

FUJITSU Storage
ETERNUS DX60 S3
Disk storage system

Configuration Guide (Basic)

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Fujitsu would like to thank you for purchasing our FUJITSU Storage ETERNUS DX60 S3 Disk storage system (hereinafter referred to as ETERNUS DX).

The ETERNUS DX is designed to be connected to Fujitsu servers (Fujitsu M10, PRIMEQUEST, or PRIMERGY) or non-Fujitsu servers.

This manual describes all the procedures that are required to start operation of the ETERNUS DX.

This manual is intended for use of the ETERNUS DX in regions other than Japan.

Please carefully review the information outlined in this manual.

Second Edition

October 2015

About This Manual

Organization

This manual is composed of the following eleven chapters:

- "Chapter 1 Component Names" (page 18)
This chapter provides components names of the ETERNUS DX.
- "Chapter 2 Rack Installation" (page 25)
This chapter describes the procedure for installing the ETERNUS DX in a rack.
- "Chapter 3 Checking the Configuration Environment" (page 37)
This chapter describes the environment required for system configuration.
- "Chapter 4 Connecting Cables" (page 46)
This chapter explains how to connect various cables to the ETERNUS DX.
- "Chapter 5 General Settings" (page 58)
This chapter describes the basic settings for the ETERNUS DX.
- "Chapter 6 Monitoring Settings" (page 84)
This chapter describes the settings required to monitor the ETERNUS DX.
- "Chapter 7 Power Control Setup" (page 104)
This chapter describes the settings required for power control of the ETERNUS DX.
- "Chapter 8 SAN Connection Settings" (page 108)
This chapter describes the settings required to use the ETERNUS DX with a SAN connection.
- "Chapter 9 Advanced Copy Settings" (page 140)
This chapter describes the settings required to operate Advanced Copy.
- "Chapter 10 System Status Check" (page 150)
This chapter describes the status check for the ETERNUS DX after system configuration.
- "Chapter 11 Solution Configuration" (page 155)
This chapter describes storage solutions using the ETERNUS DX.

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Naming Conventions

■ Product Names

- The following abbreviations are used for Microsoft® Windows Server®.

Product name	Abbreviation
Microsoft® Windows Server® 2008 Datacenter	Windows Server 2008
Microsoft® Windows Server® 2008 R2 Datacenter	
Microsoft® Windows Server® 2008 Enterprise	
Microsoft® Windows Server® 2008 R2 Enterprise	
Microsoft® Windows Server® 2008 Standard	
Microsoft® Windows Server® 2008 R2 Standard	
Microsoft® Windows Server® 2008 for Itanium-Based Systems	
Microsoft® Windows Server® 2008 R2 for Itanium-Based Systems	
Microsoft® Windows Server® 2008 HPC Edition	
Microsoft® Windows Server® 2008 R2 HPC Edition	

Product name	Abbreviation
Microsoft® Windows Server® 2012 Datacenter	Windows Server 2012
Microsoft® Windows Server® 2012 R2 Datacenter	
Microsoft® Windows Server® 2012 Standard	
Microsoft® Windows Server® 2012 R2 Standard	
Microsoft® Windows Server® 2012 Essentials	
Microsoft® Windows Server® 2012 R2 Essentials	

- The following abbreviations are used for Red Hat Linux.

Product name	Abbreviation
Red Hat Enterprise Linux 5 (for x86)	Red Hat Enterprise Linux 5
Red Hat Enterprise Linux 5 (for Intel64)	
Red Hat Enterprise Linux 6 (for x86)	Red Hat Enterprise Linux 6
Red Hat Enterprise Linux 6 (for Intel64)	
Red Hat Enterprise Linux 7 (for Intel 64)	Red Hat Enterprise Linux 7

■ Symbols Used in This Manual

The following symbols are used throughout this manual:



This indicates information for the user to note when using the ETERNUS DX. Please be sure to read this information.



This indicates supplementary and reference information.

■ Abbreviations Used in This Manual

- "ETERNUS DX" refers to the FUJITSU Storage ETERNUS DX60 S3 Disk storage system.
- "CA" refers to a host interface module that is used in an ETERNUS DX to connect to a server.
- "Host Bus Adapter (HBA)" refers to an interface module that is normally used in a server to connect to ETERNUS DX storage systems.
- Trademark symbols such as ™ and ® are omitted in this document.

Warning Signs

Warning signs are shown throughout this manual in order to prevent injury to the user and/or material damage. These signs are composed of a symbol and a message describing the recommended level of caution. The following explains the symbol, its level of caution, and its meaning as used in this manual.



This symbol indicates the possibility of serious or fatal injury if the ETERNUS DX is not used properly.



This symbol indicates the possibility of minor or moderate personal injury, as well as damage to the ETERNUS DX and/or to other users and their property, if the ETERNUS DX is not used properly.

IMPORTANT This symbol indicates IMPORTANT information for the user to note when using the ETERNUS DX.

The following symbols are used to indicate the type of warnings or cautions being described.

Electric Shock



△ The triangle emphasizes the urgency of the WARNING and CAUTION contents. Inside the triangle and above it are details concerning the symbol (e.g. Electrical Shock).

No Disassembly



⊘ The barred "Do Not..." circle warns against certain actions. The action which must be avoided is both illustrated inside the barred circle and written above it (e.g. No Disassembly).

Unplug

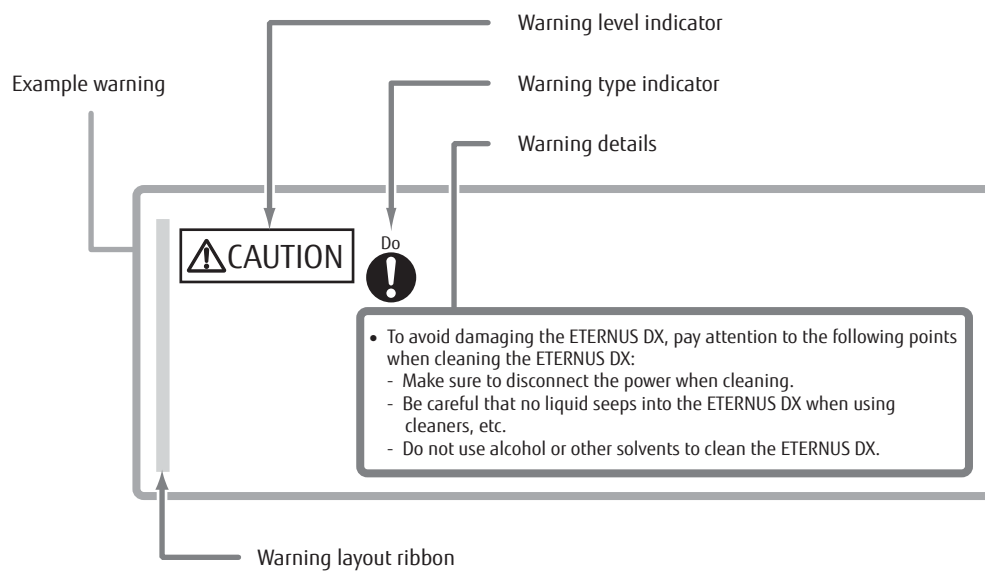


● The black "Must Do..." circle indicates actions that must be taken. The required action is both illustrated inside the black disk and written above it (e.g. Unplug).

How Warnings are Presented in This Manual

A message is written beside the symbol indicating the caution level. This message is marked with a vertical ribbon in the left margin, to distinguish this warning from ordinary descriptions.

A display example is shown here.



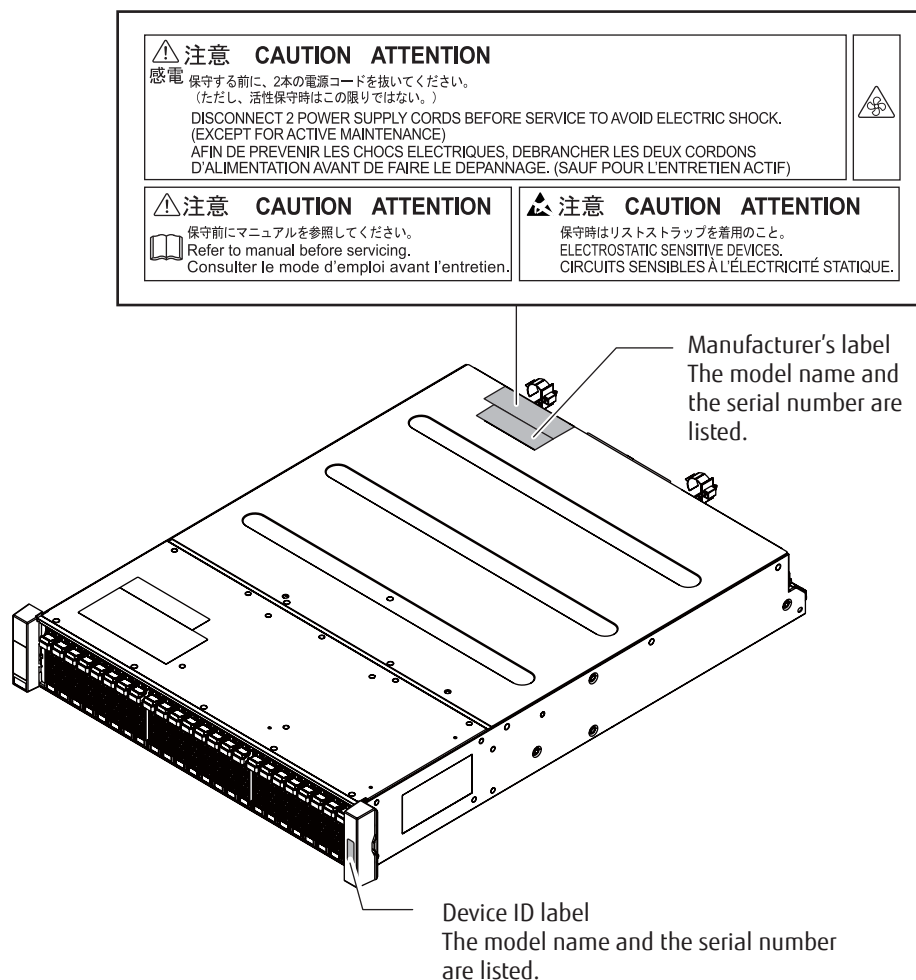
Warning Labels and Manufacturer's Labels

Warning labels, manufacturer's labels, and a device ID label are found in the ETERNUS DX, as shown in the example below.

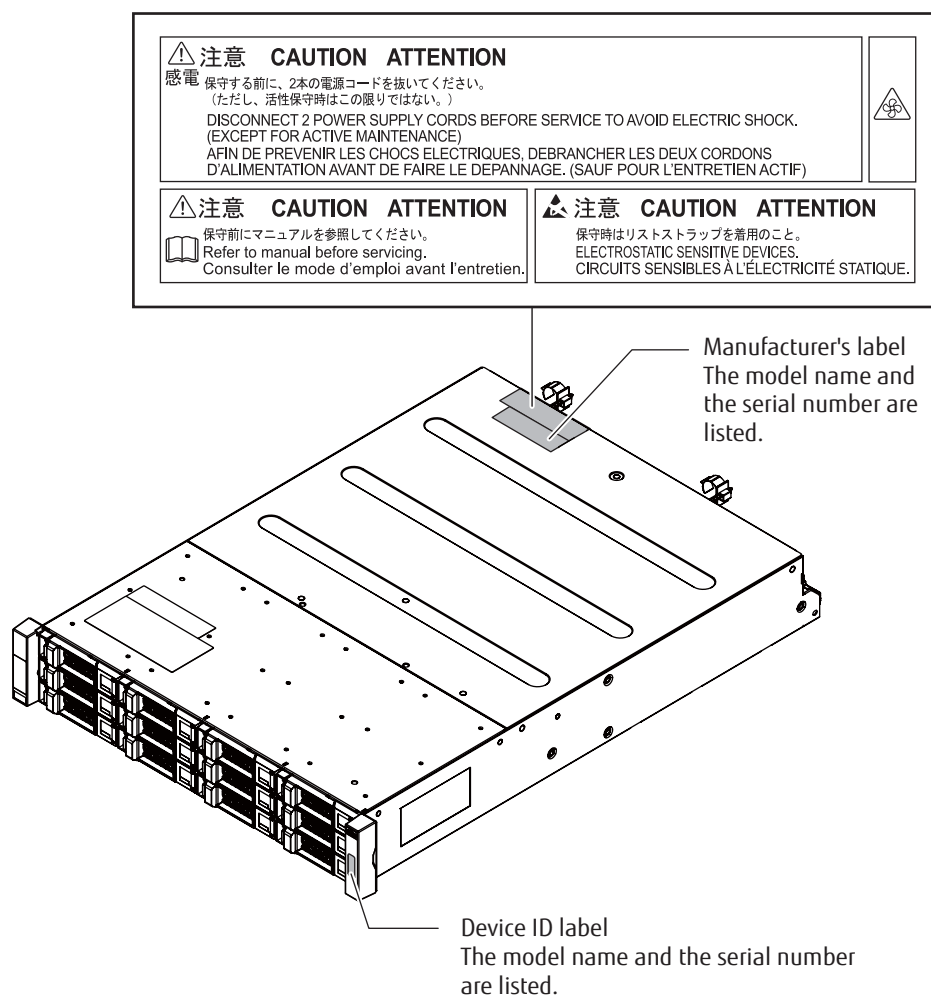
Never remove these labels from the equipment or allow them to become dirty.

ETERNUS DX60 S3 (Controller Enclosures)

- 2.5" Type Controller Enclosure

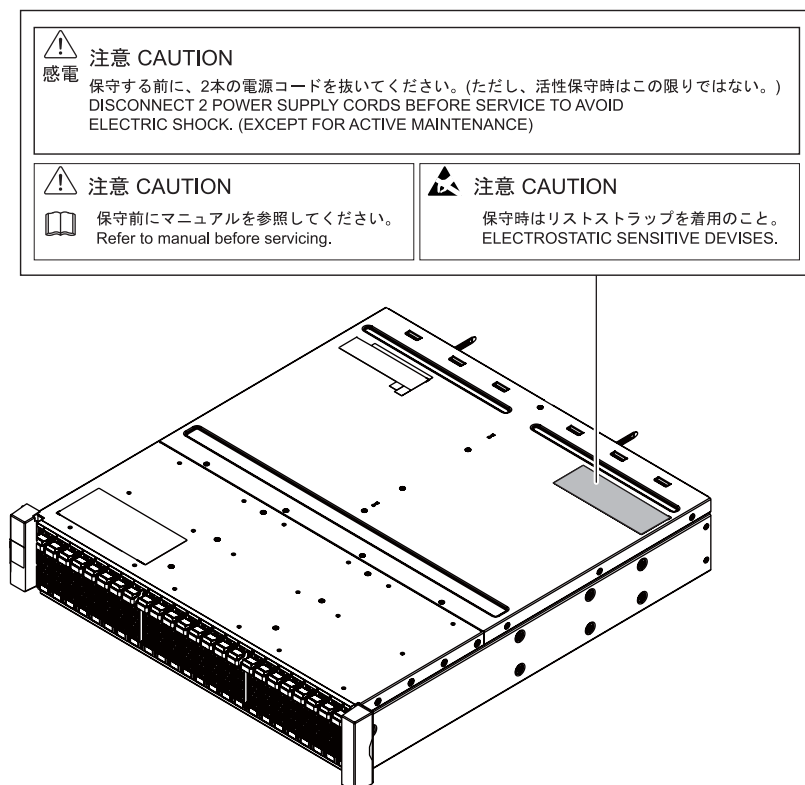


- 3.5" Type Controller Enclosure

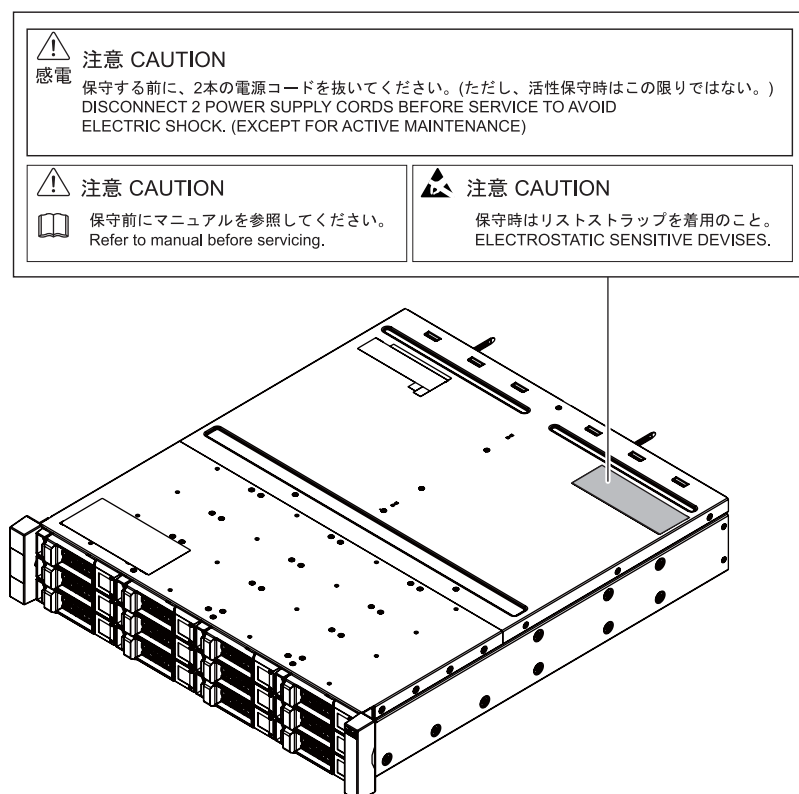


Drive Enclosures

- 2.5" type drive enclosure

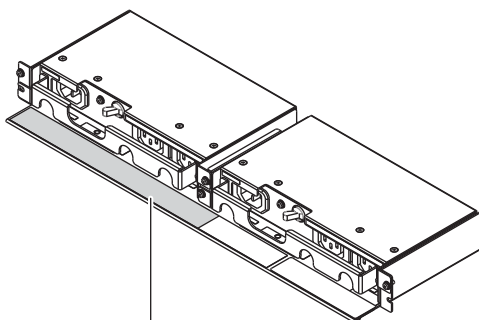


- 3.5" type drive enclosure



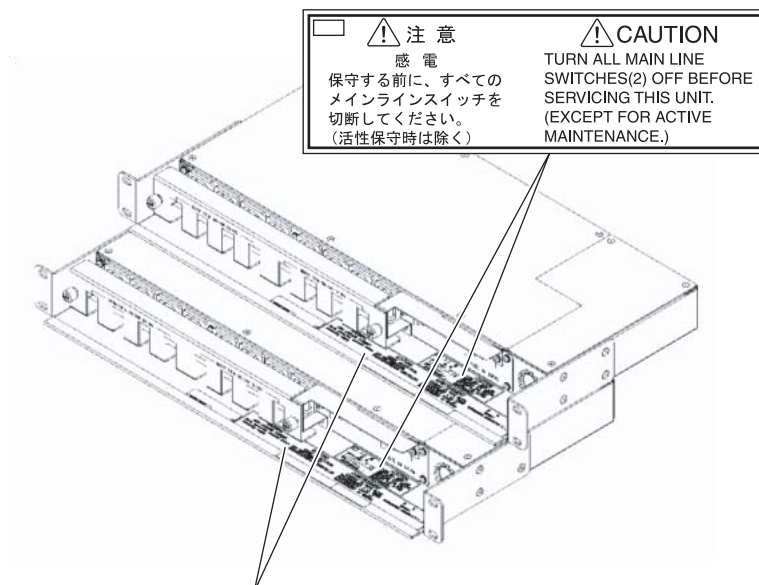
Power Distribution Units (for Regions other than the EMEA, North American, Central American, and Caribbean Regions)

- Power distribution unit (AC200-240V, 1U)



WARNING HIGH LEAKAGE CURRENT. Earth connection essential before connecting supply.	ACHTUNG HOHER ABLEITSTROM. VOR INBETRIEBNAHME ERDUNGVERBINDUNG HERSTELLEN.	AVVERTISSEMENT COURANT DE FUITE ÉLEVÉ. RACCORDEMENT À LA TERRE INDISPENSABLE AVANT LE RACCORDEMENT AU RÉSEAU.	警告 漏洩電流大 電源線接続前に接地接続を行うこと。
--	--	--	---

- Power distribution unit (AC200-240V, 2U)



☐ 注意 感電 保守する前に、すべての メインラインスイッチを 切断してください。 (活性保守時は除く)	CAUTION TURN ALL MAIN LINE SWITCHES(2) OFF BEFORE SERVICING THIS UNIT. (EXCEPT FOR ACTIVE MAINTENANCE.)
---	---

WARNING HIGH LEAKAGE CURRENT. Earth connection essential before connecting supply.	ACHTUNG HOHER ABLEITSTROM. VOR INBETRIEBNAHME ERDUNGVERBINDUNG HERSTELLEN.	AVVERTISSEMENT COURANT DE FUITE ÉLEVÉ. RACCORDEMENT À LA TERRE INDISPENSABLE AVANT LE RACCORDEMENT AU RÉSEAU.	警告 漏洩電流大 電源線接続前に接地接続を行うこと。
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Chapter 1

Component Names

This chapter provides component names of the ETERNUS DX.

1.1 Controller Enclosures

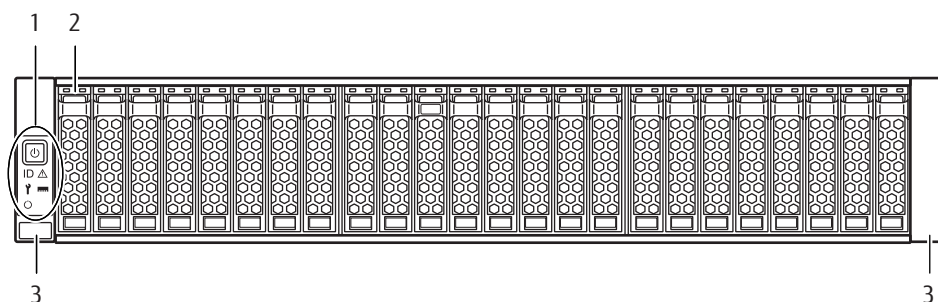
An operation panel and drives are installed in the front of the controller enclosure. Controllers and power supply units are installed in the rear.

1.1.1 Front

This section provides the names of the components in the front of a controller enclosure.

■ 2.5" Type

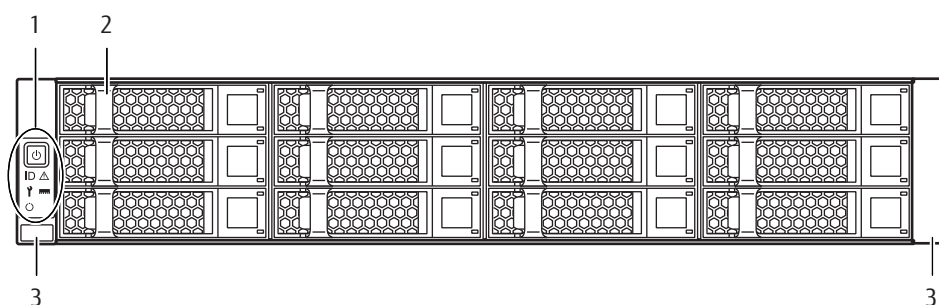
Figure 1.1 Front View of a 2.5" Type Controller Enclosure



1. Operation panel
2. 2.5" drive
3. Flange cover

■ 3.5" Type

Figure 1.2 Front View of a 3.5" Type Controller Enclosure



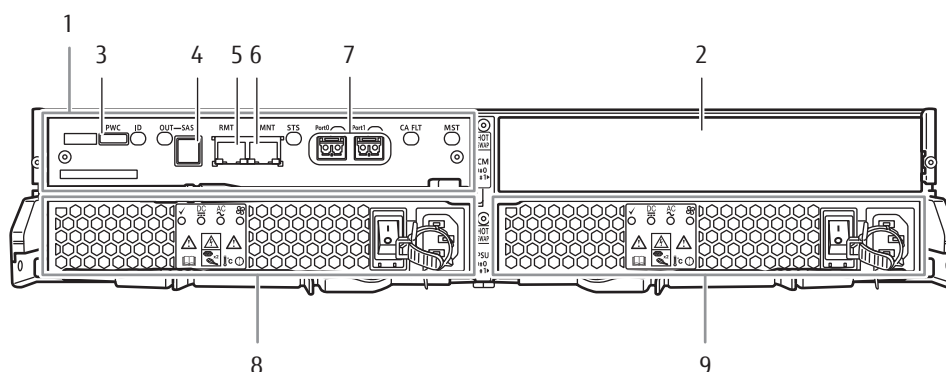
1. Operation panel
2. 3.5" drive
3. Flange cover

1.1.2 Rear

This section provides the names of the components in the rear of a controller enclosure.

- When only one controller is installed

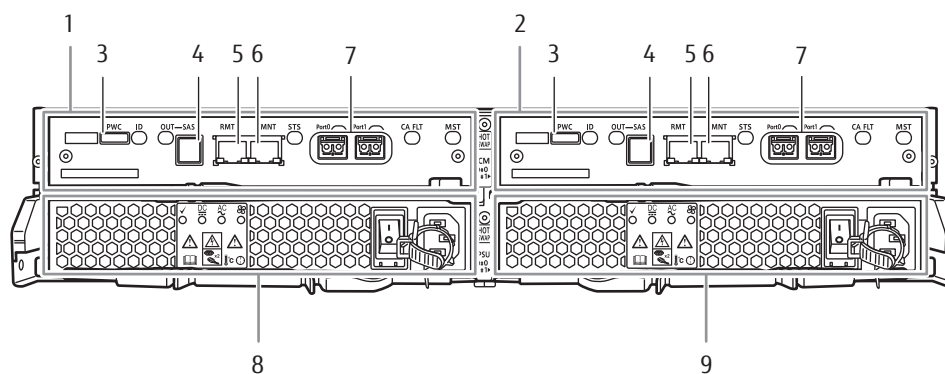
Figure 1.3 Rear View of a Controller Enclosure (When Only One Controller is Installed)



1. Controller (CM#0)
2. Cover
3. PWC port
4. Drive interface (OUT) port
5. LAN (RMT) port
6. LAN (MNT) port
7. Host interface (CA#0)
8. Power supply unit (PSU#0)
9. Power supply unit (PSU#1)

- When two controllers are installed

Figure 1.4 Rear View of a Controller Enclosure (When Two Controllers are Installed)



1. Controller (CM#0)
2. Controller (CM#1)
3. PWC port
4. Drive interface (OUT) port
5. LAN (RMT) port
6. LAN (MNT) port
7. Host interface (CA#0)
8. Power supply unit (PSU#0)
9. Power supply unit (PSU#1)

1.2 Drive Enclosure

Drives and an operation panel are installed in the front of the drive enclosure. I/O modules and power supply units are installed in the rear.

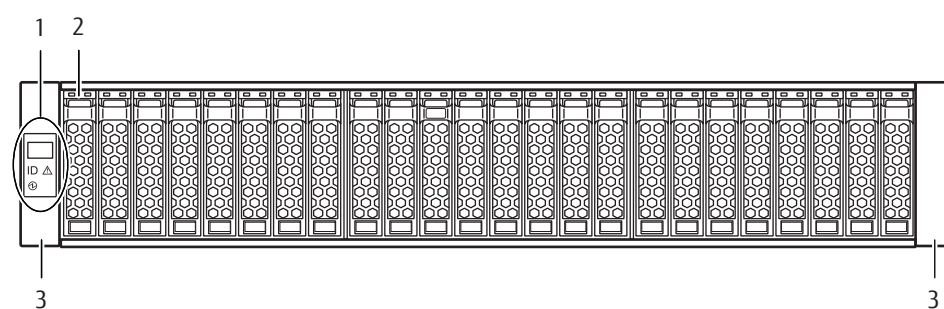
2.5" type drive enclosures and 3.5" type drive enclosures are available.

1.2.1 Front

This section provides the names of the components in the front of a drive enclosure.

■ 2.5" Type

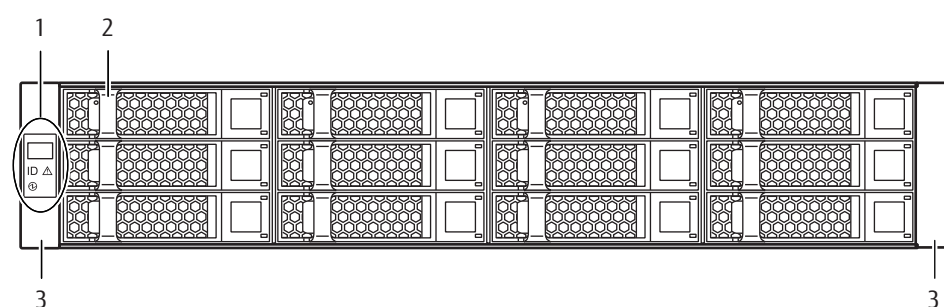
Figure 1.5 Front View of a 2.5" Type Drive Enclosure



1. Operation panel
2. 2.5" drive
3. Flange cover

■ 3.5" Type

Figure 1.6 Front View of a 3.5" Type Drive Enclosure



1. Operation panel
2. 3.5" drive
3. Flange cover

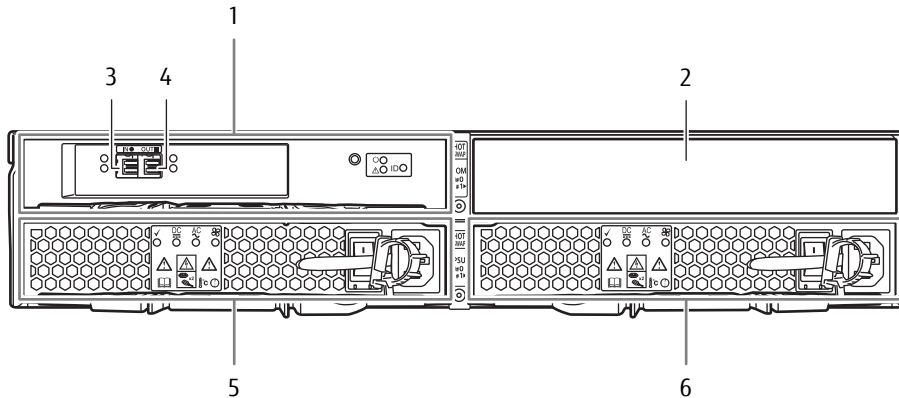
1.2.2 Rear

This section provides the names of the components in the rear of a drive enclosure.

■ 2.5" Type / 3.5" Type

- When only one I/O module is installed

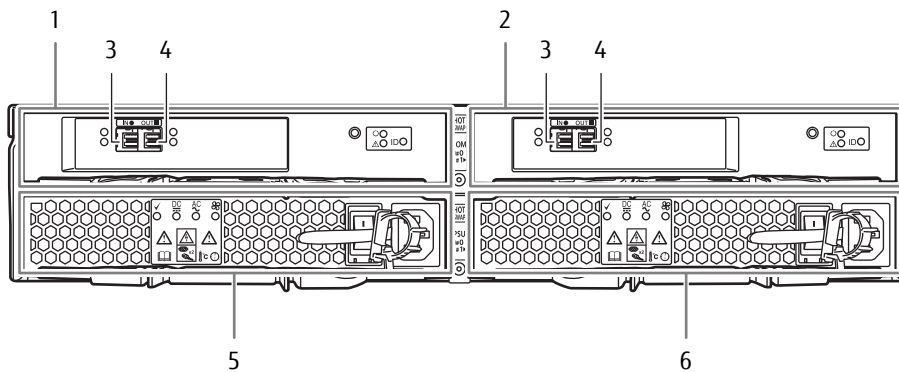
Figure 1.7 Rear View of a Drive Enclosure (When Only One I/O Module is Installed)



1. I/O module (IOM#0)
2. Cover
3. Drive interface (IN) port
4. Drive interface (OUT) port
5. Power supply unit (PSU#0)
6. Power supply unit (PSU#1)

- When two I/O modules are installed

Figure 1.8 Rear View of a Drive Enclosure (When Two I/O Modules are Installed)



1. I/O module (IOM#0)
2. I/O module (IOM#1)
3. Drive interface (IN) port
4. Drive interface (OUT) port
5. Power supply unit (PSU#0)
6. Power supply unit (PSU#1)

1.3 Power Distribution Units (for Regions other than the EMEA, North American, Central American, and Caribbean Regions)

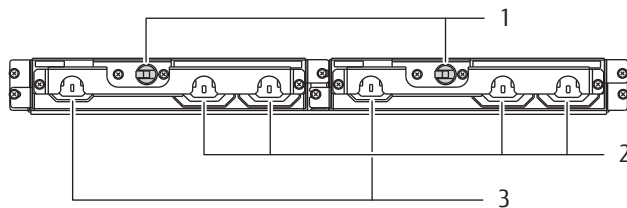
There are two sizes for power distribution units: 1U and 2U.

1.3.1 Power Distribution Units (1U)

The 1U power distribution unit has four outlets and two inlets.

1.3.1.1 Power Distribution Unit (AC200-240V, 1U, 4 Outlets)

Figure 1.9 Power Distribution Unit (AC200-240V, 1U, 4 Outlets)



1. Main line switch
2. Outlet (OUTPUT)
3. Inlet (INPUT)

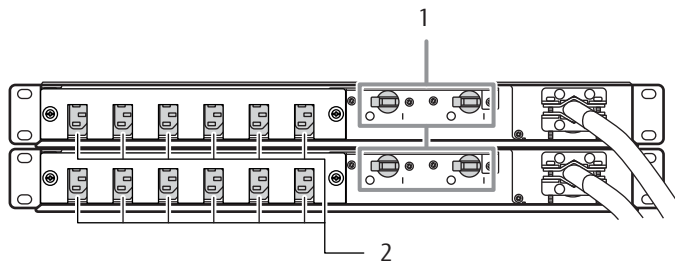
1.3.2 Power Distribution Units (2U)

2U power distribution units are available in two types: a 12 outlet type and a 16 outlet type.

1.3.2.1 Power distribution unit (AC200-240V, 2U, 12 Outlets)

There are 12 outlets.

Figure 1.10 Power Distribution Unit (AC200-240V, 2U, 12 Outlets)

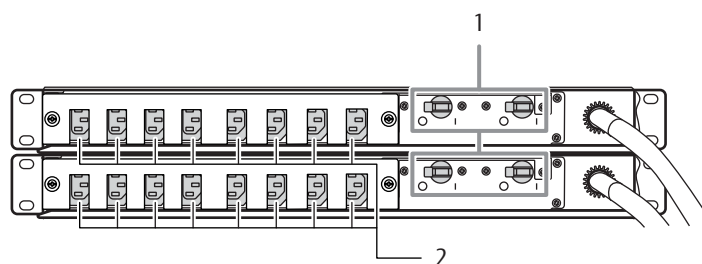


1. Main line switch
2. Outlet (OUTPUT)

1.3.2.2 Power Distribution Unit (AC200-240V, 2U, 16 Outlets)

There are 16 outlets.

Figure 1.11 Power Distribution Unit (AC200-240V, 2U, 16 Outlets)



1. Main line switch
2. Outlet (OUTPUT)

Chapter 2

Rack Installation

This chapter describes the procedure for installing the ETERNUS DX in a rack. Make sure to check "Safety Precautions" before starting the installation. Also refer to the rack manual.



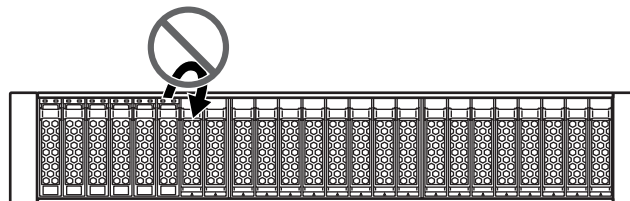
- Wear a wrist strap or touch a metal part to discharge the human body's natural static electricity before starting each operation. Failure to discharge static electricity may cause failure in the ETERNUS DX.
- If components are installed in a way other as described in this chapter, damage and/or device failure or electrical shock may occur.
- Do not install the ETERNUS DX in the rack with cables, such as power cords, connected.
- The ETERNUS DX contains delicate components, and should be handled gently. Do not drop or knock the ETERNUS DX against the rack when installing it. Also, do not knock the other devices installed in the rack.
- The center of gravity must be taken into consideration to prevent a rack from toppling over. Enclosures should generally be installed from bottom to top to lower the center of gravity and to ensure the safe use of racks.

Do Not



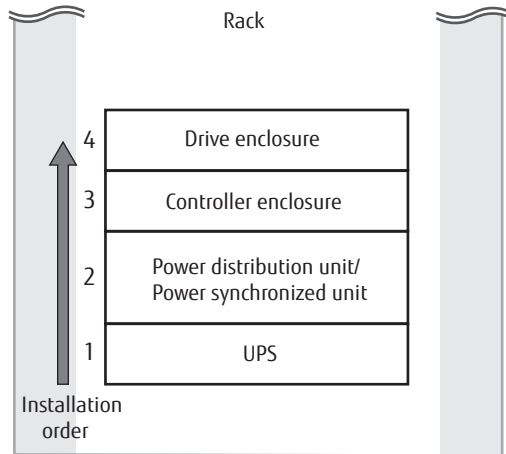
- Do not uninstall the drives that are installed by default or move them to any other slot.

Contact your sales representative or maintenance engineer if drives that are installed by default need to be uninstalled or moved to another slot.



Note

- If the storage system is installed at the bottom of a rack, a space for the surplus of cables may not be available in some racks, preventing the storage system from being pulled out when maintenance work is required. In this case, secure a space of 1U or more at the bottom when installing the storage system.
- To install an enclosure, power distribution units, power synchronized units, and UPS units in a single rack, mount the devices in the following order (from bottom to top).



2.1 Installing Power Distribution Unit (for Regions other than the EMEIA, North American, Central American, and Caribbean Regions)

This section describes how to install the power distribution unit in a rack.



Do Not



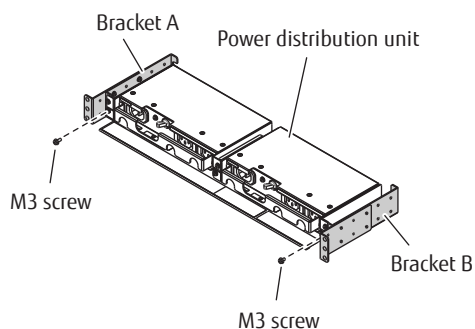
- Do not connect any devices other than the ETERNUS DX to the power distribution unit.

2.1.1 Installing Power Distribution Unit (1U)

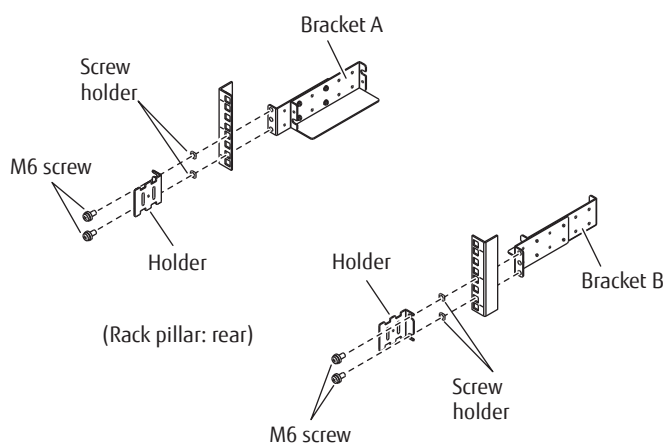
This section describes how to install the 1U power distribution unit in a rack.

Procedure

- 1 Remove the two brackets temporarily attached to the power distribution unit.
Remove the two M3 screws from the front of the power distribution unit to free the brackets.

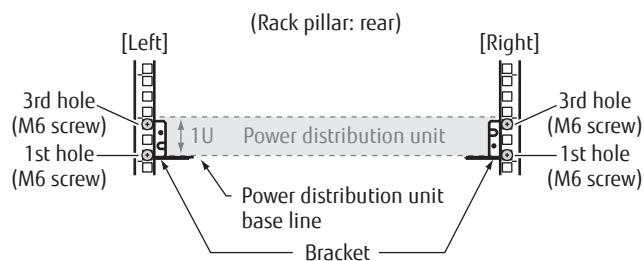


- 2 Attach the brackets and holders to the rack.

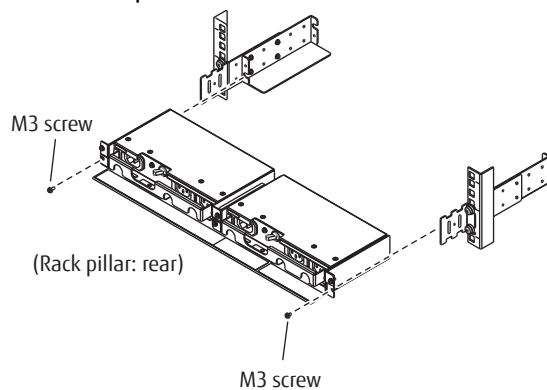


The four M6 screw positions for the brackets are determined relative to the power distribution unit base line.

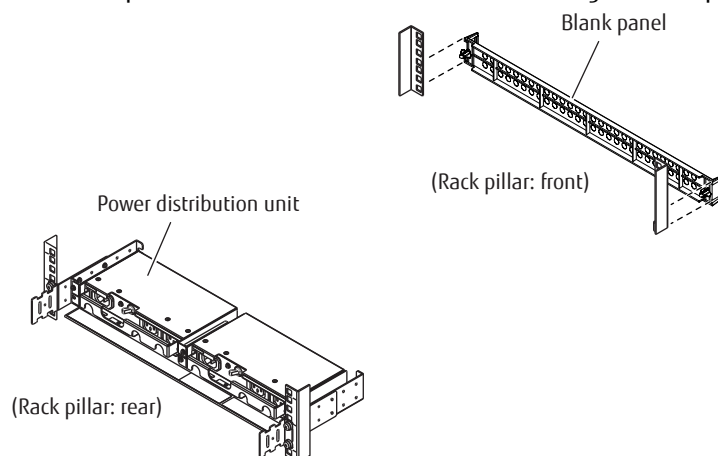
The four M6 screws should be inserted in the 1st and 3rd holes above the base line.



- 3 Install the power distribution unit in the rack.
Fasten the power distribution unit to the bracket with the two M3 screws removed in [Step 1](#).



- 4 Attach the blank panel to the front side of the rack.
The blank panel should be attached at the same height as the power distribution unit.



End of procedure

2.1.2 Installing Power Distribution Unit (2U)

This section explains how to install a 2U power distribution unit (12 outlet type or 16 outlet type) in a rack.

Note

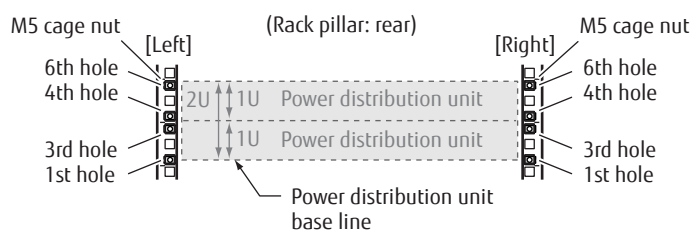
This section explains how to install a 12 outlet type power distribution unit as an example. This installation method can also be applied to a 16 outlet type power distribution unit.

Procedure

- 1 Attach the M5 cage nuts to the rear rack pillar.

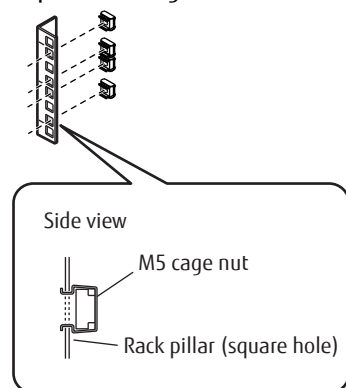
- Attachment positions

On either side, insert eight M5 cage nuts in the 1st, 3rd, 4th, and 6th holes above the power distribution unit base line.

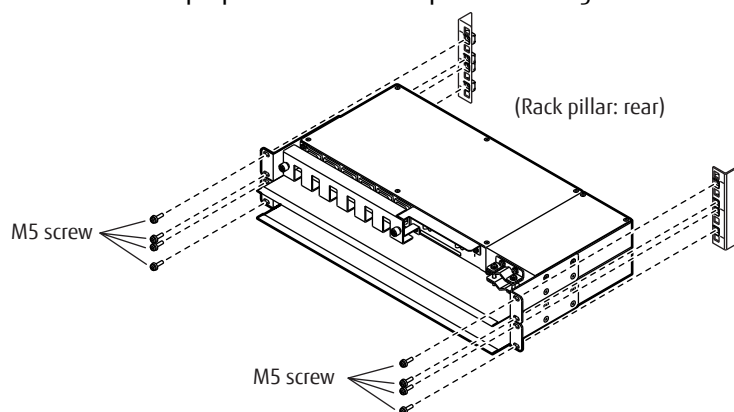


- Attachment procedure

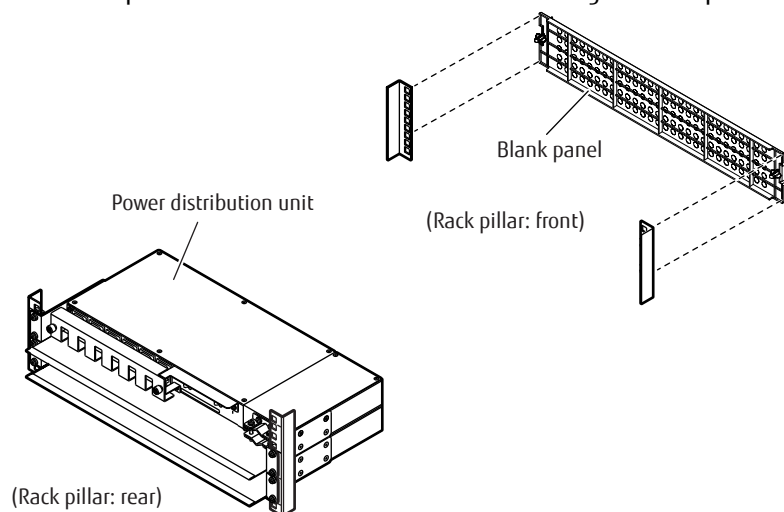
Clip the M5 cage nut tabs into the desired hole from the inside.



- 2 Install the power distribution unit in the rack.
Fasten it to the prepared holes in the pillars with eight M5 screws.



- 3 Attach the blank panel to the rack front.
The blank panel should be attached at the same height as the power distribution unit.



End of procedure

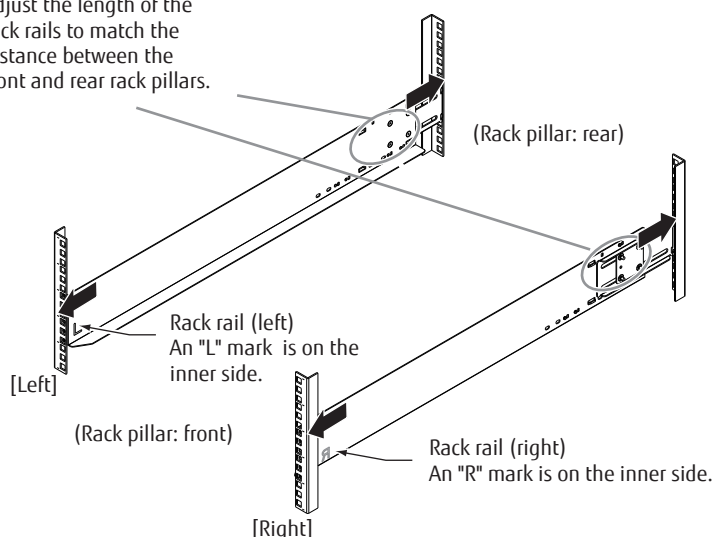
2.2 Controller Enclosure Installation (for Regions other than the EMEA, North American, Central American, and Caribbean Regions)

This section describes how to install the controller enclosure in a rack.

Procedure

- 1 Adjust the sizes of the rack rail (for left side) and the rack rail (for right side) to fit the rack.
Loosen the M4 screws to adjust the length of the rack rails to match the distance between the front and rear rack pillars. Leave the M4 screws slightly unscrewed, as the rack rails must be attached to the rack before they can be completely tightened.

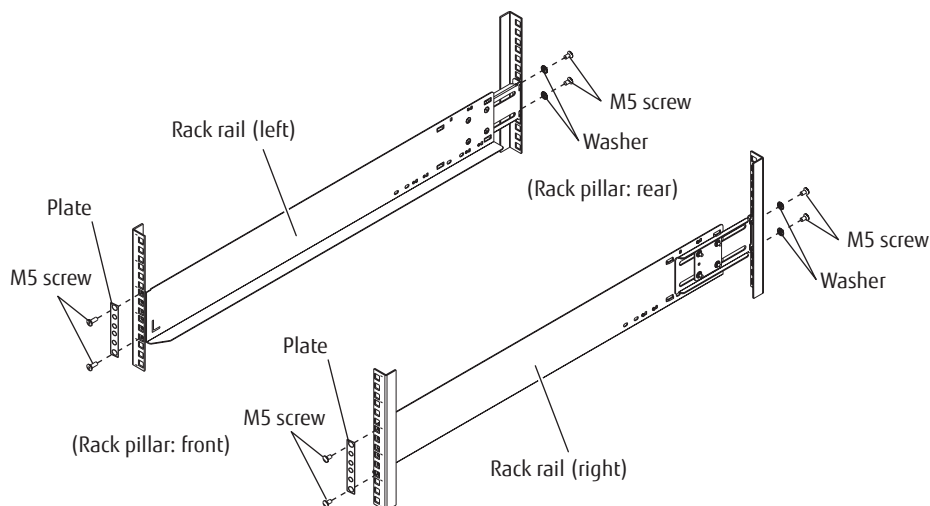
Loosen the M4 screws to adjust the length of the rack rails to match the distance between the front and rear rack pillars.



- 2 Attach the rack rails to the rack.
Use the two plates to fasten the rack rails to the front rack pillars. Use the washers to fasten the rack rails to the rear rack pillars.

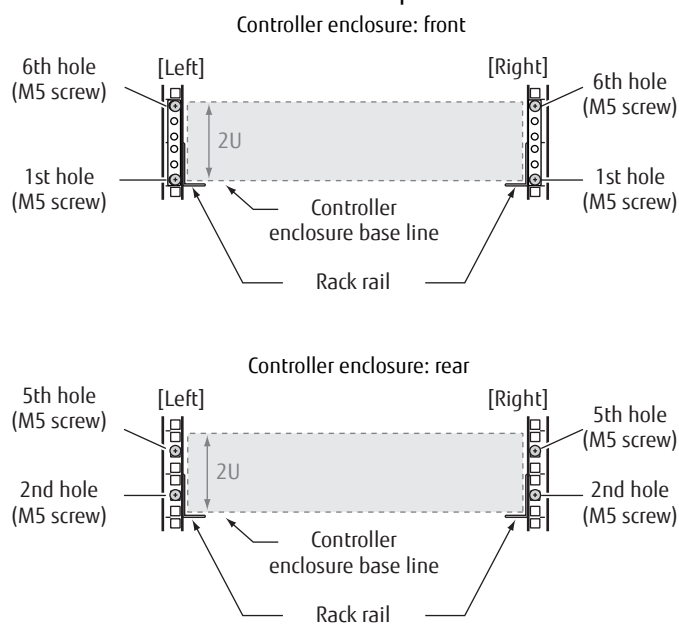
Note

Make sure to attach the rack rails to rack pillars so that they fit exactly together without any space between them.



The M5 screw positions for the rack rails are determined by the controller enclosure base line.

Insert the M5 screws in the 1st and 6th holes on the front rack pillars above the base line and in the 2nd and 5th holes on the rear rack pillars above the base line to fasten the rack rails.



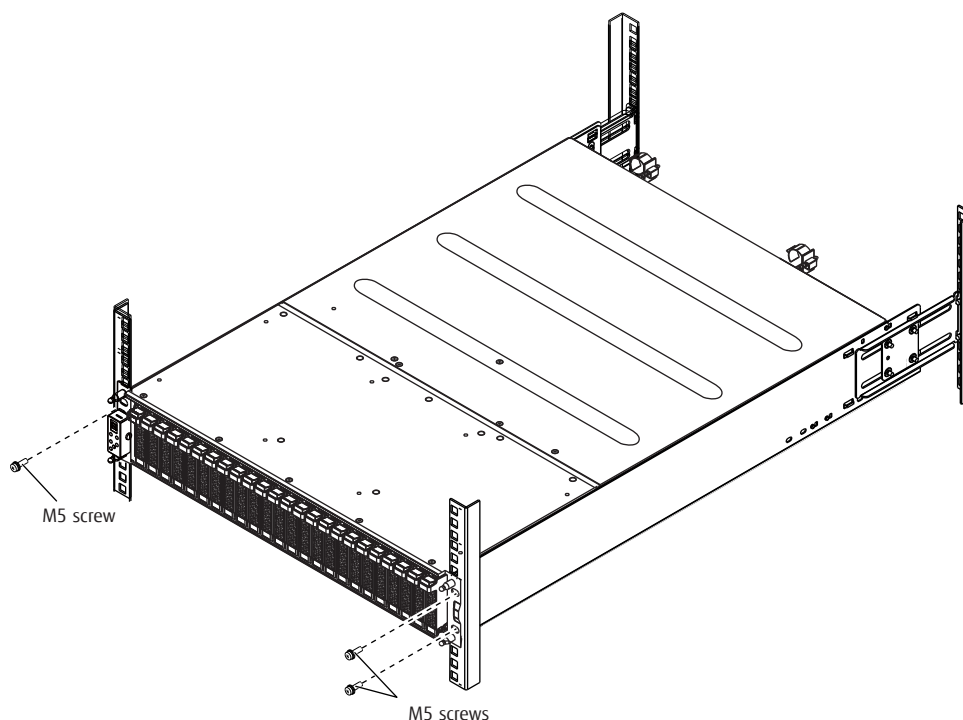
- 3 Tighten the M4 screws of the rack rails that were slightly unscrewed in [Step 1](#).

4 Install the controller enclosure in the rack.

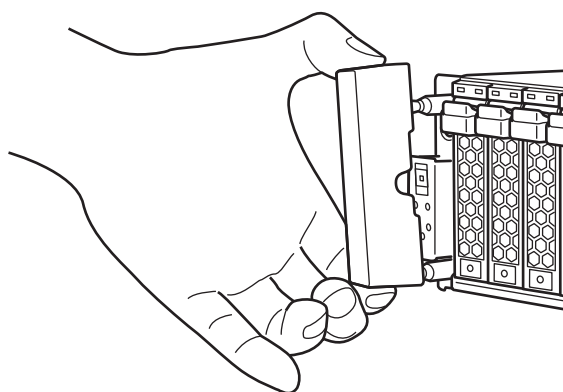


- When installing or removing the controller enclosure to or from the rack, make sure that the sides and the bottom of the controller enclosure are held by two or more people. Failure to do so may cause injury.

5 Fasten the controller enclosure in the rack. Use three M5 screws to fasten it in the rack pillar.



6 Attach the flange cover.



End of procedure

2.3 Drive Enclosure Installation (For Regions other than the EMEA, North American, Central American, and Caribbean Regions)

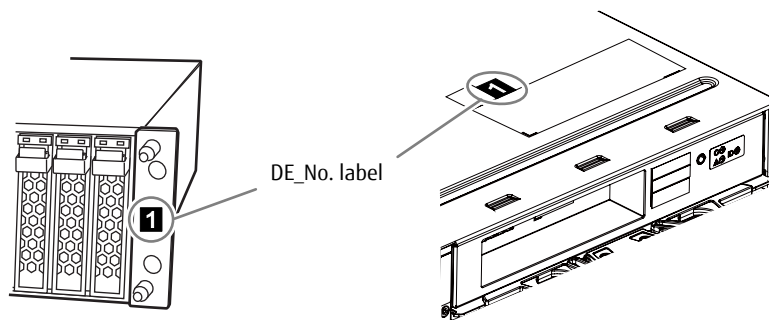
This section describes how to install a drive enclosure in a rack.

IMPORTANT

Drive enclosures must be installed above the controller enclosure. When installing multiple drive enclosures, install them in the order of the "DE_No. label" numbers that are attached to the drive enclosures. The DE_No. labels are attached on the following locations.

Right front side of the drive enclosure

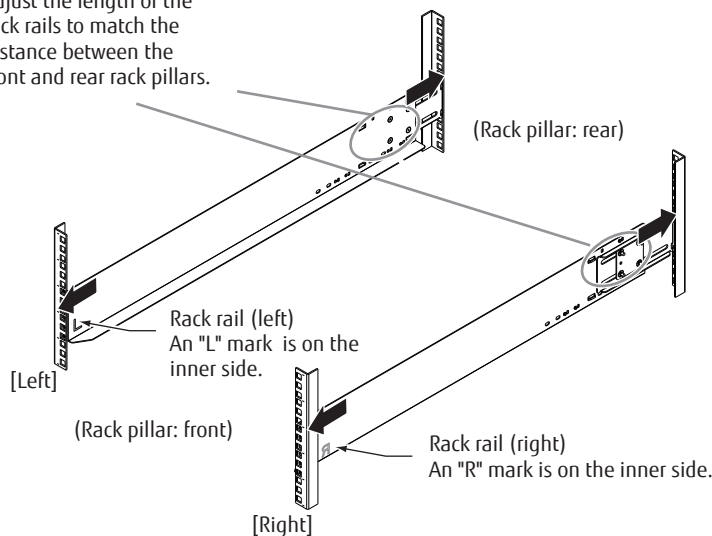
Upper right rear side of the drive enclosure



Procedure

- 1 Adjust the sizes of the rack rail (for left side) and the rack rail (for right side) to fit the rack.
Loosen the M4 screws to adjust the length of the rack rails to match the distance between the front and rear rack pillars. Leave the M4 screws slightly unscrewed, as the rack rails must be attached to the rack before they can be completely tightened.

Loosen the M4 screws to adjust the length of the rack rails to match the distance between the front and rear rack pillars.

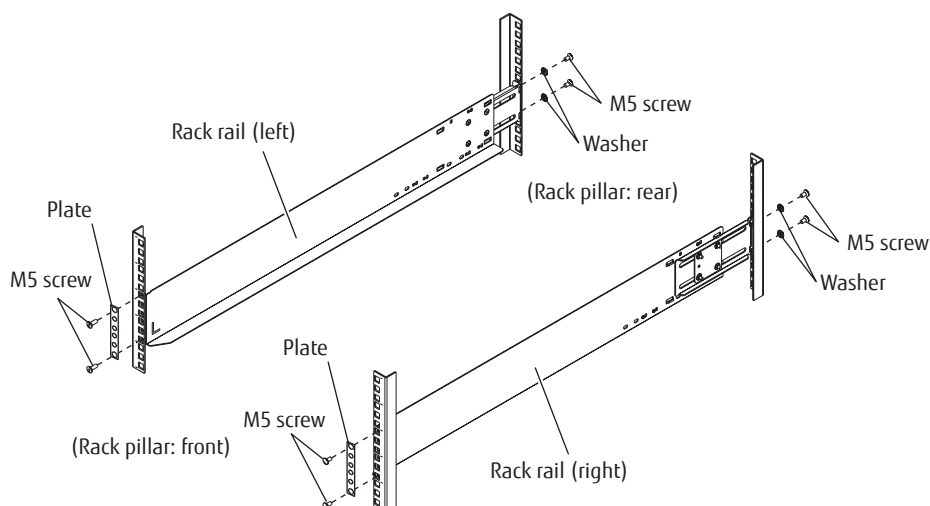


2 Attach the rack rails to the rack.

Use the two plates to fasten the rack rails to the front rack pillars. Use the washers to fasten the rack rails to the rear rack pillars.

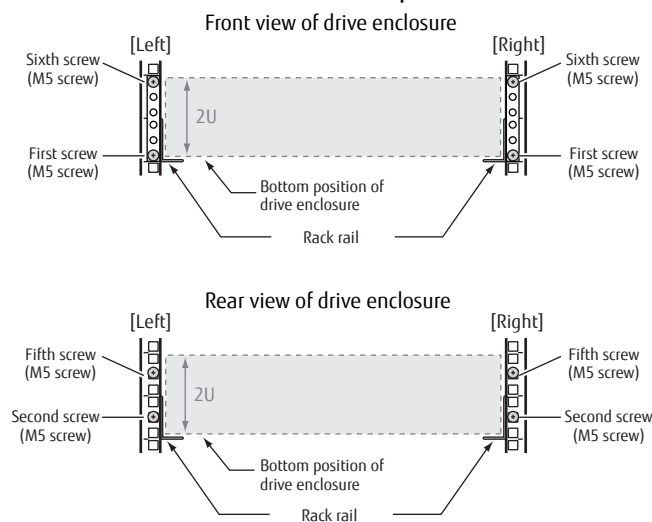
Note

Make sure to attach the rack rails to rack pillars so that they fit exactly together without any space between them.



The M5 screw positions for the rack rails are determined by the drive enclosure base line.

Insert the M5 screws in the 1st and 6th holes on the front rack pillars above the base line and in the 2nd and 5th holes on the rear rack pillars above the base line to fasten the rack rails.



3 Tighten the M4 screws of the rack rails that were slightly unscrewed in [Step 1](#).

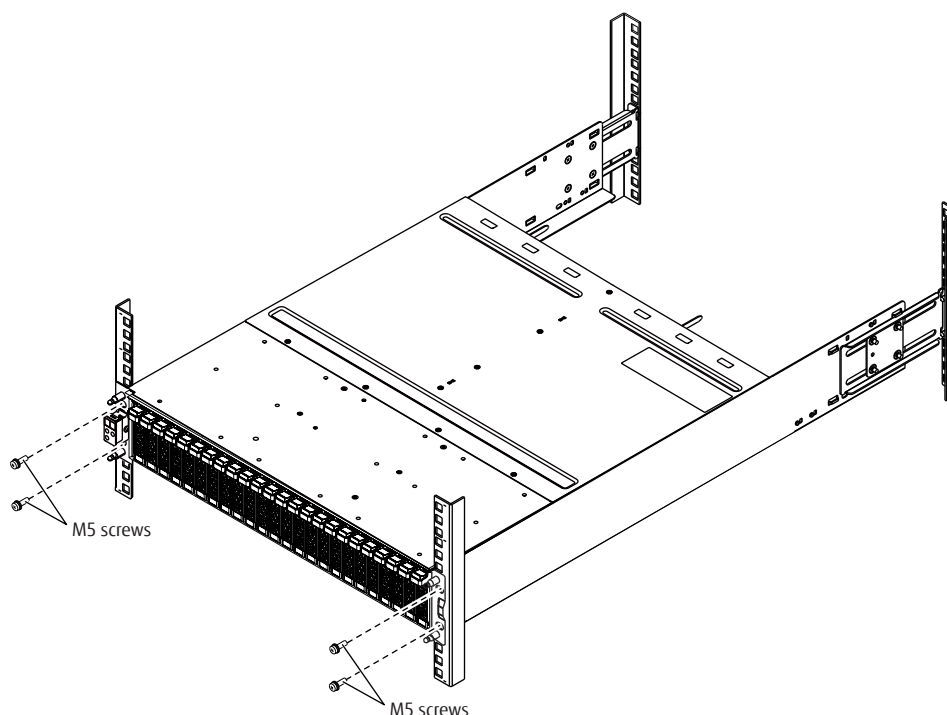
4 Install the drive enclosure in the rack.



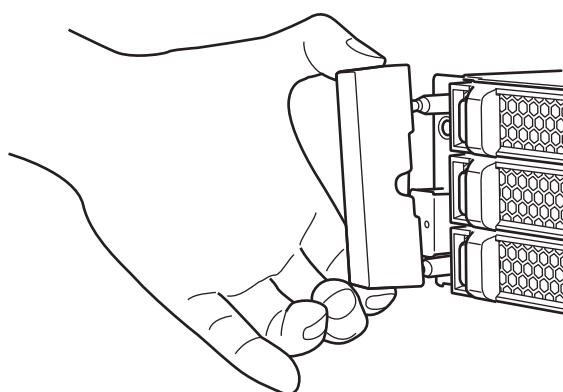
- When installing or removing the drive enclosure to or from the rack, make sure that the sides and the bottom of the drive enclosure are held by two or more people. Failure to do so may cause injury.

5 Fasten the drive enclosure in the rack.

Use four M5 screws to fasten it in the rack pillar.



6 Attach the flange cover.



End of procedure

Chapter 3

Checking the Configuration Environment

This manual explains how to configure the system with the ETERNUS DX, taking a basic configuration as an example.

3.1 System Configuration Example

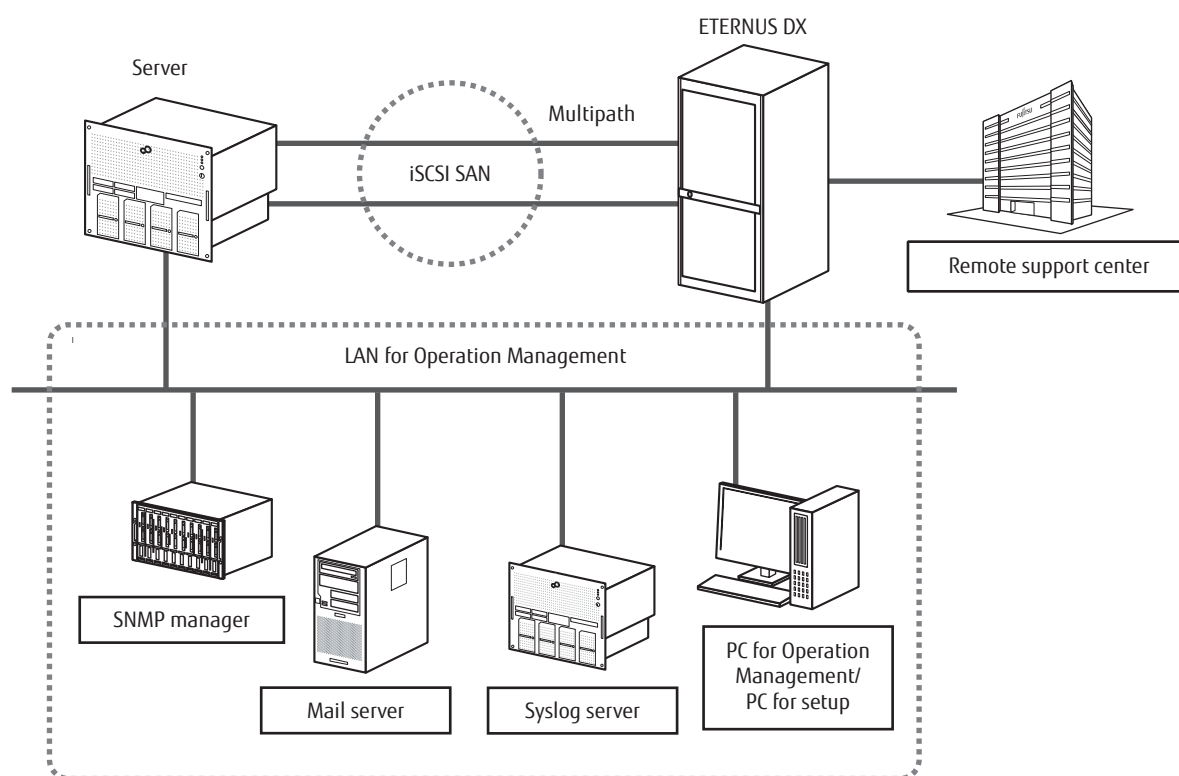
This section describes the procedure for the following system configuration as an example.

- iSCSI interface connection
- Multipath connection using the ETERNUS Multipath Driver
- Event notification (SNMP trap transmission, email notification, syslog notification, and remote support) via LAN
- Generation management of data by acquisition of backup based on the day of the week with generation copy using SnapOPC+

■ Configuration Diagram

The following diagram shows a system configuration example.

Figure 3.1 System Configuration Example



■ Server (Host) Environment

Table 3.1 Server (Host) Environment

Item	Explanation
Server OS	Windows Server 2008
Connection Configuration	iSCSI connection, duplicated with multipath connection
Multipath Driver	ETERNUS Multipath Driver

To connect the server and the ETERNUS DX via a switch, setting up of the switch must be performed. For details on this setting, refer to relevant manuals of the switch.

3.2 Server Connection Preparation

Prepare the server to connect to the ETERNUS DX.

A host bus adapter (HBA) that matches the connection interface that is to be used and a driver for the HBA are required. Some types of HBA require utility software. Prepare the required environment for the HBA that is to be used by referring to the HBA manual.

This section uses an iSCSI connection as an example to explain the required preparation for server connection.

3.2.1 Driver Preparation

Prepare required drivers and utilities.

- LAN card driver for iSCSI
 - LAN driver
 - Supported version of iSCSI Software Initiator

This is already installed in a server that runs Windows Server 2008 or later.

- ETERNUS Multipath Driver



- Before installing the ETERNUS Multipath Driver, make sure that the server is not connected to the ETERNUS DX. If the server is connected, shut down the server, remove the cable, and then restart the server.

3.2.2 Driver Installation

Install the LAN driver and the ETERNUS Multipath Driver.

■ LAN Driver Installation

The following procedure explains how to install the LAN driver.
When using the onboard LAN card, skip this procedure.

Procedure

- 1 To install a LAN driver, refer to the instructions for the LAN card.
- 2 Check that the driver has correctly been installed.

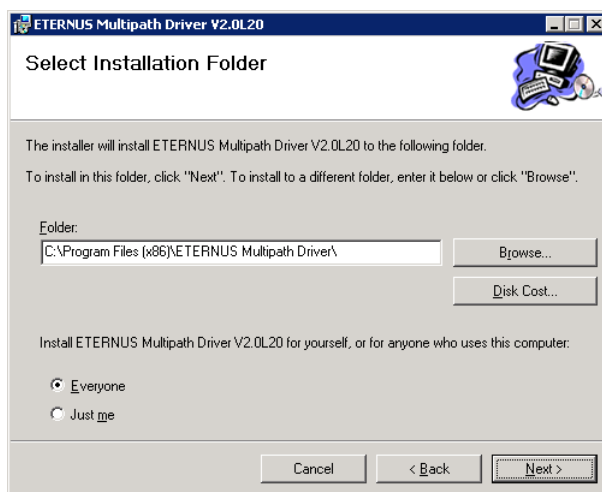
End of procedure

■ ETERNUS Multipath Driver Installation

The following procedure explains how to install the ETERNUS Multipath Driver.

Procedure

- 1 Insert the CD-ROM into the server, then from Windows Explorer double-click on "setup.msi" in the "English" folder of the CD-ROM.
A screen to confirm the start of installation appears.
- 2 Click the [Next] button.
A screen to specify the installation directory of the ETERNUS Multipath Driver and which user installs the driver appears.
- 3 To change the installation directory, click the [Browse] button and select the installation directory. To leave the settings unchanged, click the [Next] button.



Note

For the user who installs the driver, select [Everyone] for normal operations.

If [Just me] is selected, users other than the one who installed the driver are not allowed to uninstall or overwrite the installation of it.

The option that is selected here does not affect the operation of the ETERNUS Multipath Driver after installation.

A screen to confirm execution of the installation appears.

- 4 Click the [Next] button.
When installation is complete, a message appears.
- 5 Click the [Close] button.
A screen to confirm whether to restart the computer appears.
- 6 Restart the server.

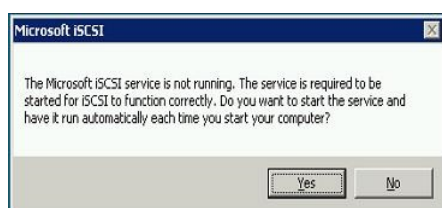
End of procedure

3.2.3 iSCSI Initiator Parameter Settings

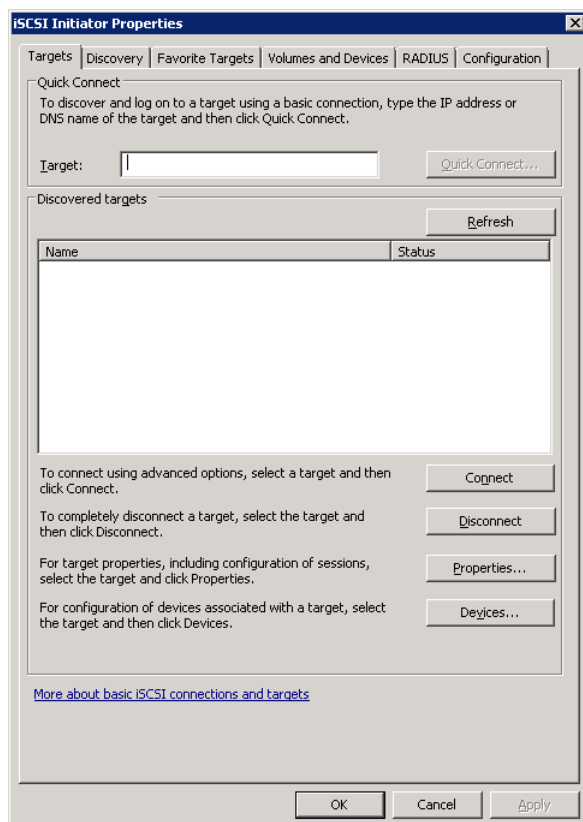
The following procedure explains how to set the iSCSI initiator parameters. This section shows how to set an iSCSI initiator name.

Procedure

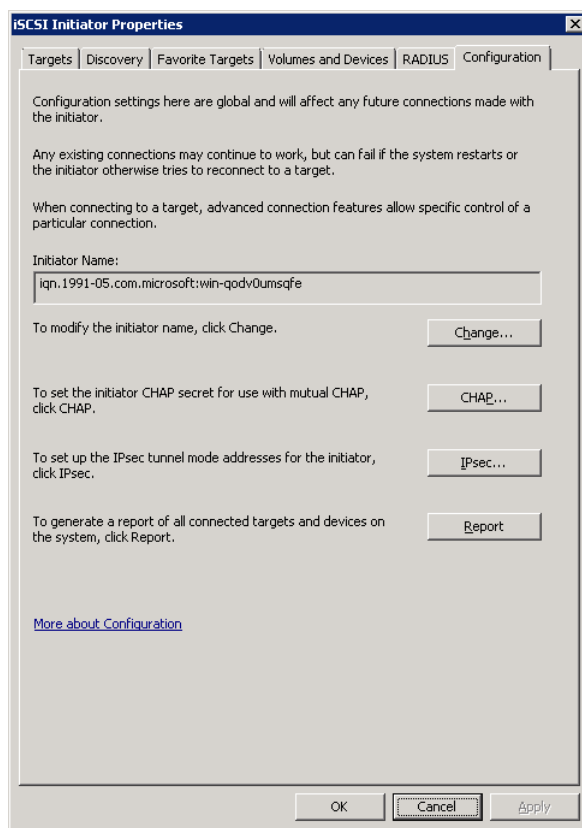
- 1 In [Administrative Tools], click [iSCSI Initiator].
- 2 For the first startup, the dialog box that is shown below appears.
If there is no problem with service startup settings, click the [Yes] button.



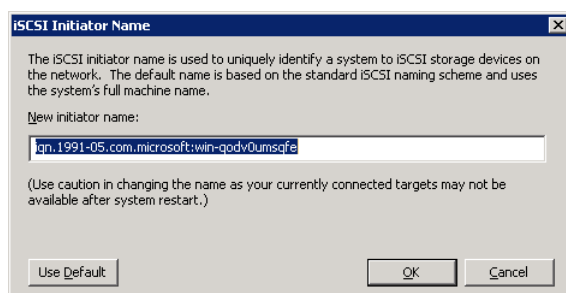
- 3 On the [iSCSI Initiator Properties] screen, click the [Configuration] tab.



- 4 The currently set initiator name is displayed.
Click the [Change] button.



- 5 On the [iSCSI Initiator Name] screen, specify the initiator name and click the [OK] button.
To leave the initiator name unchanged, click the [OK] button.



Note

To use the default initiator name, also click the [Change] button.
This allows you to continue to use this initiator name even after changing the "server name".

- 6 Shut down the server.

Note

After this, the settings for the ETERNUS DX must be completed before connecting the ETERNUS DX to the server. In order to perform these settings, turn off the server.

End of procedure

3.3 Preparing the PC Terminal for Setup

The initial settings are performed by using a Web browser on the PC terminal.
Prepare and set up the PC terminal before the initial settings.

Preparing the PC terminal

Prepare the PC terminal that contains the following environment:

- Web browser

Usable Web browsers are shown below. Using Web browsers other than the following is possible, but proper operation is not guaranteed.

- Microsoft Internet Explorer 7.0, 8.0, 9.0, 10.0 (desktop version), 11.0 (desktop version)
- Mozilla Firefox 3.6.x, ESR 10.0.x, ESR 17.0.x, ESR 24.0.x

Setting up the PC terminal

Set up the PC terminal with the following procedure:

Procedure

- 1 Set the IP address and subnet mask of the PC terminal.
Set the following values.
IP address: 192.168.1.2
Subnet mask: 255.255.255.0
- 2 Check the settings of the Web browser.
For details on the required settings, refer to "Configuration Guide (Web GUI)".

End of procedure

3.4 LAN Connection Preparation for Operation Management

3.4.1 Completing and Attaching the Network Settings Label

Enter the network setting information on the Network Settings label. Attach the Network Setting label on the rack wall near the controller enclosure to avoid losing it.

Figure 3.2 Network Setting Label

Network Setting	
IP address of MNT port	:
IP address of FST port	: . . .
Subnet Mask of FST port	: . . .
IP address of RMT port	:

Complete the following items in the Network Settings label.

- IP address of MNT port
Enter the IP address for the MNT port of the ETERNUS DX. The MNT port is a LAN port that is used to perform operation management connection.
- IP address of FST port
This item is not used. No information needs to be entered for this item.
- Subnet Mask of FST port
This item is not used. No information needs to be entered for this item.
- IP address of RMT port
Enter the IP address for the RMT port of the ETERNUS DX. The RMT port is a LAN port that is used during initial setup and to connect to the remote support center.

3.4.2 LAN Related Specifications

■ Network Communication Protocols

The usable LAN ports and functions are different depending on the usage and protocol.

The following table shows how the LAN ports may be used (by usage and protocol).

Table 3.2 LAN Port Availability

Usage	Protocol	tcp / udp	Port number	Direction	Master CM		Slave CM		Remarks
					MNT	RMT	MNT	RMT	
ETERNUS Web GUI	http / https	tcp	80 / 443	from	○	○	△ (*1)	△ (*1)	Accessed from a Web browser
ETERNUS CLI	telnet / ssh	tcp	23 / 22	from	○	○	△ (*1)	△ (*1)	-
	ftp (client)	tcp	21	to	○	○	△ (*1)	△ (*1)	-

Usage		Protocol	tcp / udp	Port number	Direction	Master CM		Slave CM		Remarks
						MNT	RMT	MNT	RMT	
SNMP	agent	snmp	udp	161	from	○	○	○	○	–
	trap	snmp trap	udp	Must be set	to	○ (*2)	○ (*2)	×	×	–
SMI-S		http / https	tcp	5988 / 5989	from	○	×	×	×	Used for SMI-S client communication
E-mail		smtp (client)	tcp	25 (*3)	to	○ (*2)	○ (*2)	×	×	Used for failure notification, etc.
NTP		NTP (client)	udp	123	to	○ (*2)	○ (*2)	×	×	–
REMCS (remote support)	smtp	tcp	Must be set	to	○ (*2)	○ (*2)	×	×	×	Used for failure notification, etc.
	http (client)	tcp	Must be set	to	○ (*2)	○ (*2)	×	×	×	Used for firmware download, etc.
AIS Connect (remote support)		https (client)	tcp	443	to	○ (*2)	○ (*2)	×	×	–
Syslog (event notification and audit log sending)		Syslog	udp	Must be set	to	○ (*2)	○ (*2)	×	×	–
RADIUS		Radius	udp	Must be set	to	○ (*2)	○ (*2)	×	×	–
ping		ICMP	–	–	from	○ (*2)	○ (*2)	×	×	–
ETERNUS DX Discovery		Unique protocol	udp	9686	from	○	×	×	×	–

○: Possible / △: Partially possible / ×: Not possible

***1:** Only the following functions are available:

- Checking the ETERNUS DX status
- Switching the Master CM

***2:** May use either the MNT port or RMT port.

***3:** Modifiable

For details on the port numbers for the ETERNUS SF Software, refer to the manual of each Storage Foundation Software ETERNUS SF.

■ Communication Modes

The default LAN operation mode is "Auto Negotiation" which allows the ETERNUS DX to automatically recognize 1000Base-T/100Base-TX/10Base-T and Full/Half-Duplex connections. However, some devices may require that a fixed communication mode be set.

Chapter 4

Connecting Cables

This chapter explains how to connect various cables to the ETERNUS DX.



- Wear a wrist strap or touch a metal part to discharge the human body's natural static electricity before starting each operation. Failure to discharge static electricity may cause failure in the ETERNUS DX.

4.1 Host Interface Cable Connection

Connect the ETERNUS DX to the connection destination using host interface cables. The connection procedure varies depending on the type of host interface that is used for the ETERNUS DX.

Prepare the same number of host interface cables as the number of host interface ports.

This section uses an iSCSI 1Gbit/s host interface (CA) as an example to show the connection procedure.

IMPORTANT

- To help with host interface cable management and prevent incorrect connections, attach labels to the cables that show which end is for the connection origin and which end is for the connection destination.
- When connecting a host interface cable, check the direction of the connector tab and insert it all the way in firmly.

When disconnecting a host interface cable, pull out the connector while holding its tab.

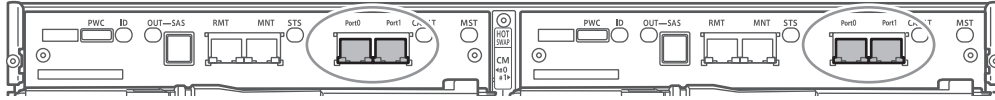
- If the host interface ports and host interface cable connectors have covers, remove the covers. Keep the removed covers in a safe place where they will not be lost.
- When connecting the cables, position them so that they will not obstruct replacement of the power supply unit or controllers by the maintenance engineer.

Note

This section uses a controller enclosure with two controllers as an example to explain the connection procedure. When one controller is installed, this procedure is only applied to Controller 0 (CM#0).

Procedure

- 1 Connect a host interface cable to the ETERNUS DX.
Insert the host interface cable connectors in the host interface ports (iSCSI) of Controller 0 (CM#0) and Controller 1 (CM#1).



- When connecting the host interface cables, position them so that they will not obstruct replacement of the power supply unit or controllers by the maintenance engineer.

- 2 Connect the host interface cable to the connection destination.
Connect the other end of the cable to the connection destination.

End of procedure

4.2 Drive Enclosure Connection

When a drive enclosure is installed, connect the drive enclosure to the controller enclosure with a mini SAS HD cable between enclosures. When multiple drive enclosures are installed, connect the drive enclosures with mini SAS HD cables between enclosures.

0.75m mini SAS HD cables between enclosures are provided with drive enclosures.

The connection type between Controller 0 and the I/O modules for Controller 0 is different from that between Controller 1 and the I/O modules for Controller 1.

Between Controller 0 and I/O module line 0, connect the source DI (OUT) port and the destination DI (IN) port in ascending order of the drive enclosure numbers (DE-ID) of the drive enclosure.

Between Controller 1 and I/O module line 1, contrary to the line 0, connect the source DI (OUT) port and the destination DI (IN) port in descending order of the drive enclosure numbers (DE-ID) of the drive enclosure.

Do not connect anything to the last DI port that is nearest to the edge.

The last ports nearest to the edge are the DI (OUT) port of I/O module 0 in the drive enclosure of the largest DE-ID and the DI (OUT) port of I/O module 1 in the drive enclosure of the smallest DE-ID.

The connection configuration of cables between enclosures and the last DI port location when two drive enclosures are installed are shown below.

Figure 4.1 Connecting Cables Between Enclosures (When Only One Controller is Installed)

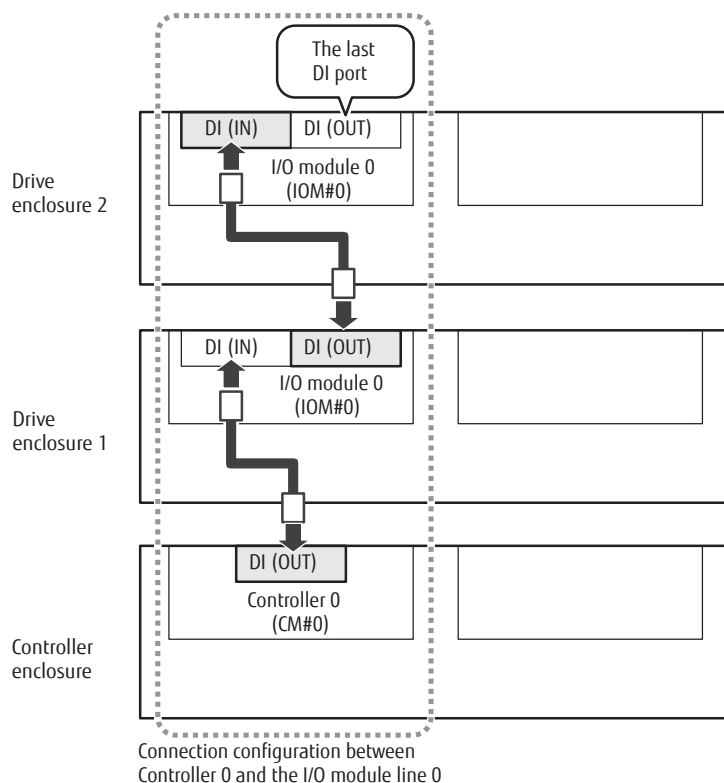
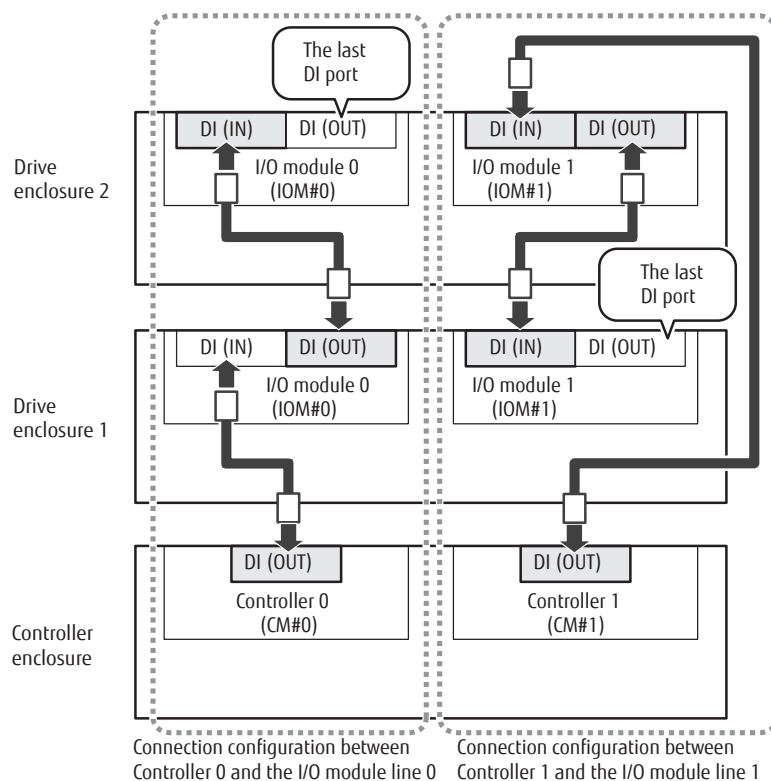


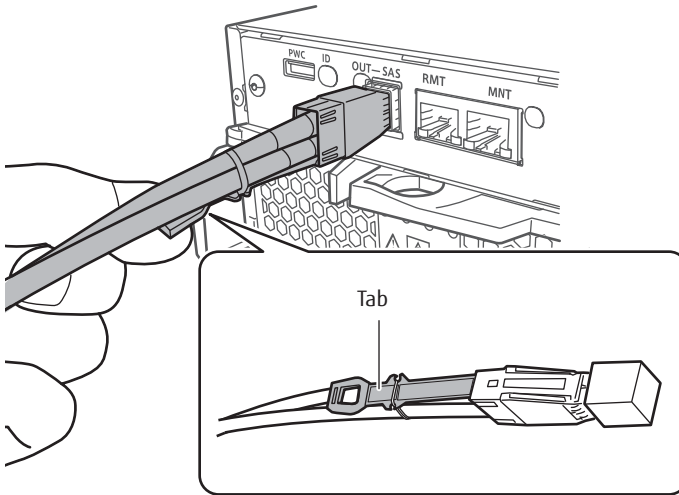
Figure 4.2 Connecting Cables Between Enclosures (When Two Controllers are Installed)



The following procedure explains how to connect the mini SAS HD cable between enclosures.

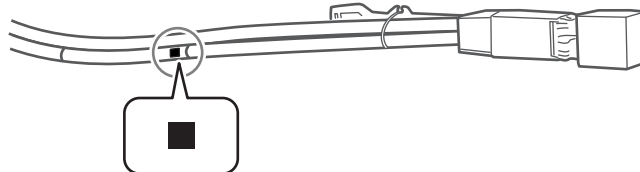
IMPORTANT

- To help with management of the mini SAS HD cable between enclosures and prevent incorrect connections, make sure to attach the destination labels to the connectors of the cables.
 - When connecting the mini SAS HD cable between enclosures, check the direction of the connector (the tab must be pointed downward) and firmly insert all the way in.
- To disconnect the mini SAS HD cables between enclosures, hold the tab and then pull out the connector.

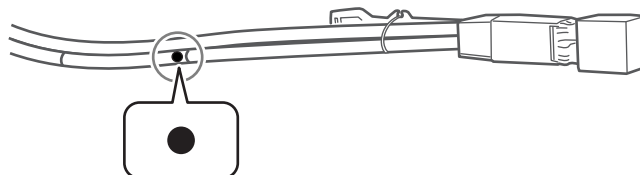


Procedure

- 1 Attach the destination labels to the connectors of the mini SAS HD cables between enclosures.
 - (1) Before attaching the destination labels, check the connection destination of the mini SAS HD cables between enclosures.
 - The connector on which the "■" symbol is printed is connected to the DI (OUT) port on the controller enclosure or the drive enclosure.

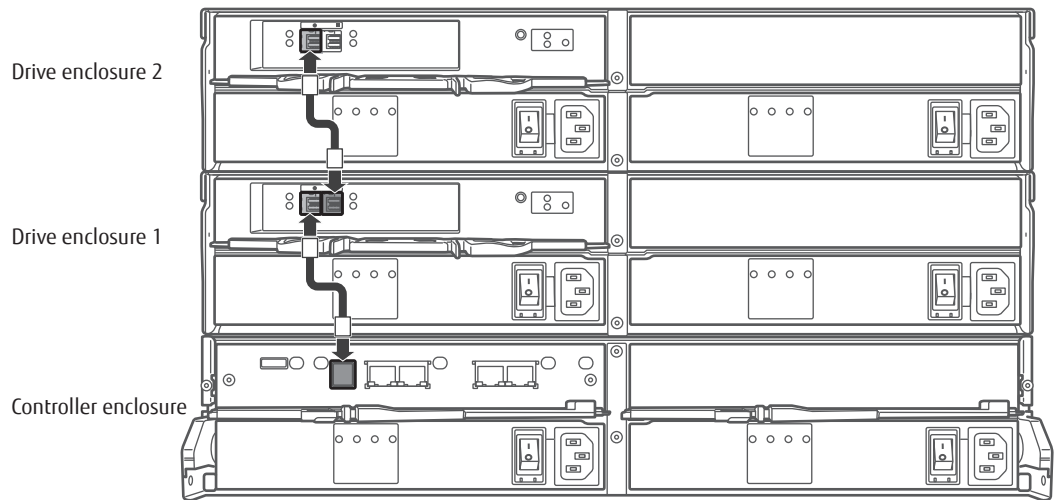


- The connectors on the cable with the "●" symbol are connected to the DI (IN) ports on the drive enclosure.

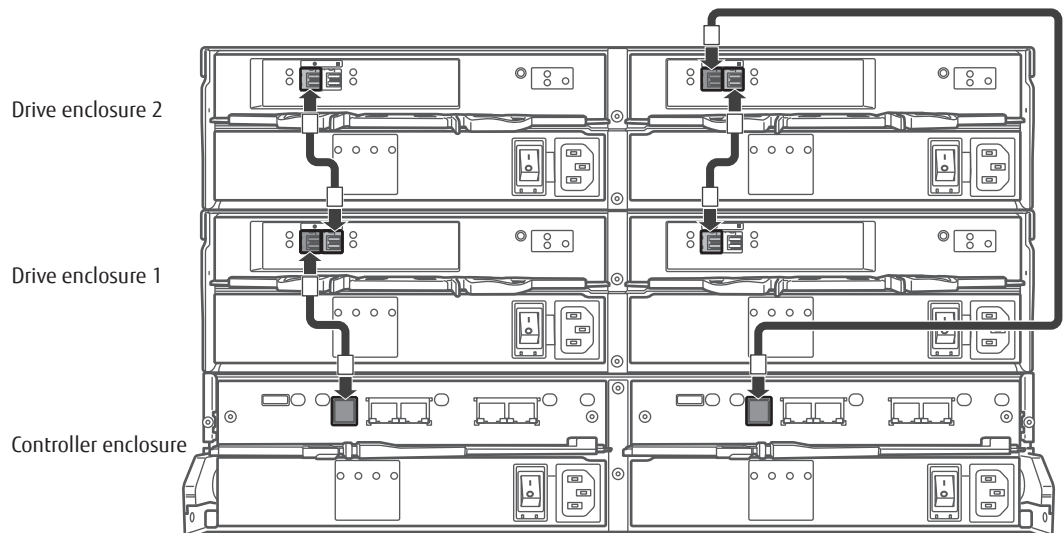


The following figures show the connection of the mini SAS HD cable between enclosures connecting the controller enclosure to drive enclosure 1 and connecting drive enclosure 1 to drive enclosure 2.

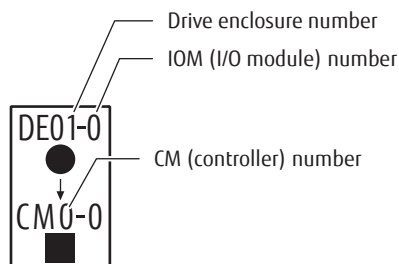
- When only one controller is installed



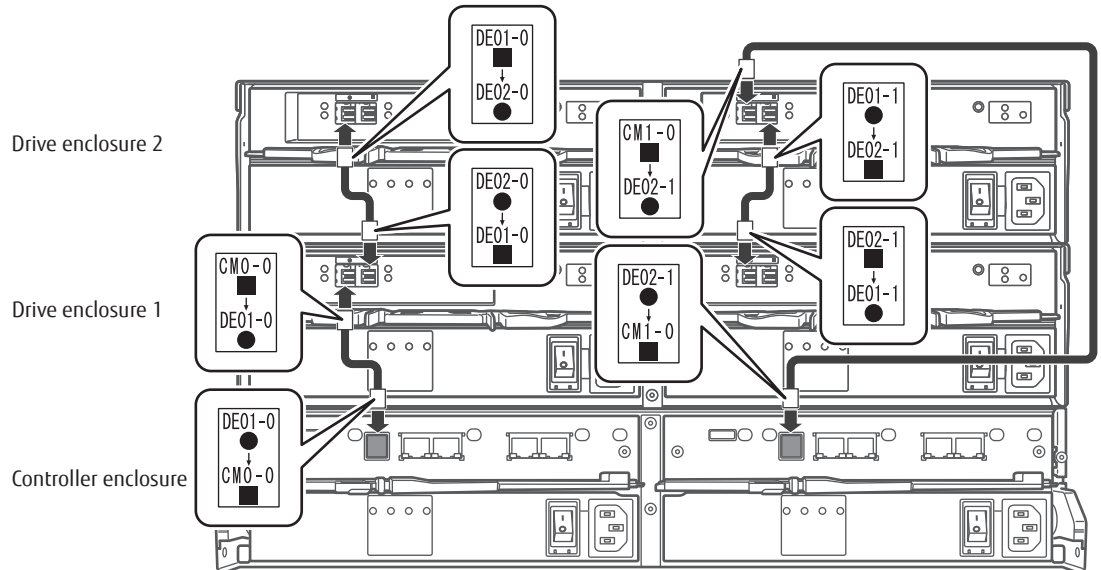
- When two controllers are installed



- (2) Attach the destination labels to the connectors of the mini SAS HD cables between enclosures. "Controller number" or "Drive enclosure number - IOM number" is printed on the destination labels in the "Connection origin DI port → Connection destination DI port" format. The "■" or "●" symbol is also printed on the destination labels. Carefully check the connection origin and connection destination, and then attach the destination labels.



The following figure shows an example of the destination label attachments on the mini SAS HD cables between enclosures that connect the controller enclosure to drive enclosure 1 and that connect drive enclosure 1 to drive enclosure 2.

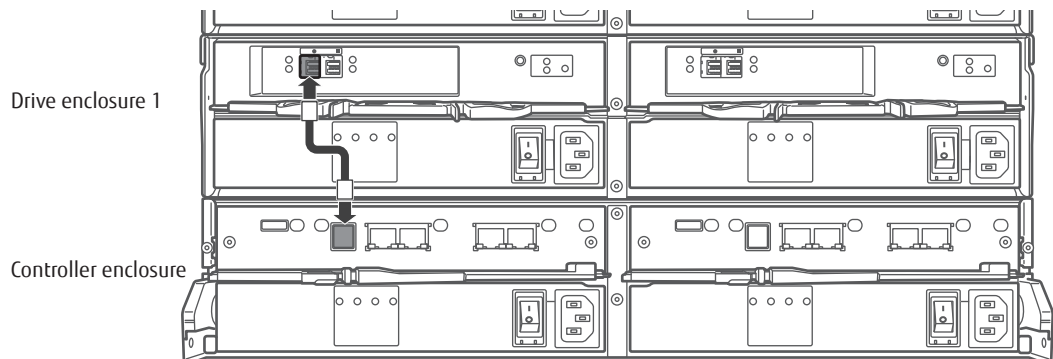


- 2 Connect the controller enclosure to the drive enclosure and connect between the drive enclosures.
Connect Controller 0 first.

- (1) Connect the controller enclosure to the drive enclosure.

Connect the DI (OUT) port of Controller 0 (CM#0) in the controller enclosure to the DI (IN) port of I/O module 0 (IOM#0) in drive enclosure 1 with the mini SAS HD cable between enclosures.

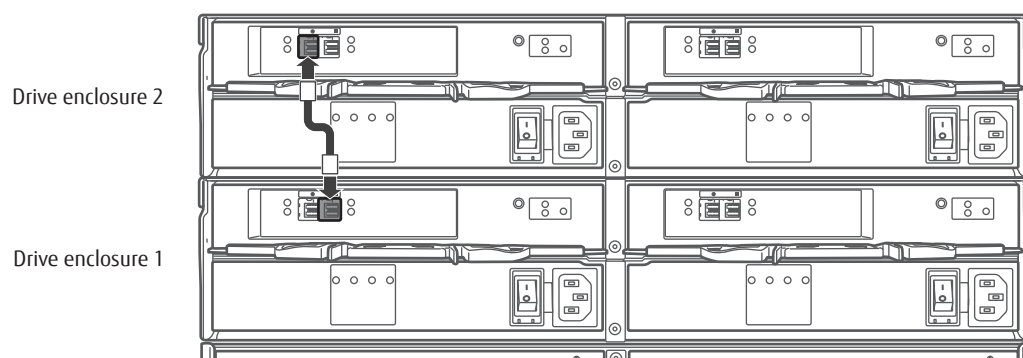
- (i) Connect the plug to be connected to DI (OUT) port, to the DI (OUT) port of the Controller 0 (CM#0).
- (ii) Connect the plug to be connected to DI (IN) port, to the DI (IN) port of the I/O module 0 (IOM#0).



- (2) Connect between the drive enclosures.

Connect the DI (OUT) port of I/O module 0 (IOM#0) in drive enclosure 1 to the DI (IN) port of I/O module 0 (IOM#0) in drive enclosure 2 with the mini SAS HD cable between enclosures.

Connect the cable in the same way as [Step \(1\)](#).

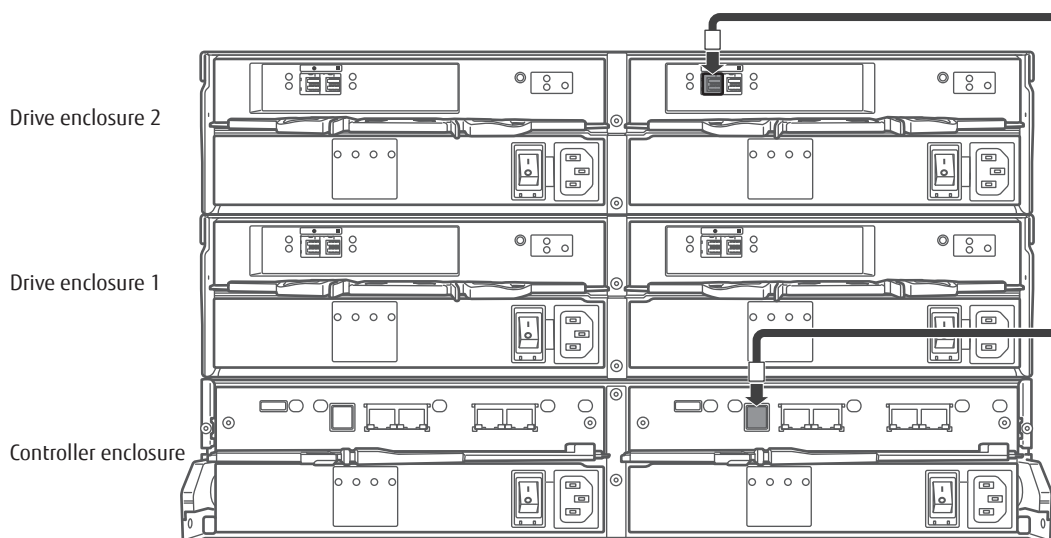


3 When two controllers are installed, connect Controller 1 next.

(1) Connect the controller enclosure to the drive enclosure.

Connect the DI (IN) port of I/O module 1 (IOM#1) in drive enclosure 2 to the DI (OUT) port of Controller 1 (CM#1) with the mini SAS HD cable between enclosures.

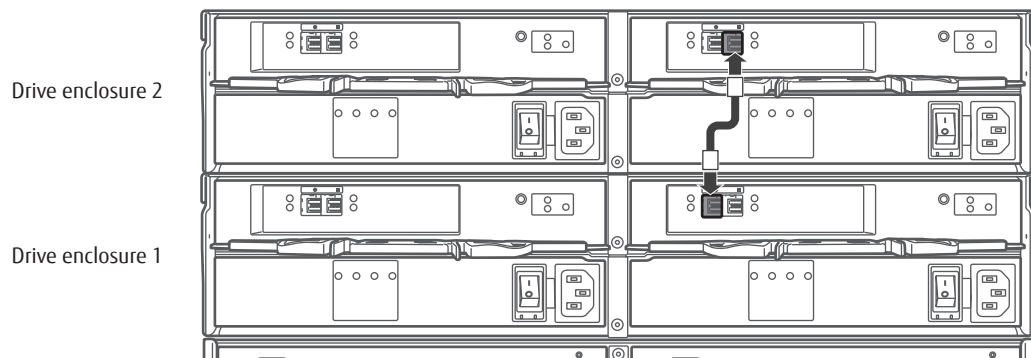
- (i) Connect the plug to be connected to DI (OUT) port, to the DI (OUT) port of the Controller 1 (CM#1) in the controller enclosure.
- (ii) Connect the plug to be connected to the DI (IN) port, to the DI (IN) port of the I/O module 1 (IOM#1) in drive enclosure 2.



(2) Connect between the drive enclosures.

Connect the DI (OUT) port of I/O module 1 (IOM#1) in drive enclosure 2 to the DI (IN) port of I/O module 1 (IOM#1) in drive enclosure 1 with the mini SAS HD cable between enclosures.

Connect the mini SAS HD cable between enclosures in the same way as [Step \(1\)](#).



End of procedure

4.3 Power Synchronized Unit Connection

When using a power synchronized unit for power control, connect the power synchronized unit to the ETERNUS DX.

Refer to "Configuration Guide (Power Synchronized Unit)" for details about power synchronized units, the procedure for connecting power synchronized units to the ETERNUS DX, and required settings.

4.4 Power Cord Connection

Connect the power cords to the ETERNUS DX.

IMPORTANT

The controller enclosure and drive enclosure have two power supply units (PSU#0 and PSU#1).
Make sure that the power cords are connected to all the power supply units.

4.4.1 When No Power Distribution Units are Installed

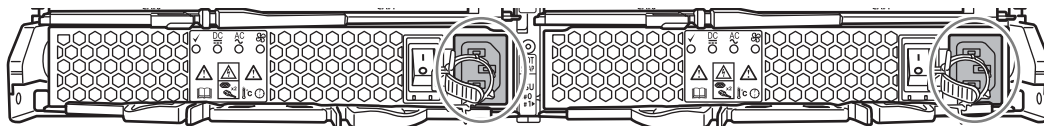
The following procedure explains how to connect the power cords when no power distribution units are installed.

IMPORTANT

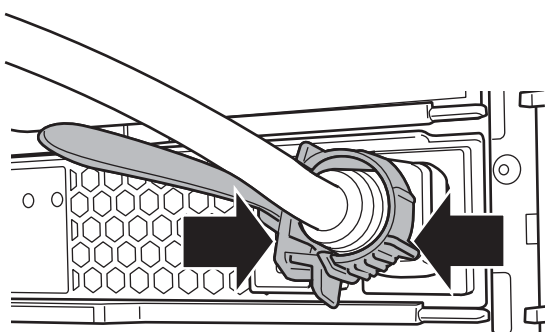
To help with power cord management and prevent incorrect connections, attach labels to the power cords and make a note of connection origins and destinations.

Procedure

- 1 Connect the power cord to the ETERNUS DX.
 - (1) Connect the power cord plugs to the power inlets of the power supply units.



- (2) Fasten the plug of the power cord with the release tie.
Wrap the release tie around the power cord and fasten the release tie from either side. Make sure that the release tie is not loose.



- 2 Connect the power cords to the socket.
Connect the plug at the other end of each power cord to the socket.

IMPORTANT

Connecting two power cords for each enclosure to different two power supply facilities improves the availability of the power supply facilities against failures.



Do Not



- Do not use the server service outlet to connect a power cord for the ETERNUS DX.

End of procedure

4.4.2 When 1U Power Distribution Unit is Installed (for Regions other than the EMEA, North American, Central American, and Caribbean Regions)

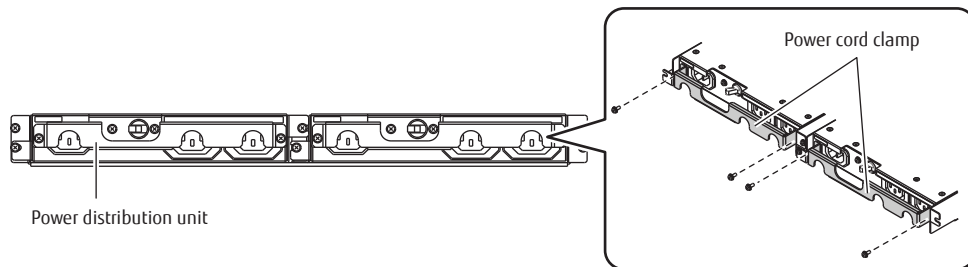
The following procedure explains how to connect the power cord when a 1U power distribution unit is installed.

IMPORTANT

To help with power cord management and prevent incorrect connections, attach labels to the power cords and make a note of connection origins and destinations.

Procedure

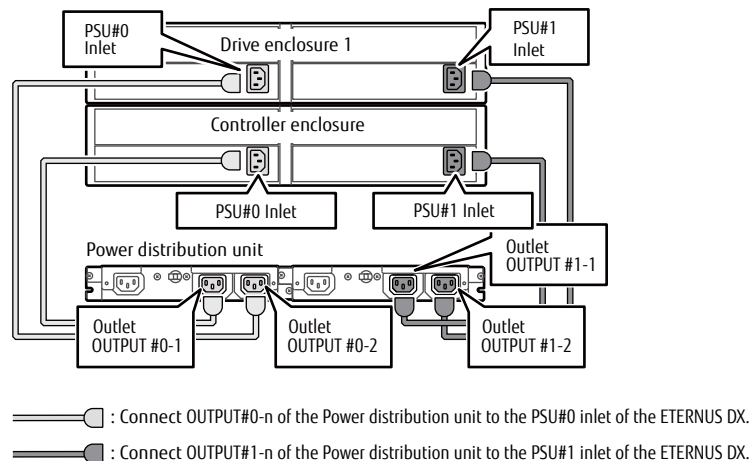
- 1 Remove the power cord clamp from the power distribution unit.



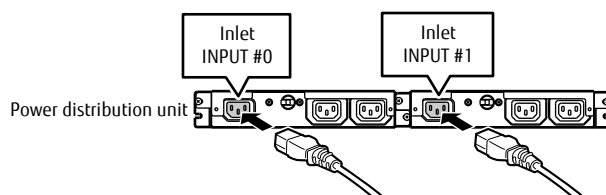
- 2 Connect the power distribution unit outlets and power supply unit inlets with the power cords (AC output cables).

The procedures to connect the power supply unit is same as [Step 1](#) in "4.4.1 When No Power Distribution Units are Installed" (page 53).

The following figure shows an example of AC output cable connection:



- 3 Connect the power cord (AC input cable) plugs to the inlets of the power distribution unit.



- 4 Use the power cord clamps to prevent the power plugs from coming unplugged. Attach the power cord clamps removed in [Step 1](#).
- 5 Connect the plugs on the other end of the power cords (AC input cables) that were connected in [Step 3](#) to the sockets.

IMPORTANT

Power supply failure can be prevented by connecting the power cords (AC input cables) on the INPUT#0 side and the INPUT#1 side to different power sources.

End of procedure

4.4.3 When 2U Power Distribution Unit is Installed (for Regions other than the EMEA, North American, Central American, and Caribbean Regions)

The following procedure explains how to connect the power cords when a 2U power distribution unit (12 outlet type or 16 outlet type) is installed.

Note

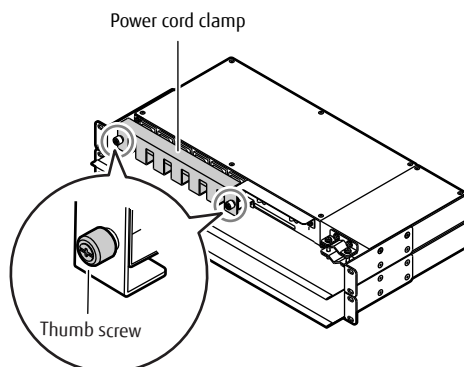
This section explains how to install a 12 outlet type power distribution unit as an example. This installation method can also be applied to a 16 outlet type power distribution unit.

IMPORTANT

To help with power cord management and prevent incorrect connections, attach labels to the power cords and make a note of connection origins and destinations.

Procedure

- 1 Remove the power cord clamp from the power distribution unit.
Loosen the two thumb screws on both sides of the power cord clamp to remove it.

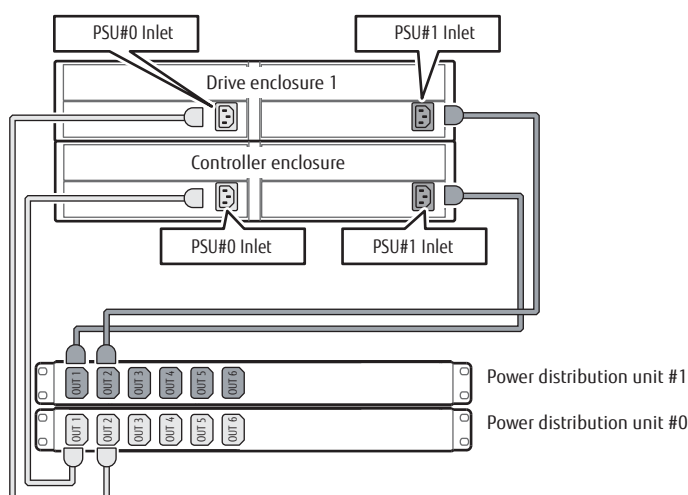


- 2 Connect the power distribution unit outlets and power supply unit inlets with the power cords (AC output cables).
The procedures to connect the power supply unit is same as [Step 1](#) in "[4.4.1 When No Power Distribution Units are Installed](#)" (page 53).

IMPORTANT

Connect the PSU#0 power cord to power distribution unit#0 (the lower power distribution unit). Connect the PSU#1 power cord to power distribution unit#1 (the higher power distribution unit).

The following figures show a connection diagram of AC outlet cables.



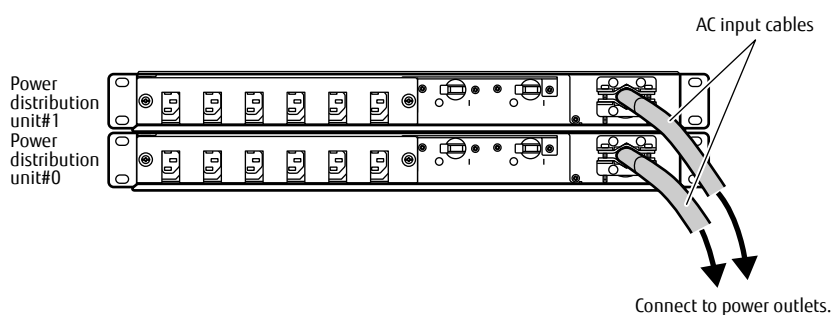
— : Connect OUTPUT#0-n of the Power distribution unit to the PSU#0 inlet of the ETERNUS DX.

— : Connect OUTPUT#1-n of the Power distribution unit to the PSU#1 inlet of the ETERNUS DX.

- 3 Use the power cord clamps to prevent the power plugs from coming unplugged. Attach the power cord clamps removed in [Step 1](#).
- 4 Connect the plugs on the other end of the power cords (AC input cables) that are attached to the power distribution unit to sockets.

IMPORTANT

Power supply failure can be prevented by connecting the power cords (AC input cables) on the power distribution unit #0 side and the power distribution unit #1 side to different power sources.



End of procedure

Chapter 5

General Settings

This chapter explains how to set up the ETERNUS DX.

■ Initial Settings After Installation

The following settings must be performed when an ETERNUS DX is installed.

- Storage Management

Perform the device information settings and the network connection settings. All of the required settings can be performed by following the instructions that are displayed when the Initial Setup 1 wizard is used.

- Firewall Settings

Select whether to enable or disable connections for each service that is to be used via the LAN for operation management.

- RAID Configuration Settings

Register the RAID groups, the volumes, and the hot spares in the ETERNUS DX.

- Monitoring Settings

Perform the settings to enable constant monitoring of the storage system status. For details on these settings, refer to "[Chapter 6 Monitoring Settings](#)" (page 84).

- Power Control Setup

Perform the storage system power control settings. For details on these settings, refer to "[Chapter 7 Power Control Setup](#)" (page 104).

- SAN Connection Settings

Perform the settings for SAN connections with the server. For details on these settings, refer to "[Chapter 8 SAN Connection Settings](#)" (page 108).

- Advanced Copy Settings

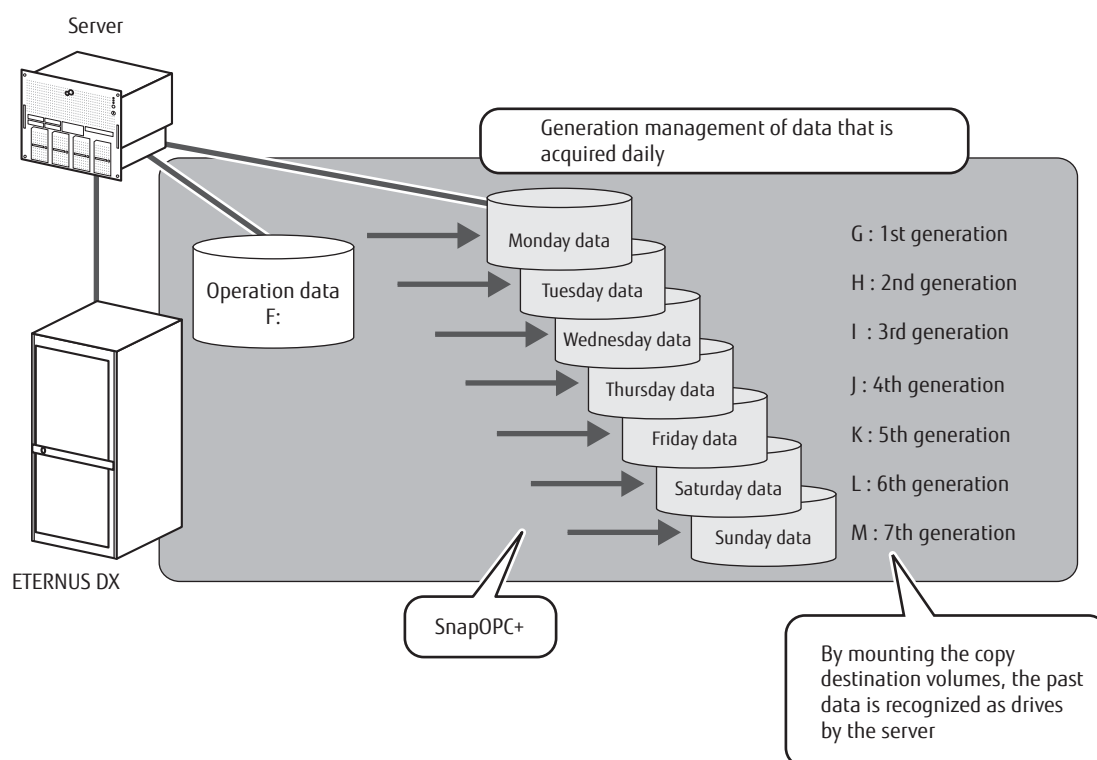
Perform the basic settings to use the Advanced Copy function. For details on these settings and performing SnapOPC+, refer to "[Chapter 9 Advanced Copy Settings](#)" (page 140).

■ Example of Differential Backup Settings

This section describes the RAID configuration settings by using the settings for differential backing up with SnapOPC+ as an example.

In the ETERNUS DX, the differential copy function (SnapOPC+) can be used without needing any optional software. Mounting the copy destination volume on the server allows the past data to be seen as a drive, and the past data can be easily restored with copy & paste from the assigned drive.

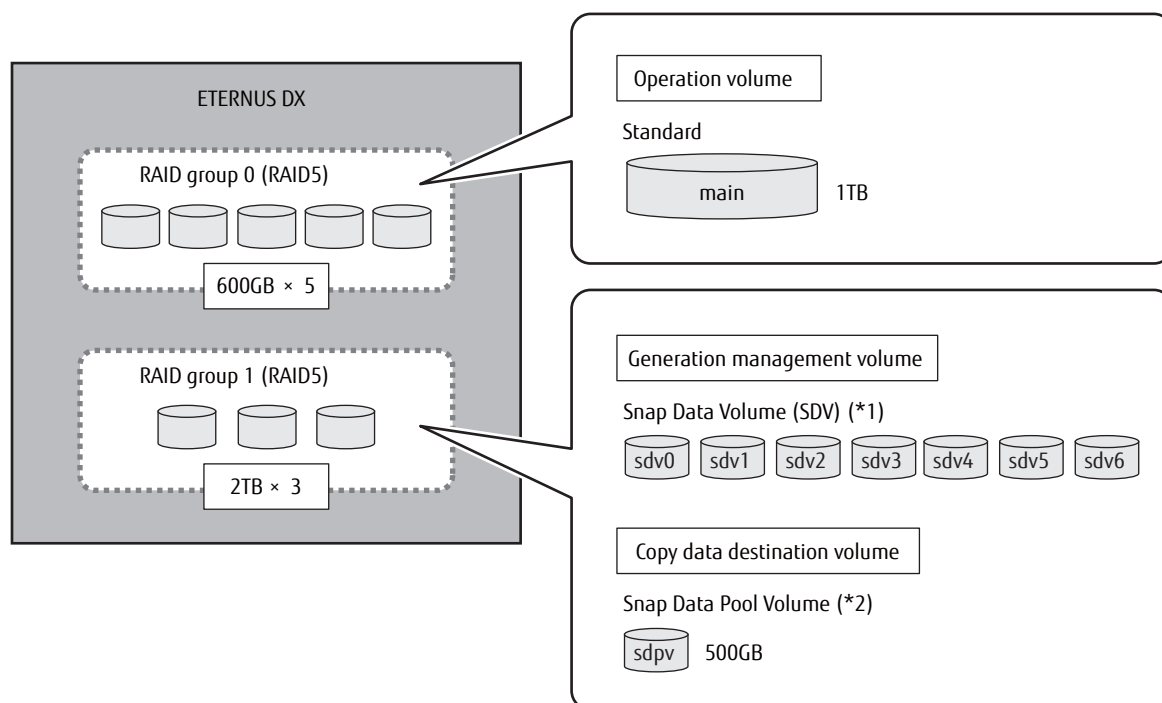
Figure 5.1 Example of Differential Backup Settings with SnapOPC+



• ETERNUS DX Environment

Create the operation volume and backup volume in the ETERNUS DX.

Figure 5.2 Example of Creating Operation Volume and Backup Volume



*1: SDV is used as the copy destination for SnapOPC+ and stores generation data.

*2: SDPV is the expansion area of the SDV and is used to configure the Snap Data Pool (SDP) area.

5.1 PC Terminal Connection

Connect a PC terminal to the ETERNUS DX.

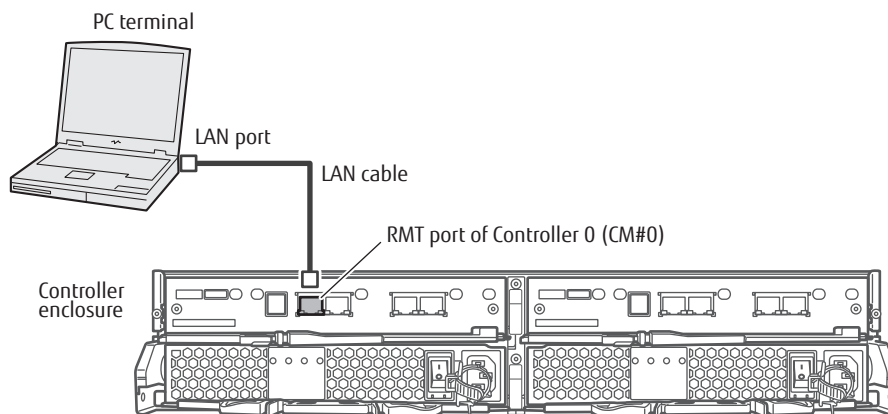
Connect the PC terminal to the RMT port of Controller 0 (CM#0) on the controller enclosure directly with the LAN cable (for operation management).

For the setup information of the PC terminal, refer to ["3.3 Preparing the PC Terminal for Setup"](#) (page 43).

Note

The ETERNUS DX and the PC terminal must be connected directly since the network environment of the ETERNUS DX is set using the PC terminal for the initial setup of the ETERNUS DX.

Figure 5.3 PC Terminal Connection for Initial Setup



5.2 Powering On

This section explains how to turn on the ETERNUS DX.

5.2.1 Switching On and Off the Main Line Switch on the Power Distribution Unit

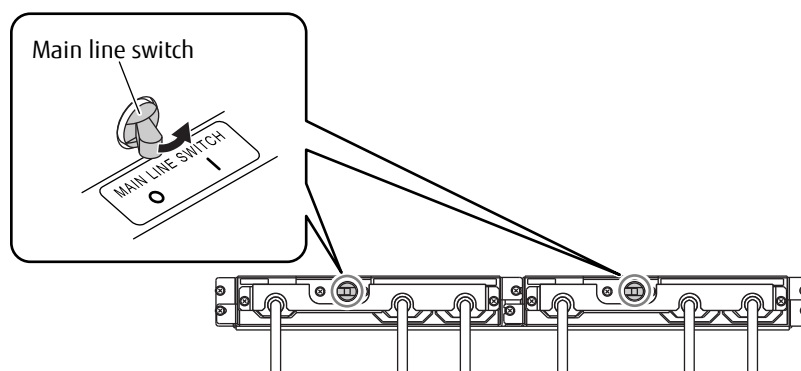
Turn the main line switch of the power distribution unit to the ON position (marked "|").

IMPORTANT

Make sure all of the main line switches are in the ON position.

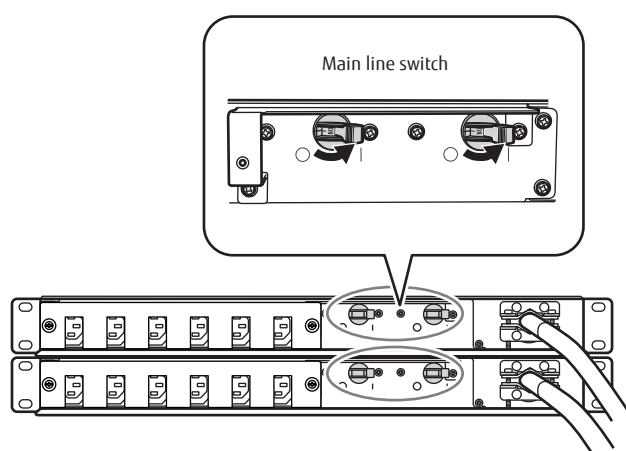
- For 1U

Figure 5.4 ON Position (Marked "|") of the Main Line Switches on a 1U Power Distribution Unit



- For 2U

Figure 5.5 ON Position (Marked "|") of the Main Line Switches on a 2U Power Distribution Unit



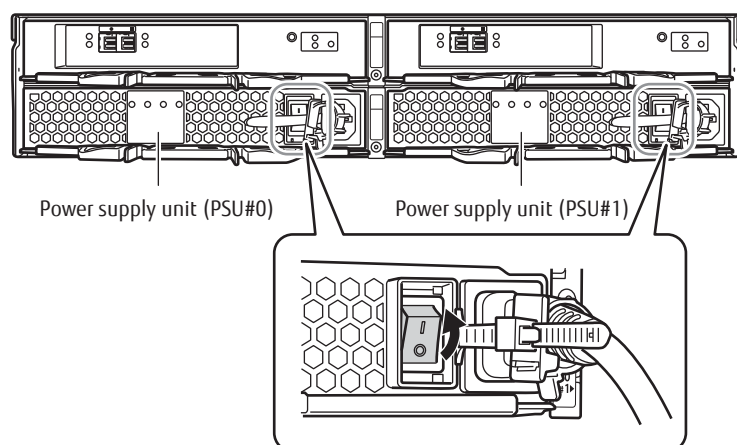
5.2.2 Switching On and Off the PSU Switch on the Power Supply Unit

Move the PSU switches of the power supply unit in the controller enclosure and the drive enclosures to the ON position (marked "|").

IMPORTANT

Make sure all of the PSU switches are in the ON position.

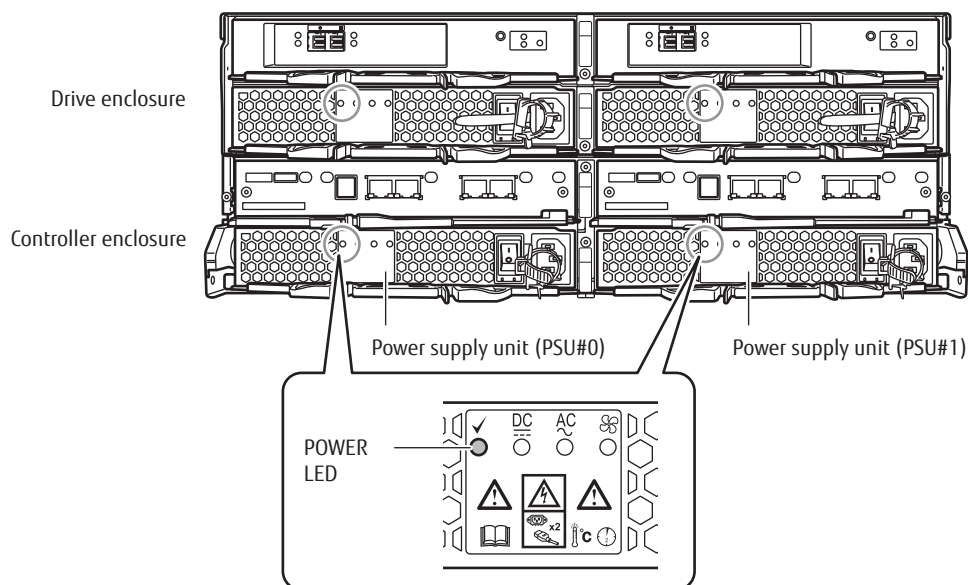
Figure 5.6 ON Position (Marked "|") of the PSU Switch on a Power Supply Unit



AC power is supplied to an enclosure.

- For the controller enclosure, the POWER LED on the power supply unit blinks green.

- For the drive enclosure, the POWER LED on the power supply unit emits green lights and the fan revolves at high speed for 30 seconds.



5.2.3 Powering On

Turn on the PC terminal and the ETERNUS DX.

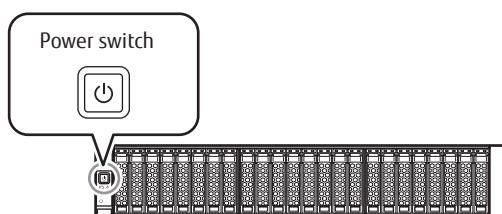
Follow the procedure below to turn on the ETERNUS DX.

IMPORTANT

- After turning the power on, it takes approximately five minutes for the ETERNUS DX to be in READY state (READY LED (🟢) turns on). If an error is detected in a component during the initial power-on diagnostics, it may take a longer time (up to 10 minutes) for the ETERNUS DX to be in a READY state.
- After power-off, wait for about one minute before turning power on again.

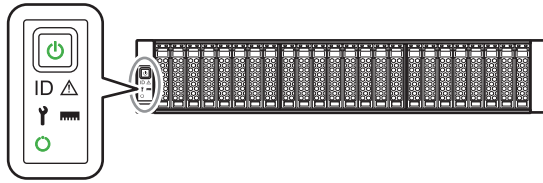
Procedure

- 1 Press the Power switch of the controller enclosure.



The POWER LED (🔌) is turned on.

- 2 After approximately five minutes, check that the READY LED (🟢) is lit up.



When checking the connection between the PC terminal and the ETERNUS DX, execute the "ping" command at the PC command prompt. An example of ping execution is shown below. ("192.168.1.1" is the default IP address for the ETERNUS DX)

```
ping 192.168.1.1
```

If the execution results in an error, check the network settings of the PC terminal.

IMPORTANT

When communication cannot be established even after the RMT port of Controller 0 (CM#0) is connected to the LAN port of the PC terminal, make sure that the MASTER LED of Controller 0 (CM#0) is turned on. When two controllers are installed and the MASTER LED of Controller 1 (CM#1) is turned on, use the RMT port of Controller 1 (CM#1).

End of procedure

5.3 ETERNUS Web GUI Startup

Start up ETERNUS Web GUI via the Web browser of the connected terminal.

If the settings of the Web browser are incorrect, ETERNUS Web GUI may not be connected. For details on these settings, refer to "Configuration Guide (Web GUI)".

Procedure

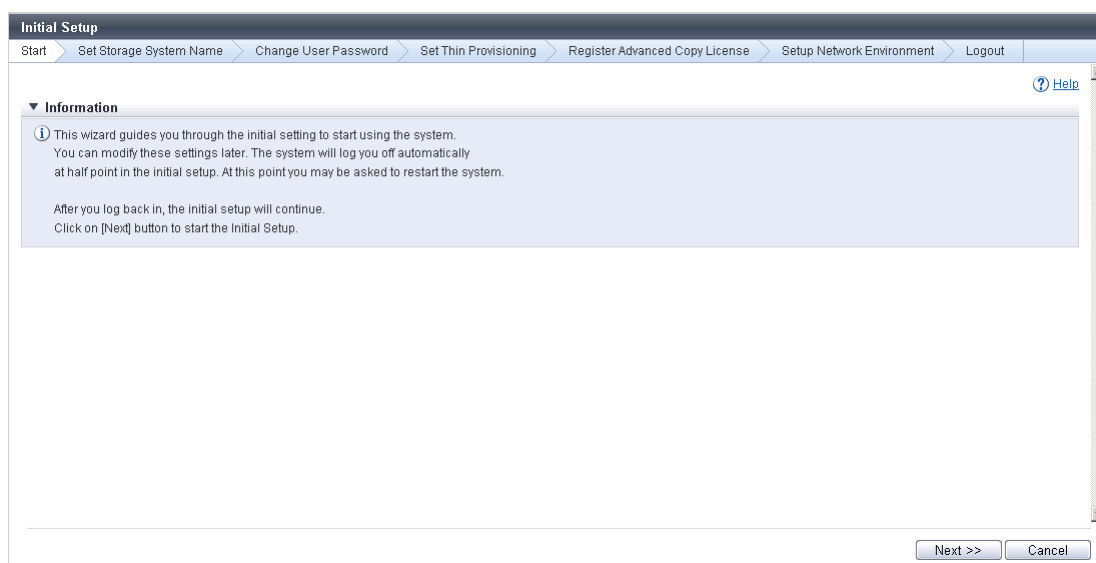
- 1 Open the Web browser on the terminal.
- 2 Enter the following URL in the address bar of the Web browser:

```
http://192.168.1.1/
```

The login screen for ETERNUS Web GUI appears.

- 3 To change the language, click the [Option] button and select [English] or [Japanese] in [Language:].
- 4 Enter the User ID and Password.
User ID: root
Password: root (by default)

After logging in, the Initial Setup screen of ETERNUS Web GUI appears.



End of procedure

5.4 Storage Management (Initial Setup 1)

Perform the settings that are required before operation of the ETERNUS DX by using the Initial Setup 1 screen of ETERNUS Web GUI.

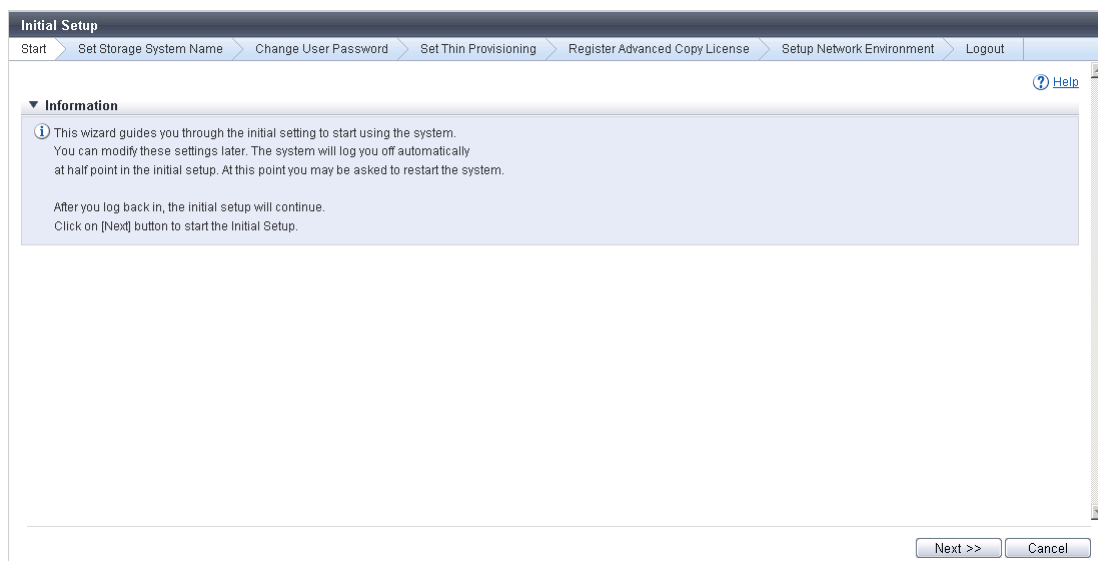
Perform the following settings according to the wizard screen:

- Set Storage System Name
- Change User Password
- Set Thin Provisioning
- Setup Network Environment

The procedure for initial setup is shown below. For details on the settings, refer to "Configuration Guide (Web GUI)".

Procedure

- 1 Click the [Next >>] button in the [Initial Setup] screen.



The [Set Storage System Name] screen appears.

- 2 ETERNUS DX name setup
Set the name of the ETERNUS DX as well as other information.

Note

The information that is set here is used for network management by SNMP. The name of the ETERNUS DX is displayed in the login and operation screens of ETERNUS Web GUI.

- (1) Set the required items and click the [Next >>] button.

The screenshot shows the 'Initial Setup' window with the 'Set Storage System Name' step active. Below the progress bar, there is a section titled 'Set the Name of this Storage System' with a light blue header. It contains a table with four rows: 'Name', 'Installation Location', 'Administrator', and 'Description'. Each row has a text input field. The values entered are: 'Name' is 'ETERNUS', 'Installation Location' is 'Tokyo', 'Administrator' is 'TEST', and 'Description' is 'DX S3'. At the bottom right of the window, there are three buttons: '<< Back', 'Next >>', and 'Skip'.

A confirmation screen appears.

- (2) Click the [OK] button.
The name of the ETERNUS DX is set and the setting completion screen appears.
 - (3) Click the [Done] button.
The [Change User Password] screen appears.
- 3 Changing user passwords
Change the user password.
- (1) Set the required items and click the [Next >>] button.

The screenshot shows the 'Initial Setup' window with a progress bar at the top indicating the current step is 'Change User Password'. The window is divided into two main sections: 'User Information' and 'Password Settings'. In the 'User Information' section, the 'User ID' is set to 'root' and the 'Role' is set to 'Admin'. In the 'Password Settings' section, there are three password fields: 'Old Password', 'New Password', and 'Confirm New Password'. Each field has a password strength indicator on the right, showing '(4 - 64 characters)'. The 'Old Password' field contains four dots. The 'New Password' and 'Confirm New Password' fields contain eight dots. At the bottom right of the window, there are three buttons: '<< Back', 'Next >>', and 'Skip'.

- A confirmation screen appears.
- (2) Click the [OK] button.
The password is changed and the change completion screen appears.
 - (3) Click the [Done] button.
The [Set Thin Provisioning] screen appears.
- 4 Thin Provisioning setup
Enable or disable the Thin Provisioning function and set the maximum pool capacity.

- (1) Set the required items and click the [Next >>] button.

The screenshot shows the 'Initial Setup' window with a progress bar at the top indicating the current step is 'Set Thin Provisioning'. The main content area has a section titled 'Thin Provisioning Settings' with two rows: 'Thin Provisioning' with radio buttons for 'Enable' (selected) and 'Disable', and 'Maximum Pool Capacity' with radio buttons for '32.00 TB' (selected) and '64.00 TB'. At the bottom right, there are three buttons: '<< Back', 'Next >>', and 'Skip'.

A confirmation screen appears.

- (2) Click the [OK] button.
The Thin Provisioning is set and the change completion screen appears.
- (3) Click the [Done] button.
The [Register Advanced Copy License] screen appears.

- 5 Advanced Copy license registration
Click the [Skip] button to proceed to the [Setup Network Environment] screen.

The screenshot shows the 'Initial Setup' window with the progress bar at 'Register Advanced Copy License'. The main content area has a message box that says: 'Advanced Copy License has been already registered. Click [Next] button to continue Initial Setup.' At the bottom right, there are three buttons: '<< Back', 'Next >>', and 'Skip'.

- 6 Network environment setup
Set the ETERNUS DX environment for network communication.

Caution

If the network environment is set with the factory default, some functions are not available.
Make sure to set up the network environment.

IMPORTANT

- Do not use the RMT port for an operation management LAN. Use the RMT port only for remote support.
- Configure the IP address for the MNT port with an IP address in a different subnetwork than the RMT port.
- When specifying the IP address of the Slave CM, specify an IP address that is in the same subnet but is different from the IP address of the Master CM.
- Either or both an IPv4 address and an IPv6 address can be specified for the MNT port and the RMT port.
- To connect to the devices in a network in which the ETERNUS DX does not belong, set "Gateway", and specify the IP address (or network address) or the connect IP address in "Allowed IP Address".
If the ETERNUS DX is accessed from a system with the same network address (or same subnetwork), the IP address does not need to be set.

- (1) Click the [IPv4 Settings] tab to specify an IPv4 address. Click the [IPv6 Settings] tab to specify an IPv6 address.

The following procedure shows an example when selecting the [IPv4 Settings] tab.

The screenshot shows the 'Initial Setup' window with the 'Setup Network Environment' step selected. The 'Information' section contains a message: 'Please configure the network environment for storage management.' The 'Select Network Port' section has 'MNT' selected. The 'LAN' section has 'Auto-negotiation' selected for 'Speed and Duplex' and 'Disable' selected for 'Wake on LAN'. The 'IPv4 Settings' tab is active, showing the following values:

Field	Value
Master IP Address	192.168.1.62
Slave IP Address	192.168.1.63
Subnet Mask	255.255.255.0
Gateway	192.168.1.61

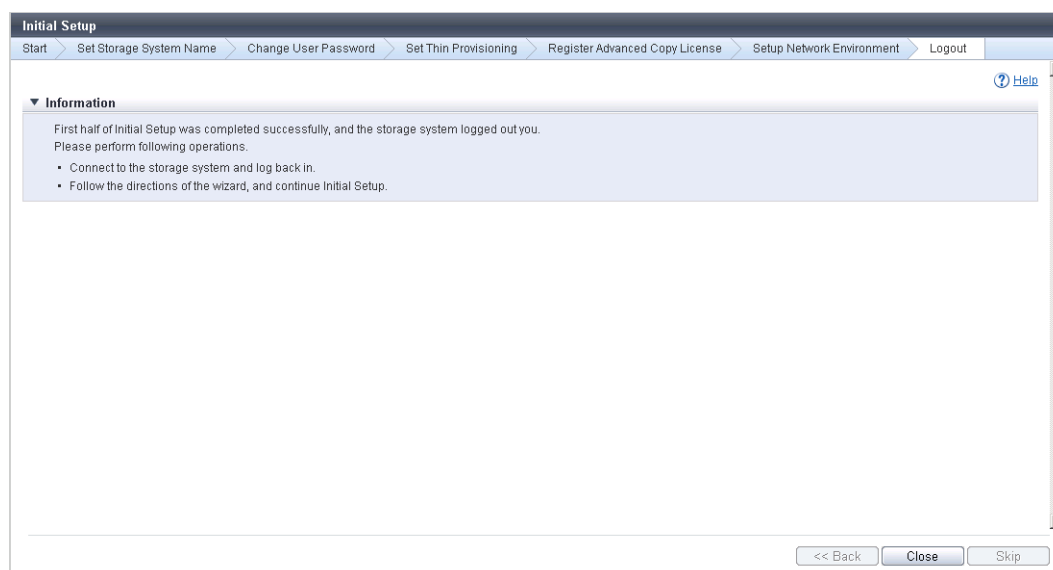
The 'DNS' section has 'Primary DNS' and 'Secondary DNS' fields, both of which are empty. At the bottom right, there are buttons for '<< Back', 'Next >>', and 'Skip'.

A confirmation screen appears.

- (2) Click the [OK] button.
The network environment setting is applied and the setting completion screen appears.
- (3) Click the [Finish] button.
The [Logout] screen appears.

7 Logout

(1) Click the [Close] button.



Initial setup 1 is complete and the screen returns to the [Login] screen.

(2) Close the Web browser.

8 Remove the LAN cable that connects the RMT port to the PC terminal.

End of procedure

5.5 LAN Cable Connection (for Operation Management)

The ETERNUS DX must be connected to a LAN to perform actions via ETERNUS Web GUI or ETERNUS CLI such as settings, maintenance operations, monitoring the device status, and using remote support.

Prepare the required number of LAN cables for the network environment of the customer.

The following procedure explains how to connect the LAN cable.

Caution

When the LAN switch that is to be used has the Spanning Tree Protocol (STP) function enabled, connection to the ETERNUS DX may fail. Use the following settings to disable the STP function:

- When the STP function is not necessary for the network configuration:
Disable the STP function of the LAN switch.
- When the STP function is necessary for the network configuration:
Disable the STP function of the LAN switch port only for the ETERNUS DX connection or perform the Port-Fast setting.

IMPORTANT

- To help with LAN cable management and prevent incorrect connections, attach labels to the LAN cables and make a note of connection origins and destinations.
- When connecting LAN cables, check the connector orientation and then firmly push it all the way in. When disconnecting LAN cables, depress the tab, then pull out the connector.

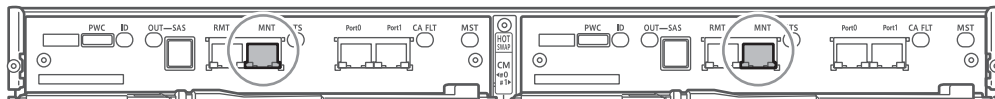
Note

This section uses a controller enclosure with two controllers as an example to explain the connection procedure. When one controller is installed, this procedure is only applied to Controller 0 (CM#0).

Procedure

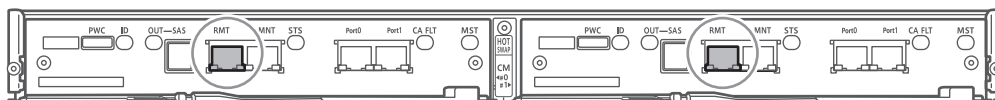
- 1 Connect the LAN cable to the ETERNUS DX.

Connect the LAN cable connectors to the MNT ports of the Controller 0 (CM#0) and Controller 1 (CM#1) for the ETERNUS DX.



- When connecting the LAN cables, position them so that they will not obstruct replacement of the power supply unit or controllers by the maintenance engineer.

- 2 When the RMT port is used, connect the connector of the LAN cable to the RMT port of Controller 0 (CM#0) and Controller 1 (CM#1).



- 3 Connect the LAN cables of the MNT port to the network of the customer. If the RMT port is used for remote support, connect the LAN cable of the RMT port to the network for remote support.

End of procedure

5.6 Firewall Settings

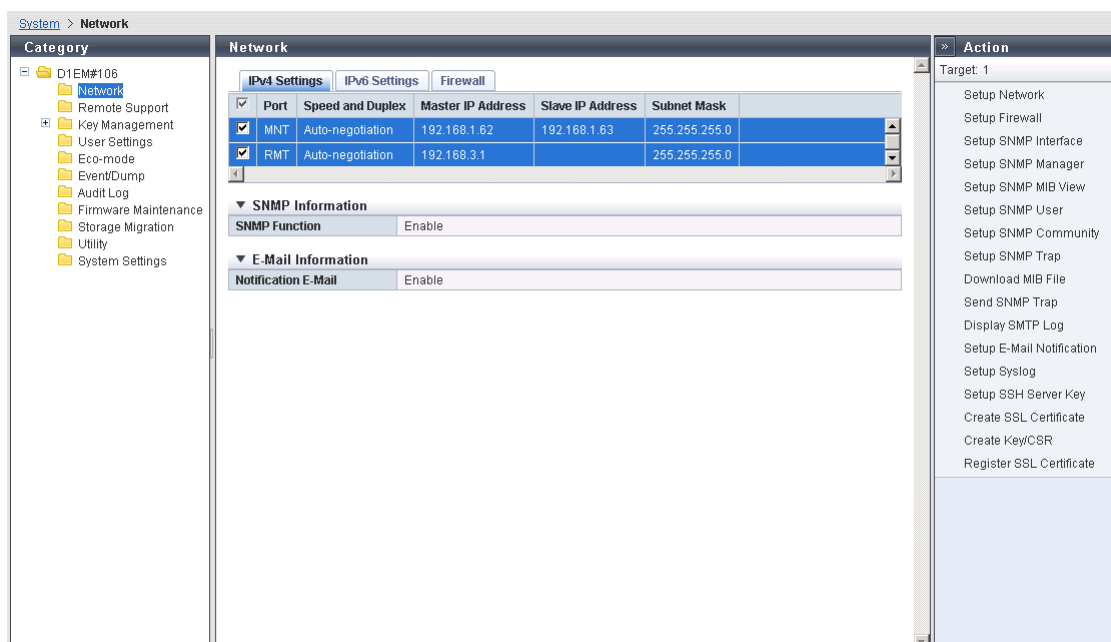
Set the firewall for each service. The settings are required respectively for the MNT port and the RMT port.

Caution

- If both HTTP connection and HTTPS connection are disabled, the device is inaccessible via ETERNUS Web GUI.
- If both Telnet connection and SSH connection are disabled, the device is inaccessible via ETERNUS CLI.
- If the network environment for the MNT port is not set up, some functions will be unusable. Make sure to set up the network environment.

Procedure

- 1 Start the Web browser and log in to ETERNUS Web GUI with the IP address that is set in [Step 6](#) in "5.4 Storage Management (Initial Setup 1)" (page 65).
- 2 Click the [System] tab on the navigation of the ETERNUS Web GUI screen.
- 3 In [Category], click [Network].
The [Network] screen appears.
- 4 Select the port to be set. In [Action], click [Setup Firewall].



- 5 In the [Setup Firewall] screen, specify whether to enable/disable each service.
To enable a service, select the checkbox for that service.

Port	MNT	RMT
HTTP	☒	☒
HTTPS	☒	☒
Telnet	☒	☒
SSH	☒	☒
ICMP	☒	☒
Maintenance-Secure	☒	☒
SNMP	☒	☒
RCIL	☐	☐
ETERNUS DX Discovery	☐	☐

- HTTP/HTTPS
This service is enabled when an ETERNUS DX is connected via ETERNUS Web GUI.
Data is encrypted and transferred for HTTPS.
 - Telnet/SSH
This service is enabled when an ETERNUS DX is connected via ETERNUS CLI.
Data is encrypted and transferred for Secure SHell (SSH).
 - ICMP
This service is enabled when an ICMP connection is allowed.
 - Maintenance-Secure
This service is enabled for connections from things such as monitoring software or for using the remote support function to download firmware between storage systems.
SSH encrypts and sends/receives data.
 - SNMP
This service is enabled when an ETERNUS DX is connected via the SNMP manager.
 - ETERNUS DX Discovery
Change the setting to "Disable".
- 6 Click the [Set] button.
 - 7 In the confirmation screen, click the [OK] button.
The firewall settings are applied.
 - 8 Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

End of procedure

5.7 RAID Configuration Settings

Use ETERNUS Web GUI to set RAID configurations in the ETERNUS DX.

Perform the following settings:

- RAID group creation
- Volume creation
- Hot spare registration

This section describes the configuration settings using a case of creating the following volumes as an example.

- Operation volume
Create an operation volume (Standard) in RAID5(4+1) RAID group.
- Backup volume
Create a generation management volume (SDV) and copy data destination volume (SDPV) in RAID5(2+1) RAID group.

5.7.1 RAID Group Creation

Create RAID groups (groups of drives that configure RAID in the ETERNUS DX) to create volumes.

Create an operation RAID group and a backup RAID group.

Figure 5.7 RAID Group Creation

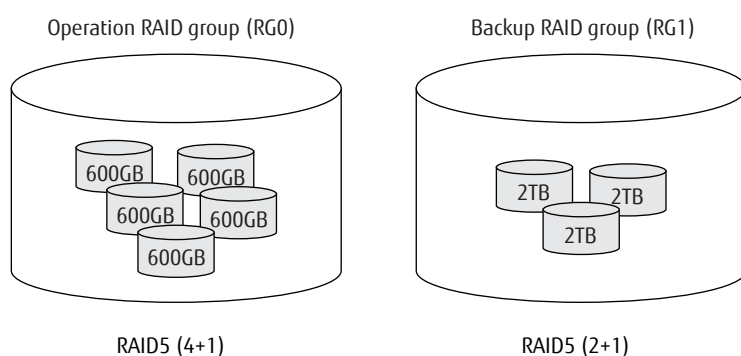


Table 5.1 RAID Group Creation

Usage	Item	Create mode	RAID type	Configuration drive
Operation RAID group (copy source)	RG0	Manual	RAID5	600GB SAS disk × 5
Backup RAID group (copy destination)	RG1	Manual	RAID5	2TB Nearline SAS disk × 3



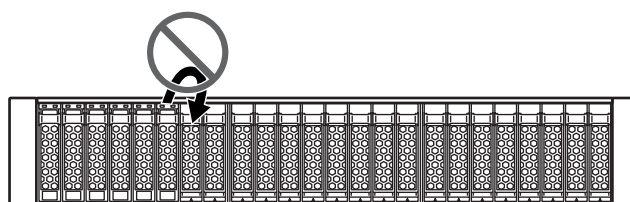
CAUTION

Do Not



- Do not uninstall the drives that are installed by default or move them to any other slot.

Contact your sales representative or maintenance engineer if drives that are installed by default need to be uninstalled or moved to another slot.



The procedure to register a RAID group is as follows:

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click the [RAID Group] tab.
The [RAID Group] screen appears.
- 2 In [Action], click [Create].
The [Create RAID Group] screen appears.

- 3 Enter the name of the RAID group that is to be registered. Select "Manual" for "Create Mode".
- 4 Set the required items and click the [Create] button.
Name: RG0
Create Mode: Manual
RAID Level: High Capacity (RAID5)

Controlling CM: Automatic

Drives: Select five

A confirmation screen appears.

- 5 Click the [OK] button.
The RAID group is registered and the registration completion screen appears.
- 6 Click the [Done] button.
The screen display returns to the [RAID Group] screen.
- 7 After creating an operation RAID group, repeat [Step 1](#) and later steps to create a backup RAID group.

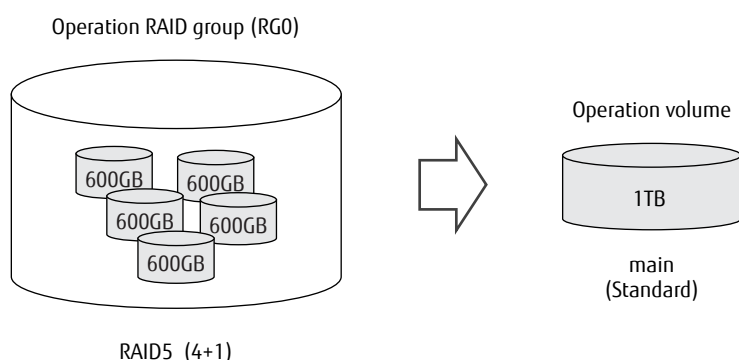
End of procedure

5.7.2 Operation Volume Creation

Create volumes (areas in the drives of a RAID group) in the RAID group.

Create a 1TB Standard volume in the operation RAID group created in ["5.7.1 RAID Group Creation"](#) (page 74).

Figure 5.8 Operation Volume Creation



To perform a backup with SnapOPC+, two types of backup volumes (generation data management area and expansion area where copy data is saved) must be prepared in addition to one for operation. For details about creation of backup volume, refer to ["5.7.3 Generation Management Volume \(SDV\) Creation"](#) (page 78) and ["5.7.4 Copy Data Destination Volume \(SDPV\) Creation"](#) (page 79).

Table 5.2 Operation Volume Creation

Usage	Item	Capacity	Volume type
Operation volume (copy source)	main	1TB	Standard
Generation management volume	sdv0 - 6	1TB (*1)	Snap Data Volume
Copy data destination volume	sdpv	500GB	Snap Data Pool Volume

***1:** Though the copy source capacity is specified during creation, the capacity allocated to sdv is approximately 0.1% of the copy source capacity.

Note

When creation is finished, the volume is automatically formatted. After volume creation, Standard and SDV become accessible from the host when host affinity setting is completed.

SDPV becomes available when formatting starts after creation.

The procedure to create an operation volume is as follows:

Procedure

- 1 Click the [Volume] tab on the navigation of the ETERNUS Web GUI screen.
The [Volume] screen appears.
- 2 In [Action], click [Create].
The [Create Volume] screen appears.
- 3 Set the required items in the [Create Volume] screen and click the [Create] button.
Name: main
Capacity: 1TB
Type: Standard
RAID Group / TPP Selection: Manual
Manual Setting: RGO

Create Volume

Information

Please enter the parameters for volume provision a new Volume.
 1MB = 1024 * 1024bytes, 1GB = 1024MB, 1TB = 1024GB
 It is recommended to select a single drive type to compose a RAID group in Wide Striping Volume.
 If Wide Striping Volume is composed of Online and Nearline mixed disks, performance may be limited.

New Volume

Name: main
 Capacity: 1 TB
 Type: ☒ Standard ☐ Wide Striping Volume ☐ Thin Provisioning Volume ☐ Snap Data Volume ☐ Snap Data Pool Volume
 Capacity of source volume: ☒ Only SDV ☐ Only SDP ☐ Only SDPV ☐ Only SDV+SDP ☐ Only SDV+SDPV ☐ Only SDV+SDPV+SDP
 RAID Group / TPP Selection: ☐ Automatic ☒ Manual

Manual Setting

Use all Largest Free Space: ☐ Enable
 Volume No.: Set Value ☐ 0
 Encryption by CM: ☒ On ☐ Off

2 items | 1/1 pages | 1 page | Go

RAID Group Name	Drive Type	RAID Level	Number of Drives	Number of Volumes	Total Capacity	Total Free Space	Largest Free Space	Encryption
RGO	Online	High Capacity (RAID5)	5	1 Max:127	2.13 TB	2.13 TB	2.13 TB	-
RG1	Nearline	High Capacity (RAID5)	3	0 Max:120	3.56 TB	3.06 TB	3.06 TB	-

Create Cancel

A confirmation screen appears.

- 4 Click the [OK] button.
The volume is created and the registration completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [Volume] screen.
- 6 Then, create SDV and SDPV in the backup RAID group (RG1).
For the creation procedure, refer to "5.7.3 Generation Management Volume (SDV) Creation" (page 78) and "5.7.4 Copy Data Destination Volume (SDPV) Creation" (page 79).

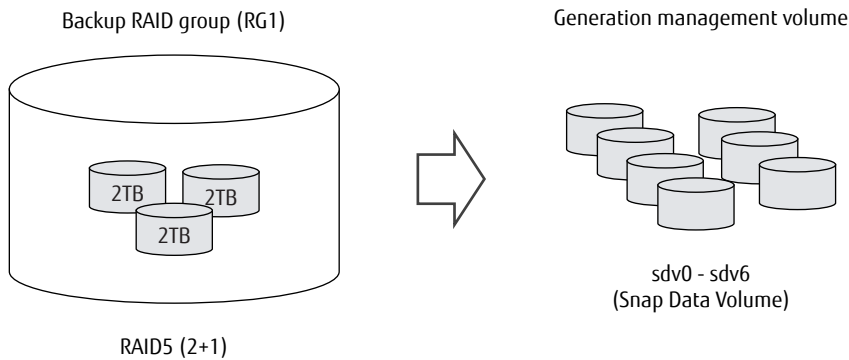
End of procedure

5.7.3 Generation Management Volume (SDV) Creation

Create a generation management volume in the backup RAID group.

Create SDV for seven generations (as a backup area for seven days a week) in the backup RAID group "RG1" created in "5.7.1 RAID Group Creation" (page 74).

Figure 5.9 Generation Management Volume (SDV) Creation



The procedure to create a generation management volume (SDV) is as follows:

Procedure

- 1 Click the [Volume] tab on the navigation of the ETERNUS Web GUI screen.
The [Volume] screen appears.
- 2 In [Action], click [Create].
The [Create Volume] screen appears.
- 3 Set the required items in the [Create Volume] screen and click the [Create] button.
Name: sdv
Type: Snap Data Volume
Capacity of source volume: 1TB (*1)
RAID Group / TPP Selection: Manual
Manual Setting: RG1
Number of Volumes: 7 (*2)

*1: Enter the capacity of the copy source volume during creation of SDV.
*2: If "7" is specified for the number of volumes, sdv0, sdv1, sdv2, sdv3, sdv4, sdv5, and sdv6 volumes are created.

Create Volume

Information

Please enter the parameters for volume provision a new Volume.
 1MB = 1024 * 1024bytes, 1GB = 1024MB, 1TB = 1024GB
 It is recommended to select a single drive type to compose a RAID group in Wide Striping Volume.
 If Wide Striping Volume is composed of Online and Nearline mixed disks, performance may be limited.

New Volume

Name:

Capacity: TB

Type: ☐ Standard ☐ Wide Striping Volume ☐ Thin Provisioning Volume ☒ Snap Data Volume ☐ Snap Data Pool Volume

Capacity of source volume: ☐ Only SDV TB

RAID Group / TPP Selection: ☐ Automatic ☒ Manual

Manual Setting

Use all Largest Free Space: ☐ Enable

Volume No.: Set Value ☐

Encryption by CM: ☒ On ☐ Off

2 items | 1/1 pages | 1 page | Go

RAID Group Name	Drive Type	RAID Level	Number of Drives	Number of Volumes	Total Capacity	Total Free Space	Largest Free Space	Encryption
RG0	Online	High Capacity (RAID5)	5	0 Max:127	2.13 TB	2.13 TB	2.13 TB	-
RG1	Nearline	High Capacity (RAID5)	3	7 Max:120	3.56 TB	3.06 TB	3.06 TB	-

Create Cancel

A confirmation screen appears.

- 4 Click the [OK] button.
The volume is created and the registration completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [Volume] screen.

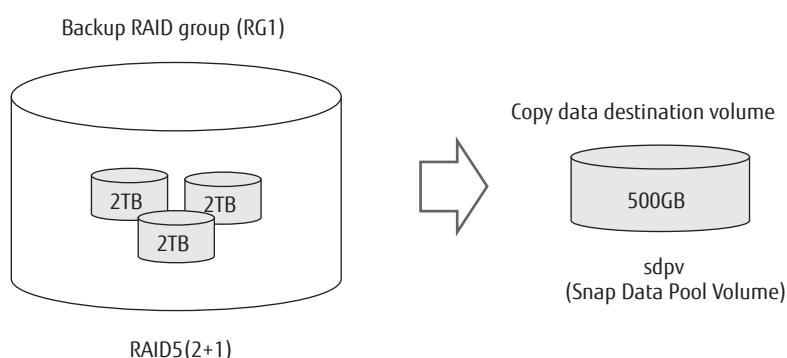
End of procedure

5.7.4 Copy Data Destination Volume (SDPV) Creation

Create a copy data destination volume in the backup RAID group.

Create a volume as an expansion area of SDV in the backup RAID group "RG1" created in "5.7.1 RAID Group Creation" (page 74).

Figure 5.10 Copy Data Destination Volume (SDPV) Creation



The procedure to create a copy data destination volume (SDPV) is as follows:

Procedure

- 1 Click the [Volume] tab on the navigation of the ETERNUS Web GUI screen.
The [Volume] screen appears.
- 2 In [Action], click [Create].
The [Create Volume] screen appears.
- 3 Set the required items in the [Create Volume] screen and click the [Create] button.
Name: sdpv
Capacity: 500GB
Type: Snap Data Pool Volume
RAID Group / TPP Selection: Manual
Manual Setting: RG1

Create Volume

Information

Please enter the parameters for volume provision a new Volume.
 1MB = 1024 * 1024bytes, 1GB = 1024MB, 1TB = 1024GB
 It is recommended to select a single drive type to compose a RAID group in Wide Striping Volume.
 If Wide Striping Volume is composed of Online and Nearline mixed disks, performance may be limited.

New Volume

Name:

Capacity: GB

Type: ☐ Standard ☐ Wide Striping Volume ☐ Thin Provisioning Volume ☐ Snap Data Volume ☒ Snap Data Pool Volume

Capacity of source volume: GB

RAID Group / TPP Selection: ☐ Automatic ☒ Manual

Manual Setting

Use all Largest Free Space: ☐ Enable

Volume No.: Set Value

Encryption by CM: ☒ On ☐ Off

2 items | 1/1 pages | 1 page Go

RAID Group Name	Drive Type	RAID Level	Number of Drives	Number of Volumes	Total Capacity	Total Free Space	Largest Free Space	Encryption
RG0	Online	High Capacity (RAID5)	5	0 Max:127	2.13 TB	2.13 TB	2.13 TB	-
RG1	Nearline	High Capacity (RAID5)	3	1 Max:120	3.56 TB	3.06 TB	3.06 TB	-

Create Cancel

A confirmation screen appears.

- 4 Click the [OK] button.
The volume is created and the registration completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [Volume] screen.

End of procedure

The volume information after the copy data destination volume is created is as shown below.

Figure 5.11 Volume Information After Creation

The screenshot shows a web-based interface for managing storage volumes. On the left is a 'Category' sidebar with options like 'Volume', 'Performance(Host I/O)', 'Performance(Advanced)', 'LUN Group', 'Reservation', 'Pinned Data', 'Bad Sector', and 'Balancing Thin Provision'. The main area is titled 'Volume' and contains a 'Filter setting' bar with buttons for 'Filter' and 'Clear'. Below this is a table listing 9 items. The table has columns for 'No.', 'Name', 'Status', 'Type', 'Capacity', 'RAID Group/TPP/FTRP No.', and 'RAID Group/TPP/FTRP Name'. To the right of the table is an 'Action' menu with various options like 'Create', 'Delete', 'Rename', 'Format', etc.

No.	Name	Status	Type	Capacity	RAID Group/TPP/FTRP No.	RAID Group/TPP/FTRP Name
0	main	Available	Standard	1.00 GB	1	RG0
1	sdv0	Available	SDV	1.00 TB	2	RG1
2	sdv1	Available	SDV	1.00 TB	2	RG1
3	sdv2	Available	SDV	1.00 TB	2	RG1
4	sdv3	Available	SDV	1.00 TB	2	RG1
5	sdv4	Available	SDV	1.00 TB	2	RG1
6	sdv5	Available	SDV	1.00 TB	2	RG1
7	sdv6	Available	SDV	1.00 TB	2	RG1
8	sdv7	Available	SDPV	500.00 GB	2	RG1

5.7.5 Hot Spare Registration

Register the hot spare for the failure of a drive.

Note

The following two types of hot spare are available:

- Global Hot Spare
This is available for any RAID group.
- Dedicated Hot Spare
This is only available to the specified RAID group (one RAID group).

For a RAID group that contains important data, assign "Dedicated Hot Spare" in order to preferentially use the hot spare.

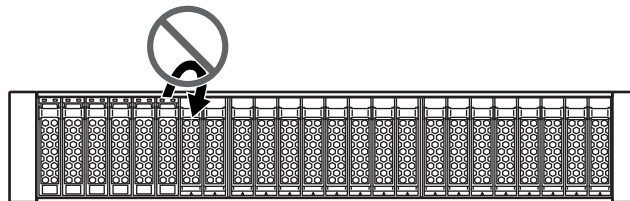


Do Not



- Do not uninstall the drives that are installed by default or move them to any other slot.

Contact your sales representative or maintenance engineer if drives that are installed by default need to be uninstalled or moved to another slot.

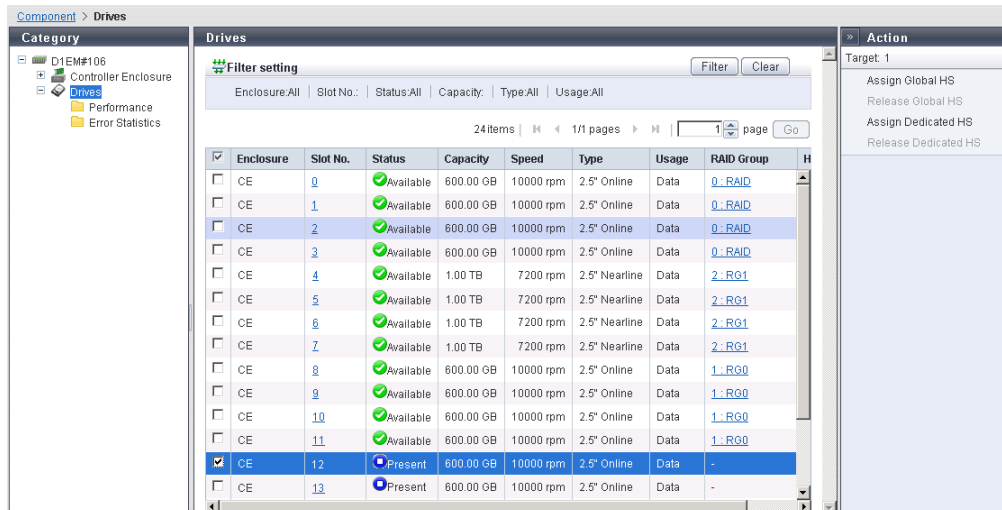


Global Hot Spare Registration

The procedure to register a Global Hot Spare is as follows:

Procedure

- Click the [Component] tab on the navigation of the ETERNUS Web GUI screen. On the [Component] screen, click [Drives] in [Category].
The [Drives] screen appears.
- Select the drive that is to be registered as the Global Hot Spare and click [Assign Global HS] in [Action].



A confirmation screen appears.

- Click the [OK] button.
The Global Hot Spare is registered and the registration completion screen appears.

- 4 Click the [Done] button.
The screen display returns to the [Drives] screen.

End of procedure

■ Dedicated Hot Spare Registration

The procedure to register a Dedicated Hot Spare is as follows:

Procedure

- 1 Click the [Component] tab on the navigation of the ETERNUS Web GUI screen. On the [Component] screen, click [Drives] in [Category].
The [Drives] screen appears.
- 2 Select the drive that is to be registered as the Dedicated Hot Spare and click [Assign Dedicated HS] in [Action].
The [Assign Dedicated Hot Spare] screen appears.
- 3 Select the RAID group for the drive that was selected in [Step 2](#) as the Dedicated Hot Spare. Click the [Assign] button.

Assign Dedicated Hot Spare

▼ Information
Please enter the assign of the RAID group.

▼ Dedicated Hot Spare Drives
1 items | 1/1 pages | 1 page Go

Enclosure	Slot No.	Drive Type	Capacity	Speed
CE	0	3.5" Online	600.00 GB	15000 rpm

▼ Assign RAID Group
3 items | 1/1 pages | 1 page Go

Name	Status	RAID Level	Capacity	Drive Type	Minimum Drive Capacity
RAID5_TEST	Available	High Capacity (RAID5)	4.27 TB	Online	600.00 GB
RAID6_TEST	Available	High Reliability (RAID6)	4.27 TB	Online	600.00 GB
Windows	Available	High Performance (RAID1+0)	265.50 GB	Online	146.00 GB

Assign Cancel

A confirmation screen appears.

- 4 Click the [OK] button.
The Dedicated Hot Spare is registered and the registration completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [Drives] screen.

End of procedure

Chapter 6

Monitoring Settings

Perform the ETERNUS DX monitoring setup if required.

For details on the settings, refer to "Configuration Guide (Web GUI)".

6.1 Event Notification Setup

Select whether to report events detected in the ETERNUS DX. There are six methods for event notification: Host Sense Key Code Qualifier, SNMP Trap, E-Mail, Syslog, REMCS, and AIS Connect.

The event notification setting is explained below.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Event/Dump].
The [Event/Dump] screen appears.
- 3 In [Action], click [Setup Event Notification].
The [Setting based on Severity] tab screen of the [Setup Event Notification] screen appears.
- 4 In the [Setting based on Severity] tab screen, select the required items.

The screenshot shows the 'Setup Event Notification' window with the 'Setting based on Severity' tab selected. The window has four tabs: 'Setting based on Severity', 'Error Severity Level', 'Warning Level', and 'Informational Level'. The main area contains a table with columns for 'Host Sense Key Code Qualifier', 'SNMP Trap', 'E-Mail', 'syslog', and 'REMCS'. Below the table are two rows of settings: 'Blink Fault LED at warning' and 'Turn on Fault LED when redundant copy is completed', each with 'Enable' and 'Disable' radio buttons. At the bottom are 'System Defaults' and 'REMCS Defaults' buttons, and 'Set' and 'Cancel' buttons.

	Host Sense Key Code Qualifier	SNMP Trap	E-Mail	syslog	REMCS
All Error Events	☒	☒	☒	☐	☒
All Warning Events	☒	☒	☒	☐	☐
All Informational Events	-	☒	☒	☐	☐
Individual Settings within Severity Level	Yes	Yes	Yes	No	Yes
Blink Fault LED at warning	☒ Enable ☐ Disable				
Turn on Fault LED when redundant copy is completed	☐ Enable ☒ Disable				

- 5 On the screens that are displayed by clicking each level tab, select the required items.

- 6 Click the [Set] button to apply the specified settings.
A confirmation screen appears.
- 7 Click the [OK] button.
The event notification settings are applied.
- 8 Check the setting completion message and click the [Done] button.
The screen display returns to the [Event/Dump] screen.

End of procedure

6.2 Various Notification Settings

To monitor an ETERNUS DX, perform the required settings for device error notification.

6.2.1 SNMP Trap Setup

SNMP Trap can be sent to the SNMP Manager (monitoring server) when an event occurs in the ETERNUS DX. The SNMP Trap setting is explained below.

IMPORTANT

Carefully read this manual and the manuals for the monitoring software (SNMP Manager) that is to be used before monitoring the ETERNUS DX.

■ ETERNUS DX Settings

The SNMP Trap test setting is explained below.

Procedure

- 1 Set up the network environment for the ETERNUS DX.
When the ETERNUS DX and the monitoring server are in different subnet environments, set the Gateway IP address and the Allowable IP address (IP address of the monitoring server or the network address to which the monitoring server belongs) on the [Setup Network Environment] screen of ETERNUS Web GUI.

The following procedure shows an example when selecting the [IPv4 Settings] tab.

The screenshot shows the 'Setup Network Environment' window. The 'Information' section contains a message: 'Please configure the network environment for storage management.' The 'Select Network Port' section shows 'MNT' selected. The 'LAN' section has 'Speed and Duplex' set to 'Auto-negotiation' and 'Wake on LAN' set to 'Enable'. The 'IPv4 Settings' tab is active, showing the 'Interface' section with the following values: Master IP Address (192.168.1.62), Slave IP Address (192.168.1.63), Subnet Mask (255.255.255.0), and Gateway (192.168.1.61). The 'DNS' section has empty fields for Primary and Secondary DNS. The 'Allowable IP Address' section shows a table with one entry: #1, 192.168.6.200, 255.255.255.0. At the bottom are 'Clear', 'Set', and 'Cancel' buttons.

- 2 Set up the SNMP environment.
 - (1) On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
 - (2) In [Category], click [Network].
The [Network] screen appears.
 - (3) In [Action], click [Setup SNMP Interface].
The [Setup SNMP Agent Basic Interface] screen appears.
 - (4) Select [Enable] for [SNMP Function], set the required items, and click the [Set] button.
Select the LAN port that was set up in [Step 1](#) for "LAN Port used for SNMP".

The screenshot shows the 'Setup SNMP Agent Basic Interface' window. The 'Information' section contains a message: 'Please enter the setting of SNMP Agent Basic Interface.' The 'Basic Interface' section has the following settings: 'SNMP Function' is set to 'Enable'; 'LAN Port used for SNMP' is set to 'MNT'; 'Authentication Failure' is set to 'Send SNMP Trap'; 'Engine ID' is set to 'Default (0x800000D38050000E0D0401400)'; and 'MIB-II RFC Version' is set to 'RFC4293'. At the bottom are 'Set' and 'Cancel' buttons.

A confirmation screen appears.

- (5) Click the [OK] button.
The SNMP Agent basic settings are applied.
 - (6) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.
- 3 Set up the SNMP Manager.
- Set up the SNMP Manager (monitoring server) that is the destination of the SNMP Trap transmission.

Note

This step is not required when ETERNUS SF Storage Cruiser is used to monitor the ETERNUS DX.

- (1) In [Action], click [Setup SNMP Manager].
The [Setup SNMP Manager] screen appears.
- (2) In the manager list of the [Setup SNMP Manager] screen, click the [Add] button.
The [Manager] screen appears.
- (3) Enter the IP address of SNMP Manager (monitoring server) and click the [OK] button.

Manager	
IP Version	☒ IPv4 ☐ IPv6
Manager IP Address (IPv4)	192 168 6 200
Manager IP Address (IPv6)	

OK Cancel

The screen display returns to the manager list of the [Setup SNMP Manager] screen.

- (4) Check the SNMP Manager that was added in [Step \(3\)](#) is displayed in the manager list and click the [Set] button.
A confirmation screen appears.
- (5) Click the [OK] button.
The SNMP Manager settings are applied.
- (6) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

- 4 Set up a community or a user.
Set up the community or the user that is used for SNMP Trap.

Note

- To use SNMPv1 or SNMPv2c, perform the "Setup SNMP Agent Community" settings. To use SNMPv3, perform the "Setup SNMP Agent User" settings.
- To use ETERNUS SF Storage Cruiser for management, perform the "Setup SNMP Agent Community" settings to use SNMPv1.

Community setup

- (1) In [Action], click [Setup SNMP Community].
The [Setup SNMP Agent Community] screen appears.
- (2) In the community list of the [Setup SNMP Agent Community] screen, click the [Add] button.
- (3) Enter the community name, set the required items, and click the [OK] button.

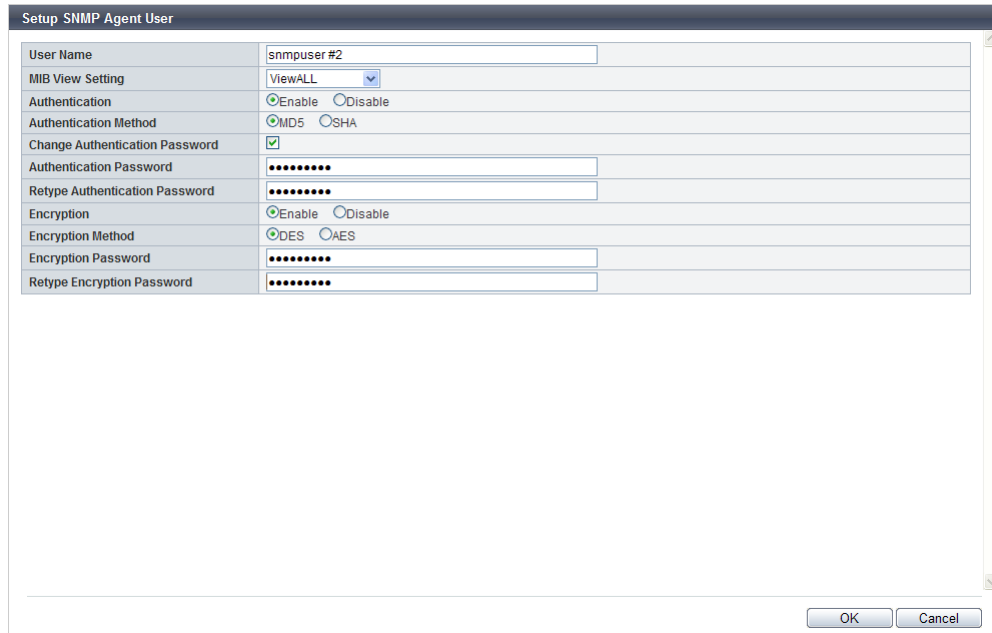
Setup SNMP Agent Community	
Community Name	COM#2
View Name	ViewALL
Allowed SNMP Manager List	#1 ☒ 192.168.6.200
	#2 ☐ fe80::1
	#3 ☐ 192.168.30.42
	#4 ☐ 2003::db8:bd05:1d2:288a
	#5 ☐ 192.168.30.41
OK Cancel	

The screen display returns to the community list of the [Setup SNMP Agent Community] screen.

- (4) Check the community name that was set in [Step \(3\)](#) is added in the community list and click the [Set] button.
A confirmation screen appears.
- (5) Click the [OK] button.
The SNMP community settings are applied.
- (6) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

User setup

- (1) In [Action], click [Setup SNMP User].
The [Setup SNMP Agent User] screen appears.
- (2) In the user list of the [Setup SNMP Agent User] screen, click the [Add] button.
- (3) Enter the user name, set the required items, and click the [OK] button.



The screen display returns to the user list of the [Setup SNMP Agent User] screen.

- (4) Check the user that was set in [Step \(3\)](#) is added in the user list and click the [Set] button.
A confirmation screen appears.
- (5) Click the [OK] button.
The SNMP user settings are applied.
- (6) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

5 Trap setup

Set up the destination for sending the SNMP Trap.

Note

This step is not required when ETERNUS SF Storage Cruiser is used to monitor the ETERNUS DX.

- (1) In [Action], click [Setup SNMP Trap].
The [Setup SNMP Agent Trap] screen appears.
- (2) In the trap list of the [Setup SNMP Agent Trap] screen, click the [Add] button.

- (3) Select the Manager No. that was set in [Step 3](#) for [Manager No.], set the required items, and click the [OK] button.

Manager No.	Manager01
SNMP Version	v1
Community Name	COM#2
User Name	snmpuser #0
Port No.	162

The screen display returns to the trap list of the [Setup SNMP Agent Trap] screen.

- (4) Check the trap that was set in [Step \(3\)](#) is added in the trap list and click the [Set] button.
A confirmation screen appears.
- (5) Click the [OK] button.
The SNMP Trap settings are applied.
- (6) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.
- 6 Download the MIB file.
Download the MIB file that is registered in the ETERNUS DX.
- (1) In [Action], click [Download MIB File].
The [Download MIB File] screen appears.

- (2) In the [Download MIB File] screen, set the required items and click the [Download] button.

Note

Select the "The ServerView control code is added to the comment line of the MIB definition file" checkbox when downloading the MIB file for monitoring the ETERNUS DX by ServerView.

Download MIB File	
Information	
MIB File is downloaded.	
Download MIB File	
Option	☒ The ServerView control code is added to the comment line of the MIB definition file
Version	v1 C_v2c/v3

Download Done Cancel

A confirmation screen appears.

- (3) Click the [OK] button.
A dialog box to download the file appears.
- (4) Click the [Save] button.
The MIB file is saved.
- (5) Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

End of procedure

6.2.2 E-mail Setup

If an event occurs in the ETERNUS DX, the event information is reported to the specified e-mail address.

Note

- Up to five e-mail addresses can be set.
- Make sure to check whether the e-mail messages are received correctly after the e-mail notification environment setup is complete.
- E-mail messages are not sent again when a communication error occurs between the ETERNUS DX and the SMTP server.

The e-mail setting is explained below.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Network].
The [Network] screen appears.
- 3 In [Action], click [Setup E-Mail Notification].
The [Notification E-Mail] tab screen of the [Setup E-Mail Notification] screen appears.
- 4 In the [Notification E-Mail] tab screen, set the required items.
 - Select "Yes" for "Notification E-Mail".
 - Enter the destination e-mail address or addresses for the Destination E-Mail Address fields.

Setup E-Mail Notification

Information

E-Mail address of destination for various event notification are defined here.

Notification E-Mail | E-Mail Server Settings | Advanced Settings

Notification E-Mail Settings

Notification E-Mail	☒ Yes ☐ No
Destination E-Mail Address 1	user01@fooohost.com
Destination E-Mail Address 2	
Destination E-Mail Address 3	
Destination E-Mail Address 4	
Destination E-Mail Address 5	
Comment	

Set Send Test E-Mail Cancel

- 5 Click the [E-Mail Server Settings] tab.
The [E-Mail Server Settings] tab screen appears.

- 6 In the [E-Mail Server Settings] tab screen, set the required items.

The screenshot shows the 'Setup E-Mail Notification' dialog box with the 'E-Mail Server Settings' tab selected. The 'Information' section at the top states: 'E-Mail address of destination for various event notification are defined here. The log data will be collected and sent within 15 minutes from the occurrence of error or warning. This log includes only the latest 12 hours log data before the error or warning occurs and the limit log size is 1.44 MB.' Below this are three tabs: 'Notification E-Mail', 'E-Mail Server Settings' (active), and 'Advanced Settings'. The 'E-Mail Server Settings' section contains the following fields:

LAN Port used for SMTP Connection	MNT
SMTP Server	DesEmail1@Fujitsu
SMTP Port No.	25 (1 - 65535)
Sender E-Mail Address	DesEmail2@Fujitsu
SMTP over SSL	☒ None ☐ STARTTLS ☐ SSL/TLS
SMTP requires authentication	☐ None ☒ AUTH SMTP
Authentication Method	☒ Automatic ☐ CRAM-MD5 ☐ PLAIN ☐ LOGIN
User Name	profile
Password	*****

At the bottom right are three buttons: 'Set', 'Send Test E-Mail', and 'Cancel'.

- 7 Click the [Advanced Settings] tab.
The [Advanced Settings] tab screen appears.
- 8 In the [Advanced Settings] tab screen, set the required items.

Note

This item does not need to be changed from the default value for normal operation.

The screenshot shows the 'Setup E-Mail Notification' dialog box with the 'Advanced Settings' tab selected. The 'Information' section is the same as in the previous tab. Below the tabs are three tabs: 'Notification E-Mail', 'E-Mail Server Settings', and 'Advanced Settings' (active). The 'Advanced Settings' section contains the following fields:

☒ Change following Timing Parameter items	
Connection Timeout	30 sec. (1 - 300)
Response Timeout	60 sec. (1 - 300)
Maximum Retries	2 count (0 - 5)
Retry Interval	60 sec. (1 - 300)

At the bottom right are three buttons: 'Set', 'Send Test E-Mail', and 'Cancel'.

- 9 Click the [Set] button to apply the specified settings.
A confirmation screen appears.
- 10 Click the [OK] button.
The e-mail notification settings are applied.

- 11 Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

End of procedure

6.2.3 Syslog Setup

If an event occurs in the ETERNUS DX, logs for the event can be sent to the specified Syslog server (external server).

Note

- Up to two Syslog servers can be set.
- Make sure to check whether the Syslog server receives logs correctly after the Syslog notification environment setup is complete.
- Logs are not sent again when a communication error occurs between the ETERNUS DX and the Syslog server.

The Syslog setting is explained below.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Network].
The [Network] screen appears.
- 3 In [Action], click [Setup Syslog].
The [Setup Syslog] screen appears.
- 4 In the [Setup Syslog] screen, set the required items.
 - Select "on(RFC3164)" or "on(RFC5424)" for "Send Log".

IMPORTANT

To send messages in RFC5424 format to a target Syslog server that supports RFC5424, select "on(RFC5424)". If this is not the case, select "on(RFC3164)".

- Enter the domain name or IP address of the Syslog server in "Domain Name /IP Address".

Setup Syslog

▼ Information

Please enter the setting of Syslog.

▼ Syslog Server1

Send Log: ☒ on(RFC3164) ☐ on(RFC5424) ☐ off

Domain Name /IP Address: 192.168.5.34

Port No.: 500

LAN Port: MNT

▼ Syslog Server2

Send Log: ☐ on(RFC3164) ☐ on(RFC5424) ☒ off

Domain Name /IP Address:

Port No.: 500

LAN Port: MNT

Set Cancel

- 5 Click the [Set] button.
A confirmation screen appears.
- 6 Click the [OK] button.
The Syslog notification settings are applied.
- 7 Check the setting completion message and click the [Done] button.
The screen display returns to the [Network] screen.

End of procedure

6.3 Remote Support Setup

When using the remote support, reporting problems in the ETERNUS DX to the remote support center must be set.

Note

Remote support allows prompt detection and resolution of trouble.

There are two types for performing remote support function; by using AIS Connect function and by using REMCS.

Caution

- Note that AIS Connect and REMCS are not available in some regions. Contact the Support Department for details.
- AIS Connect and REMCS cannot be used at the same time. AIS Connect function can only be used when REMCS is not specified or is stopped. When REMCS is used, suspend the REMCS function, and then enable the AIS Connect function.

6.3.1 Remote Support (by AIS Connect) Setup

When using the remote support function by AIS Connect, perform the environment settings for connecting to the remote server (AIS Connect server) in the remote support center.

IMPORTANT

- If the REMCS function is being used, temporarily stop the REMCS function.
- In the EMEA, North American, Central American, and Caribbean regions, the "Log Transmission" setting for the "Set E-Mail Notification" function may be enabled ("Yes" is displayed). If this setting is enabled, disable it (select "No").

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [AIS Connect] in [Remote Support].
The [Remote Support] screen appears.
- 3 Perform the environment settings for the AIS Connect function.
 - (1) In [Action], click [Setup AIS Connect Environment].
The [Setup AIS Connect Environment] screen appears.
 - (2) Select "Enable" for "AIS Connect" and then "Country code : Country name" for "Country of Installation (Country Code : Country Name)". Perform the other additional settings that are required.

Setup AIS Connect Environment

Information

During registration process, the necessary registration data will be sent from the ETERNUS DX to 'AIS Connect Server'. Even if the registration is completed, Fujitsu cannot access to the ETERNUS DX without customers' acknowledge. AIS Connect function will send events, which are configured by the 'Setup Event Notification' function, from the ETERNUS DX to 'AIS Connect Server'. The notification data is only used for customer hardware support.
For SLA contract, any data required for problem investigation is automatically reported to 'AIS Connect Server'.
Note that the data is encrypted before being sent.

AIS Connect Environment Setting

AIS Connect	☒ Enable ☐ Disable
Country of Installation (Country Code : Country Name)	156 : CHINA
Use LAN Port	☒ MINT ☐ ORMT
SSL Server Certification	☒ Use ☐ Not Use
Automatic Log Transmission	☒ Enable ☐ Disable
Proxy Server	proxy.fujitsu.co.jp
Port No.	443
Connection Type	☐ HTTP ☒ SOCKS
User Name	Anonymous
Change Password	☒
Password	*****
Confirm Password	*****

Set Cancel

- (3) Click the [Set] button.
A confirmation screen appears.
- (4) Click the [OK] button.
The AIS Connect settings are applied.

- (5) Check the setting completion message and click the [Done] button.
The screen display returns to the remote support screen.
- 4 Confirm the connection of the ETERNUS DX and the AIS Connect server in the remote support center.
 - (1) In [Action], click [Test Server Connectivity].
A confirmation screen appears.
 - (2) Click the [OK] button.
The connection with the server is checked. The result is displayed in the [Test Server Connectivity Result] screen.
 - (3) Click the [Done] button.
The screen display returns to the remote support screen.
- 5 Send the test event to confirm that the event is reported to the AIS Connect server.
 - (1) In [Action], click [Send AIS Connect Test Event].
A confirmation screen appears.
 - (2) Click the [OK] button.
The test event is sent to the AIS Connect server. The result is displayed in the [Send AIS Connect Test Event Result] screen.
 - (3) Click the [Done] button.
The screen display returns to the remote support screen.

End of procedure

6.3.2 Remote Support (by REMCS) Setup

When using the remote support function by REMCS, perform the environment settings for connecting to the remote support center, and register the customer information to send to the remote support center.

IMPORTANT

If the AIS Connect function is being used, disable the AIS connect function and then start the remote support (by REMCS) setup.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [REMCS] in [Remote Support].
The [Support Information] tab screen of the [Remote Support] screen appears.
- 3 In [Action], click [Setup Remote Support].
The [Setup Remote Support] screen appears.

- 4 In the [Setup Remote Support] screen, set the items in [Customer Information] and [Communication Environment Information].

Setup Remote Support

▼ Information

⚠ * designates mandatory field.

⚠ By clicking on the [Set] button, the configuration information is sent to the REMCS center. The REMCS center will verify the information and the result of verification is sent back to the "Result notification information" set in the destination. Please make sure to check the contents of the E-mail for correctness.

Depending on the network situation, it may take some time for the round trip transmission.

▼ Information File

Customer Information File	D:\CustomerInformation.bt	参照
Communication Environment Information File	D:\CommunicationEnvironmentInformation.bt	参照

Import

▼ Customer Information

▼ Information

ⓘ This function sends customer and hardware configuration information to Fujitsu 'REMCS Center'. The information is used for customer hardware support, improvement of Fujitsu products and to send information regarding new products. This information will never be disclosed to any third parties. Under maintenance contract, any data required for problem investigation is automatically reported to Fujitsu 'REMCS Center'. Note that the information is encrypted before being sent.

▼ Detailed Settings

☐ Delete any Customer Identity information from the storage system after the information is sent to the 'REMCS Center'.

Set Cancel

- 5 Click the [Set] button.
A confirmation screen appears.
- 6 Click the [OK] button.
The remote support settings are applied.
- 7 Check the setting completion message and click the [Done] button.
The screen display returns to the remote support screen.
The specified information is sent to the remote support center and the connection of the ETERNUS DX and the remote support center is checked.
The connection check result is sent to the e-mail address that is set in "Result notification information".

End of procedure

6.4 Audit Log Setup

Audit trail logs (hereinafter referred to as "audit log") that record performed operations by using the ETERNUS DX and the system actions that are associated with these operations can be sent to the specified Syslog server (external server).

Note

- Up to two Syslog servers can be set.
- After the environmental settings for audit logs are complete, confirm that the audit log is successfully received on the Syslog server.
- Even if a communication error occurs between the ETERNUS DX and the Syslog server, the audit log is not sent again.

The audit log setting is explained below.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Audit Log].
The [Audit Log] screen appears.
- 3 If "Disable" is specified for "Audit Log", select "Enable".
 - (1) Click [Enable Audit Log] in [Action].
A confirmation screen appears.
 - (2) Click the [OK] button.
Enabling of the audit log starts.
 - (3) Check the setting completion message and click the [Done] button.
The screen display returns to the [Audit Log] screen.
- 4 Specify the Syslog server to which the audit log is sent.
 - (1) Click [Setup Audit Log] in [Action].
The [Setup Audit Log] screen appears.
 - Select "on (RFC3164)" or "on (RFC5424)" for "Send Audit Log".

IMPORTANT

To send messages in RFC5424 format to a target Syslog server that supports RFC5424, select "on (RFC5424)". If this is not the case, select "on (RFC3164)".

- Enter the domain name or IP address of the Syslog server in "Domain Name /IP Address".

Setup Audit Log

▼ Information

Please enter the Audit Log setting.

▼ Syslog Server1

Send Audit Log: ☒ On (RFC3164) ☐ On (RFC5424) ☐ Off

Domain Name / IP Address: 192.168.5.21

Port No.: 9

LAN Port: MNT

▼ Syslog Server2

Send Audit Log: ☐ On (RFC3164) ☐ On (RFC5424) ☒ Off

Domain Name / IP Address: 192.168.3.24

Port No.: 10

LAN Port: MNT

Set Cancel

- (2) Click the [Set] button.
A confirmation screen appears.
- (3) Click the [OK] button.
Setting of the audit log starts.
- (4) Check the setting completion message and click the [Done] button.
The screen display returns to the [Audit Log] screen.

End of procedure

6.5 Monitoring Server (SNMP Manager) Settings

Install and set up the monitoring software on the server side.

Refer to the manual for the monitoring software to install and set the monitoring software.

Note

Register the file that was downloaded in "Download the MIB file" (Step 6) in "6.2.1 SNMP Trap Setup" (page 85) as the MIB definition file for the monitoring software.

6.6 Transmission Test Execution

For SNMP Trap notifications or e-mail notifications, perform a transmission test to make sure that event notifications are sent normally.

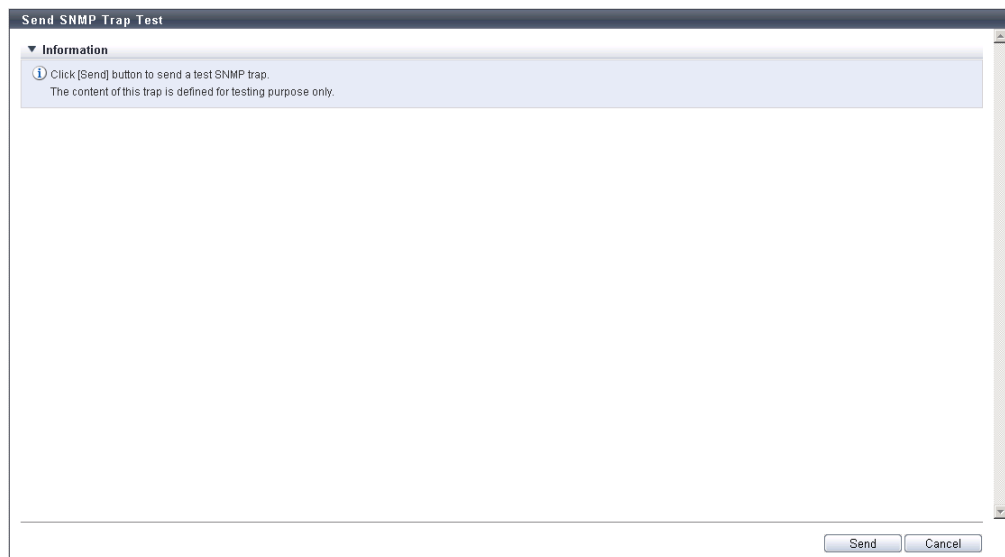
6.6.1 SNMP Trap Test

Perform the SNMP Trap test to check that the SNMP Trap can be sent from the ETERNUS DX to the SNMP Manager.

The procedure to send trap test and to check the result is as follows:

Procedure

- 1 Perform the test transmission of the SNMP Trap.
 - (1) On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
 - (2) In [Category], click [Network].
The [Network] screen appears.
 - (3) In [Action], click [Send SNMP Trap].
The [Send SNMP Trap Test] screen appears.
 - (4) In the [Send SNMP Trap Test] screen, click the [Send] button.



A confirmation screen appears.

- (5) Click the [OK] button.
The test transmission of the SNMP Trap is performed.
- (6) Check the test transmission completion message and click the [Done] button.
The screen display returns to the [Network] screen.

- 2 Check the result of the test transmission.

Check that the SNMP Trap is notified to the monitoring server.

For details on the messages for test transmission, refer to "Message List".

If the SNMP Manager cannot receive an SNMP test trap, check that the network has no trouble, and the settings for the ETERNUS DX are correct.

- Is the LAN between the monitoring server and ETERNUS DX connected correctly?

Execute the "ping" command from the monitoring server, and confirm the reply from the ETERNUS DX.

IMPORTANT

When "ICMP" is disabled by the firewall settings for ETERNUS Web GUI, the "ping" command cannot be used for confirmation. Enable "ICMP" before executing the "ping" command.

- Is the monitoring software set correctly to monitor the ETERNUS DX?
- Are the SNMP environment settings and the transmission destination for the SNMP Trap set correctly on the ETERNUS DX?

End of procedure

6.6.2 Send Test Mail

Perform the email transmission test to check that the email can be sent from the ETERNUS DX to the specified email address.

The procedure to send test mail is as follows:

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Network].
The [Network] screen appears.
- 3 In [Action], click [Setup E-Mail Notification].
The [Setup E-Mail Notification] screen appears.

- 4 Click the [Send Test E-Mail] button.

Setup E-Mail Notification

▼ Information
E-Mail address of destination for various event notification are defined here.

Notification E-Mail | E-Mail Server Settings | Advanced Settings

▼ Notification E-Mail Settings

Notification E-Mail	☒ Yes ☐ No
Destination E-Mail Address 1	user01@fooohost.com
Destination E-Mail Address 2	
Destination E-Mail Address 3	
Destination E-Mail Address 4	
Destination E-Mail Address 5	
Comment	

Set Send Test E-Mail Cancel

- 5 Check that the test mail is sent to the e-mail addresses that are set.
For details on the event code and message of the test mail, refer to "Message List".

End of procedure

Chapter 7

Power Control Setup

Perform power control settings as required.

Power control settings must be performed if the Auto Power function (AC automatic linkage mode) is enabled, the Power Resume function (automatic power recovery mode) is enabled, the power synchronized unit is connected, or the Wake On LAN function is used.

For details on the settings, refer to "Configuration Guide (Web GUI)".

7.1 Setup of the Auto Power Function and/or the Power Resume Function

To automatically turn on the ETERNUS DX when AC power is supplied or when power is restored after a power failure, use ETERNUS Web GUI to enable the Auto Power function and/or the Power Resume function.

- Auto Power function (AC automatic linkage mode)

When the Auto Power function is enabled, the ETERNUS DX is automatically turned on when AC power is supplied.

The Auto Power function is disabled for the factory default setting.

- Power Resume function (automatic power recovery mode)

When the Power Resume function is enabled, the ETERNUS DX is automatically turned on when the power supply is restored after a power failure.

The Power Resume function is disabled for the factory default setting.

Table 7.1 shows how the ETERNUS DX operates when the Auto Power function and the Power Resume function are enabled or disabled.

Table 7.1 ETERNUS DX Operation According to the Settings of the Auto Power Function and the Power Resume Function

Settings for the power control functions	How the ETERNUS DX operates
Auto Power function is disabled Power Resume function is disabled	The ETERNUS DX is not automatically turned on even when AC power is supplied or when power is restored after a power failure.
Auto Power function is enabled Power Resume function is disabled	The ETERNUS DX is automatically turned on when AC power is supplied. The ETERNUS DX is not turned on even when power is restored after a power failure.
Auto Power function is disabled Power Resume function is enabled	The ETERNUS DX is not turned on automatically even when AC power is supplied. The ETERNUS DX is automatically turned on when power is restored after a power failure.
Auto Power function is enabled Power Resume function is enabled	The ETERNUS DX is automatically turned on when AC power is supplied and when power is restored after a power failure.

The procedure to enable the Auto Power function and/or the Power Resume function is described below.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [System Settings].
The [System Settings] screen appears.
- 3 In [Action], click [Setup Power Management].
The [Setup Power Management] screen appears.
- 4 In the [Setup Power Management] screen, select [Enable] for [Auto Power], [Power Resume], or both.

Setup Power Management

▼ Information

Please enter the setting of Power Management.

▼ Power Control by External Device

RCIL	☐ Enable ☒ Disable
Auto Power	☒ Enable ☐ Disable
Power Resume	☒ Enable ☐ Disable

▼ PWC Connection Settings

Connection CM	☐ CM#0 ☒ CM#1
Delay until Shutdown	0 min.
Set management unit interface	☒ Power Synchronized Unit ☐ PMAN ☐ Manual
Power Failure Signal	☒ Positive ☐ Negative
Low Battery Signal	☒ Positive ☐ Negative
UPS Shutdown Signal	☒ Enable ☐ Negative

Set Cancel

- 5 Click the [Set] button.
A confirmation screen appears.
- 6 Click the [OK] button.
The Auto Power function and/or the Power Resume function setting is applied.
- 7 Check the setting completion message and click the [Done] button.
The screen display returns to the [System Settings] screen.

End of procedure

7.2 Connection Setup for Power Synchronized Unit

Refer to "Configuration Guide (Power Synchronized Unit)" for the required settings to use power control by connecting power synchronized units to an ETERNUS DX.

7.3 Wake On LAN Settings

A network environment needs to be set to receive magic packets that are used by Wake On LAN for the ETERNUS DX.

The procedure to set Wake On LAN is as follows.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click [System].
The [System] screen appears.
- 2 In [Category], click [Network].
The [Network] screen appears.
- 3 In [Action], click [Setup Network].
The [Setup Network Environment] screen appears.
- 4 In the [Setup Network Environment] screen, select [Enable] for [Wake on LAN].
 - For operations with cluster connections, set the IP address of the Slave CM for the "Slave IP Address" of the MNT port.
 - To control power supply with servers in a network to which the ETERNUS DX does not belong, set "Gateway" and specify the server IP address or the network address in "Allowable IP Address".

The screenshot shows the 'Setup Network Environment' web interface. It includes sections for Information, Select Network Port (MNT), LAN settings (Speed and Duplex set to Auto-negotiation, Wake on LAN set to Enable), IPv4 and IPv6 Settings tabs, and an Interface section with fields for Master IP Address (192.168.1.62), Slave IP Address (192.168.1.63), Subnet Mask (255.255.255.0), and Gateway (192.168.1.61). There are also fields for Primary and Secondary DNS, and a table for Allowable IP Address. At the bottom right are 'Clear', 'Set', and 'Cancel' buttons.

- 5 Click the [Set] button.
A confirmation screen appears.
- 6 Click the [OK] button.
The network environment settings are applied.
- 7 Check the setting completion message and click the [Done] button.
The screen display returns to the [System Settings] screen.

End of procedure

Chapter 8

SAN Connection Settings

This chapter explains the required settings to use an ETERNUS DX via a SAN connection.

8.1 Connection Settings for the ETERNUS DX

Set up the ETERNUS DX as required to connect to the server.

This section uses an iSCSI connection as an example to explain the required settings.

8.1.1 Host Response Settings

Using host response, set an operation mode of the ETERNUS DX as appropriate for the connected host. In normal host connection, the recommended patterns prepared for each OS type in advance or the default settings are used.

Depending on the OS type and operating environment, the settings are added when the host response is customized.

IMPORTANT

Make sure to perform the appropriate host response settings before performing host group registration.

If the appropriate host response settings are not set, the volumes may not be recognized or the expected performance may not be achieved. For details on the host response settings, refer to "Configuration Guide (Web GUI)" or "Configuration Guide -Server Connection-".

Procedure

- 1 Click the [Connectivity] tab on the navigation of the ETERNUS Web GUI screen. On the [Connectivity] screen, click [Host Response] in [Category].
- 2 In [Action], click [Add Host Response].

- 3 Enter the host response name and set the required items. When ETERNUS Multipath Driver is used, the TPG Referrals setting can be enabled.
Click the [Modify] button after the required settings are complete.

Modify Host Response

Information
Please enter the settings of Host Response.

Host Response Name
Name: host_iscsi (1 - 16 characters(alphanumeric character blank sign))

LUN Settings
LUN Addressing: ☒ Peripheral device addressing (Default) ☐ Flat space addressing
LUN Expand Mode (Peripheral Device Addressing): ☐ Enable ☒ Disable (Default)

ALUA Settings
Asymmetric / Symmetric Logical Unit Access: ☒ ACTIVE-ACTIVE / PREFERRED_PATH (Default) ☐ ACTIVE / ACTIVE
TPGS Mode: ☐ Enable (Default) ☒ Disable
TPG Referrals Mode: ☒ Enable ☐ Disable (Default)

Inquiry Command Settings
Peripheral Device Type (Peripheral Device Addressing): ☒ No Device Type (3Fh) (Default) ☐ Not Supported (7Fh) ☐ Not Connected (20h)
Peripheral Device Type (Flat Space Addressing): ☒ No Device Type (3Fh) (Default) ☐ Controller Device (0Ch)
SCSI Version: ☒ Version6 (Default) ☐ Version5 ☐ Version4 ☐ Version3
NACA: ☐ Enable ☒ Disable (Default)
Device ID Type: ☒ Type3 (Default) ☐ Type1 ☐ Type1 + Type3
Product ID: ☒ Default ☐ Respond as ETERNUS DX S2

Test Unit Ready Command Settings
Reservation Conflict Response: ☒ GOOD (Default) ☐ RESERVATION CONFLICT

Sense Settings
Notify Change of Volume Mapping: ☒ Enable (Default) ☐ Disable
Notify Change of Volume Expansion: ☒ Enable (Default) ☐ Disable
Notify Vendor Unique Sense: ☐ Enable ☒ Disable (Default)
Sense Data Conversion: ☒ No Conversion (Default) ☐ Customize

Other Settings
Command Monitor Time: ☒ Default (25sec.) ☐ Customize sec. (10 - 255)
Load Balance Response Status: ☒ CHECK CONDITION / UNIT ATTENTION (Default) ☐ BUSY ☐ TASK SET FULL
iSCSI Discovery Reply Mode: ☒ All - Reply All Ports (Default) ☐ Port - Reply Target Port Only
iSCSI Reservation Range: ☒ Storage System (Default) ☐ CA Port

Modify Cancel

- 4 In the confirmation screen, click the [OK] button.
- 5 Click the [Done] button to return to the [Host Response] screen.

End of procedure

8.1.2 Host Affinity Settings

Use ETERNUS Web GUI to set host affinity.

Host affinity settings ensure security when multiple servers are connected by assigning the servers that can access the volumes.

This section provides an example for setting host affinity by associating a host group, a CA port group, and a LUN group when an iSCSI interface is used for connection.

Set host affinity in the following order:

- Host group addition
- Port parameter settings
- CA port group creation
- LUN group addition
- Host affinity creation

For the settings for connection using other interfaces, refer to "Configuration Guide (Web GUI)". Also refer to "Configuration Guide -Server Connection-" as required.

8.1.2.1 iSCSI Host Group Addition

Add the information on the hosts (servers) that access the ETERNUS DX via the host interface port. Create a host group when adding a host.

A host group is a group of HBAs that have the same host interface and access the same LUN groups.

The procedure to register a host group is as follows:

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click the [Connectivity] tab.
- 2 In [Action], click [Add iSCSI Host Group].
The [Add iSCSI Host Group] screen appears.
- 3 Specify a host group name to be created, and select a host response to be assigned to the host group.
- 4 Register an iSCSI host in a host group and click the [Add] button.

The following screen shot shows registration of a host by clicking the [Now Connected] tab.

Add iSCSI Host Group

Information

Please enter the setting of a new Host Group.
When changing host response of a registered host group, host response of all other host groups containing the member hosts of the host group will also be changed.

Host Group Setting

Host Group Name: iSCSI_host
Host Response: Default
Number of Hosts: 2

Now Connected **Manual Input**

Filter setting Filter Clear

ISCSI Name: Host Group: Host Response: All

2 items | 1/1 pages | 1 page Go

☒	iSCSI Name	IP Version	IP Address	Name	Alias Name	CHAP User ID	Change CHAP Password
☒	iqn.1991-05.com.microsoft:win-qodv0umsqle	IPv4	192.168.3.100	iSCSI_host_0			☐
☒	iqn.1991-05.com.microsoft:win-8nfu6rcs308	IPv4	192.168.2.200	iSCSI_host_1			☐

Add Cancel

A confirmation screen appears.

- 5 Click the [OK] button.
The iSCSI host group is added and the registration completion screen appears.
- 6 Click the [Done] button.
The screen display returns to the [Host Group] screen.

End of procedure

8.1.2.2 iSCSI Port Parameter Settings

Set the connection information between the host interface port and the server.

The procedure to set the port parameters is as follows.

The setting screen that is displayed depends on the host interface port that is being used.

Set the connection information for the iSCSI ports on the ETERNUS DX and the server.

Procedure

- 1 On the navigation of the ETERNUS Web GUI screen, click the [Connectivity] tab.
- 2 Select which iSCSI port to set the port parameters for and click [Configure iSCSI Port] in [Action].
The [Modify iSCSI Port Parameters] screen appears.
- 3 Select the target port, specify the items (for TCP/IP settings, iSCSI settings, basic settings, and security settings), and then click the [Set] button.

Note

- iSCSI Name can be managed more easily if the port name is added to the end of the default.
- When multiple target ports are selected, the parameters must be set for multiple ports.
Select the port to be set from the pull-down menu.

The following items are set as shown in this example.

- Port
CM#0 CA#0 Port#0
- IP Version
Select an IP address type. IPv4 is used in this example.
- IP Address
Specify an available IP address for the iSCSI network that is to be connected.
For IPv4, the subnet mask needs to be specified.
- iSCSI Name
For multipath connections, each name must be different.
- CHAP
Specify [ON] to use unidirectional CHAP authentication or bidirectional CHAP authentication for the target port and [OFF] to use neither of them.

To use bidirectional CHAP authentication, the CHAP user name and password must be entered.

A confirmation screen appears.

- 4 Click the [OK] button.
The port parameter is set and the setting completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [iSCSI Port] screen.

End of procedure

8.1.2.3 CA Port Group Creation

Create a CA port group for a host to access the ETERNUS DX.

A CA port group is a group of host interface ports that have the same interface and connect to the specific host group.

The procedure to create a CA port group is as follows:

Procedure

- 1 Click the [Connectivity] tab on the navigation of the ETERNUS Web GUI screen. On the [Connectivity] screen, click [Port Group] in [Category].
The [CA Port Group] screen appears.
- 2 In [Action], click [Create iSCSI Port Group].
The [Create iSCSI Port Group] screen appears.
- 3 In the [Create iSCSI Port Group] screen, enter the name of the CA port group that is to be created, select the checkbox for the ports that are to be registered in the CA port group, and click the [Create] button.

Port	Affinity
☒ CM#0 CA#0 Port#0	
☐ CM#0 CA#0 Port#1	
☒ CM#1 CA#0 Port#0	
☐ CM#1 CA#0 Port#1	

A confirmation screen appears.

- 4 Click the [OK] button.
The CA port group is created and the setting completion screen appears.
- 5 Click the [Done] button.
The screen display returns to the [CA Port Group] screen.

End of procedure

8.1.2.4 LUN Group Addition

Add a group of volumes that can be recognized by the host (LUN group).

For each LUN group, volume numbers are assigned for the Logical Unit Numbers (LUNs) that are recognized by the host.

The procedure to create a LUN group is as follows:

Procedure

- 1 Click the [Connectivity] tab on the navigation of the ETERNUS Web GUI screen. On the [Connectivity] screen, click [LUN Group] in [Category].
The [LUN Group] screen appears.
- 2 In [Action], click [Add LUN Group].
The [Add LUN Group] screen appears.
- 3 Enter the LUN group name in [LUN Group Setting]. Click the [Add] button in [Define LUN Group].
The [Add LUN] screen appears.
- 4 Enter the number for the first LUN and number of LUNs to allocate to the LUN group in [LUN Setting], select the number for the first volume to be allocated, and click the [OK] button.

No.	Name	Type	Capacity	LUN Group
0	main	Standard	1.00 GB	ISCSI_LUN0
1	sdv0	SDV	1.00 TB	ISCSI_LUN0
2	sdv1	SDV	1.00 TB	ISCSI_LUN0
3	sdv2	SDV	1.00 TB	ISCSI_LUN0
4	sdv3	SDV	1.00 TB	ISCSI_LUN0
5	sdv4	SDV	1.00 TB	ISCSI_LUN0
6	sdv5	SDV	1.00 TB	ISCSI_LUN0
7	sdv6	SDV	1.00 TB	ISCSI_LUN0

The LUNs that are to be registered in the LUN group and the information for the volumes that are allocated to the LUNs are displayed.

Host LUN	Volume No.	Name	Type	Capacity	Operation Button	LUN Group
0	0	main	Standard	1.00 GB	Delete	iSCSI_LUN0
1	1	sdv0	SDV	1.00 TB	Delete	iSCSI_LUN0
2	2	sdv1	SDV	1.00 TB	Delete	iSCSI_LUN0
3	3	sdv2	SDV	1.00 TB	Delete	iSCSI_LUN0
4	4	sdv3	SDV	1.00 TB	Delete	iSCSI_LUN0
5	5	sdv4	SDV	1.00 TB	Delete	iSCSI_LUN0
6	6	sdv5	SDV	1.00 TB	Delete	iSCSI_LUN0
7	7	sdv6	SDV	1.00 TB	Delete	iSCSI_LUN0

- 5 Click the [Create] button.
A confirmation screen appears.
- 6 Click the [OK] button.
The LUN group is added and the setting completion screen appears.
- 7 Click the [Done] button.
The screen display returns to the [LUN Group] screen.

End of procedure

8.1.2.5 Host Affinity Creation

Create an association between a host group, a CA port group, and a LUN group to enable the host to recognize a LUN group.

The procedure to create a host affinity is as follows:

Procedure

- 1 Click the [Connectivity] tab on the navigation of the ETERNUS Web GUI screen. On the [Connectivity] screen, click [Create Host Affinity] in [Action].
The [Create Host Affinity] screen appears.
- 2 Select "Host Group - CA Port Group" in "Target Connection".
- 3 Select the "Host Group", the "CA Port Group", and the "LUN Group" that are to be associated.
 - (1) Click the [Browse] button in [Host Group].
A screen to select the host group appears.

- (2) Select "Host Group" or "All" in "Target Connection".

Note

To allow all of the hosts to recognize the LUN group, select "All".

- When "Host Group" is selected
Select a host group that is to be associated, and click the [OK] button.
 - When "All" is selected
Select a host response and click the [OK] button.
- (3) Click the [Browse] button in [CA Port Group].
A screen to select the CA port group appears.
 - (4) Select the CA port group that is to be associated and click the [OK] button.
The name of the selected CA port group is displayed in "CA Port Group".
 - (5) Click the [Browse] button in [LUN Group].
A screen to select the LUN group appears.
 - (6) Select the LUN group that is to be associated and click the [OK] button.
The name of the selected LUN group is displayed in "LUN Group".
- 4 Check the path between the host and the host interface port on the ETERNUS DX in [Host – CA Port Connection], and click the [Create] button.

Create Host Affinity

▼ Information
Please enter the setting of a new Host Affinity.

▼ Target Connection Setting
Target Connection: ☒ Host Group - CA Port Group ☐ Host - CA Port

▼ Host Group - CA Port Group - LUN Group Setting

Host Group	ISCSI_host	Browse...
CA Port Group	ISCSI_CA	Browse...
LUN Group	ISCSI_LUN1	Browse...

▼ Host - CA Port Connection

Host	CA Port	
ISCSI_host_0	CM#0 CA#1 Port#1	Edit
	CM#1 CA#1 Port#1	
ISCSI_host_1	CM#0 CA#1 Port#1	Edit
	CM#1 CA#1 Port#1	

Create Cancel

A confirmation screen appears.

- 5 Click the [OK] button.
The host affinity is created and the registration completion screen appears.

- 6 Click the [Done] button.
The screen display returns to the [Connectivity] screen.

End of procedure

8.1.3 CA Reset Group Settings

All the ports are configured to be members of one CA reset group in the initial setting.

In consideration of the range affected by inaccessible port, this function can be used to create CA reset group on only a specific port and change the member ports of an existing CA reset group.

For normal operations, the setting does not need to be changed. For the servers that require CA reset group to be set, refer to "Configuration Guide -Server Connection-" for each OS.

Procedure

- 1 Click the [Connectivity] tab on the navigation of the ETERNUS Web GUI screen. On the [Connectivity] screen, click [CA Reset Group] in [Category].
- 2 Select the CA reset group to be set. In [Action], click [Set Reset Group].
All the ports are configured in one reset group in the initial setting.
- 3 Set the CA reset group member ports and click the [Modify] button.
- 4 In the confirmation screen, click the [OK] button.
- 5 Click the [Done] button to return to the [CA Reset Group] screen.

End of procedure

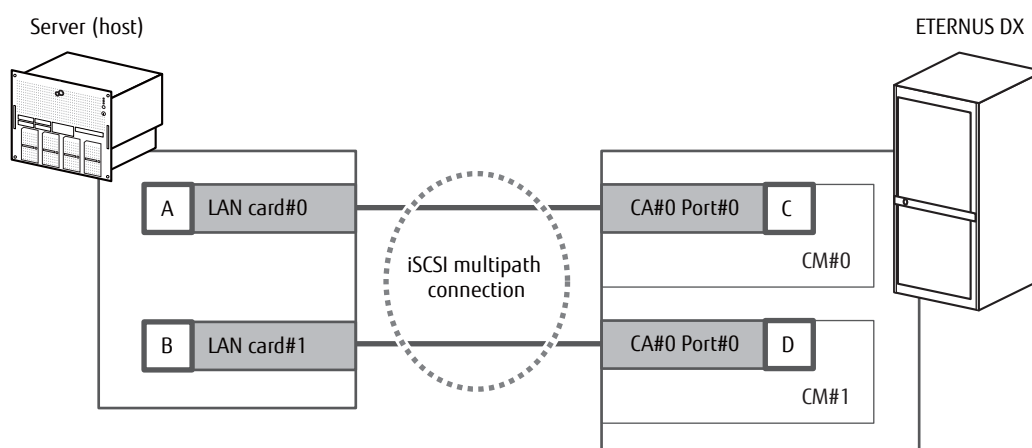
8.2 Server Connection Setup

Set up the server as required to connect to the ETERNUS DX.

The IP address to connect to the iSCSI network must be set on the server before the ETERNUS DX is connected.

After the server connection setup is completed, confirm that the volumes in the ETERNUS DX can be recognized by the server.

Figure 8.1 Connection Configuration with Servers



8.2.1 iSCSI Initiator Parameter Settings (Connection Information Settings)

Use the iSCSI Software Initiator to set the iSCSI initiator parameters.

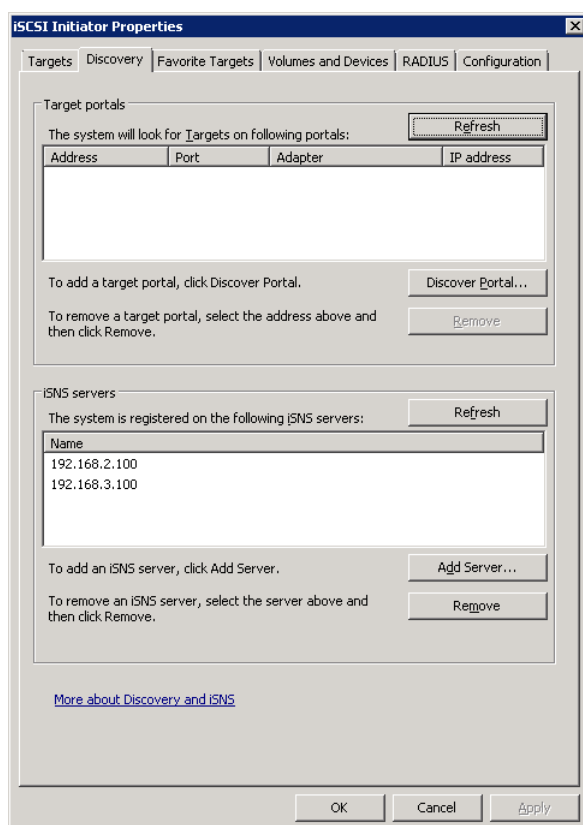
After performing the settings, check the connection to the ETERNUS DX.

Turn on the ETERNUS DX while its iSCSI port is connected to the LAN port for iSCSI connection on the server with the host interface cable. After confirming that the ETERNUS DX is in READY status, turn on the server.

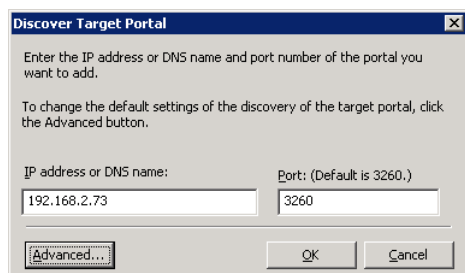
Procedure

- 1 On the [iSCSI Initiator Properties] screen, click the [Discovery] tab.

- 2 In [Target portals], click the [Discover Portal] button.

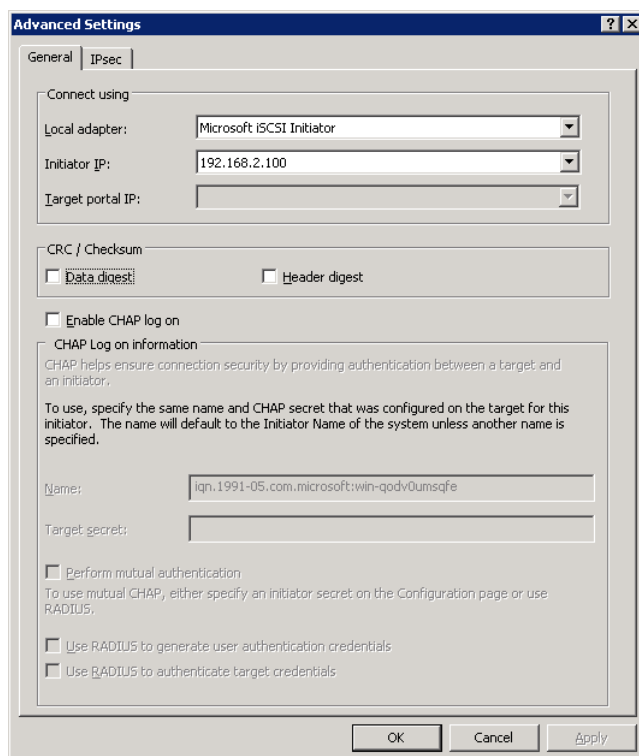


- 3 In [IP address or DNS name] on the [Discover Target Portal] screen, specify the IP address of "CM#0 CA#0 Port#0" of the ETERNUS DX (C in [Figure 8.1](#)).
When the port number on the ETERNUS DX is changed, the value set in [Port] must be changed.



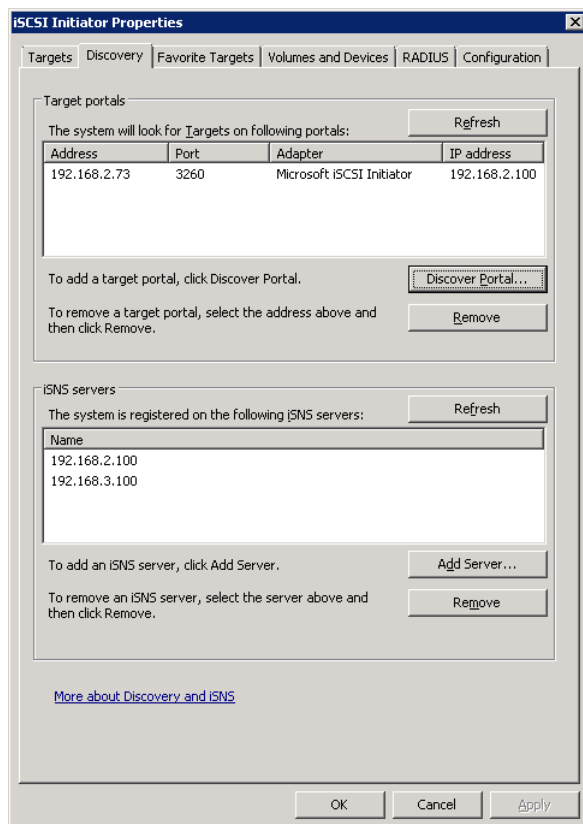
- 4 Click the [Advanced] button.
- 5 On the [Advanced Settings] screen, click the [General] tab.
- 6 Specify the following items under [Connect using].
Local adapter: Microsoft iSCSI Initiator
Initiator IP: IP address of the server (A in [Figure 8.1](#))
When setting access restrictions, the settings related to CHAP authentication is required.
For details on CHAP authentication, refer to "Configuration Guide -Server Connection-".

To enable mutual authentication, select [Perform mutual authentication].

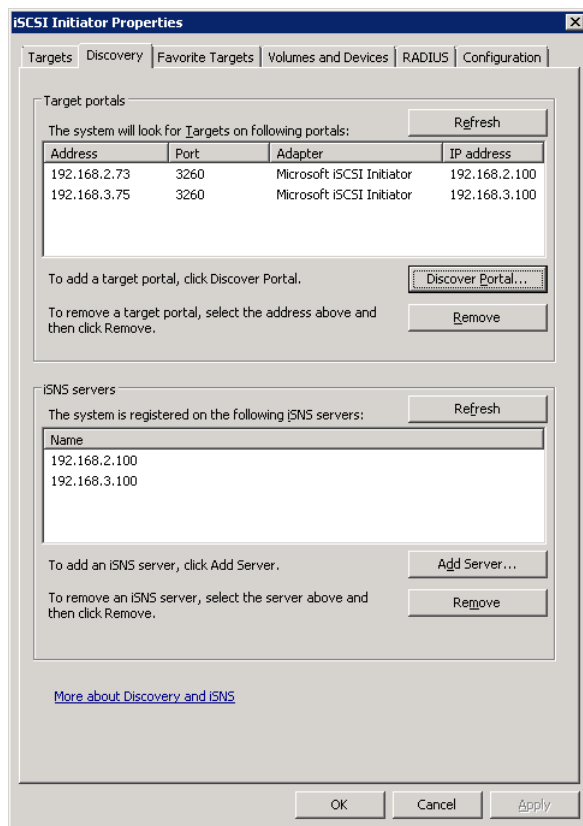


- 7 Click the [OK] button.
The screen display returns to the [Discover Target Portal] screen.
- 8 Click the [OK] button.

- 9 On the [iSCSI Initiator Properties] screen, click the [Discovery] tab.
Confirm that the specified settings are correctly reflected to [The system will look for Targets on following portals].

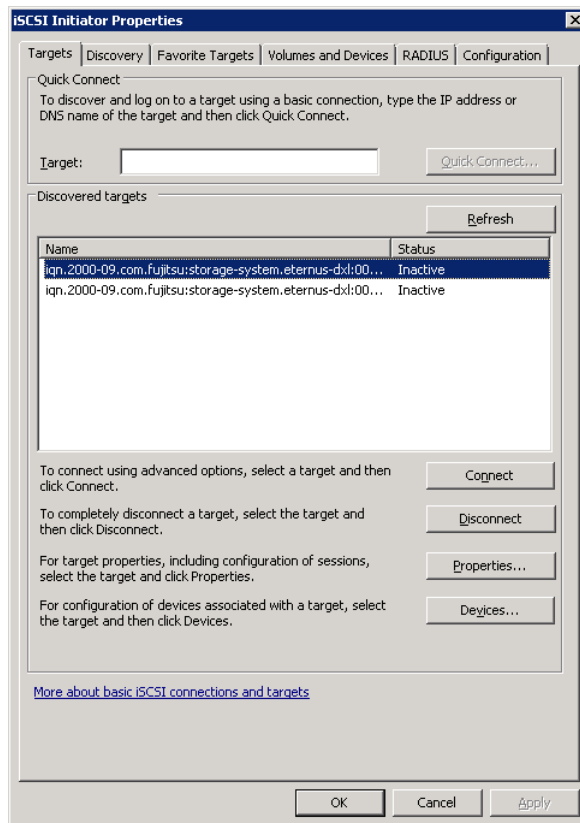


- 10 In the same way, repeat [Step 3](#) through [Step 9](#) to specify the IP address of the other LAN card (B in [Figure 8.1](#)) on the server and the IP address of "CM#1 CA#0 Port#0" (D in [Figure 8.1](#)) for the ETERNUS DX.

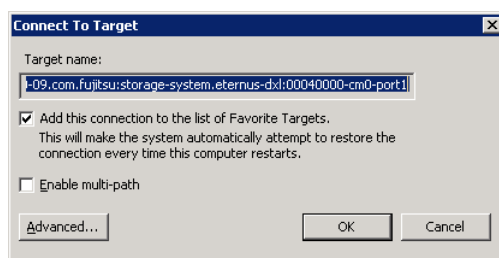


- 11 On the [iSCSI Initiator Properties] screen, click the [Targets] tab.
Confirm whether the specified contents in [The system will look for Targets on following portals] have been applied correctly before checking connection.

- 12 Confirm that the ETERNUS DX iSCSI name is displayed in [Discovered targets] and that the [Status] is [Inactive].

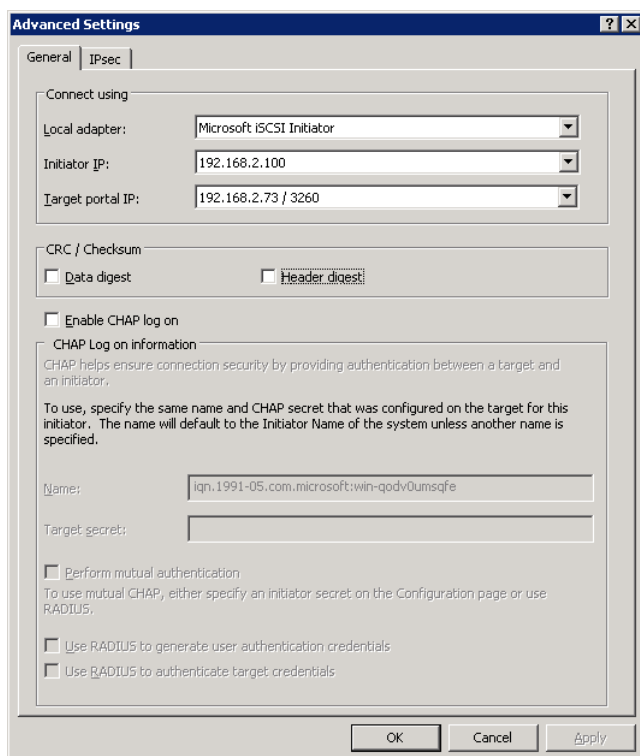


- 13 Select the iSCSI name that is to be the connection target, and click the [Connect] button.
In this example, "CM#0 CA#0 Port#0" with an iSCSI name that is specified in "8.1.2.2 iSCSI Port Parameter Settings" (page 111) is the target.
[Connect To Target] appears.
- 14 Confirm the controller number at the end of the target name and click the [Advanced] button.



- 15 On the [Advanced Settings] screen, specify the following items under [Connect using] and click the [OK] button.
Local adapter: Microsoft iSCSI Initiator
Initiator IP: IP address of the server (A in Figure 8.1)

Target portal IP: IP address of the ETERNUS DX (C in [Figure 8.1](#))



The 'Advanced Settings' dialog box, IPsec tab, is shown. It contains the following fields and options:

- Connect using:**
 - Local adapter: Microsoft iSCSI Initiator
 - Initiator IP: 192.168.2.100
 - Target portal IP: 192.168.2.73 / 3260
- CRC / Checksum:**
 - ☐ Data digest
 - ☐ Header digest
- ☐ Enable CHAP log on
- CHAP Log on information:**

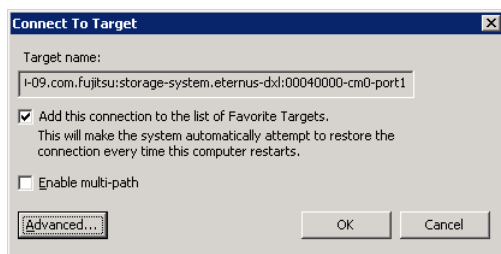
CHAP helps ensure connection security by providing authentication between a target and an initiator.

To use, specify the same name and CHAP secret that was configured on the target for this initiator. The name will default to the Initiator Name of the system unless another name is specified.

 - Name: iqn.1991-05.com.microsoft:win-qodv0umsqfe
 - Target secret:
- ☐ Perform mutual authentication
To use mutual CHAP, either specify an initiator secret on the Configuration page or use RADIUS.
- ☐ Use RADIUS to generate user authentication credentials
- ☐ Use RADIUS to authenticate target credentials

Buttons: OK, Cancel, Apply

- 16 Confirm that the [Add this connection to the list of Favorite Targets.] checkbox is selected and click the [OK] button.

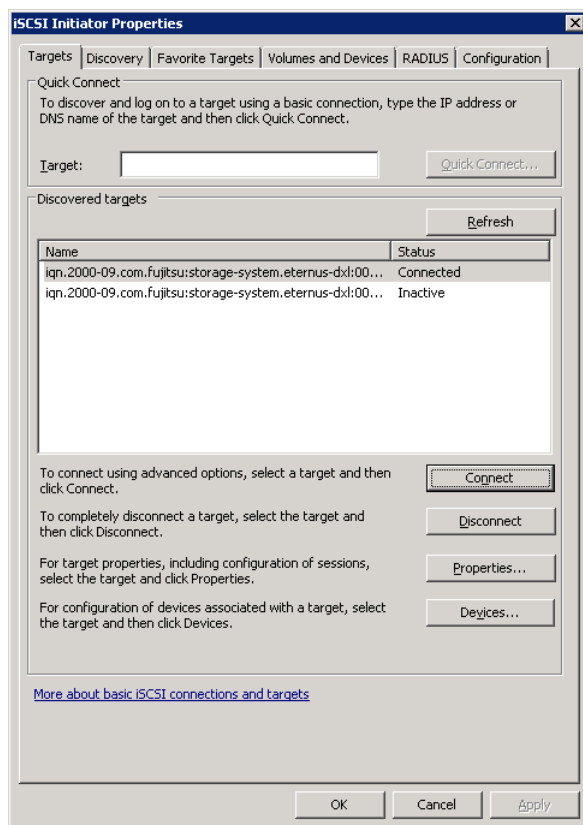


The 'Connect To Target' dialog box is shown. It contains the following fields and options:

- Target name:** i-09.com.fujitsu:storage-system.etermus-dx1:00040000-cm0-port1
- ☒ Add this connection to the list of Favorite Targets.
This will make the system automatically attempt to restore the connection every time this computer restarts.
- ☐ Enable multi-path

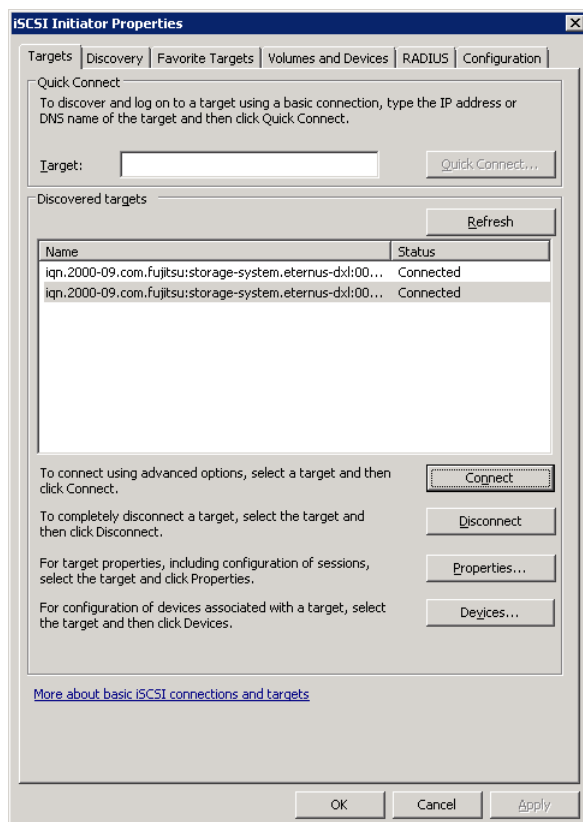
Buttons: Advanced..., OK, Cancel

- 17 On the [iSCSI Initiator Properties] screen, confirm that [Status] has changed to [Connected].



- 18 In the same way, repeat [Step 11](#) and later steps for the other target.
Initiator IP: IP address of the server (B in [Figure 8.1](#))
Target portal IP: IP address of the ETERNUS DX (D in [Figure 8.1](#))

- 19 Confirm that [Status] of the two targets has changed to [Connected] and click the [OK] button.



End of procedure

8.2.2 LUN Recognition Check

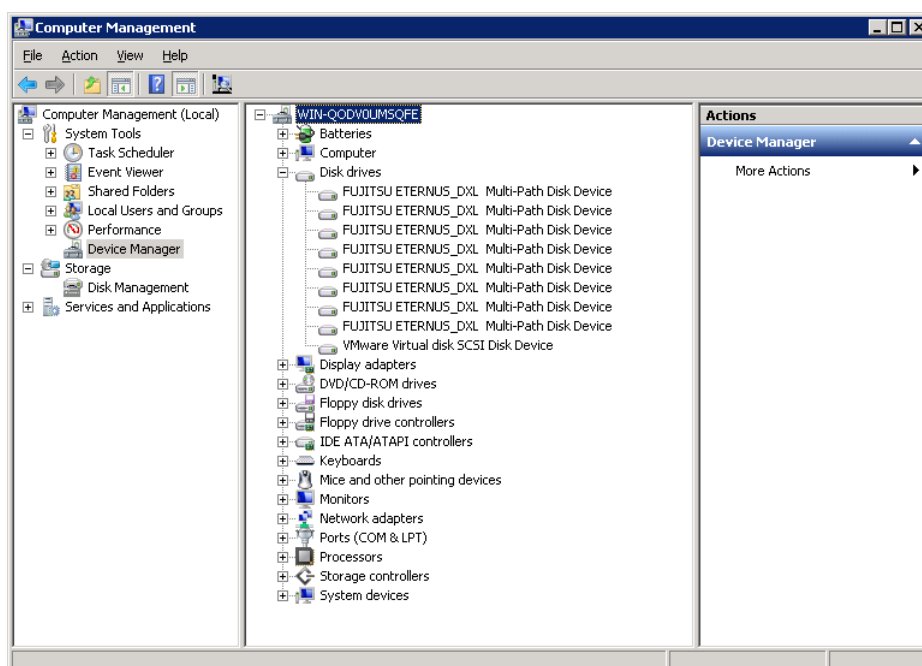
When connection is completed, confirm that the server recognizes the LUN set to the ETERNUS DX.

■ When Checking Using the Windows Device Manager

The following procedure explains how to check LUN using the Windows Device Manager.

Procedure

- 1 Open [Device Manager] and expand [Disk drives].
- 2 Confirm that the same number of "FUJITSU..." items are displayed as the number of LUNs that are set.



If the example is used, eight "FUJITSU..." items are displayed.

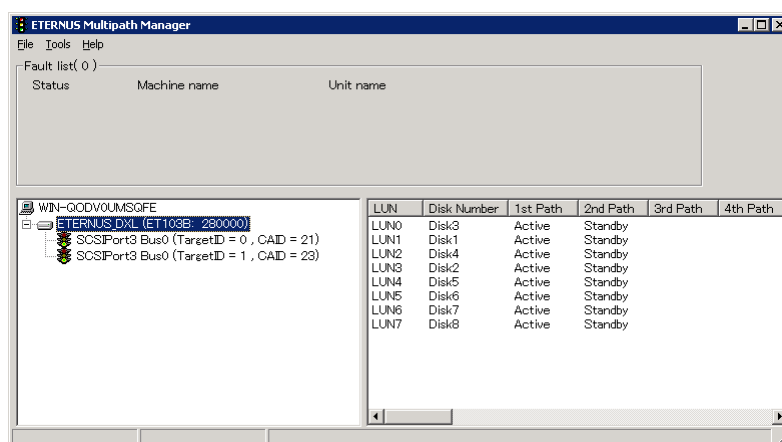
End of procedure

■ When Checking Using the ETERNUS Multipath Driver

The following procedure explains how to check LUNs with the ETERNUS Multipath Driver.

Procedure

- 1 Click the [Start] button, expand [ETERNUS Multipath Driver] from [All Programs], and open [ETERNUS Multipath Manager].
- 2 Confirm that the same number of LUNs are displayed as the number of LUNs that are set.
If the LUNs for the ETERNUS DX storage systems are recognized by the server, the devices (LUNs) in the ETERNUS DX storage systems are displayed under LUN and Disk Number.



Note

The host interface (CA) numbers of the ETERNUS DX are displayed on ETERNUS Multipath Driver as shown below.

CM#0 CA#0 Port#0 → CAID = 00

CM#1 CA#0 Port#0 → CAID = 02

CM#0 CA#0 Port#1 → CAID = 01

CM#1 CA#0 Port#1 → CAID = 03

End of procedure

8.2.3 Disk Partition Settings

Set up disk partitions to use the specified LUNs for the ETERNUS DX.

The volumes are recognized as disks in order, starting from the volume that is set for LUN0.

For example, if LUN0 is recognized as Disk 1, LUN1 is recognized as Disk 2 and LUN2 as Disk 3.

Perform the settings as shown below.

Drive	File system that is to be created	LUN	Volume No.	Volume name	Type	Capacity (*1)
F	NTFS	0	0	main	Standard	1TB
G	RAW	1	1	sdv0	SDV	(1TB)
H	RAW	2	2	sdv1	SDV	(1TB)
I	RAW	3	3	sdv2	SDV	(1TB)
J	RAW	4	4	sdv3	SDV	(1TB)
K	RAW	5	5	sdv4	SDV	(1TB)
L	RAW	6	6	sdv5	SDV	(1TB)
M	RAW	7	7	sdv6	SDV	(1TB)

***1:** The capacity that is displayed in "()" is the copy source capacity.

For the operation volume (Standard), perform "[■ Operation Disk Settings](#)" (page 133) in "[8.2.3.2 Disk Settings](#)" (page 133).

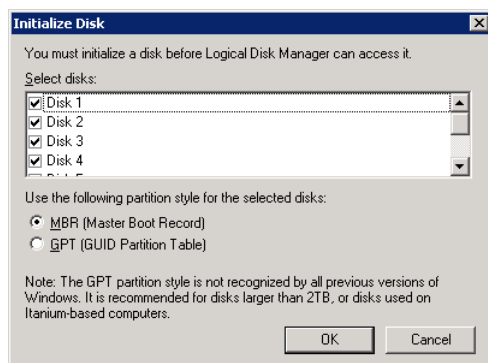
For the volume for generation copy (Snap Data Volume), perform "[■ SnapOPC+ Destination Settings](#)" (page 136) in "[8.2.3.2 Disk Settings](#)" (page 133).

8.2.3.1 Disk Recognition

The following procedure explains how to create a disk partition.

Procedure

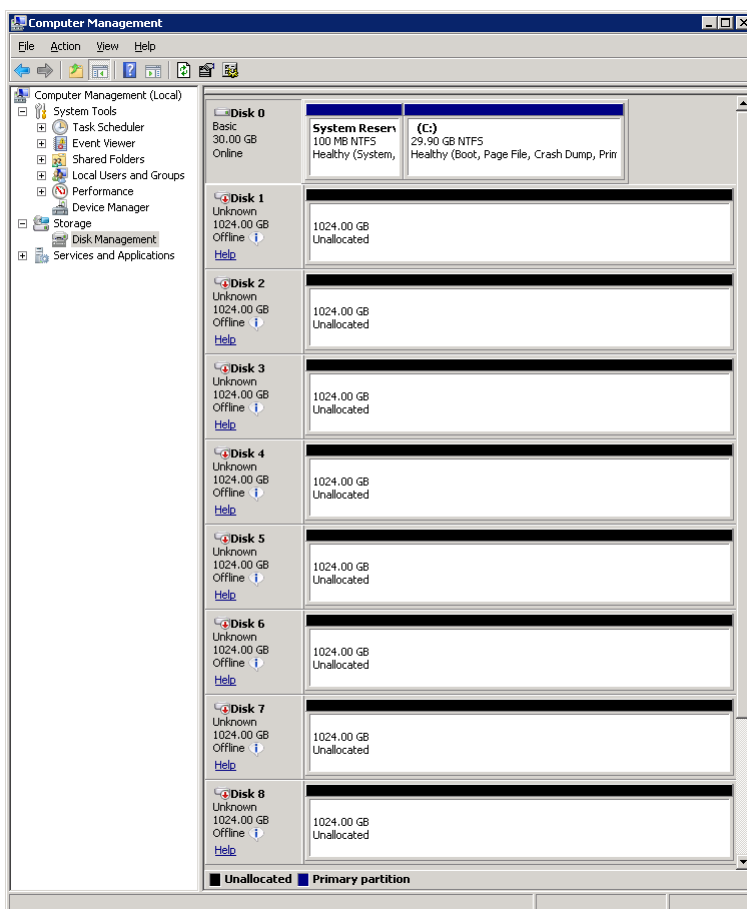
- 1 Select [Disk Management] from [Computer Management].
- 2 If the [Initialize Disk] screen appears, confirm that all the disks are selected and click the [OK] button. Then proceed to [Step 6](#).



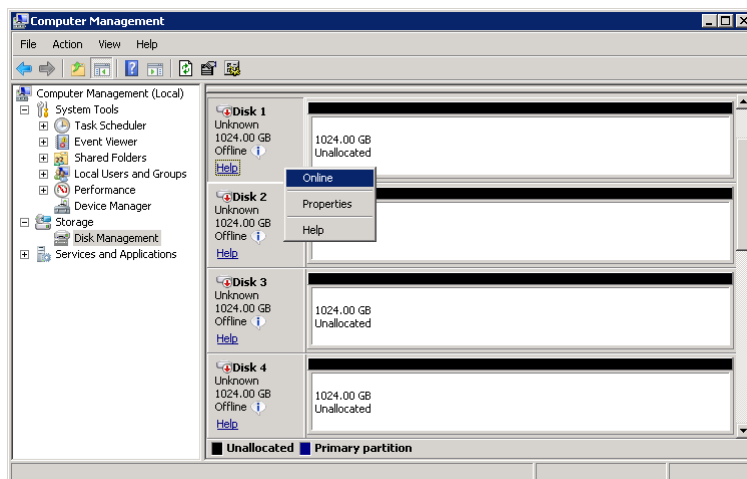
Select the checkbox for eight disks in this example.

When Windows Server 2008 Enterprise is used, [Initialize Disk] does not appear. Perform the steps from [Step 3](#) onwards.

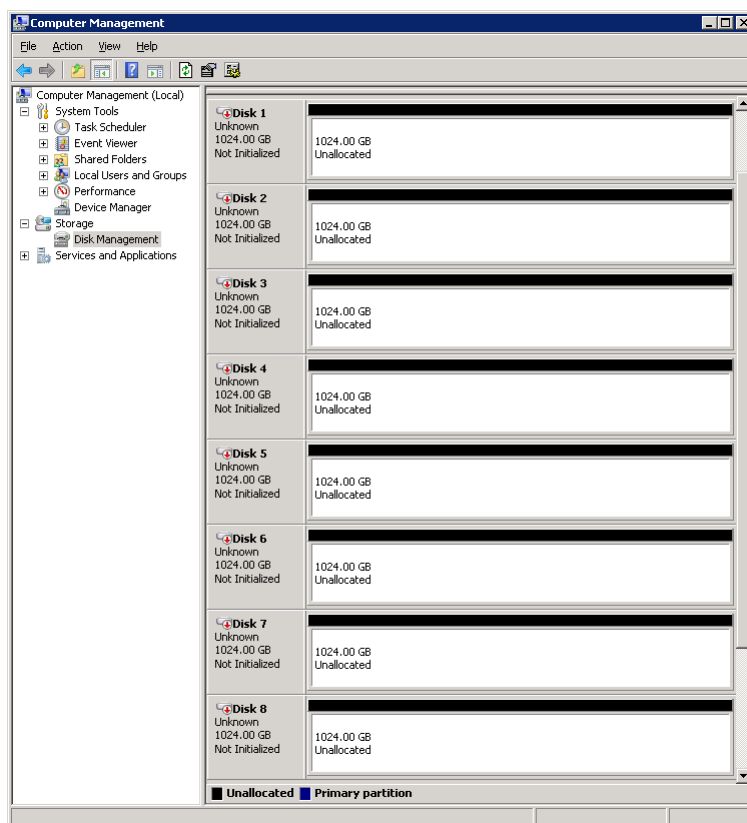
The LUNs that are set with the ETERNUS DX are recognized as [Offline].



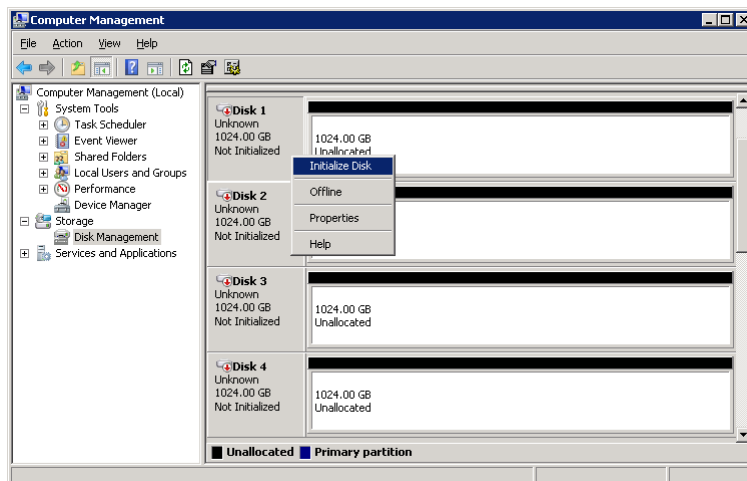
- 3 Right-click all the disks displayed as offline, and select [Online].



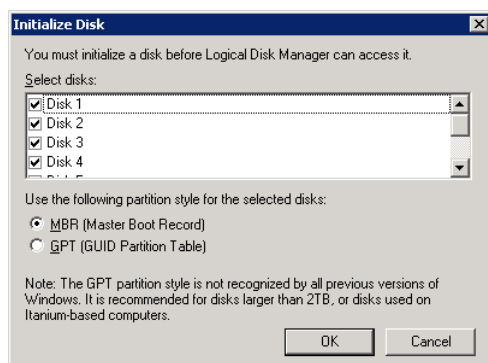
[Offline] changes to [Not Initialized].



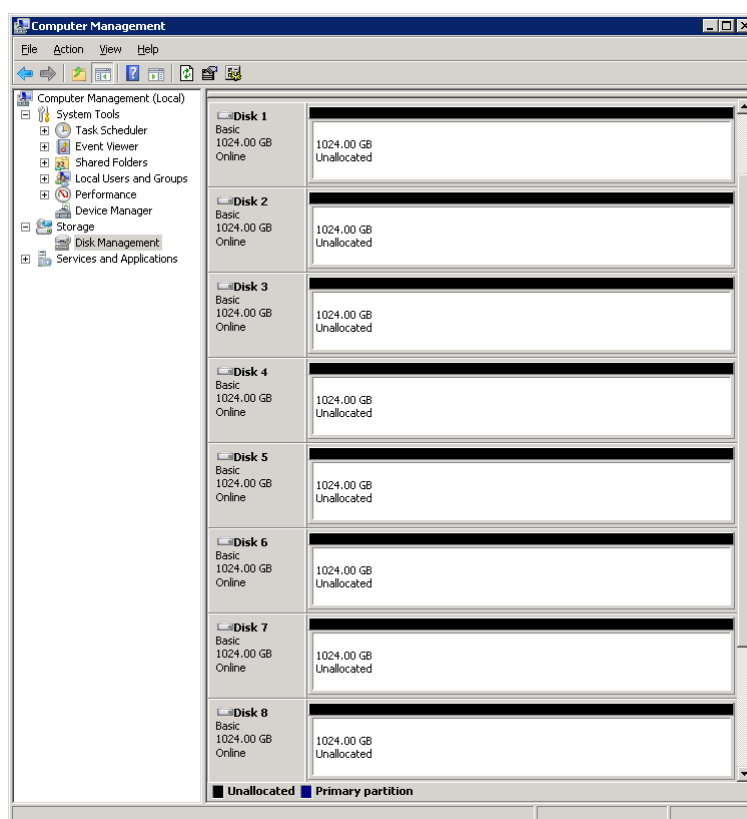
- 4 Right-click all the disks to be changed to online, and select [Initialize Disk].



- 5 When the [Initialize Disk] screen appears, confirm that all the disks are selected and click the [OK] button.



- 6 Confirm that the initialized disks are displayed as [Online].



End of procedure

8.2.3.2 Disk Settings

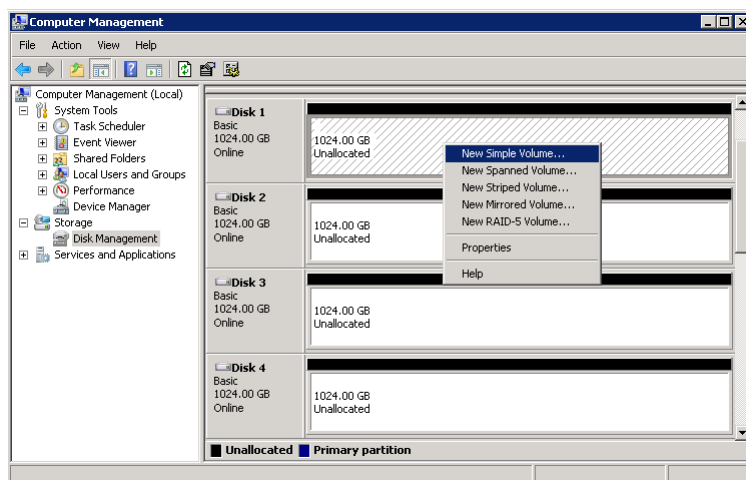
After initialization is complete, create a file system in a disk with offline status.

■ Operation Disk Settings

The following procedure explains how to set up the operation disk.

Procedure

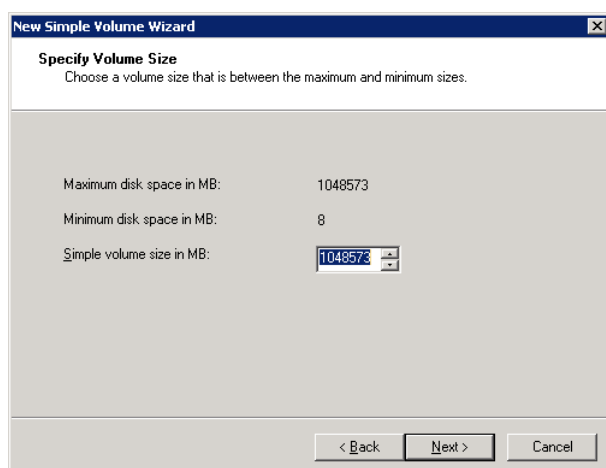
- 1 Select [Disk Management] from [Computer Management].



- 2 On the [New Simple Volume Wizard] screen, click the [Next] button.



- 3 Specify the capacity in [Specify Volume Size], and click the [Next] button.

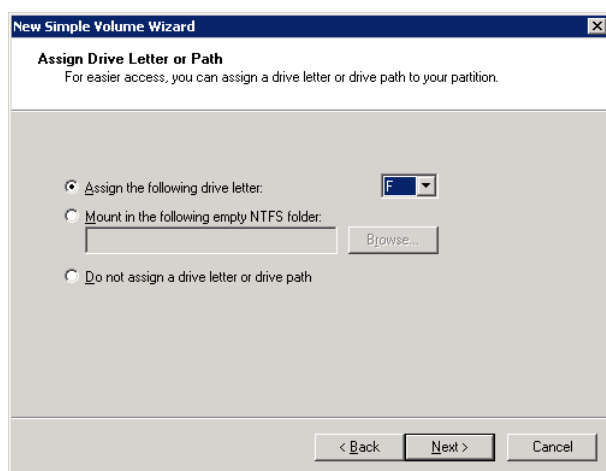


The screenshot shows the 'Specify Volume Size' step of the 'New Simple Volume Wizard'. The window title is 'New Simple Volume Wizard'. The subtitle is 'Specify Volume Size'. Below the subtitle, it says 'Choose a volume size that is between the maximum and minimum sizes.' There are three labels with corresponding values: 'Maximum disk space in MB:' with value '1048573', 'Minimum disk space in MB:' with value '8', and 'Simple volume size in MB:' with a value of '1048573' in a text box. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Set the capacity assuming "LUN size = drive size" for this example.

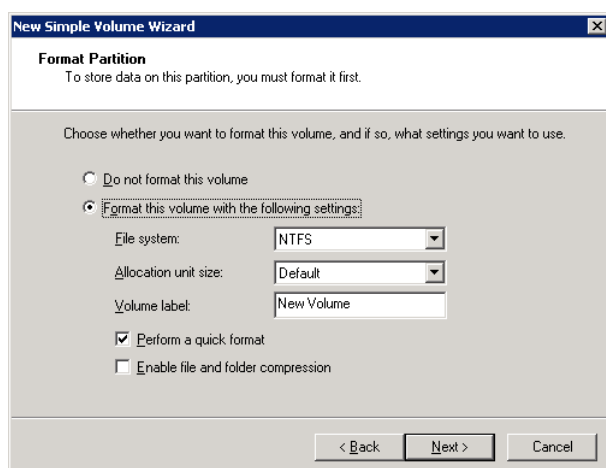
- 4 When [Assign Drive Letter or Path] appears, assign a drive letter and click the [Next] button.
Perform the settings as shown below.

Drive	File system that is to be created	LUN	Volume No.	Volume name	Type	Capacity
F	NTFS	0	0	main	Standard	1TB

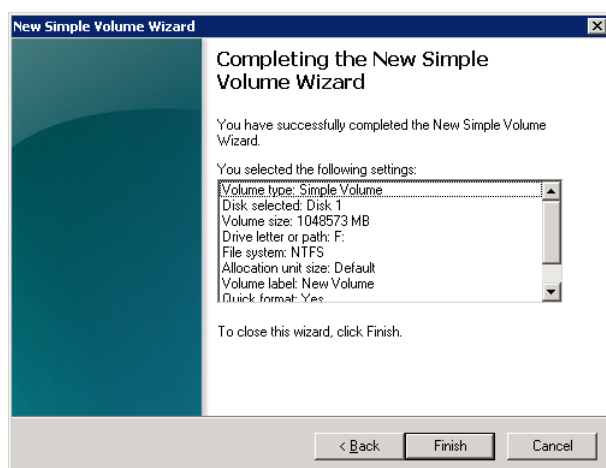


The screenshot shows the 'Assign Drive Letter or Path' step of the 'New Simple Volume Wizard'. The window title is 'New Simple Volume Wizard'. The subtitle is 'Assign Drive Letter or Path'. Below the subtitle, it says 'For easier access, you can assign a drive letter or drive path to your partition.' There are three radio button options: 'Assign the following drive letter:' (selected), 'Mount in the following empty NTFS folder:', and 'Do not assign a drive letter or drive path'. The 'Assign the following drive letter:' option has a dropdown menu showing 'F'. The 'Mount in the following empty NTFS folder:' option has a text box and a 'Browse...' button. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

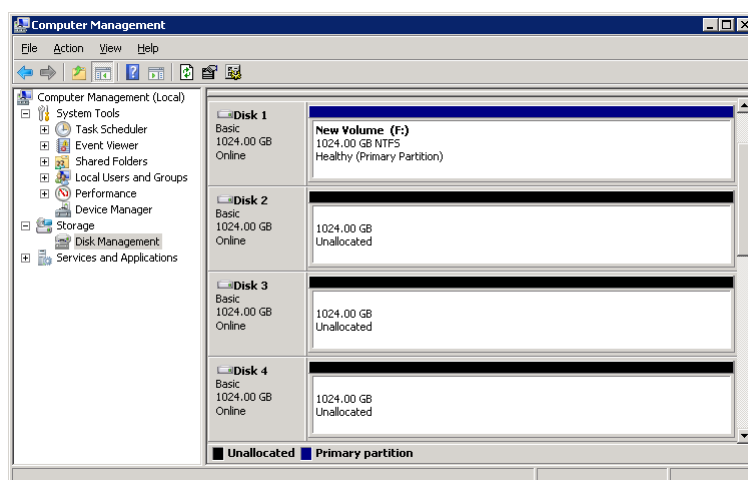
- 5 [Format Partition] appears. Click the [Next] button.



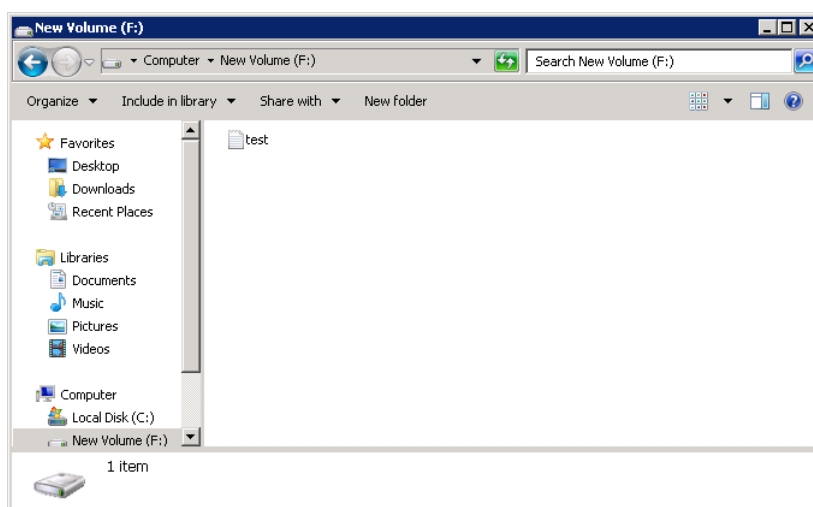
- 6 [Completing the New Simple Volume Wizard] appears. Click the [Finish] button.



- 7 Check that the specified settings are displayed correctly.



- 8 Check whether a file or other item can be created in the created drive.



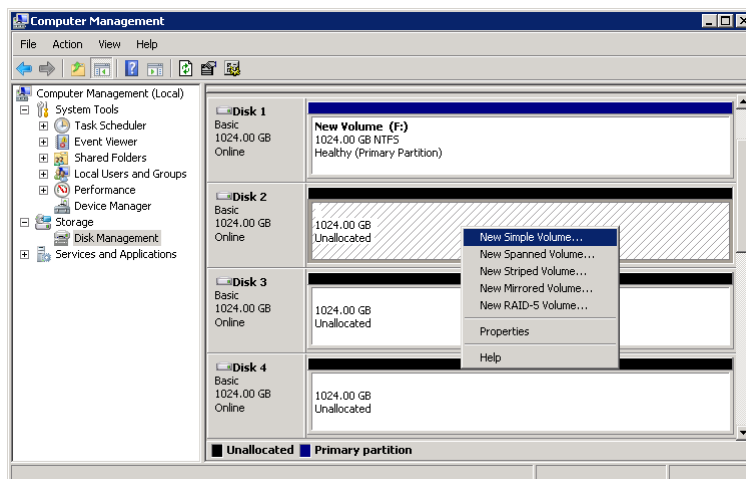
End of procedure

■ SnapOPC+ Destination Settings

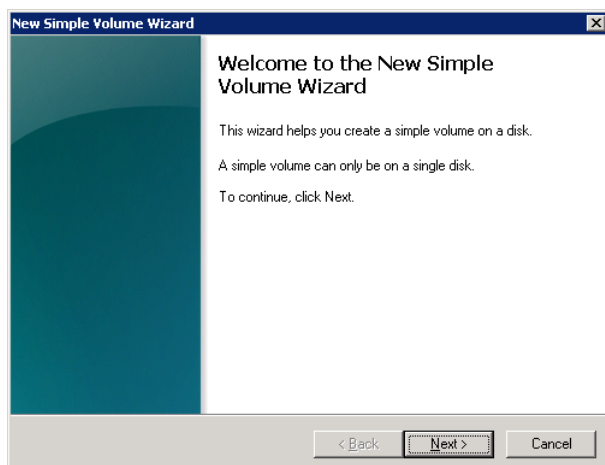
Set up the disk created in [Snap Data Volume].

Procedure

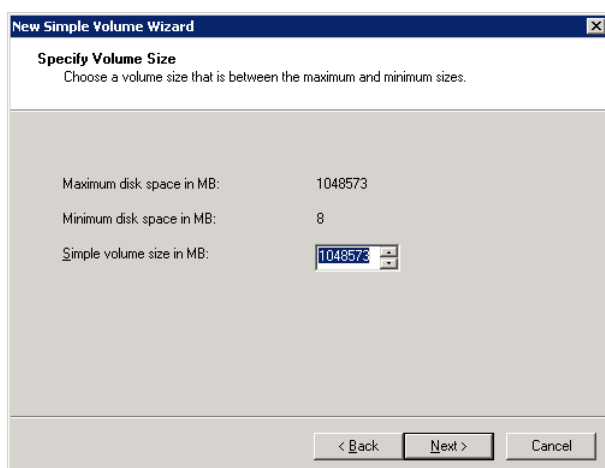
- 1 During volume creation, right-click the disk created in [Snap Data Volume] and select [New Simple Volume].



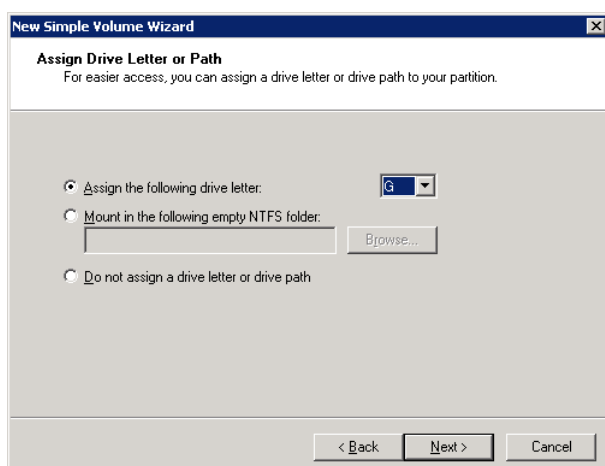
- 2 [New Simple Volume Wizard] appears. Click the [Next] button.



- 3 Without changing the default settings of [Specify Volume Size], click the [Next] button.



- 4 Assign a drive letter in [Assign Drive Letter or Path] and click the [Next] button.

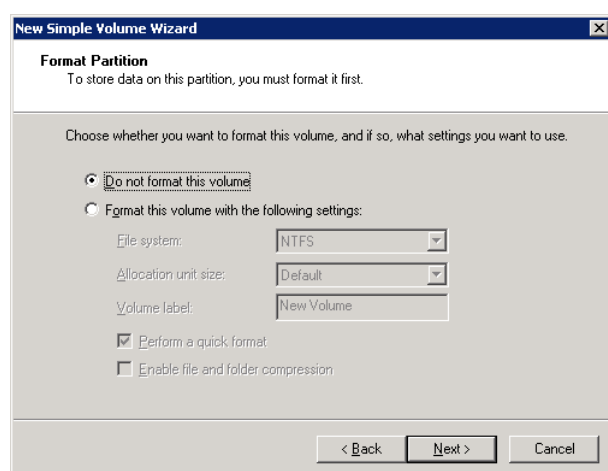


Perform the settings as shown below.

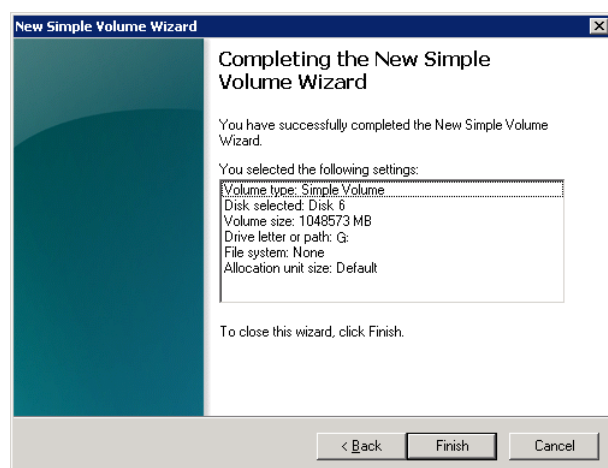
Drive	File system that is to be created	LUN	Volume No.	Volume name	Type	Capacity (*1)
G	RAW	1	1	sdv0	SDV	(1TB)
H	RAW	2	2	sdv1	SDV	(1TB)
I	RAW	3	3	sdv2	SDV	(1TB)
J	RAW	4	4	sdv3	SDV	(1TB)
K	RAW	5	5	sdv4	SDV	(1TB)
L	RAW	6	6	sdv5	SDV	(1TB)
M	RAW	7	7	sdv6	SDV	(1TB)

***1:** The capacity that is displayed in "()" is the copy source capacity.

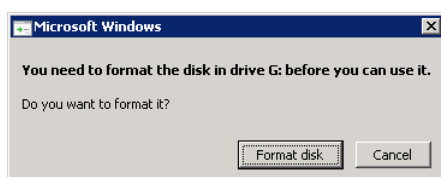
- 5 Select [Do not format this volume], and click the [Next] button.



- 6 [Completing the New Simple Volume Wizard] appears. Click the [Finish] button.



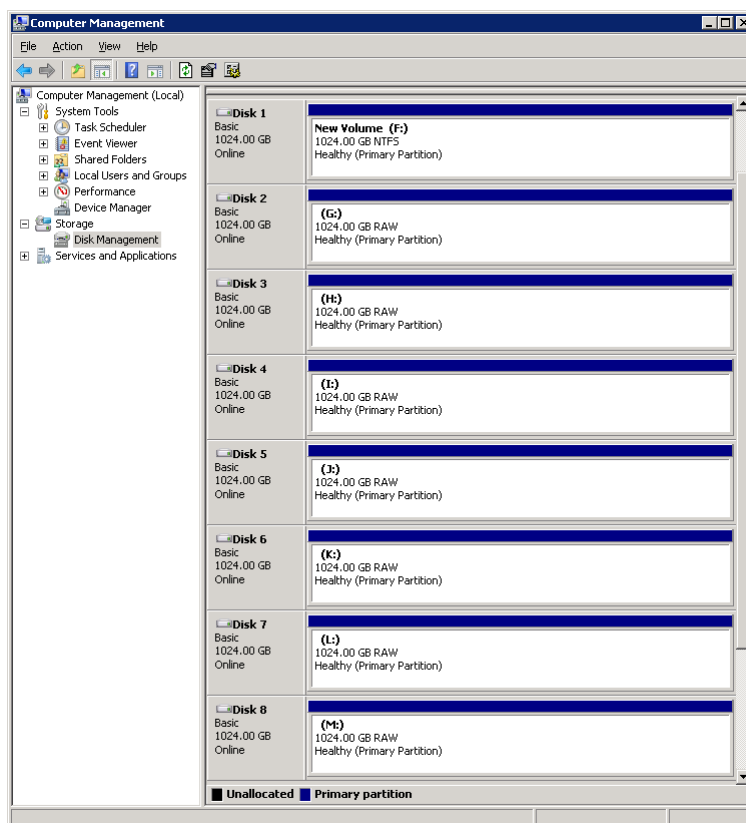
- 7 The next dialog box appears. Click the [Cancel] button.



Caution

Do not click [Format disk].

- 8 Repeat the procedure in [Step 1](#) through [Step 7](#) for all the disks created in [Snap Data Volume].



In this case, seven disks are created as [Drive Letter: Assigned, RAW].

End of procedure

Chapter 9

Advanced Copy Settings

This chapter explains the required setting to perform an Advanced Copy. This chapter also provides a procedure on how to perform an Advanced Copy.

9.1 Advanced Copy Basic Settings

This section describes the basic settings to use Advanced Copy.

9.1.1 Copy Priority Settings

Specify the copy priority when using the EC and OPC (*1) functions.

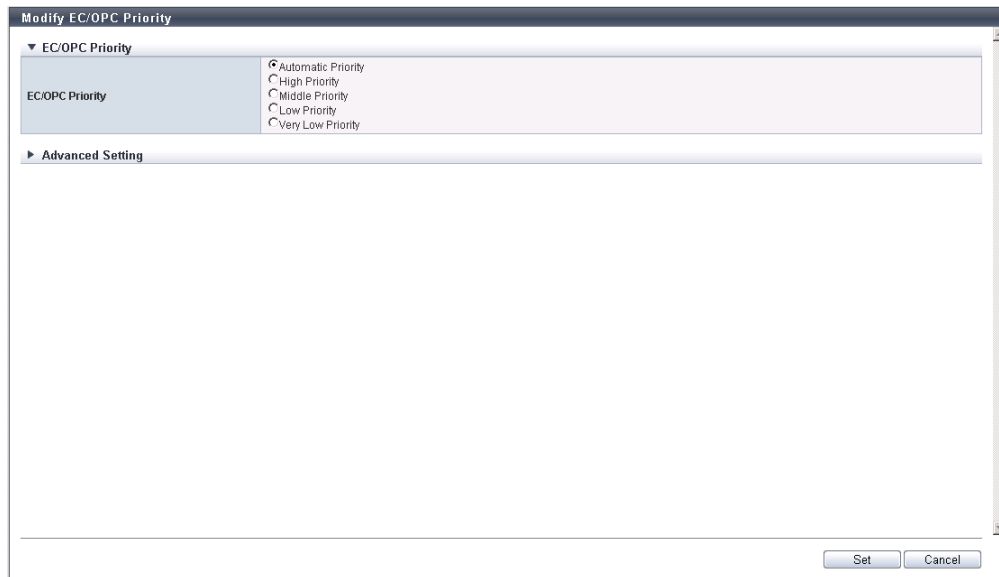
To set the copy priority, the host I/O load and the copy processing load must be taken into consideration. The specified copy priority is applied not only to the next session, but also to the existing session.

***1:** An OPC includes OPC, QuickOPC, SnapOPC, and SnapOPC+.

Procedure

- 1 Click the [Advanced Copy] tab on the navigation of the ETERNUS Web GUI screen. Then, click [Setting] in [Category].
- 2 In [Action] on the [Setting] screen, click [Modify EC/OPC Priority].
- 3 Select the EC/OPC priority and click the [Set] button.
 - Automatic Priority
This mode changes the EC/OPC priority automatically in response to the operating load status.
 - High Priority
This mode operates by making maximum use of internal resources.
This mode greatly affects host access performance, thus should not be used during normal operation.
Use when the operation load is low.
 - Middle Priority
This mode operates slightly slower than the High Priority mode.
Select this mode when performance is greatly affected by the High Priority mode, but the copy speed is too slow with the Low Priority mode.
 - Low Priority
This mode reduces the effect on host access.
Select this mode when using EC and/or OPC during operation.
 - Very Low Priority
This mode operates slower than the Low Priority mode.

Select this mode when performance is affected (such as when the performance of host response is reduced) by the Automatic Priority or Low Priority mode.



- 4 In the confirmation screen, click the [OK] button.
EC/OPC priority setting starts.
- 5 In the setting completion screen, click the [Done] button.
The screen display returns to the [Setting (Advanced Copy)] screen.

End of procedure

9.1.2 Copy Table Size Settings

On the controller cache memory, set the copy table size used by the firmware.

This copy table is used as the area for copy progress management when the EC or OPC (OPC, QuickOPC, SnapOPC+) functions are executed.

Caution

- When the copy table size is 0MB, the copy function cannot be used.
- Before reducing the copy table size, stop copy sessions.
- The maximum capacity of copy table size is 128MB.
- Changes in the resolution is applied when the next copy session starts. If a copy session is already running, copy is continued with the resolution set at the beginning of the copy session. To apply the changed resolution to a running copy session, cancel the target copy session and then start the session again.
- It is recommended to set the maximum resolution if the amount of data increase in the copy target area cannot be estimated.

Procedure

- 1 Click the [Advanced Copy] tab on the navigation of the ETERNUS Web GUI screen. Then, click [Setting] in [Category].
- 2 In [Action] on the [Setting] screen, click [Modify Copy Table Size].
- 3 Set the required items and click the [Set] button.
 - Resolution
Select the resolution. Specify "x64" in this example.
 - Table Size (MB)
Specify the copy table size. Specify "128 (MB)" in this example.
 - Table Size Threshold
Select the threshold for the table size usage rate.
To send notification automatically when the usage rate exceeds the threshold, enable notification in ["6.1 Event Notification Setup" \(page 84\)](#) and specify the notification method (email, SNMP, trap, or Syslog).

Modify Copy Table Size

Information

Please enter the setting of this Copy Table Size.

In case you need to decrease the copy table size, please do so after stopping all copy sessions.

Maximum copy table size may not be set, if installed memory capacity is small, or Bind-in-Cache or REC buffer size is set.

Advanced Copy Table Size Setting

Resolution	x64
Table Size	128 MB
Table Size Threshold	80 %

Calculation of recommended values

Set Cancel

- 4 In the confirmation screen, click the [OK] button.
Copy table size setting starts.
- 5 In the setting completion screen, click the [Done] button.
The screen display returns to the [Setting (Advanced Copy)] screen.

End of procedure

9.1.3 Copy Parameter Settings

Set the parameter and the area allocation unit (SDPE) to execute notification automatically when the SDP capacity becomes insufficient while SnapOPC+ is running.

The following four types of notification methods are available: Email, SNMP, Trap, and Syslog. The method that is specified in "6.1 Event Notification Setup" (page 84) is used as the notification to the user. Specify whether to enable notification and the notification method when enabled in advance.

Caution

If the data to be copied exceeds the physical capacity of the copy destination (if no SDP with free space exists), the copy session and the copy sessions of earlier generations cause an error.

Notification occurs only once for each policy level. No notification is sent even if the threshold is reached within 24 hours from the previous notification. Notification is sent after 24 hours have passed.

When the thresholds of multiple levels are reached at the same time, the highest level of notification is sent.

Procedure

- 1 Click the [Advanced Copy] tab on the navigation of the ETERNUS Web GUI screen. Then, click [Snap Data Pool] in [Category].
- 2 In [Action] on the [Setting] screen, click [Modify Copy Parameters].
- 3 Set the required items and click the [Modify] button.

▼ Information	
Please enter the setting of this Copy Parameters.	

▼ Policy of Snap Data Pool	
Policy Level 1 (Informational) Threshold	50 % (1 - 97)
Policy Level 2 (Warning) Threshold	70 % (2 - 98)
Policy Level 3 (Error) Threshold	99 % (3 - 99)

▼ SDPE Setting	
SDPE	1 GB

Modify Cancel

- 4 In the confirmation screen, click the [OK] button.
Copy table size setting starts.

- 5 In the setting completion screen, click the [Done] button.
The screen display returns to the [Snap Data Pool] screen.

End of procedure

9.2 Performing a Copy (SnapOPC+)

SnapOPC+ is a function to copy the data of the operation volume before update (previous data) to the duplicate volume.

Though SnapOPC+ can be executed both from ETERNUS Web GUI and ETERNUS CLI, operation using batch files is recommended in consideration of daily operations.

Copy session are first created for seven generations. These copy sessions are switched in turn when daily backup operations are performed.

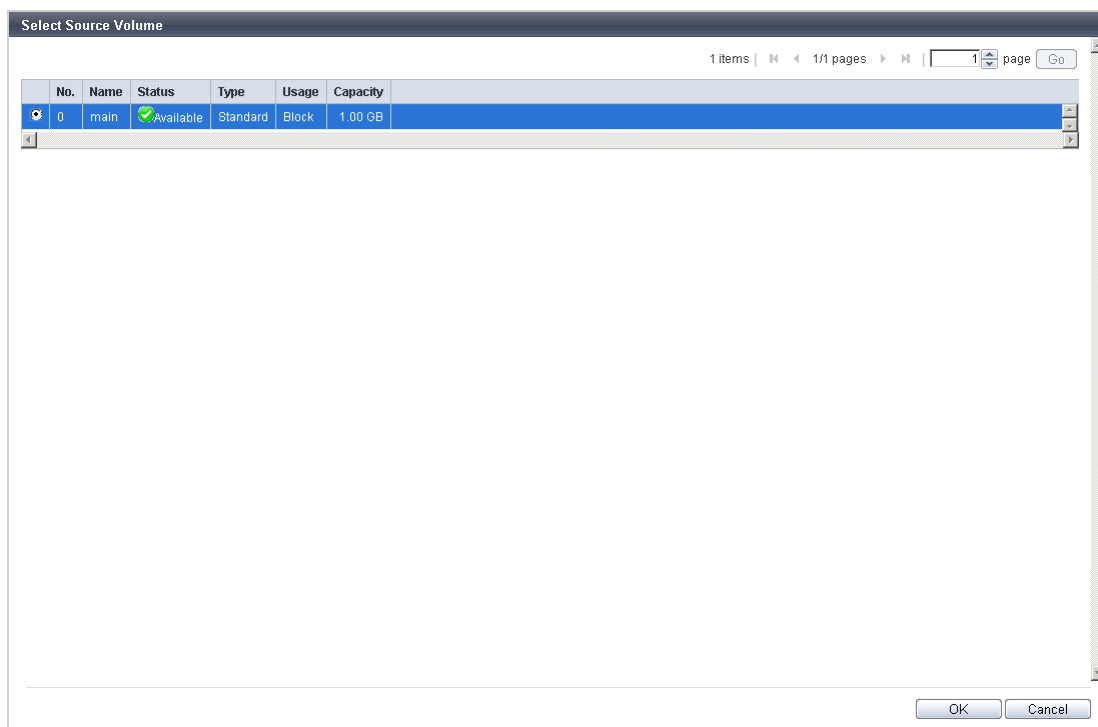
The procedure to perform the SnapOPC+ is as follows.

Procedure

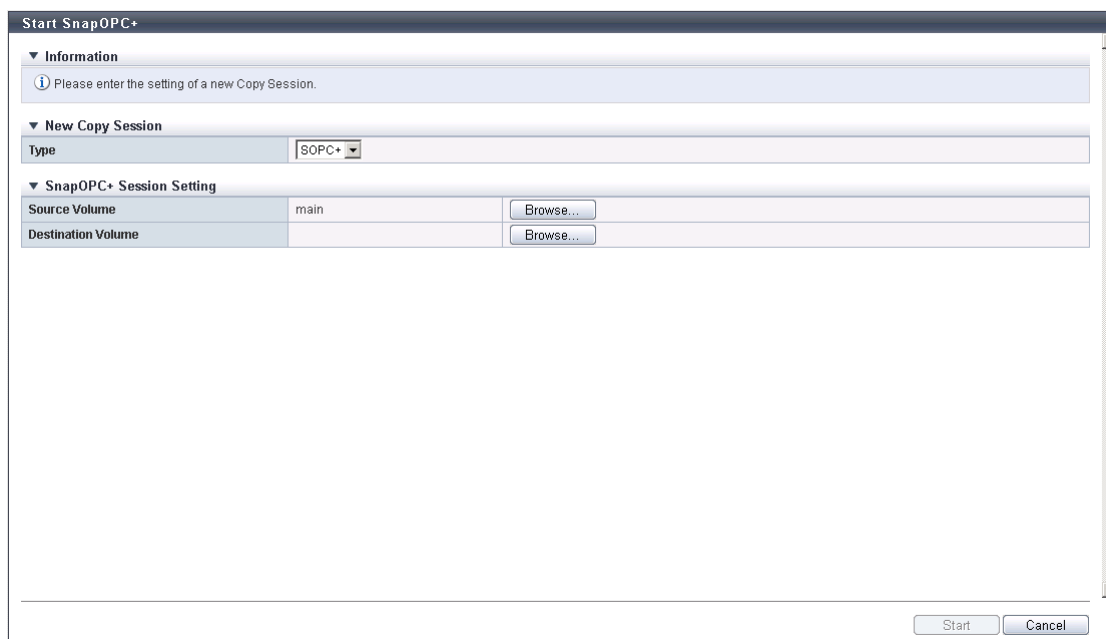
- 1 On the navigation of the ETERNUS Web GUI screen, click the [Advanced Copy] tab.
- 2 In [Action], click [Start SnapOPC+].
- 3 Click the [Browse] button of the copy source volume.

The screenshot shows the 'Start SnapOPC+' dialog box. It has a title bar 'Start SnapOPC+'. Inside, there's an 'Information' section with a message: 'Please enter the setting of a new Copy Session.' Below that is the 'New Copy Session' section, which includes a 'Type' dropdown menu currently set to 'SOPC+'. The 'SnapOPC+ Session Setting' section contains two rows: 'Source Volume' and 'Destination Volume', each with a corresponding 'Browse...' button. At the bottom right of the dialog are 'Start' and 'Cancel' buttons.

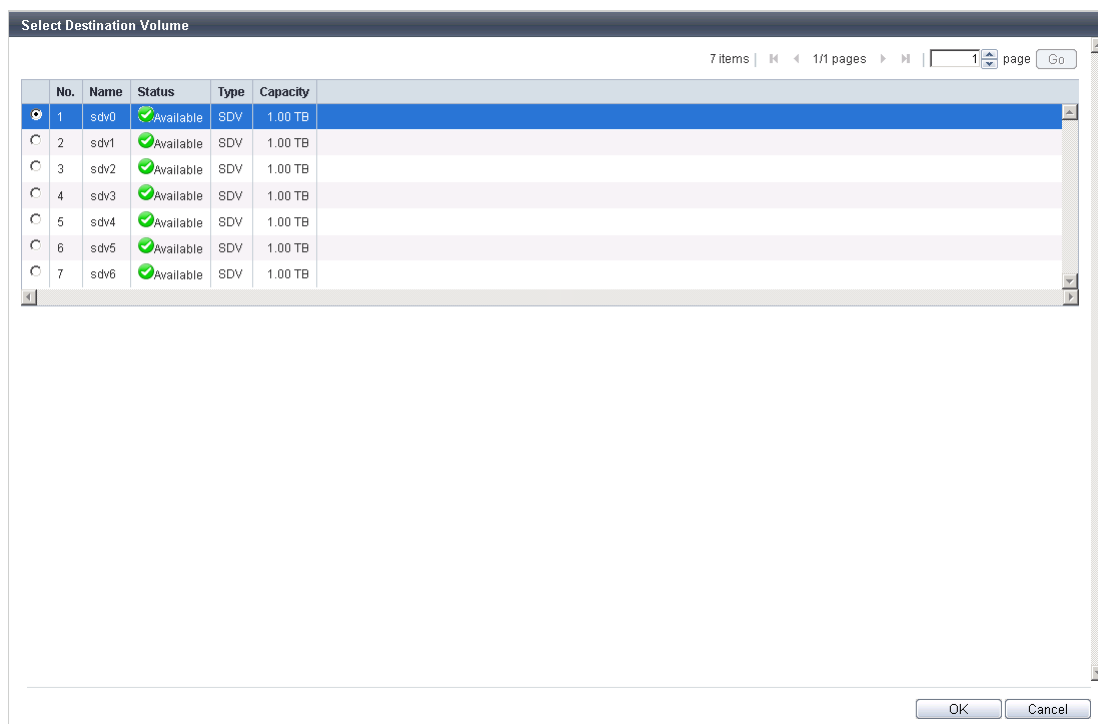
- 4 Select the radio button of the volume that is to be used, and then click the [OK] button.
Select the "No.: 0, Name: main" volume.



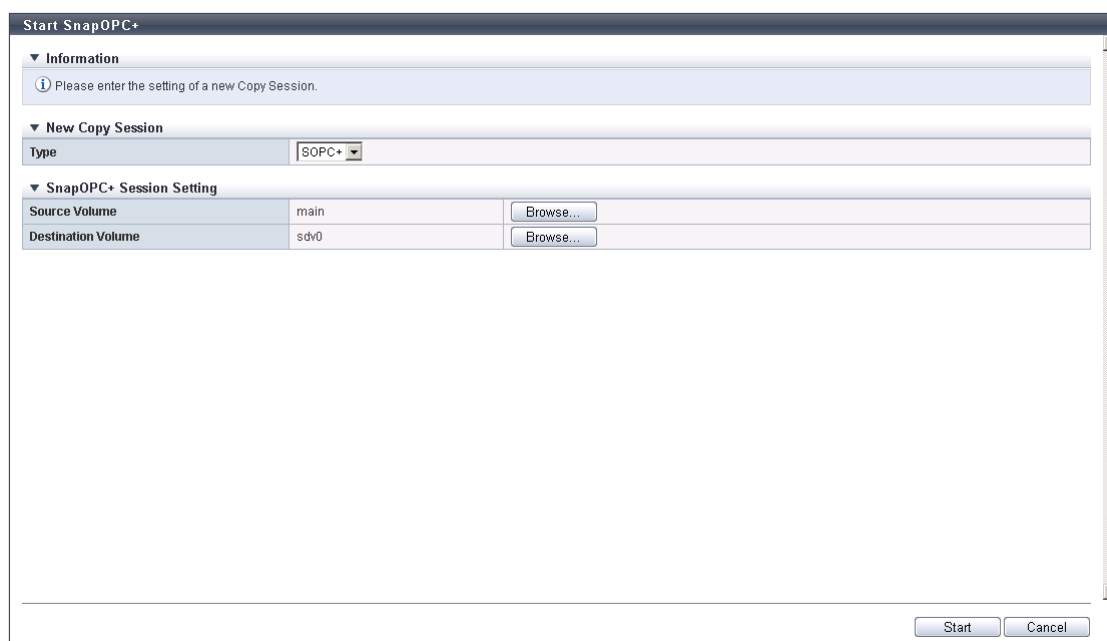
- 5 In the same way as the copy source volume, click the [Browse] button of the copy destination volume.



- 6 Select the radio button of the volume that is to be used, and then click the [OK] button.
Select the "No.: 1, Name: sdv0" volume.

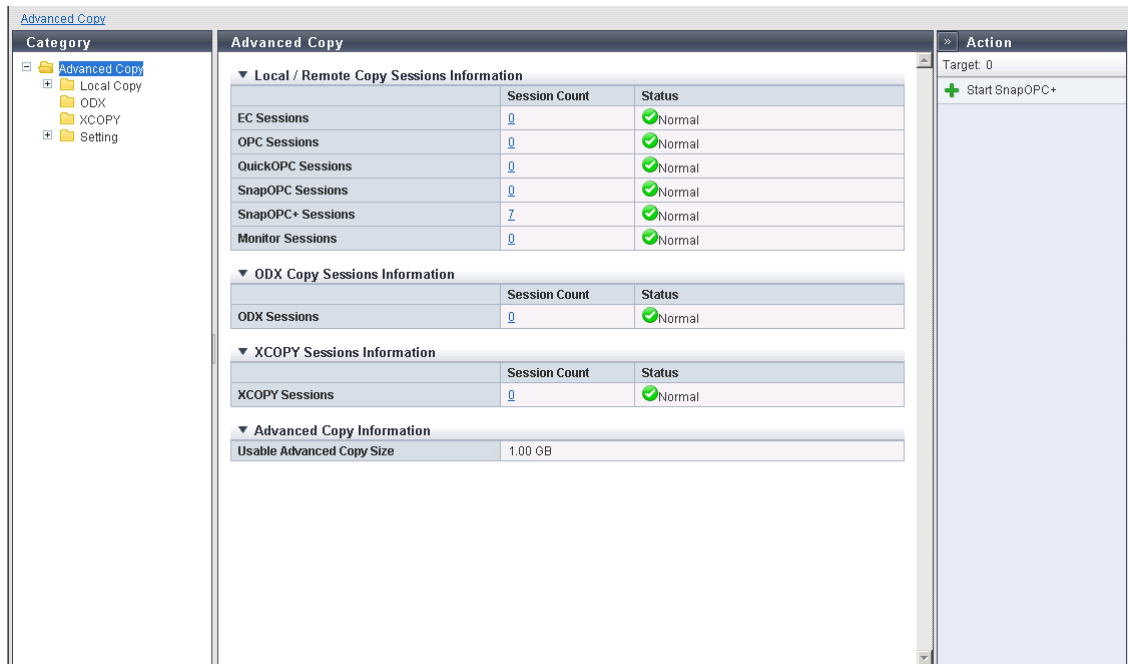


- 7 Check the displayed information, and then click the [Start] button.

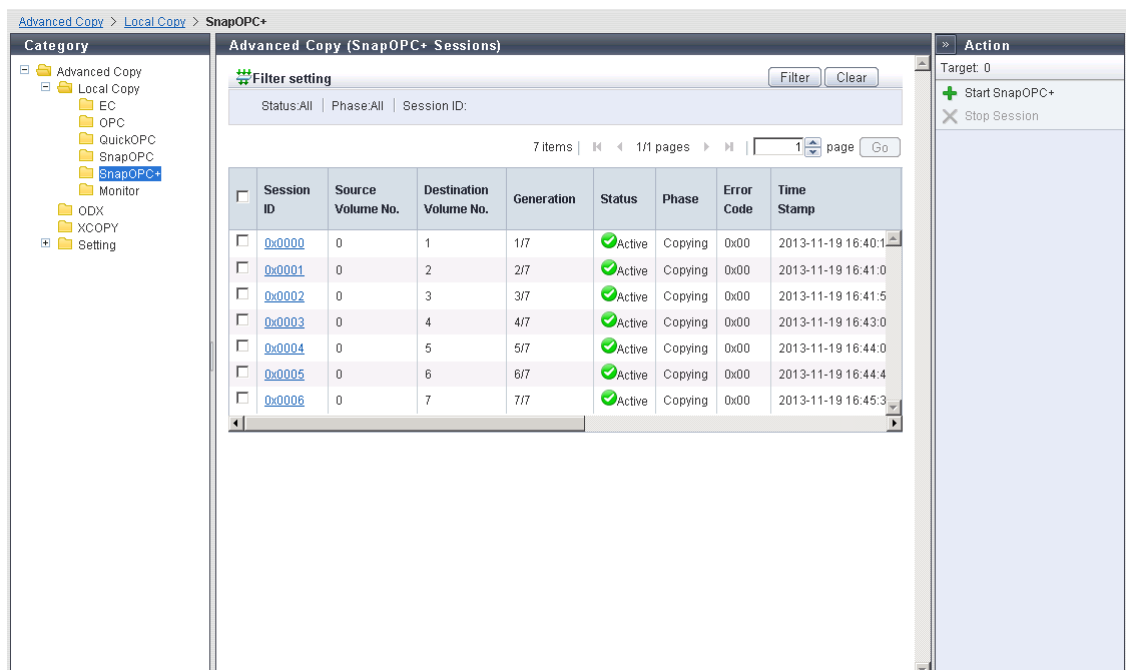


- 8 In the confirmation screen, click the [OK] button.
The SnapOPC+ session starts.
- 9 Click the [Done] button to return to the [Advanced Copy] screen.

- 10 Use the same method to create sessions for the remaining six generations.
Specify from "No.: 3, Name: sdv1" through to "No.: 8, Name: sdv6" for the copy destination volumes.
- 11 After all of the sessions are created, click the number of sessions in [SnapOPC+ Sessions].

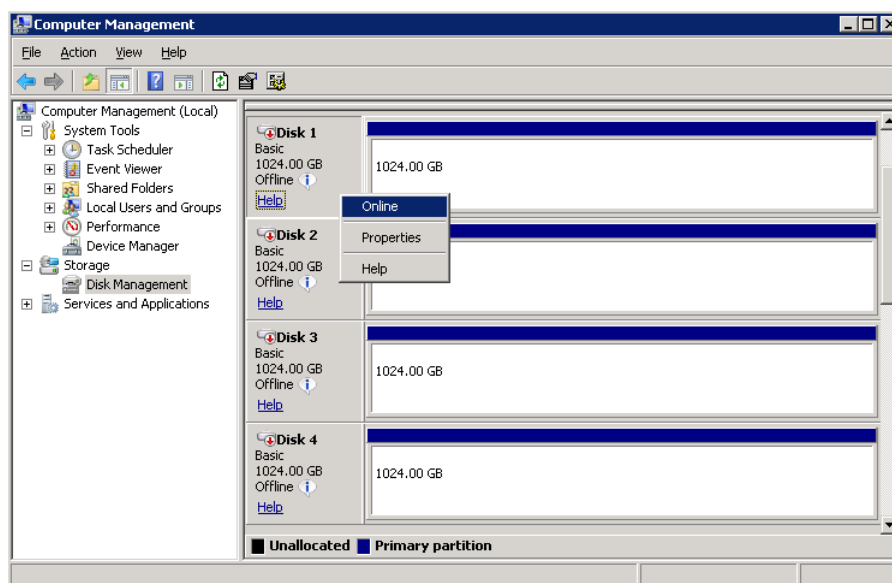


- 12 Check the status of the copy source volume and the copy destination volume.
In this case, the copy source volume number is "0" and the copy destination volume numbers are from "1" through to "7".



- 13 Open [Disk Management] from [Computer Management].

- 14 Change the status of all the disks with [Offline] to [Online]. In this case, change the status of Disk 1 through to Disk 8 to [Online].

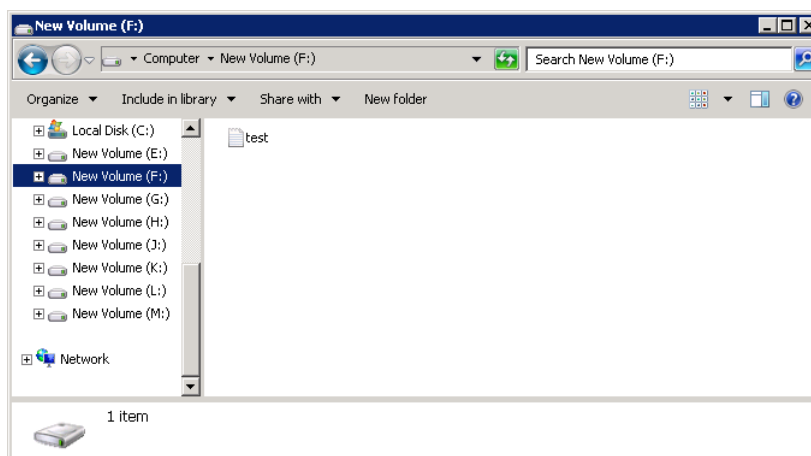


After the status of the disks is changed to [Online], file systems and drive letters are assigned.

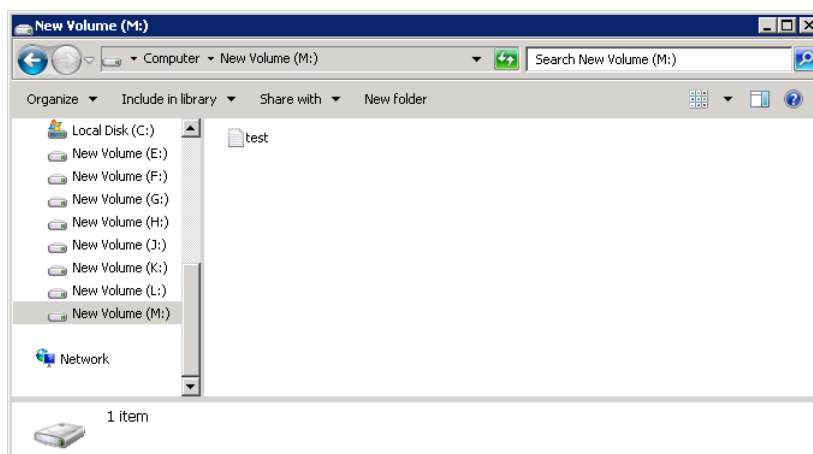
Note

If any drive letter is unused, the unused drive letter is assigned in ascending order of the drive letters, which results in discontinuous drive letters. Change the automatically assigned drive letter if necessary.

- 15 Check if the file that was created in Step 8 in "■ Operation Disk Settings" (page 133) in "8.2.3.2 Disk Settings" (page 133) is displayed for the copy source drive.



- 16 Use the same method to open the remaining seven copy destination drives to check if those files that were created in [Step 15](#) are displayed.



End of procedure

Old data can be restored by simply copying and pasting the data files that are to be restored from the server.

Chapter 10

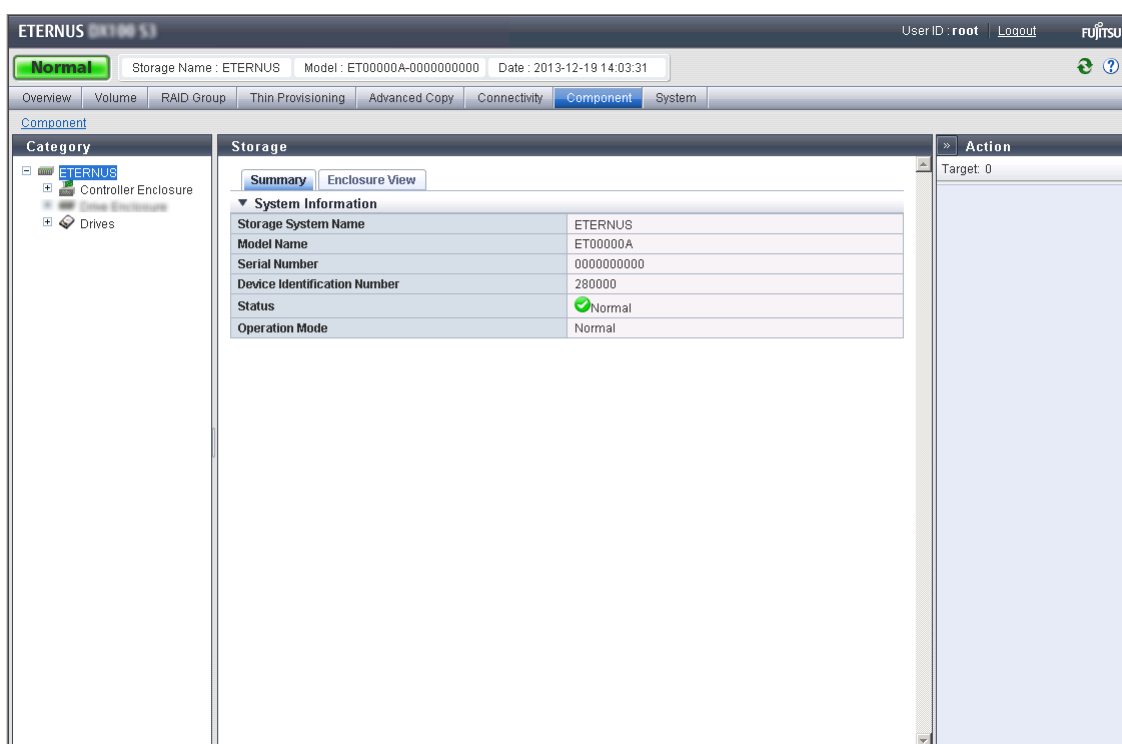
System Status Check

Check the status of the ETERNUS DX on the ETERNUS Web GUI screen or ETERNUS CLI.

10.1 Component Status Check

The status of the ETERNUS DX can be checked by general status in the upper left of the ETERNUS Web GUI screen.

When the general status image is "**Normal**", the ETERNUS DX is in normal status. When the general status image is other than "**Normal**" ("**Error**", "**Warning**", etc.), an abnormality has been detected in the ETERNUS DX. Check the status of each component on the [Storage] screen.



If there is a component in Warning or Error status, contact your sales representative or maintenance engineer.

10.2 RAID Group Check

On the [RAID Group Details] screen of ETERNUS Web GUI, the status of RAID groups that you have created is displayed. Check if RAID configuration is set correctly.

To display the [RAID Group Details] screen, click the [RAID Group] tab on the navigation of the ETERNUS Web GUI screen. In the [RAID Group (Basic Information)] screen that appears, select which RAID group to check the information for and click the No. or name of this RAID group.

No.	Name	Status	Usage	RAID Level	Total
0	RAIDName000	Available	Standard	Mirroring (RAID1)	
1	RAIDName001	Available	Standard	Mirroring (RAID1)	
2	RAIDName002	Available	Standard	High Capacity (RAID5)	
3	RAIDName003	Available	TPP	High Capacity (RAID5)	
4	RAIDName004	Available	TPP	Mirroring (RAID1)	
5	RAIDName005	Available	TPP	Mirroring (RAID1)	
6	RAIDName006	Available	Standard / WSV	High Performance (RAID1+0)	
7	RAIDName007	Available	Standard / WSV	High Performance (RAID1+0)	

10.3 Volume Check

On the [Volume Details] screen of ETERNUS Web GUI, the status of volumes that you have created is displayed. Check if volumes are set correctly.

To display the [Volume Details] screen, click the [Volume] tab on the navigation of the ETERNUS Web GUI screen. In the [Volume (Basic Information)] screen that appears, select which volume to check the information for and click the No. or name of this volume.

No.	Name	Status	Type	Capacity	RAID Group/TPP/ITRP No.
0	VolumeName000	Available	Standard	4.00 GB	1
1	VolumeName001	Available	Standard	4.00 GB	1
2	VolumeName002	Available	Standard	1.00 GB	1
3	VolumeName003	Available	TPV	4.00 GB	1
4	VolumeName004	Available	TPV	1.00 GB	1
5	VolumeName005	Available	TPV	4.00 GB	1
6	VolumeName006	Available	SDPV	1.00 GB	1
7	VolumeName007	Available	Standard	4.00 GB	7
8	VolumeName008	Available	TPV	400.00 GB	1
9	VolumeName009	Available	Standard	4.00 GB	9
10	VolumeName010	Available	Standard	1.00 GB	1

10.4 Checking Copy Sessions

On the [Advanced Copy] screen, the status of the copy sessions that are set is displayed. Check if the copy session status is normal.

To display the [Advanced Copy] screen, click the [Advanced Copy] tab on the navigation of the ETERNUS Web GUI screen and click the number of sessions in [SnapOPC+ Sessions].

Advanced Copy

Category

- Advanced Copy
 - Local Copy
 - ODX
 - XCOPY
 - Setting

Advanced Copy

Local / Remote Copy Sessions Information

	Session Count	Status
EC Sessions	0	Normal
OPC Sessions	0	Normal
QuickOPC Sessions	0	Normal
SnapOPC Sessions	0	Normal
SnapOPC+ Sessions	7	Normal
Monitor Sessions	0	Normal

ODX Copy Sessions Information

	Session Count	Status
ODX Sessions	0	Normal

XCOPY Sessions Information

	Session Count	Status
XCOPY Sessions	0	Normal

Advanced Copy Information

Usable Advanced Copy Size	1.00 GB
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Action

Target: 0

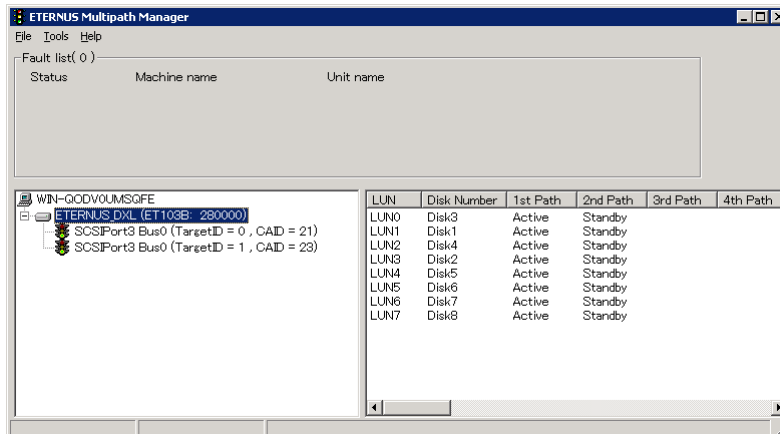
+ Start SnapOPC+

10.5 Checking LUNs

Check the LUN status from the server.

This section describes the check procedure using the ETERNUS Multipath Driver.

Click the [Start] button for Windows, expand [ETERNUS Multipath Driver] from [All Programs], and open [ETERNUS Multipath Manager]. Check that the LUN status is normal (that the signal icon is blue).



10.6 Powering Off

To turn off the ETERNUS DX, perform one of the procedures below.

- Via the power switch
Press the Power switch to turn off the ETERNUS DX.
- Via ETERNUS Web GUI or ETERNUS CLI
Use ETERNUS Web GUI or ETERNUS CLI to turn off the ETERNUS DX.

The following methods can be used to turn off the power by linking with the server.

- Via the power synchronized unit
Use the power synchronized unit to turn off the ETERNUS DX.

IMPORTANT

- When turning off the ETERNUS DX, the power shuts off after the data in the cache memory is written to the drives. As a result, it may take approximately five minutes or up to 10 minutes maximum for the power supply to be completely turned off.
- Do not turn off the power of the ETERNUS DX and the network devices that connect the ETERNUS DX to a server while the server is operating. This may result in the loss of data or prevent data from being saved in the ETERNUS DX.
- When using a power synchronized unit for power control, turn off the power of the ETERNUS DX via the power synchronized unit. When a power synchronized unit is connected, the power of the ETERNUS DX is automatically turned on because the power synchronization function is activated.

This section explains how to use the Power switch and power synchronization unit to turn off the ETERNUS DX.

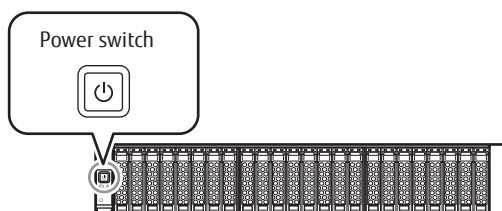
For other procedures, refer to the related manuals.

■ When Controlling by the Power Switch

This section explains how to use the Power switch to turn off the ETERNUS DX.

Procedure

- 1 Press and hold the Power switch of the controller enclosure for four seconds or more.



The READY LED (🟢) is turned off.

IMPORTANT

- After power-off, wait for about one minute before turning power on again.
- If the Power switch is pressed again between the time of the READY LED (🟢) turning off and the POWER LED (🟢) turning off, the ETERNUS DX power may turn on.

- 2 The power of the ETERNUS DX is disconnected.

When the power is disconnected, the POWER LED (🟢) is turned off.

End of procedure

■ When a Power Synchronized Unit is Used

If the server is turned off, the ETERNUS DX is also turned off.

Chapter 11

Solution Configuration

This chapter describes the optimum solutions provided by the ETERNUS DX linking with software programs.

11.1 Green

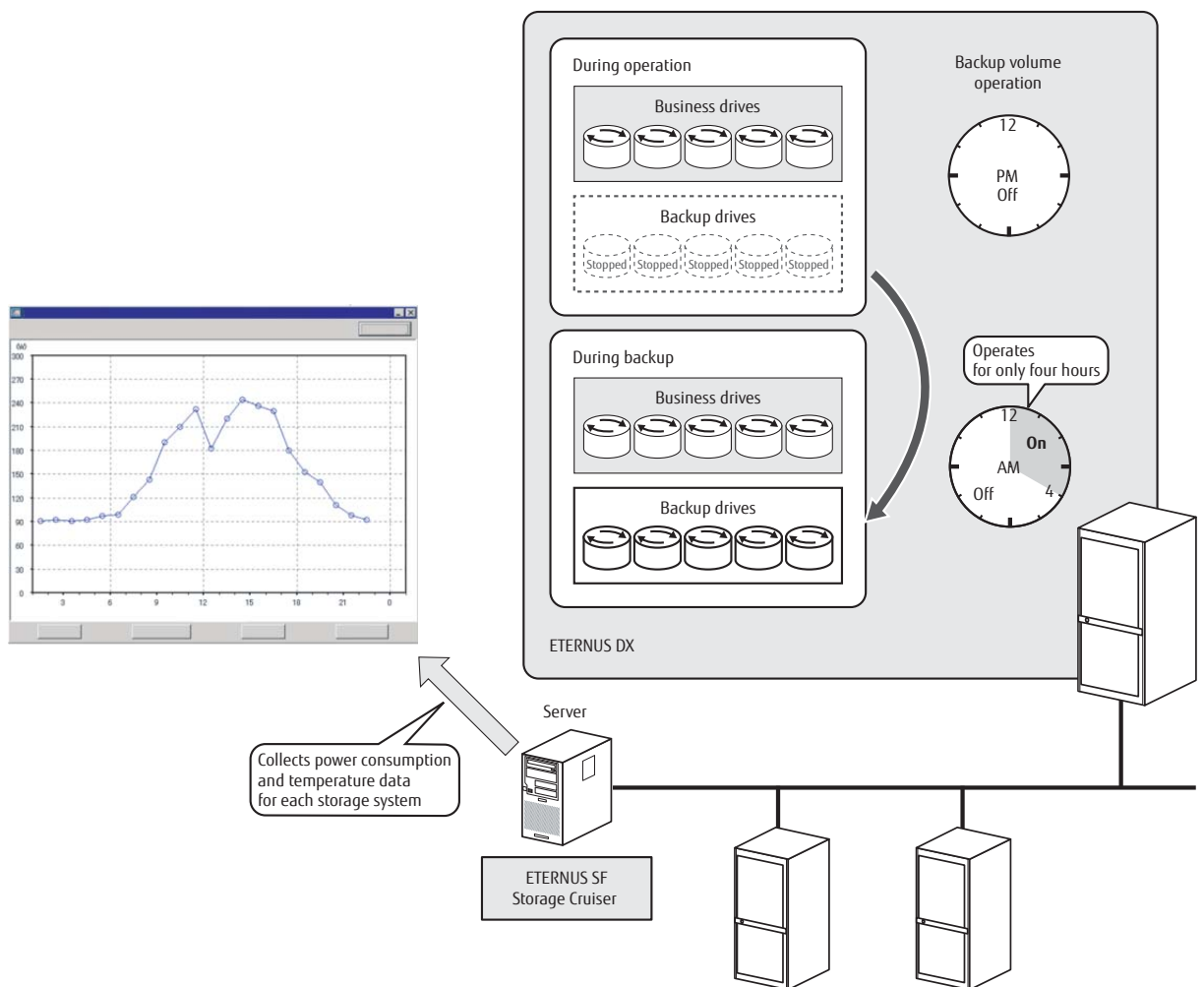
■ Solution Overview

Power consumption can be reduced by stopping disk motors when they are not being used. Making power consumption more efficient reduces the cost of electricity, noise emissions, and CO₂ emissions.

If the backup time period is predetermined, power saving operations can be implemented effectively by setting the Eco-mode schedule for backing up disk drives to only activate the disks when required. The disks motor or the disks power can be turned on and off according to the backup operation state using ETERNUS SF AdvancedCopy Manager.

The graphical display when ETERNUS SF Storage Cruiser is used makes it easy to understand changes in power consumption and in temperature as well as check the effect of power saving operations and the effect of air conditioning around the ETERNUS DX. This statistical data can be output to a file so that it can be used when planning which power supply equipment and air conditioning equipment should be used by monitoring the degree of changes in power consumption and temperature.

Figure 11.1 Solution – Green



■ Configuration Procedure

Perform the required settings for Eco-mode. These settings can be performed with either ETERNUS SF Storage Cruiser or ETERNUS Web GUI.

To set the visualization of power consumption and temperature, use ETERNUS SF Storage Cruiser. ETERNUS SF Storage Cruiser obtains power consumption of the ETERNUS DX for "power consumption" and ambient temperature (intake air temperature for the fans) for "temperature".

● Required Environment

ETERNUS SF Storage Cruiser is required to visualize (graphically display) the power consumption and temperature.

● Configuration Procedure

Eco-mode

Perform the following settings with the operation management server (ETERNUS SF Storage Cruiser) or ETERNUS Web GUI:

- Eco-mode setup
 - Enable the Eco-mode for the ETERNUS DX.

- Eco-mode schedule setup

Set the schedule to apply Eco-mode. Register the time period to turn on the disk motors or turn on the disk power for backups as well as the RAID group that contains these target disks.

Visualization of the power consumption and the temperature

Register the ETERNUS DX storage systems that are the targets for performance management in the operation management server (ETERNUS SF Storage Cruiser).

For more details on the settings for ETERNUS SF Storage Cruiser, refer to "ETERNUS SF Storage Cruiser Operation Guide".

11.2 Virtualization Platform

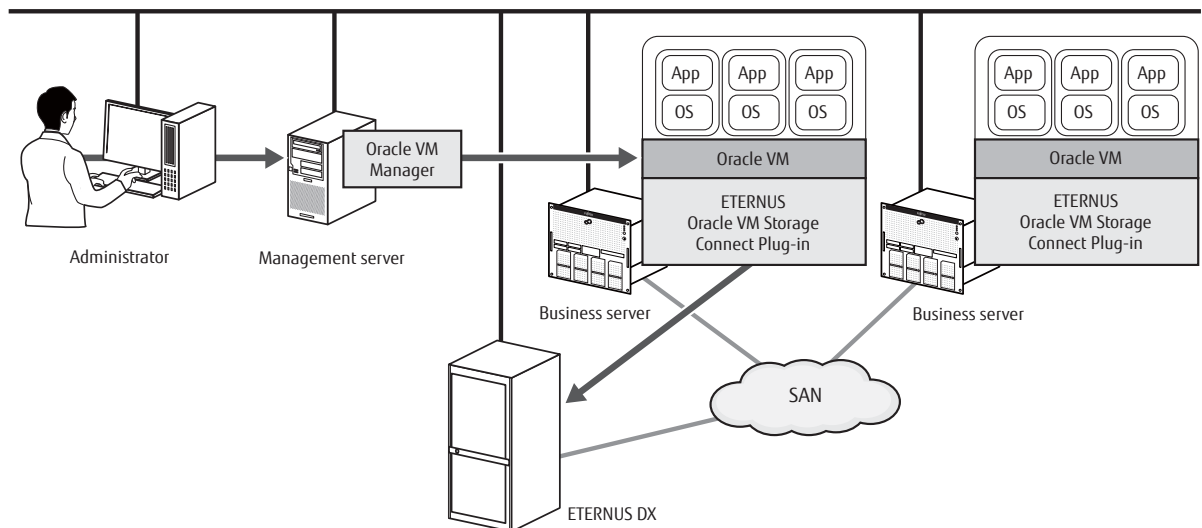
By linking virtualization software, the entire status of a system that has an ETERNUS DX can be understood by using the management tool for the server virtualization environment. This central administrative control of the virtual environment enables operations to be improved and optimized.

11.2.1 Oracle VM Linkage

■ Solution Overview

The Oracle VM Storage Connect framework supports creation, deletion, and expansion of Logical Unit Number (LUN) and snapshot native storage service, so that Oracle VM Manager can directly use the resources and functions of the storage system existing in the Oracle VM environment.

Figure 11.2 Solution – Virtualization Platform (Oracle VM Linkage)



■ Configuration Procedure

Install any plug-ins that are required for Oracle VM linkage and perform the necessary settings.

● Required Environment

For linkage with Oracle VM Manager, ETERNUS Oracle VM Storage Connect Plug-in is required. An Advanced Copy Feature license is also required.

● Configuration Procedure

Install ETERNUS Oracle VM Storage Connect Plug-in in the Oracle VM Server. For details on ETERNUS Oracle VM Storage Connect Plug-in installation, refer to "ETERNUS Oracle VM Storage Connect Plug-in User's Guide".

• Settings for the ETERNUS DX

Use ETERNUS Web GUI or ETERNUS CLI to perform the following preliminary settings.

- Registration of a user account with the Software role
- RAID group and Thin Provisioning Pool creation
- Settings of a LAN for operation management (such as the firewall settings and the SSH connection settings)

• SAN connection

Perform FC switch zoning settings to connect the Oracle VM Server and the ETERNUS DX with FC switches.

• Registration of the ETERNUS DX

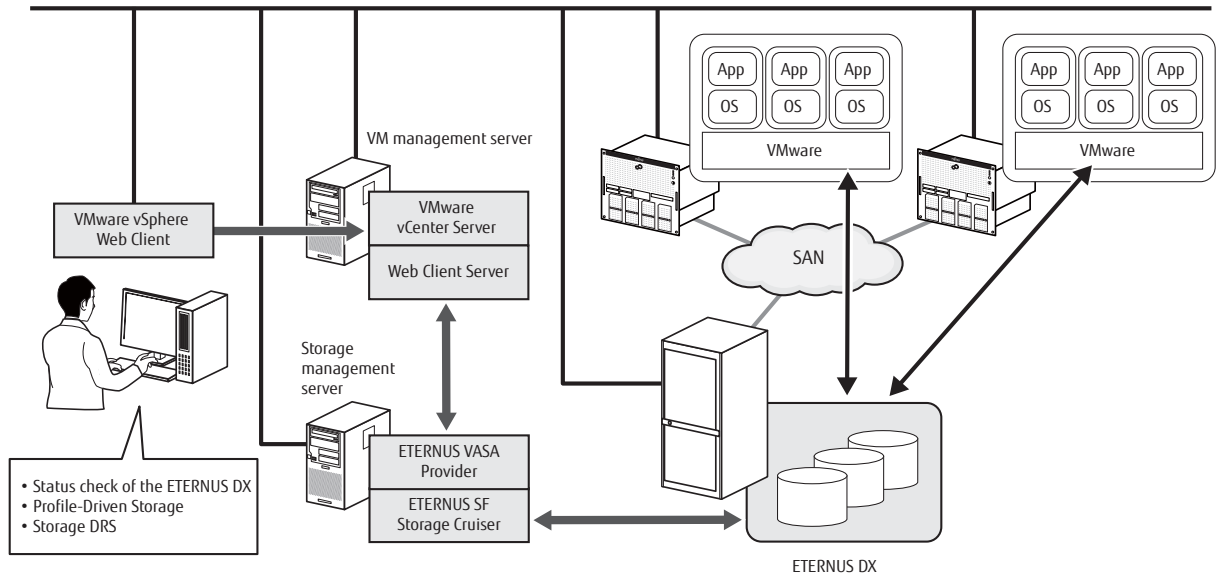
Discover a SAN server with Oracle VM Manager and register the ETERNUS DX. For details on operating Oracle VM Manager, refer to "Oracle VM User's Guide".

11.2.2 VMware Linkage

■ Solution Overview

Information on the ETERNUS DX can be checked from the vSphere Web Client by expanding the user interface for VMware vSphere Web Client. The VMware administrator can grasp the physical and virtual mapping related to virtual machine, datastore, and host system, allowing integrated management of the infrastructure under a virtual environment. In addition, installation of vSphere Storage APIs for Storage Awareness (VASA) can enhance the VMware storage management function.

Figure 11.3 Solution – Virtualization Platform (VMware Linkage)



■ Configuration Procedure

Install any plug-ins that are required for VMware linkage and perform the necessary settings.

● Required Environment

For linkage with vSphere Web Client, ETERNUS vCenter Plug-in is required.

For linkage with VASA, ETERNUS SF Storage Cruiser and ETERNUS VASA Provider are required.

● Configuration Procedure

vCenter

Install ETERNUS vCenter Plug-in in a Windows server where VMware Web Client Server is installed.

- Server-side settings

Install ETERNUS vCenter Plug-in and then register the ETERNUS DX as a management target device.

- Settings for the ETERNUS DX

Enable SSH connections in the firewall settings of the network settings in ETERNUS Web GUI.

For more details on the settings for ETERNUS vCenter Plug-in, refer to "ETERNUS vCenter Plug-in User's Guide".

VASA Provider

Install ETERNUS VASA Provider in the storage management server in which ETERNUS SF Storage Cruiser is operating.

- Settings for ETERNUS VASA Provider

Install ETERNUS VASA Provider in the storage management server.

Perform the settings that are related to ETERNUS VASA Provider in the vCenter Server after installation.

- Settings for ETERNUS SF Storage Cruiser

Before starting the ETERNUS VASA Provider service, register ESXi Server and the ETERNUS DX that is to be monitored in ETERNUS SF Storage Cruiser.

Update the configuration file and enable linkage with the device event information to apply the ETERNUS VASA Provider settings.

For more details on the settings for ETERNUS VASA Provider, refer to "ETERNUS VASA Provider User's Guide".

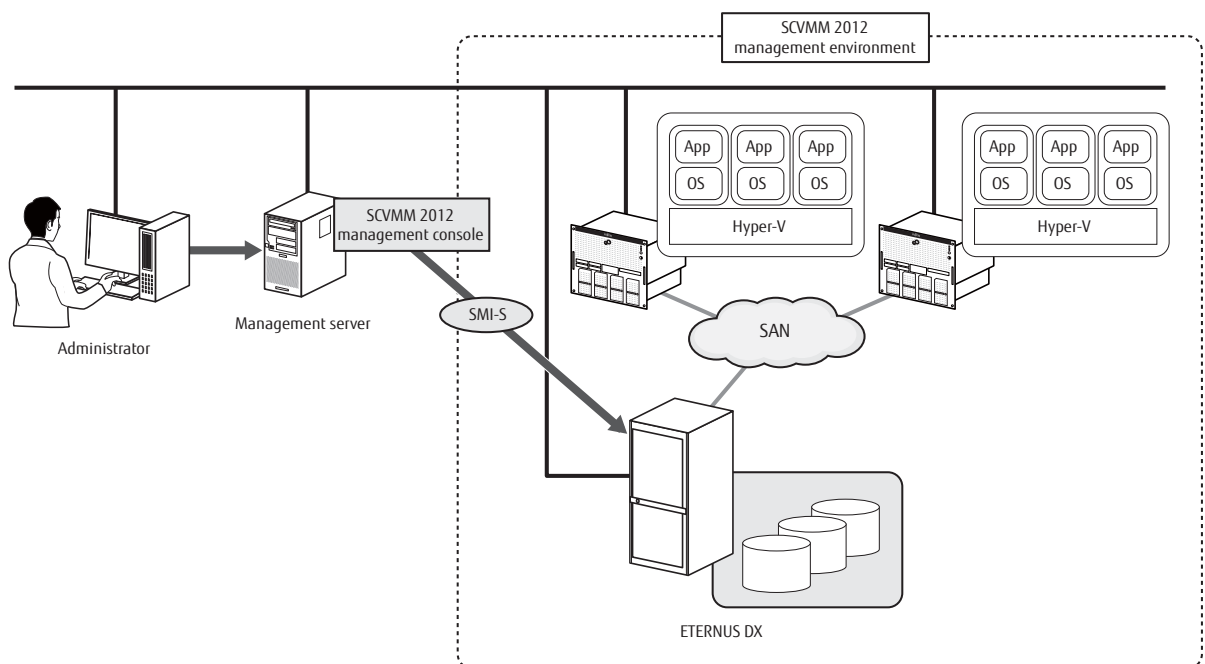
For more details on the settings for ETERNUS SF Storage Cruiser, refer to "ETERNUS SF Web Console Manual" and "ETERNUS SF Storage Cruiser Operation Guide".

11.2.3 Microsoft Linkage

■ Solution Overview

By linking with Microsoft System Center Virtual Machine Manager 2012 (SCVMM 2012), the resources and functions of the ETERNUS DX can be controlled directly from the management console of System Center 2012.

Figure 11.4 Solution – Virtualization Platform (Microsoft Linkage)



■ Configuration Procedure

Install any plug-ins that are required for function linkage and perform the necessary settings.

● Required Environment

For linkage with System Center 2012, no plug-ins are required.

● Configuration Procedure

SCVMM2012

Use ETERNUS Web GUI to enable the SMI-S settings in the ETERNUS DX.

If the management console for SCVMM2012 uses a different subnet, add the subnet to [Allowed IP List] in [Set Network Environment].

When Windows Server 2012 is installed in the Hyper-V server, the ODX function is available for data copying. Create ODX volumes after enabling the ODX settings for the Advanced Copy function in the ETERNUS DX with ETERNUS Web GUI.

For details on the SCVMM2012 settings, refer to the manual of the SCVMM2012.

FUJITSU Storage ETERNUS DX60 S3 Disk storage system Configuration Guide (Basic)

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