FUJITSU

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Fujitsu Storage ETERNUS DX S6 series Operation Guide (Basic)

Operation management/maintenance

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Preface

Fujitsu would like to thank you for purchasing the Fujitsu Storage ETERNUS DX600 S6/DX900 S6, ETERNUS DX8900 S6 Hybrid Storage Systems (hereinafter referred to as ETERNUS DX).
The ETERNUS DX is designed to be connected to Fujitsu servers (Fujitsu SPARC Servers, PRIMEQUEST, PRIMERGY, and other servers) or non-Fujitsu servers.
This manual describes the operation management and maintenance 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
September 2024

Trademarks

Third-party trademark information related to this product is available at:
https://www.fujitsu.com/global/products/computing/storage/eternus/trademarks.html

About This Manual

Intended Audience

This manual is intended for storage system administrators or system administrators who manage and maintain the ETERNUS DX.

Related Information and Documents

The latest information for your model is available at:
https://www.fujitsu.com/global/support/products/computing/storage/manuals-list.html
Refer to the following manuals of your model as necessary:
"Configuration Guide (Basic Setup)"
"Message List"
"Design Guide"
"Configuration Guide -Server Connection-"
"Web GUI User's Guide"

Document Conventions

Third-Party Product Names

- Oracle Solaris may be referred to as "Solaris", "Solaris Operating System", or "Solaris OS".
- Microsoft® Windows Server® may be referred to as "Windows Server".

Notice Symbols

The following notice symbols are used in this manual:

Caution	Indicates information that you need to observe when using the ETERNUS storage system. Make sure to read the information.
Note	Indicates information and suggestions that supplement the descriptions included in this manual.

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.

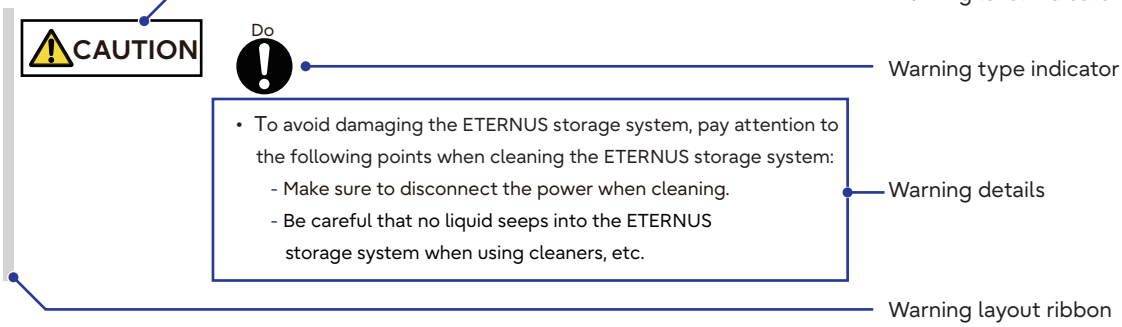
Electric Shock 	△The triangle emphasizes the urgency of the WARNING and CAUTION contents. Inside the triangle and above it are details concerning the symbol (e.g. Electrical Shock).
No Disassembly 	⃠The barred "Do Not..." circle warns against certain actions. The action which must be avoided is both 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.

An example is shown below.

Example warning



Setting Procedures in This Manual

Detailed information about the setup parameters (descriptions and input conditions in the procedure) and the status displays is described in "Web GUI User's Guide".

Note that the screen shots in this manual may be different from the actual screens.

Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.

1. Basic Operation

This chapter explains how to open and close rack doors and how to turn the ETERNUS DX on and off.

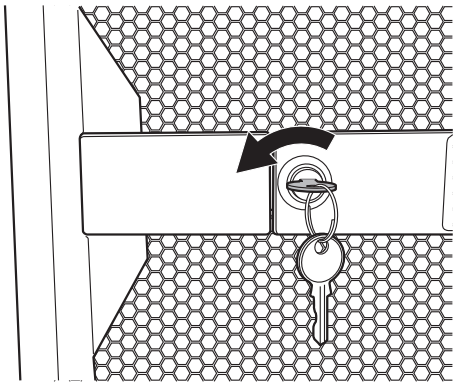
How to Open/Close the Rack Doors

Each 19-inch rack has a front door and a rear door.
The following section explains how to open and close the front and rear doors.

How to Open/Close the Front Door

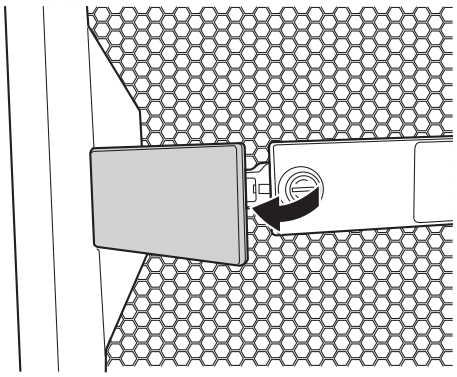
How to Open the Front Door

1 Insert the rack key and turn the key 180 degrees counterclockwise.



This will unlock the front door.

2 Pull the door handle forward.



How to Close the Front Door

Reverse the opening procedure to close the front door.

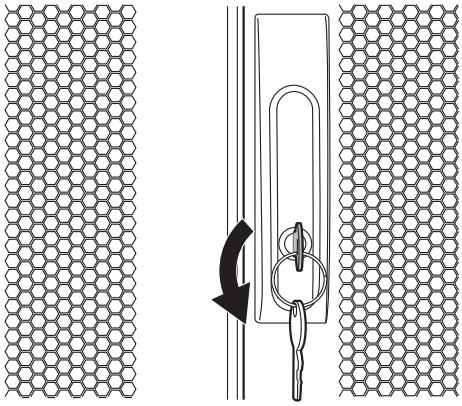
Important

Close the front door with the door handle pulled forward.

How to Open/Close the Rear Door

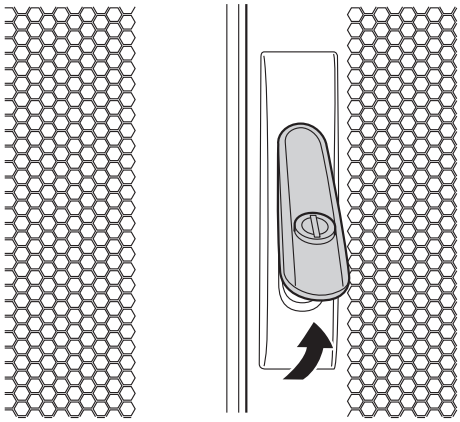
How to Open the Rear Door

1 Insert the rack key and turn the key 180 degrees counterclockwise.

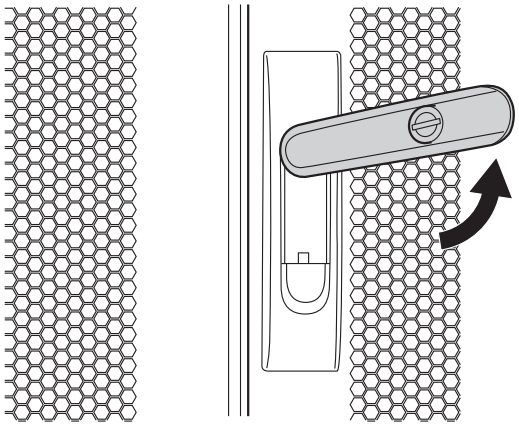


This will unlock the rear door.

2 Pull the bottom of the door handle forward.



3 Rotate the door handle counterclockwise and pull the door open.



How to Close the Rear Door

Reverse the opening procedure to close the rear door.

Important

Close the rear door with the door handle rotated.

Powering On and Off

For details on how to turn on and off the ETERNUS DX, refer to the following sections in "Configuration Guide (Basic Setup)".

- "Switching On and Off the Main Line Switch on the Power Distribution Unit"
- "Switching On and Off the PSU Switch on the Power Supply Unit"
- "Powering On"

Important

If the ETERNUS DX is not connected to a power source for long periods, it takes up to four hours before the built-in battery is fully charged. If the ETERNUS DX is used before the battery is fully charged, the operational state of the cache is changed to the Write Through mode and performance of the ETERNUS DX degrades.

- "Powering Off"

Using the Multifunction Switch (Setting Change Switch)

This section explains how to use the Multifunction switch (setting change switch) of the controller enclosure.

The following settings can be performed by using the Multifunction switch (setting change switch):

- Switching the Main CM to the other controller

Note

For the two controllers in the ETERNUS DX, the controller through which the ETERNUS DX is set up and operated is called the "Main CM", while the other controller is called the "Subordinate CM". The single-controller type only has a "Main CM" controller.

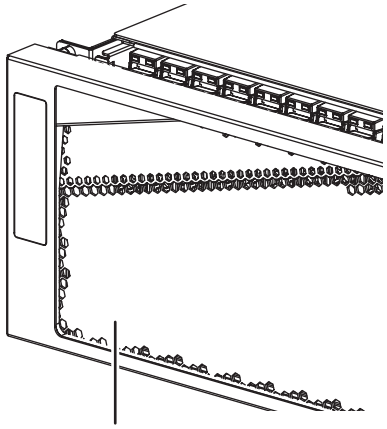
- Restoring the factory default settings (network environment settings and firewall settings) of the LAN ports
- Restoring the factory default user settings (user account, role, and RADIUS settings)

Caution

When the user information initialization function on the operation panel is disabled with the "set user-policy" command of ETERNUS CLI, the user settings do not revert to the default values even if the Multifunction switch (setting change switch) is operated.

The operating procedure for the Multifunction switch (setting change switch) is described below.

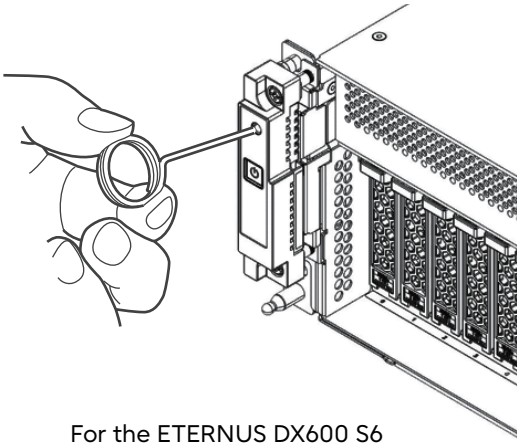
1 Remove the front cover of the controller enclosure.



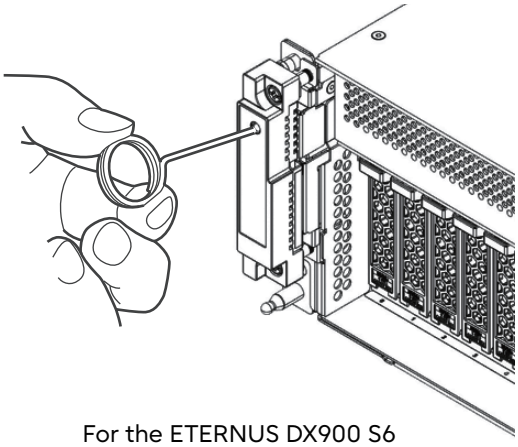
Front cover

2 Change the status of the ETERNUS DX to maintenance status.

Use the pin to push the Multifunction switch (maintenance switch) for three seconds.



For the ETERNUS DX600 S6



For the ETERNUS DX900 S6

The ETERNUS DX is in maintenance status when the MAINTENANCE LED is green.

3 Use the Multifunction switch to change the settings.

The settings to be changed are switched according to the number of times the Multifunction switch is pressed within three seconds:

- Switching the Main CM to the other controller when two controllers are installed

  Use the pin to push the Multifunction switch (CM Main Change switch) twice within three seconds.

  The MAIN CM LED for the controller that is set as the Main CM is green.
- Restoring the factory default settings of the LAN ports

  Use the pin to push the Multifunction switch (IP reset switch) three times within three seconds.

  After the default settings of the LAN ports are restored, the MAINTENANCE LED blinks green a few times a second for several seconds.
- Restoring the factory default user settings

  (1) Remove all the LAN cables from the LAN ports (MNT ports, RMT ports, and FST ports) of all the controllers.

  (2) Use the pin to push the Multifunction switch (IP reset switch) five times within three seconds.

  After the default user settings are restored, the MAINTENANCE LED blinks green approximately every second for several seconds.

4 Release maintenance status.

Use the pin to push the Multifunction switch (maintenance switch) for three seconds.

The MAINTENANCE LED turns off, which indicates that the ETERNUS DX is no longer in maintenance status.

5 Attach the front cover.

2. Storage System Monitoring

This chapter describes the status monitoring of the ETERNUS DX.

Checking LED Status

The status of the ETERNUS DX can be checked by the LEDs.

If the FAULT LED on the system operation panel of the frontend enclosure (ETERNUS DX900 S6 and ETERNUS DX8900 S6) or the operation panel of the controller enclosure (ETERNUS DX600 S6) is amber, contact your maintenance engineer.

Checking the Message of the LCD Panel

The status of the ETERNUS DX can be checked with the LCD panel.

If an alarm is displayed in the LCD panel of the ETERNUS DX900 S6 or the ETERNUS DX8900 S6, contact your maintenance engineer.

Displaying Status via ETERNUS Web GUI

The status of the ETERNUS DX and the usage status of RAID groups, TPPs, and SDPs can be checked in the Overview screen of ETERNUS Web GUI.

Figure 1 ETERNUS Web GUI Screen

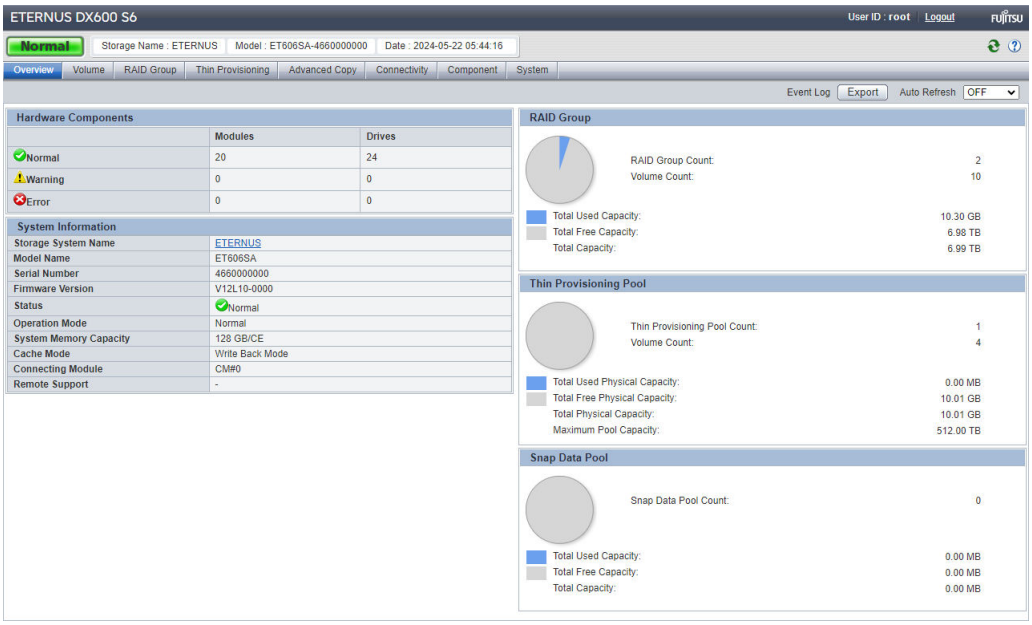


Table 1 shows the general status.

Status of the ETERNUS DX is monitored periodically, and the result is displayed as a general status icon with character strings.

Table 1 General Status of ETERNUS Web GUI

Status	Description
Normal (green)	The ETERNUS DX is in a normal state.
Not Ready (red)	An abnormality is detected at a power-off, and I/O access from the server cannot be received.
Error (red)	The ETERNUS DX is in error state.
Maintenance (orange)	The ETERNUS DX is under maintenance.
Warning (yellow)	The ETERNUS DX is in warning state.

For more details, refer to "Web GUI User's Guide".

Displaying Status via ETERNUS CLI

The status of the ETERNUS DX and the usage status of RAID groups, TPPs, and SDPs can be checked by sending the status display command via ETERNUS CLI.

```
CLI> show status
Summary Status [Normal]
CLI> show status
Summary Status [Error]
CLI> show status
Summary Status [Warning]
```

The general status of the ETERNUS DX indicates whether an error status component or a warning status component exists in the ETERNUS DX.

Table 2 General Status of ETERNUS CLI

Status	Description
Empty	An undefined or uninstalled component exists in the ETERNUS DX.
Normal	The ETERNUS DX is in a normal state.
Pinned Data	Pinned data exists in the ETERNUS DX.
Unused	An undefined component is installed in the ETERNUS DX.
Warning	The ETERNUS DX contains a component that requires preventive maintenance.
Maintenance	The ETERNUS DX is under maintenance.
Error	An error has occurred in a component that is installed in the ETERNUS DX.
Loop Down	The ETERNUS DX is in the BackEnd Down state.
Not Ready	An abnormality is detected and access from the host cannot be received.
Subsystem Down	The ETERNUS DX cannot be used.
Change Assigned CM	CM hot expansion recovery is required.

Status	Description
Unknown	A status other than the ones listed above.

Event Notification

By setting event notification, if an error (event) occurs in the ETERNUS DX, the event information is notified.

The methods that can be used to notify an event are "e-mail", "SNMP Trap", "Syslog", "remote support", and "host sense".

For the event notification settings, refer to "Setup Event Notification" of "Web GUI User's Guide".

For more details on the event information for E-mails, SNMP Traps, Syslog, and Host Sense, refer to "Message List".

Audit Log

By setting audit log, 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 Syslog server.

For the procedure on setting audit logs, refer to "Configuration Guide (Basic Setup)".

For log information, refer to "Message List".

3. Process Time (Estimated)

This chapter explains the estimated time that is required for volume formatting and for rebuild/copyback for each RAID level configuration.

Volume Formatting Time

The following table shows the time required for the volume formatting process.

Table 3 Volume Formatting Time

RAID level	Number of drives	Volume formatting time (*1)			
		NVMe SSDs	SAS SSDs	SAS disks	Nearline SAS disks
RAID1	2 (1D+1M)	Approx. 3 minutes/100GB	Approx. 7 minutes/100GB	Approx. 40 minutes/100GB	Approx. 73 minutes/100GB
RAID1+0	8 (4D+4M)	Approx. 1 minute/ 100GB	Approx. 3 minutes/100GB	Approx. 30 minutes/100GB	Approx. 43 minutes/100GB
RAID5	5 (4D+1P)	Approx. 1 minute/ 100GB	Approx. 3 minutes/100GB	Approx. 25 minutes/100GB	Approx. 49 minutes/100GB
RAID5+0	6 ((2D+1P) × 2)	Approx. 1 minute/ 100GB	Approx. 4 minutes/100GB	Approx. 30 minutes/100GB	Approx. 43 minutes/100GB
RAID6	6 (4D+2P)	Approx. 2 minutes/100GB	Approx. 4 minutes/100GB	Approx. 40 minutes/100GB	Approx. 58 minutes/100GB

***1:** The value shows the time required for volume formatting when the volume capacity is 100GB and there is no server I/O. The time that is required depends on the type and configuration of the drive.

Rebuild/Copyback Process Time

This section explains the time required for Rebuild/Copyback.

Rebuild Process Time

The following table shows the time required for the rebuild process.

Table 4 Rebuild Process Time

RAID level	Number of drives	Rebuild process time (*1)			
		NVMe SSDs	SAS SSDs	SAS disks	Nearline SAS disks
RAID1	2 (1D+1M)	Approx. 3 minutes/100GB	Approx. 5 minutes/100GB	Approx. 27 minutes/100GB	Approx. 47 minutes/100GB
RAID1+0	8 (4D+4M)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 7 minutes/100GB	Approx. 11 minutes/100GB
RAID5	5 (4D+1P)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 10 minutes/100GB	Approx. 15 minutes/100GB
RAID5+0	6 ((2D+1P) × 2)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 7 minutes/100GB	Approx. 11 minutes/100GB
RAID6	6 (4D+2P)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 13 minutes/100GB	Approx. 21 minutes/100GB

***1:** The value shows the rebuild process time when the volume capacity is 100GB and there is no server I/O. The time that is required depends on the type and configuration of the drive.

Copyback Process Time

The following table shows the time required for the copyback process.

Table 5 Copyback Process Time

RAID level	Number of drives	Copyback process time (*1)			
		NVMe SSDs	SAS SSDs	SAS disks	Nearline SAS disks
RAID1	2 (1D+1M)	Approx. 3 minutes/100GB	Approx. 5 minutes/100GB	Approx. 27 minutes/100GB	Approx. 49 minutes/100GB
RAID1+0	8 (4D+4M)	Approx. 1 minute/ 100GB	Approx. 1 minute/ 100GB	Approx. 7 minutes/100GB	Approx. 11 minutes/100GB
RAID5	5 (4D+1P)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 10 minutes/100GB	Approx. 16 minutes/100GB
RAID5+0	6 ((2D+1P) × 2)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 7 minutes/100GB	Approx. 11 minutes/100GB
RAID6	6 (4D+2P)	Approx. 1 minute/ 100GB	Approx. 2 minutes/100GB	Approx. 13 minutes/100GB	Approx. 20 minutes/100GB

***1:** The value shows the copyback process time when the volume capacity is 100GB and there is no server I/O. The time that is required depends on the type and configuration of the drive.

Important

[Set RAID Group Parameter] specifies the rebuild priority for host access. When the Rebuild Priority is "High", rebuild, copyback, and redundant copy performance can be improved.

Note that RAID group performance (throughput) may be reduced when a rebuild, copyback, or redundant copy is being performed in the target RAID group.

4. Expansion Functions

This chapter explains the expansion functions.

License Registration

Veeam Storage Integration License Registration

The following procedure explains how to register the Veeam Storage Integration license.
Registering the Veeam Storage Integration license to the ETERNUS DX enables the Veeam Storage Integration function.

Important

A Veeam Storage Integration license is issued for each ETERNUS DX. The issued license cannot be registered in another ETERNUS DX.

Note

For the procedure to obtain the Veeam Storage Integration license, refer to "Configuration Guide (Basic Setup)".

1. Start up ETERNUS Web GUI.
2. Click the [Advanced Copy] tab on the navigation. Then, click [Settings] in [Category].
   The [Settings] screen appears.
   For the following procedure, refer to "Register Veeam Storage Integration License" of "Web GUI User's Guide".
3. After the registration is completed, confirm that "License" of "Veeam Storage Integration" has changed to "Registered" in the [Settings] screen.

5. Maintenance

This chapter describes maintenance once the ETERNUS DX starts to be operated.

Periodic Backup

In case of an unexpected problems, important data should be regularly backed up.

CAUTION

Do

- We recommend that you backup important data regularly. If the ETERNUS DX fails and the data has not been backed up, it may be lost.

Maintenance Service

This section explains the ETERNUS DX maintenance service.

Important

When performing maintenance service, the maintenance engineer connects a PC used for maintenance to the ETERNUS DX. Also, the maintenance engineer may require information that is necessary for performing maintenance operations. If the maintenance engineer has any requirement, we ask that they be handled.

Maintenance Support Period

The standard maintenance support period for ETERNUS DX is five years from the date of purchase, or is defined in your service level agreement (SLA). Contact your sales representative for details if you prefer to extend the period.

Replacing Batteries

The batteries of the ETERNUS DX are expendable components that need to be replaced periodically.

Battery replacement must be carried out by qualified specialists. For notes on replacing the battery, refer to the corresponding general terms and conditions or maintenance agreement, or contact Fujitsu technical support.

Replacement Cycle for a Battery

If a battery is used at an average temperature of 25 °C, the battery can be used for the entire maintenance support period (five years). The replacement cycle for a battery varies according to the customer's environment and usage.

CAUTION

Do

- The replacement cycle for a battery is shortened if the battery is used at high temperatures or the battery charges and discharges frequently.

Checking the Time to Replace the Battery

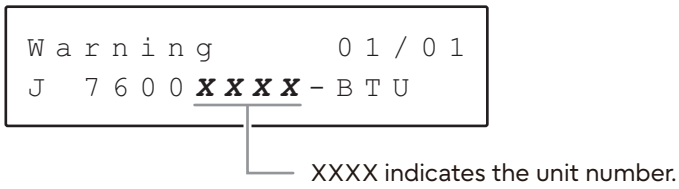
CAUTION

- If the time to replace the battery is near, contact your maintenance engineer to replace the battery. If the end of the battery's life (low battery charge rate) is detected by the ETERNUS DX due to continued use even after exceeding the replacement period, the performance of the ETERNUS DX degrades because the operational state of the cache is changed to the Write Through mode to protect the data.

The time to replace the battery can be checked by using the following options.
If the time to replace the battery is near, contact your maintenance engineer.

- Check the time to replace the battery by using ETERNUS Web GUI or ETERNUS CLI.
- If the time to replace the battery is near, a notification is sent via an e-mail or an SNMP trap message.
  - A notification is sent six months before the expiration date.
  - A notification is sent everyday for a week before the expiration date.
- If the battery replacement time is near for the ETERNUS DX900 S6 or the ETERNUS DX8900 S6, a message is displayed on the LCD panel of the system operation panel.

Figure 2 Battery Unit Replacement Notification



Related Service

Remote Support

If a possible error that may occur is detected or an error occurs when remote support service is used, the contents of events are automatically sent to the remote support center and notified to the user.

6. Troubleshooting

This chapter explains how to troubleshoot when errors occur.

If something unusual occurs during operation, refer to "Check List" (page 22) to check the ETERNUS DX status, and contact your maintenance engineer according to "Required Information for Inquiries" (page 25).

- When the ETERNUS DX is turned off
- When the ETERNUS DX refuses to turn on
- When the READY LED is not on
- When the FAULT LED is on
- When the FAULT LED blinks
- When the DRIVE FAULT LED is on
- When the ETERNUS DX cannot be connected via a network service
- License keys cannot be registered
- When I/O access is slow
- When the server does not recognize the volumes
- When a server HBA fails and needs to be replaced

Check List

When the ETERNUS DX Is Turned Off

Check the points that are shown below. If the problem cannot be resolved, leave the ETERNUS DX alone and contact your maintenance engineer.

- Is the ETERNUS DX's power cord disconnected?
- Is PSU switch of the power supply unit turned to OFF (O)?
- Is the main line switch of the power distribution unit turned OFF (O)?
- Is there a power failure?
- Has there been a recent main power failure?
  If the Power Resume function is enabled, the ETERNUS DX turns on automatically after the power is restored.

When the ETERNUS DX Refuses to Turn On

Check the points that are shown below. If the problem cannot be resolved, leave the ETERNUS DX alone and contact your maintenance engineer.

- Is the ETERNUS DX's power cord disconnected?
- Is PSU switch of the power supply unit turned to OFF (O)?
- Is the main line switch of the power distribution unit turned OFF (O)?
- Is there a power failure?
- Is the backend cable disconnected?

When the READY LED Is Not On

If the following time have passed since the power of the ETERNUS DX was turned on and the READY LED is still not on, contact your maintenance engineer.

Table 6 Time Required for the READY LED to Turns On after Turning the Power On

Model	Deduplication/Compression function is disabled	Deduplication/Compression function is enabled
ETERNUS DX600 S6	20 minutes or more	28 minutes or more
ETERNUS DX900 S6 (*1) ETERNUS DX8900 S6 (*1)	20 minutes or more	24 minutes or more

***1:** The ETERNUS DX900 S6 and the ETERNUS DX8900 S6 support the Compression function only.

When the FAULT LED Is On

Check the general status and the system messages in ETERNUS Web GUI, leave the storage system as is, and contact your maintenance engineer.

Note

For details about how to check the general status via ETERNUS CLI, refer to "Displaying Status via ETERNUS CLI" (page 15).

When the FAULT LED Blinks

Check the general status and the system messages in ETERNUS Web GUI. A general status of Warning indicates that the ETERNUS DX contains a component that requires preventive maintenance.
In the details screen for each component, check the detailed information for each component with the ⚠ symbol and contact your maintenance engineer.

Note

For details about how to check the general status via ETERNUS CLI, refer to "Displaying Status via ETERNUS CLI" (page 15).

When the DRIVE FAULT LED Is On

Check the drive status.
While the Shield function is being used, the DRIVE FAULT LED is temporarily turned on. For details on how the Shield function works and how to check whether it is running, refer to "Design Guide".
If the problem persists, contact your maintenance engineer.

When the ETERNUS DX Cannot Be Connected via a Network Service

Check the points that are shown below. If the problem persists, contact your maintenance engineer.

- Is the ETERNUS DX turned off?
- Is the LAN cable disconnected? Is the LAN cable connected to a LAN port of a controller with a MAIN CM LED not turned on?
- Have any network devices (such as LAN switch or router) failed? Is the LAN cable disconnected or damaged? Are the network device settings invalid?
- Are the environment settings for the network service invalid?
- Is the IP address correct?
- Are the settings for the ETERNUS DX LAN ports (firewall) invalid?

When I/O Access Is Slow

Check the points that are shown below. When the cause is not identified, contact your maintenance engineer.

- Check that the ambient temperature does not exceed the operating environment conditions.
  If the ambient temperature exceeds the operating environment conditions, Nearline SAS disk performance may be reduced.
- Check the battery status of the ETERNUS DX by using ETERNUS Web GUI.
  If the battery charge rate is low, the performance of the ETERNUS DX degrades because the operational state of the cache is changed to Write Through mode.
  If the battery charge rate is low, contact your maintenance engineer.
- Click the icon of each part on the [Storage] screen of [Component] of ETERNUS Web GUI to check if an abnormality is detected in ETERNUS DX parts.
  If an abnormality is detected, contact your maintenance engineer.
- Check the path status.
  - If the ETERNUS Multipath Driver is used, start ETERNUS Multipath Manager.
    If an abnormality is detected in a path, refer to the ETERNUS Multipath Driver manuals and follow the direction given in the manuals.
  - If the ETERNUS Multipath Driver is not used, check the path status by using the path management tool that each software provides and handle any problems as required.
- Check the loading of the ETERNUS DX. If the load is out of balance because of operation content changing or for other reasons, review the configuration and settings.
- Check the transfer rate of the FC port.
  If the transfer rate for the ETERNUS DX is different from the server or the FC switch, set the same transfer rate as the server or FC switch.
- Check the number of command queues in the server.
  When there are no problems in the process capacity of the server, adjust the number of command queues so that the I/Os are issued for the appropriate number.
  For details on the number of command queues, refer to "Configuration Guide -Server Connection-".
- Check the message log of the OS on the server that is connected and then take the appropriate actions.
- Check the status of the RAID group.
  When rebuild/copyback or redundant copy is being performed in a RAID group with a "High" rebuild priority, the performance may be reduced until the operation is complete. For more details on the setting status of the rebuild priority, refer to "Tuning" of "Web GUI User's Guide".
- Check the cache parameter settings of the volumes.
  The performance may be reduced when multiple sequential read accesses simultaneously occur for volumes that do not have the Force Prefetch mode enabled. Enable the Force Prefetch mode and specify the appropriate value for the Prefetch Limit. For details on the setting status of the Forced Prefetch mode, refer to "Performance (Host I/O)" of "Web GUI User's Guide".
  This may be caused by accesses that are used for video distribution businesses.

When the Server Does Not Recognize the Volumes

Check the points that are shown below. If the problem cannot be resolved, leave the ETERNUS DX alone and contact your maintenance engineer.

- Check the status of the ETERNUS DX and other devices such as network devices connecting the server and the ETERNUS DX, and ensure that there are no problems with the power supply.

- Check if an error occurs in a path by using a path management tool such as ETERNUS Multipath Manager. Refer to the relevant manuals and take the required actions.

When a Server HBA Fails and Needs to Be Replaced

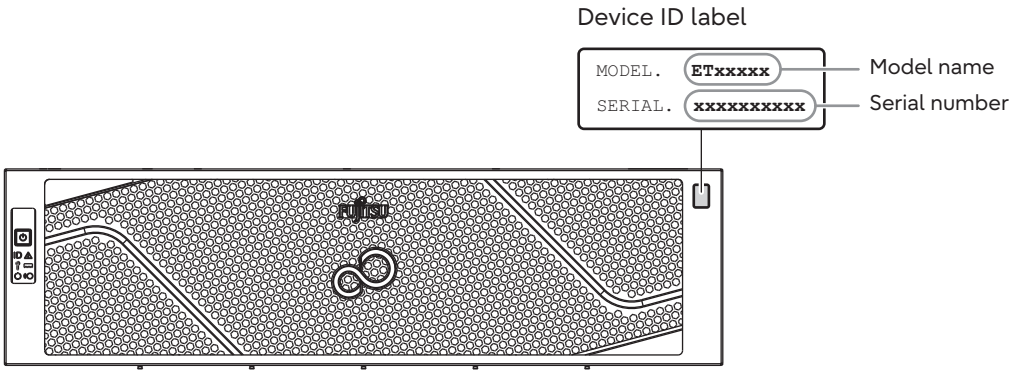
When an error occurs such as with the FC card, the HBA of the server must be replaced.
Leave the storage system as is and contact your maintenance engineer.

Required Information for Inquiries

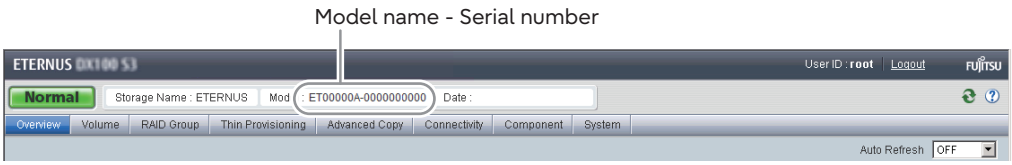
Before contacting your maintenance engineer when trouble occurs, prepare the information that is shown below. For details on the maintenance service, refer to "Maintenance Service" (page 20).

The Model Name and the Serial Number of the ETERNUS DX

This information can be checked by using a device ID label, ETERNUS Web GUI, or ETERNUS CLI.



ETERNUS Web GUI screen



ETERNUS CLI ("show enclosure-status" command)
Output example for the ETERNUS DX600 S6

```
CLI> show enclosure-status
Enclosure View
 Storage System Name            [ETERNUS DX600 S6]
 Model Upgrade Status           [Not Upgraded]
 Model Name                     [ETxxxxxx]
 Serial Number                  [xxxxxx]
  :
```

Model name
Serial number

Details about the Trouble, Any Actions Taken, and the Results of These Actions

The Devices That Are Connected to the ETERNUS DX

- The models of the server and network devices
- The UPS model

Log/Dump Information of the ETERNUS DX

When your maintenance engineer asks for the log/dump information of the ETERNUS DX, obtain the required log/dump information using the log/dump collection function of ETERNUS Web GUI.

For details on obtaining the log/dump information, refer to "Web GUI User's Guide".

A. Component Names

For the component names of the ETERNUS DX, refer to "Component Names" in "Configuration Guide (Basic Setup)".

Fujitsu Storage
ETERNUS DX S6 series
Operation Guide (Basic)

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