

ETERNUS vCenter Plug-in 2.2

User's Guide

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This manual explains an overview and usage of ETERNUS vCenter Plug-in.

Second Edition
December 2013

Structure of this Manual

This manual is composed of the following 11 chapters and five appendices.

- Chapter 1 About ETERNUS vCenter Plug-in
This chapter provides an overview of ETERNUS vCenter Plug-in and also explains functions and operations for ETERNUS vCenter Plug-in.
- Chapter 2 Installation and Initial Setup
This chapter describes installation and initial setup for ETERNUS vCenter Plug-in.
- Chapter 3 Displaying Storage Information
This chapter describes displaying the information of the ETERNUS Disk storage system.
- Chapter 4 Displaying Adapter Information
This chapter describes displaying the adapter information.
- Chapter 5 Displaying Performance Monitoring and Performance Information
This chapter describes displaying the performance monitoring and the performance information of the ETERNUS Disk storage system.
- Chapter 6 Refreshing Displayed Information
This chapter describes refreshing displayed information.
- Chapter 7 Registering ETERNUS Disk Storage Systems
This chapter explains how to register the information of the ETERNUS Disk storage system.
- Chapter 8 Adding and Deleting Datastore Volumes
This chapter describes adding and deleting datastore volumes.
- Chapter 9 Changing Settings
This chapter explains how to change various settings.

- Chapter 10 Uninstallation

This chapter explains how to uninstall ETERNUS vCenter Plug-in.

- Chapter 11 Required Information for Failure Investigation

This chapter describes the required information for failure investigation.

The following information is provided as appendices:

- Appendix A Frequent Inquiry Solutions
- Appendix B List of Displayed Items
- Appendix C Messages
- Appendix D JRE Use Conditions
- Appendix E About Open Source Software License

Naming Conventions

Abbreviations Used in This Manual

In this manual, "ETERNUS Disk storage system" refers to a storage system that is supported by ETERNUS vCenter Plug-in. For the supported storage systems, refer to the following website:

<http://www.fujitsu.com/global/services/computing/storage/eternus/tools/evcp.html>

In this manual, "ETERNUS Web GUI" refers to Web GUI.

Symbols and Expressions

The following symbols and expressions are used in this manual:



Points to note when using the product.



Functions and know how which can be useful when setting up or operating ETERNUS vCenter Plug-in.

Product Names

The following products are referred to as "Windows Server":

- Microsoft® Windows Server® 2008 R2 Standard
- Microsoft® Windows Server® 2008 R2 Enterprise
- Microsoft® Windows Server® 2008 R2 Datacenter
- Microsoft® Windows Server® 2012 Datacenter
- Microsoft® Windows Server® 2012 Standard
- Microsoft® Windows Server® 2012 Essentials
- Microsoft® Windows Server® 2012 Foundation

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ETERNUS vCenter Plug-in Modification History

This section provides a history of modifications for ETERNUS vCenter Plug-in.

Version	Modification effect
1.0.1	None
1.1.0	Changed the tab name to [FUJITSU ETERNUS DX]
1.1.1	None
1.1.2	Changed the recommended value for the ETERNUS DX60 S2/DX80 S2/DX90 S2 to Round Robin as the Path Policy (Recommend) in the Best Practice Settings window
2.0.0	<ul style="list-style-type: none">• vSphere Client is not supported• Deleted the -i option and the -p option from the "evcpConfig" command
2.1.0	Changed the product name of the ETERNUS Disk storage system that is displayed for each function to the characters that are assigned to each device
2.2.0	<ul style="list-style-type: none">• Changed the product names for ETERNUS Disk storage systems that are displayed in each wizard screen to the storage system names of ETERNUS Disk storage systems. Also changed the display item name to "Storage System Name".• Changed the message that is displayed when selecting an unregistered ETERNUS Disk storage system in the storage information display screen or the adapter information display screen from STXE1001 to STXE1019• Changed the message that is displayed when selecting an unsupported ETERNUS Disk storage system in the storage information display screen from STXE1002 to STXE1019• Changed the adapter information display screen to display the unsupported ETERNUS Disk storage system information only with the serial number in the "Storage Targets" window• Changed the system to display the STXE2012 message when a user attempts to specify a RAID group in which volumes other than Standard, WSV, SDV, or SDPV are registered to prevent the registration of the new resource• Changed the system to display the STXE2015 message when rescanning of an HBA fails while datastore volumes are being added

ETERNUS vCenter Plug-in Updates

The following table shows the updates for each ETERNUS vCenter Plug-in version:

Version	Modification details
1.0.0 (February 2012)	First version

Version	Modification details
1.0.1 (April 2012)	Corrected version <ul style="list-style-type: none"> • Corrected the display error when a license for the Advanced Copy or Thin Provisioning functions is not registered • Corrected the display error when an unsupported disk is used as Raw Device Mapping
1.1.0 (June 2012)	<ul style="list-style-type: none"> • Added support for the function to display adapter information • Added support for the function to display performance information • Added support for the function to display best practice information • Added support for the ETERNUS DX60 S2
1.1.1 (August 2012)	Corrected version <ul style="list-style-type: none"> • Corrected the display error when the NFS datastore is used • Corrected the display error when a Wide Striping Volume is used
2.0.0 (December 2012)	<ul style="list-style-type: none"> • Added support for VMware Web Client • Added support for the new datastore volume function • Added the -l option to the "evcpConfig" command
2.1.0 (July 2013)	<ul style="list-style-type: none"> • Added support for the new datastore volume function for clusters • Added support for the new function to delete datastore volumes • Added support for the function to display WSV/FTV information
2.2.0 (December 2013)	<ul style="list-style-type: none"> • Added support for the ETERNUS DX S3 series

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Chapter 1

About ETERNUS vCenter Plug-in

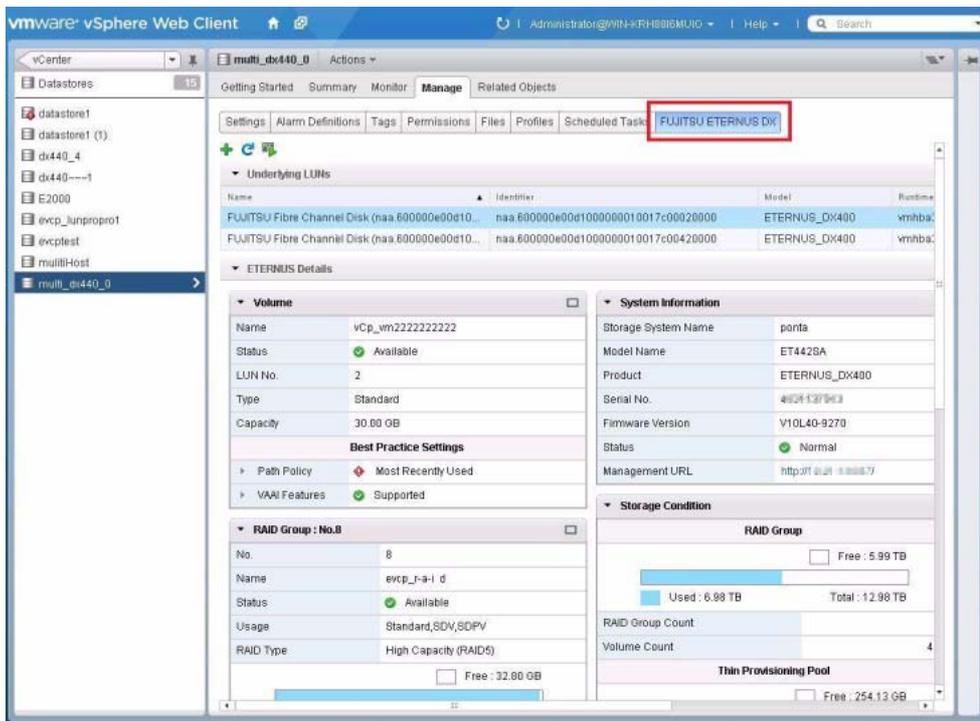
1.1 Overview

ETERNUS vCenter Plug-in expands the user interface of VMware vSphere Web Client to provide various functions for Fujitsu ETERNUS Disk storage systems that can be used in combination with vCenter Server. Application of this product facilitates visualization of information on the storage systems and allows the VMware administrators to grasp physical and virtual mapping related to virtual machines, datastores and host systems, which enables integrated management of the infrastructure of virtual environment. Information that previously could only be viewed with ETERNUS Web GUI can now also be viewed from vSphere Web Client and volumes can be created with Web Client, improving the usability of VMware vSphere Web Client.

1.2 Functions

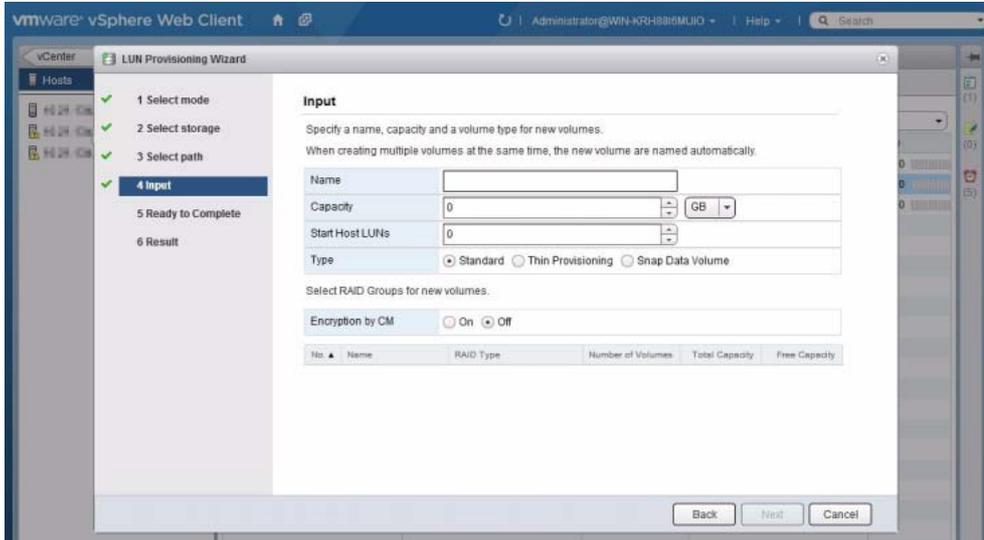
Information display function

The [FUJITSU ETERNUS DX] tab can be added under the management tab by selecting a VMware object from the inventory tree of vSphere Web Client. Selecting this tab enables the information of the ETERNUS Disk storage system to be displayed on vSphere Web Client.

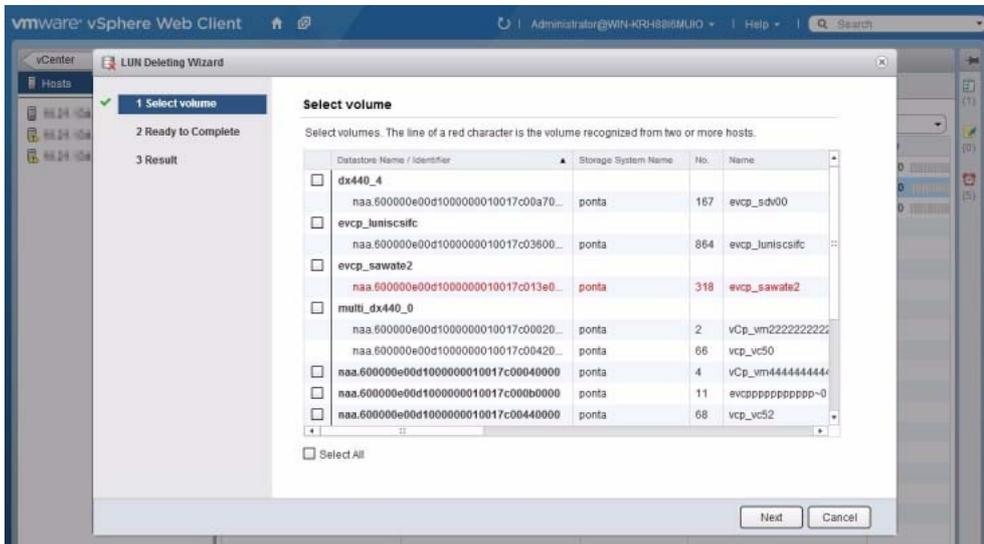


■ Adding and deleting datastore volumes

[ALL FUJITSU ETERNUS DX Actions] can be added to the menu list by selecting a VMware host object or a VMware cluster object from the inventory tree of vSphere Web Client and right clicking on it. To add volumes to the selected object, perform the wizard process that is started from this menu. These volumes can also be automatically converted into datastores.

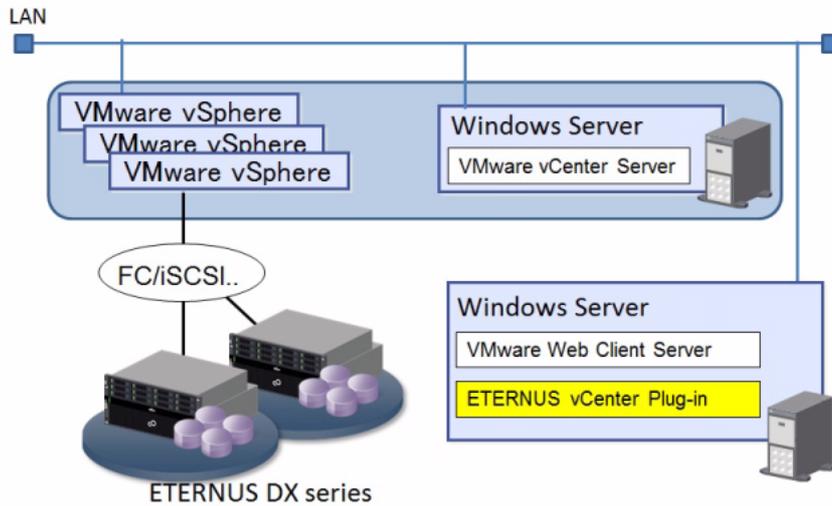


A datastore volume can also be deleted from the selected object in a similar way as above.



1.3 Operation

Install ETERNUS vCenter Plug-in in a Windows Server with VMware Web Client Server installed.



▶ Caution

When vCSA (vCenter Server Appliance) is used as the vCenter Server, ETERNUS vCenter Plug-in cannot be installed in a VMware Web Client Server that is bundled with vCSA. Install ETERNUS vCenter Plug-in in a Windows server that already has VMware Web Client Server installed.

1.4 Supported Environment

For the versions of storage systems, VMware vSphere, and vSphere Web Client supported by ETERNUS vCenter Plug-in, refer to the following website:

<http://www.fujitsu.com/global/services/computing/storage/eternus/tools/evcp.html>

1.5 Required Resources

1.5.1 Disk Capacity Required for Installation

No.	Details	Capacity	Folder
1	Program storage	118MB	Installation folder (*1)

*1: The default installation folder is:
System Drive:\Program Files\ETERNUS vCenter Plug-in

1.5.2 Disk Capacity Required for Operation

No.	Details	Capacity	Folder
1	Trace log	125MB	Installation folder (*1)

*1: The default installation folder is:
System Drive:\Program Files\ETERNUS vCenter Plug-in

1.6 Exclusive Software

Do not start the following software at the same time as ETERNUS vCenter Plug-in. If the following software is running, information about the ETERNUS Disk storage system may not be displayed in the [FUJITSU ETERNUS DX] tab.

- Web GUI for ETERNUS DX series
- Command Line Interface (CLI) for ETERNUS DX series

Caution

The following software can be used at the same time as ETERNUS vCenter Plug-in:

- ETERNUS SF Storage Cruiser
- ServerView Resource Coordinator VE

Note that a message about exclusive software that has a message number such as STXE1006 may be displayed while operating ETERNUS vCenter Plug-in. If this type of message is displayed, close the window of ETERNUS SF Storage Cruiser or ServerView Resource Coordinator VE and reperform the operation with ETERNUS vCenter Plug-in. The above software can be used again after the target operations with ETERNUS vCenter Plug-in are complete.

1.7 Notes

1.7.1 Network File System

ETERNUS vCenter Plug-in does not support a datastore that is configured with the network file system.

1.7.2 Firewall Settings

Set the following port numbers to bypass the firewall when setting up a firewall between the server in which ETERNUS vCenter Plug-in is installed and the ETERNUS Disk storage system.

No.	Destination	Port number/protocol	Communication direction
1	ETERNUS Disk storage system	1999/tcp	From the server in which ETERNUS vCenter Plug-in is installed to the ETERNUS Disk storage system
2	ETERNUS Disk storage system	1372/tcp	From the server in which ETERNUS vCenter Plug-in is installed to the ETERNUS Disk storage system
3	ETERNUS Disk storage system	22/tcp	From the server in which ETERNUS vCenter Plug-in is installed to the ETERNUS Disk storage system

1.7.3 SSH Settings for the ETERNUS Disk Storage System

Enable the SSH connection for the monitoring target ETERNUS Disk storage system. For details, refer to "ETERNUS Web GUI User's Guide".

1.7.4 Supported Processors

Itanium is not supported.

1.7.5 Displaying Performance Monitoring and Performance Information

- This function is not supported for the ETERNUS DX60 S2 Disk storage system.
- Firmware version V10L30-0000 or later for the ETERNUS Disk storage system is required to use this function with the ETERNUS DX S2 series.

1.7.6 IPv6

IPv6 cannot be used for vCenter Server and ETERNUS Disk storage systems that are managed by ETERNUS vCenter Plug-in.

1.7.7 Creating and Deleting Datastore Volumes

- This function is not supported for the ETERNUS DX60 S2 Disk storage system.
- Firmware version V10L40-0000 or later for the ETERNUS Disk storage system is required to use this function with the ETERNUS DX S2 series.
- Only Fibre Channel and iSCSI are supported for interfaces between servers and ETERNUS Disk storage systems.
- A user who is logged into Web Client must have the "Storage Partition" privilege to use this function. To obtain the "Storage Partition" privilege, click [Hosts], [Configuration], and then select the [Storage partition] checkbox.
- Only Fibre Channel interfaces are supported for hosts running vSphere4.1. iSCSI interfaces are not supported.
- This function is not supported for Flexible Tier Volumes (FTV) and Wide Striping Volumes (WSV).
- A datastore volume that is used in Virtual Machine cannot be deleted with this function.
- To use an iSCSI interface, "Network Port Binding" must be performed with vSphere Web Client. Refer to the vSphere Web Client help for a detailed procedure on performing this action.

Chapter 2

Installation and Initial Setup

The installation methods for ETERNUS vCenter Plug-in are described below:

- New installation
Perform the procedures from ["2.1 New Installation" \(page 17\)](#) to ["2.2 Operation Required After New Installation" \(page 20\)](#).
- Upgrade ETERNUS vCenter Plug-in
Perform the procedure in ["2.3 Upgrading ETERNUS vCenter Plug-in" \(page 20\)](#).

2.1 New Installation

Install ETERNUS vCenter Plug-in using the following procedure:

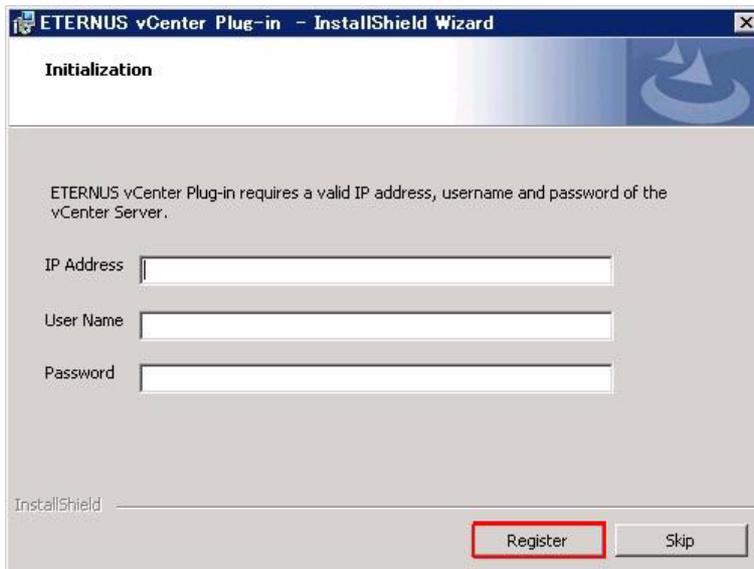
 **Caution**

When the installation is complete, the VMware vSphere Web Client service automatically restarts.

Procedure

- 1** Extract the downloaded file.
- 2** Double-click the extracted ETERNUS vCenter Plug-in installer to start the wizard. Proceed with the installation according to the wizard.

- 3** Specify each parameter in the [Initialization] screen and click the [Register] button.



▶ Caution

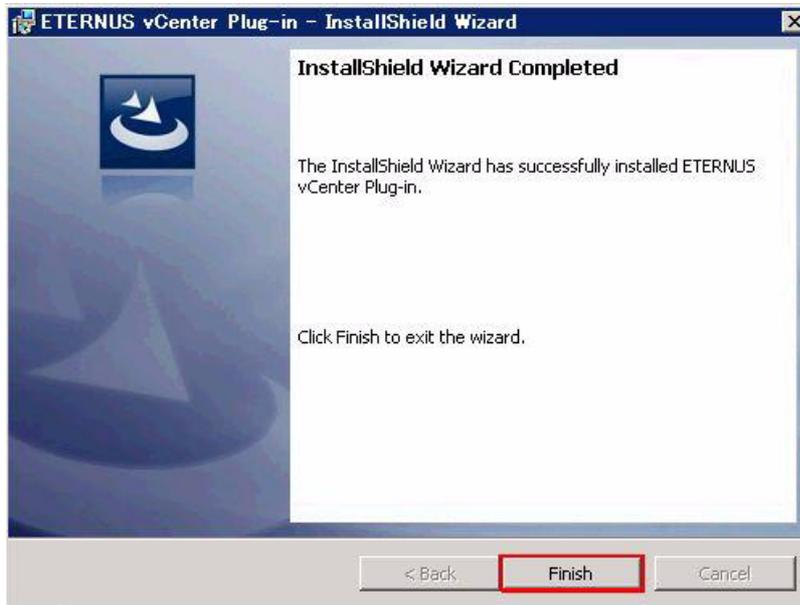
If the [Skip] button is clicked, the installation process completes without performing the initial setup. In this case, the initial setup must be performed manually after installation. For details, refer to ["Appendix A Frequent Inquiry Solutions" \(page 67\)](#).

In the [Initialization] screen, perform the initial setup (registering the vCenter Server to ETERNUS vCenter Plug-in).

Register the vCenter Server to ETERNUS vCenter Plug-in and log in to the Web Client Server that manages the vCenter Server. Then, the information of the ETERNUS Disk storage system can be displayed on vSphere Web Client.

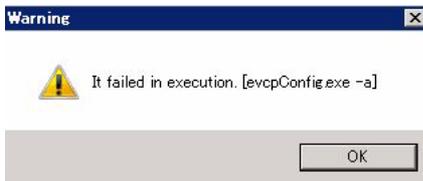
Parameter	Details
IP Address	Enter the IP address of the vCenter Server that is to be registered to ETERNUS vCenter Plug-in. Do not enter a local loopback address.
User Name	Enter a valid account of the vCenter Server specified above.
Password	Enter the password for the account specified above.

- 4** When the installation process is complete, the [InstallShield Wizard Completed] screen appears. Click the [Finish] button to finish the installation.



Caution

If the initial setup fails, a Warning screen appears. In this case, the initial setup must be performed manually after installation. For details, refer to "[Appendix A Frequent Inquiry Solutions](#)" (page 67).



End of procedure

2.2 Operation Required After New Installation

Perform the following operations after installing ETERNUS vCenter Plug-in.

Caution

When the installation is complete, the VMware vSphere Web Client service automatically restarts. After the VMware vSphere Web Client service is restarted, the [FUJITSU ETERNUS DX] tab of ETERNUS vCenter Plug-in might not appear. If this tab is not displayed, wait a couple of minutes, and then log in again.

2.2.1 Registering ETERNUS Disk Storage Systems for Management

Before registering the information of the ETERNUS Disk storage system that is to be managed, the SSH connection of the target ETERNUS Disk storage system must be enabled in advance. For the detailed procedure, refer to "ETERNUS Web GUI User's Guide".

To display the information of the ETERNUS Disk storage system onto vSphere Web Client, the information of the target ETERNUS Disk storage system must be registered in ETERNUS vCenter Plug-in. For the registration procedure, refer to "[Chapter 7 Registering ETERNUS Disk Storage Systems](#)" (page 41).

2.3 Upgrading ETERNUS vCenter Plug-in

This procedure explains how to upgrade ETERNUS vCenter Plug-in in an environment in which an old version of ETERNUS vCenter Plug-in is already installed and used. There is no need to change the environment settings again after upgrading ETERNUS vCenter Plug-in because the settings prior to upgrading are retained even after upgrading is complete.

Upgrading from version 1.x of ETERNUS vCenter Plug-in cannot be performed. If this is the case, install the latest version of ETERNUS vCenter Plug-in after uninstalling the old version.

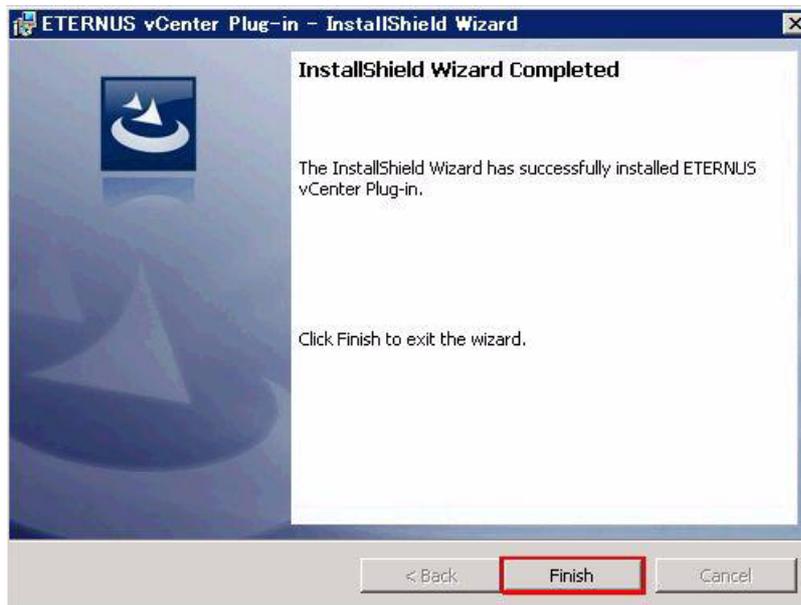
Caution

The VMware vSphere Web Client service is automatically restarted after installation is complete.

Procedure

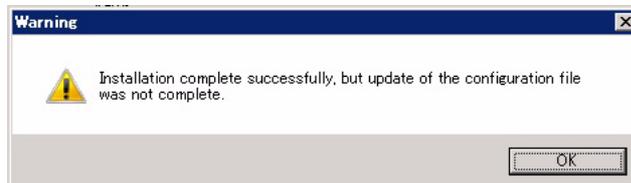
- 1** Extract the downloaded file.
- 2** Double-click the extracted ETERNUS vCenter Plug-in installer to start the wizard. Proceed with the installation according to the wizard.

- 3** When the installation process is complete, the [InstallShield Wizard Completed] screen appears. Click the [Finish] button to finish the installation.



Caution

If the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete, a Warning screen appears.



In this case, changing the environment settings manually is required after upgrading of ETERNUS vCenter Plug-in is complete. For details, refer to ["Appendix A Frequent Inquiry Solutions" \(page 67\)](#).

End of procedure

Chapter 3

Displaying Storage Information

This function is used to display various types of information for the ETERNUS Disk storage systems in the vSphere Web Client screen. To add the [FUJITSU ETERNUS DX] tab under the management tab, select a VMware object from the inventory tree of vSphere Web Client. To display the information of the ETERNUS Disk storage system, click the [FUJITSU ETERNUS DX] tab. The following three VMware objects are supported:

- Datastore
- Virtual Machine
- Host System

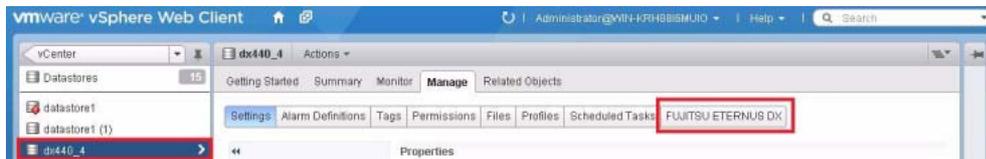
For details about the items displayed with this function, refer to ["Appendix B List of Displayed Items" \(page 70\)](#).

3.1 Displaying Datastore Information

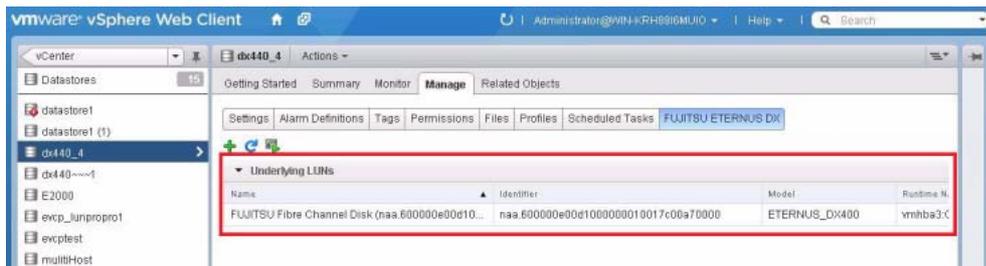
To display the information corresponding to Datastore of the ETERNUS Disk storage systems, perform the following procedure:

Procedure

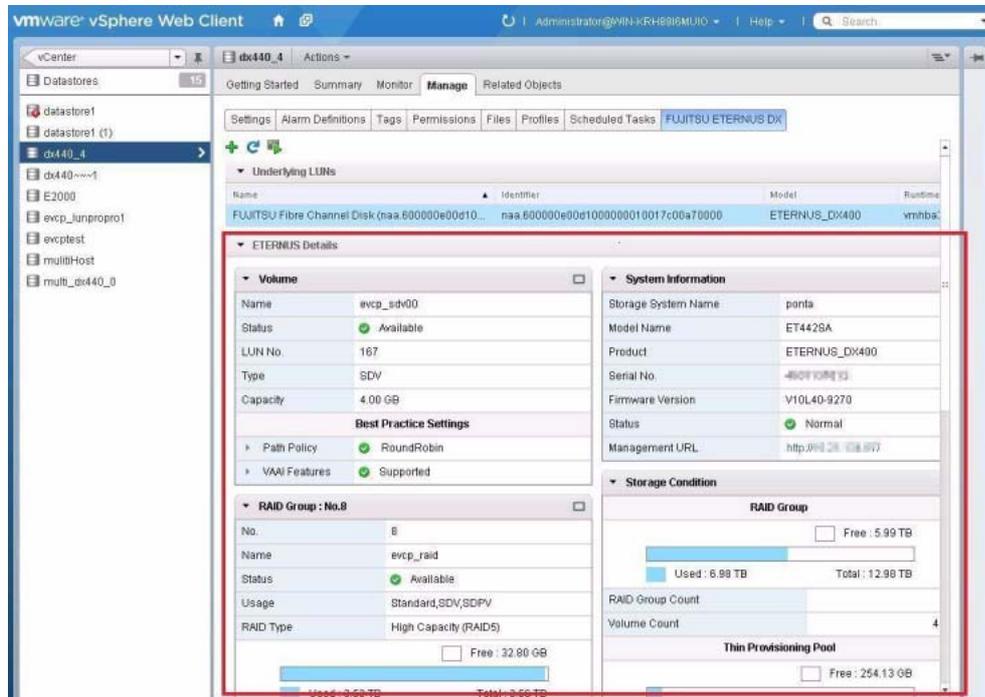
- 1 From the vCenter home screen of vSphere Web Client, select [Inventory List] – [Datastores].
- 2 From the datastore list in the left pane, select the datastore that is assigned to the ETERNUS Disk storage system, and then click the [FUJITSU ETERNUS DX] tab under the management tab.



A list of the disks that configure the selected datastore is displayed in the [Underlying LUNs] window.



- From the [Underlying LUNs] window, select a disk to display the detailed information of the disk in the [ETERNUS Details] window.



Eight portlets are displayed in the [ETERNUS Details] window.

- **Volume**
Displays LUN specific information such as the name and the size of the selected disk.
- **System Information**
Displays all of the ETERNUS Disk storage system information in which the selected disk belongs.
- **RAID Group / Thin Provisioning Pool**
Displays the information for the RAID group and the Thin Provisioning Pool in which the selected disk belongs.
- **Storage Condition**
Displays the usages of the RAID group, the Thin Provisioning Pool, and the Snap Data Pool of the ETERNUS Disk storage system in which the selected disk belongs.
- **Performance**
Displays the performance information for the selected disk. To display the information, performance monitoring must be started via [Start/Stop Perfmon].
- **Adapter**
Displays the information of the host bus adapter that recognizes the selected disk and the information of the ETERNUS Disk storage system port that is connected to the host bus adapter.
- **WSV RAID Groups**
Displays the information of the RAID group that configures the Wide Striping Volume (WSV) when a WSV is selected.

- Flexible Tier Pool
Displays the Flexible Tier Pool information and also the Flexible Tier Sub Pool information when a Flexible Tier Volume (FTV) is selected.

End of procedure

3.2 Displaying Virtual Machine Information

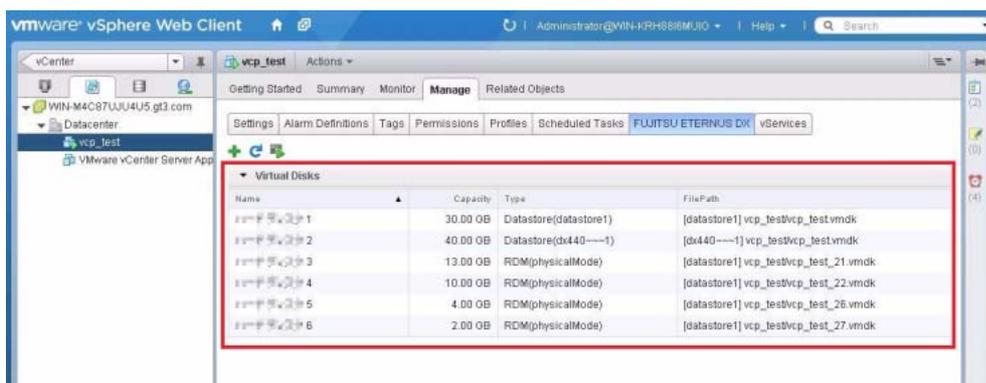
To display the information corresponding to Virtual Machine of the ETERNUS Disk storage systems, perform the following procedure:

Procedure

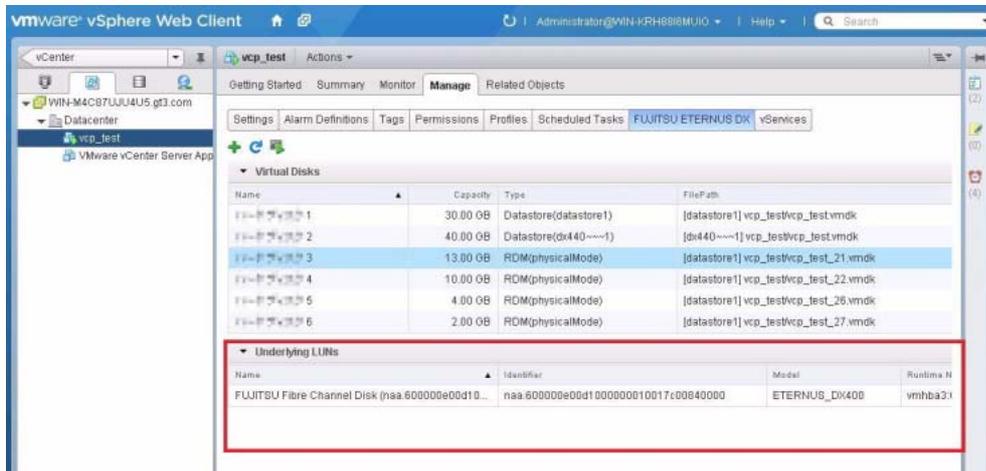
- 1 From the vCenter home screen of vSphere Web Client, select [Inventory Tree] – [VMs and Templates].
- 2 From the virtual machine list in the left pane, select the virtual machine that is assigned to the ETERNUS Disk storage system, and then click the [FUJITSU ETERNUS DX] tab under the management tab.



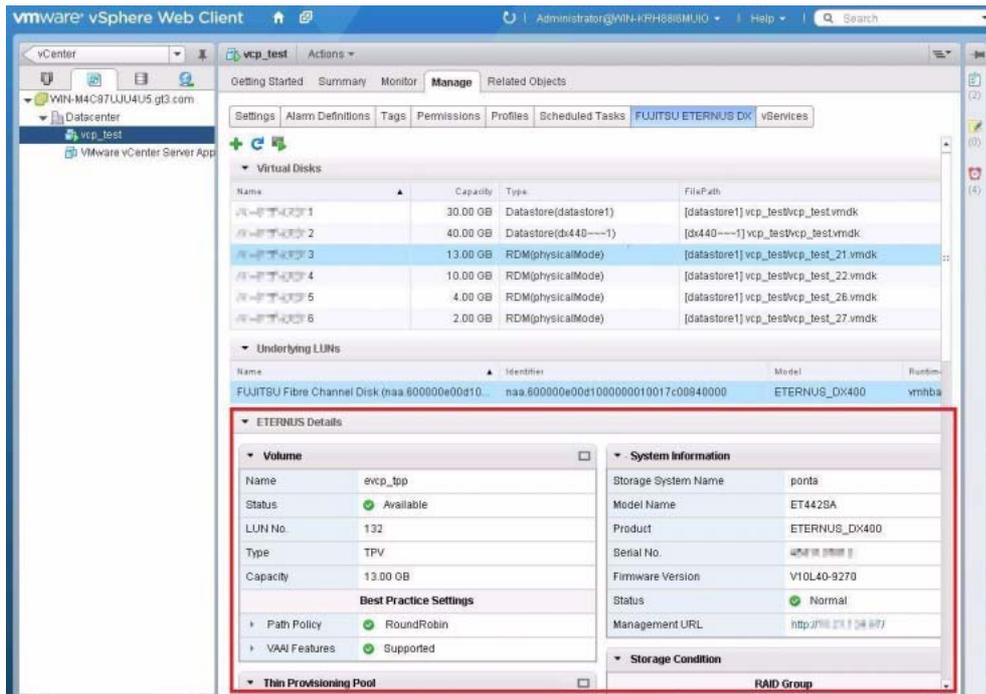
A list of the disks that are used as hard disks for the selected virtual machine is displayed in the [Virtual Disks] window.



- From the [Virtual Disks] window, select a hard disk to display the information of the disks that configure the hard disk in the [Underlying LUNs] window.



- From the [Underlying LUNs] window, select a disk to display the detailed information of the disk in the [ETERNUS Details] window.



End of procedure

3.3 Displaying Host System Information

To display the information corresponding to Host System of the ETERNUS Disk storage systems, perform the following procedure:

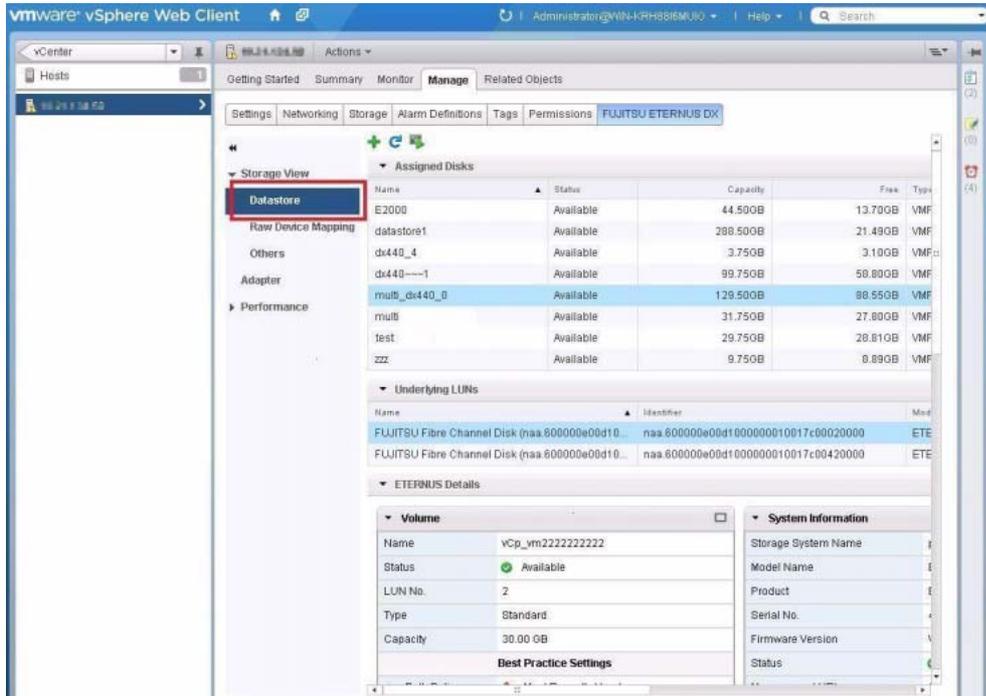
Procedure

- 1** From the vCenter home screen of vSphere Web Client, select [Inventory List] – [Hosts].
- 2** From the host list in the left pane, select the host system that uses the ETERNUS Disk storage system.
- 3** Click the [FUJITSU ETERNUS DX] tab under the management tab. The following three links are displayed under the [Storage View] menu: [Datastore], [Raw Device Mapping], and [Others]. Clicking each link changes the information that is displayed.

Item	Details
Datastore	Displays a list of the disks used as Datastore in the host selected in the inventory tree.
Raw Device Mapping	Displays information of the disks used as Raw Device Mapping in the host selected in the inventory tree.
Others	Displays information of the disks not used as either Datastore or Raw Device Mapping in the host selected in the inventory tree.

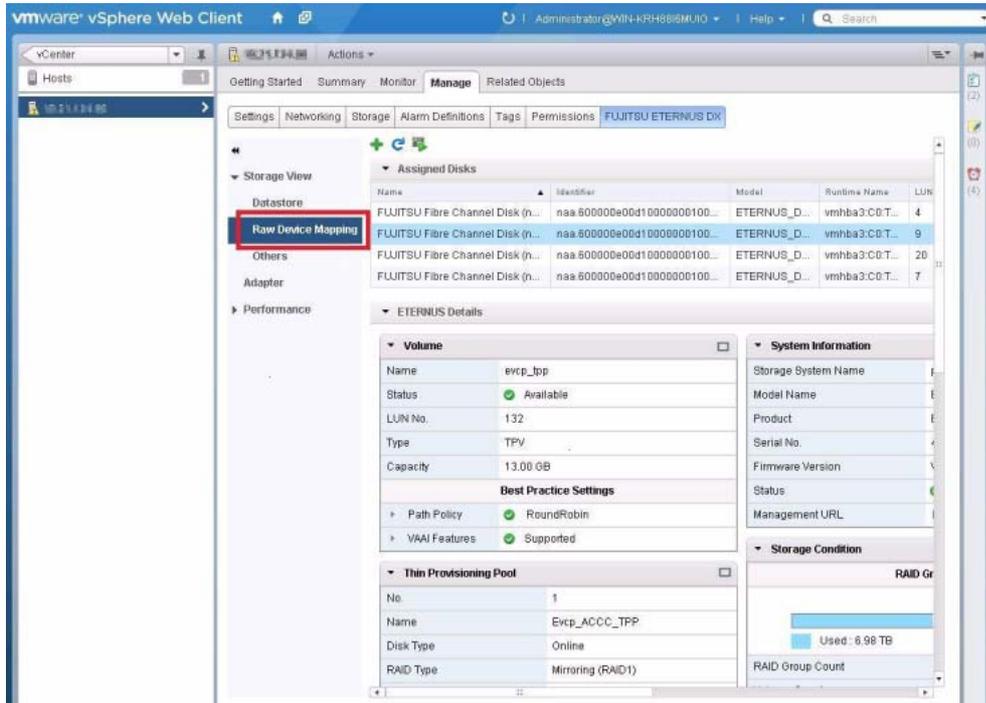
The displayed contents vary depending on the selected link.

■ Datastore



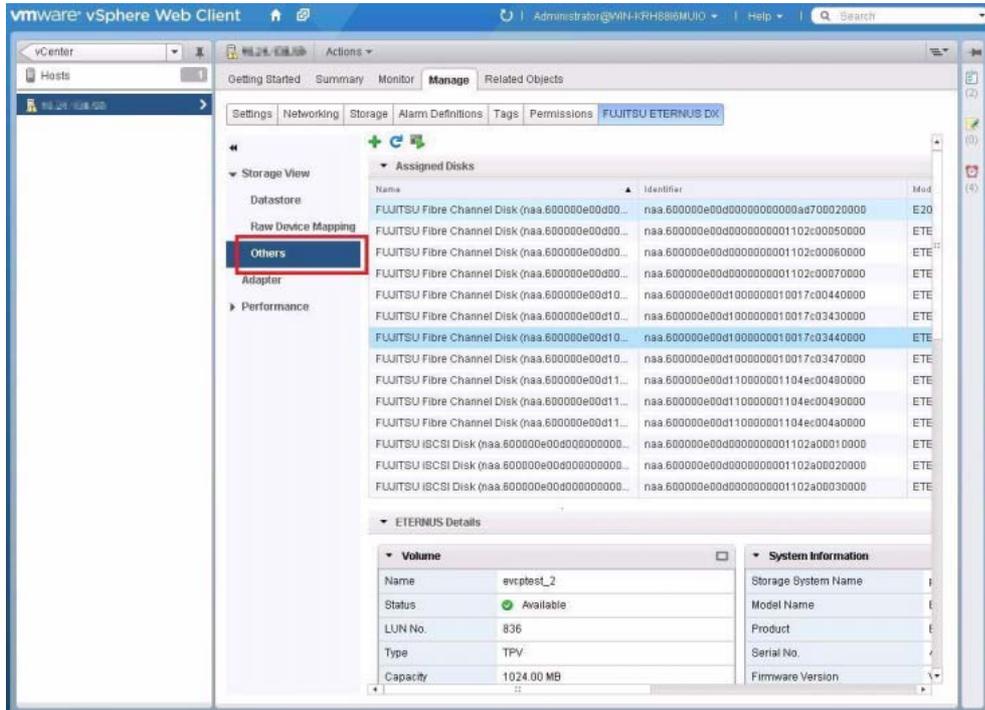
- (1) A list of datastores used by the selected host is displayed in the [Assigned Disks] window.
- (2) From the [Assigned Disks] window, select a datastore to display a list of disks that configure the selected datastore in the [Underlying LUNs] window.
- (3) From the [Underlying LUNs] window, select a disk to display the detailed information of the disk in the [ETERNUS Details] window.

■ Raw Device Mapping



- (1) A list of devices used as Raw Device Mapping in the selected host is displayed in the [Assigned Disks] window.
- (2) From the [Assigned Disks] window, select a disk to display the detailed information of the disk in the [ETERNUS Details] window.

■ Others



- (1) A list of devices not used as either Datastore or Raw Device Mapping in the selected host is displayed in the [Assigned Disks] window.
- (2) From the [Assigned Disks] window, select a disk to display the detailed information of the disk in the [ETERNUS Details] window.

End of procedure

3.4 Notes

- In each list displayed by clicking the [FUJITSU ETERNUS DX] tab, only the information of disks on the ETERNUS Disk storage system is displayed. Other disk information is not displayed.
- No information is displayed in the [ETERNUS Details] window when using an ETERNUS Disk storage system that is not supported by ETERNUS vCenter Plug-in or a supported ETERNUS Disk storage system that is not registered as a management storage system.
- For datastore information display, the following message appears when a datastore that is used by multiple host systems is selected and the [FUJITSU ETERNUS DX] tab is clicked. Use [Datastore] of the host system to display the information for the datastore that is used by multiple host systems.

```
STXE1017 NOTICE The datastore that is accessible from multiple hosts is not supported in this function. The information on this datastore can be confirmed with Host System.
```

Chapter 4

Displaying Adapter Information

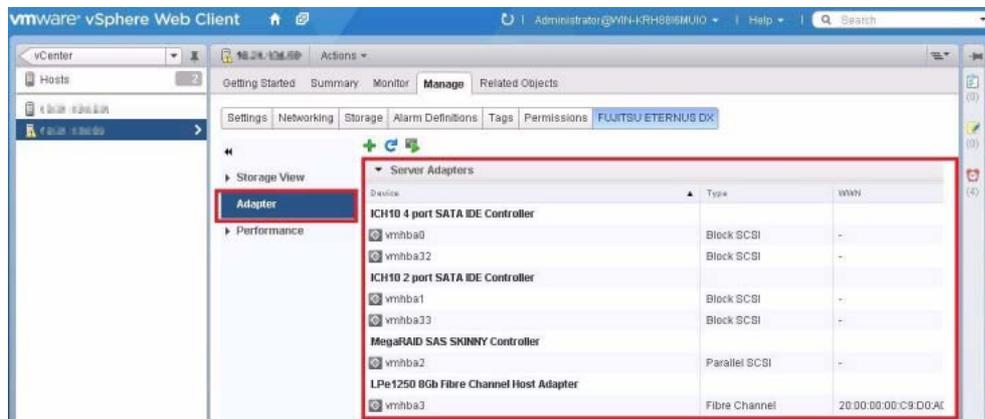
This function is used to display adapter information for the host that is selected from the inventory tree, port information for the ETERNUS Disk storage system that is connected to the adapter, and information for recognized LUNs. Only Host System is supported for a VMware object.

For details about the items displayed with this function, refer to ["Appendix B List of Displayed Items" \(page 70\)](#).

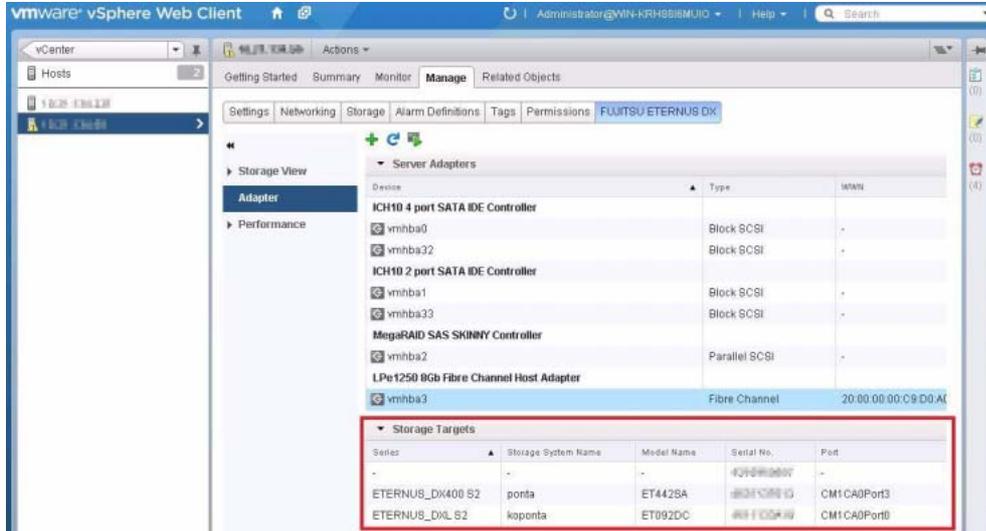
To display adapter information, perform the following procedure:

Procedure

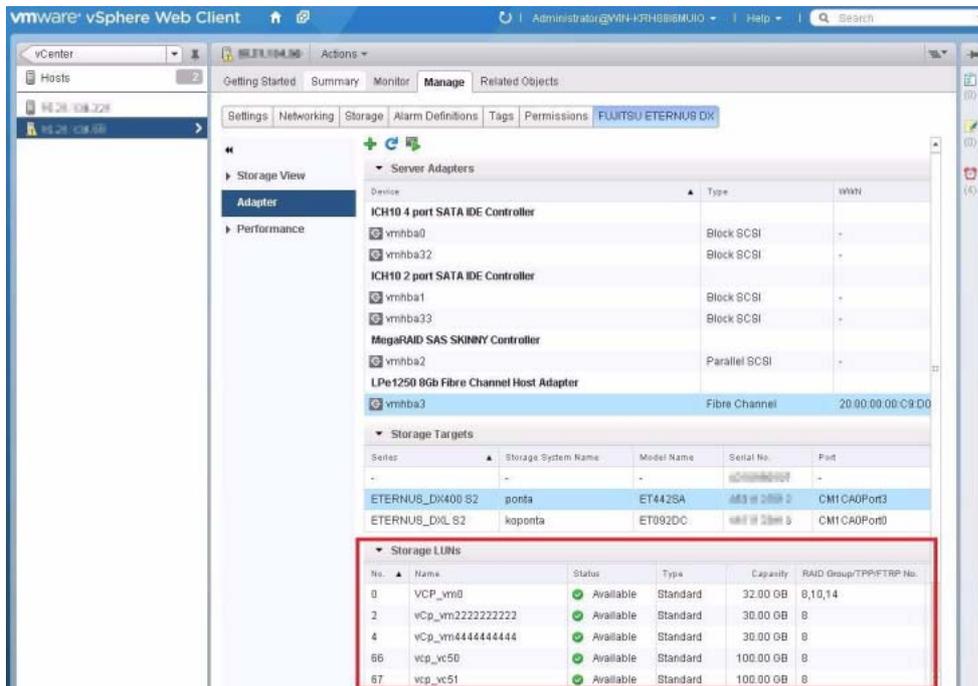
- 1 From the vCenter home screen of vSphere Web Client, select [Inventory List] – [Hosts].
- 2 From the host list in the left pane, select the host system that uses the ETERNUS Disk storage system, and then click the [FUJITSU ETERNUS DX] tab under the management tab.
- 3 Click the [Adapter] link to display the list of host bus adapters that are used for the selected host system in the [Server Adapters] window.



- 4 Select an adapter in the [Server Adapters] window.
The port information for the ETERNUS Disk storage system that is recognized by the adapter is displayed in the [Storage Targets] window.



- 5 Select a port in the [Storage Targets] window.
The list of LUNs that are assigned to the port is displayed in the [Storage LUNs] window.



End of procedure

Chapter 5

Displaying Performance Monitoring and Performance Information

This function is used to monitor ETERNUS Disk storage system performance and display its information. After performance monitoring is started, refer to the performance information and stop the performance monitoring when monitoring is complete.

For details about the items displayed with this function, refer to ["Appendix B List of Displayed Items" \(page 70\)](#).

Caution

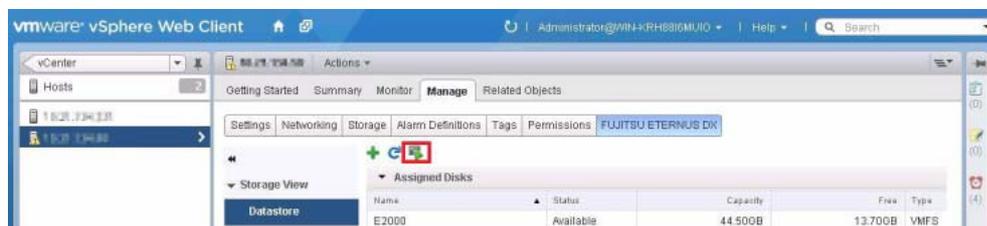
- This function is not supported for the ETERNUS DX60 S2 Disk storage system.
- Firmware version V10L30-0000 or later for the ETERNUS Disk storage system is required to use this function with the ETERNUS DX S2 series.

5.1 Starting Performance Monitoring

This section explains how to start performance monitoring. The following example is for the case when Host System is selected from the inventory tree.

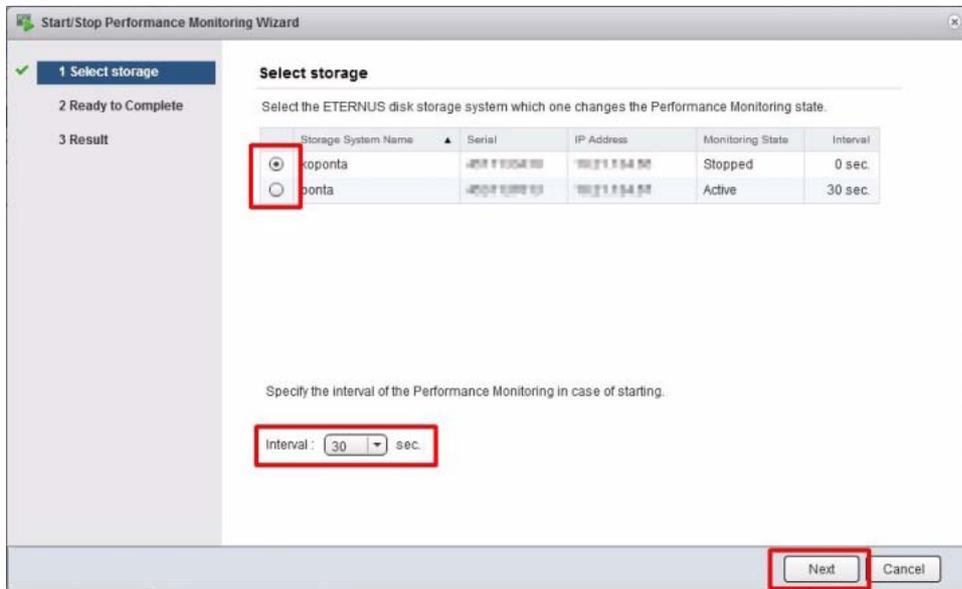
Procedure

- 1** From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts].
- 2** From the host list in the left pane, select the arbitrary host system, and then click the [FUJITSU ETERNUS DX] tab under the management tab. Select [Storage View] – [Datastore], and then click the "Start/Stop Perfmon" icon.

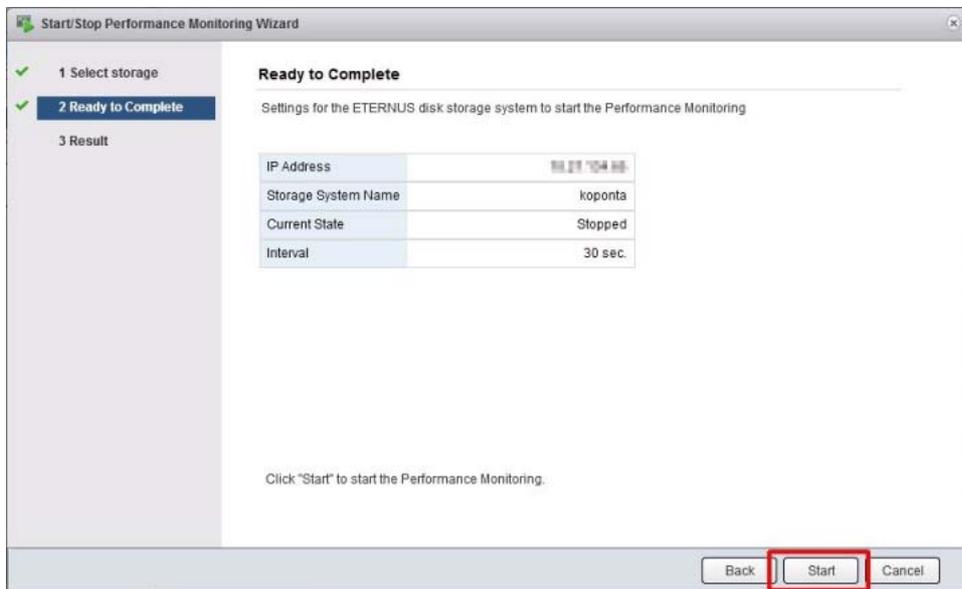


The wizard is started and a list of the ETERNUS Disk storage systems that are registered by the ETERNUS Disk storage system registration function is displayed.

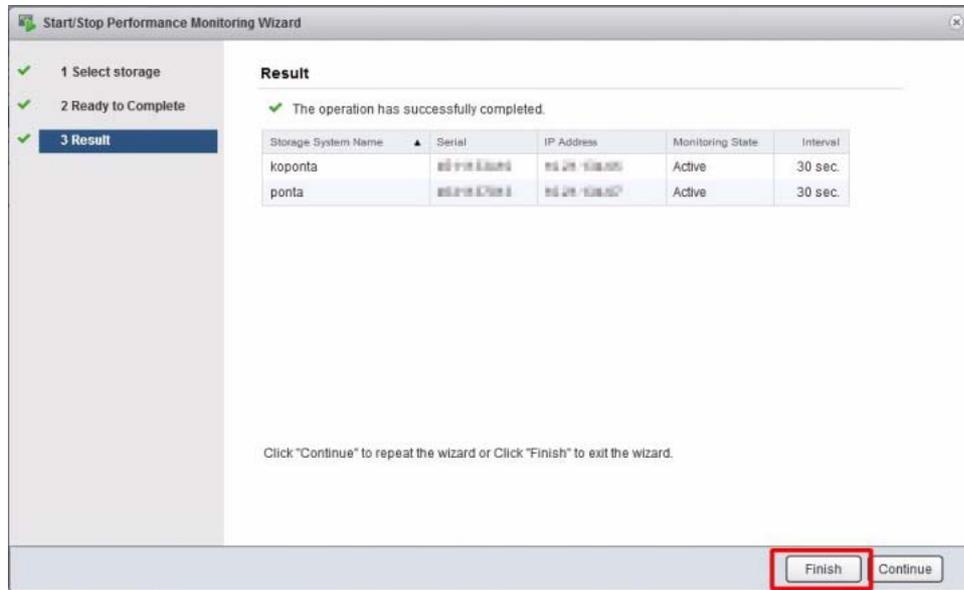
- 3 Select the radio button of the ETERNUS Disk storage system for which performance monitoring is started, select the performance monitoring interval from the pull-down menu, and then click the [Next] button.
The ETERNUS Disk storage system collects and measures the performance information at the interval that is selected.



- 4 The following screen appears. Click the [Start] button to start performance monitoring.



- 5** The following screen appears after performance monitoring is started. Click the [Finish] button.



End of procedure

5.2 Displaying Performance Information

After performance monitoring is started, performance information can be displayed as a list or displayed individually.

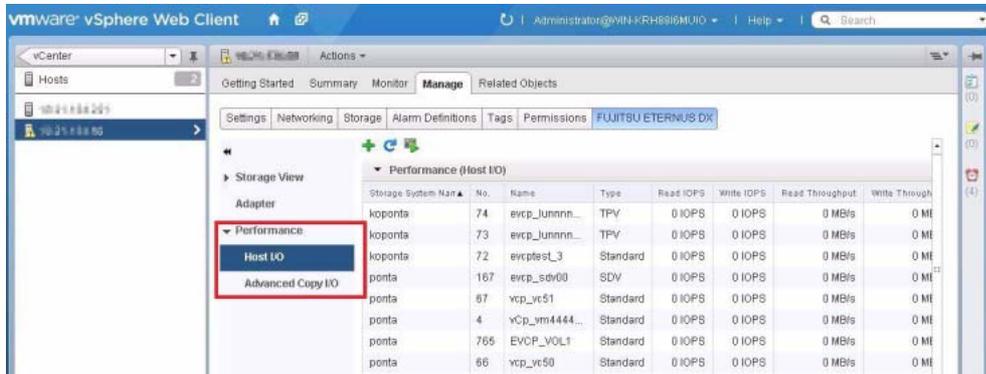
5.2.1 Displaying the Performance Information of all the LUNs in a List

Performance information for all of the LUNs that are recognized by the selected host system can be displayed. Only Host System is supported for a VMware object. This section explains how to check the performance information.

Procedure

- 1** From the vCenter home screen of vSphere Web Client, select [Inventory List] – [Hosts].
- 2** From the host list in the left pane, select the host system that uses the ETERNUS Disk storage system, and then click the [FUJITSU ETERNUS DX] tab under the management tab.

- From the [Performance], click the [Host I/O] link or the [Advanced Copy I/O] link.
 A list of the LUNs that are used in the ETERNUS Disk storage system by the selected host system and the LUN performance information are displayed. To refresh the performance information, click the [Host I/O] link or the [Advanced Copy I/O] link again.



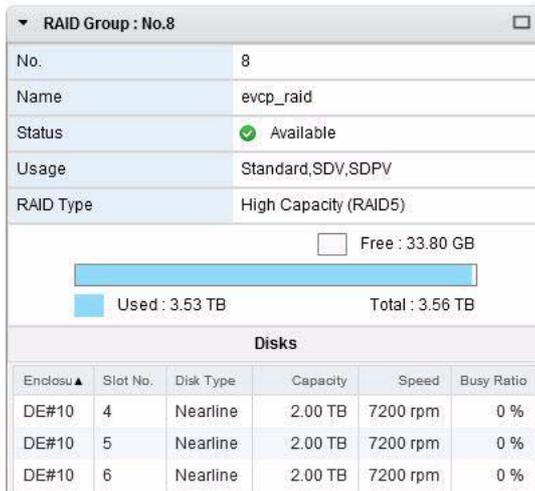
End of procedure

5.2.2 Displaying the Performance Information of each LUN

Click the [Performance] portlet in the [ETERNUS Details] window to display I/O performance information for each LUN. To refresh the performance information, click the "Refresh" icon (blue arrow) on the header of the [Performance] portlet.

Host I/O	
Read IOPS	0 IOPS
Write IOPS	0 IOPS
Read Throughput	0 MB/s
Write Throughput	0 MB/s
Read Response Time	0 ms
Write Response Time	0 ms
Read Cache Hit Rate	0 %
Write Cache Hit Rate	0 %
Prefetch Cache Hit Rate	0 %
Advanced Copy I/O	
Read IOPS	0 IOPS
Write IOPS	0 IOPS
Read Throughput	0 MB/s
Write Throughput	0 MB/s
Read Cache Hit Rate	0 %
Write Cache Hit Rate	0 %
Prefetch Cache Hit Rate	0 %

The disk busy ratio is displayed on the [RAID Group] portlet or the [Thin Provisioning Pool] portlet in the [ETERNUS Details] window. To refresh the information, select any entries other than the target entry in a window above the [ETERNUS Details] window, and then select the target entry again on the [RAID Group] portlet or the [Thin Provisioning Pool] portlet in the [ETERNUS Details] window.



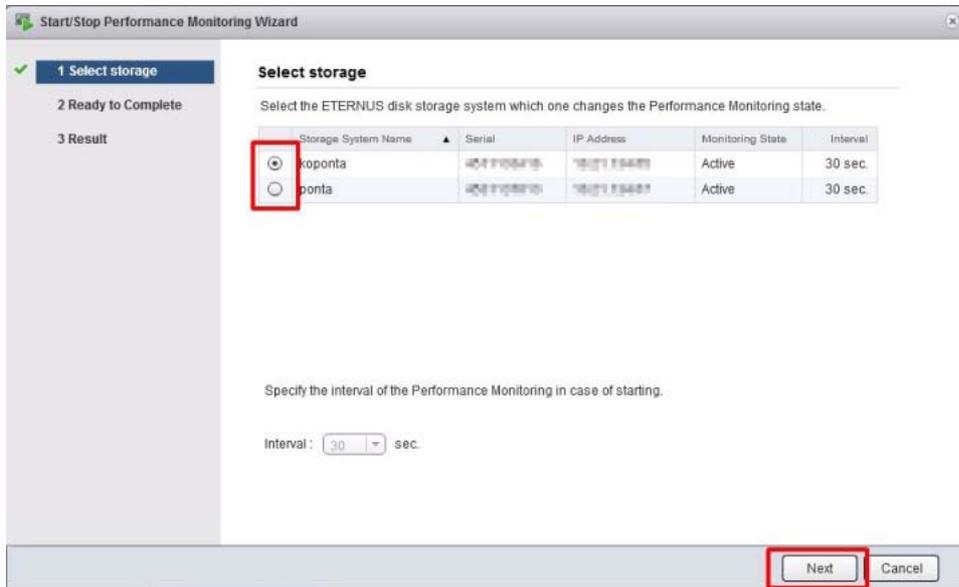
5.3 Stopping Performance Monitoring

This section explains how to stop performance monitoring. The following example is for the case when Host System is selected from the inventory tree.

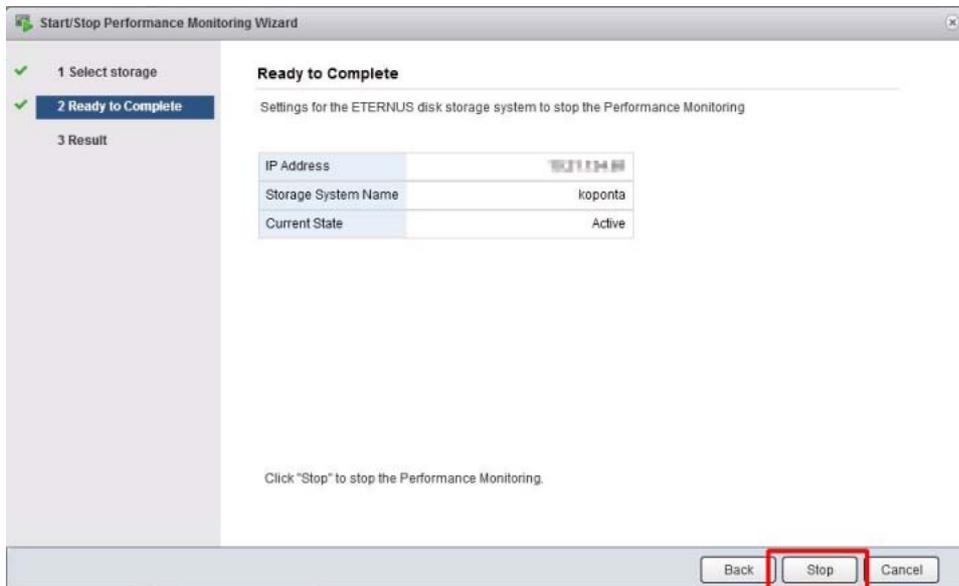
Procedure

- 1 From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts].
- 2 From the host list in the left pane, select the arbitrary host system, and then click the [FUJITSU ETERNUS DX] tab under the management tab. Select [Storage View] – [Datastore], and then click "Start/Stop Perfmon" icon. The wizard is started and a list of the ETERNUS Disk storage systems that are registered by the ETERNUS Disk storage system registration function is displayed.

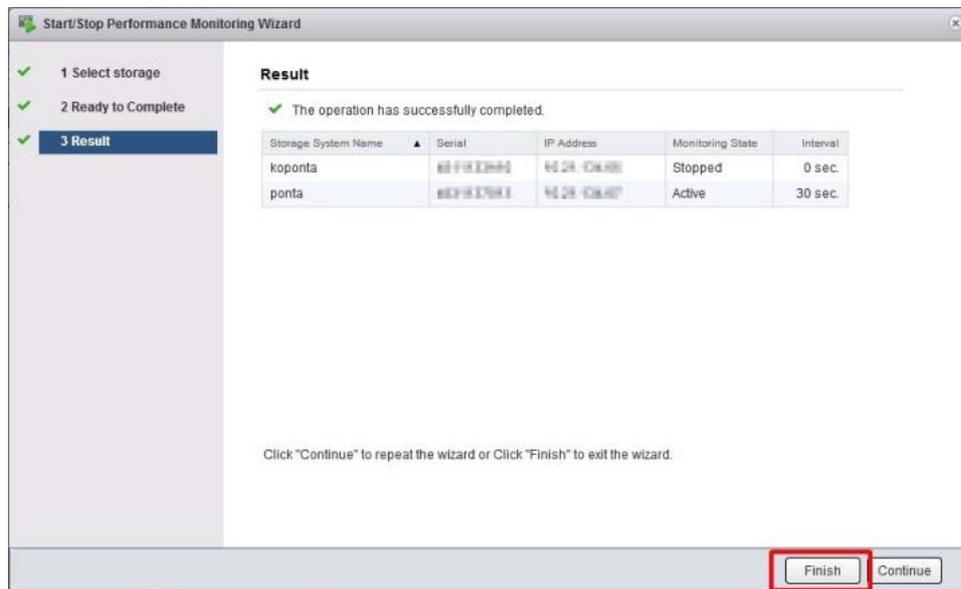
- 3 Select the radio button of the ETERNUS Disk storage system for which performance monitoring is to be stopped, and then click the [Next] button.



- 4 The following screen appears. Click the [Stop] button to stop performance monitoring.



- 5** The following screen appears after performance monitoring is stopped. Click the [Finish] button.



End of procedure

Caution

For ETERNUS Disk storage systems for which performance monitoring is started via ETERNUS SF Storage Cruiser, performance monitoring cannot be stopped via ETERNUS vCenter Plug-in.

Chapter 6

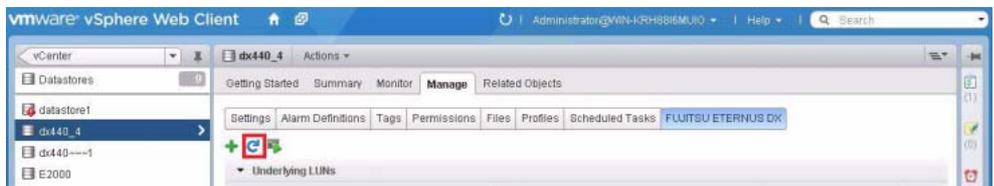
Refreshing Displayed Information

ETERNUS vCenter Plug-in retains the information of vSphere and the ETERNUS Disk storage systems to be managed as database. Selecting the [FUJITSU ETERNUS DX] tab displays information based on the database. Therefore, the contents displayed by selecting the [FUJITSU ETERNUS DX] tab may not be the latest information at the point. ETERNUS vCenter Plug-in communicates with vCenter Servers and the ETERNUS Disk storage systems at intervals of 30 minutes and keeps the database up-to-date. Note that displayed information can be refreshed when a volume datastore is created or deleted.

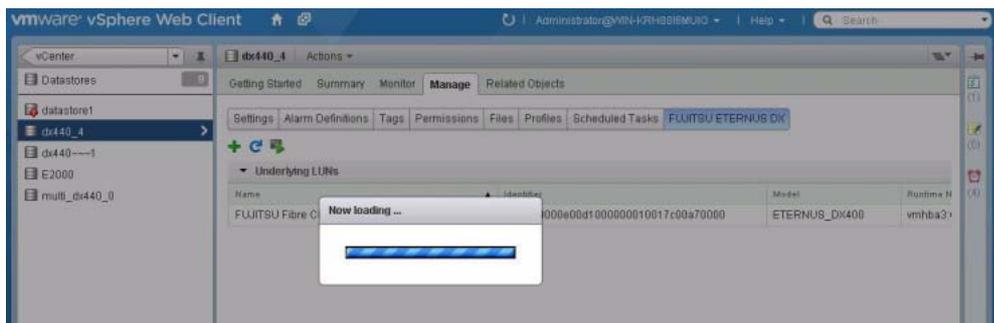
"Refresh" is the function to update the database manually. Using this function enables the latest information to be displayed when the [FUJITSU ETERNUS DX] tab is selected. Use the following procedure:

Procedure

- 1 From the inventory tree in the left pane of vSphere Web Client, select any object from Datastore, Virtual Machine, or Host System, and then select the [FUJITSU ETERNUS DX] tab under the management tab.
- 2 Click the "Refresh" icon.



The message "Now loading..." appears and the database is updated. This process may require a long period of time.



When the update process is complete, the latest information is displayed for the object selected from the inventory tree.

End of procedure

Chapter 7

Registering ETERNUS Disk Storage Systems

This function is used to register the information of the ETERNUS Disk storage systems to ETERNUS vCenter Plug-in as the management target. Registration allows the information of the ETERNUS Disk storage systems to be displayed in the [ETERNUS Details] window under the [FUJITSU ETERNUS DX] tab. Use the Storage Registration Wizard as an interface to register the information of the ETERNUS Disk storage systems.

7.1 Starting the Storage Registration Wizard

Procedure

- 1 From the inventory tree in the left pane of vSphere Web Client, select any object from Datastore, Virtual Machine, or Host System, and then click the [FUJITSU ETERNUS DX] tab under the management tab.
- 2 Click the "Storage Registration" icon to start the Storage Registration Wizard.

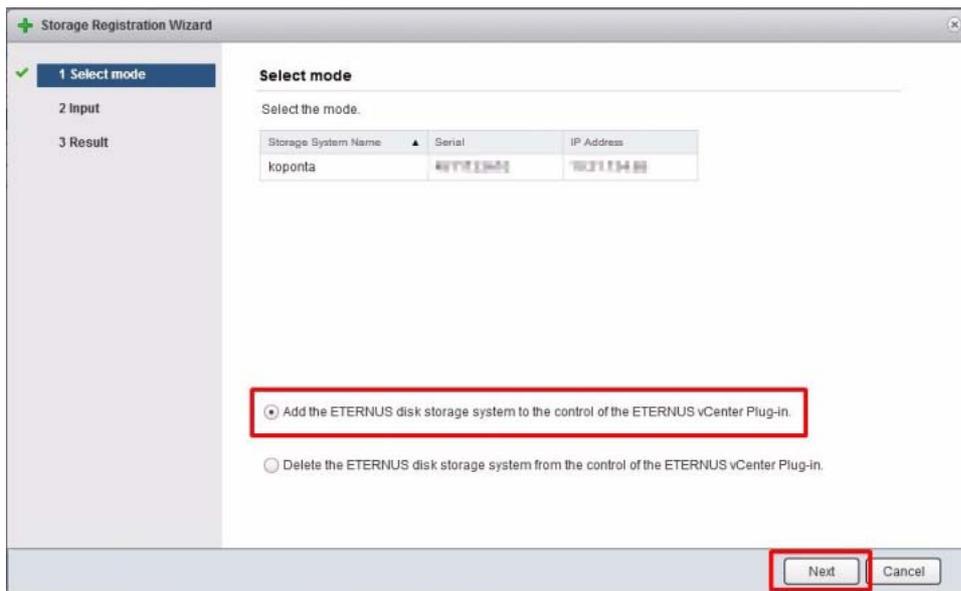


End of procedure

7.2 Registering ETERNUS Disk Storage Systems

Procedure

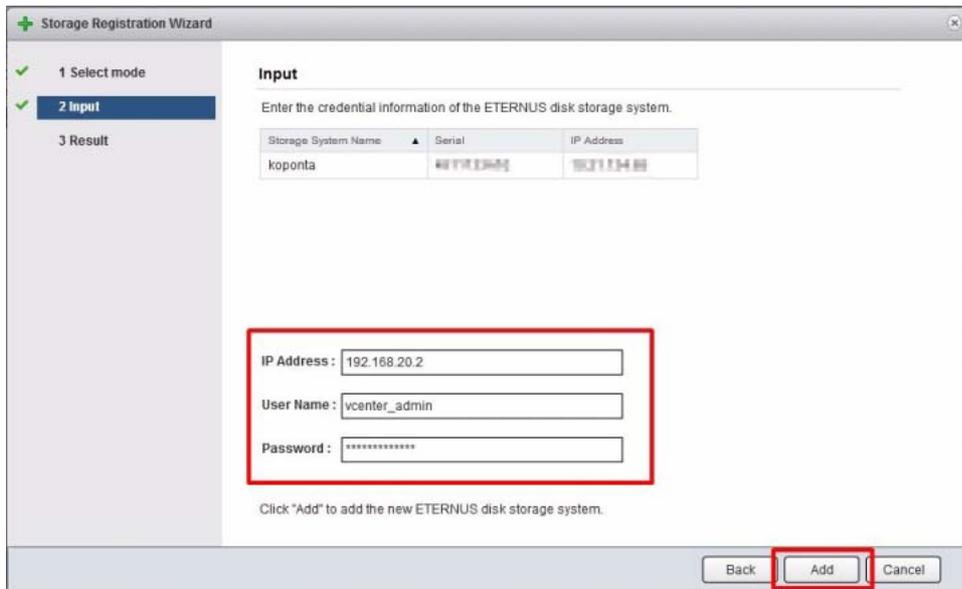
- 1 Start the Storage Registration Wizard, select the [Add the ETERNUS disk storage system to the control of the ETERNUS vCenter Plug-in.] radio button, and then click the [Next] button.



- 2 Enter the IP address, user account, and password of the ETERNUS Disk storage system to be newly registered, and click the [Add] button.

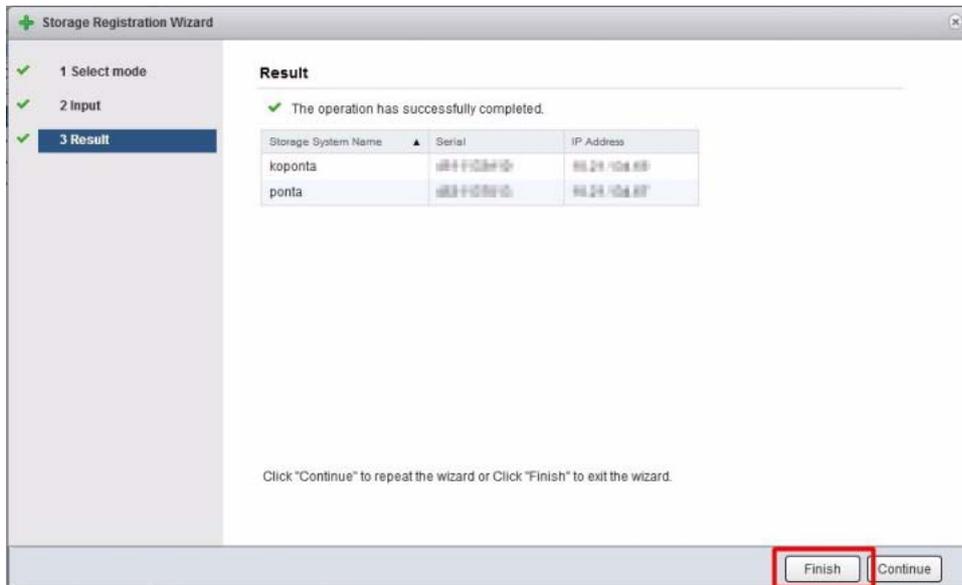
Caution

Use a user account with the Software role for registration.



When registration is complete successfully, the ETERNUS Disk storage system is added to the list.

- 3 Click the [Finish] button to finish the wizard.



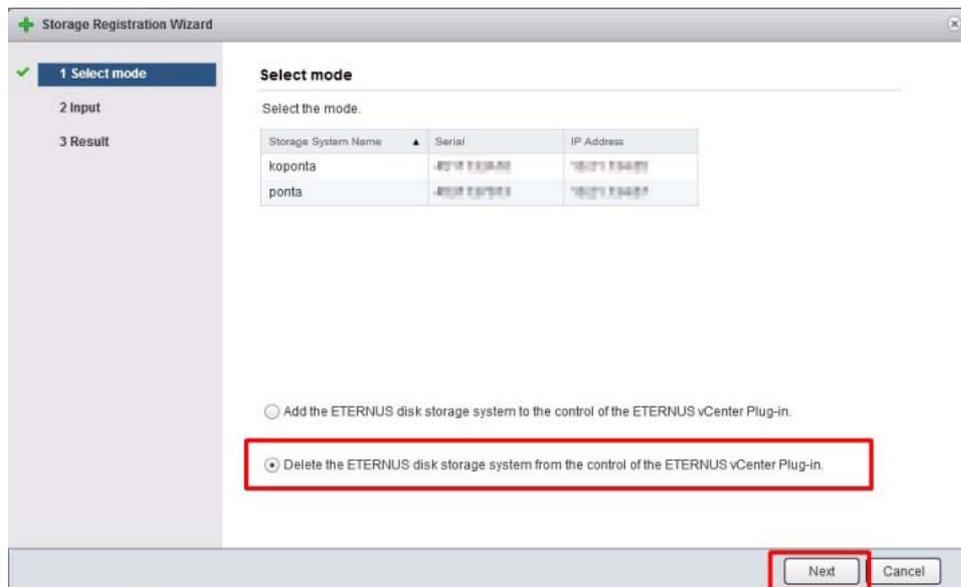
- 4 Click the "Refresh" icon to update the displayed contents to the latest status.
For details about Refresh, refer to "[Chapter 6 Refreshing Displayed Information](#)" (page 40).

End of procedure

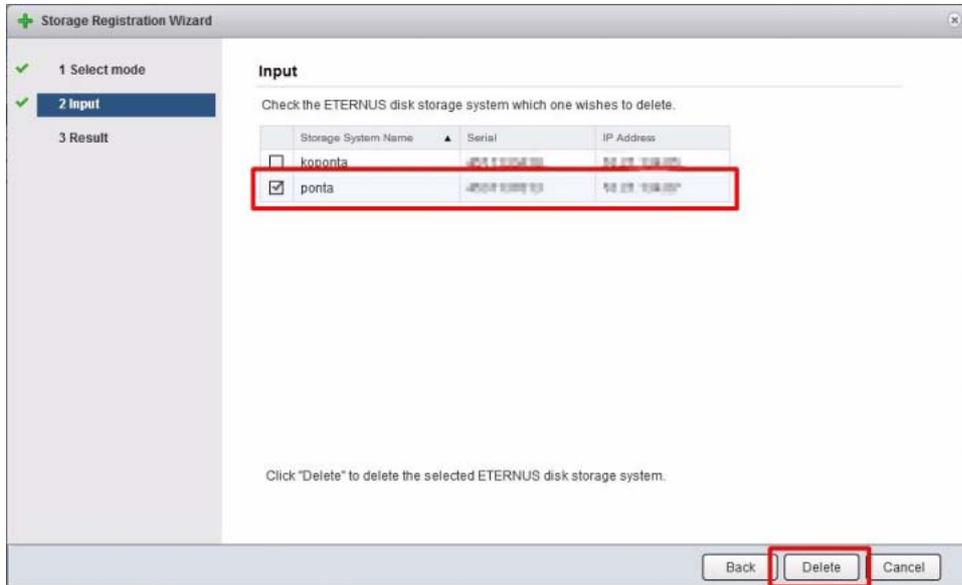
7.3 Unregistering ETERNUS Disk Storage Systems

Procedure

- 1 Start the Storage Registration Wizard, select the [Delete the ETERNUS disk storage system from the control of the ETERNUS vCenter Plug-in.] radio button, and then click the [Next] button.

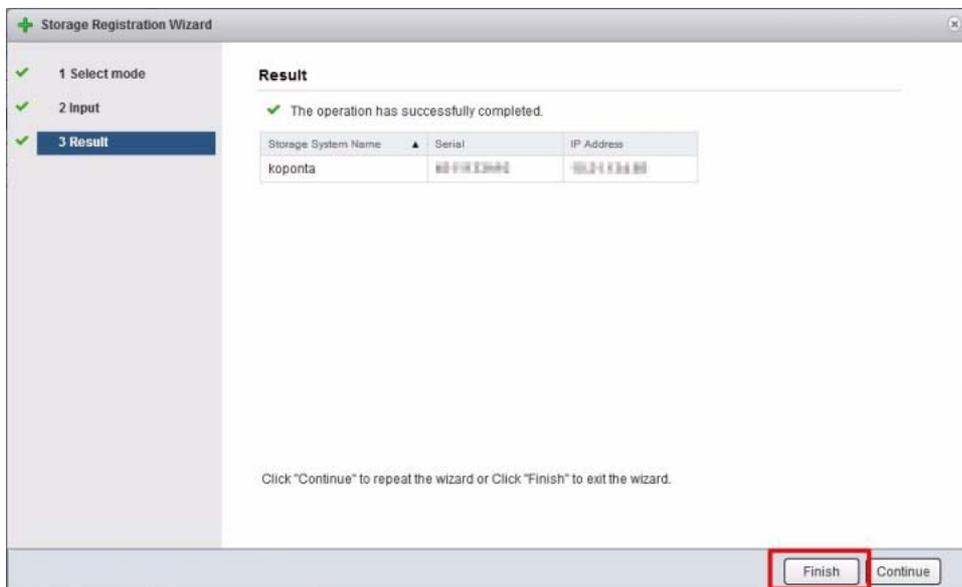


- 2** Select the checkbox for the ETERNUS Disk storage system to be deleted and click the [Delete] button.
Selection of multiple ETERNUS Disk storage systems is available.



When unregistration is complete successfully, the target ETERNUS Disk storage systems are deleted from the list.

- 3** Click the [Finish] button to finish the wizard.



End of procedure

Chapter 8

Adding and Deleting Datastore Volumes

This function is used to add volumes to a host or a cluster. Created volumes can automatically be converted into datastores.

This function is also used to delete created datastore volumes.

To create or delete a volume, a RAID group or a Thin Provisioning Pool from which the volume is to be created or deleted must be registered in advance.

Note that the supported VMware objects are Host System and Cluster.

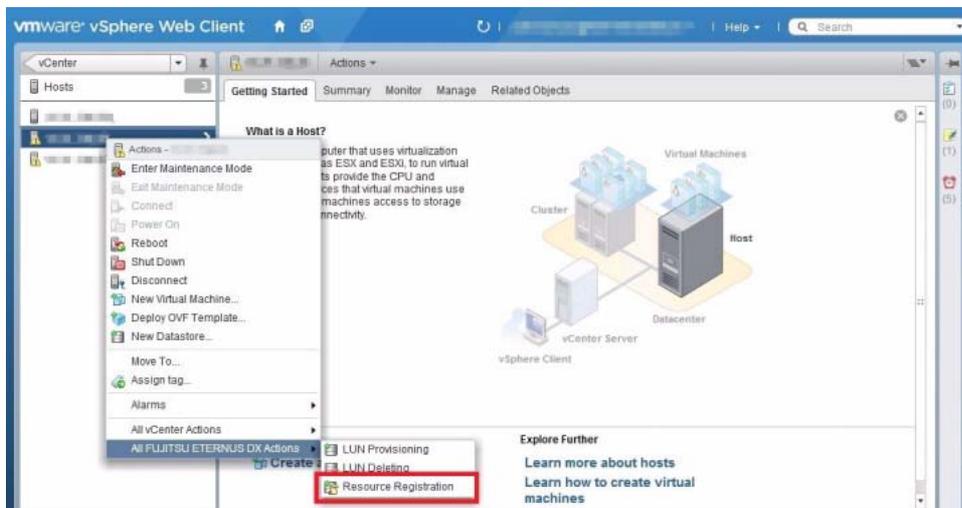
Caution

- This function is not supported for the ETERNUS DX60 S2 Disk storage system.
- Firmware version V10L40-0000 or later for the ETERNUS Disk storage system is required to use this function with the ETERNUS DX S2 series.
- Only Fibre Channel and iSCSI are supported for interfaces between servers and ETERNUS Disk storage systems.
- A user who is logged into Web Client must have the "Storage Partition" privilege to use this function. To obtain the "Storage Partition" privilege, click [Hosts], [Configuration], and then select the [Storage partition] checkbox.
- Only Fibre Channel interfaces are supported for hosts running vSphere4.1. iSCSI interfaces are not supported.
- This function is not supported for Flexible Tier Volumes (FTV) and Wide Striping Volumes (WSV).
- A datastore volume that is used in Virtual Machine cannot be deleted with this function.
- To use an iSCSI interface, "Network Port Binding" must be performed with vSphere Web Client. Refer to the vSphere Web Client help for a detailed procedure on performing this action.

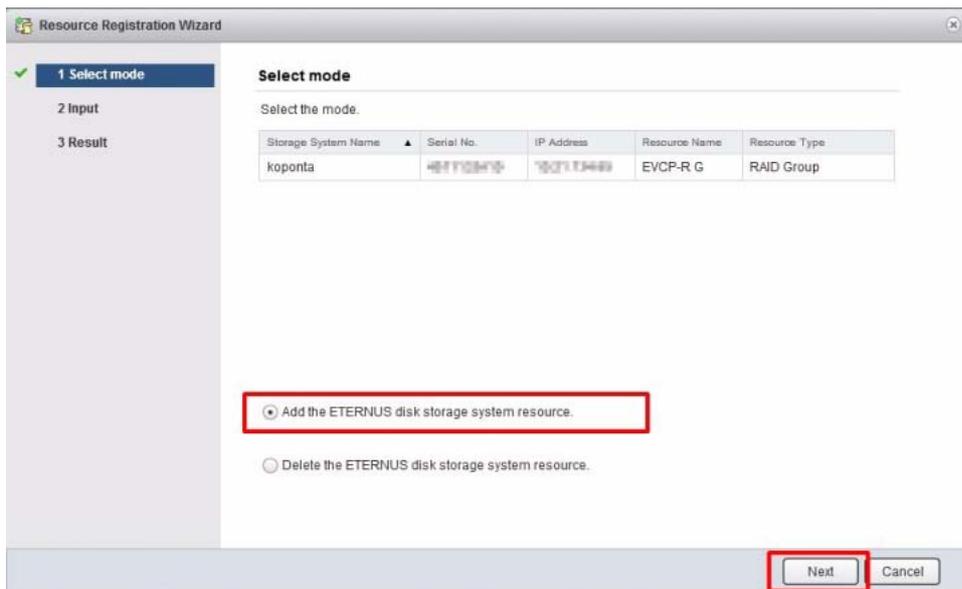
8.1 Registering Resources

Procedure

- 1 From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts] or [Clusters], and then right-click on the host or the cluster to display the menu bar.
- 2 From the menu bar, select [All FUJITSU ETERNUS DX Actions] – [Resource Registration], and then start the Resource Registration Wizard.



- 3 Select the [Add the ETERNUS disk storage system resource.] radio button, and then click the [Next] button.



- 4** Enter all of the following items, and then click the [Add] button.
- The IP address of the ETERNUS Disk storage system in which the resource is registered
 - The resource type (RAID Group or Thin Provisioning Pool) that is to be registered
 - The name of the resource that is to be registered

The screenshot shows the 'Resource Registration Wizard' dialog box. On the left, a sidebar indicates the current step is '2 Input'. The main area is titled 'Input' and contains the instruction: 'Enter the resource information of the ETERNUS disk storage system.' Below this is a table with the following data:

Storage System Name	Serial No.	IP Address	Resource Name	Resource Type
koponta	192.168.10.10	192.168.10.10	EVCP-R.G	RAID Group

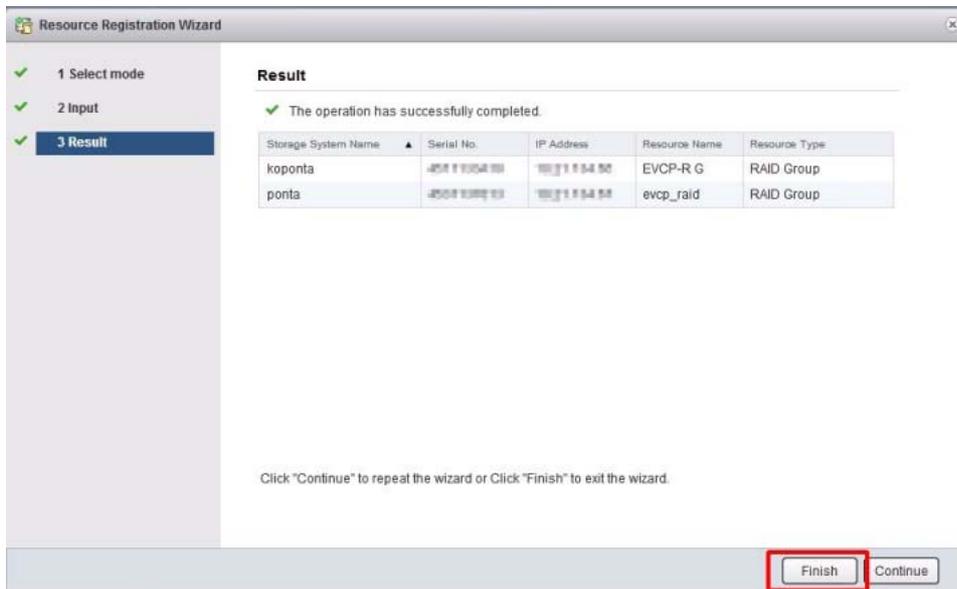
Below the table, there are three input fields: 'IP Address' (containing '192.168.10.10'), 'Type' (with radio buttons for 'RAID Group' and 'Thin Provisioning Pool'), and 'Name' (containing 'evcp_raid'). A red box highlights these three input fields. At the bottom right, there are three buttons: 'Back', 'Add', and 'Cancel'. The 'Add' button is also highlighted with a red box. A note at the bottom of the dialog says: 'Click "Add" to add the new ETERNUS disk storage system resource.'

Caution

Only resources with "evcp" as the first four letters of the name can be registered. Note that these letters are not case-sensitive.

When registration is successfully completed, the resource is added to the list.

5 Click the [Finish] button to finish the wizard.



End of procedure

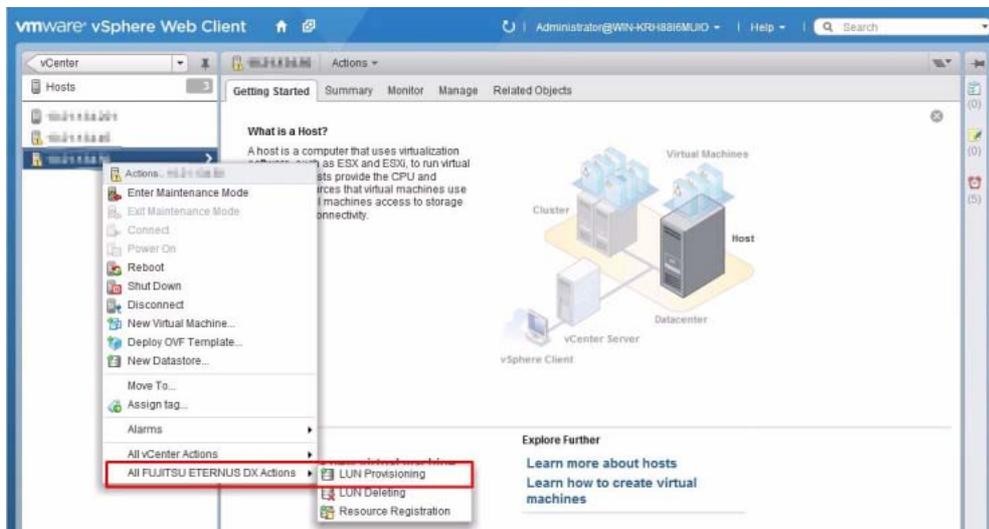
Caution

When a RAID group is deleted in ETERNUS Web GUI after a resource is registered by using this procedure, clear the registered resource by the Resource Registration Wizard.

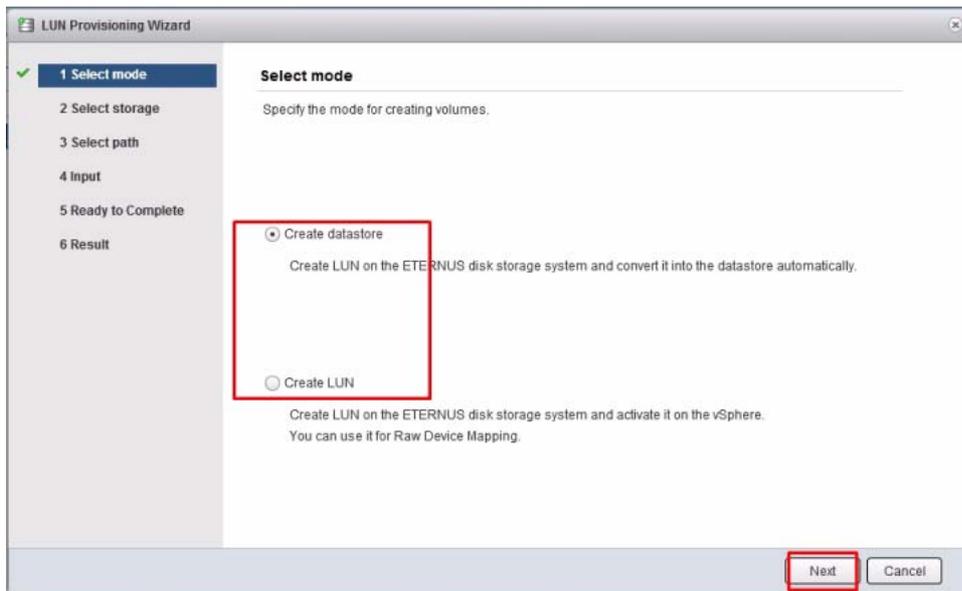
8.2 Creating Volume Datastores

Procedure

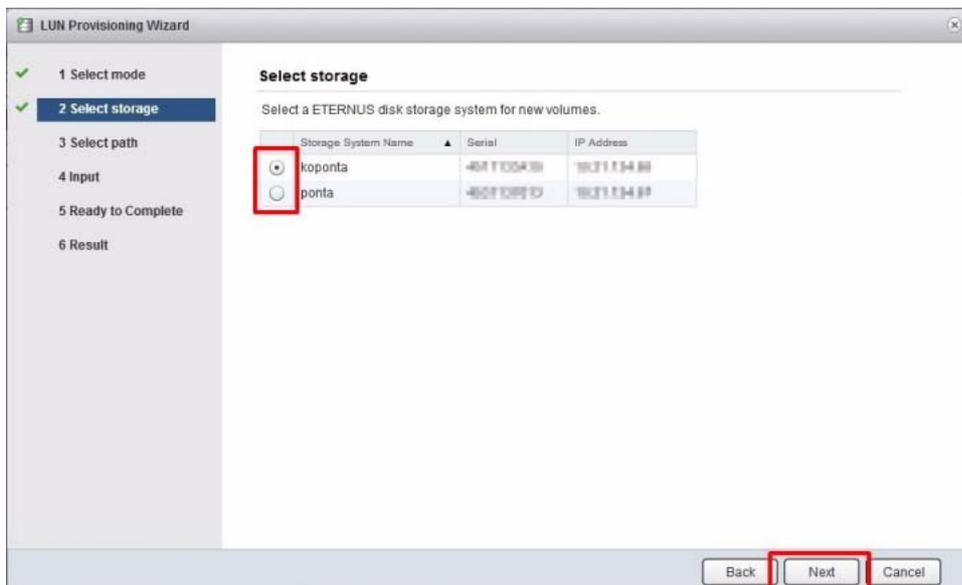
- 1 From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts] or [Clusters], and then right-click on the host or the cluster to display the menu bar.
- 2 From the menu bar, select [All FUJITSU ETERNUS DX Actions] – [LUN Provisioning], and then start the LUN Provisioning wizard.



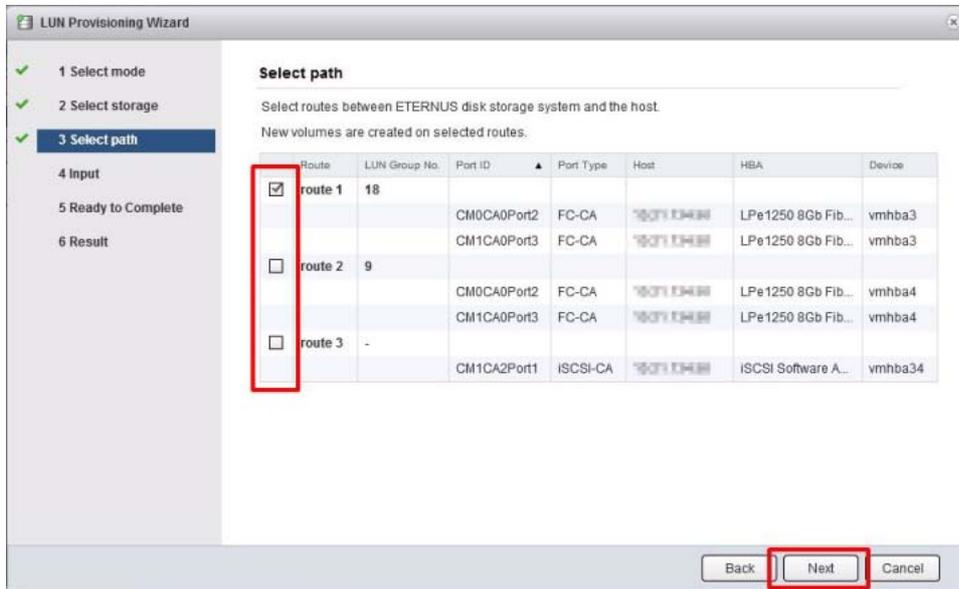
- 3** Select the radio button for one of the following modes, and then click the [Next] button.
- Create datastore
LUNs are automatically changed to datastores after LUNs are created in the ETERNUS Disk storage system and these LUNs are recognized as volumes by the selected host.
 - Create LUN
LUNs are recognized as volumes by the selected host when LUNs are created in the ETERNUS Disk storage system.



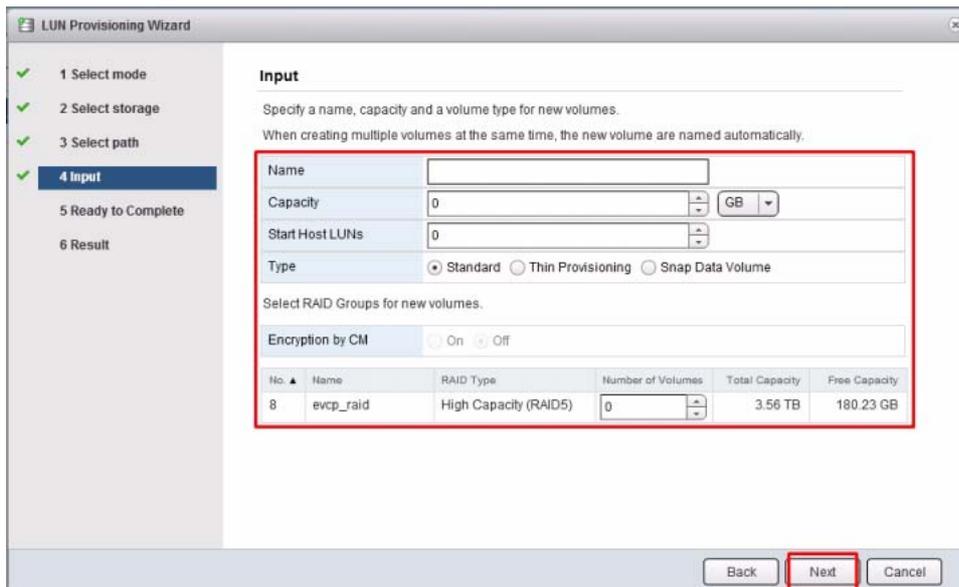
- 4** Select the radio button of the ETERNUS Disk storage system in which the volume is to be created, and then click the [Next] button.



- 5** The path information between the selected host and the ETERNUS Disk storage system is displayed. If [Clusters] is selected to start the wizard, the path information between all of the hosts that belong to the cluster and the ETERNUS Disk storage system is displayed. Select the path that is to be used to create a volume, and then click the [Next] button.



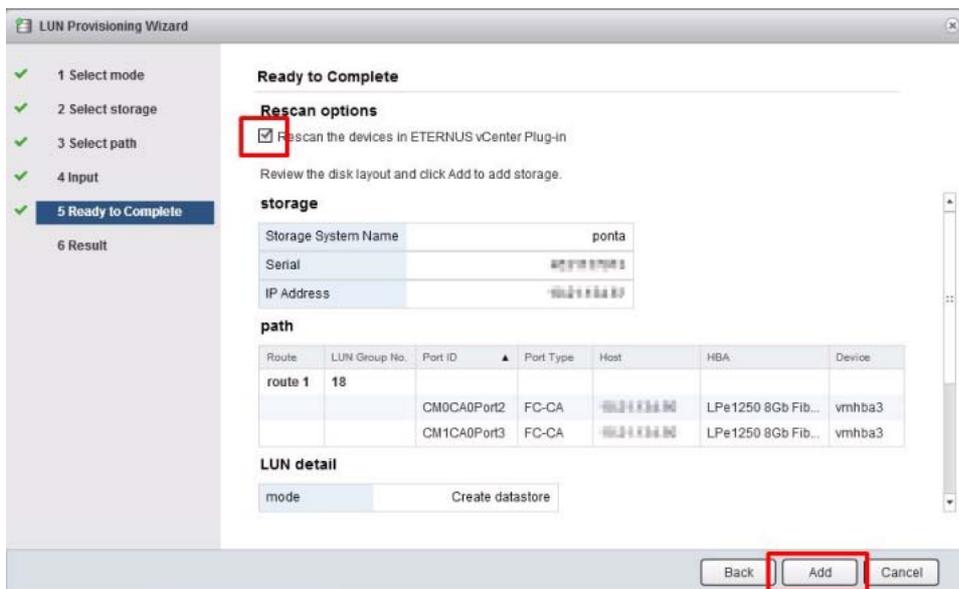
- 6** Perform all of the following actions, and then click the [Next] button.
- Enter the name, the size, and the type of volume that is to be created
 - Enter the number for the first volume (unused numbers after the specified first volume number are allocated in order for created volumes)
 - Select On/Off for [Encryption by CM] (only if available)
 - Select the RAID group and the Thin Provisioning Pool from which the volume is to be created
 - Enter the number of volumes that are to be created



Caution

- An entered volume name is also used for both the volume name and the datastore name that are managed by the ETERNUS Disk storage system.
- If multiple volumes are created by a single operation, the entered name and the suffix "x" (the serial number starting from x: 0) are automatically assigned to each volume.
 - Example
 The entered volume name: StandardVolume (14 letters) → The created volume names: StandardVolume0, StandardVolume1, etc.
- If the total number of characters including the suffix "x" for the volume name exceeds 16, the excess letters are omitted and "~x" is assigned at the end of the name.
 - Example
 The entered volume name: Standard_Volume0 (16 letters) → The created volume names: Standard_Volum~0, Standard_Volum~1, etc.
- From 1 to 16 alphanumeric characters, symbols, and spaces can be entered in the Name field. Note that the following symbols cannot be used:
 - Comma (,)
 - Question mark (?)
 If "Create datastore" is selected in [Step 3](#), the following symbols cannot be used:
 - Slash (/)
 - Backslash (\)
 - Percent (%)
 - A space that is used as the first or the last character
- If a decimal number is entered in the Capacity field, this number is automatically rounded to the nearest whole number.
- For details on other field requirements, refer to the ETERNUS Web GUI manual or help.

7 The entered information is displayed. After making sure that the entered information is correct, select whether to refresh the displayed information automatically after registration is complete, and then click the [Add] button.

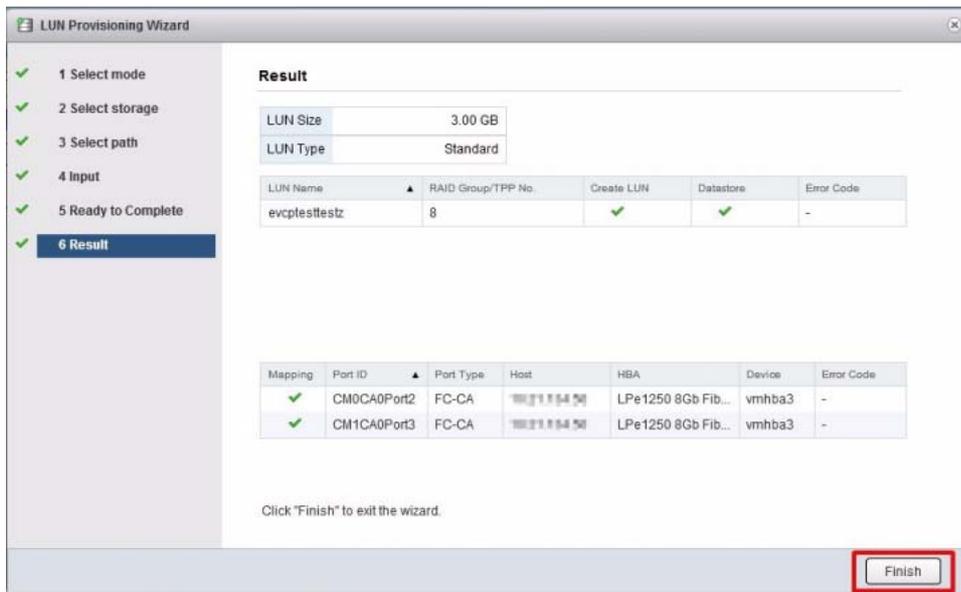


If the registration completes normally, the information of the created volume is displayed.

Caution

If the [Cancel] button or the [X] button is clicked during the process of creating volume datastores after clicking the [Add] button, the wizard finishes but the volume datastores continue to be created.

8 Click the [Finish] button to finish the wizard.

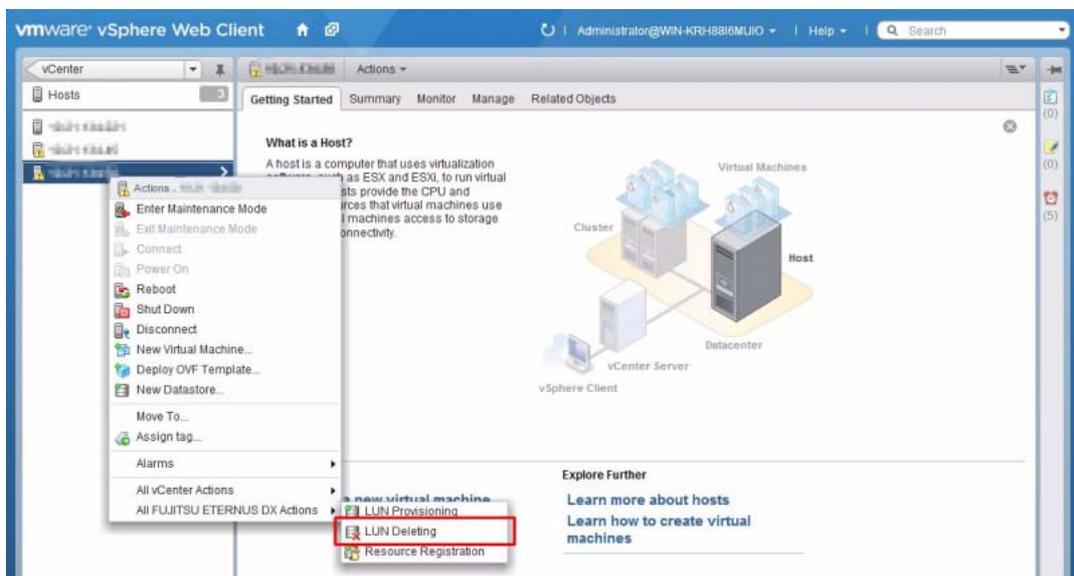


End of procedure

8.3 Deleting Volume Datastores

Procedure

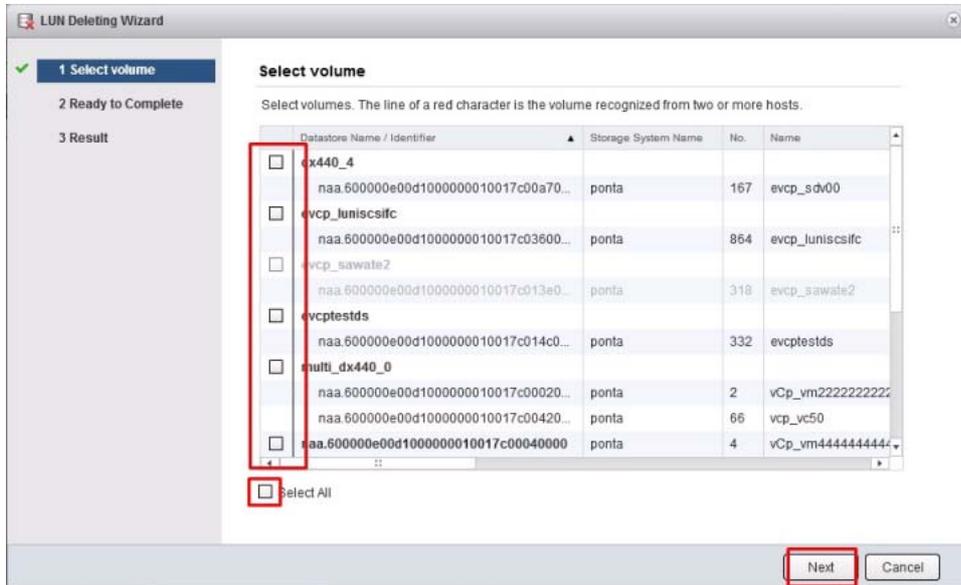
- 1 From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts] or [Clusters], and then right-click on the host or the cluster to display the menu bar.
- 2 From the menu bar, select [All FUJITSU ETERNUS DX Actions] – [LUN Deleting], and then start the LUN Deleting wizard.



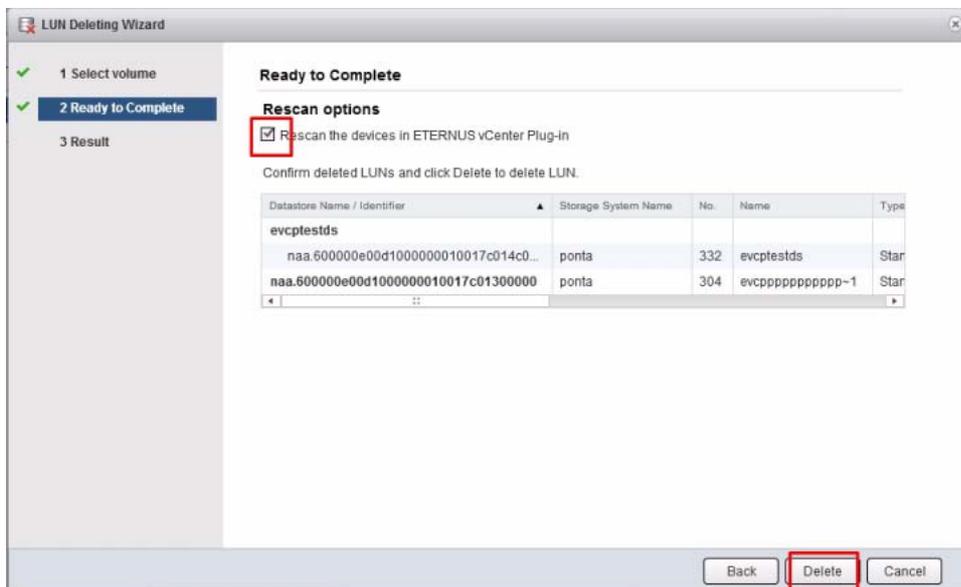
A list of the datastore volumes that are recognized by the selected host is displayed. If [Clusters] is selected to start the wizard, a list of the datastore volumes that are recognized by all of the hosts that belong to the cluster is displayed.

Letters in red indicate the datastore volumes that are recognized by multiple hosts. Letters in gray indicate any datastore volumes that cannot be deleted.

- 3 Select the datastore volume that is to be deleted from the deletable datastore volumes, and then click the [Next] button.
If the [Select All] checkbox is selected, all of the deletable datastore volumes are selected.



- 4 The entered information is displayed. After making sure that the entered information is correct, select whether to refresh the displayed information automatically after registration is complete, and then click the [Delete] button.

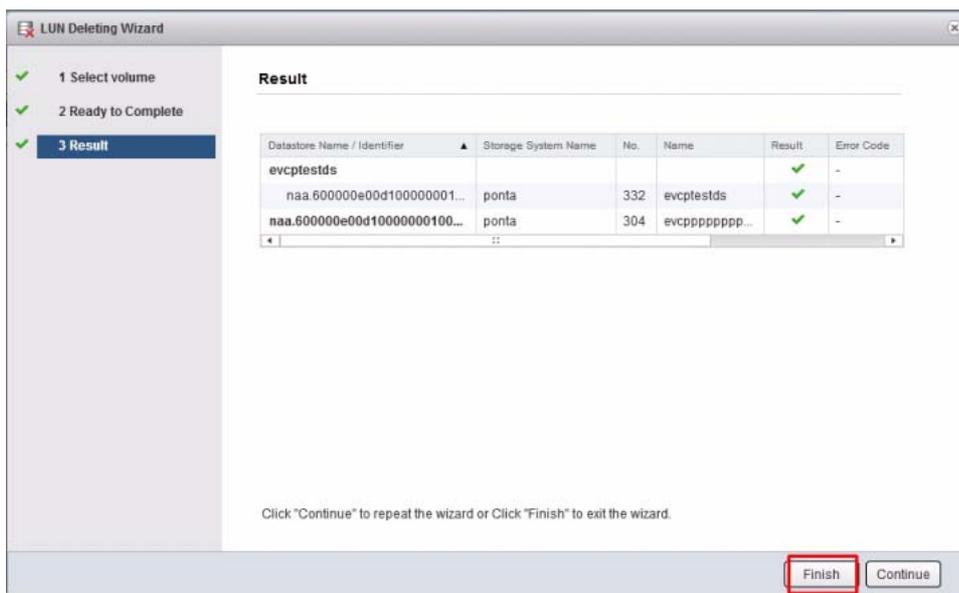


When the deletion completes normally, the information of the deleted datastore volumes is displayed.

Caution

If the [Cancel] button or the [X] button is clicked during the process of deleting volume datastores after clicking the [Delete] button, the wizard finishes but the volume datastores continue to be deleted.

- 5 Click the [Finish] button to finish the wizard.

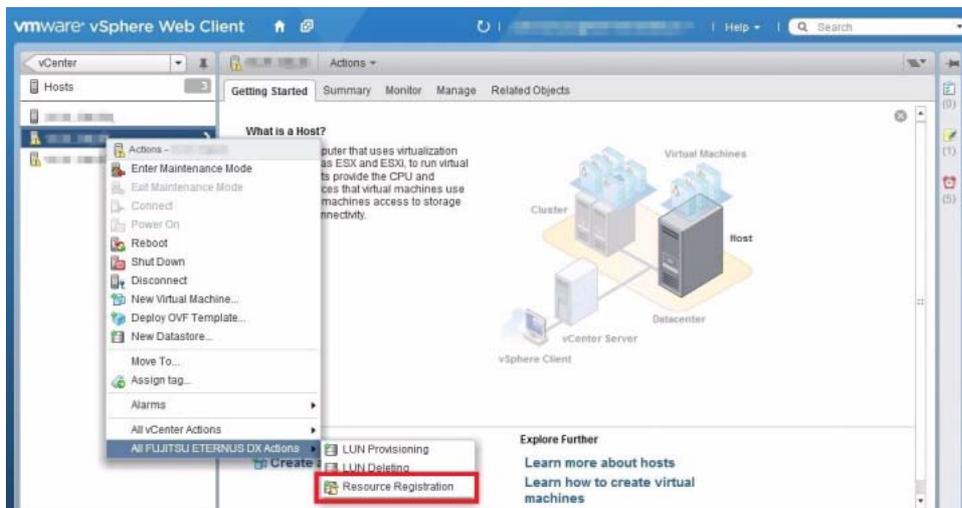


End of procedure

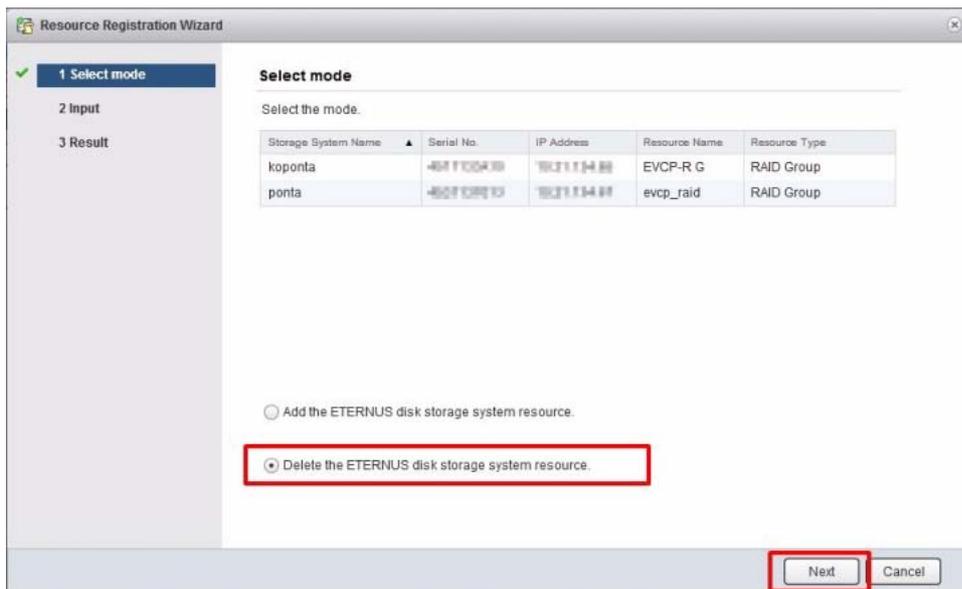
8.4 Unregistering Resources

Procedure

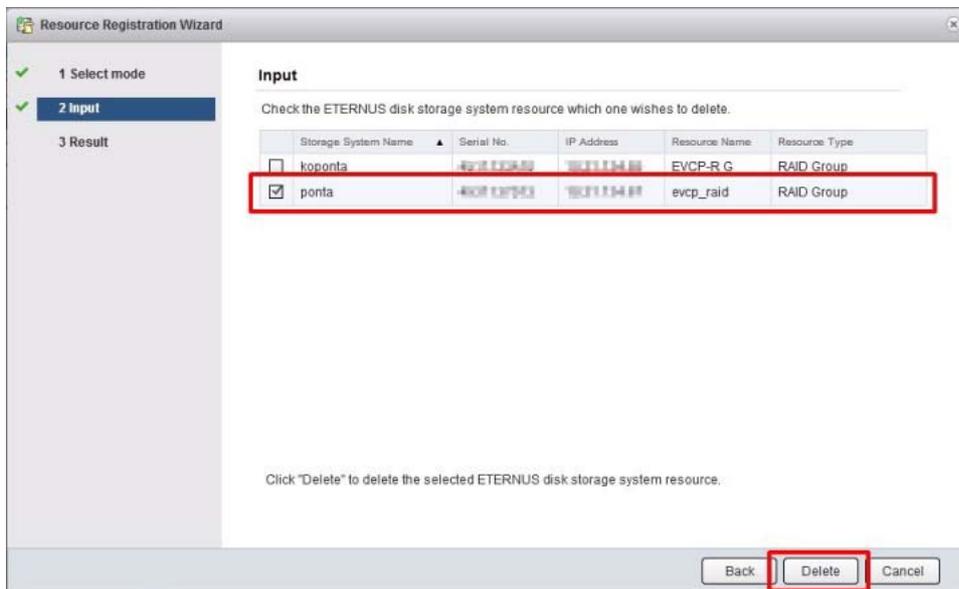
- 1 From the vCenter Home screen of vSphere Web Client, select [Inventory List] – [Hosts] or [Clusters], and then right-click on the host or the cluster to display the menu bar.
- 2 From the menu bar, select [All FUJITSU ETERNUS DX Actions] – [Resource Registration], and then start the Resource Registration Wizard.



- 3 Select the [Delete the ETERNUS disk storage system resource.] radio button, and then click the [Next] button.

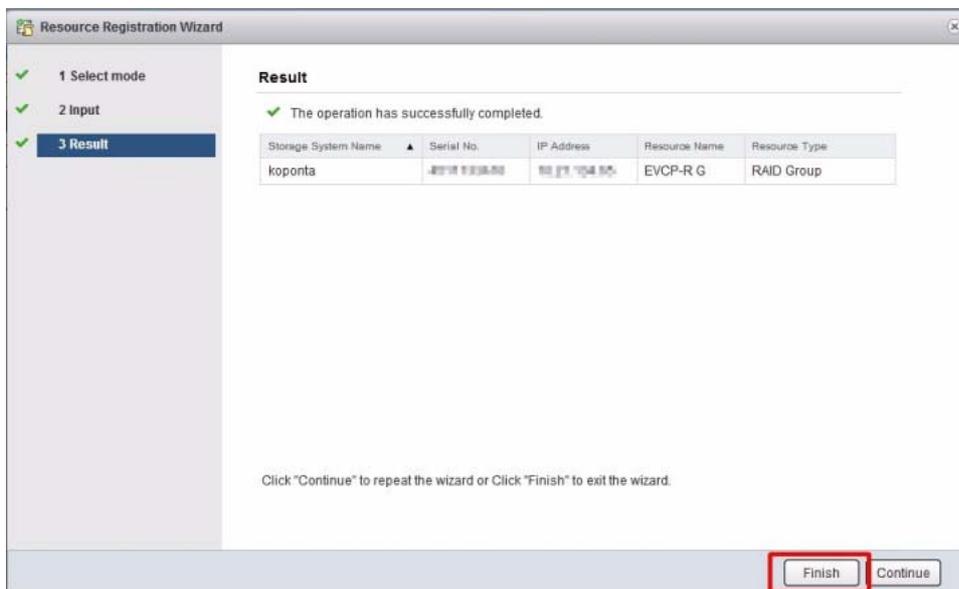


- 4** Select the checkbox of the resource that is to be deleted, and then click the [Delete] button. Multiple resources can be selected.



When the cancellation of the registration is complete, the resource is deleted from the list.

- 5** Click the [Finish] button to finish the wizard.



End of procedure

Caution

- A resource that is unregistered from ETERNUS vCenter Plug-in is not deleted from the ETERNUS Disk storage system.
- Use ETERNUS Web GUI to delete resources from the ETERNUS Disk storage system. For more details, refer to "ETERNUS Web GUI User's Guide".

8.5 Points to Note

This section describes points to note when adding datastore volumes in an environment in which volumes are shared in a cluster configuration.

For more details about the host groups, the port groups, and the LUN groups that are used in this section, refer to "ETERNUS Web GUI User's Guide".

8.5.1 When LUN Groups are Shared

For a configuration in which multiple hosts share the same LUN group as shown below, refer to ["8.2 Creating Volume Datastores" \(page 50\)](#) and create a volume or a datastore by selecting which LUN group needs to be added.

If only one of the hosts is selected, the volumes are automatically recognized by the other host.

- Host 1
Host group: HG 1
Port group: PG 1
LUN group: LG 1
- Host 2
Host Group: HG 2
Port group: PG 2
LUN group: LG 1

8.5.2 When Different LUN Groups are Used

This section provides information about a configuration in which multiple hosts each use different LUN groups and when some volumes are shared between these LUN groups as shown below.

- Host 1
Host group: HG 1
Port group: PG 1
LUN group: LG 1 → (LUN 1, 2, 3, 6)
- Host 2
Host group: HG 2
Port group: PG 2
LUN group: LG 2 → (LUN 1, 2, 3, 4, 5)

■ When adding a new local volume

Refer to ["8.2 Creating Volume Datastores" \(page 50\)](#), and then create a volume or a datastore by selecting which LUN group needs to be added.

■ When adding a new volume that is to be shared

Refer to ["8.2 Creating Volume Datastores" \(page 50\)](#), and then select [Clusters] to start the wizard. Select all of the LUN groups that need to be added and create a volume or a datastore.

Chapter 9

Changing Settings

This chapter describes the operations required for changing various settings after installing ETERNUS vCenter Plug-in. The procedures are explained for the following two cases:

- Changing settings for the ETERNUS Disk storage systems
- Changing settings for Windows Server where vCenter is installed

9.1 Changing Settings for ETERNUS Disk Storage Systems

To change the IP address, account, or password for an ETERNUS Disk storage system that is registered with the Storage Registration Wizard, the ETERNUS Disk storage system must be registered again. Perform the following procedure:

Procedure

- 1** Start the Storage Registration Wizard, and unregister the ETERNUS Disk storage system.
- 2** Register the ETERNUS Disk storage system with the changed information.
- 3** Click the "Refresh" icon to update the database information.

End of procedure

9.2 Changing Settings for Windows Server Where vCenter is Installed

To change the IP address, account, or password for the vCenter Server that is registered to ETERNUS vCenter Plug-in, the "evcpConfig" command must be executed to update the configuration information of ETERNUS vCenter Plug-in.

Perform the following procedure:

Procedure

- 1 Execute the "evcpConfig -x" command. For the argument, specify the IP address of the vCenter Server before changed. Enter the information of the vCenter Server after changed in interactive mode.

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -x 192.168.10.1
Welcome to the setup wizard for vCenter registration.
Please enter a NEW IP address of vCenter Server : 192.168.10.11
Please enter a NEW valid account of vCenter Server : administrator
Please enter a NEW password for the account : *****
```

```
Updated successfully.
```

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

- 2 Click the "Refresh" icon to update the database information.

End of procedure

9.3 evcpConfig Command

The "evcpConfig" command is used for environment setting for ETERNUS vCenter Plug-in. This command is used only when the server and/or storage settings are changed after ETERNUS vCenter Plug-in is installed and not in other situation.

The command is mainly used in the conditions as mentioned below.

- The initial setup during installation was skipped or failed.
- The account and/or network settings for each server were changed during operation.

Caution

Execute the command with the built-in administrator privileges. A user belonging to the Administrator group must execute the command with the administrator privileges.

■ Command format

```
evcpConfig -a  
evcpConfig -d vCenter-IP-address  
evcpConfig -x vCenter-IP-address  
evcpConfig -l
```

■ Option details

Option	Description
-a	Registers the vCenter Server to ETERNUS vCenter Plug-in. With this option, the command runs in interactive mode. Enter the IP address, account, and password of the vCenter Server to be registered.
-d	Deletes the vCenter Server from ETERNUS vCenter Plug-in. Specify the IP address of the vCenter Server to be deleted.
-x	Updates the information of the registered vCenter Server. If this option is executed by specifying the IP address of the vCenter Server to be updated, the command runs in interactive mode. Enter the IP address, account, and password of the vCenter Server after updated.
-l	Displays the information about the registered vCenter Server.

■ Example

● -a option

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -a  
Welcome to the setup wizard for vCenter registration.  
Please enter a IP address of vCenter Server : 192.168.0.10  
Please enter a valid account of vCenter Server : administrator  
Please enter a password for the account : *****  
  
Registration completed successfully.  
  
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

● -d option

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -d 192.168.0.10  
  
Unregistration completed successfully.  
  
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

● -x option

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -x 192.168.0.10  
Welcome to the setup wizard for vCenter registration.  
Please enter a NEW IP address of vCenter Server : 192.168.0.20  
Please enter a NEW valid account of vCenter Server : administrator  
Please enter a NEW password for the account : *****  
  
Updated successfully.  
  
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

● -l option

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -l  
  
IP address=(192.168.10.10) Account=(administrator)  
  
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

Chapter 10

Uninstallation

To uninstall ETERNUS vCenter Plug-in, perform the following procedure. If the [User Account Control] screen appears during the uninstallation process, select [Allow] to continue the process.

 **Caution**

When uninstallation is complete, the VMware vSphere Web Client service automatically restarts.

Procedure

- 1** From the Control Panel, select [Uninstall a program] and then [ETERNUS vCenter Plug-in], and click the [Uninstall] button to execute uninstallation.
- 2** Manually delete log files and other data that remain in the installation folder if necessary.

End of procedure

Chapter 11

Required Information for Failure Investigation

Prepare the following files when an error occurs, and contact a Fujitsu engineer.

- Files are stored in the following folders.

Installation folder\log

Installation folder\ETERNUS-MICC\var\log

 **Note**

Default installation folder is as follows:

System drive:\Program Files\ETERNUS vCenter Plug-in

Appendix A

Frequent Inquiry Solutions

Solutions for frequent inquiries are provided in this appendix.
Follow the solutions provided for each case.

A.1 The Initial Setup During Installation Failed or was Skipped

Perform the following procedure to configure the initial setup:

Procedure

- 1 Execute the "evcpConfig -a" command. Enter the information of the vCenter Server in interactive mode.

This operation must be performed for all the vCenter Servers to be managed.

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>evcpConfig -a
Welcome to the setup wizard for vCenter registration.
Please enter a IP address of vCenter Server : 192.168.0.10
Please enter a valid account of vCenter Server : administrator
Please enter a password for the account : *****
```

```
Registration completed successfully.
```

```
C:\Program Files\ETERNUS vCenter Plug-in\bin>
```

- 2 Perform the operations required after installation by referring to ["2.2 Operation Required After New Installation" \(page 20\)](#).

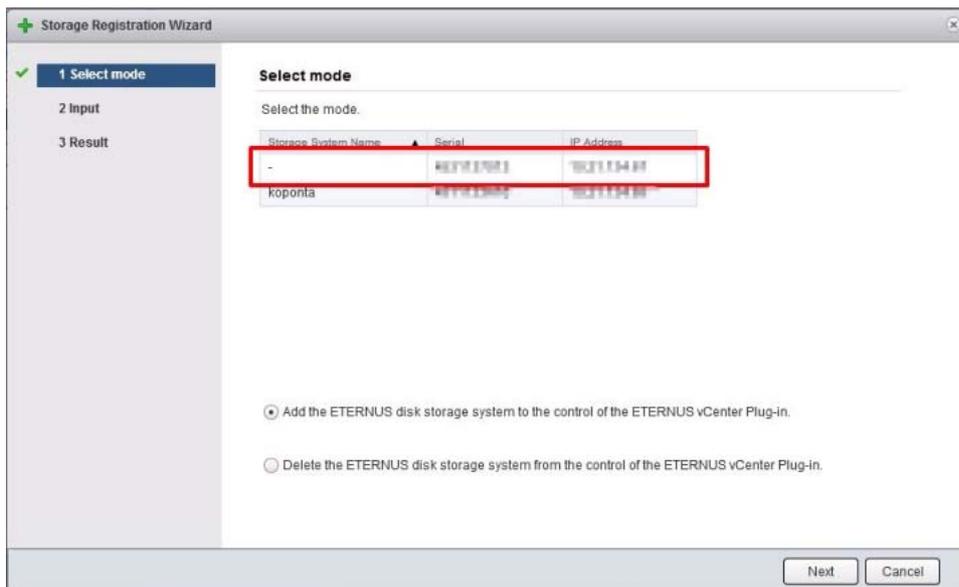
End of procedure

A.2 The Environment Settings are not Retained Normally After Upgrading ETERNUS vCenter Plug-in

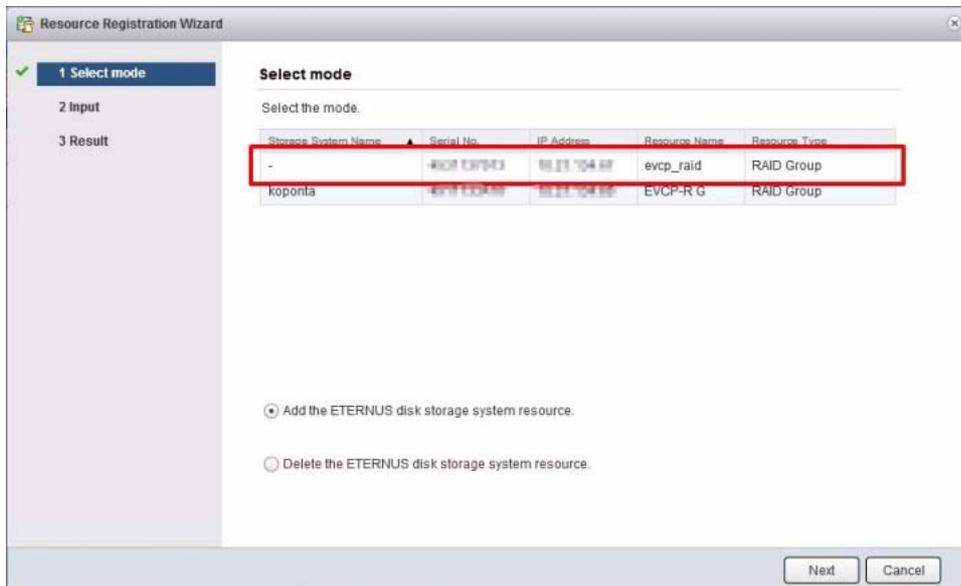
Perform the following procedure to check an ETERNUS Disk storage system or a resource in which the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete, and then register it again.

Procedure

- 1 Start the Storage Registration Wizard or the Resource Registration Wizard to check the ETERNUS Disk storage system or the resource in which the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete.
 - "-" is displayed as the "Storage System Name" of an ETERNUS Disk storage system in which the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete when the Storage Registration Wizard is started.



- "-" is displayed as the "Storage System Name" of a resource in which the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete when the Resource Registration Wizard is started.



- 2 Delete the ETERNUS Disk storage system or the resource in which the environment settings prior to upgrading of ETERNUS vCenter Plug-in are not retained normally after upgrading is complete, and then register it again. For details, refer to the following sections.
 - ["7.2 Registering ETERNUS Disk Storage Systems"](#)
 - ["7.3 Unregistering ETERNUS Disk Storage Systems"](#)
 - ["8.1 Registering Resources"](#)
 - ["8.4 Unregistering Resources"](#)

End of procedure

Appendix B

List of Displayed Items

B.1 Underlying LUNs

Display Item	Description
Name	Disk name
Identifier	Identifier
Model	Product ID of the ETERNUS Disk storage system
Runtime Name	Runtime name
LUN	LUN (LUN on the host)
Paths	The number of paths between the server and the ETERNUS Disk storage system
Status	Path status. If there are multiple paths, the status of each path is separated by a comma and displayed.
Policy	Multipath I/O policy

B.2 Virtual Disks

Display Item	Description
Name	Name of virtual disk
Capacity	Size of virtual disk (TB/GB/MB)
Type	Type of virtual disk
File Path	Path to the vmdk file. If Raw Device Mapping is used for connection, the path to the datastore mapping file is displayed.

B.3 Assigned Disks (Datastore)

Display Item	Description
Name	Datastore name
Status	Datastore status
Capacity	Datastore size (TB/GB/MB)
Free	Free space size in datastore (TB/GB/MB)
Type	Type of file system

B.4 Assigned Disks (Raw Device Mapping)

Display Item	Description
Name	Disk name
Identifier	Identifier
Model	Product ID of the ETERNUS Disk storage system
Runtime Name	Runtime name
LUN	LUN (LUN on the host)
Paths	The number of paths between the server and the ETERNUS Disk storage system
Status	Path status. If there are multiple paths, the status of each path is separated by a comma and displayed.
Policy	Multipath I/O policy
Assigned Guest	Assigned guest OS name and device name
File Path	Path to the datastore mapping file
Mode	Raw Device Mapping mode

B.5 Assigned Disks (Others)

Display Item	Description
Name	Disk name
Identifier	Identifier
Model	Product ID of the ETERNUS Disk storage system
Runtime Name	Runtime name
LUN	LUN (LUN on the host)
Paths	The number of paths between the server and the ETERNUS Disk storage system
Status	Path status. If there are multiple paths, the status of each path is separated by a comma and displayed.
Policy	Multipath I/O policy

B.6 ETERNUS Details

■ Volume

Display Item	Description
Name	Volume name
Status	Volume health status <ul style="list-style-type: none"> • Available • Broken • Data Lost • Exposed • Partially Exposed • Copyback • Redundant Copy • Not Available • Not Supported • Readying • Rebuild • Recalculate • Spare in Use • Portable • Not Ready • Partially Exposed Rebuild • Exposed Rebuild • Unknown
LUN No.	Volume No. (decimal)
Type	Volume type <ul style="list-style-type: none"> • For Open volumes <ul style="list-style-type: none"> - Standard - TPV - FTV - SDV - SDPV - WSV • For Mainframe volumes <ul style="list-style-type: none"> - F6427 • For MVV volumes <ul style="list-style-type: none"> - MVV • For any other volume types not listed above <ul style="list-style-type: none"> - Unknown
Capacity	Volume size (TB/GB/MB)
Path Policy (Actually)	Current path policy <ul style="list-style-type: none"> • If "RoundRobin" (recommended setting) is not specified, "x" is displayed.

Display Item	Description
Path Policy (Recommend)	Recommended path policy
VAAI Features (Actually)	Current VAAI feature status <ul style="list-style-type: none"> • For vSphere 4.1, "Supported" is displayed when one of the VAAI features is operated. • For vSphere 5, "Supported" is displayed when any of the VAAI features are operational. This value is the same as the value for [Hardware Acceleration] that is displayed for vSphere Client.
VAAI Features (Recommend)	Recommended VAAI features status

■ RAID Group

Property	Description
No.	RAID group No.
Name	RAID group name
Status	RAID group health status <ul style="list-style-type: none"> • Available • Exposed • Broken • Not Available • Not Supported • Partially Exposed • Present • Copyback • Redundant Copy • Rebuild • Recalculate • Protected Disabled • Verify in Progress • Dynamic Reconfiguration • Portable • Spare in Use • Failed Usable • Formatting • Partially Exposed Rebuild • Exposed Rebuild • No Disk Path • Unknown

Property	Description
Usage	RAID group usage. If the RAID group is used in multiple ways, each different usage is separated by a comma and displayed. <ul style="list-style-type: none"> • RDB • Standard • SDV • SDPV • TPV • FTV • Mainframe • MVV • Temporary • TPP • FTRP • Unknown • WSV
RAID Type	RAID type <ul style="list-style-type: none"> • Striping (RAID0) • Mirroring (RAID1) • High Performance (RAID1+0) • High Capacity (RAID5) • Reliability (RAID5+0) • High Reliability (RAID6) • Unknown
Bar chart	Used: Total used capacity (TB/GB/MB) Free: Total free capacity (TB/GB/MB) Total: Total capacity (TB/GB/MB)

● Disks

Property	Description
Enclosure	Enclosure No.
Slot No.	Slot No.
Disk Type	Disk type <ul style="list-style-type: none"> • Online • Nearline • SED • SSD • Unknown
Capacity	Capacity (TB/GB)
Speed	Disk speed (rpm)
Busy Ratio	Disk usage rate (%)

■ Thin Provisioning Pool

Property	Description
No.	Thin Provisioning Pool (TPP) No.
Name	TPP name
Disk Type	Type of disks that configure the TPP <ul style="list-style-type: none"> • Online • Nearline • SSD • SED • Unknown
RAID Type	Type of RAID groups that configure the TPP <ul style="list-style-type: none"> • Striping (RAID0) • Mirroring (RAID1) • High Performance (RAID1+0) • High Capacity (RAID5) • High Reliability (RAID6) • Unknown
Status	TPP health status <ul style="list-style-type: none"> • Available • Exposed • Partially Ready • Ready • Maintenance • Broken • Data Lost • Blockade • Unknown
Used Status	Used status of TPP <ul style="list-style-type: none"> • Normal The used capacity of the TPP is less than the attention alarm notification threshold • Attention The used capacity of the TPP is less than the warning alarm notification threshold and is equal to or greater than the attention alarm notification threshold • Warning The used capacity of the TPP is equal to or greater than the warning alarm notification threshold • Unknown The used capacity of the TPP cannot be obtained
Encryption	Encryption status of TPP <ul style="list-style-type: none"> • CM The TPP is encrypted by CM • SED The TPP is encrypted by SED • - (hyphen) The TPP is not encrypted • Unknown The encryption status of the TPP cannot be obtained

Property	Description
Warning	Warning threshold to monitor used capacity of TPP (%)
Attention	Attention threshold to monitor used capacity of TPP (%)
Bar chart	Used: Total used capacity of TPP (TB/GB/MB) Free: Total free capacity of TPP (TB/GB/MB) Total: Total capacity of TPP (TB/GB/MB)

■ WSV RAID Groups

● RAID Group

All of the RAID groups that configure the WSV are displayed. The displayed information for each RAID group is same as ["RAID Group" \(page 73\)](#).

■ Flexible Tier Pool

Property	Description
No.	Flexible Tier Pool (FTRP) No.
Name	FTRP name
Status	FTRP health status <ul style="list-style-type: none"> • Available • Exposed • Partially Readying • Readying • Maintenance • Broken • Data Lost • Blockade • Unknown
Used Status	Used status of FTRP <ul style="list-style-type: none"> • Normal The used capacity of the FTRP is less than the attention alarm notification threshold • Attention The used capacity of the FTRP is less than the warning alarm notification threshold and is equal to or greater than the attention alarm notification threshold • Warning The used capacity of the FTRP is equal to or greater than the warning alarm notification threshold • Unknown The used capacity of the FTRP cannot be obtained

Property	Description
Encryption	Encryption status of FTRP <ul style="list-style-type: none"> • CM The FTRP is encrypted by CM • SED The FTRP is encrypted by SED • - (hyphen) The FTRP is not encrypted • Unknown The encryption status of the FTRP cannot be obtained
Warning	Warning threshold to monitor used capacity of FTRP (%)
Attention	Attention threshold to monitor used capacity of FTRP (%)
Bar chart	<ul style="list-style-type: none"> • Used Total used capacity of FTRP (TB/GB/MB) • Free Total free capacity of FTRP (TB/GB/MB) • Total Total capacity of FTRP (TB/GB/MB)

● Flexible Tier Sub Pool

Property	Description
No.	Flexible Tier Sub Pool (FTSP) No.
Name	FTSP name
Status	FTSP health status <ul style="list-style-type: none"> • Available • Exposed • Partially Ready • Ready • Maintenance • Broken • Data Lost • Blockade • Unknown
Disk Type	Type of disks that configure the FTSP <ul style="list-style-type: none"> • Online • Nearline • SSD • SED • Unknown
RAID Type	Type of RAID groups that configure the FTSP <ul style="list-style-type: none"> • Striping (RAID0) • Mirroring (RAID1) • High Performance (RAID1+0) • High Capacity (RAID5) • High Reliability (RAID6) • Unknown

Property	Description
RAID Group No.	No. of RAID groups that configure the FTSP RAID group numbers are displayed with a comma at the end of each number if multiple RAID groups exist.
Bar chart	<ul style="list-style-type: none"> Used Total used capacity of FTSP (TB/GB/MB) Free Total free capacity of FTSP (TB/GB/MB) Total Total capacity of FTSP (TB/GB/MB)

■ System Information

Property	Description
Storage System Name	Name of the ETERNUS Disk storage system
Model Name	Model name of the ETERNUS Disk storage system
Product	Product name of the ETERNUS Disk storage system
Serial No.	Serial No. of the ETERNUS Disk storage system
Firmware Version	Firmware version of running controller
Status	Health status of the total storage system <ul style="list-style-type: none"> Offline Normal Warning Maintenance Not Ready Error
Management URL	Link to ETERNUS Web GUI

■ Storage Condition

Property	Description
RAID Group	Used: Total used capacity of the RAID group (TB/GB/MB) Free: Total free capacity of the RAID group (TB/GB/MB) Total: Total capacity of the RAID group (TB/GB/MB) <ul style="list-style-type: none"> The total used capacity is the total capacity of the area that is used for the volumes of all the RAID groups. Note that RAID groups that configure TPPs and RAID groups that are registered as REC Disk Buffers are not included. The total free capacity is the total unused capacity of all the RAID groups. Note that RAID groups that configure TPPs and RAID groups that are registered as REC Disk Buffers are not included. The total capacity is the total of all the RAID groups registered in the storage system. Note that RAID groups that configure TPPs or RAID groups that are registered as REC Disk Buffers are not included.
RAID Group Count	The number of RAID groups registered in the storage system This includes the number of RAID groups that configure the TPP and the number of RAID groups that are registered as REC Disk Buffers.

Property	Description
Volume Count	The number of volumes registered in the storage system Volumes of "Standard" or "WSV" volume type are applicable.
Thin Provisioning Pool	Used: Total used physical capacity of the TPP (TB/GB/MB) Free: Total free physical capacity of the TPP (TB/GB/MB) Total: Total physical capacity of the TPP (TB/GB/MB) <ul style="list-style-type: none"> • The total used physical capacity is the total of the physical capacity that is allocated to the volumes for all the TPPs. • The total free physical capacity is the total of the physical capacity for areas that are not allocated to volumes for all the TPPs. • The total physical capacity is the total physical capacity of all the TPPs registered in the storage system.
Thin Provisioning Pool Count	The number of TPPs registered in the storage system
Volume Count	The number of volumes registered in the storage system Volumes of "TPV" volume type are applicable.
Snap Data Pool	Used: Total used capacity for the SDP (TB/GB/MB) Free: Total free capacity for the SDP (TB/GB/MB) Total: Total capacity for the SDP (TB/GB/MB) <ul style="list-style-type: none"> • The total used capacity is the total of the capacity that is allocated to all the SDP volumes. • The total free capacity is the total unallocated capacity of the volumes for all of the SDPs. • The total capacity is the total of all the SDPs registered in the storage system.
Snap Data Pool Count	The number of SDPs registered in the storage system

■ Adapter

Property	Description
HBA	Host bus adapter name. The host name is displayed in the first brackets [].
Device	Logical device name for host bus adapter
Storage System Name	Name of the ETERNUS Disk storage system
Port	Port location information for the ETERNUS Disk storage system (displayed only for Fibre Channel and iSCSI interfaces) Format: CM#xCA#yPort#z x: CM number y: CA number z: Port number
WWN/IP Address	WWN or iSCSI IP address for the ETERNUS Disk storage system port (displayed only for Fibre Channel and iSCSI interfaces)

■ Performance

The performance information of the ETERNUS Disk storage system is displayed. When unsupported firmware is used for the ETERNUS Disk storage system, or when information cannot be retrieved successfully from the ETERNUS Disk storage system, "-" is displayed.

● Host I/O

Property	Description
Read IOPS	The number of Read per second
Write IOPS	The number of Write per second
Read Throughput	Transmission amount of Read data per second (MB/s)
Write Throughput	Transmission amount of Write data per second (MB/s)
Read Response Time	Average response time (Read) per millisecond (ms)
Write Response Time	Average response time (Write) per millisecond (ms)
Read Cache Hit Rate	Cache hit rate (Read) (%)
Write Cache Hit Rate	Cache hit rate (Write) (%)
Prefetch Cache Hit Rate	Cache hit rate (Prefetch) (%)

● Advanced Copy I/O

Property	Description
Read IOPS	The number of Read per second
Write IOPS	The number of Write per second
Read Throughput	Transmission amount of Read data per second (MB/s)
Write Throughput	Transmission amount of Write data per second (MB/s)
Read Cache Hit Rate	Cache hit rate (Read) (%)
Write Cache Hit Rate	Cache hit rate (Write) (%)
Prefetch Cache Hit Rate	Cache hit rate (Prefetch) (%)

B.7 Adapter (Server Adapters)

Property	Description
Device	Host bus adapter name and logical device name
Type	Host bus adapter type
WWN	WWN or iSCSI name for the ETERNUS Disk storage system port (displayed only for Fibre Channel and iSCSI interfaces)

B.8 Adapter (Storage Targets)

Property	Description
Series	Product name of the ETERNUS Disk storage system
Storage System Name	Name of the ETERNUS Disk storage system
Model Name	Model name of the ETERNUS Disk storage system
Serial No.	Serial No. of the ETERNUS Disk storage system
Port	Port location information for the ETERNUS Disk storage system (displayed only for Fibre Channel and iSCSI interfaces) Format: CM#xCA#yPort#z x: CM number y: CA number z: Port number

B.9 Adapter (Storage LUNs)

Property	Description
No.	Volume number
Name	Volume name
Status	Volume status
Type	Volume type
Capacity	Volume capacity (MB/GB/TB)
RAID Group/TPP/FTRP No.	The RAID group number, the TPP number, or the FTRP number to which a volume belongs. RAID group numbers are displayed with a comma at the end of each number if multiple RAID groups exist. If the type is "WSV", the RAID group number to which the representative volume (*1) belongs is displayed.
Encryption	Volume encryption status
Forbid Advanced Copy	Protection setting status for a volume

*1: A volume for WSV, which is created by concatenating multiple RAID groups with striping, that belongs to the RAID group that is first in the concatenation order.

B.10 Performance

■ Performance (Host I/O)

Property	Description
Storage System Name	Name of the ETERNUS Disk storage system
No.	Volume number
Name	Volume name
Type	Volume type
Read IOPS	The number of Read per second
Write IOPS	The number of Write per second
Read Throughput	Transmission amount of Read data per second (MB/s)
Write Throughput	Transmission amount of Write data per second (MB/s)
Read Response Time	Average response time (Read) per millisecond (ms)
Write Response Time	Average response time (Write) per millisecond (ms)
Read Cache Hit Rate	Cache hit rate (Read) (%)
Write Cache Hit Rate	Cache hit rate (Write) (%)
Prefetch Cache Hit Rate	Cache hit rate (Prefetch) (%)

■ Performance (Advanced Copy I/O)

Property	Description
Storage System Name	Name of the ETERNUS Disk storage system
No.	Volume number
Name	Volume name
Type	Volume type
Read IOPS	The number of Read per second
Write IOPS	The number of Write per second
Read Throughput	Transmission amount of Read data per second (MB/s)
Write Throughput	Transmission amount of Write data per second (MB/s)
Read Cache Hit Rate	Cache hit rate (Read) (%)
Write Cache Hit Rate	Cache hit rate (Write) (%)
Prefetch Cache Hit Rate	Cache hit rate (Prefetch) (%)

Appendix C

Messages

C.1 Information Display Function

■ Message

```
STXE1000 NOTICE Please click "Refresh" button to display information of the object specified at inventory tree if the specified object consists of the volume that is supported by the ETERNUS vCenter Plug-in.
```

[Cause]

The object selected in the inventory tree is not registered in the database of ETERNUS vCenter Plug-in.

[Solution]

Execute Refresh. For details, refer to ["Chapter 6 Refreshing Displayed Information" \(page 40\)](#).

■ Message

```
STXE1001 NOTICE This ETERNUS Disk Storage System is not registered. Register by Registration.
```

[Cause]

The selected ETERNUS Disk storage system is not registered in ETERNUS vCenter Plug-in.

[Solution]

Start GUI for storage system registration and register the storage system. For details, refer to ["7.2 Registering ETERNUS Disk Storage Systems" \(page 42\)](#).

■ Message

```
STXE1002 NOTICE ETERNUS vCenter Plug-in does not support this kind of ETERNUS disk storage system.
```

[Cause]

The selected ETERNUS Disk storage systems is not supported by ETERNUS vCenter Plug-in.

[Solution]

Unnecessary.

■ Message

```
STXE1003 NOTICE ETERNUS vCenter Plug-in does not support this type of volume.
```

[Cause]

The selected volume is not supported by ETERNUS vCenter Plug-in.

[Solution]

Unnecessary.

■ Message

```
STXE1005 ERROR Detail information was not able to be acquired from ETERNUS disk storage system normally because of invalid credentials.
```

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function normally because the account or password of the ETERNUS Disk storage system is invalid. The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Unregister the ETERNUS Disk storage system from GUI for storage system registration and then re-register it. For details, refer to ["9.1 Changing Settings for ETERNUS Disk Storage Systems" \(page 61\)](#).

■ Message

```
STXE1006 ERROR Detail information was not able to be acquired from ETERNUS disk storage system normally because another user is using exclusive software of the ETERNUS vCenter Plug-in. Please click "Refresh" button after checking no one is using exclusive software.
```

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system normally because another user was using exclusive software of ETERNUS vCenter Plug-in. For details, refer to ["1.6 Exclusive Software" \(page 14\)](#).

[Solution]

Stop exclusive software of ETERNUS vCenter Plug-in, and then execute Refresh.

■ Message

```
STXE1007 ERROR Detail information was not able to be acquired from ETERNUS disk storage system normally because a login account specified by the registration tool does not have a software role. Please login the ETERNUS Web GUI and give a software role to a user account using by the ETERNUS vCenter Plug-in, and click "Refresh" button.
```

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function normally because the account of the ETERNUS Disk storage system does not have the Software role. The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Grant the Software role to a configured account using ETERNUS Web GUI. Then execute Refresh.

■ Message

```
STXE1008 ERROR Detail information was not able to be acquired from ETERNUS disk storage system normally because of a transport error." Please click "Refresh" button after fixing network issues.
```

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system normally because of a network error between the server where ETERNUS vCenter Plug-in is installed and the ETERNUS Disk storage system.

[Solution]

Check for any problems in network connection. Solve the problem and then execute Refresh.

■ Message

```
STXE1009 ERROR Detail information was not able to be acquired from ETERNUS disk storage system normally because of an internal error.
```

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system normally because of a detected internal error.

[Solution]

Refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE1010 ERROR Detail information was not able to be acquired from a vSphere server normally because of invalid credentials.
```

[Cause]

Information was not able to be acquired from the vSphere Server normally because of invalid account or password of the vCenter Server where ETERNUS vCenter Plug-in is installed. The account or password of the vCenter Server might have been changed after installation of ETERNUS vCenter Plug-in.

[Solution]

Refer to ["9.2 Changing Settings for Windows Server Where vCenter is Installed" \(page 62\)](#).

■ Message

```
STXE1011 ERROR Detail information was not able to be acquired from a vSphere server normally because of a transport error or invalid credentials.
```

[Cause]

Information was not able to be acquired from the vSphere Server normally because of a network error between the server where ETERNUS vCenter Plug-in is installed and the vCenter Server, or because of an invalid account information of the vCenter Server.

[Solution]

Check for any problems in network connection. If no problem is found, check for any errors in the account information. For details, refer to ["9.2 Changing Settings for Windows Server Where vCenter is Installed" \(page 62\)](#). Solve the problem and then execute Refresh.

■ Message

```
STXE1012 ERROR Detail information was not able to be acquired from a vSphere server normally because of an internal error.
```

[Cause]

Information was not able to be acquired from the vSphere Server normally because of a detected internal error.

[Solution]

Refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE1013 ERROR Detail information was not able to be acquired from a vSphere server normally because of wrong configuration files.
```

[Cause]

The configuration file of ETERNUS vCenter Plug-in is invalid.

[Solution]

Refer to "[Chapter 11 Required Information for Failure Investigation](#)" (page 66) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE1014 NOTICE There is no supported ETERNUS Disk Storage system device on the selected vmware object.
```

[Cause]

No disks for the ETERNUS Disk storage system exist for the selected resource.

[Solution]

Unnecessary.

■ Message

```
STXE1015 NOTICE The license is currently not registered.
```

[Cause]

A license for the Advanced Copy functions or the Thin Provisioning function is not registered.

[Solution]

Use ETERNUS Web GUI to register a license.

■ Message

```
STXE1016 NOTICE This ETERNUS Disk Storage System does not support this resource.
```

[Cause]

The resource is not supported.

[Solution]

Unnecessary.

■ Message

```
STXE1017 NOTICE The datastore that is accessible from multiple hosts is not supported in this function.  
The information on this datastore can be confirmed with Host System.
```

[Cause]

The information about the datastore that is used by multiple hosts cannot be displayed.

[Solution]

Select the host that uses the target datastore from the inventory tree, click the [FUJITSU ETERNUS DX] tab, and use [Datastore] to display the information.

■ Message

```
STXE1018 ERROR ETERNUS vCenter Plug-in does not support this type of volume.  
Or, detail information was not able to be acquired from ETERNUS disk storage system.
```

[Cause]

The selected volume is not supported by ETERNUS vCenter Plug-in or information was not able to be acquired from the ETERNUS Disk storage system.

[Solution]

Check if the selected volume is supported by ETERNUS vCenter Plug-in.
When the selected volume is not supported, no action is necessary.
When the selected volume is supported, execute Refresh.

■ Message

```
STXE1019 NOTICE This ETERNUS Disk Storage System is not registered, or is not supported by ETERNUS vCenter Plug-in. Register by Registration.
```

[Cause]

The selected ETERNUS Disk storage system is not registered in ETERNUS vCenter Plug-in or the selected ETERNUS Disk storage system is not supported by ETERNUS vCenter Plug-in.

[Solution]

Start GUI for storage system registration and register the storage system. For details, refer to ["7.2 Registering ETERNUS Disk Storage Systems" \(page 42\)](#).

C.2 Registering Storage Systems

■ Message

```
STXE2001 ERROR Input information has already been registered.
```

[Cause]

The specified ETERNUS Disk storage system is already registered in ETERNUS vCenter Plug-in.

[Solution]

Unnecessary.

■ Message

```
STXE2002 ERROR Registration failed because of invalid credentials.
```

[Cause]

The specified ETERNUS Disk storage system has an invalid account or password.

[Solution]

Specify a valid account and password.

■ Message

```
STXE2003 ERROR Registration failed because specified user account does not have a software role.  
Please retry after giving a software role to a user account by using ETERNUS Web GUI.
```

[Cause]

The specified ETERNUS Disk storage system account does not have the Software role.

[Solution]

Specify a user account with the Software role.

■ Message

```
STXE2004 ERROR Registration failed because of a transport error. Please retry after fixing network issues.
```

[Cause]

The specified ETERNUS Disk storage system was not able to be connected. The network or the SSH connection setting of the ETERNUS Disk storage system has an error.

[Solution]

Check the network connection or check the SSH connection setting of the ETERNUS Disk storage system for any problems. Solve the problem, and then perform registration again.

■ Message

```
STXE2005 ERROR Registration failed because of an internal error.
```

[Cause]

An internal error was detected.

[Solution]

Refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE2006 ERROR The error occurred because of wrong configuration files.
```

[Cause]

The configuration file of ETERNUS vCenter Plug-in is invalid.

[Solution]

Refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE2007 ERROR The operation failed because of invalid credential of ETERNUS disk storage system.
```

[Cause]

The operation failed for the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function because the account or password of the ETERNUS Disk storage system is invalid. The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Unregister the ETERNUS Disk storage system from GUI for storage system registration and then re-register it. For details, refer to ["9.1 Changing Settings for ETERNUS Disk Storage Systems" \(page 61\)](#).

■ Message

```
STXE2008 ERROR The operation failed because a login account specified by the registration tool does not have a software role. Please login the ETERNUS Web GUI and give a software role to a user account using by the ETERNUS vCenter Plug-in.
```

[Cause]

The operation failed for the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function because the account of the ETERNUS Disk storage system does not have the Software role.

The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Grant the Software role to a configured account using ETERNUS Web GUI.

■ Message

```
STXE2009 ERROR The operation failed because of a transport error. Please retry after fixing network issues.
```

[Cause]

The specified ETERNUS Disk storage system was not able to be connected. The network or the SSH connection setting of the ETERNUS Disk storage system has an error.

[Solution]

Check the network connection or check the SSH connection setting of the ETERNUS Disk storage system for any problems. Solve the problem, and then perform the operation again.

■ Message

```
STXE2010 ERROR The operation failed because of an internal error.
```

[Cause]

An internal error was detected.

[Solution]

Refer to "[Chapter 11 Required Information for Failure Investigation](#)" ([page 66](#)) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
STXE2011 ERROR The operation failed because another user was using exclusive software of the ETERNUS vCenter Plug-in.
```

[Cause]

The operation failed because another user was using exclusive software of ETERNUS vCenter Plug-in. For details on exclusive software, refer to "[1.6 Exclusive Software](#)" ([page 14](#)).

[Solution]

Stop the exclusive software of ETERNUS vCenter Plug-in, and perform the operation again.

■ Message

```
STXE2012 ERROR The resource does not exist in this ETERNUS Disk Storage System.
```

[Cause]

One of the following resources is specified when adding a resource with the Resource Registration Wizard.

- A resource that does not exist in the ETERNUS Disk storage system
- A RAID group without registered Standard volumes, WSVs, SDVs, or SDPVs

[Solution]

Check the following conditions and then try again.

- The resource that is to be registered exists in the ETERNUS Disk storage system
- Only a RAID group with registered Standard volumes, WSVs, SDVs, or SDPVs is selected

■ Message

```
STXE2013 ERROR ETERNUS vCenter Plug-in does not support this resource.
```

[Cause]

A resource that ETERNUS vCenter Plug-in does not support was specified when adding a resource in the Resource Registration Wizard or the resource that was selected in the LUN Provisioning wizard does not exist.

[Solution]

Make sure a resource that ETERNUS vCenter Plug-in supports or a resource that exists is specified.

C.3 evcpConfig Command

■ Message

```
[ERROR] This command requires administrative rights.
```

[Cause]

The command is executed by an account without the execution privileges.

[Solution]

Execute the command with the built-in administrator privileges. A user belonging to the Administrator group must execute the command with the administrator privileges.

■ Message

```
[ERROR] ETERNUS vCenter Plug-in has not installed correctly.
```

[Cause]

ETERNUS vCenter Plug-in is not properly installed.

[Solution]

Uninstall ETERNUS vCenter Plug-in and then install it again.

■ Message

```
[ERROR] Invalid Argument.
```

[Cause]

The command argument is invalid.

[Solution]

Specify a correct argument.

■ Message

```
[NOTICE] evcpConfig command is already running.
```

[Cause]

This command is running in another process. Multiple instances of this command cannot be started.

[Solution]

After the command in another process is complete, execute it again.

■ Message

```
[ERROR] Failed to create JAVA VM.  
[ERROR] Failed to Find Class.  
[ERROR] Failed Get Method.  
[ERROR] Failed to get computer name.
```

[Cause]

An internal error was detected.

[Solution]

Refer to "[Chapter 11 Required Information for Failure Investigation](#)" (page 66) to prepare the required information, and contact a Fujitsu engineer.

■ Message

```
[ERROR] Invalid login account or password.
```

[Cause]

The entered vCenter Server account or password is incorrect.

[Solution]

Enter a valid account and password.

■ Message

```
[ERROR] Invalid IP address(transport error).
```

[Cause]

A connection to the vCenter Server of the specified IP address could not be established.

[Solution]

Specify a valid IP address for the vCenter Server. If the specified IP address is valid, check for any problems that may exist in the network connection. Fix any problems, and then try again.

■ Message

```
[ERROR] Plug-in Registration failed.  
[ERROR] Plug-in Unregistration failed.
```

[Cause]

Registration of the vCenter Server in ETERNUS vCenter Plug-in or deletion of the vCenter Server from ETERNUS vCenter Plug-in failed.

[Solution]

Refer to "[Chapter 11 Required Information for Failure Investigation](#)" (page 66) to prepare any required information for troubleshooting, and then contact a Fujitsu engineer.

C.4 Adding and Deleting Datastore Volumes

If datastore volumes are added or deleted, messages that are described in "[C.1 Information Display Function](#)" ([page 83](#)) and "[C.2 Registering Storage Systems](#)" ([page 89](#)) may be displayed as well as the messages that are described in this section.

■ 1027

[Cause]

Invalid characters were specified for the volume name.

[Solution]

Make sure the volume name is specified correctly, and then try again.

■ 2012

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function normally because the account or password of the ETERNUS Disk storage system is invalid. The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Unregister the ETERNUS Disk storage system from GUI for storage system registration and then re-register it.

■ 2013

[Cause]

Information was not able to be acquired from the ETERNUS Disk storage system that was registered to ETERNUS vCenter Plug-in by using the storage system registration function normally because the account of the ETERNUS Disk storage system does not have the Software privilege. The account information might have been changed after registered to ETERNUS vCenter Plug-in with the storage system registration function.

[Solution]

Unregister the ETERNUS Disk storage system from GUI for storage system registration and then re-register it.

■ 4015

[Cause]

The exclusive software of ETERNUS vCenter Plug-in is being used by another user.

[Solution]

Stop the exclusive software of ETERNUS vCenter Plug-in that is running, and then try again.

- **4018**
 - [Cause]
The specified RAID group is not registered in the ETERNUS Disk storage system.
 - [Solution]
Specify a RAID group that is registered in the ETERNUS Disk storage system, and then try again.

- **4028**
 - [Cause]
The operation cannot be performed because the specified RAID group is for work.
 - [Solution]
Specify a RAID group in the ETERNUS Disk storage system that is not being used for work, and then try again.

- **4042**
 - [Cause]
The specified volume is not registered in the ETERNUS Disk storage system.
 - [Solution]
Specify a volume that is already registered in the ETERNUS Disk storage system, and then try again.

- **4045**
 - [Cause]
The specified volume name is already registered in the ETERNUS Disk storage system.
 - [Solution]
Enter a volume name that is not registered in the ETERNUS Disk storage system, and then try again.

- **4065**
 - [Cause]
The maximum number of host affinities that can be created for one port has been exceeded.
 - [Solution]
Delete the host affinities that exceed the maximum, make sure the maximum number of host affinities that can be created for one port is not exceeded, and then try again.

- **4067**
 - [Cause]
The maximum number of volumes that can be created for the RAID group has been exceeded.
 - [Solution]
Delete the volumes that exceed the maximum, make sure the maximum number of volumes that can be created for one RAID group is not exceeded, and then try again.

- 4068
 - [Cause]
The specified RAID group is in error status.
 - [Solution]
When the status for the specified RAID group changes to normal, and then try again.

- 4070
 - [Cause]
The maximum number of volumes that can be created in a single ETERNUS Disk storage system has been exceeded.
 - [Solution]
Delete the volumes that exceed the maximum, make sure the maximum number of volumes that can be created for one ETERNUS Disk storage system is not exceeded, and then try again.

- 4071
 - [Cause]
The specified RAID group is undergoing LDE.
 - [Solution]
Wait for LDE to complete, and then try again.

- 4074
 - [Cause]
The specified volume is undergoing an Advanced Copy.
 - [Solution]
Wait for the Advanced Copy process to complete, and then try again.

- 4089
 - [Cause]
The specified volume is undergoing RAID migration.
 - [Solution]
Stop RAID migration that is running, and then try again.

- 4099
 - [Cause]
The specified RAID group is blocked.
 - [Solution]
When the RAID group status changes to normal, and then try again.

■ 4119

[Cause]

The maximum volume capacity that can be created for an ETERNUS Disk storage system has been exceeded.

[Solution]

Delete the capacity that exceeds the maximum, make sure the maximum volume capacity that can be created for one ETERNUS Disk storage system is not exceeded, and then try again.

■ 4121

[Cause]

The functions for the ETERNUS Disk storage system are disabled.

[Solution]

If an Advanced Copy license is not registered, register it.

If an Advanced Copy license is already registered, refer to "[Chapter 11 Required Information for Failure Investigation](#)" ([page 66](#)) to prepare any required information for troubleshooting, and then contact a Fujitsu engineer.

■ 5002

[Cause]

An internal error was detected.

[Solution]

Possible causes are as follows:

- The ETERNUS Disk storage system is in error status
- One or more parts in the ETERNUS Disk storage system failed
- The network environment is not correctly set
- The LAN connection is not correctly set
- The maximum number of installable disks has been exceeded

Check and correct any of the possible causes that are listed above, wait for a while, and then try again.

If the problem persists, refer to "[Chapter 11 Required Information for Failure Investigation](#)" ([page 66](#)) to prepare any required information for troubleshooting, and then contact a Fujitsu engineer.

■ 7004

[Cause]

Communication between the server in which ETERNUS vCenter Plug-in is installed and the ETERNUS Disk storage system failed.

[Solution]

Check for any problems in the network connection. Fix any problems, and then try again.

■ 8002

[Cause]

The size of the specified volume is not valid.

[Solution]

Specify a volume size that is in the valid size range, and then try again.

For more details about the valid size range of a volume, refer to "ETERNUS Web GUI User's Guide".

■ 8071

[Cause]

Deletion of the LUN group mapping information failed.

[Solution]

If exclusive software of ETERNUS vCenter Plug-in is running, stop the exclusive software and then try again.

If exclusive software of ETERNUS vCenter Plug-in is not running, refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare any required information for troubleshooting, and then contact a Fujitsu engineer.

■ 8080

[Cause]

The available resources are insufficient.

[Solution]

Check the capacity of the RAID group or the Thin Provisioning Pool. If the capacity is sufficient, fix any other possible problems such as the maximum number of affinity groups that can be registered being exceeded.

■ 8101

[Cause]

The memory is insufficient.

[Solution]

Obtain a sufficient amount of memory, and then try again.

■ 8110

[Cause]

The specified Thin Provisioning Pool or LUN group is not registered in the ETERNUS Disk storage system.

[Solution]

Specify a Thin Provisioning Pool or LUN group that is registered in the ETERNUS Disk storage system, and then try again.

■ 8151

[Cause]

Startup or shutdown of the ETERNUS Disk storage system is currently being performed.

[Solution]

Wait for the startup or shutdown process of the ETERNUS Disk storage system to complete, and then try again.

■ 8156

[Cause]

The RAID group to which the specified volume belongs is undergoing LDE.

[Solution]

Wait for LDE to complete, and then try again.

■ D010

[Cause]

Encryption was specified for a RAID group that is configured with SEDs.

[Solution]

Specify encryption for a RAID group that is not configured with SEDs.

■ E007

[Cause]

The specified volume is undergoing an Advanced Copy (Offloaded Data Transfer Copy).

[Solution]

Wait for the Advanced Copy process to complete, and then try again.

■ STXE2014

[Cause]

The created volume was not recognized by a host even after an extended period of time. The process finished without creating a datastore.

[Solution]

Check if the created volume is recognized by vSphere Web Client. If the created volume is recognized, convert it to a datastore manually. If the created volume is not recognized, scan the host HBA again, and check if the created volume is recognized.

■ STXE2015

[Cause]

Rescanning of HBAs for the host failed.

[Solution]

Rescan the HBAs of the target host from vSphere Web Client. After scanning is complete, make sure that the added datastore volume exists in vSphere Web Client and that the deleted datastore volume does not exist.

■ For error numbers other than the above

[Cause]

An error was detected.

[Solution]

Refer to ["Chapter 11 Required Information for Failure Investigation" \(page 66\)](#) to prepare any required information for troubleshooting, and then contact a Fujitsu engineer.

Appendix D

JRE Use Conditions



Before using ETERNUS vCenter Plug-in, you must agree to the following articles regarding the handling of the Java Runtime Environment (JRE) that is packaged together with this software. If you do not agree to these articles, you cannot use ETERNUS vCenter Plug-in.

(1) Observe the JRE use conditions that are described in the license text file.

The license text is stored under the following directory or file:

Program folder\ETERNUS-MICC\jre*(version of JRE)*\LICENSE

Program folder\ETERNUS-MICC\jre*(version of JRE)*\THIRDPARTYLICENSEREADME.txt

(2) The JRE that is packaged together with ETERNUS vCenter Plug-in cannot be used for any purposes other than the operation of this software.

(3) Fujitsu shall not be liable for loss or damage caused by using JRE under conditions other than [\(1\)](#) and [\(2\)](#) above.

Appendix E

About Open Source Software License

This product uses the following open source software:

- Ganymed SSH-2 for Java
The license that is applied to this software is stored in the following file:
Program folder\ETERNUS-MICC\jars\LICENSE.txt
- VMware vSphere Web Service SDK
The license that is applied to this software is stored in the following file:
Program folder\evcpService\open_source_licenses.txt

ETERNUS vCenter Plug-in 2.2 User's Guide

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