed on the Main pane.

5. On the Main pane, check the target port checkbox.

6. On the Action pane, click **Modify SAS Port** under **Port**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.14.8 Display the FCoE port information

The procedure to display FCoE port information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.
   The port type list is displayed on the Main pane.

4. On the Main pane, click the digit of **Number of Ports** field for FCoE port.
The FCoE port list is displayed on the Main pane.

4.14.9 Display the number of hosts for port type

The procedure to display the number of hosts by port type is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host**.
The number of hosts for each port type is displayed on the Main pane.

4.14.10 Add the FC host

The procedure to add FC host is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host**.
The number of hosts for each port type is displayed on the Main pane.

5. On the Action pane, click **Add FC Host** under **Hosts**.
The information input screen is displayed.

6. On the **Now Connected** tab, specify WWN and a FC CA port that is connected to the host to be added. Enter the necessary information for the specified WWN. When entering WWN manually, select the **Manual Input** tab, and enter the necessary information. Click **Add**, and specify an object WWN from the **FC Host** list.

7. Specify the host information to add, and then click **Next**.
The information confirmation screen is displayed.

8. Confirm the information, and then click **Add**.

4.14.11 Add the iSCSI host

The procedure to add iSCSI host is as follows:

1. On the global navigation tab, click **Storage**.
The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host**.
The number of hosts for each port type is displayed on the Main pane.

5. On the Action pane, click **Add iSCSI Host** under **Hosts**.
The information input screen is displayed.

6. On the **Now Connected** tab, specify iSCSI name and an iSCSI CA port that is connected to the host to be added. Enter the necessary information for the specified iSCSI. When entering iSCSI manually, select the **Manual Input** tab, and enter the necessary information. Click **Add**, and specify an object iSCSI name from the **iSCSI Host** list.

7. Specify the host information to add, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Add**.

Note

- If the iSCSI host is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

- Setting the IP address, iSCSI name, iSCSI alias name, and iSCSI host name of an iSCSI host the same as another iSCSI host may not be allowed. Refer to [Note] in "Connectivity Management" in the *ETERNUS SF Storage Cruiser Operation Guide* for details.

4.14.12 Add the SAS host

The procedure to add SAS host is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host**.
   The number of hosts for each port type is displayed on the Main pane.

5. On the Action pane, click **Add SAS Host** under **Hosts**.
   The information input screen is displayed.

6. On the **Now Connected** tab, specify SAS address and a SAS CA port that is connected to the host to be added. Enter the necessary information for the specified SAS. When entering SAS manually, select the **Manual Input** tab, and enter the necessary information. Click **Add**, and specify an object SAS address from the **SAS Host** list.

7. Specify the host information to add, and then click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Add**.

4.14.13 Display the Affinity/LUN group list

The procedure to display the Affinity/LUN group list is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Affinity/LUN Group**.
   The Affinity/LUN group list is displayed on the Main pane.

Note

. . . .

In an environment where BS2000 is connected to an ETERNUS Disk storage system, the affinity group for BS2000 may not be properly displayed.

. . . .

4.14.14 Create the Affinity/LUN group

The procedure to create the Affinity/LUN group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Affinity/LUN Group**.
   The Affinity/LUN group list is displayed on the Main pane.

5. On the Action pane, click **Create** under **Affinity/LUN Group**.
   The information input screen is displayed.

6. Specify **Affinity/LUN Group Setting** and **Define LUN Mapping** items, and then click **Add**.
   Specify **Define LUN Mapping** from either **Specify Volume Range** tab or **Select Volume** tab.
   The volume list is displayed on the **Assigned Volumes**.

7. Click **Next**.
   The information confirmation screen is displayed.

8. Confirm the information, and then click **Create**.

Information

. . . .

From **Assigned** column of the volume list on **Define LUN Mapping** and **Assigned Volumes** in the above step 6, you can check whether the volume is assigned to other Affinity/LUN group.

Displayed strings	Explanation
Assigned	Volumes assigned to other Affinity/LUN groups.
No use	Volumes not assigned to other Affinity/LUN groups.

. . . .

4.14.15 Delete the Affinity/LUN group

The procedure to delete the Affinity/LUN group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Affinity/LUN Group**.
   The Affinity/LUN group list is displayed on the Main pane.

5. On the Main pane, check the target Affinity/LUN group checkbox.

6. On the Action pane, click **Delete** under **Affinity/LUN Group**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

4.14.16 Change the Affinity/LUN group settings

The procedure to change the Affinity/LUN group settings is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Affinity/LUN Group**.
   The Affinity/LUN group list is displayed on the Main pane.

5. On the Main pane, check the target Affinity/LUN group checkbox.

6. On the Action pane, click **Modify** under **Affinity/LUN Group**.
   The information input screen is displayed.

7. When adding volumes, specify with either **Specify Volume Range** tab or **Select Volume** tab, and then click **Add**.
   The volumes are added on the **Assigned Volumes**.
   When deleting volumes, check the volume checkbox to delete on the **Assigned Volumes**.

8. Click **Next**.
   The information confirmation screen is displayed.

9. Confirm the information, and then click **Modify**.

Information

From **Assigned** column of the volume list on **Define LUN Mapping** and **Assigned Volumes** in the above step 7, you can check whether the volume is assigned to other Affinity/LUN group.

Displayed strings	Explanation
Assigned	Volumes assigned to other Affinity/LUN groups.
No use	Volumes not assigned to other Affinity/LUN groups.

Note

In an environment where BS2000 is connected to an ETERNUS Disk storage system, do not change the affinity group for BS2000.

4.14.17 Display the Host Affinity list

The procedure to display the Host Affinity list is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Affinity**.
   The Host Affinity list is displayed on the Main pane.

4.14.18 Create the Host Affinity

The procedure to create the Host Affinity is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Affinity**.
   The Host Affinity list is displayed on the Main pane.

5. On the Action pane, click **Create** under **Host Affinity**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Create**.

4.14.19 Delete the Host Affinity

The procedure to delete the Host Affinity is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Affinity**.
   The Host Affinity list is displayed on the Main pane.

5. On the Main pane, check the target Host Affinity checkbox.

6. On the Action pane, click **Delete** under **Host Affinity**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

4.14.20 Display the Host Response list

The procedure to display the Host Response list is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Response**.
   The Host Response list is displayed on the Main pane.

Note

- In an environment where BS2000 is connected to an ETERNUS Disk storage system, host response for BS2000 cannot properly be displayed. The **Host Specific Mode** is displayed as "Normal (Default)".

- For ETERNUS DX80 S2/DX90 S2, ETERNUS DX400 S2 series and ETERNUS DX8000 S2 series, Byte-0 of Inquiry Response for the Host Response is displayed as shown below:

  - When it is set to "0x7F Conversion mode": Unknown

  - When it is set to "0x20 Conversion mode": Custom

4.14.21 Add the Host Response

The procedure to add the Host Response is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Response**.
   The Host Response list is displayed on the Main pane.

5. On the Action pane, click **Add** under **Host Response**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Add**.

4.14.22 Delete the Host Response

The procedure to delete the Host Response is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Response**.
   The Host Response list is displayed on the Main pane.

5. On the Main pane, check the target Host Response checkbox.

6. On the Action pane, click **Delete** under **Host Response**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Delete**.

4.14.23 Change the Host Response

The procedure to change the Host Response setting is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Connectivity**.

4. On the **Connectivity** pane, click **Host Response**.
   The Host Response list is displayed on the Main pane.

5. On the Main pane, check the target Host Response checkbox.

6. On the Action pane, click **Modify** under **Host Response**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

🔰 Note

In an environment where BS2000 is connected to an ETERNUS Disk storage system, do not change the host response for BS2000.

4.15 Storage device component operations

This section describes the operations related to the storage device component.

4.15.1 Display the entire device information

The procedure to display entire information of storage device is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.
   The entire device information is displayed on the Main pane.

4.15.2 Display the Controller Enclosure information

The procedure to display the Controller Enclosure information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Controller Enclosure**.
   The Controller Enclosure information is displayed on the Main pane.

4.15.3 Display the Drive Enclosure Information

The procedure to display the Drive Enclosure information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Drive Enclosure**.
   The Drive Enclosure list is displayed on the Main pane.

   When selecting Drive Enclosure on the Main pane, the detailed information of selected Drive Enclosure is displayed.

4.15.4 Display the port information

The procedure to display the storage port information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Ports**.
   The port list is displayed on the Main pane.

4.15.5 Display the disk information

The procedure to display the storage disk information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Disks**.
   The disk list is displayed on the Main pane.

4.15.6 Register the Global Hot Spare disk

The procedure to register the Global Hot Spare disk is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Disks**.
   The disk list is displayed on the Main pane.

5. On the Main pane, check the disk checkbox to register as Global Hot Spare disk, selecting disks which are suitable for the storage device to be used.

6. On the Action pane, click **Assign Global HS** under **Hot Spare**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Assign**.

4.15.7 Register the Dedicated Hot Spare disk

The procedure to register the Dedicated Hot Spare disk is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Disks**.
   The disk list is displayed on the Main pane.

5. On the Main pane, check the disk checkbox to register as Dedicated Hot Spare disk, selecting disks which are suitable for the storage device to be used.

6. On the Action pane, click **Assign Dedicated HS** under **Hot Spare**.
   The information input screen is displayed.

7. RAID Groups are displayed on the **Register RAID Group**. Select a RAID Group radio button, and then click **Assign**.

4.15.8 Release the Hot Spare disk

The procedure to release the Hot Spare disk is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Component**.

4. On the **Component** pane, click **Disks**.
   The disk list is displayed on the Main pane.

5. On the Main pane, check the target disk checkbox.

6. On the Action pane, click **Release** under **Hot Spare**.
   The information confirmation screen is displayed.

7. Confirm the information, and then click **Release**.

4.16 Network operations

This section describes the operations related to networks.

4.16.1 Display the FC switch list

The procedure to display the FC switch list is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

4.16.2 Register the FC switch

The procedure to register the FC switch is as follows:

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

2. On the Action pane, click **Discover** under **Switch**.
   The information input screen is displayed.

3. Enter the necessary information, and then click **Discover**.
   The information registration screen is displayed.

4. Check the target switch checkbox.

5. Specify the FC switch information, and then click **Register**.

P Point
....

First register the Principal switch and then register all the FC switches that make up the fabric.

If the Principal switch has not registered first or unknown, on completion of registration of all the FC switches making up the fabric, perform "4.16.7 Reload the FC switch configuration information" on all the FC switches making up the fabric.
....

Note
....

If the FC switch is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.
....

4.16.3 Delete the FC switch

The procedure to delete the FC switch is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, check the target FC switch checkbox.

3. On the Action pane, click **Delete** under **Switch**.
   The information confirmation screen is displayed.

4. Confirm the information, and then click **Delete**.

4.16.4 Reset the FC switch password

The procedure to re-configure the FC switch password is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, check the target FC switch checkbox.

3. On the Action pane, click **Reset Password** under **Switch**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Reset**.

4.16.5 Display the FC switch ports

The procedure to display the FC switch ports is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Port**.
   The FC switch ports are displayed on the Main pane.

P Point
....

1GbE RJ45 port is not displayed.
....

4.16.6 Display the FC switch zoning

The procedure to display the FC switch zoning is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Zoning**.
   The FC switch zoning information is displayed on the Main pane.

4. On the Main pane, click the target zoning.
   The World Wide Port Name (WWPN) registered in the clicked zoning is displayed on the Main pane.

4.16.7 Reload the FC switch configuration information

The procedure to reload the FC switch configuration information is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, check the target FC switch checkbox.

3. On the Action pane, click **Reload Conf.** under **Switch**.

P Point

- In registering FC switches, if the Principal switch has not been registered beforehand or unknown, on completion of registration of all the FC switches making up the fabric, perform this operation on all the FC switches making up the fabric.

- If the FC switch configuration has been changed in such cases as below, perform this operation on all the FC switches making up the fabric:

  - The Principal switch was changed due to FC switch replacement.

  - The fabric configuration was changed due to cascade connection/disconnection between FC switches.

  - Switches were added to or deleted from the fabric.

  - The Principal switch was intentionally changed.

  - The device name of the FC switch was changed.

4.16.8 Start the beacon

The procedure to start the FC switch beacon is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, check the target FC switch checkbox.

3. On the Action pane, click **Beacon (Start)** under **Beacon**.
   The information confirmation screen is displayed.

4. Confirm the information, and then click **Start**.

4.16.9 Stop the beacon

The procedure to stop the FC switch beacon is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switch list is displayed on the Main pane.

2. On the Main pane, check the target FC switch checkbox.

3. On the Action pane, click **Beacon (Stop)** under **Beacon**.
   The information confirmation screen is displayed.

4. Confirm the information, and then click **Stop**.

4.17 Server operations

This section describes the operations related to the server.

4.17.1 Register the server

The procedure to register the server is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Action pane, click **Register** under **Server**.
   The information input screen is displayed. (select the registration options)

3. Enter the necessary information, and then click **Next**.
   The information input screen is displayed. (enter the detailed server information)

4. Enter the necessary information, and then click **Register**.

🛈 Note

. . . .

- The Job Status pane allows you to confirm the completion of server registration processing. However, since the information in the Job Status pane is automatically deleted 24 hours after processing is completed, check deleted information in "4.21.1 Display the operation history". The server registration processing has completed when the displayed items of the **Operation History** screen is as follows:

  - Action : Register Server

  - State : Complete

  - Result : Success

  - Target : IP address for registered server

  Please do not perform any operation for this server until the registration processing has been completed.

- Please do not register a server which is managed by another Management Server.

- If you install the Storage Cruiser's agent on the Managed Server which the AdvancedCopy Manager's agent has been installed, it is necessary to register its Managed Server again after deleting it.

- If the server is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

- For a server on which the following agent is installed, even if IPv6 address exists in the server, its registration is accepted only with IPv4 address.

  - ETERNUS SF Storage Cruiser's agent that does not support IPv6 address

- Softek Storage Cruiser's agent

4.17.2 Display the server

The registered server list is displayed on the Main pane when clicking **Server** on the global navigation tab.

Note

- The servers registered by CLI are not displayed on the Web Console.

- In the case of the following servers, a displayed operating system name may be different from a Storage Cruiser's agent installed server:

    - VMware Host

    - VMware Guest

    - Hyper-V host

    - Hyper-V guest

4.17.3 Display the server details

The procedure to display the detailed information of the registered server is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Main pane, click the target server name.
   The detailed information of the server and HBA list are displayed on the Main pane.

Note

A CNA card installed in the server is displayed as "FC HBA".

4.17.4 Delete the server

The procedure to delete the registered server is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

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

3. On the Action pane, click **Delete** under **Server**.
   The information confirmation screen is displayed.

4. Confirm the information, and then click **Delete**.

Note

- If there are access paths connected with the server to be deleted:

   Before deleting the server, delete all access paths connected with the server to be deleted.

- If the server is registered as the Hyper-V host:

    Before deleting the server, delete the registration as the Hyper-V host.

4.17.5 Change the server information

The procedure to change the registered server information is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

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

3. On the Action pane, click **Modify** under **Server**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Modify**.

P Point

If the following conditions apply, it is necessary to perform the above procedure to declare the use of AdvancedCopy Manager.

- The server registered using the Web Console has been set up the Managed Server of AdvancedCopy Manager using the command.

- In addition, the Advanced Copy functions will be operated from the Web Console.

4.17.6 Set and change the information of the account that can access VMware Host

The procedure to register the information of the account that can access the VMware Host into this product, and the procedure to change the account information registered in this product are as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Main pane, check the target VMware Host checkbox.

3. On the Action pane, click **Reset Password** under **Server**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Reset**.

Note

- This procedure does not include instructions for:

    - Registering the account information into the VMware Host

    - Changing the account information registered in the VMware Host

- If account information in the VMware Host is registered or changed, execute this procedure immediately to match the account information in the VMware Host and this product.

    When account information in the VMware Host and this product are not matched, communicate from this product to the VMware Host fails because of the authentication error. If the authentication error occurs, the Web Console cannot display the correct information.

4.17.7 Reload the server configuration information

The procedure to reload the server configuration information is as follows:

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

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

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

4.17.8 Add the HBA

The procedure to add HBA to the registered server is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Main pane, click the target server name.
   The detailed information of the server and information about HBAs installed in the server are displayed on the Main pane.

3. On the Action pane, click **Add** under **HBA**.
   The information input screen is displayed.

4. Enter the necessary information, and then click **Next**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Add**.

Point

The interface which can be selected in the HBA adding operation is as follows.

Server status	Interfaces can be added
Managed Server of both Storage Cruiser and AdvancedCopy Manager	iSCSI
Managed Server of Storage Cruiser	
Managed Server of AdvancedCopy Manager	FC and iSCSI
Server registered in Express	
Manually embedded device of Storage Cruiser	

Note

If an HBA whose interface is iSCSI is a dual stack device to which both IPv4 and IPv6 addresses are configured, register either of the two addresses.

4.17.9 Delete the HBA

The procedure to delete HBA is as follows:

1. On the global navigation tab, click **Server**.
   The registered servers are displayed on the Main pane.

2. On the Main pane, click the target server name.
   The detailed information of the server and information about HBAs installed in the server are displayed on the Main pane.

3. On the Main pane, check the target HBA checkbox.

4. On the Action pane, click **Delete** under **HBA**.
   The information confirmation screen is displayed.

5. Confirm the information, and then click **Delete**.

Note

. . . .

When deleting a target HBA that is installed in the device, the deletion operation finishes normally, but the HBA information is not deleted and the status of the HBA is updated to be displayed.

. . . .

4.18 Performance management operations (for storage device)

This section describes the operations related to performance management of the storage devices.

4.18.1 Display the performance monitoring status

The procedure to display the collection status of performance information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.
   The collection status of performance information for the selected storage system is displayed on the Main pane.

4.18.2 Start the performance monitoring

The procedure to start the performance monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Start** under **Performance**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Start**.

4.18.3 Change the performance monitoring settings

The procedure to change the performance monitoring settings is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Modify** under **Performance**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Modify**.

4.18.4 Stop the performance monitoring

The procedure to stop the performance monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Stop** under **Performance**.

4.18.5 Display the performance information graph

The procedure to display the collected performance information with a graph is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Charts**.

5. On the Main pane, select the items which you want to display from the **Select Charts Category** pull-down list.

6. Select the objects to display.

7. On the Action pane, click **Performance Chart** under **Charts**.

8. On the Performance Chart window, enter the necessary information, and then click **Plot**.
   The performance information is displayed as graphs.

🅿 Point
. . . .

- To display the Threshold Monitoring graph, only one object must be selected.
  When multiple objects are selected on the Main pane (at the above step 6), display the Threshold graph by specifying only one object on the Performance Chart screen.

- If you check the **Display Threshold Monitoring** checkbox, the current threshold value is displayed on the graph.

- The "Peak graph" is a graph where only the maximum values inside successive time intervals are plotted on the vertical axis. If you check the **Peak Graph** checkbox in the Performance Chart window, the Peak graph can be displayed on the graph. The **Peak Graph** checkbox is enabled when "1 Day" or "1 Week" is specified in the Duration.

. . . .

4.18.6 Export the performance information

The procedure to export the collected performance information is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Charts**.

5. On the Main pane, select the items which you want to display from the **Select Charts Category** pull-down list.

6. Select the objects to display.

7. On the Action pane, click **Performance Chart** under **Charts**.

8. On the Performance Chart window, enter the necessary information, and then click **Download**.

🅟 Point

. . . .

The "Peak graph" is a graph where only the maximum values inside successive time intervals are plotted on the vertical axis. If you check the **Peak Graph** checkbox in the Performance Chart window, the data of Peak graph can be exported. The **Peak Graph** checkbox is enabled when "1 Day" or "1 Week" is specified in the Duration.

. . . .

4.18.7 Enable the Threshold Monitoring

The procedure to enable the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Enable** under **Monitoring**.

4.18.8 Disable the Threshold Monitoring

The procedure to disable the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Disable** under **Monitoring**.

4.18.9 Start the Threshold Monitoring

The procedure to start the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Start Monitoring** under **Thresholds Setting**.

4.18.10 Stop the Threshold Monitoring

The procedure to stop the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Stop Monitoring** under **Thresholds Setting**.

4.18.11 Display the common configuration of the Threshold Monitoring for all CMs

The procedure to display the common configuration of the Threshold Monitoring for all CMs is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **CM Configuration**.
   The common configuration of the Threshold Monitoring for all CMs is displayed on the Main pane.

4.18.12 Change the common configuration of the Threshold Monitoring for all CMs

The procedure to change the common configuration of the Threshold Monitoring for all CMs is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **CM Configuration**.
   The common configuration of the Threshold Monitoring for all CMs is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Default Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.18.13 Set the configuration of the Threshold Monitoring for each CM

The procedure to set the configuration of the Threshold Monitoring for each CM is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **CM Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of CMs that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Action pane, click **Add** under **Individual Setting**.
   The information input screen is displayed.

8. Enter the necessary information, and check the target CM checkbox. Then, click **Add**.

4.18.14 Change the configuration of the Threshold Monitoring for each CM

The procedure to change the configuration of the Threshold Monitoring for each CM is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **CM Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of CMs that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target CM checkbox.

8. On the Action pane, click **Modify** under **Individual Setting**.
   The information input screen is displayed.

9. Enter the necessary information, and then click **Modify**.

4.18.15 Delete the configuration of the Threshold Monitoring for each CM

The procedure to delete the configuration of the Threshold Monitoring for each CM is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **CM Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of CMs that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target CM checkbox.

8. On the Action pane, click **Delete** under **Individual Setting**.
   The information confirmation screen is displayed.

9. Confirm the information, and then click **Delete**.

4.18.16 Display the common configuration of the Threshold Monitoring for all RAID groups

The procedure to display the common configuration of the Threshold Monitoring for all RAID groups is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **RAID Group Configuration**.
   The common configuration of the Threshold Monitoring for all RAID groups is displayed on the Main pane.

4.18.17 Change the common configuration of the Threshold Monitoring for all RAID groups

The procedure to change the common configuration of the Threshold Monitoring for all RAID groups is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **RAID Group Configuration**.
   The common configuration of the Threshold Monitoring for all RAID groups is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Default Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.18.18 Set the configuration of the Threshold Monitoring for each RAID group

The procedure to set the configuration of the Threshold Monitoring for each RAID group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **RAID Group Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of RAID groups that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Action pane, click **Add** under **Individual Setting**.
   The information input screen is displayed.

8. Enter the necessary information, and check the target RAID group checkbox. Then, click **Add**.

4.18.19 Change the configuration of the Threshold Monitoring for each RAID group

The procedure to change the configuration of the Threshold Monitoring for each RAID group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **RAID Group Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of RAID groups that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target RAID group checkbox.

8. On the Action pane, click **Modify** under **Individual Setting**.
   The information input screen is displayed.

9. Enter the necessary information, and then click **Modify**.

4.18.20 Delete the configuration of the Threshold Monitoring for each RAID group

The procedure to delete the configuration of the Threshold Monitoring for each RAID group is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **RAID Group Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of RAID groups that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target RAID group checkbox.

8. On the Action pane, click **Delete** under **Individual Setting**.
   The information confirmation screen is displayed.

9. Confirm the information, and then click **Delete**.

4.18.21 Display the common configuration of the Threshold Monitoring for all volumes

The procedure to display the common configuration of the Threshold Monitoring for all volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Volume Configuration**.
   The common configuration of the Threshold Monitoring for all volumes is displayed on the Main pane.

4.18.22 Change the common configuration of the Threshold Monitoring for all volumes

The procedure to change the common configuration of the Threshold Monitoring for all volumes is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Volume Configuration**.
   The common configuration of the Threshold Monitoring for all volumes is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Default Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.18.23 Set the configuration of the Threshold Monitoring for each volume

The procedure to set the configuration of the Threshold Monitoring for each volume is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Volume Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of volumes that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Action pane, click **Add** under **Individual Setting**.
   The information input screen is displayed.

8. Enter the necessary information, and check the target volume checkbox. Then, click **Add**.

4.18.24 Change the configuration of the Threshold Monitoring for each volume

The procedure to change the configuration of the Threshold Monitoring for each volume is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Volume Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of volumes that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target volume checkbox.

8. On the Action pane, click **Modify** under **Individual Setting**.
   The information input screen is displayed.

9. Enter the necessary information, and then click **Modify**.

4.18.25 Delete the configuration of the Threshold Monitoring for each volume

The procedure to delete the configuration of the Threshold Monitoring for each volume is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Volume Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of volumes that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target volume checkbox.

8. On the Action pane, click **Delete** under **Individual Setting**.
   The information confirmation screen is displayed.

9. Confirm the information, and then click **Delete**.

4.18.26 Set the Threshold Monitoring time

There are the following items about the Threshold Monitoring time.

- Start Time of the Threshold Monitoring

- Stop Time of the Threshold Monitoring

- Start Time of the Alarm Display

- Stop Time of the Alarm Display

- Frequency of the Alarm Display

The procedure to set the Threshold Monitoring time is as follows:

1. On the global navigation tab, click **Storage**.
   The registered ETERNUS Disk storage systems are displayed on the Main pane.

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

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Time Setting**.
   The current status is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Time Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.19 Performance management operations (for network device)

This section describes the operations related to performance management of the network devices.

4.19.1 Display the performance monitoring status

The procedure to display the collection status of performance information is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.
   The collection status of performance information for the selected FC switch is displayed on the Main pane.

4.19.2 Start the performance monitoring

The procedure to start the performance monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Start** under **Performance**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Start**.

4.19.3 Change the performance monitoring settings

The procedure to change the performance monitoring settings is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Modify** under **Performance**.
   The information input screen is displayed.

6. Enter the necessary information, and then click **Modify**.

4.19.4 Stop the performance monitoring

The procedure to stop the performance monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Configuration**.

5. On the Action pane, click **Stop** under **Performance**.

4.19.5 Display the performance information graph

The procedure to display the collected performance information with a graph is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Charts**.

5. On the Main pane, select the objects to display.

6. On the Action pane, click **Performance Chart** under **Charts**.

7. On the Performance Chart window, enter the necessary information, and then click **Plot**.
   The performance information is displayed as graphs.

🅿 Point
. . . .

- To display the Threshold Monitoring graph, only one object must be selected.
  Multiple objects maybe selected on the Main pane (above step 5). These objects can be selected one at a time on the Performance Chart screen to display the Threshold graph.

- If you check the **Display Threshold Monitoring** checkbox, the current threshold value is displayed on the graph.

- The **Peak Graph** checkbox is enabled when "1 Day" or "1 Week" is specified for the Duration.

. . . .

4.19.6 Export the performance information

The procedure to export the collected performance information is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Charts**.

5. On the Main pane, select the objects to display.

6. On the Action pane, click **Performance Chart** under **Charts**.

7. On the Performance Chart window, enter the necessary information, and then click **Download**.

4.19.7 Enable the Threshold Monitoring

The procedure to enable the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Enable** under **Monitoring**.

4.19.8 Disable the Threshold Monitoring

The procedure to disable the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Disable** under **Monitoring**.

4.19.9 Start the Threshold Monitoring

The procedure to start the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Start Monitoring** under **Thresholds Setting**.

4.19.10 Stop the Threshold Monitoring

The procedure to stop the Threshold Monitoring is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.
   The current status is displayed on the Main pane.

5. On the Action pane, click **Stop Monitoring** under **Thresholds Setting**.

4.19.11 Display the common configuration of the Threshold Monitoring for all ports

The procedure to display the common configuration of the Threshold Monitoring for all ports is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Port Configuration**.
   The common configuration of the Threshold Monitoring for all ports is displayed on the Main pane.

4.19.12 Change the common configuration of the Threshold Monitoring for all ports

The procedure to change the common configuration of the Threshold Monitoring for all ports is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Port Configuration**.
   The common configuration of the Threshold Monitoring for all ports is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Default Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.19.13 Set the configuration of the Threshold Monitoring for each port

The procedure to set the configuration of the Threshold Monitoring for each port is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Port Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of ports that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Action pane, click **Add** under **Individual Setting**.
   The information input screen is displayed.

8. Enter the necessary information, and check the target port checkbox. Then, click **Add**.

4.19.14 Change the configuration of the Threshold Monitoring for each port

The procedure to change the configuration of the Threshold Monitoring for each port is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Port Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of ports that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target port checkbox.

8. On the Action pane, click **Modify** under **Individual Setting**.
   The information input screen is displayed.

9. Enter the necessary information, and then click **Modify**.

4.19.15 Delete the configuration of the Threshold Monitoring for each port

The procedure to delete the configuration of the Threshold Monitoring for each port is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Port Configuration**.

6. On the Main pane, click the target of the Threshold Monitoring.
   The list of ports that the configuration of the Threshold Monitoring is set is displayed on the Main pane.

7. On the Main pane, check the target port checkbox.

8. On the Action pane, click **Delete** under **Individual Setting**.
   The information confirmation screen is displayed.

9. Confirm the information, and then click **Delete**.

4.19.16 Set the Threshold Monitoring time

There are the following items about the Threshold Monitoring time.

- Start Time of the Threshold Monitoring

- Stop Time of the Threshold Monitoring

- Start Time of the Alarm Display

- Stop Time of the Alarm Display

- Frequency of the Alarm Display

The procedure to set the Threshold Monitoring time is as follows:

1. On the global navigation tab, click **Network**.
   The registered FC switches are displayed on the Main pane.

2. On the Main pane, click the target FC switch.

3. On the Category pane, click **Performance**.

4. On the **Performance** pane, click **Threshold Monitoring**.

5. On the **Threshold Monitoring** pane, click **Time Setting**.
   The current status is displayed on the Main pane.

6. On the Action pane, click **Modify** under **Time Setting**.
   The information input screen is displayed.

7. Enter the necessary information, and then click **Modify**.

4.20 Display Map View

This section describes the operations of Map View.

Map View has the following screens:

Screen name	Explanation
Overview	Displays the physical configuration of the device nodes held by ETERNUS SF system.
Logical Path View	Displays on the Main pane the physical configuration and logical configuration of the device nodes selected on the Overview screen.

Note

When displaying the Overview and Logical Path View screens, the maximum number of registered devices is 1000. If the number exceeds 1000, a communication error may occur.
To confirm the device information when any communication error occurs, use "End to End view".

4.20.1 Display the Overview screen

In order to display the Overview screen, it is necessary to click **Map View** on the global navigation tab.
As a result, physical configuration information of the system is displayed on the Main pane.

🛈 Note

- If you click " 🔄 Refresh " in the menu area with the displayed content different from the resources (other user added or deleted the resources),

  a dialog box including the following message is displayed:

  ```
  Resource information has been refreshed because they were modified.
  ```

  To close the dialog box, click **OK** or **Close**.
  The information displayed on the tree view and Main pane is updated.

- If you click " 🔄 Refresh " in the menu area while the device selected on the tree view has been deleted by other user,

  a dialog box including the following message is displayed:

  ```
  Resource information has been refreshed because they were modified.
  ```

  To close the dialog box, click **OK** or **Close**.
  At this time, the selected state on the tree view is transferred to the root node (Overview node). On the Main pane, the content when the root node was selected is displayed. The tree view expanded state is not changed.

4.20.2 Highlight on the Overview screen

The procedure to highlight is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click the target device node.

🅿 Point

Depending on the type of the device clicked in Step 2, what is highlighted varies as follows:

Device to be clicked	What is highlighted
Server	- Physical connection line between clicked server and its physically connected network device - Network device as physical connection destination
Storage device	- Physical connection line between clicked storage device and its physically connected network device - Network device as physical connection destination
Network device	None.

4.20.3 Reload device node configuration on the Overview screen

The procedure to reload the configuration information is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click the pull-down menu icon of the target device node.

3. Click **Reload Conf.** from the pull-down menu.

Note

....

Even if **Reload Conf.** is executed on the Overview screen, the information currently displayed on the Main pain of Logical Path View is not updated.

....

4.20.4 Zoom In/Out the Overview screen with the mouse wheel

The following is the procedure to zoom In/Out the screen using the mouse wheel:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, roll the mouse wheel.

4.20.5 Display all on the Overview screen

The procedure to display the entire system is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click the pull-down menu icon of the target device node.

3. Click **View all device** in the pull-down menu.

4.20.6 Display the Logical Path View

The procedure to display the Logical Path View is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click **Logical Path View** in the menu for a target device node.

Note

....

If you click " Refresh " on the menu bar with the target device deleted, a dialog box including the following message is displayed:

```
Please close the window by clicking [Close] button of Logical Path View because specified resource
has been removed.
```

Clicking **OK** or **Close** in the dialog box closes the dialog box and the currently displayed window, as well.

....

4.20.7 Highlight on the Logical Path View screen

The procedure to highlight is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click **Logical Path View** in the menu for a target device node.
   The logical configuration of the target device node is displayed on another window.

3. On another window, click the target device node or component.

Ⓟ Point
....

- The components are as follows:

    - Physical port of network device

    - HBA of server

    - Multipath information of server

    - CA port of storage device

    - Affinity Group of storage device

- Depending on the type of the device clicked in step 3, what is highlighted varies as follows:

Device to be clicked	What is highlighted
Server, Storage device	- Physical port of network device. (However, if the network device is not displayed in detail, its device nodes are highlighted) - Physical connection line between clicked device and its physically connected network device
Physical port of network device	- HBA of server or CA port of storage device. (If the server or storage device is not displayed in detail, its device nodes are highlighted) - Physical connection line between physical port of network device and HBA (or CA port)
Server component (HBA or multipath information)	- Physical port of network device. (However, if the network device is not displayed in detail, its device nodes are highlighted) - Physical connection line between server and network device - Physical connection line between network device and storage device - Logical path between server and storage device - CA port and affinity group of the storage device logically related to a clicked device. (However, if the storage device is not displayed in detail, its device nodes are highlighted)
Storage device component (CA port or Affinity Group information)	- Physical port of network device. (However, if the network device is not displayed in detail, its device nodes are highlighted) - Physical connection line between server and network device - Physical connection line between network device and storage device - Logical path between server and storage device - HBA and multipath information for the server logically related to a clicked device. (However, if the server is not displayed in detail, its device nodes are highlighted)
Network device	None.

- The cascade lines between network devices are not highlighted.

....

4.20.8 Reload device node configuration on the Logical Path View screen

The procedure to reload configuration is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click **Logical Path View** in the menu for a target device node.
   The logical configuration of the target device is displayed on another window.

3. On another window, click the pull-down menu icon of the target device node.

4. Click **Reload Conf.** in the pull-down menu.

📑 Note

. . . .

If **Reload Conf.** is executed on the Logical Path View screen, the information currently displayed on the Category pane and Main pain of the Overview screen is not updated.

. . . .

4.20.9 Zoom In/Out the Logical Path View screen with the mouse wheel

The procedure to zoom In/Out the screen using the mouse wheel is as follows:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click **Logical Path View** in the menu for a target device node.
   The logical configuration of the target device is displayed on another window.

3. On another window, roll the mouse wheel.

4.20.10 Display All on the Logical Path View Screen

The following is the procedure to display the entire logical configuration of a target device:

1. On the global navigation tab, click **Map View**.
   Physical configuration information of the system is displayed on the Main pane.

2. On the Main pane, click **Logical Path View** in the menu for the target device node.
   The logical configuration of the target device node is displayed on another window.

3. On another window, click the pull-down menu icon on the menu bar.

4. Click **View all device** in the pull-down menu.

4.21 History information operations

This section describes the operations related to history information.

The history information contains the logs below:

- Operation History

- Events

- Login/Logout History

- Threshold Monitoring Alarms

4.21.1 Display the operation history

The procedure to display the operation logs is as follows:

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

2. On the **Log** pane, click **Operation History**.
   The operation log list is displayed on the Main pane.

If confirming the detailed operation log information, click the confirmation object operation log. The detailed information displayed on a pop-up window.

Information displayed in the Operation History screen

The following is the information displayed in the **Operation History** screen.

Column name	Description
(none)	Status of confirmation for processing result. " 🔵 " icon is displayed if not confirm the processing result.
Date	Recorded time and date.
User ID	User name that performed the operation.
Action	Operation name.
State	Processing status for the operation. - Submit: Indicates receiving the processing. - Start: Indicates starting the processing. - Complete: Indicates completing the processing.
Result	The processing result for the operation. Displays the operation logs which **State** column is "Complete". - ✅ Success : Indicates completed the processing successfully. - ⚠ Warning : Indicates completed the processing. It may have possibilities of shortage of requirements. - ❌ Failed : Indicates terminated the processing abnormally.
Target	Operational object (device name, etc.) Displays hyphen (-) for the operation logs which indicate "Submit" on the **State** column.
Detail	Detailed resource name and setup contents on the screen (as an operational object). Displays hyphen (-) if there is no information to display.

🛈 Note

- The history of screens displayed is not displayed on the **Operation History** screen, because they are not recorded as logs.

- The filter function can limit the display on **Operation History** screen to only the operation logs which indicate "Complete" on the **State** column.

Message confirmation

If there are operation logs which the processing result is " ⚠ Warning " or " ❌ Failed ", check the message and perform appropriate action by following procedures. The operation logs with unidentified messages are displayed with boldface and unidentified mark " 🔵 " on the leftmost column.

1. Click the confirmation object operation log.

2. Refer to the **Message** field in a pop-up window.

3. Refer to the *ETERNUS SF Messages*, and perform appropriate action according to the corresponding message.

When no corrective action is required, the log status can be marked as confirmed.

1. On the Action pane, click [Mark as Confirmed].

2. Confirm that the log in the **Mark as Confirmed** screen does not require corrective action, and then click **Mark**.

Note

- The target operational logs of "Mark as Confirmed" are limited to logs currently displayed on the screen.

- When confirming a specific user's operation logs, set the filter function to only display the specific user's operation logs.

4.21.2 Export the operation history

The procedure to export operation logs is as follows:

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

2. On the **Log** pane, click **Operation History**.

3. On the Action pane, click **Download** under **Operation History**.
   The **File Download** dialog box is displayed.

4. Click **Save**.
   The **Save As** dialog box is displayed.

5. Click **Save**, specifying the location to save the operation logs.

Note

- Even if Filter setting is enabled on the Web Console, all data is exported.

- Logs are exported as zip-compressed CSV file.

- The character code of the CSV format file is UTF-8. It is necessary to specify the character code depending on the application which opens the file.

- A hyphen (-) is displayed in the "Operation ID" column of all of the data in the exported file, because **Operation ID** column is currently unused.

4.21.3 Display the events

The procedure to display the events is as follows:

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

2. On the **Log** pane, click **Events**.
   The event list is displayed on the Main pane.

If confirming the detailed event information, click **Message** column for the confirmation object event. The detailed information is displayed in a pop-up window.

4.21.4 Export the events

The procedure to export events is as follows:

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

2. On the **Log** pane, click **Events**.

3. On the Action pane, click **Download** under **Events**.
   The **File Download** dialog box is displayed.

4. Click **Save**.
   The **Save As** dialog box is displayed.

5. Click **Save**, specifying the location to save the events.

 Note
....

- Even if Filter setting is enabled on the Web Console, all data is exported.

- Logs are exported as zip-compressed CSV file.

- The character code of the CSV format file is UTF-8. It is necessary to specify the character code depending on the application which opens the file.
....

4.21.5 Display the login/logout history

The procedure to display the login and logout logs is as follows:

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

2. On the **Log** pane, click **Login/Logout History**.
   The login and logout log list is displayed on the Main pane.

4.21.6 Export the login/logout history

The procedure to export the login and logout logs is as follows:

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

2. On the **Log** pane, click **Login/Logout History**.

3. On the Action pane, click **Download** under **Login/Logout History**.
   The **File Download** dialog box is displayed.

4. Click **Save**.
   The **Save As** dialog box is displayed.

5. Click **Save**, specifying the location to save the login and logout logs.

 Note
....

- Even if Filter setting is enabled on the Web Console, all data is exported.

- Logs are exported as zip-compressed CSV file.

- The character code of the CSV format file is UTF-8. It is necessary to specify the character code depending on the application which opens the file.
....

4.21.7 Display the threshold monitoring alarms

The procedure to display the threshold monitoring alarms is as follows:

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

2. On the **Log** pane, click **Threshold Monitoring Alarms**.
   The threshold monitoring alarm list is displayed on the Main pane.

When confirming the detailed threshold monitoring alarm information, click the confirmation object threshold monitoring alarm. The detailed information is displayed in a pop-up window.

Note

The "Report ID" of the Threshold Monitoring Alarms circulates from 1 to 1000.
The Report ID may overlap because it is not unique in the Threshold Monitoring Alarms.

4.21.8 Export the threshold monitoring alarms

The procedure to export the threshold monitoring alarms is as follows

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

2. On the **Log** pane, click **Threshold Monitoring Alarms**.

3. On the Action pane, click **Download** under **Threshold Monitoring Alarms**.
   The **File Download** dialog box is displayed.

4. Click **Save**.
   The **Save As** dialog box is displayed.

5. Click **Save**, specifying the location to save the threshold monitoring alarms.

Note

- Even if Filter setting is enabled on the Web Console, all data is exported.

- Logs are exported as zip-compressed CSV file.

- The character code of the CSV format file is UTF-8. It is necessary to specify the character code depending on the application which opens the file.

4.22 Web Console control settings

This section describes the operations related to Web Console control settings.

4.22.1 Display the values set for Web Console control

When clicking **System** on the global navigation tab, the values set for Web Console control is displayed on the Main pane as follows:

- Log Preference

  - Operation History

  - Events

  - Login/Logout History

- Threshold Monitoring Alarms

- GUI Preference

- Screen Refresh Interval

- Session Preference

- Session Timeout

4.22.2 Change the value for log preference

The procedure to display the values set for log preference is as follows:

1. On the global navigation tab, click **System**.
   The current value is displayed on the Main pane.

2. On the Action pane, click **Modify** under **Log Preference**.
   The information input screen is displayed.

3. Enter the necessary information, and then click **Modify**.

4.22.3 Change the value for screen refresh interval

The procedure to change the screen refresh interval for the Web Console is as follows:

1. On the global navigation tab, click **System**.
   The current value is displayed on the Main pane.

2. On the Action pane, click **Modify** under **Screen Refresh Interval**.
   The information input screen is displayed.

3. Enter the necessary information, and then click **Modify**.

4.22.4 Change the value for session timeout

The procedure to change the session timeout value is as follows:

1. On the global navigation tab, click **System**.
   The current value is displayed on the Main pane.

2. On the Action pane, click **Modify** under **Session Timeout**.
   The information input screen is displayed.

3. Enter the necessary information, and then click **Modify**.

Note

When the session timeout value is longer than the screen refresh interval, the session timeout value is invalid. The session remains connected after the elapse of session timeout value.

4.22.5 Reload the configuration files

The procedure to display/reload the configuration file is as follows:

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

2. On the **System** pane, click **System Settings**.

    The content of the configuration files is displayed.

3. On the Action pane, click **Refresh Config File** under **System Settings**.

    The information confirmation screen is displayed.

4. Confirm the information, and then click **Refresh**.

4.23 System maintenance

This section describes the operation related to the system maintenance.

4.23.1 Collect the troubleshooting data

The procedure to collect the troubleshooting data is as follows:

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

2. On the **System** pane, click **Trouble Shootings**.

3. On the Action pane, click the operation to perform.

    Selectable operations are as follows:

    - Download(Initial)

      This function collects the information needed for the initial investigation.

    - Download(All)

      This function collects the detailed troubleshooting data.

 Note
....

While the collection of the troubleshooting data is in progress, other processes may be kept waiting.

Therefore, do not execute other operations during the collection of troubleshooting data.
....

Chapter 5 HTTPS Connection

This chapter describes the security features of the HTTPS connection used by this software.
This software uses a HTTPS connection between the web browser (client) and Management Server. The connection data is encrypted with a security certificate.

As a default, a self-signed certificate is used when the product was installed.

As the network is isolated from the intranet by a firewall the communication with the neighboring devices is safe and using a self-signed certificate is not a problem, but may generate warning message in a web browser set to access the Internet.

- When the web browser is started a warning message is displayed regarding the security certificate upon establishing the connection for the first time.

- When Internet Explorer is used, the Address bar turns red and a "**Certificate Error**" message displays in the Security Status bar. Moreover, a warning icon of a possible phishing attempt is displayed in the Security Status bar.

To disable the first connection warning and error messages, it is necessary to create a certificate corresponding to the Management Server IP address or host name (FQDN) and import it in the web browser.

5.1 Certificate creation

A certificate corresponding to "localhost" is created when the product was installed.
If the Management Server is the same as the server for the web browser (client), certificate creation is not necessary.

If the Web Console is served from a different terminal than the Management Server, follow the procedure below on the Management Server to create the certificate.

For Windows environment

1. Stop the following services.

   - ETERNUS SF Manager Apache Service

   - ETERNUS SF Manager Tomcat Service

   Open the **Services** dialog box by clicking **Control Panel** > **Administrative Tools** > **Services**, and then stop the target services.

2. Open a command prompt, and change to the *installDir*\Common\sys\apache\conf directory.

   📔 Example

   When the ETERNUS SF Manager is installed in "C:\ETERNUS_SF":

   ```
   >cd "C:\ETERNUS_SF\Common\sys\apache\conf" <RETURN>
   ```

3. Back up the original certificate file.

   📔 Example

   ```
   >copy server.crt server.crt.org <RETURN>
   >copy server.key server.key.org <RETURN>
   ```

4. Execute the command (openssl.exe) to create a certificate for the software.

   📔 Example

   If the Management Server IP address is "192.168.1.1"and the expiration date is 20 years later (-days 7300):

```
>..\bin\openssl.exe req -sha256 -new -x509 -nodes -newkey rsa:2048 -out server.crt -keyout
server.key -days 7300 -config openssl.cnf <RETURN>
Loading 'screen' into random state - done
Generating a 2048 bit RSA private key
................................................................................
..................................+++
.................+++
writing new private key to 'server.key'
-----
You are about to be asked to enter information that will be incorporated into your certificate
request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) []:<RETURN>
State or Province Name (full name) []:<RETURN>
Locality Name (eg, city) []:<RETURN>
Organization Name (eg, company) []:<RETURN>
Organizational Unit Name (eg, section) []:<RETURN>
Common Name (eg, YOUR name) []:192.168.1.1<RETURN>
Email Address []:<RETURN>
```

Option

-days

Specify the period for which the certificate is available.

This option is counted from the day of the command execution. Enter a reasonably long number of days, while keeping the expiration date earlier than January 19, 2038.

Input items

Input item	Explanation
Country Name	The two-letter abbreviation for your country. (ISO-3166)
State or Province Name	The state or province where the Management Server is located.
Locality Name	The city where your organization is located.
Organization Name	The exact legal name of your organization.
Organizational Unit Name	Optional for additional organization information.

Common Name	Enter the IP address or the host name (FQDN) that will be entered in the web browser. Enter This item is mandatory. The enter example is as follows.
	
	 - In the case of specifying IP address:
	   192.168.1.1
	
	 - In the case of specifying host name:
	   myhost.company.com

Email Address	E-mail address for contact

5. Start the following services.

   - ETERNUS SF Manager Apache Service

   - ETERNUS SF Manager Tomcat Service

   Open the **Services** dialog box by clicking **Control Panel** > **Administrative Tools** > **Services**, and then start the target services.

For Solaris or Linux environment

1. Log in the Management Server with Administrator privileges,

2. Execute the following command to stop daemons related to the web service.

```
# /opt/FJSVesfcm/bin/stop-webservice.sh <RETURN>
```

3. Move to /etc/opt/FJSVesfcm/conf/apache directory.

```
# cd /etc/opt/FJSVesfcm/conf/apache <RETURN>
```

4. Back up the original certificate file.

📔 Example
・・・

```
# cp server.crt server.crt.org <RETURN>
# cp server.key server.key.org <RETURN>
```

・・・

5. Execute the openssl command to create a certificate for the software.

📔 Example
・・・

If the Management Server IP address is "192.168.1.1"and the expiration date is 20 years later (-days 7300):

```
# /opt/FJSVesfcm/SSL/bin/openssl req -sha256 -new -x509 -nodes -newkey rsa:2048 -out server.crt
-keyout server.key -days 7300 -config openssl.cnf <RETURN>
Loading 'screen' into random state - done
Generating a 2048 bit RSA private key
.......................................................................................
....................................+++
..................+++
writing new private key to 'server.key'
-----
You are about to be asked to enter information that will be incorporated into your certificate
request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) []:<RETURN>
State or Province Name (full name) []:<RETURN>
Locality Name (eg, city) []:<RETURN>
Organization Name (eg, company) []:<RETURN>
Organizational Unit Name (eg, section) []:<RETURN>
Common Name (eg, YOUR name) []:192.168.1.1<RETURN>
Email Address []:<RETURN>
```

・・・

Option

-days

Specify the period for which the certificate is available.
This option is counted from the day of the command execution. Enter a reasonably long number of days of using the software while keeping the expiration date earlier than January 19, 2038.

Input items

Input item	Explanation
Country Name	The two-letter abbreviation for your country. (ISO-3166)
State or Province Name	The state or province where the Management Server is located.
Locality Name	The city where your organization is located.

Input item	Explanation
Organization Name	The exact legal name of your organization.
Organizational Unit Name	Optional for additional organization information.

Common Name	Enter the IP address or the host name (FQDN) that will be entered in the web browser. Enter This item is mandatory. The enter example is as follows.
	
	- In the case of specifying IP address:
	  192.168.1.1
	
	- In the case of specifying host name:
	  myhost.company.com

Email Address	E-mail address for contact

6. Execute the following command to restart daemons related to the web service.

```
# /opt/FJSVesfcm/bin/start-webservice.sh <RETURN>
```

5.2 Certificate import

Follow the procedure below to import the certificate.

Note

Please use the same IP address or host name (FQDN) for the URL entered in the web browser as the one used in the generated certificate. For example, if the URL is different from the certificate, the certificate warning messages will be displayed.

- The certificate was created with a host name (FQDN) and the URL is entered with the IP address.

- The Management Server has several IP addresses, and the IP address used in the URL is different from the one used for the certificate creation.

For Internet Explorer:

1. In the web browser address bar, enter the IP address or host name (FQDN) specified in the **Common Name** at the certificate creation. If the Management Server is the same as the server for the web browser (client), enter the "localhost".

Example

- In the case of entering IP address (192.168.1.1):

```
https://192.168.1.1:9855/
```

- In the case of entering "localhost":

```
https://localhost:9855/
```

2. A dialog box showing the "**There is a problem with this website's security certificate.**" message is displayed. Click the **Continue to this website (not recommended).**.

3. Click the **Certificate Error** in the address bar.

4. Click on **View certificates** at the bottom of the dialog box.

5. On the **Certificates** dialog box, click **Install Certificate**.

6. The Certificate Import Wizard is displayed. Click **Next** on the Certificate Import Wizard.

7. The **Certificate Store** dialog box is displayed. Select **Place all certificates in the following store**, and then click **Browse**.

8. The **Select Certificate Store** dialog box is displayed. Select **Trusted Root Certification Authorities**, and then click **OK**.

9. The **Certificate Store** dialog box is displayed again. Check that **Trusted Root Certification Authorities** appears in the **Certificate store:**, and then click **Next**.

10. The **Completing the Certificate Import Wizard** dialog box is displayed. Check that **Trusted Root Certification Authorities** has been set, and then click **Finish**.

11. On the **Security Warning** dialog box, click **Yes**.

12. Restart the web browser, and then enter the URL of the Management Server.

For Firefox:

1. In the web browser address bar, enter the IP address or host name (FQDN) specified in the **Common Name** at the certificate creation. If the Management Server is the same as the server for the web browser (client), enter the "localhost".

 Example
....

  - In the case of entering IP address (192.168.1.1):

    ```
    https://192.168.1.1:9855/
    ```

  - In the case of entering "localhost":

    ```
    https://localhost:9855/
    ```
....

2. The **This Connection is Untrusted** dialog box is displayed. Click **I Understand the Risks**, and then click **Add Exception**.

3. The **Add Security Exception** window id displayed. Check that **Permanently store this exception** has been checked on, and then click **Confirm Security Exception**.

Chapter 6 Notes

This chapter describes notes for the Web Console operations.

6.1 Control by monitoring functions

Web Console operations are controlled by the following monitoring functions.

Session timeout monitoring

This function monitors the Web Console operations and discards the sessions not operated for a long time.

Web Console operation is the connection, including automatic updating of Web Console screen, to a Management Server from the Web Console.

When an operation runs beyond the term of monitoring interval from previous operation, it is rejected because of session timeout. The default monitoring interval is 60 minutes.

See
. . . .
Refer to "4.22.4 Change the value for session timeout" for changing monitoring interval.
. . . .

Session connection number monitoring

This function monitors the number of connecting sessions at the same time. If the number of connecting sessions exceeds the upper limits, 100 sessions, you fail to log on.

Maximum operation number monitoring

This function monitors the number of operations.

If the number of operations exceeds either the following limit, the monitoring function rejects the operation.

- Upper limit for each user

    The upper limit immediately after login is 512.
    The upper limits can be changed in the **User Management** screen. The changed upper limit is valid during login.

    ### See
    . . . .
    Refer to "4.2.3 Set the maximum number of jobs in queue" for changing the upper limit.
    . . . .

- Upper limit for the whole system

    It is the total number of processing operated by all logged on users.
    The upper limit 1024 is fixed.

Point
. . . .
For the number of operations:

Processing requests from the Web Console are executed asynchronously after storing in the Management Server.
The number of operations indicates the total number of waiting and executing requests.
. . . .

6.2 Operation on Model upgrade for ETERNUS Disk storage system

This section describes the operation on Model upgrade for ETERNUS Disk storage system on the Web Console.

Before applying Model upgrade options	After applying Model upgrade options	Operation
ETERNUS DX60	ETERNUS DX80	Refer to "Operation on Model upgrade for ETERNUS DX60 to ETERNUS DX80, for ETERNUS DX80 S2 to ETERNUS DX90 S2, for ETERNUS DX410 S2 to ETERNUS DX440 S2".
ETERNUS DX80 S2	ETERNUS DX90 S2	
ETERNUS DX410 S2	ETERNUS DX440 S2	
ETERNUS DX80 S2/DX90 S2	ETERNUS DX410 S2/DX440 S2	Refer to "Operation on Model upgrade for ETERNUS DX80 S2 or ETERNUS DX90 S2 to ETERNUS DX410 S2 or ETERNUS DX440 S2".

Operation on Model upgrade for ETERNUS DX60 to ETERNUS DX80, for ETERNUS DX80 S2 to ETERNUS DX90 S2, for ETERNUS DX410 S2 to ETERNUS DX440 S2

Use the following procedure for applying Model upgrade options:

1. If Advanced Copy is in progress, stop Advanced Copy processing.

2. Apply Model upgrade options for ETERNUS Disk storage system.

3. Perform the following steps on the Web Console:

    1. Reload the latest information about ETERNUS Disk storage system. Refer to "4.3.10 Reload ETERNUS Disk storage system configuration information" for details.

    2. Delete the license registered with ETERNUS Disk storage system. Refer to "4.8.3 Delete the license" for details.

    3. Register the license with ETERNUS Disk storage system. Refer to "4.8.1 Register the license" for details.

Note

- The device model name after applying Model upgrade options is displayed as "*nameBeforeApplyingModelUpgradeOptions*"/"*nameAfterApplyingModelUpgradeOptions*".

- When you reload configuration information of the device which is applied Model upgrade options to ETERNUS DX440 S2, make sure that the license of the old device is registered.

    In the following cases, you cannot reload configuration information.

    - When all of the licenses for the device which is applied Model upgrade options to ETERNUS DX440 S2 are deleted.

    - When no license is registered with the device which is applied Model upgrade options to ETERNUS DX440 S2.

    When you cannot reload configuration information since all of the licenses are deleted, provisionally register the license of the old device. Then, reload configuration information of the device.

Operation on Model upgrade for ETERNUS DX80 S2 or ETERNUS DX90 S2 to ETERNUS DX410 S2 or ETERNUS DX440 S2

Use the following procedure for applying Model upgrade options:

1. If Advanced Copy is in progress, stop Advanced Copy processing.

2. Perform the following steps on the Web Console:

    1. Delete the license registered with ETERNUS Disk storage system. Refer to "4.8.3 Delete the license" for details.

    2. Delete ETERNUS Disk storage system. Refer to "4.3.3 Delete ETERNUS Disk storage system" for details.

3. Apply Model upgrade options for ETERNUS Disk storage system.

4. Perform the following steps on the Web Console:

    1. Register the upgraded ETERNUS Disk storage system. Refer to "4.3.1 Register ETERNUS Disk storage system" for details.

    2. Register the license with the upgraded ETERNUS Disk storage system. Refer to "4.8.1 Register the license" for details.

    3. If you have used the Advanced Copy function before applying Model upgrade options, reconfigure the connection type for ETERNUS Disk storage system. Refer to "4.13.2 Configure the connection type for ETERNUS Disk storage system" for details.

📄 Note

. . . .

- A serial number of ETERNUS Disk storage system may change after applying Model upgrade options. If you apply Model upgrade options without deleting ETERNUS Disk storage system, ETERNUS SF may not recognize the new ETERNUS Disk storage system. In this case, delete the new ETERNUS Disk storage system and re-register it.

- If you apply Model upgrade options for ETERNUS Disk storage system without deleting the license, the screen displays the license list for the old device. To display the license list for the new device, delete all of the registered licenses and update the screen. Register the license after displaying the license list for the new device.

. . . .

6.3 Restrictions

End to End view (VMware)

Filter setting function is not available for **Path Status** column in the **Datastore** screen.
When extracting the specified "path status" data, narrows data down using some spreadsheet software function after downloading data with CSV format.

About unusable characters

Please do not use the double quote ("), single quote ('), less than sign (<) and multibyte characters in the input fields on each screen of the Web Console.
If these characters are used, an unexpected action may be done.

6.4 Notes

6.4.1 Note for operating Web browser

Do not use buttons to transit screens in the web browser, for example the **Refresh**, **Back** or **Next** and so on, during using the Web Console.

If you use these buttons, the screen may not transit properly.

6.4.2 Note when going through the proxy server

When accessing to the Management Server going through the proxy server, client IP addresses may not be displayed properly in the following screens.
For displaying properly, specify the Management Server to the exceptional setting without going through the proxy server of web browser.

- **Login Result** pop-up window displayed at the time of login

- **Login/Logout History** screen

- **User Management** screen

Note
· ·
If you use Firefox, do not check the **Auto-detect proxy settings for this network** radio button under the **Configure Proxies to Access the Internet** in the Connection Settings screen.

When the **Auto-detect proxy settings for this network** radio button is checked, the following message may be displayed.

```
esgui00001 Internal error occurred.
```

When the **Auto-detect proxy settings for this network** radio button is checked and the above message is displayed, select the category to be displayed in the global navigation tab.
· ·

6.4.3 Note for pop-up window

Clicking **Up** and **Down** on the pop-up window of each screen only displays the parent screen information.
When displaying other information, change the parent screen.

6.4.4 Note for management software call

When the Web Console calls management software of the following devices, it uses HTTPS connection by default.

- ETERNUS DX60/DX60 S2/DX80/DX80 S2/DX90/DX90 S2

- ETERNUS DX400 S2 series

- ETERNUS DX8000 S2 series

Set URL with HTTP connection to "Management Software" as a setting item for ETERNUS Disk storage system.

See
· ·
Refer to "4.3.4 Change ETERNUS Disk storage system information" for setting information to "Management Software".
· ·

6.4.5 Note for FCoE port of ETERNUS Disk storage system

For the FCoE port in ETERNUS Disk storage system, use the ETERNUS Web GUI for the following operations:

- Change the port settings

When the **Reload Conf.** operation is performed on the Web Console, the setting information set by the ETERNUS Web GUI is displayed on the Web Console.

6.4.6 Note when mixing disks of different type in a RAID group

Web Console cannot create the RAID group in which online disk and nearline disk are mixed. If mixing different types of disks in a RAID group, use the ETERNUS Web GUI.

However, it is not recommended to mix disks with different the rotational speed in the same RAID group, because the access performance is degraded.

6.4.7 Note for LUN Mapping which does not use Host Affinity function

For the LUN Mapping which does not use Host Affinity function, Web Console can only display.
Use the ETERNUS Web GUI for the setting, modification and deletion.

When the **Reload Conf.** operation is performed on the Web Console, the setting information set by the ETERNUS Web GUI is displayed on the Web Console.

6.4.8 Note for dialog box displayed during the script processing

When the script processing is taking a long time, the browser may display a warning dialog box.
To continue processing, it is necessary to confirm acceptance on the warning dialog box.

The displaying of the warning dialog box can be avoided by the following methods.

- For Internet Explorer:

  Change the script time-out value to the larger than current value by modifying a registry entry. Serious problems may occur if you modify the registry incorrectly. Therefore, be careful to modify the registry correctly.

  Refer to the following information (Article ID: 175500) provided by Microsoft about the method for modifying a registry entry:

  ```
  http://support.microsoft.com/kb/175500/en
  ```

- For Firefox:

  Let the script run longer from about:config page.
  Refer to "Warning Unresponsive script" in the FIREFOX HELP at the following site provided by Mozilla about the setting method:

  ```
  http://support.mozilla.com/en-US/home
  ```

6.4.9 Note for Last Operation Date

The Last Operation Date displayed on the **User Management** screen and the pop-up window of the forcible login is a reference, and it is not updated in the following operations.

- Sort the displayed contents

- Switch the screen

- Update to the latest information

- Set the maximum number of jobs in queue

- Change the session timeout value

- Collect the troubleshooting data

6.4.10 Note for IPv6

This sub section describes the notes on IPv6 on the Web Console.

Operation

Since using Express in the IPv6 environment is not supported, use it in the IPv4 environment.

View

If IPv6 is displayed in the IP Address field in the list on the Web Console, the following are observed.
IPv6 address is expressed in full format or abbreviated format. For abbreviated format, multiple formats are available for one address based on an adaptable rule. The Web Console uses and displays the recommended format in RFC5952 so as to make IPv6 address format unique and unified. However, like the screen to add HBA, if there are two fields on one screen; one to enter IP addresses and the other to display the entered IP addresses, IPv6 address is expressed in the format used for its input.

The recommended format in RFC5952 complies with the following rules:

- In the 16 bit field (number between ":" and ":"), if the number starts with zero (0), all leading zeros are suppressed to be expressed. The "0000" is expressed as "0" (called zero-valued field).

- About abbreviation to "::"

    - If a zero-valued field is abbreviated to "::", all zeros are abbreviated to the extent possible. For example, in the case of "2001:db8:0:0:0:0:2:1", it is expressed as "2001:db8::2:1", not as "2001:db8::0:2:1".

    - If many zeros do not continue but only one zero exists in a zero-valued field, the zero is not abbreviated. For example, in the case of "2001:db8:0:1:1:1:1:1", it is not expressed as "2001:db8::1:1:1:1:1".

    - When abbreviating a zero-valued field, the field where zero continues the most is abbreviated. For example, in the case of "2001:0:0:1:0:0:0:1", it is expressed as "2001:0:0:1::1", not as "2001::1:0:0:0:1".
      In addition, if there are multiple zero-valued fields where zero continues, the first zero continuing field (leftmost side) is abbreviated. For example, in the case of "2001:db8:0:0:1:0:0:1", it is expressed as "2001:db8::1:0:0:1", not as "2001:db8:0:0:1::1".

    - Hexadecimal alphabets (from "a" to "f") are expressed in lowercase letters.

Configuration

For IPv6 address entry, both full format and abbreviated format are available. However, a special format of IPv4 embedded IPv6 address (::ffff:192.0.0.1, ::<192.0.0.1>, 2002:192.0.0.1:) and a format that adds an interface number or name with "%" (fe80::1234%fx0) are not available.

On the Web Console, the following conditions are checked as an IPv6 address syntax:

- Other characters than from "0" to "9", from "a" to "f", from "A" to "F" and ":" are not used, and

- There are not more than 9 fields separated with ":", and

- The ":" alone is not specified.

If the above conditions are met, an IPv6 address can be configured on the Web Console. However, if there is something wrong with the configured IP address, error may occur when accessing a target device with the address.

Filter

IPv6 can be specified in the IP Address field to be filtered in the list on the Web Console. Partial match filtering is accepted. For example, only ":" is accepted.
The values displayed in the list are to be filtered. Despite of the same IP address as an IPv6 address, if it does not match with that in the list, it does not correspond to the filter criterion.

Sort method

When sorting IP addresses in the list on the Web Console, they are sorted by their displayed values. If IPv4 and IPv6 addresses coexist, they are not separated to be sorted.

6.5 Customization

Edit the files in this section according to requirements.
However, be sure not to edit values of parameters not discussed in this section.

6.5.1 Customizing sanma.conf

This file is saved at the following location as a detailed setting file of the storage management:

Platform of Management Server	Location
Windows	$ENV_DIR\ESC\Manager\etc\opt\FJSVssmgr\current\sanma.conf ($ENV_DIR means "Environment Directory" specified at the ETERNUS SF Manager installation.)
Solaris, Linux	/etc/opt/FJSVssmgr/current/sanma.conf

Customization

AUTODISCOVER_SUBNET

Specify the address of a subnet searched during an automatic device search. Use a "," (comma) to define multiple subnets.

```
Example:
AUTODISCOVER_SUBNET="10.12.13.255,133.134.13.255";
```

The Management Server issues SNMP broadcasts for automatic device detection in these subnets, but if the broadcast is limited by network settings, this function is not enabled.

SNMP_COMMUNITY_NAME_FOR_IP

Specify the SNMP community name for communication using SNMP between this software and a device. If "public" (READ-direction) and "private" (WRITE-direction) are used for the SNMP community name, the specification of this parameter is not required. Specify the IP address of the device and the community name used for SNMP communication with the device, delimiting them with a space. Note that a community name that includes space characters cannot be set in this parameter.

When setting "abc" as the community name used for SNMP communication with IP address 10.11.12.13, set as follows:

```
Example:
SNMP_COMMUNITY_NAME_FOR_IP="10.11.12.13 abc";
```

Wild card definitions in which "*" is used at the end of the IP address is permitted.

```
Example:
SNMP_COMMUNITY_NAME_FOR_IP="10.11.12.* abc";
SNMP_COMMUNITY_NAME_FOR_IP="20.21.*.* def";
SNMP_COMMUNITY_NAME_FOR_IP="30.*.*.* ghi";
```

To define community names for multiple devices, specify the names on as many definition lines as the number of devices.

```
Example:
SNMP_COMMUNITY_NAME_FOR_IP="10.11.12.13 abc";
SNMP_COMMUNITY_NAME_FOR_IP="10.11.14.15 def";
```

If community names must be different in the READ-direction and WRITE-direction of SNMP communication, specify a device IP address, community name used for READ-direction, and community name used for WRITE-direction, delimiting them with a space.

When setting "abc" as the READ-direction community name and "def" as the WRITE-direction community name used for SNMP communication with IP address 10.11.12.13, set as follows:

```
Example:
SNMP_COMMUNITY_NAME_FOR_IP="10.11.12.13 abc def";
```

SNMP_COMMUNITY_NAME_FOR_AUTODISCOVER

Using the SNMP protocol, the Intra-subnet device detection function detects devices. If "public" is used for the SNMP community name, the specification of this parameter is not required. For such communication using any name other than "public", specify its

community name in this parameter. When specifying this parameter, the parameter "SNMP_COMMUNITY_NAME_FOR_IP" must be specified at the same time.

Note that a community name that includes space characters cannot be set in this parameter.

When community name is "abc," set as follows:

```
Example:
SNMP_COMMUNITY_NAME_FOR_AUTODISCOVER="abc";
```

In an environment where each device has a unique community name, not all devices can be detected even if this parameter is specified. In this case, specify only the parameter "SNMP_COMMUNITY_NAME_FOR_IP" to search for one device at a time.