

ETERNUS VASA Provider

Software Release Guide

Windows

FJSVESFIP-0100DC-STG-E-07
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Preface

Purpose

This manual describes ETERNUS VASA Provider, software that provides API to manage ETERNUS Disk storage systems on VMware(R) vCenter(TM) Server.

Intended Readers

This manual is intended for system administrators who use ETERNUS Disk storage systems to run VMware(R) vCenter(TM) Server.

Organization

This manual is composed as follows:

[Chapter 1 Overview](#)

The overview of the functions of this product is described.

[Chapter 2 Setup](#)

The setup and uninstall of ETERNUS VASA Provider is described.

[Chapter 3 Maintenance](#)

The maintenance procedure to use ETERNUS VASA Provider is described.

[Appendix A Configuration File](#)

The configuration file for ETERNUS VASA Provider is described.

[Appendix B Command Reference](#)

Many different types of commands to use ETERNUS VASA Provider are described.

[Appendix C Event Log](#)

The event logs output by the ETERNUS Information Provider service are described.

[Appendix D Information Notified to vCenter Server](#)

The information of which the ETERNUS Information Provider service notifies VMware(R) vCenter(TM) Server is described.

[Appendix E Customize Capability Information](#)

This appendix describes how to customize capability information.

[Appendix F Information Provided in Older Versions](#)

This appendix describes the information provided to VMware(R) vCenter(TM) Server by older versions of ETERNUS VASA Provider.

Notation

- Microsoft(R) Windows Server(R) 2003, Standard Edition, Microsoft(R) Windows Server(R) 2003 and Enterprise Edition are abbreviated as "Windows Server 2003".
- Microsoft(R) Windows Server(R) 2003 R2, Standard Edition, Microsoft(R) Windows Server(R) 2003 R2 and Enterprise Edition are abbreviated as "Windows Server 2003 R2".
- Microsoft(R) Windows Server(R) 2008 Standard, Microsoft(R) Windows Server(R) 2008 Enterprise and Microsoft(R) Windows Server(R) 2008 Datacenter are abbreviated as "Windows Server 2008".
- Microsoft(R) Windows Server(R) 2008 R2 Standard, Microsoft(R) Windows Server(R) 2008 R2 Enterprise and Microsoft(R) Windows Server(R) 2008 R2 Datacenter are abbreviated as "Windows Server 2008 R2".
- Microsoft(R) Windows Server(R) 2012 Standard and Microsoft(R) Windows Server(R) 2012 Datacenter are abbreviated as "Windows Server 2012".
- ETERNUS SF Storage Cruiser is abbreviated as "Storage Cruiser".
- VMware(R) vCenter(TM) Server and vSphere(R) vCenter(TM) Server are abbreviated as "vCenter Server" or "vCenter".

- VMware(R) ESXi(TM) Server and vSphere(R) ESXi(TM) Server are abbreviated as "ESXi Server" or "ESXi".
- ETERNUS SF Express V15.x/ ETERNUS SF Storage Cruiser V15.x/ ETERNUS SF AdvancedCopy Manager V15.x Installation and Setup Guide are abbreviated as "ETERNUS SF V15.x Installation and Setup Guide".
- ETERNUS SF Express V15.x/ ETERNUS SF Storage Cruiser V15.x/ ETERNUS SF AdvancedCopy Manager V15.x Web Console Guide are abbreviated as "ETERNUS SF V15.x Web Console Guide".

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Chapter 1 Overview

This chapter describes the overview of ETERNUS VASA Provider.

1.1 What is ETERNUS VASA Provider?

The ETERNUS VASA Provider is the software that supports vStorage API for Storage Awareness (VASA) which is a storage management interface for vCenter Server and provides the management information on ETERNUS Disk storage systems on the request of vCenter Server.



See

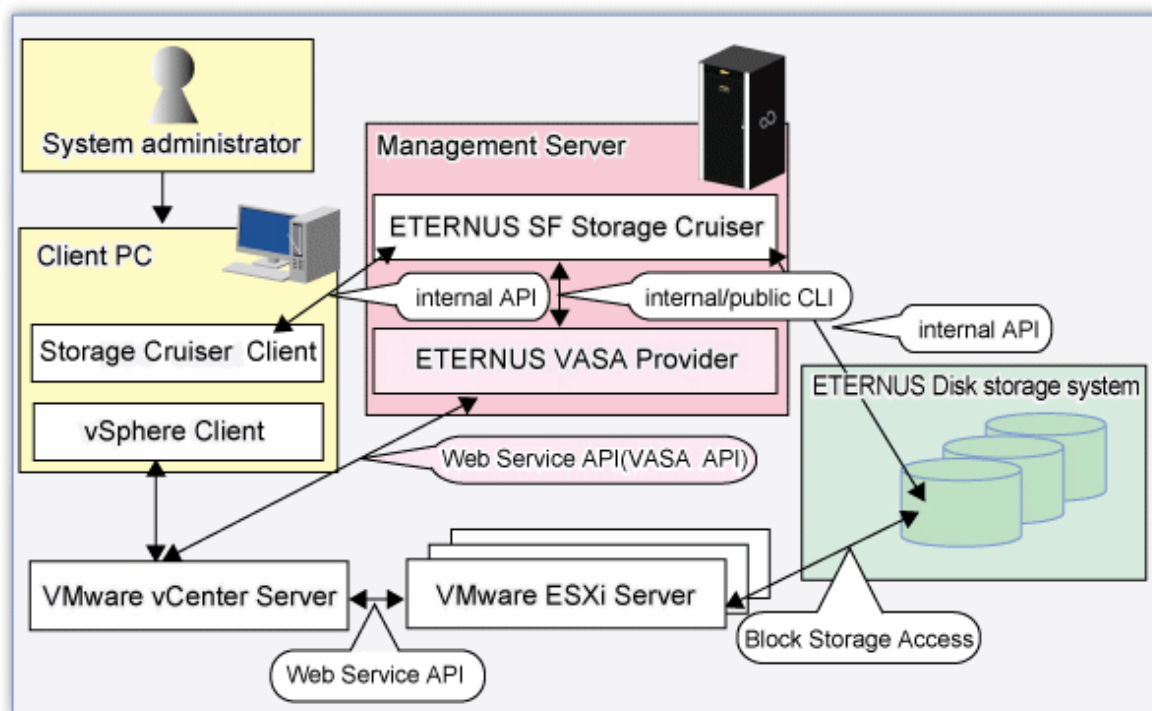
For more information on VASA Provider, refer to the VMware vSphere5 manual.

1.2 System Configuration

The ETERNUS VASA Provider obtains the information on ETERNUS Disk storage systems using Storage Cruiser (paid) to monitor them.

The following is a system configuration example of managing ETERNUS Disk storage systems from vCenter Server using ETERNUS VASA Provider.

Figure 1.1 System configuration example using ETERNUS VASA Provider



1.3 Required Environment

This section describes the required environment to use ETERNUS VASA Provider.

1.3.1 Hardware requirements

To use ETERNUS VASA Provider, the hardware that meets the following hardware requirements is needed.

Table 1.1 Hardware requirements

Hardware	Requirement
Management Server	1 Gbyte or more of memory
Disk storage system (excluding SAS model)	Use any of the following systems: <ul style="list-style-type: none"> - ETERNUS DX series - ETERNUS2000 series - ETERNUS4000 series - ETERNUS8000 series

1.3.2 Software requirements

To use ETERNUS VASA Provider, the software that meets the following software requirements is needed.

Table 1.2 Software requirements

Software	Requirement
Operating system	Use any of the following operating systems: <ul style="list-style-type: none"> - Microsoft(R) Windows Server(R) 2003 (x86/x64) - Microsoft(R) Windows Server(R) 2003 R2 (x86/x64) - Microsoft(R) Windows Server(R) 2008 (x86/x64) - Microsoft(R) Windows Server(R) 2008 R2 - Microsoft(R) Windows Server(R) 2012
ETERNUS SF Storage Cruiser	Version 14.2, 14.2A, 15.0B, 15.1, 15.2, 15.2A, 15.3, 15.3A (*1)(*2)
Java Runtime Environment (32bit)	Version 6 Update 6 or later (*2) (*3)

*1: The most updated urgent patch should be applied.

*2: They should be installed on the Management Server that has ETERNUS VASA Provider installed.

*3: Not required if combined with Storage Cruiser V15.x. If combined with Storage Cruiser V14.2 or V14.2A, obtain what the JRE vendor provides separately.



Note

- Exclusive software is the same as that for Storage Cruiser.



See

For more information on the exclusive software for Storage Cruiser V14.2 and V14.2A, refer to the "ETERNUS SF Storage Cruiser V14.2 Installation and Setup Guide".

For more information on the exclusive software for Storage Cruiser V15.x, refer to the "ETERNUS SF V15.x Installation and Setup Guide" for the relevant version.

- The vCenter Server cannot coexist on the Management Server on which ETERNUS VASA Provider is installed. It should be installed on other server than the Management Server.

- Connection configuration supported by ETERNUS VASA Provider

There are two types of connection configuration between ETERNUS Disk storage system and server as follows. ETERNUS VASA Provider supports only Fabric connection, not FC-AL (direct) connection.

- FC-AL (direct) connection: ETERNUS Disk storage system and server are directly connected.

ETERNUS Disk storage system - Server

- Fabric connection: ETERNUS Disk storage system and server are connected by way of FC switch or iSCSI.

ETERNUS Disk storage system - FC switch - Server

ETERNUS Disk storage system - iSCSI - Server

When using ETERNUS VASA Provider, it is necessary to register the associated storage system and all the switches to Storage Cruiser beforehand. Connect ETERNUS Disk storage system to ESXi Server by means of Fabric connection alone.

Figure 1.2 Supported Configuration

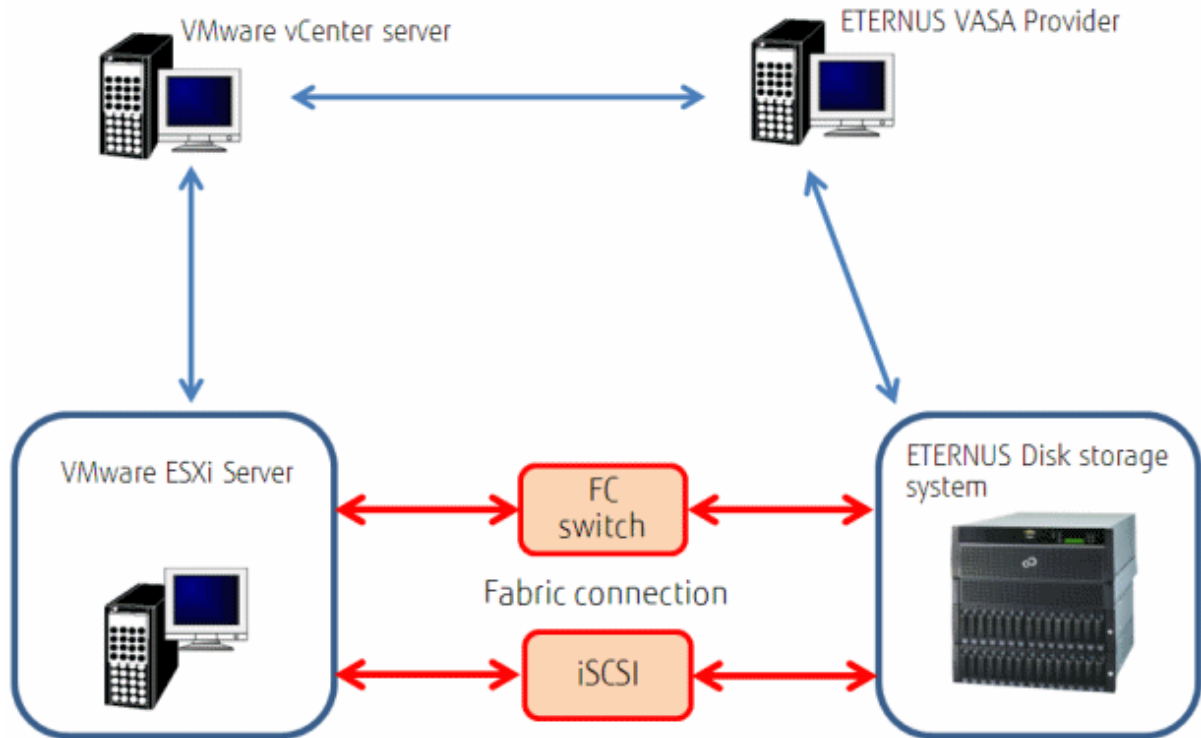
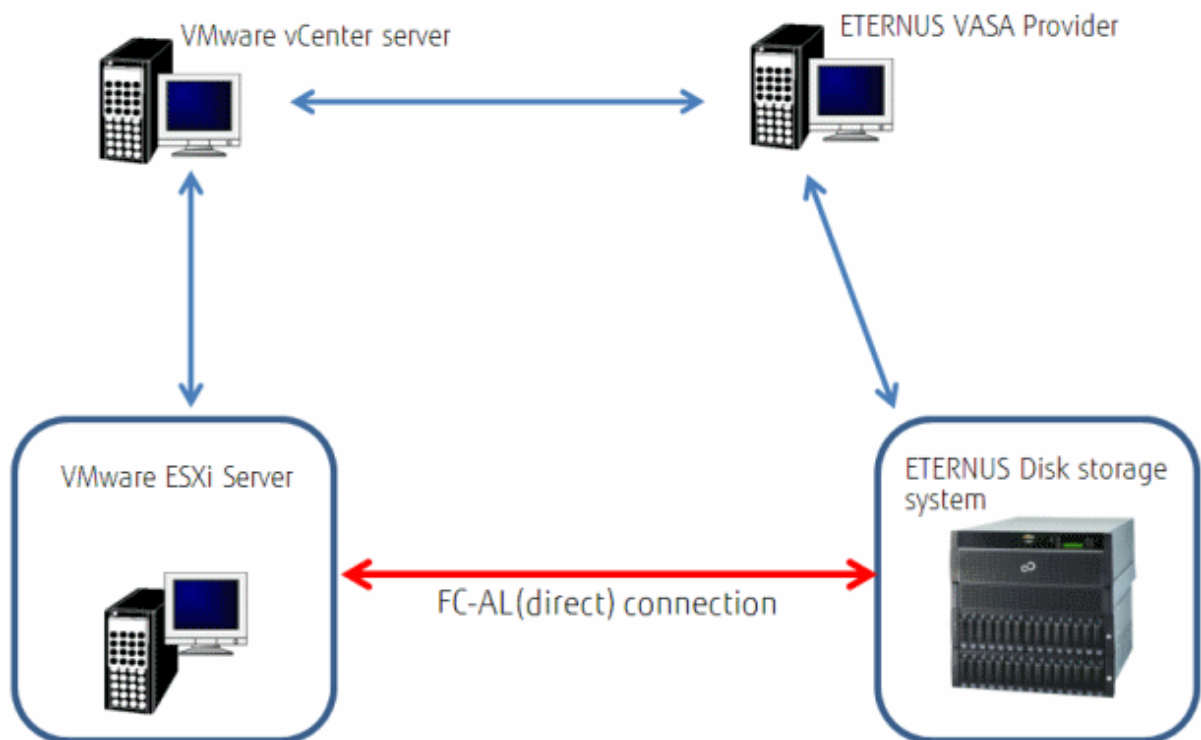


Figure 1.3 Non Supported Configuration



Chapter 2 Setup

This chapter describes how to set up and uninstall ETERNUS VASA Provider.

2.1 Preparation

Before installing ETERNUS VASA Provider, take the following steps.

- Install the software shown in "[1.3.2 Software requirements](#)".
- Check that any exclusive software is not installed.

2.2 Install

Install ETERNUS VASA Provider onto the Management Server.

ETERNUS VASA Provider serves as Windows service (service name: ETERNUS Information Provider). Therefore, install the ETERNUS Information Provider service onto the Management Server.

The following is the procedure to install the ETERNUS Information Provider service onto the Management Server.

1. Run the installer (setup.exe).



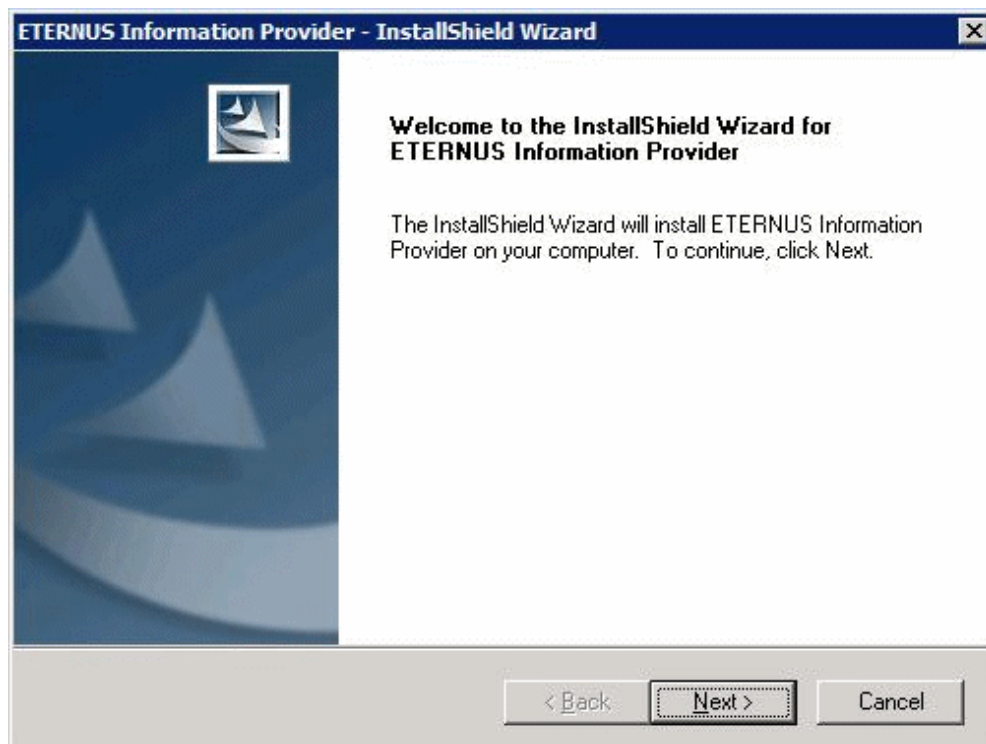
See

Download the installer from Fujitsu homepage.

Fujitsu homepage

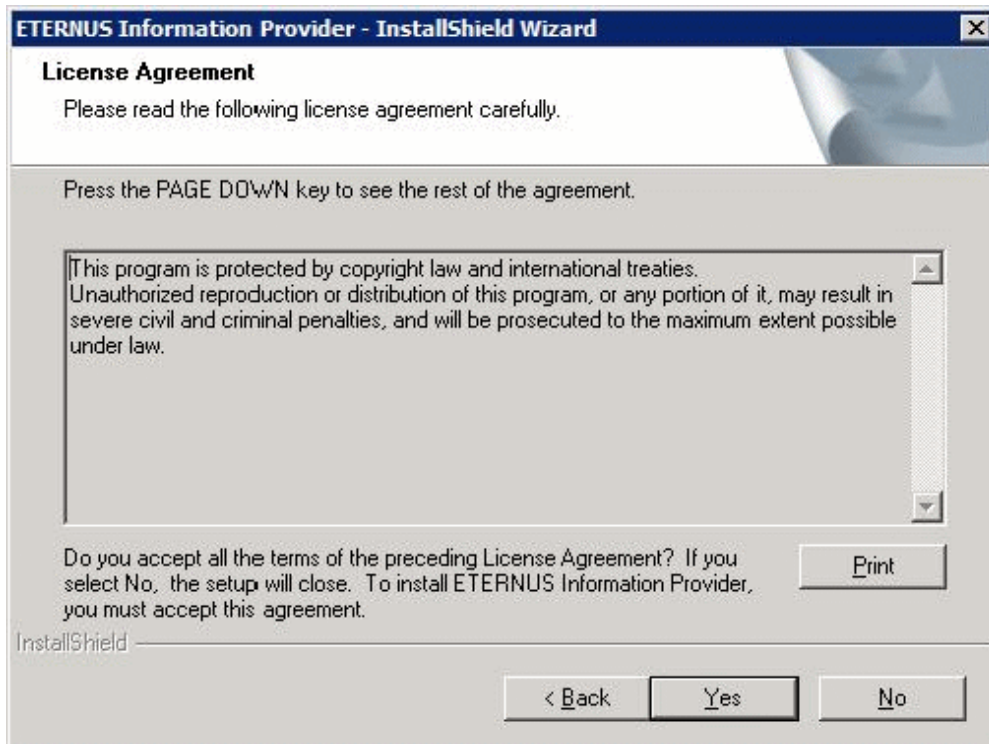
<http://www.fujitsu.com/global/services/computing/storage/eternus/tools/>

The installer is started and the [Welcome to the InstallShield Wizard for ETERNUS Information Provider] screen is displayed.



2. Check the contents and click the [Next] button.

3. Sign up for license agreement on the [License Agreement] screen. Check the displayed contents and if there is no problem, click the [Yes] button.

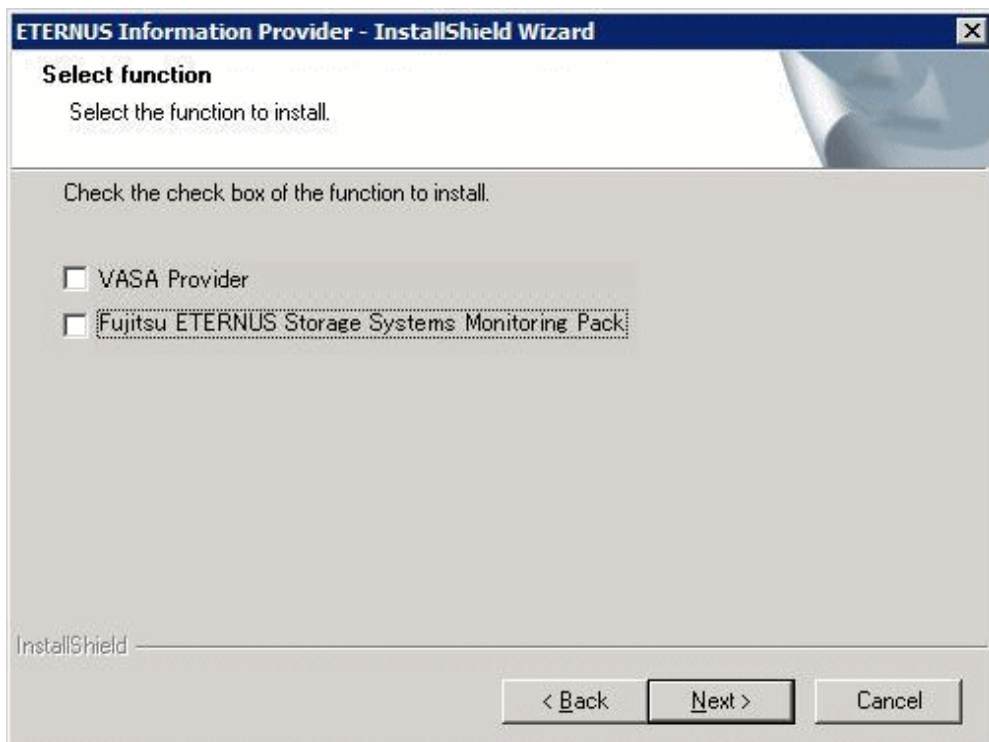


4. Specify the function you want to install on the [Select function] screen. Check the "VASA Provider" checkbox and click the [Next] button.

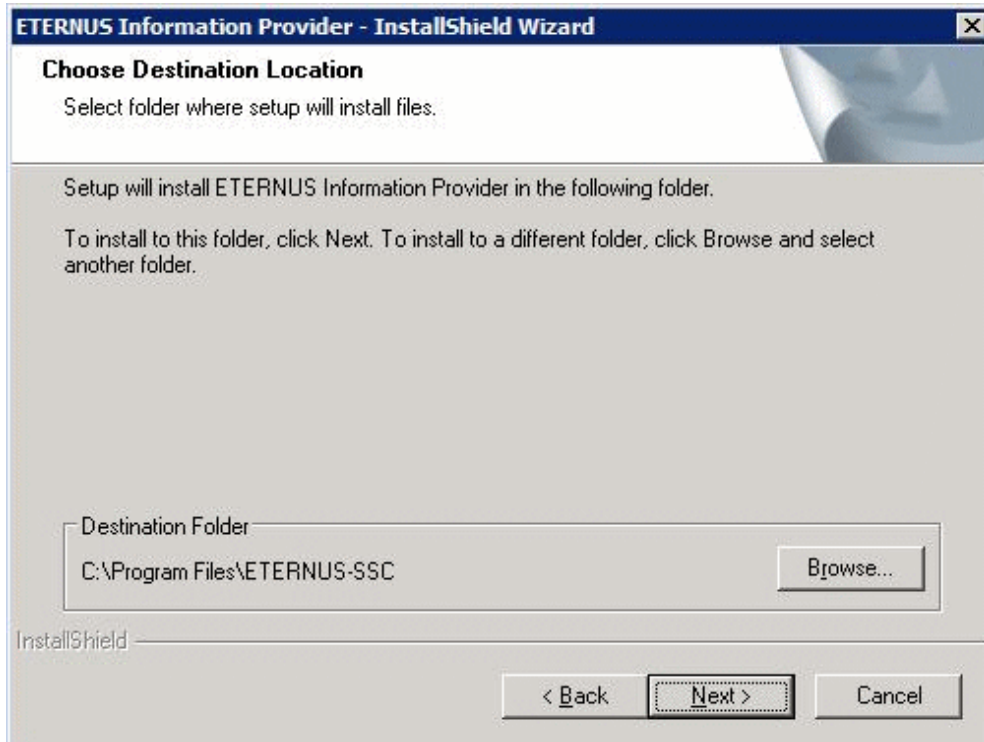


Information

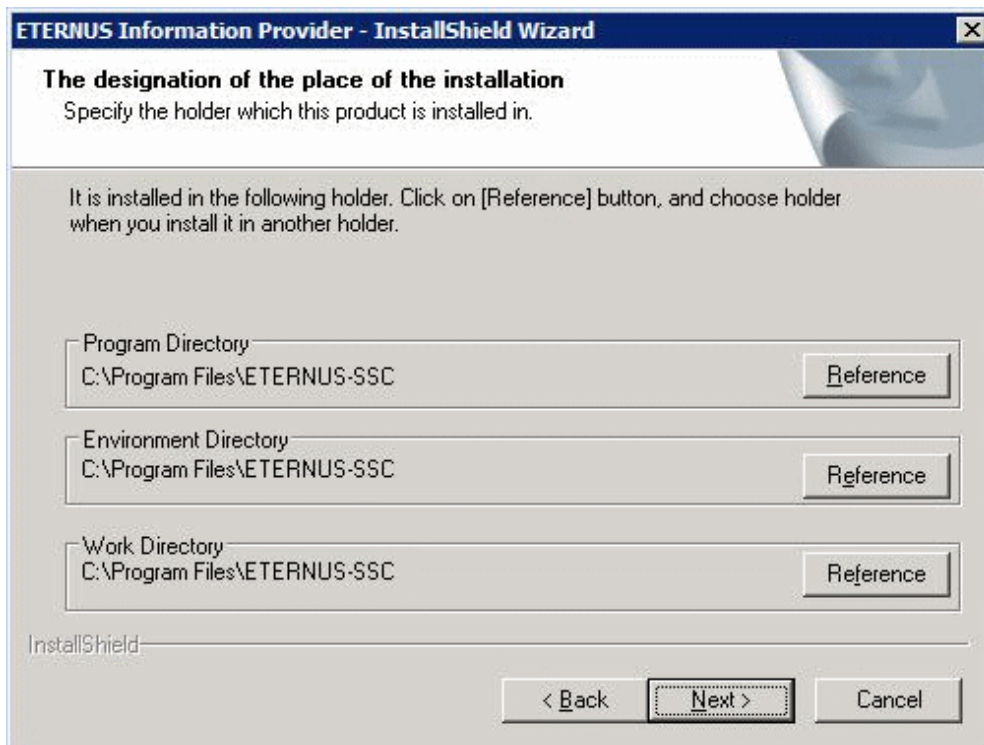
.....
You do not have to check the "Fujitsu ETERNUS Storage System Monitoring Pack" checkbox.
.....



5. Specify the install destination on the [Choose Destination Location] screen. If you do not change the install destination folder, click the [Next] button.
If you change, click the [Browse] button.



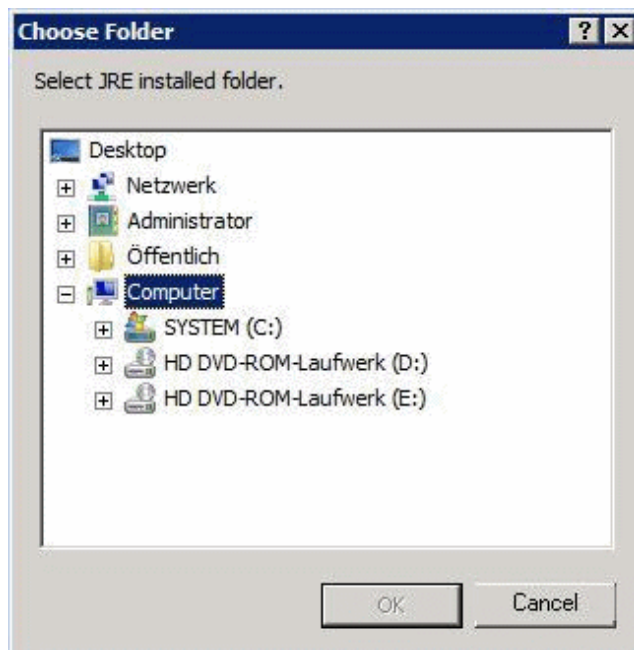
Click the [Reference] button on the [The destination of the place of the installation] screen to change the install destination folder.



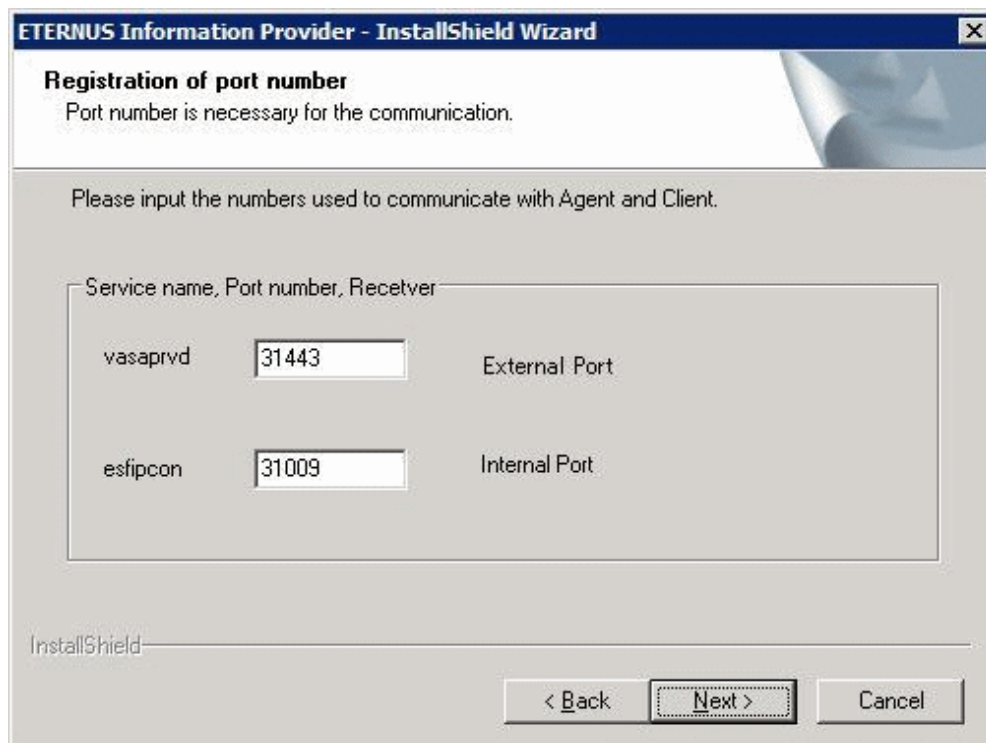
6. In the case of combination of Storage Cruiser V14.2 or V14.2A, specify the folder in which JRE is installed on the [Choose Folder] screen to click the [OK] button. In the case of combination of Storage Cruiser V15.x, this dialog does not exist.

Example

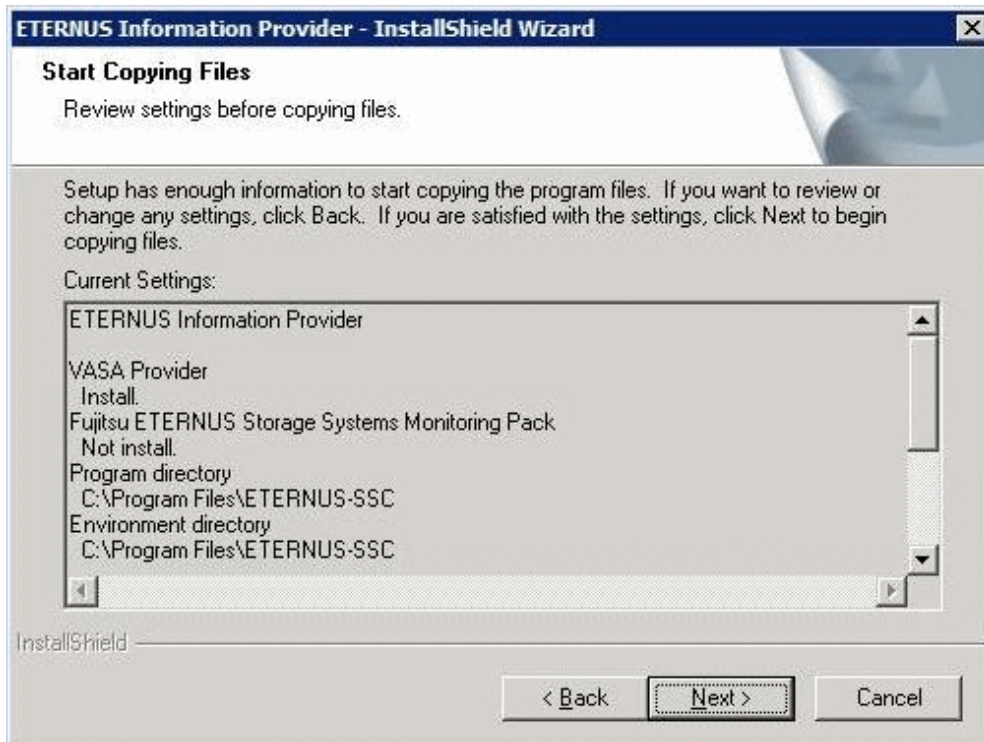
C:\Program Files\Java\jre6



- On the [Registration of port number] screen, specify in "vasaprvd" the port number(s) used for communication between ETERNUS VASA Provider and vCenter Server and in "esfipcon" the port number(s) used for internal communication. If the port number(s) is already used for other purpose, change to an unused port number. If [OK] with the displayed port number, click the [Next] button.



8. Check the setting contents on the [Start Copying Files] screen. If you do not change the contents, click the [Next] button. If you change, click the [Back] button to change the contents.



9. Enter the account for ETERNUS VASA Provider on the [Create user name, password] screen (check the username and password) to click the [Next] button.



Note

For the account for ETERNUS VASA Provider, enter the same one as set when registering ETERNUS VASA Provider with vCenter Server. (Refer to "[2.3.2 vCenter Server Settings](#)")

The screenshot shows the 'Create user name, password' step of the ETERNUS Information Provider - InstallShield Wizard. The window title is 'ETERNUS Information Provider - InstallShield Wizard'. The main heading is 'Create user name, password'. Below the heading, it says 'Please input VASA Provider's user name and password.' There are three input fields: 'User name', 'Password', and 'Confirm'. At the bottom right, there is a 'Next >' button.

10. On completion of installation, when the following [InstallShield Wizard Complete] screen is displayed, select "No, I will restart my computer later" and click the [Finish] button to finish installation.
After installation, execute "[2.3 Initial Settings](#)".

The screenshot shows the 'InstallShield Wizard Complete' screen of the ETERNUS Information Provider - InstallShield Wizard. The window title is 'ETERNUS Information Provider - InstallShield Wizard'. The main heading is 'InstallShield Wizard Complete'. Below the heading, it says 'The InstallShield Wizard has successfully installed ETERNUS Information Provider. Before you can use the program, you must restart your computer.' There are two radio button options: 'Yes, I want to restart my computer now.' (which is selected) and 'No, I will restart my computer later.' Below the options, it says 'Click Finish to complete setup.' At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'.

2.3 Initial Settings

After installing the ETERNUS Information Provider service onto the Management Server, initialize ETERNUS VASA Provider.

2.3.1 vCenter Server Account Settings

ETERNUS VASA Provider communicates with vCenter Server to obtain VM information. Therefore, specify for ETERNUS VASA Provider the account information to login to vCenter Server.

The following is a description of the procedure to set up ETERNUS VASA Provider.

1. Start the command prompt to move to the following folder.

```
<Program Directory>\bin
```

2. Execute the defuinfo command to register the login account for VCenter Server.



Example

When registering the following:

- vCenter Server: 10.90.123.1
- Username: vasauser
- Password: abc@0123
- Identification data: vcenter1

```
defuinfo -a vcenter1 10.90.123.1 vasauser abc@0123
```

3. For the configuration file for ETERNUS VASA Provider, define the identification data specified with the above defuinfo command.

The configuration file is stored in <Environment Directory>\FJSVesfip\etc\conf\InformationProvider.conf.



Example

If the identification data specified with the defuinfo command is "vcenter1", specify "vcenter1" for the value in "vCenterServerInfo" in the configuration file.

```
vCenterServerInfo=vcenter1
```



See

- For the defuinfo command, refer to "[Appendix B Command Reference](#)".
- For the configuration file, refer to "[Appendix A Configuration File](#)".

2.3.2 vCenter Server Settings

Set up ETERNUS VASA Provider with vCenter Server.

Each parameter supposed to be set on the "Add Vendor Provider" dialog box is as follows:

Item to be set	Setting value
Name	Any name that expresses ETERNUS VASA Provider. (e.g.: ETERNUS)
URL	https://<Management Server IP address>:31443/vasa/services/vasaService (*1)
Login	Username set with the installer.
Password	Password set with the installer.

Item to be set	Setting value
Certificate Location	Copy the file below on the Management Server to any folder of vCenter Server to specify the certificate location. (*2) <Environment Directory>\etc\conf\fjsvesfip.cer

*1: If you have changed the port number of vasaprvd with the installer, use "31443" as the changed number.

*2: Checking the "Use Vender Provider Certificate" checkbox enables the setting contents of "Certificate Location".



See

For information on how to register VASA Provider, refer to the VMware vSphere5 manual.

2.3.3 Storage Cruiser Settings

Before starting the ETERNUS VASA Provider service, register ETERNUS Disk storage systems and ESXi Server to be managed onto Storage Cruiser so that they can be monitored.



See

For how to register and set up ETERNUS Disk storage systems and ESXi Server onto Storage Cruiser V14.2 and V14.2A, refer to the "ETERNUS SF Storage Cruiser V14.2 User's Guide".

For how to register and set up ETERNUS Disk storage systems and ESXi Server onto Storage Cruiser V15.x, refer to the "ETERNUS SF V15.x Web Console Guide" and "ETERNUS SF Storage Cruiser V15.x Operation Guide" for the relevant version.

2.3.4 Security Settings

ETERNUS VASA Provider waits for requests from vCenter Server at the TCP port number specified with the installer.
Set up a firewall for the Management Server so as to enable the network communication with vCenter Server.

2.4 Service Startup

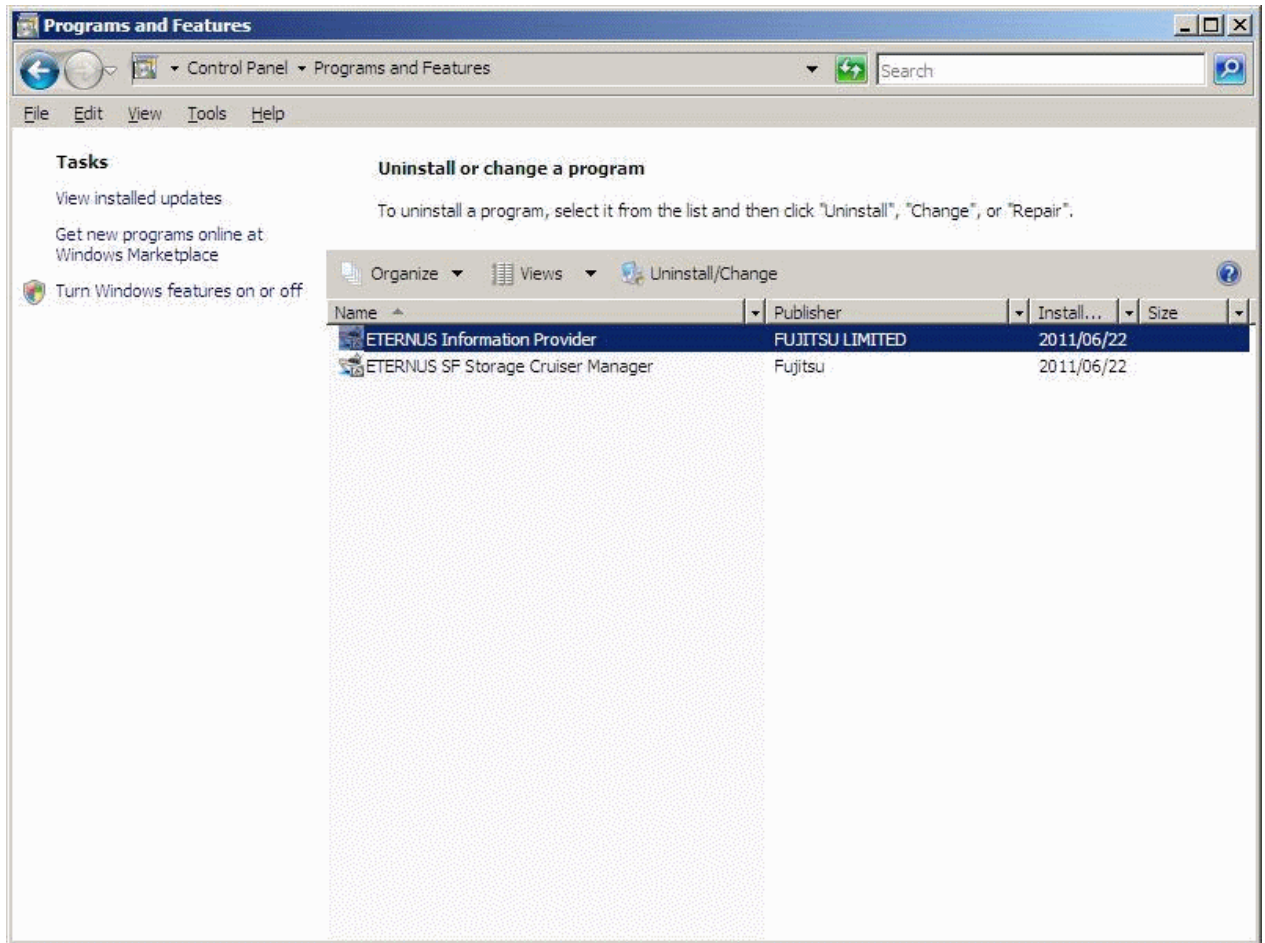
Start the ETERNUS Information Provider service on the [Administrative Tools]-[Services] screen.

2.5 Uninstall

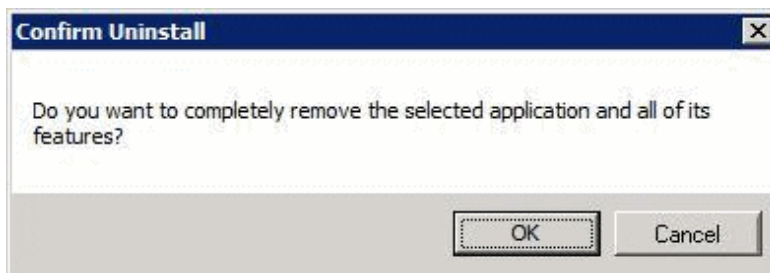
When uninstalling ETERNUS VASA Provider from the Management Server, since ETERNUS VASA Provider is running as Windows service (service name: ETERNUS Information Provider), uninstall the ETERNUS Information Provider service from the Management Server.

The following is the procedure to uninstall the ETERNUS Information Provider service.

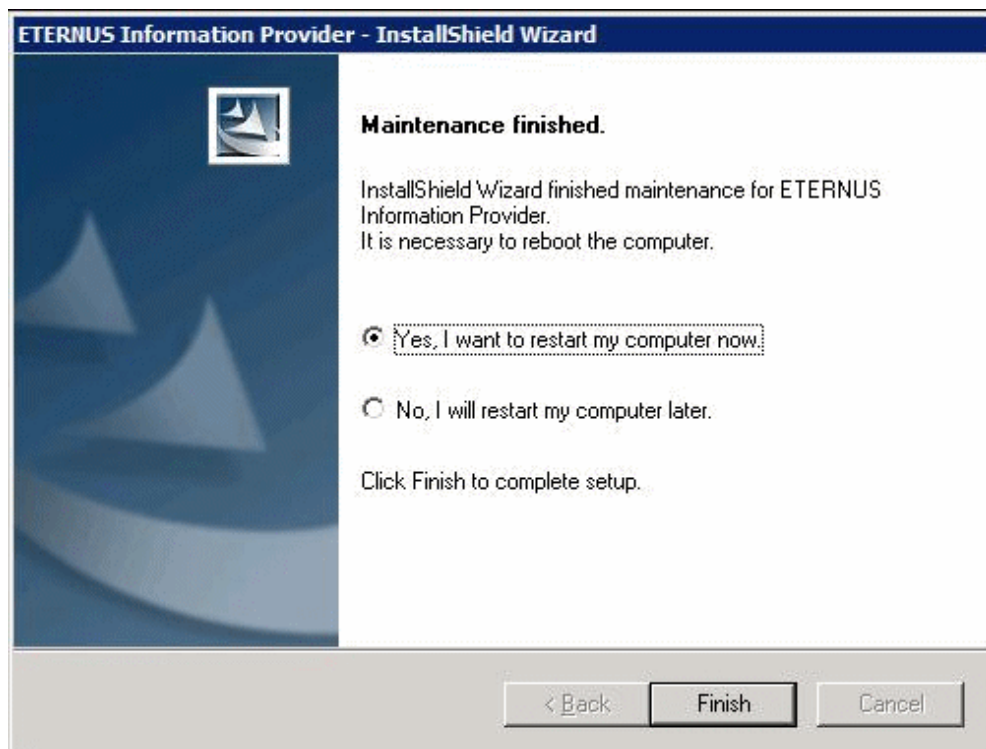
1. Open the [Programs and Features] screen from the Control panel to select ETERNUS Information Provider and click the [Change/Remove] button.



2. The following [Confirm Uninstall] screen is displayed. Click the [OK] button.



3. Click the [Finish] button to finish uninstallation.



Chapter 3 Maintenance

This chapter describes the ETERNUS VASA Provider maintenance.

3.1 Configuration Change

3.1.1 Account Change

This section describes how to change the account information for ETERNUS VASA Provider.

1. Start the command prompt to move to the following folder.

```
<Program Directory>\bin
```

2. Execute the defuinfo command to delete the current account for ETERNUS VASA Provider.

Specify "VasaProviderCred" for identification data.

```
defuinfo -d VasaProviderCred
```

3. Execute the defuinfo command to register new account information for ETERNUS VASA Provider.

Specify "VasaProviderCred" for identification data.



Example

When setting this account (username: eternus, password: vasa123):

```
defuinfo -a VasaProviderCred eternus vasa123
```



See

For the defuinfo command, refer to "[Appendix B Command Reference](#)".

3.1.2 Port number Change

This section describes the procedure to change the port numbers set with the installer.

1. Stop the ETERNUS Information Provider service.
2. Modify the contents of the XML file.

- XML file

```
<Program Directory>\FJSVesfip\tomcat\conf\server.xml
```

- Modified contents

Tag name	Attribute name	Specified value
Connector	port	Port number that waits for requests from vCenter Server
Server	port	Internal port number used by ETERNUS Information Provider service

3. Start the ETERNUS Information Provider service.

3.2 Maintenance Data Collection

If any trouble occurs or you make inquiries, provide a Fujitsu system engineer (SE) with the following information and data.

- Phenomenon
- Occurrence time
- Repeatability
- Maintenance data for ETERNUS Information Provider

Collect the following data.

- <Environment Directory>\FJSVesfp\etc
- <Work Directory>\FJSVesfp\var
- <Program Directory>\FJSVesfp\tomcat\conf
- <Program Directory>\FJSVesfp\tomcat\logs
- Maintenance data for Storage Cruiser

Collect the analysis data for Management Server (Windows).



See

.....

In the case of Storage Cruiser V14.2 or V14.2A, for analysis data for Management Server (Windows), refer to "Appendix D Troubleshooting" in the "ETERNUS SF Storage Cruiser V14.2 User's Guide".

In the case of Storage Cruiser V15.x, for analysis data for Management Server (Windows), refer to "Appendix B Troubleshooting" in the "ETERNUS SF Storage Cruiser V15.x Operation Guide" for the relevant version.

.....

Appendix A Configuration File

This appendix describes the configuration file for ETERNUS Information Provider service.

The configuration file is a text file where "item name=value" is displayed in each line.

The configuration file is stored in "<Environment Directory>\FJSVesfip\etc\conf\InformationProvider.conf".

- The following are the items required to be specified in the configuration file:



Note

Do not change items other than the following.

Item	Value type	Value description
vCenterServerInfo	String	Specify with the Set User command (defuinfo) the key string used when the account for vCenter Server was registered. If multiple accounts are registered, divide them with commas to specify multiple key strings.
EffectiveFunction	String	When enabling the ETERNUS VASA Provider function, specify "VASAProvider". If "VASA Provider" is enabled with the Installer, "VASAProvider" is specified by default.
EffectiveCapability	String	When notifying the Capability information (*) of this version, specify "8". When notifying the Capability information of older version, specify "1,2,3,4,5,6,7". When notifying the Capability information of both this version and older version, specify "1,2,3,4,5,6,7,8". For default, "8" is specified.

(*) For the Capability information of this version, refer to "[Appendix D Information Notified to vCenter Server](#)" and for the Capability information of older version, refer to "[Appendix F Information Provided in Older Versions](#)".

- How to change the configuration file:
 1. Stop the ETERNUS Information Provider service.
 2. Update the contents of the configuration file.
 3. Restart the ETERNUS Information Provider service.

Appendix B Command Reference

This appendix describes how to use commands.

B.1 Set User Command (defuinfo)

NAME

defuinfo - Account information settings

SYNOPSIS

```
defuinfo -a key-name IP-address username password
defuinfo -a key-name username password
defuinfo -l [key-name]
defuinfo -d key-name
```

DESCRIPTION

Set up the following account information for ETERNUS VASA Provider.

- Login account for vCenter Server
- Account for ETERNUS VASA Provider

OPTIONS

-a *key-name IP-address username password*

The login account for vCenter Server is registered. If registration is done with a registered key name, an error will occur.

Operand	Explanation
<i>key-name</i>	Specify any string less than 255 bytes. Changing the key name can register multiple accounts.
<i>IP-address</i>	Specify the IP address for vCenter Server.
<i>username</i>	Specify the username for vCenter Server less than 255 bytes.
<i>password</i>	Specify the password of the above user less than 255 bytes.

-a *key-name username password*

The account for ETERNUS VASA Provider is registered. If registration is done with a registered key name, an error will occur.

Operand	Explanation
<i>key-name</i>	Specify "VasaProviderCred". Only one account can be registered.
<i>username</i>	Specify the username for ETERNUS VASA Provider less than 255 bytes.
<i>password</i>	Specify the password of the above user less than 255 bytes.

-l [*key-name*]

Registered information is displayed.

For the specified key name, the defined IP address or username is displayed.

Specify the key name for which you want to display the registered information.

If the key name is omitted, all the registered accounts are displayed.

-d *key-name*

Registered account information is deleted.

NOTES

- Execute the defuinfo command with administrator privileges.
- The account information specified by this command is used only for running ETERNUS VASA Provider and has nothing to do with the startup user for ETERNUS Information Provider service and login user for Management Server.

B.2 Messages Output by the Command

The following is a description of the messages displayed on the Command Prompt window when the defuinfo command is executed.

uinfo1001

User authority error

Explanation

There is no command execution right.

Type

Error

System administrator response

Re-execute the command with administrator privileges.

uinfo1002

Information registration is failed

Explanation

The number of information registration has reached the upper limit.

Type

Error

System administrator response

Remove unnecessary definitions if any. Then, re-execute the command.

uinfo1003

Specified key is not found

Explanation

The specified key does not exist.

Type

Error

System administrator response

Specify a correct key to re-execute the command.

uinfo1004

Parameter error

Explanation

There is an error in the specified parameter.

Type

Error

System administrator response

Specify a correct parameter to re-execute the command.

uinfo1005

Process is busy now

Explanation

Since the defuinfo command is running another process, it cannot be executed.

Type

Error

System administrator response

Wait for a while and then re-execute the command.

uinfo1006

I/O error (f1)

Explanation

File input/output error occurred. (f1: error-produced file name)

Type

Error

System administrator response

Check if you can properly refer to the file displayed in f1. Then, re-execute the command.

If this message is output repeatedly, collect the analysis data to contact a Fujitsu engineer (SE).

uinfo1007

Command execution is failed (s1)

Explanation

A failure occurred in executing the command. (s1: details of the phenomenon that occurred)

Type

Error

System administrator response

Check if this function is properly installed and then, re-execute the command.

If this message is output repeatedly, collect the analysis data to contact a Fujitsu engineer (SE).

uinfo1008

Specified key already exists

Explanation

The specified key is already registered.

Type

Error

System administrator response

Specify a correct key to re-execute the command.

Appendix C Event Log

This appendix describes the event logs output by the ETERNUS Information Provider service.
The type of event logs is application and its source is fjsvesfip.

Message description

esfip10001

Provider is started.

Explanation

The ETERNUS Information Provider service has started.

Type

Information

System action

None.

System administrator response

No response is required.

esfip11001

Provider is not started. (Service initialization failed.)

Explanation

The startup of the ETERNUS Information Provider service failed.

Type

Error

System action

The system terminates processing.

System administrator response

Collect the analysis data to contact a Fujitsu engineer (SE).

esfip20001

Provider is normally stopped.

Explanation

The ETERNUS Information Provider service stopped.

Type

Information

System action

None.

System administrator response

No response is required.

esfip00001

Failed to get storage information. (%s1).

Explanation

Getting storage information failed.

Parameters

%s1: Message telling the cause of the failure to get storage information.



See

For details of the message, refer to "System administrator response".

Type

Error

System action

None.

System administrator response

Refer to the following detailed messages for parameter of esfip00001.

Detailed message	vCenterServerInfo has no value.
Explanation	No value is specified for vCenterServerInfo in the configuration file.
System administrator response	Specify a value for vCenterServerInfo in the configuration file to restart the ETERNUS Information Provider service.

Detailed message	vCenterServerInfo contains invalid value.
Explanation	The value of vCenterServerInfo in the configuration file is invalid.
System administrator response	Specify a correct value for vCenterServerInfo in the configuration file to restart the ETERNUS Information Provider service.

Detailed message	vCenterServerInfo contains value duplication.
Explanation	The value of vCenterServerInfo in the configuration file is overlapped.
System administrator response	Specify a correct value for vCenterServerInfo in the configuration file to restart the ETERNUS Information Provider service.

Detailed message	Specified vCenterServerInfo key was not found in encrypted information. (<i>key</i>)
Explanation	The key specified for vCenterServerInfo in the configuration file is not found.
System administrator response	Check with the Set User command if the key information is properly set, and if not so, set it properly. Then, restart the ETERNUS Information Provider service.

Detailed message	Failed to decrypt user information.
Explanation	Error occurred in internal processing.
System administrator response	If the message is displayed repeatedly, collect the analysis data to contact a Fujitsu engineer (SE).

Detailed message	Connection to vCenter Server time out. (<i>key</i>)
------------------	---

Explanation	Connecting to vCenter Server failed.
System administrator response	Check if there is any failure in the network environment with vCenter Server. Or, properly set the access information (IP address, port number) to vCenter Server set with the Set User command. Then, restart the ETERNUS Information Provider service.

Detailed message	Failed to login to vCenter Server. (<i>key</i>)
Explanation	Login to vCenter Server failed.
System administrator response	Properly set the account information (username, password) to vCenter Server set with the Set User command. Then, restart the ETERNUS Information Provider service.

Detailed message	Unsupported vCenter Server version. (<i>key</i>)
Explanation	The version of vCenter Server is unsupported.
System administrator response	Check the access information to vCenter Server set with the Set User command to specify vCenter Server that supports VASA. Then, restart the ETERNUS Information Provider service.

Detailed message	Command not found.
Explanation	This may be because Storage Cruiser is not installed or the version is unsupported.
System administrator response	If Storage Cruiser is not installed, install it. If Storage Cruiser is installed, check if it is a supported version.

Detailed message	Command abnormally ended.
Explanation	Collecting information from the storage system failed.
System administrator response	<p>Check the following points managed under Storage Cruiser:</p> <ul style="list-style-type: none"> - Other user login to the storage system - Support of this product by the storage system - Storage system status and failure in the network environment <p>If the above check points are not applicable, it is possible that the specified storage system is locked by another operation. If ETERNUSmgr is opened, logoff it.</p> <p>If the storage system configuration is being changed using Storage Cruiser (access path settings, access path inheritance or storage system configuration via StorageVolumeConfiguration is in progress), on completion of settings, restart the ETERNUS Information Provider service.</p> <p>In spite of the action by system administrator, if this message is output repeatedly, collect the analysis data to contact a Fujitsu engineer (SE).</p>

Detailed message	Unable to connect to the manager.
Explanation	Storage Cruiser is not running.
System administrator response	Start Storage Cruiser.

Detailed message	Internal error.
Explanation	An internal error occurred.
System administrator response	If this message is displayed repeatedly, collect the analysis data to contact a Fujitsu engineer (SE).

Detailed message	EffectiveFunction has invalid value.
Explanation	The value for EffectiveFunction in the configuration file is invalid.
System administrator response	Specify a correct value for EffectiveFunction in the configuration file to restart the ETERNUS Information Provider service.

Detailed message	EffectiveCapability has invalid value.
Explanation	The value for EffectiveCapability in the configuration file is invalid.
System administrator response	Specify a correct value for EffectiveCapability in the configuration file to restart the ETERNUS Information Provider service.

esfip00002

Failed to get Information Provider account information.

Explanation

Getting the account information for VASA Provider failed.

Type

Error

System action

None.

System administrator response

Set the account information for ETERNUS VASA Provider using the Set User command to restart the ETERNUS Information Provider service.

esfip00003

The definition error of Capability information. Line:%line% Cause:%cause%[%detail%]

Explanation

There is a definition error in the Capability information definition file.

Parameters

%line%: Number of lines that contains a definition error

%cause%: Error cause

0x01: The number of items is invalid.

0x02: Capability name is not unique in the entire definition.

0x03: The defined content of an item is invalid.

%detail%: Item number

If the defined content of an item is invalid, specify the item number.

If there are multiple errors, separate the item numbers with commas.

Type

Error

System action

If there is any definition error, this error message is output and the operation is kept running with only the target definition disabled.

In addition, if there is no valid definition, operation is run by default.

System administrator response

Configure the Capability information definition file correctly to restart the ETERNUS Information Provider service.

Appendix D Information Notified to vCenter Server

This appendix describes the information of which the ETERNUS Information Provider service notifies vCenter Server.

D.1 Capability

ETERNUS VASA Provider provides the Capability information shown below.

The vSphere Client screen can associate available disk information with such Capability information to display.



See

For how to display Capability information, refer to the vSphere5 instruction manual.

capabilityName	capabilityDetail	Explanation (this item not displayed)
AST-FTV	Flexible Tier Volume	Target volume for Automated Storage Tiering.
Extream	Solid State Drive	High-reliability, high-speed and low-power consumption volume using flash disks.
Extream-TPV	Solid State Drive & ThinProvisioning	
Performance	High Performance	High speed-priority volume appropriate for frequently accessed business operation.
Performance-TPV	High Performance & ThinProvisioning	
Availability	High Availability	High-speed volume appropriate for frequently accessed business operation.
Availability-TPV	High Availability & ThinProvisioning	
Nearline	Nearline Volume	Volume appropriate for infrequently accessed area, such as backup destination.
Nearline-TPV	Nearline Volume & ThinProvisioning	
Other	Other Volume	Other

D.2 Alarm

ETERNUS VASA Provider provides the alarm information shown below.



See

For how to display Alarm Information, refer to the VMware vSphere5 manual.

swsag4822

%EventMessage% in %SysName%(%productID%[%IPAddress%])

Explanation

The status change of the device was detected.

Parameters

%EventMessage%	Trap message information from the system
%SysName%	System name
%productID%	System model ID
%IPAddress%	System IP address

System action

None

System administrator response

When the status indicates Error or Warning, check the device status using the device management software.

When the messages indicated a timeout, check the following:

- Check if there is any failure in the network between the Management Server and the storage device. In the case of heavy network load, as well, the same status is caused.
- Check if there is any problem with communication mode settings in the network environment. If one communication mode is set to Auto Negotiation and the other to FULL-Duplex, such problems as communication failure or decreased communication speed will occur. Therefore, set the communication mode properly.

If the message showing timeout is not frequently output and there is no failure in the system, it seems to be a temporary problem, so no action is required.

If the message is frequently output, collect the analysis data to contact a Fujitsu engineer (SE).

esfip31002

Failed to obtaining information of %SysName%(%productID[%IPAddress%]).(%caus%)

Explanation

Obtaining system information failed.

Parameters

%SysName%	System name
%productID%	System model ID
%IPAddress%	System IP address
%caus%	Set Internal error or Busy error.

System action

None

System administrator response

In the case of Busy error, if the alarm of esfip31003 is output afterward, there is no problem. In the other cases, take action with regard to the message output to the event log on the Management Server.

esfip31003

Succeeded in obtaining information of %SysName%(%productID[%IPAddress%])

Explanation

The condition of the ETERNUS Disk storage system was recovered.

Parameters

%SysName%	System name
%productID%	System model ID
%IPAddress%	System IP address

System action

None

System administrator response

No response is required.

D.3 Event

ETERNUS VASA Provider provides the event information shown below.



See

For how to display Event Information, refer to the VMware vSphere5 manual.

swsag4800

Unit status changed(%status%) in %SysName%(%productID%[%IPAddress%])

Explanation

Change of the system status was detected.

Parameters

%status%	Status
%SysName%	System name, CM number, port name or LUN identifier
%productID%	System model ID
%IPAddress%	System IP address

System action

None

System administrator response

If the status shows any failure such as "Error" or "Fatal", contact a system maintenance engineer (CE).

Appendix E Customize Capability Information

Users are free to define the Capability information notified to vCenter Server by ETERNUS VASA Provider.

By customizing the Capability information definition file shown below, users can notify vCenter Server of the information corresponding to specified conditions (RAID level, disk type, number of rotation, volume type, encryption status, Eco-mode status) as Capability information.

E.1 Capability Information Definition File

The Capability information definition file exists in "<Program Directory>\FJSVesfip\etc\conf\usercapability.csv". Description is in CSV format.

Content of definition

No.	Item	Meaning	Setting value	Remarks
1	NAME	Capability name (screen view information)	One or more character string except for a comma (,) with a character other than # at the head.	Make the name unique within the definition file.
2	DESCRIPTION	Capability is described (screen view information)	Any string except for a comma (,).	
3	LEVEL	RAID level	RAID0, RAID1, RAID1+0, RAID5, RAID6, RAID5+0, Unknown, * (not targeted)	If you want multiple levels targeted, concatenate them with " " to specify.
4	DISKTYPE	Disk type	FC, SAS, SATA, SSD, SED-FC, SED-SAS, * (not targeted)	If you want multiple levels targeted, concatenate them with " " to specify.
5	DISKSPEED	Number of rotation	XXX (XXX targeted), XXX- (XXX or more targeted), XXX-XXX (specified scope targeted), -XXX (specified scope or below targeted), * (not targeted)	For XXX, specify a decimal number for the number of rotation. For those without the number of rotations, specify "*".
6	TYPE	Volume type	Open, TPV, FTV, SDV, SDPV, F6427G, F6427H, F6427K, MVV(G), MVV(H), MVV(K),	If you want multiple levels targeted, concatenate them with " " to specify.

No.	Item	Meaning	Setting value	Remarks
			Unknown, * (not targeted)	
7	ENCRYPT	Encryption status	Enabled, Disabled, Unknown, * (not targeted)	
8	ECO	Eco-mode status of RAID group	Enabled, Disabled, * (not targeted)	

How to apply and evaluate the definition

- The Capability information includes Capability name and Capability description and is correlated to LUN managed by ETERNUS VAS Provider. Every line in the Capability information definition file is evaluated from the top on a per LUN basis if the defined condition(s) therein matches those of the LUN. And the first line whose defined condition(s) matches those of the LUN is correlated to the LUN as Capability information.
- If the conditions of the LUN do not match any line condition in the definition file, "No Capability" in Capability name and "Capability definition does not match" in Capability description are correlated to the target LUN.
- If grammar check is done at service startup and there is any definition error, an error message is output in the event log.
- The line determined as definition error is not evaluated.
- If not a line with valid information exists, apply the default Capability information (refer to "[Appendix D Information Notified to vCenter Server](#)").
- A line beginning with # is treated as a comment line and not evaluated.

Definition example

In default status, the following definition is enabled:

```
#(1)NAME,(2)DESCRIPTION,(3)LEVEL,(4)DISKTYPE,(5)DISKSPEED,(6)TYPE,(7)ENCRYPT,(8)ECO
#
#
AST-FTV,Flexible Tier Volume,*,*,*,FTV,*,*
Extream,Solid State Drive,*,SSD,*,Open,*,*
Extream-TPV,Solid State Drive & Thin Provisioning,*,SSD,*,TPV,*,*
Performance,High Performance,RAID0|RAID1+0,*,10000-,Open,*,*
Performance-TPV,High Performance & Thin Provisioning,RAID0|RAID1+0,*,10000-,TPV,*,*
Availability,High Availability,*,*,10000-,Open,*,*
Availability-TPV,High Availability & Thin Provisioning,*,*,10000-,TPV,*,*
Nearline,Nearline Volume,*,*,10000-,Open,*,*
Nearline-TPV,Nearline Volume & Thin Provisioning,*,*,10000,TPV,*,*
Other,Other Volume,*,*,*,*,*,*
```

Appendix F Information Provided in Older Versions

This appendix describes the information provided to vCenter Server by older versions of ETERNUS VASA Provider.

F.1 Capability

Older versions of ETERNUS VASA Provider provided the Capability information shown below.



See

For information on how to notify the following information using older versions of ETERNUS VASA Provider, refer to "[Appendix A Configuration File](#)".

capabilityName	capabilityDetail	displayType
<i>device name_ volume numbe</i> :LUN	LUN number	Affinity group number: displayed as LUN number or #port ID:LUN number. If there are multiple affinity group numbers, divide them with commas.
<i>device name_ volume number</i> :Logical Volume	Logical volume number	"Logical Volume" + numerical (hex) value
<i>device name_ volume number</i> :Capacity	Capacity	Numerical (decimal) value + "MB"
<i>device name_ volume number</i> :Volume Type	Information by volume type	String
<i>device name_ volume number</i> :Encryption	Encrypted attribute information	String
<i>device name_ volume number</i> :RAID Group	RAID group number	"RAID Group" + numerical (hex) value
<i>device name_ volume number</i> :Thin Provisioning Pool	Thin provisioning pool	"TPP" + numerical (hex) value