

NEC Express Server
Express5800 Series

Express5800/R320d-E4

Model Number: N8800-184F, EXP320P

Express5800/R320d-M4

Model Number: N8800-185F, EXP320Q




Installation Guide (VMware 5.5)





Chapter 1 Installing OS

Chapter 2 Installing Bundled Software

Chapter 3 Configuring the Separate Log Server

Documents for This Product

Documents for this product are provided as accompanying booklets () and as electronic manuals () stored within EXPRESSBUILDER DVD ().

 User's Guide	
Chapter 1: General Description	Overviews, names, and functions of the server's parts
Chapter 2: Preparations	Installation of additional options, connection of peripheral devices, and ideal location for this server
Chapter 3: Setup	System BIOS configurations and summary of EXPRESSBUILDER
Chapter 4: Appendix	Specifications and other information
 Installation Guide	
Chapter 1: Installing OS	Installation of OS and drivers, and important information for installation
Chapter 2: Installing Bundled Software	Installation of bundled software, such as NEC ESMPRO
Chapter 3: Configuring the Separate Log Server	Configure the log server using other than ftSys Management Appliance
 Maintenance Guide	
Chapter 1: Maintenance	Server maintenance and troubleshooting
Chapter 2: Configuring and Upgrading the System	Configure hardware and setup management tool associated with hardware
Chapter 3: Useful Features	Useful features and the detail of system BIOS settings, SAS Configuration Utility, and EXPRESSBUILDER
 Other documents	
Provides the detail of NEC ESMPRO and the other features.	

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Notations Used in This Document

Notations used in the text

In addition to safety-related symbols urging caution, 3 other types of notations are used in this document. These notations have the following meanings.

Important	Indicates critical items that must be followed when handling the hardware or operating software. If the procedures described are not followed, <u>hardware failure, data loss, and other serious malfunctions could occur.</u>
Note	Indicates items that must be confirmed when handling the hardware or operating software.
Tips	Indicates information that is helpful to keep in mind when using this server.

Optical disk drives

This server is equipped with one of the following drives, depending on the order at the time of purchase. These drives are referred to as *optical disk drives* in this document.

- DVD-ROM drive
- DVD Super MULTI drive

Hard disk drives

Unless otherwise stated, hard disk drive (HDD) described in this document refers to the following.

- Hard disk drives (HDD)

Removable media

Unless otherwise stated, removable media described in this document refers to both of the following.

- USB flash drive
- Flash FDD

POST

POST described in this document refers to the following.

- Power On Self-Test

BMC

BMC described in this document refers to the following.

- Baseboard Management Controller

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Turkish RoHS information relevant for Turkish market

EEE Yönetmeliğine Uygundur.

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Russian	<p style="text-align: center;">Декларация о Соответствии</p> <p style="text-align: center;">Требованиям Технического Регламента об Ограничении Использования некоторых Вредных Веществ в электрическом и электронном оборудовании (утверждённого Постановлением №1057 Кабинета Министров Украины)</p> <p>Изделие соответствует требованиям Технического Регламента об Ограничении Использования некоторых Вредных Веществ в электрическом и электронном оборудовании (ТР ОИВВ).</p> <p>Содержание вредных веществ в случаях, не предусмотренных Дополнением №2 ТР ОИВВ:</p> <ol style="list-style-type: none"> 1. свинец (Pb) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей; 2. кадмий (Cd) – не превышает 0,01 % веса вещества или в концентрации до 100 миллионных частей; 3. ртуть (Hg) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей; 4. шестивалентный хром (Cr⁶⁺) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей; 5. полибромбифенолы (PBB) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей; 6. полибромдифеноловые эфиры (PBDE) – не превышает 0,1 % веса вещества или в концентрации до 1000 миллионных частей.
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India

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The most recent version of User's Guide, as well as other related documents, is also available for download from the following website.

<http://www.nec.com/>

NEC Express5800 Series Express5800/R320d-E4, R320d-M4

1

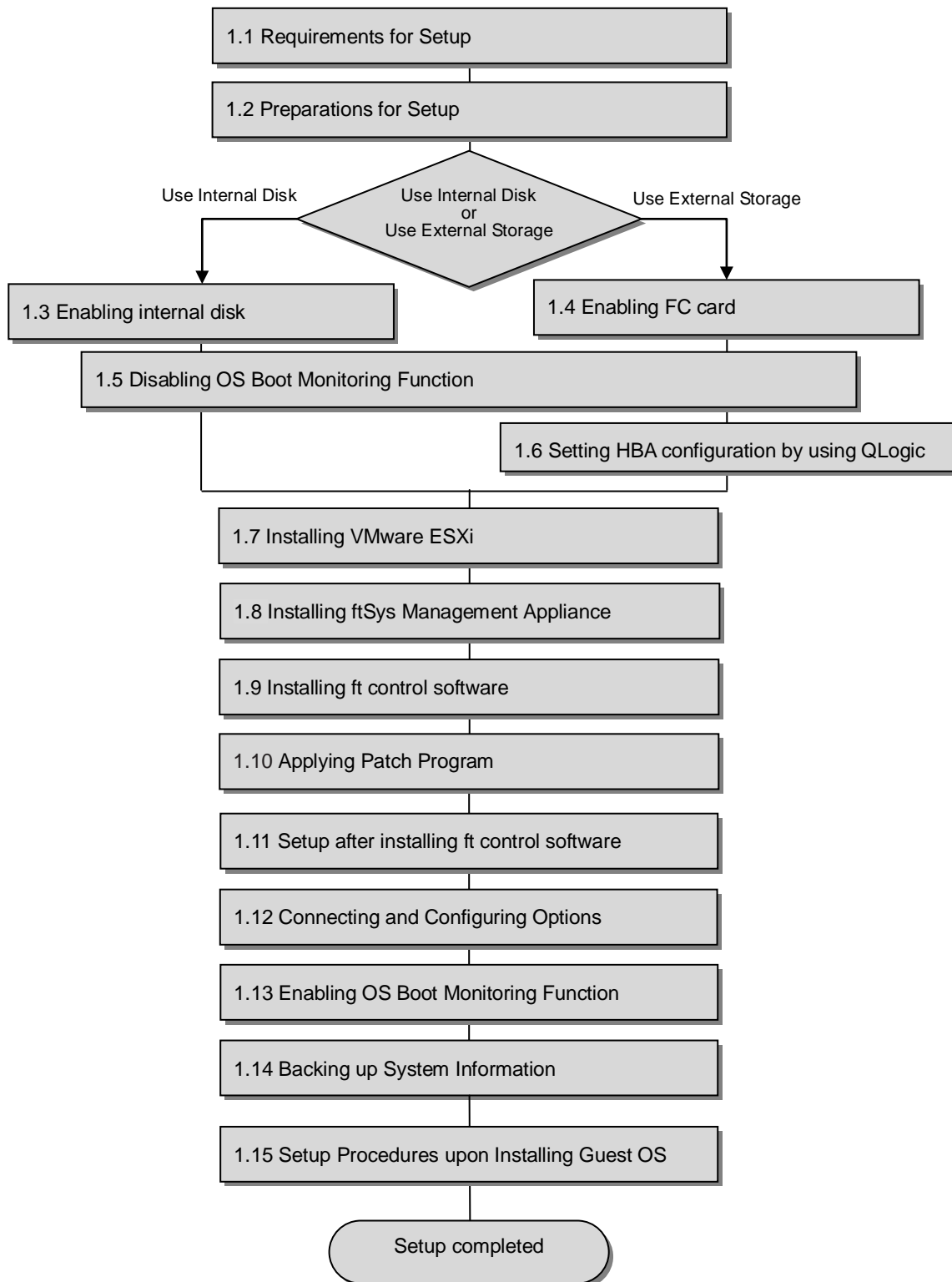
Installing OS

This chapter describes how to install OS. Read through this chapter to set up the system correctly.

1. Setup Procedure
Describes how to set up VMware.
2. Procedures after Completion of Installation
Describes how to confirm kernel version and ft control software version, and precautions when changing configuration after setup.

1. Setup Procedure

The flow-chart below illustrates the flow of the setup procedures for the server.



1.1 Requirements for Setup

The followings are required.

Components provided with the device:

- ft control software 5.1.1 for VMware vSphere 5.5 Update1 Install DVD
- User's Guide
- Installation Guide (this manual)
- Maintenance Guide

VMware ESXi 5.5 Update1 Install DVD:

Visit the VMware's web site shown below, and download the install image for VMware ESXi 5.5 Update1 (VMware's original).

```
https://my.vmware.com/web/vmware/details?downloadGroup=ESXI55U1&productId=353&rPID=5823
```

* The contents of this web site is subject to change or delete without notice.

- ESXi 5.5 Update 1 ISO image (Includes VMware Tools)
VMware-VMvisor-Installer-5.5.0.update01-1623387.x86_64.iso

Important ft control software 5.1.1 is applicable to VMware ESXi 5.5 Update1 only. Do not install any other version of ESXi.

VMware vSphere Client:

This component is required to configure the VMware ESXi installed on ft server.

VMware ESXi 5.5, Patch Release ESXi550-201404001 (2076120)

Visit the VMware's web site shown below, and download the patch program ESXi550-201404001 for ESXi 5.5 Update1.

- ESXi550-201404001.zip

```
http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&externalId=2076120
```

* The contents of this web site is subject to change or delete without notice.

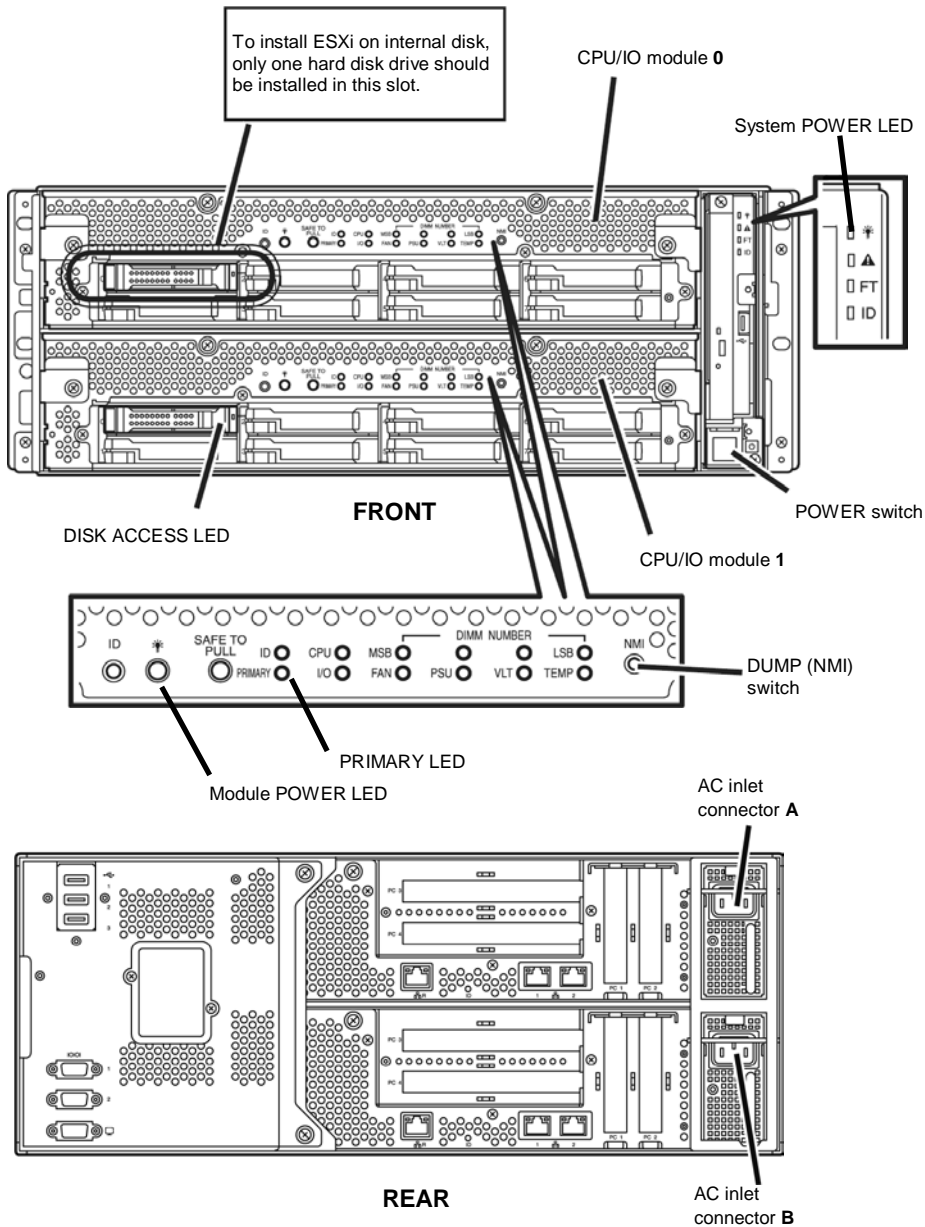
1.2 Preparations for Setup

Before SETUP, be sure to do the following.

IF YOU DO NOT PREPARE, SETUP CANNOT BE PERFORMED PROPERLY.

1.2.1 Prepare NEC Express5800/ft series

The components shown below are required for setup.



With the power of the server off, follow the steps below:

Note Make sure that the System POWER LED on the front panel is unlit.

1. Prepare NEC Express5800/ft series.

Follow the instructions below to prepare.

<When installing or reinstalling ESXi to the internal disk>

- Disconnect all power cords from outlet.
- Install only one hard disk drive in slot 0 of CPU/IO module 0.
Do not install any hard disk drive in CPU/IO module 1.
- Remove all the optional PCI boards.
- Remove all the LAN cables.

Important

- Installation must be performed on the device that is actually used. Do not use any hard disk drive of which system is installed on other device.
- Install only one hard disk drive in the slot specified here. If two or more hard disk drives are installed, the destination disk to install an OS cannot be identified.
- If the hard disk drive is not a new one, physically format it. Refer to *Chapter 3 (3. SAS Configuration Utility)* in *Maintenance Guide* for physical formatting.

<When installing or reinstalling ESXi to the external storage>

- Disconnect all power cords from outlet.
- Remove all the internal hard disk drives.
- If the FC card is not mounted, insert the FC cards into the same slot of each CPU/IO module.
- Connect each FC card and external storage with FC cables.
- Remove all the optional PCI boards except FC card and peripheral equipments except external storage.
- Remove all the LAN cables.

2. Connect power cords in the following order to start the system from CPU/IO module 0.

- (1) Connect a power cord to AC inlet connector A.
- (2) Connect a power cord to AC inlet connector B.

Important Make sure that the PRIMARY LED on CPU/IO module 0 is lit.

Note If you disconnect a power cord, wait for at least 30 seconds before connecting it again.

Note If you disconnect power cord (AC cable) and connect it again, wait for at least 30 seconds before pressing the POWER switch (DC) to power on. Make sure that Module POWER LEDs on both CPU/IO modules 0 and 1 are blinking, then press the POWER switch.

1.2.2 Prepare external storage device

Note the following when installing ESXi on the external storage device.

Disk size required for installation

Secure at least 25 GB area in boot LUN to install the ESXi host and the ft control system.

1.3 Enabling internal disk

The following procedure shows when installing or reinstalling ESXi to the internal disk. Go to "1.4 Enabling FC card" when installing or reinstalling ESXi to the external storage.

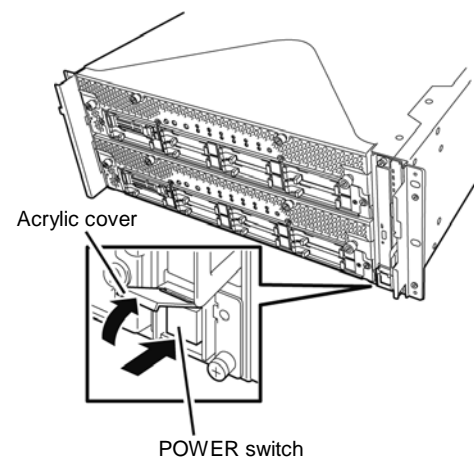
1. Turn on the display and the peripheral equipment connected to the server.

Note If the power cords are connected to a power controller like a UPS, make sure that it is powered on.

2. Detach the front bezel.
3. Press the POWER switch that is located on the front side of the server.

Lift the acrylic cover, and press the POWER switch.

Important Do not turn off the power before the "NEC" logo appears.



After a while, the "NEC" logo will appear on the screen.

Tips While the "NEC" logo is displayed on the screen, the server performs a power-on self test (POST) to check itself. For details, refer to *Chapter 3 (1.1 POST Check)* in *User's Guide*.

Note If the server detects errors during POST, it will interrupt POST and display the error message. Refer to *Chapter 1 (6.2 POST Error Message)* in *Maintenance Guide*.

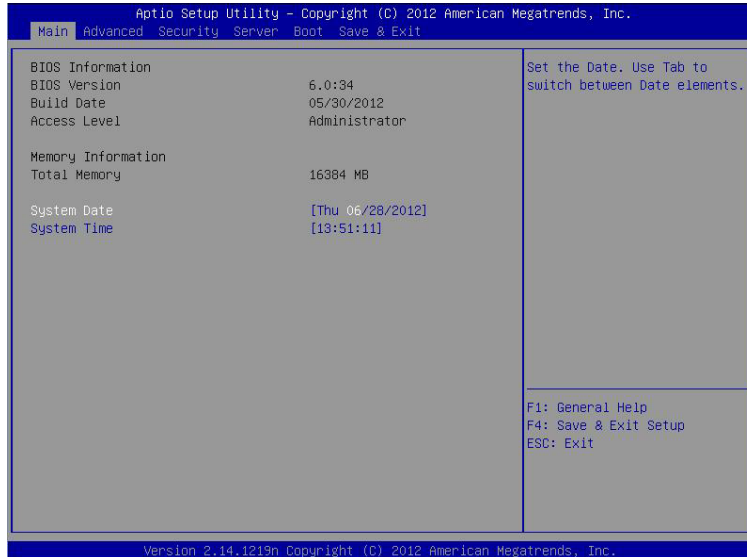
4. Run POST.

After a while, the following message appears at lower left of the screen.

Press <F2> SETUP, <F4> ROM Utility, <F12> Network

If you press **F2**, SETUP will start after POST, and the Main menu appears. (You can also start SETUP by pressing **F2** while expanding option ROM.)

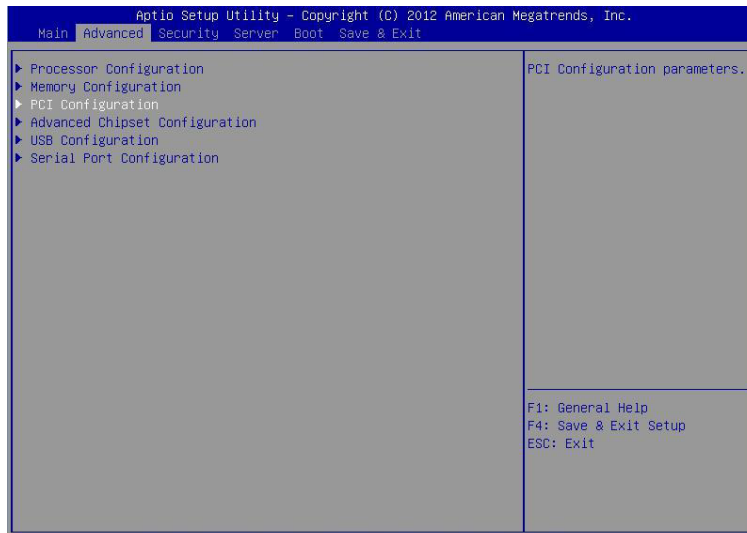
< Example >



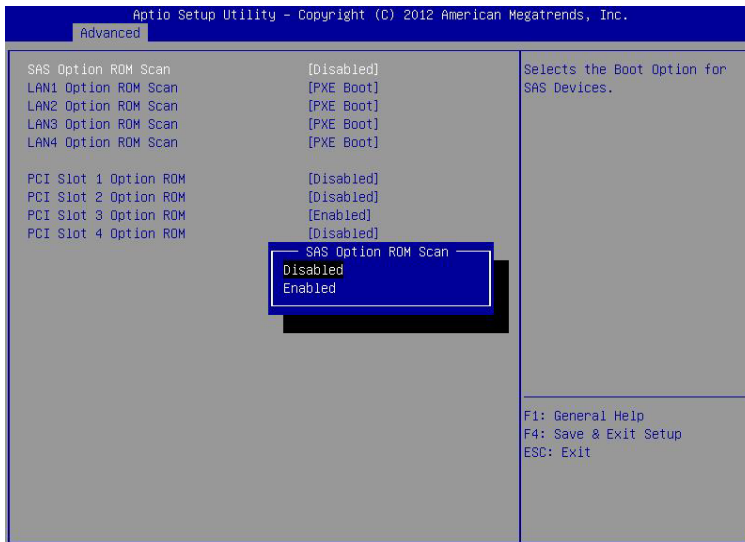
Tips

For [System Time], use Coordinated Universal Time (UTC). The specified UTC time is applied to the ESXi host to be installed later. In ftSys Management Appliance or other guest OS, set the time zone for each system.

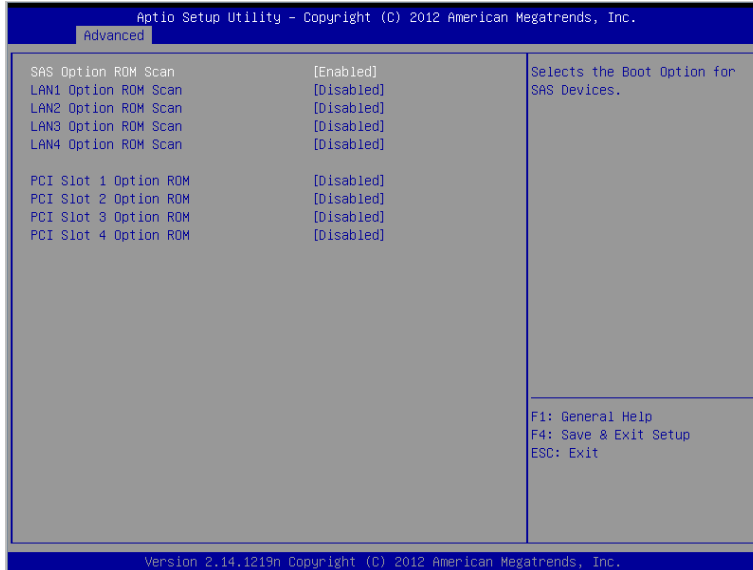
5. When you move the cursor onto "Advanced", the Advanced menu appears. Choose "PCI Configuration" and press **Enter**.



6. Move the cursor onto "SAS Option ROM Scan" and press **Enter**. Parameters will be displayed.
< Example >



7. Among the parameters, choose "Enabled" and press **Enter**. The current display of the configuration for SAS Option ROM Scan will be changed to "Enabled".
8. Select an item other than **SAS Option ROM Scan**, and press **Enter**. Select **Disabled** from the parameters displayed, and press **Enter**. Repeat these steps for all items other than **SAS Option ROM Scan**.
9. Make sure that **SAS Option ROM Scan** shows **Enabled**, and all other items show **Disabled**.
<Example>



This is the end of steps for enabling internal disk.
Now the internal disks are enabled. Then, disable OS boot monitoring feature.
Go to "1.5 Disabling OS Boot Monitoring Function" and continue setup.

1.4 Enabling FC card

The following procedure shows when installing or reinstalling ESXi to the external storage.

1. Turn on the display and the peripheral equipment connected to the server.

Note

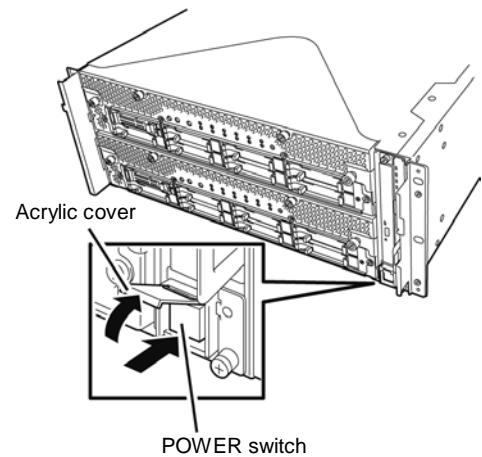
If the power cords are connected to a power controller like a UPS, make sure that it is powered on.

2. Remove the front bezel.
3. Press the POWER switch that is located on the front side of the server.

Lift the acrylic cover, and press the POWER switch.

Important

Do not turn off the power before the "NEC" logo appears.



After a while, the "NEC" logo will appear on the screen.

Tips

While the "NEC" logo is displayed on the screen, the server performs a power-on self test (POST) to check itself. For details, refer to *Chapter 3 (1.1 POST Check)* in *User's Guide*.

Note

If the server detects errors during POST, it will interrupt POST and display the error message. Refer to *Chapter 1 (6.2 POST Error Message)* in *Maintenance Guide*.

4. Run POST.

After a while, the following message appears at lower left of the screen.

Press <F2> SETUP, <F4> ROM Utility, <F12> Network

If you press **F2**, SETUP will start after POST, and the Main menu appears. (You can also start SETUP by pressing **F2** while expanding option ROM.)

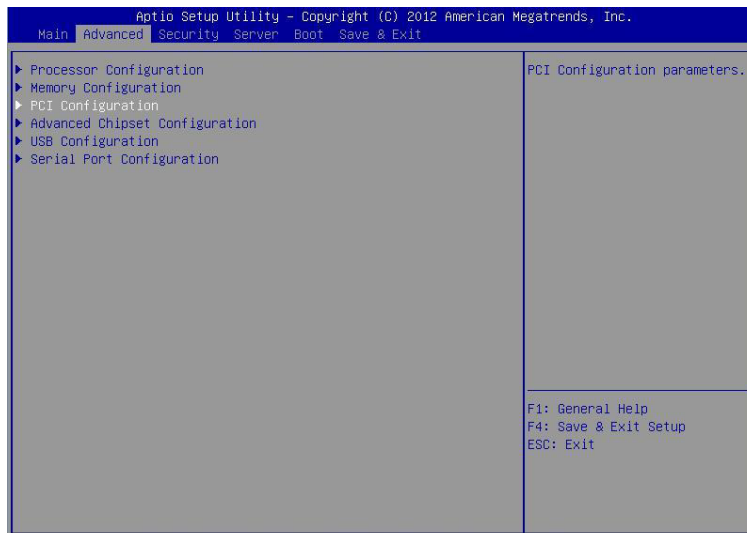
< Example >



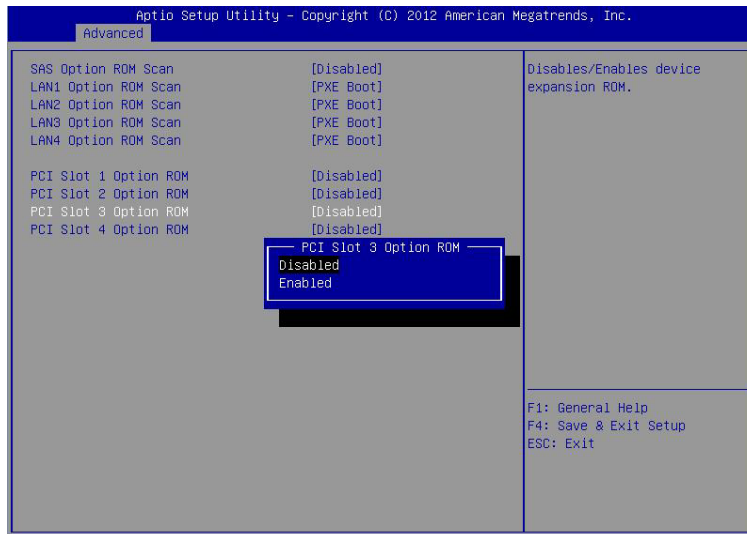
Tips

For [System Time], use Coordinated Universal Time (UTC). The specified UTC time is applied to the ESXi host to be installed later. In ftSys Management Appliance or other guest OS, set the time zone for each system.

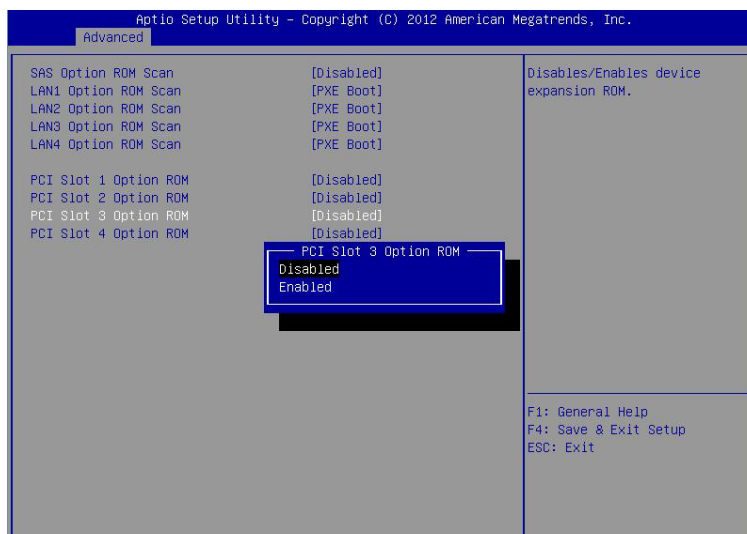
5. When you move the cursor onto "Advanced", the Advanced menu appears. Choose "PCI Configuration" and press **Enter**.



6. Move the cursor onto “PCI Slot x Option ROM” (x: the slot where FC card is installed) and press **Enter**. Parameters will be displayed.
< Example >

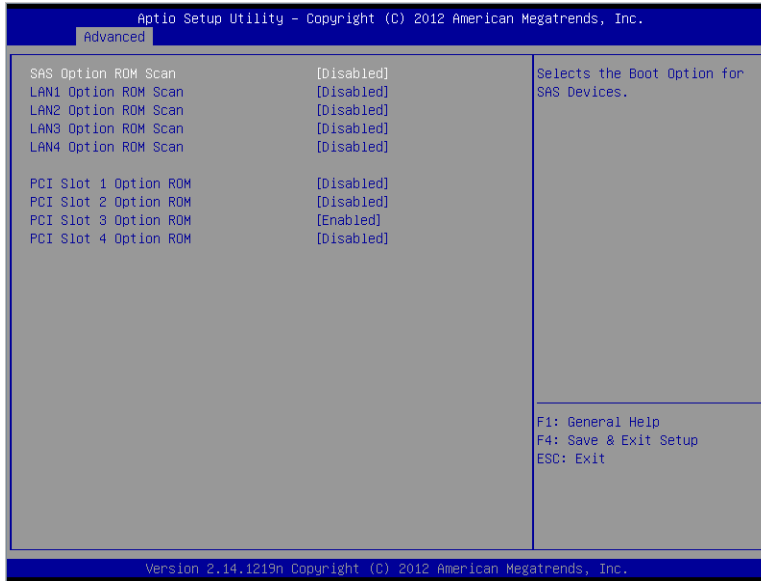


7. Among the parameters, choose “Enabled” and press **Enter**.
The current display of the configuration for **PCI Slotx Option ROM** will be changed to “Enabled”
8. Select an item other than **PCI Slot x Option ROM** for the PCI slot in which FC card is installed, and press **Enter**. Select **Disabled** from the parameters displayed, and press **Enter**. Repeat these steps for all items other than **PCI Slot x Option ROM** for the PCI slot in which FC card is installed.



9. Make sure that **PCI Slot x Option ROM** for the PCI slot in which FC card is installed shows **Enabled**, and all other items show **Disabled**.

<Example>



This is the end of steps for enabling FC card.

Then, disable OS boot monitoring feature.

Go to "1.5 Disabling OS Boot Monitoring Function" and continue setup.

1.5 Disabling OS Boot Monitoring Function

Before starting system start up, the OS boot monitoring function needs to be disabled.

Important Be sure to disable boot monitoring function before setting up the system.

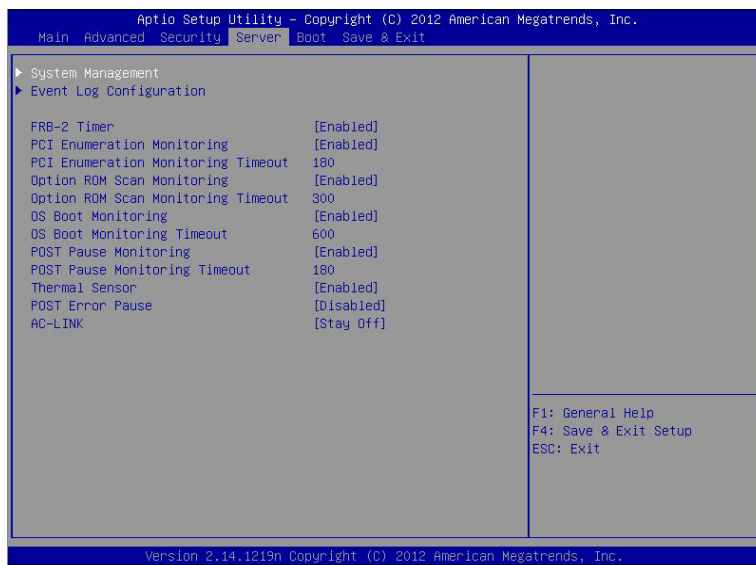
This server has a function to monitor the server at startup. (Enabled in the configuration at shipment)

If this function is enabled, the system will be forcibly restarted while OS setup screen is shown and the setup will be unsuccessful. BIOS may repeat OS setup in an invalid manner.

If setup fails, you must re-install the operating system.

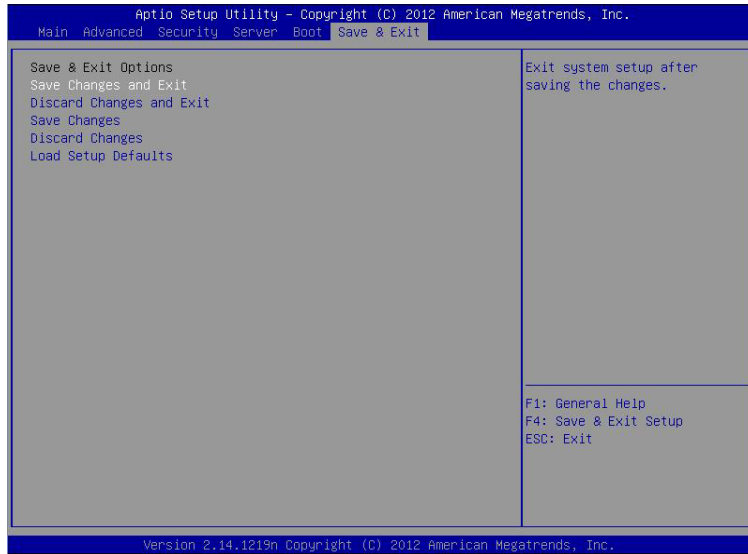
Tips For details of operations for BIOS Setup Utility and parameters for boot monitoring function, refer to *Chapter 3 (1. System BIOS)* in *Maintenance Guide*.

1. When you move the cursor onto "Server", the Server menu appears. Move the cursor onto "OS Boot Monitoring" and press **Enter**. Parameters will be displayed.

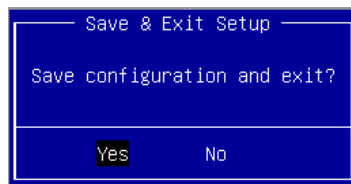


2. Among the parameters, choose "Disabled" and press **Enter**. The current display of the configuration for OS Boot Monitoring will be changed to "Disabled".

3. Move the cursor onto **Save & Exit**, the **Save & Exit** menu appears.



4. Select **Save Changes and Exit**.
On the confirmation window shown below, select [Yes] to save parameters and exit SETUP.



Now **OS Boot Monitoring** function is disabled.

System reboots when SETUP completes.

Tips

When installing ESXi, power off the server for preparation of installation.

To continue with the setup procedure, proceed to “1.6 Setting HBA configuration by using QLogic” on the next page if the FC card is enabled, and to “1.7 Installing VMware ESXi” if the internal disk is enabled.

1.6 Setting HBA configuration by using QLogic

Important Before setting the HBA configuration by using QLogic BIOS, it is required to complete the storage settings such as creating a logical disk.

1. Start from the CPU/IO module 0, and then perform the following.

Important Make sure that the PRIMARY LED on CPU/IO module 0 is lit.

- 1-1 In the QLogic prompt window which appears during POST, press **Ctrl+Q** or **Alt+Q** to launch QLogic Fast! UTIL.

```

QLogic Corporation
QLE2560 PCI Fibre Channel ROM BIOS Version 2.10
Copyright (C) QLogic Corporation 1993-2009. All rights reserved.
www.qlogic.com

Press <CTRL-Q> or <ALT-Q> for Fast!UTIL
-
  
```

- 1-2 Select "Configuration Settings", and then press **Enter**.

```

QLogic Fast!UTIL

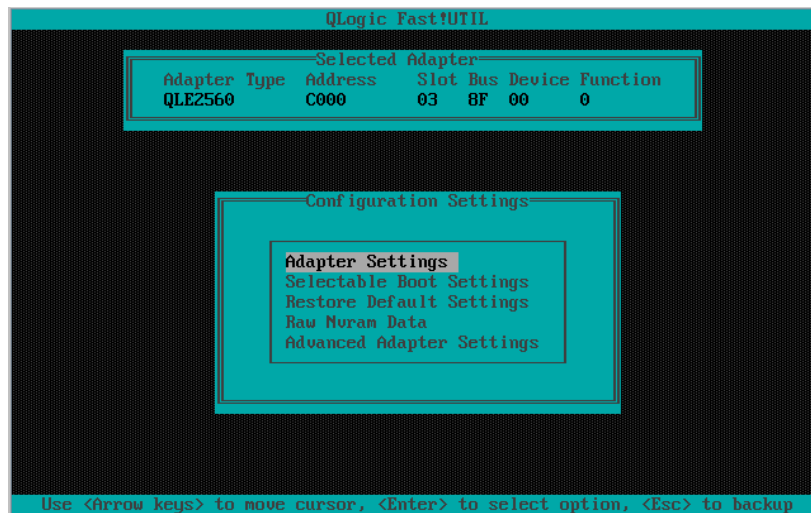
Selected Adapter
Adapter Type Address Slot Bus Device Function
QLE2560 C000 03 8F 00 0

Fast!UTIL Options

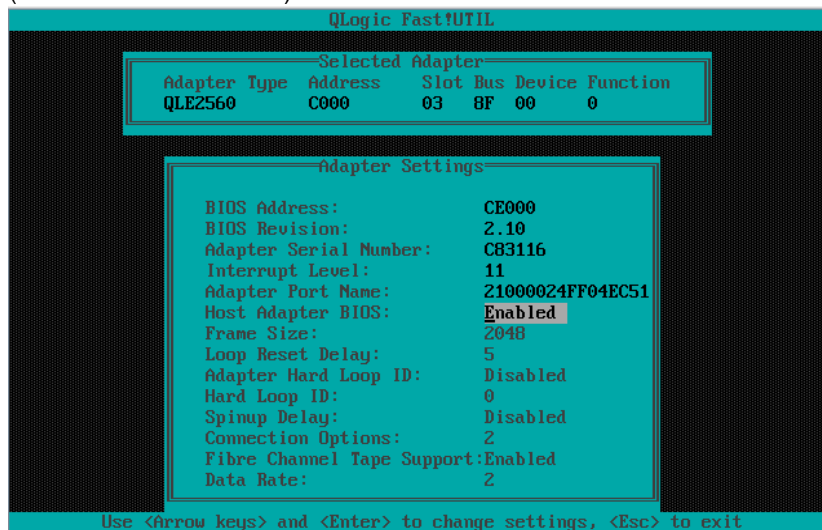
Configuration Settings
Scan Fibre Devices
Fibre Disk Utility
Loopback Data Test
Select Host Adapter
Exit Fast!UTIL

Use <Arrow keys> to move cursor, <Enter> to select option, <Esc> to backup
  
```

- 1-3 Select "Adapter Settings", and then press **Enter**.



- 1-4 Select "Host Adapter BIOS", and then press **Enter** to change the setting to "Enabled". (The default is "Disabled".)



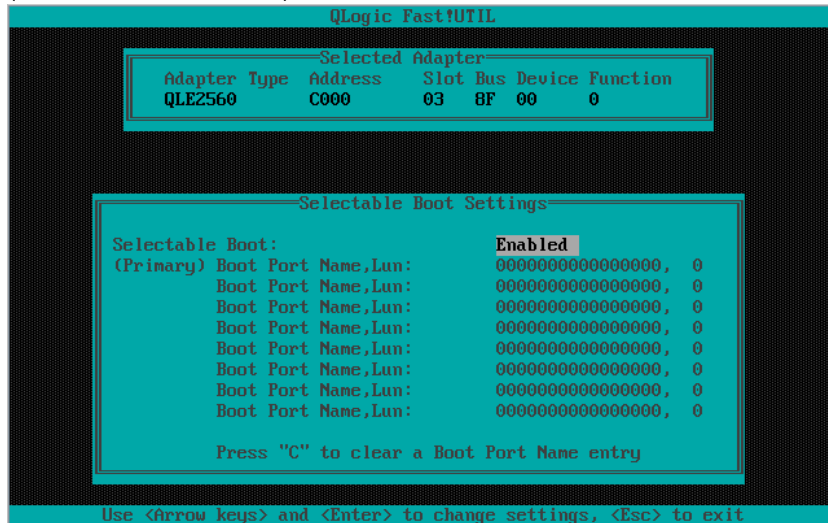
- 1-5 Press **ESC** once to return to the Configuration Settings screen.



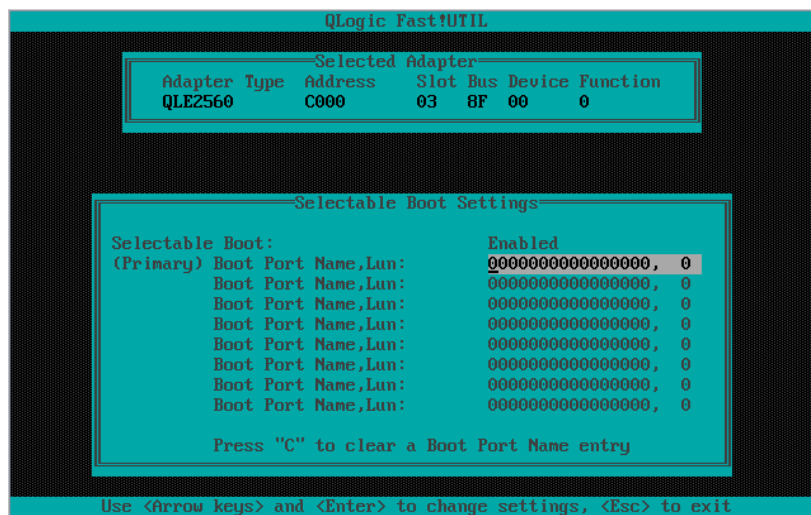
- 1-6 Select "Selectable Boot Settings", and then press **Enter**.



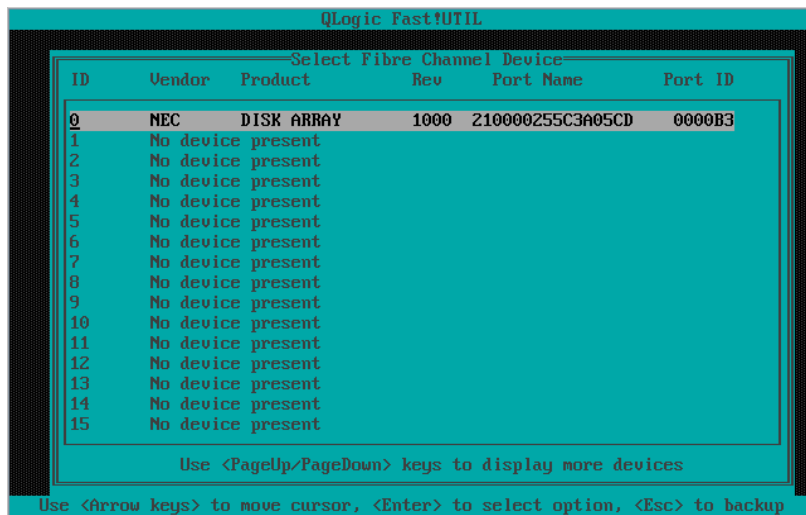
- 1-7 Select “Selectable Boot”, and then press **Enter** to change the setting to “Enabled”.
(The default is “Disabled”).



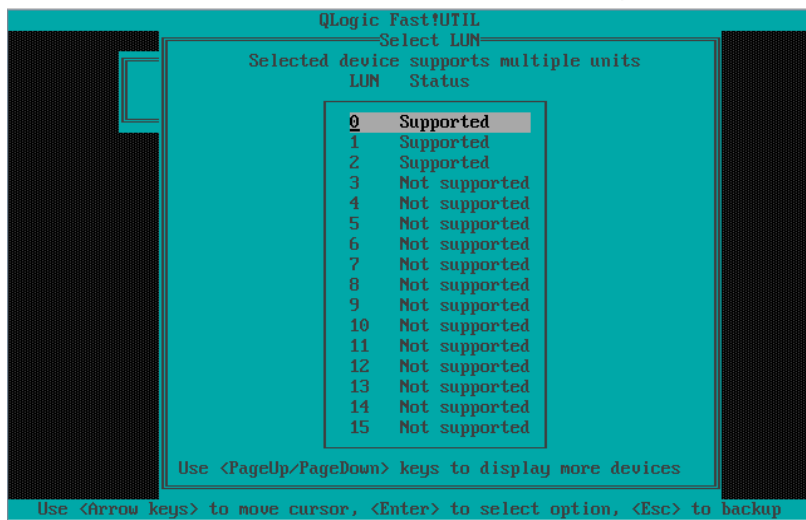
- 1-8 Select “(Primary) Boot Port Name, Lun:”, and then press **Enter**.



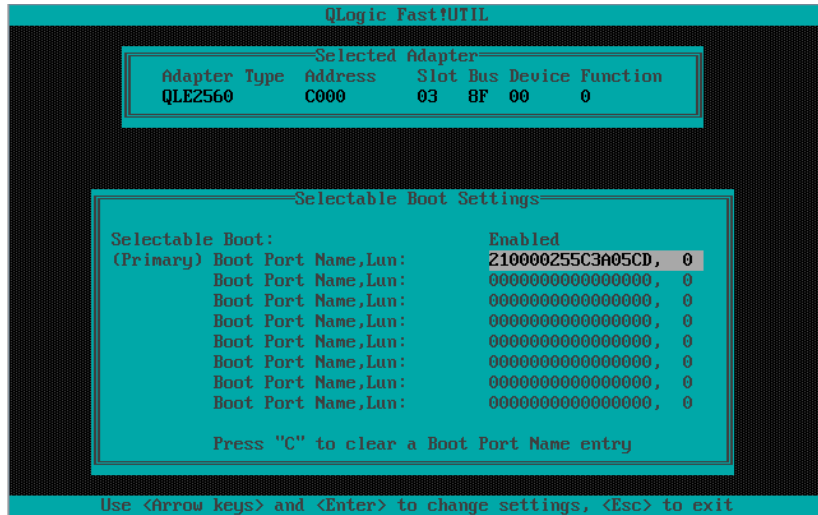
- 1-9 The storage devices that are recognized by the FC card are displayed in the “Select Fibre Channel Device” window. Select the storage device to boot, and then press **Enter**.



- 1-10 In the “Select LUN” window, select LUN to boot, and then press **Enter**.



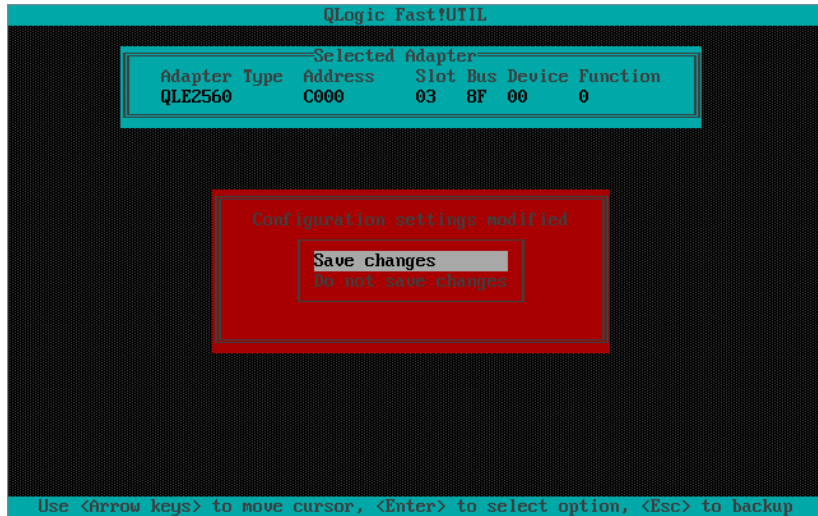
1-11 The port name and LUN specified in steps 1-9 and 1-10 respectively are applied to “(Primary) Boot Port Name, Lun:”.



Note

The images shown in steps 1-9 through 1-11 are examples. The information displayed varies depending on the product name of external storage and settings such as logical disk settings.

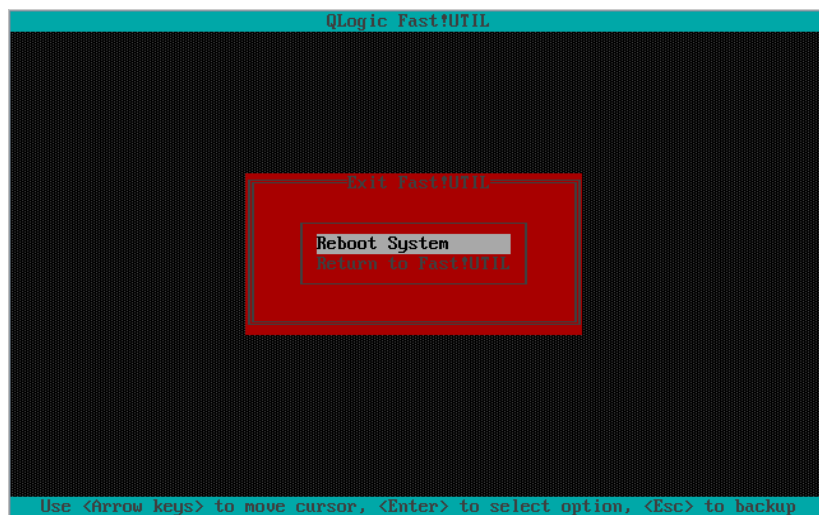
1-12 Press **ESC** twice to display the confirmation window. Select “Save changes”, and then press **Enter**.



1-13 Select “Exit Fast!UTIL”, and then press **Enter**.



1-14 Select “Reboot System”, and then press **Enter** to reboot the system.



2. Configure CPU/IO module 1.

Press the POWER switch on front panel to turn off the server.

Then, disconnect all the power cords from the server.

Note Make sure that System POWER LED is unlit before disconnecting the power cord.

3. Connect power cords in the following order to start the system from CPU/IO module 1.

(1) Connect a power cord to AC inlet connector B.

(2) Connect a power cord to AC inlet connector A.

Important Make sure that the PRIMARY LED on CPU/IO module 1 is lit.

Note If you disconnect a power cord, wait for at least 30 seconds before connecting it again.

Tips See Chapter 1 (1.2 Preparations for Setup) for AC inlet connector.

4. Press the POWER switch on front panel to start the system from the CPU/IO module 1, and perform Steps 1-1 to 1-14 in similar way.

Note If you disconnect power cord (AC cable) and connect it again, wait for at least 30 seconds before pressing the POWER switch (DC) to power on. Make sure that Module POWER LEDs on both CPU/IO modules 0 and 1 are blinking, then press the POWER switch..

5. After configuring the settings for the CPU/IO module 1, set the CPU/IO module 0 as primary. Press the POWER switch on front panel to turn off the server. Then, disconnect all the power cords from the server.

Note Make sure that System POWER LED is unlit before disconnecting the power cord.

6. Connect power cords in the following order to start the system from CPU/IO module 0.
 - (1) Connect a power cord to AC inlet connector A.
 - (2) Connect a power cord to AC inlet connector B.

Important Make sure that the PRIMARY LED on CPU/IO module 0 is lit.

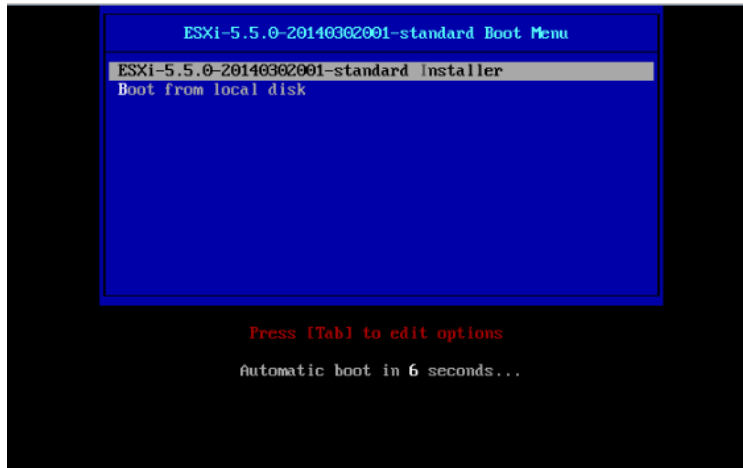
Note If you disconnect a power cord, wait for at least 30 seconds before connecting it again.

Tips See *Chapter 1 (1.2 Preparations for Setup)* for AC inlet connector.

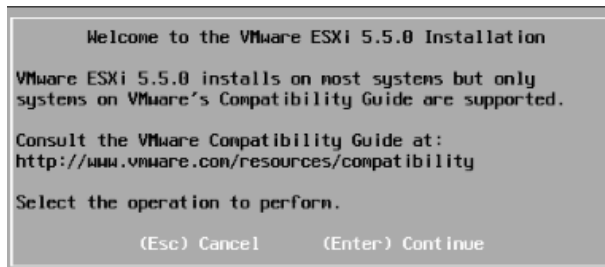
1.7 Installing VMware ESXi

1.7.1 Installing VMware ESXi

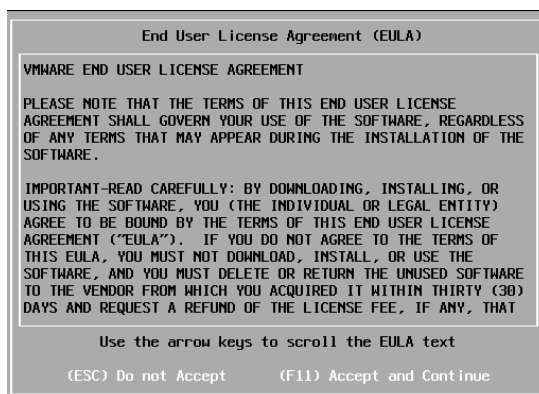
1. Immediately after powering on the server, insert the VMware ESXi 5.5 Update1 Install DVD into the DVD drive of the server.
2. If the Boot Menu screen appears after booting the server, select **ESXi 5.5.0-xxxx standard installer** and press **Enter**. The Installer will automatically starts in a few seconds, even if **Enter** is not pressed.



3. When an installation confirmation message appears, press **Enter**.



4. When the End User License Agreement (EULA) screen for ESXi appears, press **F11**.

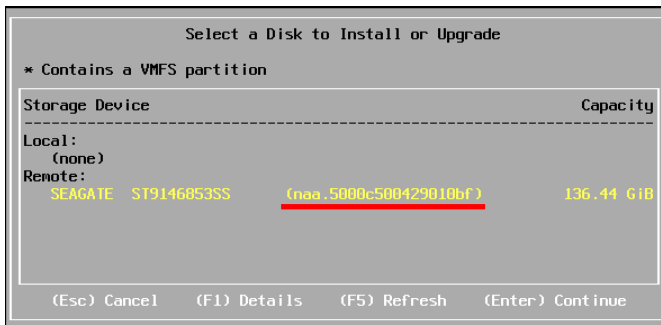


5. The disk selection screen [Select a Disk to Install or Upgrade] appears. Select the installation destination and take a note of its extent (the underlined part in the image shown below), and then, press **Enter**.

Note

The storage device name you have written is to be used when selecting an installation destination for ftSys Management Appliance (see *Chapter 1 (1.8 Installing ftSys Management Appliance)*).

<When installing ESXi to the internal disk>

**Tips**

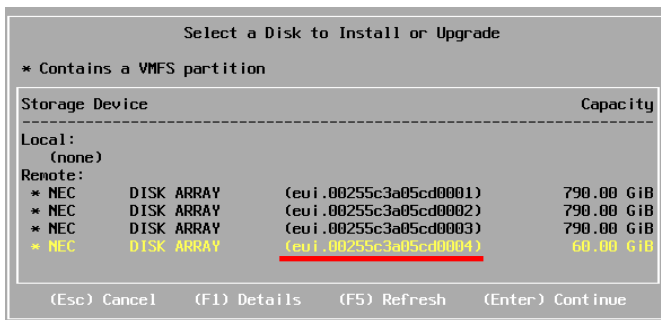
The installer of ESXi recognizes MPM device as a remote disk. Thus, the inserted internal disk is placed under [Remote] category.

Important

Note the following when reinstalling ESXi:

If any data is contained in the destination disk, the installer does not display a message to prompt you to save data because the installer of ESXi cannot recognize the Stratus MPM disk format. Therefore, make sure that the destination disk does not contain any data (or save the data, if any) before installing ESXi.

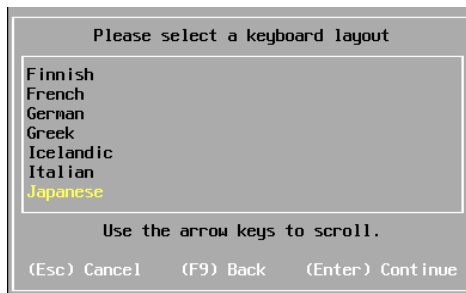
<When installing ESXi to the external storage>



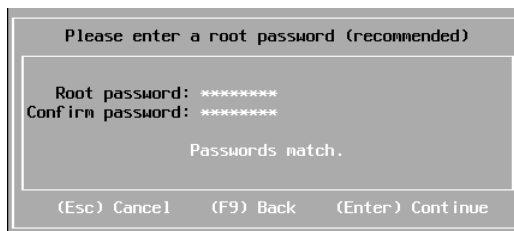
6. When reinstalling ESXi, an overwrite confirmation message appears. Move the cursor onto [Install], press the space bar to determine it, and then press **Enter**.



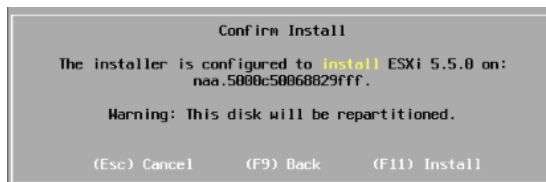
7. When the keyboard layout selection screen appears, select your desired keyboard layout and press **Enter**.



8. When the root password entry screen appears, enter the password and press **Enter**.



9. When the installation confirmation screen appears, press **F11** to start the installation.



10. In the [Installation Complete] screen, press **Enter**. The VMware ESXi Install DVD is ejected and the server reboots.

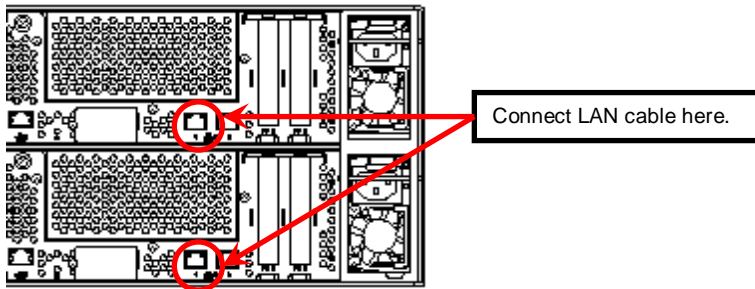


1.7.2 Configuring ESXi

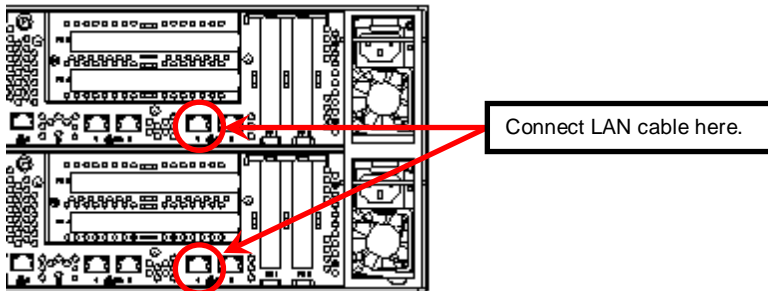
When LAN cables of the CPU/IO module 0 and 1 are removed, connect both of them.

Connect LAN cables to Port #1 connectors (1Gigabit) on CPU/IO modules 0 and 1. (At installation, the standard switch (vSwitch0) is created on this connector.)

<R320d-E4 Model>



<R320d-M4 Model>



When the installed ESXi boots, press **F2** and log in to the system as a root user.

On the System Customization menu, configure each item as shown below.



– Set the IP address.

Note Set a static IP address instead of using DHCP.

Important The ESXi host and ftSys Management Appliance must exist on the same network.

1. Select [Configure Management Network] and press **Enter**.
2. Select [IP Configuration] and press **Enter**.
3. Select [Set static IP address and network configuration] and press the space bar.
4. Enter [IP Address], [Subnet Mask] and [Default Gateway], and press **Enter**.
5. In the [Configure Management Network] screen, press **ESC** to display the confirmation screen. Press **Y** to enable the network settings and return to the main menu.

Note If the IP address is changed after installation, perform steps described in *Chapter 1 (2.3.1 If the ESXi Host IP address or root user password has been changed)*.

– Follow the steps below when specifying the DNS server.

Important Specify the DNS server from which you can obtain a correct hostname and IP address. If an inappropriate DNS server is specified, installation may fail.

Note You can configure the DNS server after completion of installation.
If the host name is changed, perform steps described in *Chapter 1 (2.3.1 If the ESXi Host IP address or root user password has been changed)*.

1. Select [Configure Management Network] and press **Enter**.
2. Select [DNS Configuration] and press **Enter**.
3. Enter [Primary DNS Server], [Alternate DNS Server] and [Hostname], and press **Enter**.
4. In the [Configure Management Network] screen, press **ESC** to display the confirmation screen. Press **Y** to enable the network settings and return to the main menu.

– Follow the steps below when configuring the settings for searching the DNS domain.

1. Select [Configure Management Network] and press **Enter**.
2. Select [Custom DNS Suffixes] and press **Enter**.
3. In the [Custom DNS Suffixes] dialog box, enter one or more DNS suffixes and press **Enter**.
4. In the [Configure Management Network] screen, press **ESC** to display the confirmation screen. Press **Y** to enable the network settings and return to the main menu.

Important If an inappropriate DNS domain is specified, installation may fail.

- Follow the steps below when enabling an SSH connection to the ESXi host.

1. Select [Troubleshooting Options] and press **Enter**.
2. Select [Enable SSH] and press **Enter** to change the setting from [SSH is Disabled] to [SSH is Enabled].
3. Press **ESC** to return to the [System Customization] menu.

Press **ESC** to log out.

Important Do not change the network configuration that is created at installation of the ESXi host before the setup procedure described in this guide completes.

If you need to add standard switch, perform it after setup process completes.

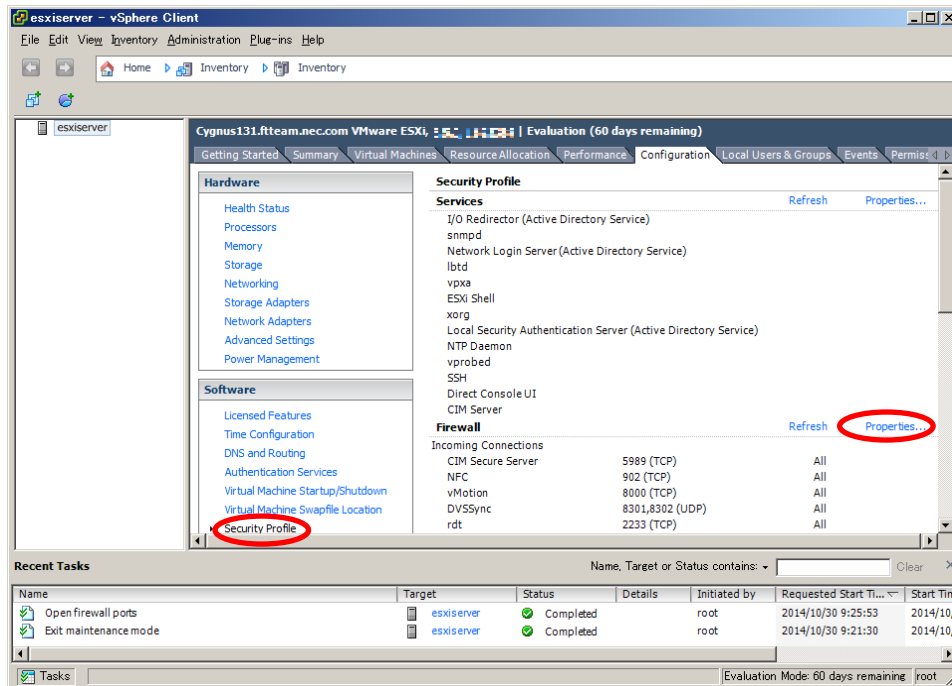
Note Set [Configuration Management Network] and [Troubleshooting Options] according to your environment.

Tips If IPv6 is disabled in Configure Management Network, the system reboots automatically. (Reboot confirmation message will not appear.)

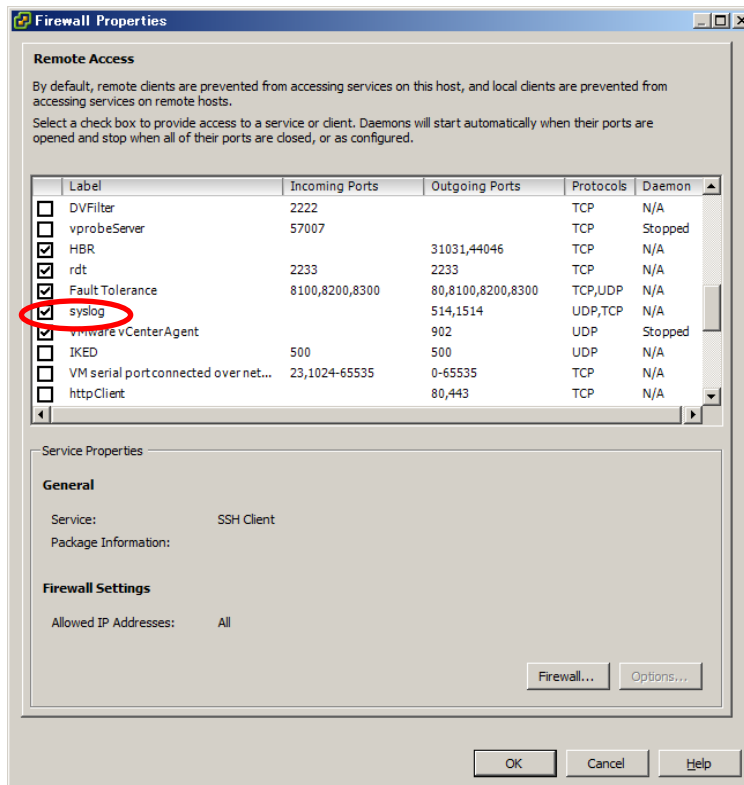
1.7.3 Configuring the Firewall for the ESXi Host from the vSphere Client

Connect to the ESXi host from vSphere Client to configure.

1. Connect to the ESXi host (ft server) from vSphere Client. In the [Configuration] tab, select [Software] → [Security Profile] → [Firewall] to open [Properties].



2. On the [Firewall Properties] screen, select the [syslog] checkbox and click [OK].



With this step, the ESXi installation has been completed.

1.8 Installing ftSys Management Appliance

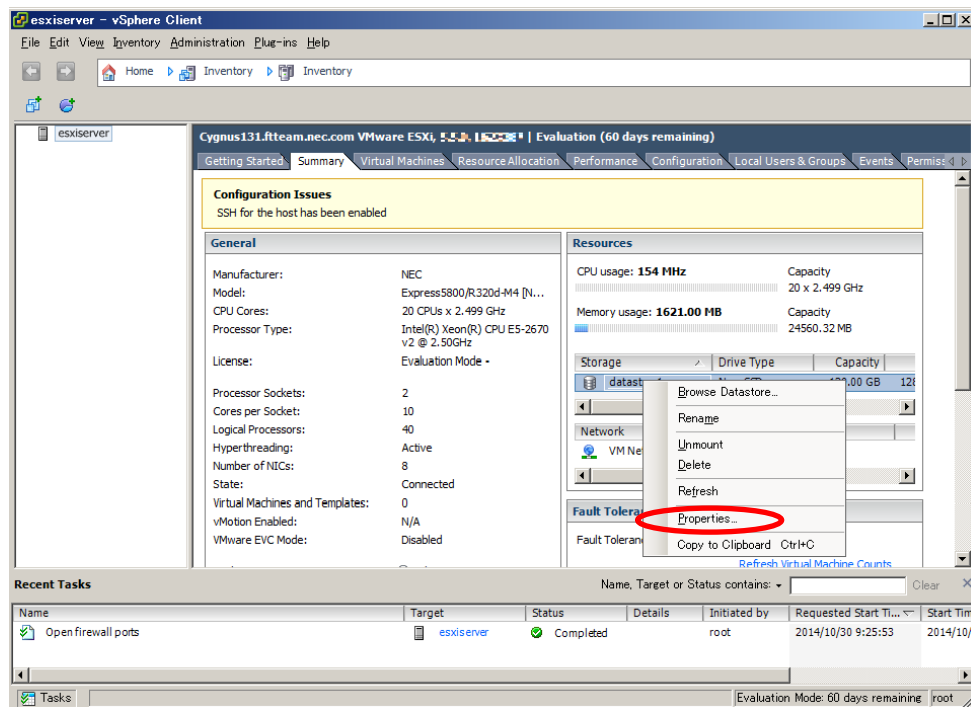
Connect to the ESXi host from vSphere Client to install.

- Important**
- Be sure to connect to the ESXi host from vSphere Client. Do not connect to the vCenter Server.
 - Do not add ESXi host to vCenter Server before the installation of ftSys Management Appliance completes.

1.8.1 Checking the Installation Destination Disk

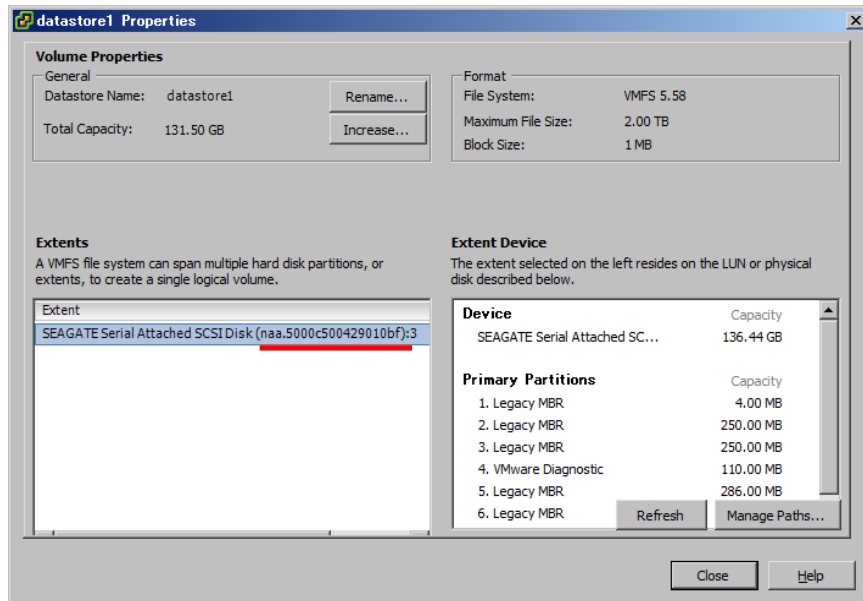
- Note** ftSys Management Appliance must be installed on the disk where the ESXi host exists. If several disks are contained in your system, perform the steps below in advance.

1. Select the ESXi Host in vSphere Client, select a storage from the list of [Storage] in the [Summary] tab to display the properties.

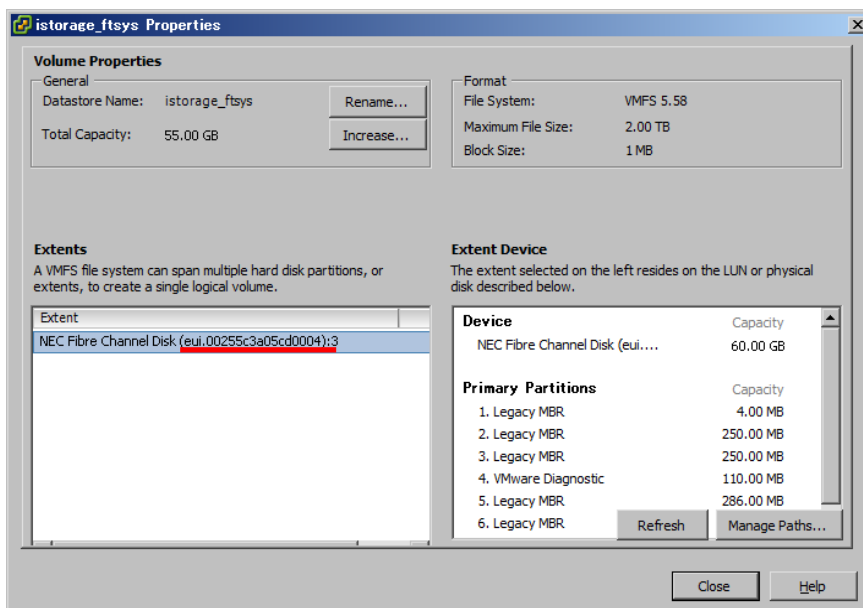


- Confirm that the selected storage has the same extent value as the disk selected at installation of the ESXi host.

<Example when installed to internal disk>



<Example when installed to external storage>



Note

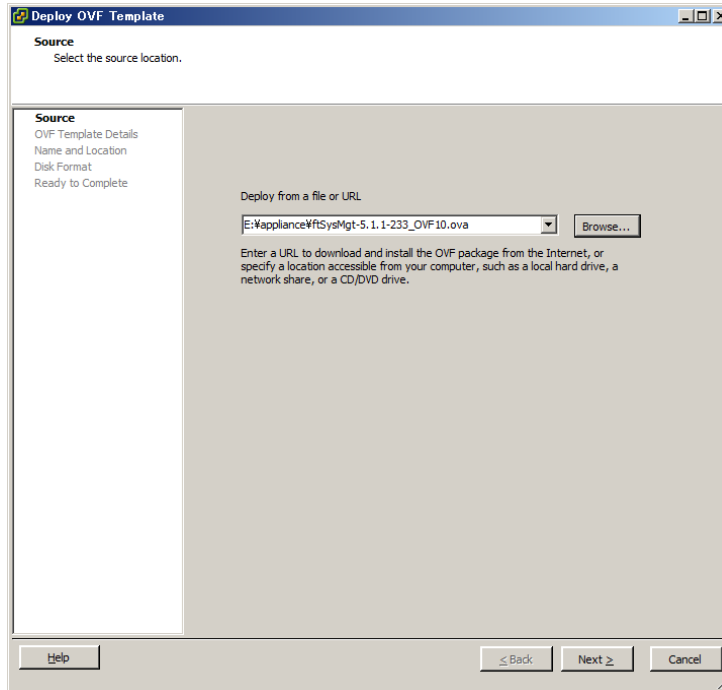
Make sure the storage has the same name as that you have written down in *Chapter 1 (1.7 Installing VMware ESXi)*.

Tips

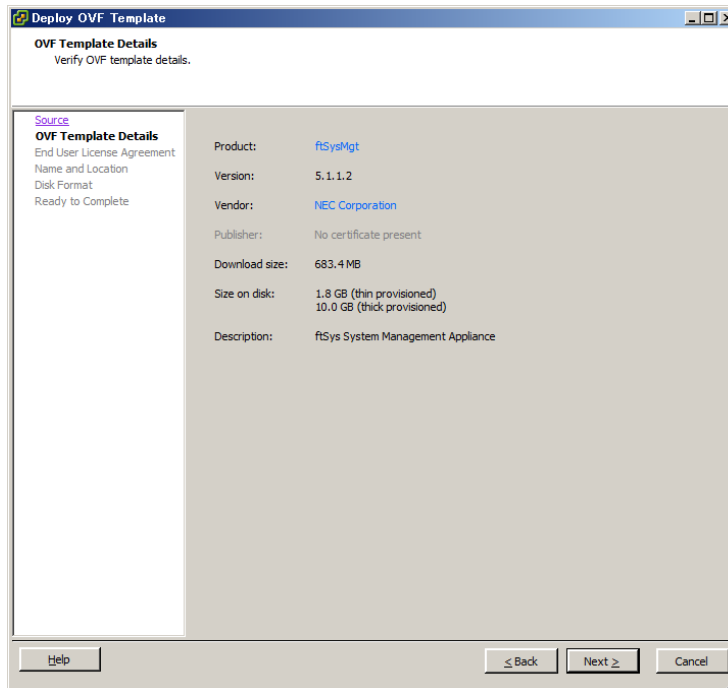
On the Storage screen displayed in *Chapter 1 (1.8.2 Installing ftSys Management Appliance)*, you cannot confirm the property of storage. You need to confirm it in advance by performing steps described here.

1.8.2 Installing ftSys Management Appliance

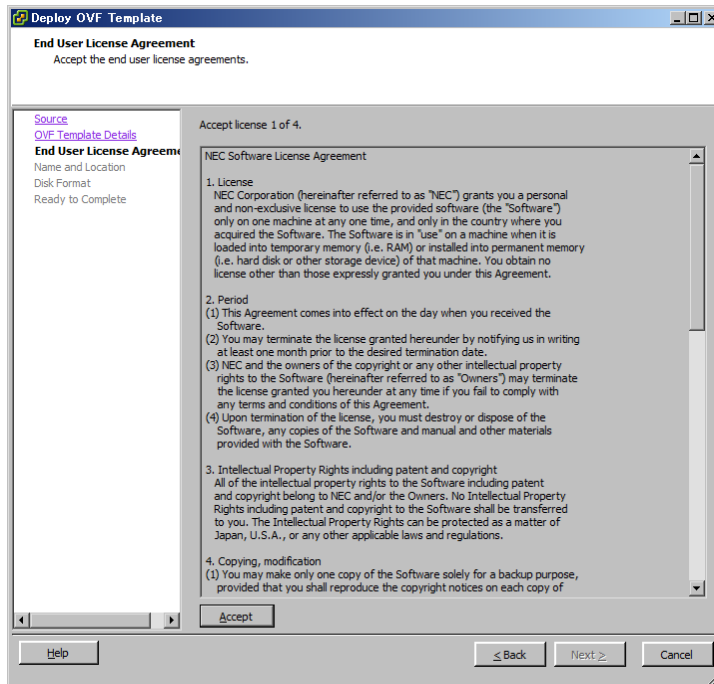
1. Insert the ft control software Install DVD into the DVD drive of the machine on which the vSphere Client is installed.
2. Start vSphere Client and connect to the ESXi host.
3. On the vSphere Client, select [File] → [Deploy OVF Template...].
4. Click [Browse...] in the screen to open the appliance folder of the DVD, select the .ova file, and click [Next].



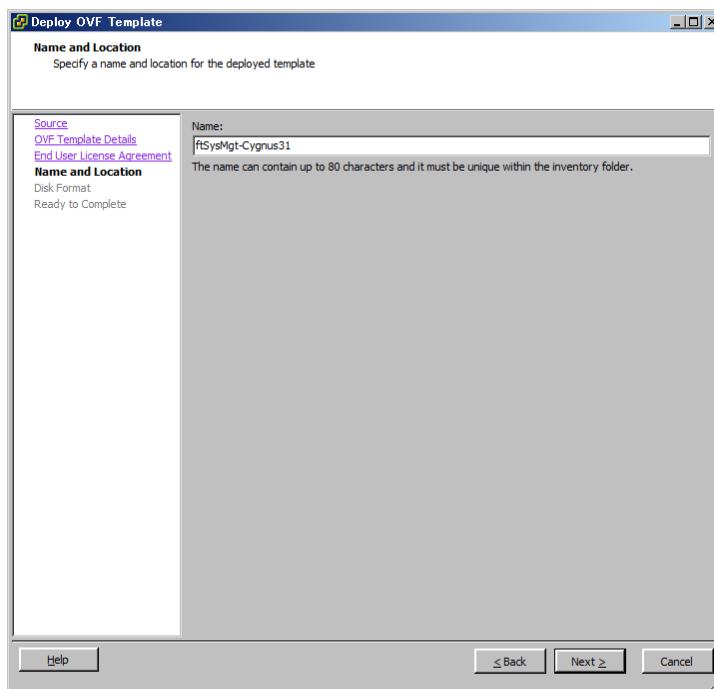
5. In the [OVF Template Details] screen, click [Next].



6. In the [End User License Agreement] screen, click [Accept] for each part of the license agreement displayed. After clicking [Accept] for the whole part, click [Next].



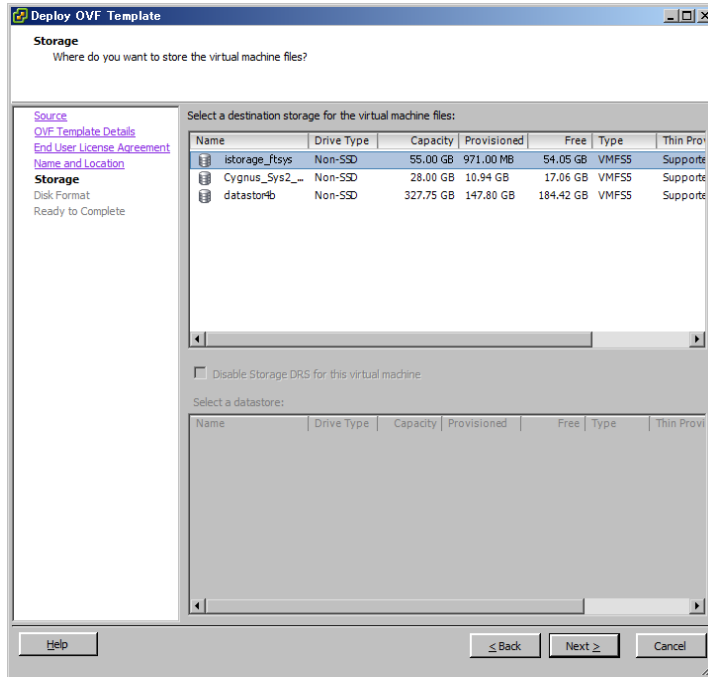
7. In the [Name and Location] screen, enter the name of ftSys Management Appliance and click [Next].



Note

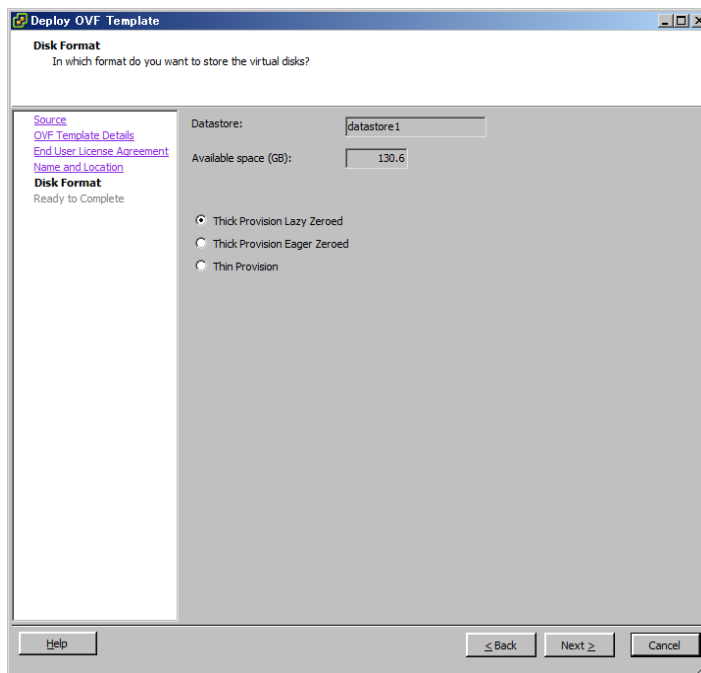
For naming ftSys Management Appliance, it is recommended to create a consistent naming convention in the light of the system operations management.
(The character string "ftSysMgt" is a prefix automatically added by Installer.)
Ex.) "ftSysMgt-[ESXi host name]"

8. When the [Storage] screen appears, select the storage you have selected at installation of the ESXi host, and click [Next].

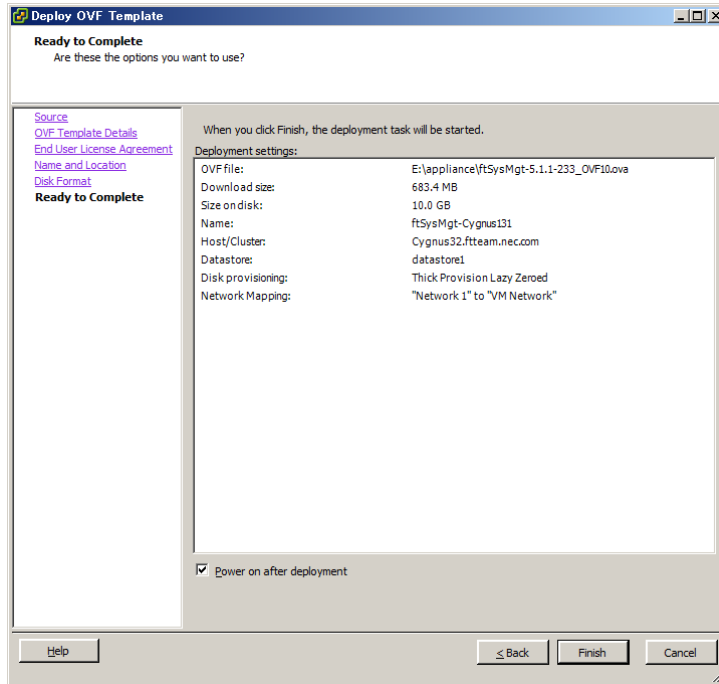


Important ftSys Management Appliance must be installed on the disk where the ESXi host exists.
Accordingly, you need to select a disk you have selected at installation of ESXi.

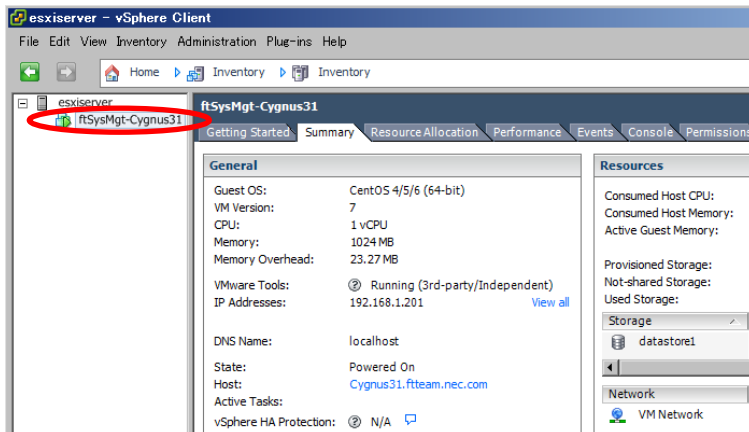
9. On the [Disk Format] screen, the following items are displayed:
 - Thick Provision Lazy Zeroed
 - Thick Provision Eager Zeroed
 - Thin Provision
 Select the [Thick Provision Lazy Zeroed] and click [Next].



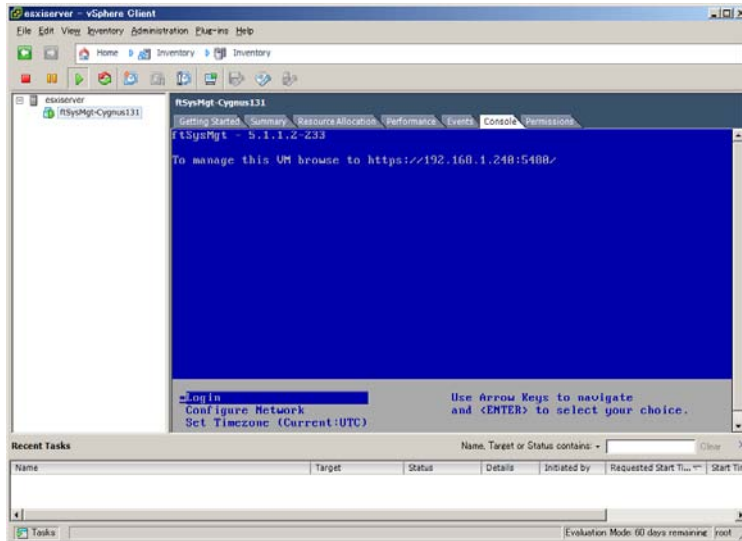
10. On the [Ready to Complete] screen, select the [Power on after deployment] checkbox and click [Finish].



11. When the deployment is completed, make sure that ftSys Management Appliance is added to the ESXi host and power is turned on.



12. To perform the following and the subsequent steps, open the console of ftSys Management Appliance, and use the main menu (blue screen) to configure.



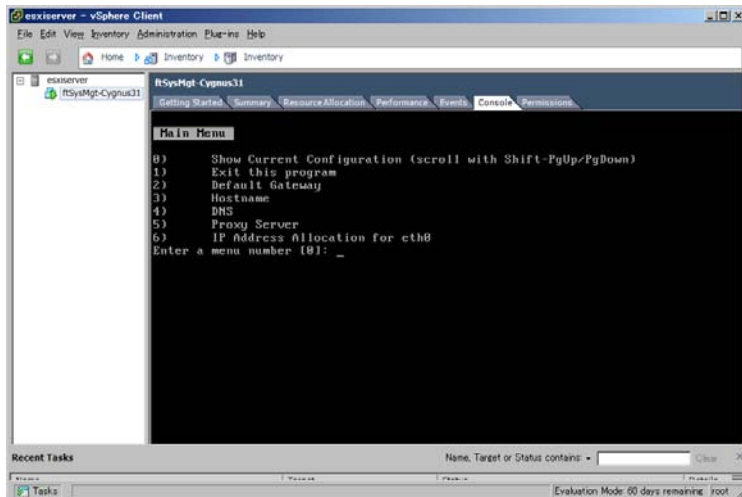
Important

- The ESXi host and ftSys Management Appliance must exist on the same network.
- Specify the DNS server from which you can obtain a correct hostname and IP address. If an inappropriate DNS server is specified, installation may fail.

Tips

You can configure the DNS server after completion of installation.

13. To use a static IP address:
From the main menu of ftSys Management Appliance, select [Configure Network]. Press **6** following the prompt "Enter a menu Number [0]" to specify the IP address. Then, press **1** to return to the main menu of ftSys Management Appliance.



14. To specify a time zone:
From the main menu of ftSys Management Appliance, select [Set Timezone] and select your area.
15. To change the initial password:
From the main menu of ftSys Management Appliance, select [Login] and log in as a root user with the password "ftServer". Use the following command to change the password as necessary.
- ```
passwd root
```

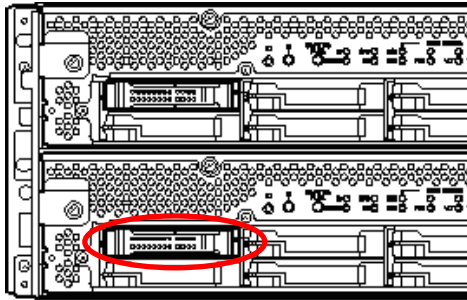


## 1.9 Installing ft control software

Connect to the ESXi host from vSphere Client to configure.

**Important** Be sure to connect to the ESXi host from vSphere Client.  
Do not connect to the vCenter Server.

1. To install ft control software on the internal disks, insert a disk in slot 0 of the CPU/IO module 1.



2. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
3. Select the ftSys Management Appliance in the left pane of vSphere Client, and click the CD/DVD button on toolbar to connect with the DVD drive that contains ft control software Install DVD.
4. Log in to ftSys Management Appliance as a root user.  
The initial password is "ftServer."
5. Run the following command on ftSys Management Appliance console.

```
/opt/ft/sbin/ft-install /dev/cdrom
```

6. When the IP address entry screen of the ESXi host appears, enter the IP address of the ESXi host, and press **Enter**.

```
Name or IP Address of the host machine[]: _
```

7. Enter the root user password of the ESXi host and press **Enter**.

```
Administrative password for xxx.xxx.xxx.xxx: _
```

8. When the confirmation message appears, press **y**.

```
Please refer to your system documentation before proceeding.
Do you want to continue [Y/n]: _
```

9. When the confirmation message appears several times, press **y**.

```
Do you want to continue [Y/n]: _
```

10. The message as shown below appears, and the installation starts.

```
Installing to host xxx.xxx.xxx.xxx. Please wait...
Updating the host's system software...
```

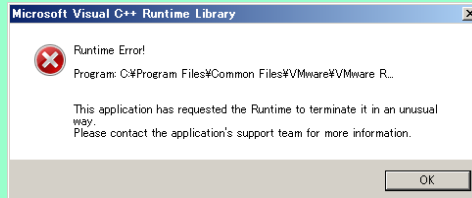
11. When the reboot confirmation message appears at the end of the installation, press **y**. Confirm that the ESXi host is shutdown, and then, remove the ft control software Install DVD.

```
A host reboot is required to place these updates into service.
Do you want to reboot now [Y/n]: _
```

**Note**

A message indicating a runtime error occurred on vSphere Client may be displayed when ESXi host is rebooted.

<Example of error message>



Even if this message is displayed, you can ignore this message. ft control software has been installed successfully at the time this message is displayed.

12. The system reboots, and the ft module registration and disk duplication are performed. These processes take several tens of minutes.

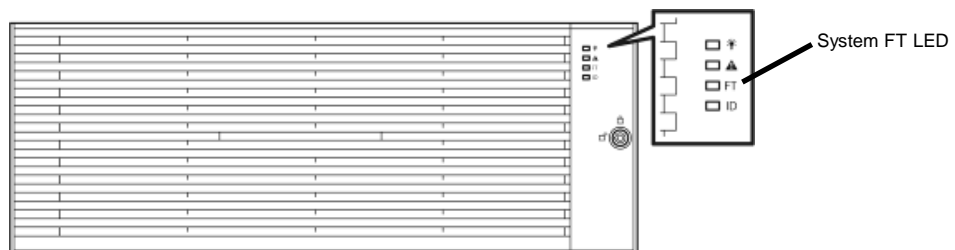
**Note**

The time required for completing the duplication varies depending on the disk space.

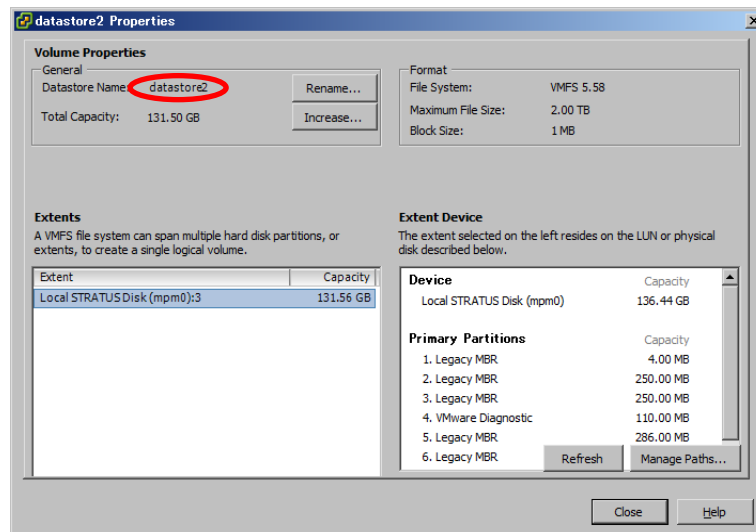
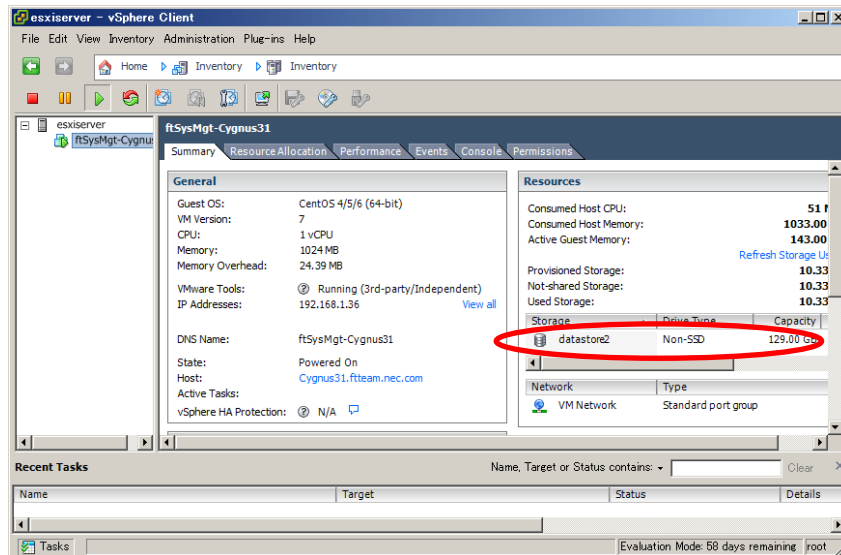
**Note**

The system will reboot twice if ft control software is installed in internal hard disk drive.

13. After the system reboot, confirm that the System FT LED at the front of the server lights.

**Tips**

- When installing ft control software to an internal disk, the PRIMARY LED of the CPU/IO module switches from #0 to #1. However, there is no problem continuing with the setup. When installing ft control software to an external storage, switching of the PRIMARY LED of the CPU/IO module does not occur.
- If the ft control software is installed in internal disk, the storage name of internal disk (datastore1) is changed to datastore2 after the system restart. However, it does not affect the system operation.



**Note**

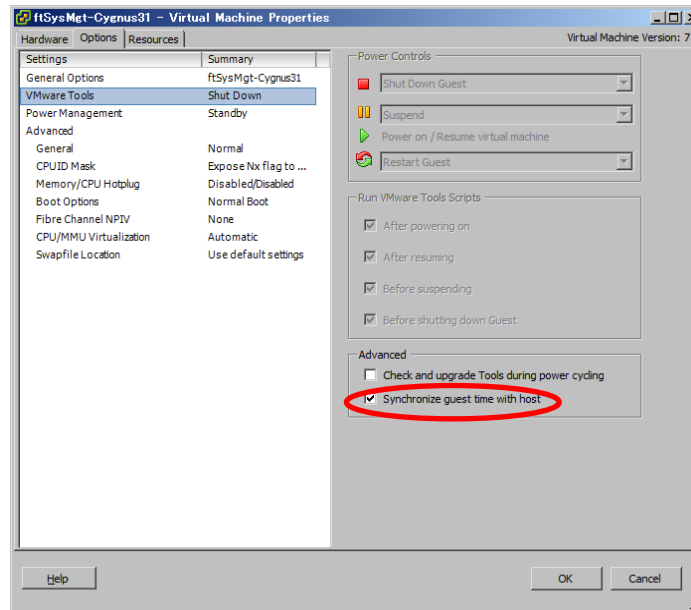
The time synchronization by NTP is unavailable in ftSys Management Appliance.

By default, ftSys Management Appliance is configured to perform time synchronization with the ESXi host. Performing time synchronization by NTP on the ESXi host makes the time of ftSys Management Appliance is also synchronized.

**Tips**

The time synchronization with the ESXi host is configured when ft control software is installed.

The [Summary] tab of ftSys Management Appliance, [Options] tab in properties of virtual machine that is displayed from [Edit Settings], and [Synchronize guest time with host] checkbox displayed by selecting [VMware Tools] → [Advanced] is enabled.



---

## **1.10 Applying Patch Program**

---

Visit the VMware's web site shown below, and download the patch program.

**VMware ESXi 5.5, Patch Release ESXi550-201404001 (2076120)**

`http://kb.vmware.com/selfservice/microsites/search.do?language=en\_US&cmd=displayKC&externalId=2076120`

\* The contents of this web site is subject to change or delete without notice.

## 1.11 Setup after installing ft control software

### 1.11.1 Log Server

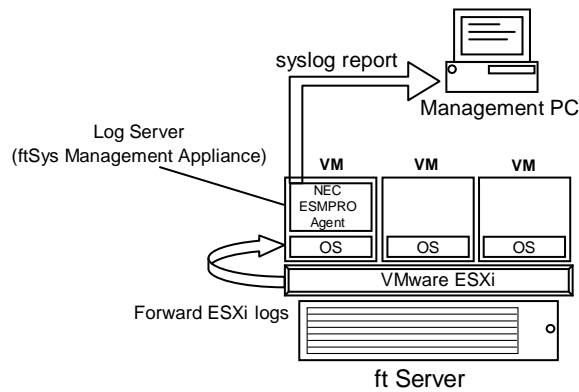
VMware ESXi 5.0 or later version does not include a service console. Therefore, this model achieves the syslog reporting by forwarding the logs generated by ESXi to the log server on which NEC ESMPRO Agent is installed.

To use ftSys Management Appliance as the log server, no additional steps are required after following the steps in Chapter 1 (1.11.2 Installing Additional Packages - When ftSys Management Appliance is set as the log server) and Chapter 2 (1.1 NEC ESMPRO Agent) of this document, because the log server will be automatically configured and forwarding the logs generated by the ESXi becomes available.

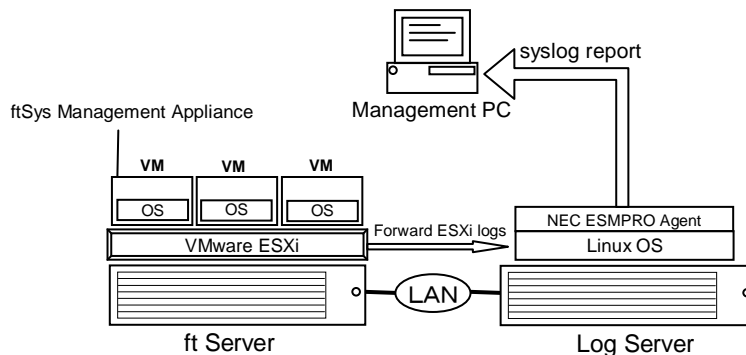
**Note**

To use any other server than ftSys Management Appliance as the log server, you need to prepare a Linux server separately. See Chapter 3 (1. Steps for Configuring the Separate Log Server) of this manual for how to configure the Linux server.

**The case of using ftSys Management Appliance as the Log Server.**



**The case of using other Linux server as the Log Server.**



**Note**

If the log server is restarted alone, the log generated during restart is not transferred to log server.

If the log server is restarted due to restart of ESXi host, the log generated on ESXi host during the period from the startup of ESXi host to restart of log server, is not transferred to log server.

If the log server other than ftSys Management Appliance is used and the syslog is to be transferred via TCP using rsyslog, transferring of log from ESXi host will not be automatically restarted. Run the following command to reload the syslog daemon.

```
esxcli -s <IP address of ESXi server or machine name> system syslog reload
```

In any other cases, the logs are automatically transferred from ESXi host when the log server is started.

## 1.11.2 Installing Additional Packages

Connect to the ESXi host from vSphere Client to configure.

**Important** Be sure to connect to the ESXi host from vSphere Client.  
Do not connect to the vCenter Server.

1. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
2. Select the ftSys Management Appliance in the left pane of vSphere Client, and click the CD/DVD button on toolbar to connect with the DVD drive that contains ft control software Install DVD.
3. Log in to ftSys Management Appliance as a root user.
4. Mount the ft control software Install DVD. When /mnt/cdrom directory exists, the making of the directory is unnecessary by mkdir command.

```
mkdir /mnt/cdrom
mount /dev/cdrom /mnt/cdrom
```

5. Run the installer of additional package.

- **When ftSys Management Appliance is set as the log server**

```
/mnt/cdrom/NEC/install.sh
```

- **When a separate Linux server is set as the log server**

```
/mnt/cdrom/NEC/install.sh -a
```

6. Select a keyboard layout ("us" for English 101 or "jp" for Japanese 106), and press **Enter**.  
Please choose a keyboard layout: [us(101) | jp(106)]
7. Select a language (English or Japanese) for NEC ESMPRO report table and enter "E" or "J".  
Please choose a language for ESMPRO alert messages: [E(nglish) | J(apanese)]

**Note** If using a separate Linux server as the log server, this message will not appear.

**Tips** NEC ESMPRO Report Table installed in this step is used by NEC ESMPRO Agent. See *Chapter 2 (1.1 NEC ESMPRO Agent)* for detail of NEC ESMPRO Agent.

8. The IP address of the ESXi host is displayed.  
Make sure that the IP address shown is correct, enter the root password for the ESXi host, and press **Enter**.

```
ESXi host: xxx.xxx.xxx.xxx
Enter the root password:
```

9. The message prompting you to configure the log server appears. Enter the IP address of log server or the machine name, and press **Enter**. You can skip this step and set it later. (In that case, see *Chapter 3 (1. Steps for Configuring the Separate Log Server)*).

**Note** The message does not appear when ftSys Management Appliance is configured as the log server.



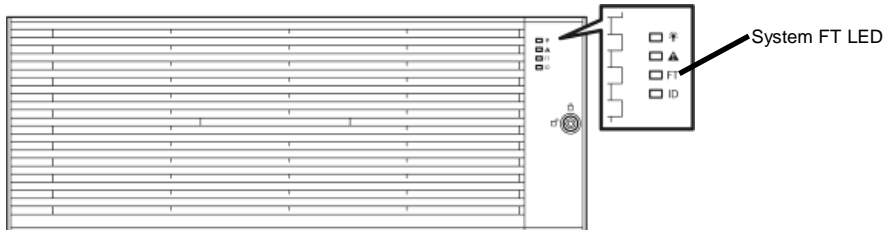
- When the message below appears, enter "yes" to restart the system. The ESXi host restarts.

```
A host reboot is required to place these updates into service.
Enter 'yes' to reboot now or 'no' to allow a manual reboot later: [yes]
```

- After making sure that the ESXi host is shutdown, take the ft control software Install DVD out from the drive.

### 1.11.3 Checking status of ft server

- After the ftSys Management Appliance restarts, check the duplication status. Confirm that the System FT LED on the front of the server lights.



- Run the following command to confirm if the system is running normally.

```
/opt/ft/sbin/ft-verify
```

The results list for each of the configuration is output. If all items show [PASS], it indicates that the installation has been completed successfully.

#### Output example:

```
ftSys Management Appliance hosted by xxx.xxx.xxx.xxx [PASS]
Host is configured with enough memory [PASS]
ftSys installed on host [PASS]
Host software version matches appliance (5.1.1-233) [PASS]
ftSys Management Appliance firewall settings [PASS]
ftSys Management Appliance installed on boot volume [PASS]
Multiple paths to storage [PASS]
Network Configuration [PASS]
Host ftSys service started [PASS]
Host logs available after reboot [PASS]
DNS Configuration [PASS]
```

---

## 1.12 Connecting and Configuring Options

---

If there is any optional PCI board or peripheral equipment to connect to NEC Express5800/ft series, turn off the power to NEC Express5800/ft series, and connect it according to *Chapter 2 (5.7 PCI Card)* in *Maintenance Guide* and the device's instruction.

For how to install and use hard disk drive, see *Chapter 2 (2. Disk Operations)* in *Maintenance Guide*.

Immediately after the installation completes, network configuration for a port is duplicated. When you change the network configuration or configure the duplication setting by adding a LAN card, it is necessary to configure the settings from vSphere Client.

For detailed procedures, refer to the *User's Guide* and VMware vSphere documents packaged with this guide from the following Website by selecting "Release 5.5"

<http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html>

\* The contents of this web site is subject to change or delete without notice.

For how to configure the duplicated network, see *Chapter 2 (3. Duplex LAN Configuration)* in *Maintenance Guide*.

To have enough time to initialize Fibre Channel disk and Fibre Channel switch and so on, adjust [Server] - [Power On Delay Time] by setting System BIOS configuration Utility.

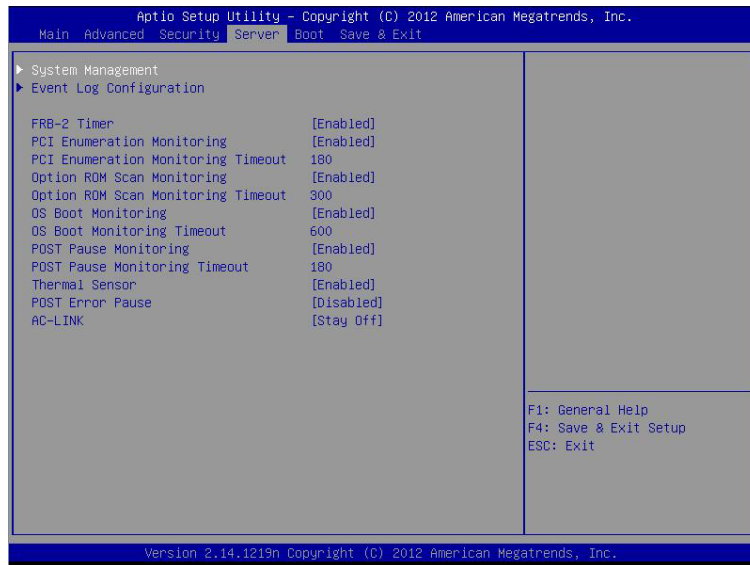
## 1.13 Enabling OS Boot Monitoring Function

Enables OS Boot Monitoring feature.

Set OS Boot Monitoring feature to Enabled on BIOS SETUP according to *Chapter 1 (1.5 Disabling OS Boot Monitoring Function)*. Then, specify the timeout time for OS Boot Monitoring Timeout parameter appropriately.

### Tips

Specify the timeout time in seconds. Default setting is 600 seconds (10 minutes).



---

## **1.14 Backing up System Information**

---

We recommend you to back up the system information after setting up the system.

With backup for system information, the information and settings that are specific to your server can be restored after the server is repaired. Follow the steps below to dictate the system information:

### **1.14.1 BIOS SETUP**

---

1. Power on the server, and run POST.
2. Press F2 while the following message is displayed on the screen.  
Press <F2> SETUP, <F4> ROM Utility, <F12> Network
3. When POST completes, write down the new setting values.  
< Example >  
[Advanced]-[PCI Configuration]-[SAS Option ROM Scan]  
[Advanced]-[PCI Configuration]-[PCI Slot x Option ROM]  
[Security]  
[Server]-[OS Boot Monitoring]  
[Server]-[AC-LINK]  
[Server]-[Power On Delay Time]  
[Boot]-[Boot Option Priorities]
4. Select Save changes and Exit.  
On the confirmation window shown below, select [Yes].  
Save configuration and exit?  
Then, the server will restart.

### 1.14.2 System information

---

1. Run POST.  
While the following message appears, press **F4**.  
Press <F2> SETUP, <F4> ROM Utility, <F12> Network
2. When POST completes, the keyboard selection menu appears.  
If you select your keyboard layout, the following menu will appear.

|                                                  |
|--------------------------------------------------|
| Off-line TOOL MENU                               |
| Maintenance Utility<br>BMC Configuration<br>Exit |

3. Choose **Maintenance Utility – System Information Viewer – Display System Information – System Information**. Write down the following system information.  
“Product Name”  
“FR Number”  
“Serial Number”
4. Press **ESC** several times until the following menu appears.

|                                                  |
|--------------------------------------------------|
| Off-line TOOL MENU                               |
| Maintenance Utility<br>BMC Configuration<br>Exit |

### 1.14.3 BMC Configuration

---

1. Choose **BMC Configuration – BMC Configuration**. Write down the BMC Configurations that have changed.  
< Example >  
“Network : CPU/IO module0”-“Property”  
“Network : CPU/IO module1”-“Property”  
“User Management”-“User Account”
2. Press **ESC** some times until the following menu appears.

|                                                  |
|--------------------------------------------------|
| Off-line TOOL MENU                               |
| Maintenance Utility<br>BMC Configuration<br>Exit |

3. Choose “Exit” to exit.

---

## ***1.15*** Setup Procedures upon Installing Guest OS

---

For the setup procedures upon installing guest OS, see the “*vSphere Virtual Machine Administration Guide*” of VMware vSphere. For the network configuration, refer to the “*vSphere Networking Guide*” packaged with this guide and the *ESXi Configuration Guide* of VMware vSphere.

**Note**

Guest OS cannot use the DVD drive on the ESXi host during operation.  
To use the DVD drive, select [Client Device] for properties setting of the guest OS.

---

## 2. Procedures after Completion of Installation

---

---

### 2.1 Confirmation of the Kernel Version

---

Explain how to check the kernel version of ftSys Management Appliance and a version of VMware ESXi.

Check the version following the steps below.

#### VMware ESXi

1. Run the following command on the ftSys Management Appliance.

```
esxcli -s <IP address of ESXi host> system version get
Product: VMware ESXi
Version: 5.5.0
Build: Releasebuild-1746018
Update: 1
```

Make sure that Version, Build, and Update are exactly same as those shown above.

#### Note

The "Build" column shows the number given after the patch program was applied.

#### ftSys Management Appliance

1. Run the following command on the ftSys Management Appliance.

```
uname -a
Linux ftsysMgt-Cygnus 2.6.18-274.e15 #1 SMP Fri Jul 22
04:43:29 EDT 2011 x86_64 x86_64 x86_64 GNU/Linux
```

"2.6.18-274.e15" indicates version of kernel, and "#1 SMP Fri Jul 22 04:43:29 EDT 2011" indicates release information of kernel.

Make sure that the version of kernel is correct.

This completes version confirmation.

---

## 2.2 Confirmation of the ft control software Version

---

The following describes how to check the version of ft control software.

Confirm the version following the steps below:

**Note**

Running the following command may fail if the necessary process does not run immediately after the system startup. In this case, wait for a while (several minutes or so), and try again.

1. Run the following command on the ftSys Management Appliance.

```
/opt/ft/bin/ftsmaint -v
ftsys-ftsmaint version 5.1.1-233
```

The version of the ft control software in operation is displayed.

Make sure that the version is exactly same as that shown above.

This completes the version confirmation.



## 2.3 Precautions for Changing the Configuration after Setup

If the network configuration has been changed after completing the setup, run the following command.

**Important** Configuration should be changed after setup is complete. If the configuration is changed during setup, it can cause an unexpected behavior.

### 2.3.1 If the ESXi Host IP address or root user password has been changed

The process that runs on ftSys Management Appliance manages duplication by connecting with ESXi host.

If the ESXi host IP address or root user password has been changed, the process running on ftSys Management Appliance will be unable to login to ESXi host.

Run the following command so that ftSys Management Appliance can detect the modified ESXi host.

```
/opt/ft/sbin/configure-appliance
```

After running the command, run the following command to reboot ftSys Management Appliance.

```
shutdown -r now
```

### 2.3.2 If the IP address of Log Server or Host Name has been Changed

If the IP address of log server or host name has been changed, perform the following steps.

**Note** See *Chapter 1 (1.11.1. Log Server)* for the log server.

1. Log in to ftSys Management Appliance as a root user.
2. Run the build-loghost command and specify the log server.  
The new IP address or the host name is recognized as the log server.

```
/opt/ft/sbin/build-loghost update -l <IP address of log server or machine name>
```

3. Run the build-loghost command with no option specified to make sure that the new IP address or host name is properly recognized as the log server.

```
/opt/ft/sbin/build-loghost
```

**Note** Execution example: When the IP address of log server is 192.168.0.7:

```
/opt/ft/sbin/build-loghost
Default Network Retry Timeout: 180
Local Log Output: /scratch/log
Local Log Output Is Configured: true
Local Log Output Is Persistent: true
Local Logging Default Rotation Size: 1024
Local Logging Default Rotations: 8
Log To Unique Subdirectory: false
Remote Host: 192.168.0.7
```

4. If the log server other than ftSys Management Appliance is used and the syslog is to be transferred via TCP, reload the syslog daemon.

```
esxcli -s <IP address of ESXi server or machine name> system syslog reload
```

In any other cases, the syslog daemon does not need to be reloaded.

### 2.3.3 Changing the Firewall Rules on ftSys Management Appliance

#### Default Firewall Rules

The default firewall rules after the setup are as follows.

| Input/Output | Destination Port | Source Port | Protocol | Service                |
|--------------|------------------|-------------|----------|------------------------|
| Input        | 514              | 67-68       | udp      | syslogd *1             |
| Input        | 22               | *           | tcp      | ssh                    |
| Input        | 67-68            | 67-68       | udp      | bootp                  |
| Input        | 80               | *           | tcp      | http                   |
| Input        | 161              | *           | *        | SNMP                   |
| Input        | 443              | *           | tcp      | https                  |
| Input        | 3052             | *           | *        | APC                    |
| Input        | 5480             | *           | tcp      | VAMI                   |
| Input        | 6547             | *           | tcp      | APC                    |
| Input        | 8089             | *           | tcp      | Apache/ftWeb           |
| Input        | 8090             | *           | tcp      | OSM<br>CIM-Indications |
| Output       | 22               | *           | tcp      | ssh                    |
| Output       | 23               | *           | tcp      | telnet                 |
| Output       | 53               | 1024-65535  | *        | DNS                    |
| Output       | 67-68            | 67-68       | udp      | bootp                  |
| Output       | 80               | *           | tcp      | http                   |
| Output       | 162              | *           | *        | snmp-trap              |
| Output       | 443              | *           | tcp      | https                  |
| Output       | 5989             | *           | tcp      | sfcdb/https            |
| Output       | *                | 3052        | *        | APC                    |

\*1. When the log server is configured on ftSys Management Appliance

Use the report method except the Manager Report (SNMP), change the setting of the firewall. NEC ESM PRO Agent (in the table referred to as Agent) list of port to use when the report is the following.

"Direction" in the table include the bi-directional arrows in the top row is at the starting time of the communication, and the lower shows the communication of return.

| Function                                       | in (Agent) | Direction | Out (default) | Note                         |
|------------------------------------------------|------------|-----------|---------------|------------------------------|
| Manager Report (SNMP)                          | Auto       | →         | 162/udp       | Port opening (default)       |
| Manager Report (TCP/IP)                        | Auto       | →<br>←    | 31134/tcp     |                              |
| Via the Manager Express Report Service         | Auto       | →<br>←    | 31136/tcp     |                              |
| HTTPS (Via the Manager Express Report Service) | Auto       | →<br>←    | 31138/tcp     |                              |
| Express Report Service (Internet email)        | Auto       | →<br>←    | 25/tcp        | smtp                         |
|                                                |            | →<br>←    | 110/tcp       | pop3                         |
| Express Report Service (HTTPS)                 | Auto       | →<br>←    | 443/tcp       | https Port opening (default) |

## Adding New Firewall Rules

**Important** Do NOT change or delete the default firewall rules. Only add individual rules as necessary.

**Note** To enable the firewall rules on ftSys Management Appliance, rebooting ftSys Management Appliance is required. Rebooting the ESXi host is not required.

1. Open the firewall configuration file (/etc/sysconfig/iptables) on ftSys Management Appliance.
 

```
vi /etc/sysconfig/iptables
```
2. Change the firewall rules and save the file.
3. Reboot ftSys Management Appliance to enable the rules.  
Reboot the guest OS from the vSphere Client or run the following command on the console.
 

```
shutdown -r now
```
4. After rebooting ftSys Management Appliance, run the following command to make sure that the system is running successfully.
 

```
/opt/ft/sbin/ft-verify
```
5. If successful, [PASS] appears in the output.
 

```
ftSys Management Appliance hosted by xxx.xxx.xxx.xxx [PASS]
Host is configured with enough memory [PASS]
ftSys installed on host [PASS]
Host software version matches appliance (5.1.1-233) [PASS]
ftSys Management Appliance firewall settings [PASS]
ftSys Management Appliance installed on boot volume [PASS]
Multiple paths to storage [PASS]
Network Configuration [PASS]
Host ftSys service started [PASS]
Host logs available after reboot [PASS]
DNS Configuration [PASS]
```

If the system does not work normally when checking the firewall behavior, review the rules or revert the rules to default by following the steps below.

## Reverting the Firewall Rules to Default

1. Delete the firewall configuration file (/etc/sysconfig/iptables) on ftSys Management Appliance.
 

```
rm /etc/sysconfig/iptables
```
2. Copy the default firewall configuration file.
 

```
cp /etc/opt/ft/firewall.templ /etc/sysconfig/iptables
```
3. Reboot ftSys Management Appliance to enable the configuration.  
Reboot the guest OS from the vSphere Client or run the following command on the console.
 

```
shutdown -r now
```

# NEC Express5800 Series Express5800/R320d-E4, R320d-M4

# 2

---

---

## Installing Bundled Software

This chapter provides brief explanation of bundled software and how to install them.

### 1. Bundled Software for the Server

Describes the bundled software to be installed in the server system.

### 2. Bundled Software for Management PC

Describes the bundled software to be installed in Management PC that is used to monitor and manage the server system.

---

# 1. Bundled Software for the Server

---

The provided "NEC EXPRESSBUILDER" DVD contains "NEC ESMPRO Manager" for managing the NEC Express5800/ft series. This utility monitors the status of Express5800/ft server.

---

## 1.1 NEC ESMPRO Agent

---

NEC ESMPRO Agent is a utility to monitor the operating status, the configuration information, the failure occurrence status of hardware and software on the NEC Express5800/ft series. When it detects some problems, it sends messages to the computer in which the NEC ESMPRO Manager is installed.

NEC ESMPRO Agent is required to be installed on the log server by users.

In order for NEC ESMPRO Agent to operate, it is necessary to configure the settings according to your environment. See the *User's Guide* (NEC/esmpro-sa/doc/lnx\_esm\_users\_e.pdf) included in the ft control software Install DVD.

NEC ESMPRO Agent is stored in the ft control software Install DVD.

Described below are procedures to configure the ft Management Appliance as the log server. If you use any other server as the log server, see *Chapter 3 (1. Steps for Configuring the Separate Log Server)* for the log server.

**Note** See *Chapter 1 (1.11.1. Log Server)* for the log server.

**Note** Be sure to install NEC ESMPRO Agent on log server.  
If the status of ft server changes due to failure, NEC ESMPRO Agent notifies of it.  
NEC ESMPRO Agent notifies server status change only. It does not notify of hardware failure of ESXi host nor events related to VMware.  
You can use `ftsmaint` command to confirm detailed status of ft server.  
Refer to *Chapter 1 (4.3 ftsmaint Examples)* in *Maintenance Guide* (separate volume) for details of `ftsmaint` command.

### 1.1.1 Preinclination

SNMP is used for reporting to NEC ESMPRO Manager. Provide settings for SNMP as shown below.

1. Log in to ftSys Management Appliance as a root user.
2. Edit the `/etc/snmp/snmpd.conf`.  
Change the `/etc/snmp/snmpd.conf`, and, for ESMPRO MIB (.1.3.6.1.4.1.119.2.2.4.4), set a right of the community in "READ WRITE".  
In the example below, "READ WRITE" authority is given to all MIB (.1 subordinates) of default community (public).

Example

```
#####
Third, create a view for us to let the group have rights to:
name incl/excl subtree mask(option)
#view systemview included .1.3.6.1.2.1.1
#view systemview included .1.3.6.1.2.1.25.1.1
view all included .1 80

#####
Finally, grant the group read-only access to the systemview view.
group context sec.model sec.level prefix read write notif
#access notConfigGroup "" any noauth exact systemview none none
access notConfigGroup "" any noauth exact all all none
```

Modify these lines.

- Comment out the existing description.
- Add new descriptions.

#### Note

Refer to Help of `snmpd.conf` for detailed procedure. Run `man` command to open Help of `snmpd.conf`.

3. Check the runlevel 3 and 5 of `snmpd` is on.

```
/sbin/chkconfig --list snmpd
```

```
snmpd 0:off 1:off 2:off 3:on 4:off 5:on 6:off
```

- In the case of on, restart `snmpd`.

```
/etc/init.d/snmpd restart
```

- In the case of off, change setting of `snmpd`, and start `snmpd`.

```
/sbin/chkconfig --level 35 snmpd on
```

```
/etc/init.d/snmpd start
```

4. Check the runlevel 3 and 5 of `portmap` is on.

```
/sbin/chkconfig --list portmap
```

```
portmap 0:off 1:off 2:off 3:on 4:off 5:on 6:off
```

- In the case of on, it is not necessary to change setting of `portmap`.

- In the case of off, change setting of `portmap`, and start `portmap`.

```
/sbin/chkconfig --level 35 portmap on
```

```
/etc/init.d/portmap start
```

### 1.1.2 Install NEC ESM PRO Agent

Connect to the ESXi host from vSphere Client to configure.

**Important** Be sure to connect to the ESXi host from vSphere Client.  
Do not connect to the vCenter Server.

1. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
2. Select the ftSys Management Appliance in the left pane of vSphere Client, and click the CD/DVD button on toolbar to connect with the DVD drive that contains ft control software Install DVD.
3. Log in to ftSys Management Appliance as a root user.
4. Mount the ft control software Install DVD. When /mnt/cdrom directory exists, the making of the directory is unnecessary by mkdir command.

```
mkdir /mnt/cdrom
mount /dev/cdrom /mnt/cdrom
```

5. Run the following command to change the directory that contains NEC ESM PRO Agent.

```
cd /mnt/cdrom/NEC/esmpro-sa/
```

6. Run the following command to install the NEC ESM PRO Agent.

```
rpm -ivh Esmpro-*
```

7. Run the following command to change setting of ESMstrg.

```
/sbin/chkconfig ESMstrg off
```

8. Running the following command displays the messages as shown below.

```
cd /opt/nec/esmpro_sa/tools
./sethwinf
```

Enter the number and set the system information.

```
1. Product Name: Other
2. Product Manufacturer: Other
3. Chassis Type: Other
s. Save and quit
q. Quit without save
```

Please input your selection (1 to 3, s, q):

Examples)

```
1. Product Name: NEC Express5800/R320d-M4
2. Product Manufacturer: NEC
3. Chassis Type: Rack
```

9. Change directory, and unmount the ft control software Install DVD.

```
cd /
umount /mnt/cdrom
```

10. Press the Ctrl+Alt keys to release the mouse, click the CD/DVD button on toolbar on the console of vSphere Client to unmount the DVD drive that contains ft control software Install DVD, and then take the ft control software Install DVD out from the DVD drive.
11. Restart the ftSys Management Appliance.  
`# reboot`
12. Perform a basic configuration of the Manager Report (SNMP).
  1. Start the ESMamsadm, see "*Chapter 3 Report Features*" – "1. Report Setting" – "*Method of starting the Control Panel (ESMamsadm)*" of *NEC ESMPRO Agent User's Guide*.
  2. Set a trap notification destination IP, see "*Chapter 3 Report Features*" – "2.1.1. Base Setting of Manager (SNMP)" of *NEC ESMPRO Agent User's Guide*.
13. Perform the automatic discovery of servers in NEC ESMPRO Manager.  
Perform the automatic discovery of servers according to *NEC ESMPRO Server Management Guide*.  
You can download the *NEC ESMPRO Server Management Guide* from the following URL:  
<http://www.58support.nec.co.jp/global/download/index.html>



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## **2. Bundled Software for Management PC**

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This section describes the bundled software required to configure PC for Management used to manage the server system.

---

### **2.1 NEC ESMPRO Manager**

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NEC ESMPRO Manager remotely controls and monitors the server hardware. Install NEC ESMPRO Manager on management PC.

To use these features, install the bundled software such as NEC ESMPRO Agent on the server.

For details about the system requirements of NEC ESMPRO Manager and how to install it, refer to "*NEC ESMPRO Manager Installation Guide*" (xxx\doc\jp\pdf\sg\_es\_sm\_j.pdf, where xxx represents 3-digit numeric) in EXPRESSBUILDER.

**NEC Express5800 Series  
Express5800/R320d-E4, R320d-M4**

# 3

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## **Configuring the Separate Log Server**

This chapter provides how to configure the log server other than ftSys Management Appliance.

### **1. Steps for Configuring the Separate Log Server**

Describes how to configure the log server other than ftSys Management Appliance.

---

# ***I.* Steps for Configuring the Separate Log Server**

---

To use a log server separately, prepare a Linux server other than ftSys Management Appliance. To configure the server to be used for log server, install NEC ESMPRO Agent on it, and provide various settings (e.g., editing `snmpd.conf`, opening of port, and others). Refer to NEC ESMPRO Agent Installation Guide for detailed information.

If you have not specified IP address or machine name of log server in Step 9 of *Chapter 1 (1.11.2 Installing Additional Packages)*, perform the steps described in *Chapter 1 (2.3.2 If the IP address of Log Server or Host Name has been Changed)* so that the Linux server (log server) can be detected.

After configuring the server as described above, provide the following settings according to your environment.

**Tips**

If the separate log server is used, some event logs related to internal disk are not reported because these logs are output to syslog of ftSys Management Appliance. If you install NEC ESMPRO Agent and report table in ftSys Management Appliance and provide report settings, these logs can be reported. However, logs related to degradation of internal disks are reported without performing these steps.

---

## ***I.I* Setting Firewall for Log Server**

---

To forward logs from the ESXi server, use the 514/udp port. In the case of setting the firewall on the log server side, set it to receive logs from the 514/udp port.

**Examples**

1. Add below to `/etc/sysconfig/iptables`.  
`-A INPUT -p udp -dport 514 -j ACCEPT`
2. Restart iptables.  
`# service iptables restart`

## 1.2 Setting Syslog for Log Server

Set the 514/udp port in waiting state on the log server side. Additionally, the configuration to output transferred logs to `/var/log/messages` needs to be set as well.

### Examples of setting an environment to use syslog

- To set the 514/udp port in waiting state, edit `/etc/sysconfig/syslog`.
 

```
<Before the change>
SYSLOGD_OPTIONS="-m 0"
<After the change>
SYSLOGD_OPTIONS="-m 0 -r"
```
- To output transferred logs to `/var/log/messages`, edit `/etc/syslog.conf`.
 

```
<Before the change>
*.info;mail.none;authpriv.none;cron.none /var/log/messages
<After the change>
*.info;mail.none;authpriv.none;cron.none;local4.none;local6.notice /var/log/messages
```
- Restart syslog.
 

```
service syslog restart
```

### Examples of setting an environment to use rsyslog

- To set the 514/udp port in waiting state, edit `/etc/sysconfig/rsyslog`.
 

```
<Before the change>
Provides UDP syslog reception
#$ModLoad imudp.so
#$UDPServerRun 514
<After the change>
Provides UDP syslog reception
$ModLoad imudp.so
$UDPServerRun 514
```
- To output transferred logs to `/var/log/messages`, edit `/etc/rsyslog.conf`.
 

```
<Before the change>
*.info;mail.none;authpriv.none;cron.none /var/log/messages
<After the change>
*.info;mail.none;authpriv.none;cron.none;local4.none;local6.notice /var/log/messages
```
- Restart rsyslog.
 

```
service rsyslog restart
```

#### Note

The setting method may be changed depending on the package version. For the setting method, refer to Help, etc. for `.conf` files. For example, Help for `rsyslog.conf` can be checked by running the `man` command as below.

```
man rsyslog.conf
```

---

## 1.3 Installing Reporting Function onto Log Server

---

Install the report table of NEC ESMPRO onto the log server so that NEC ESMPRO Agent can send the ft server-specific messages transferred to the log server to NEC ESMPRO Manager.

**Note**

If you want to change from the previously selected language to other language in the language selection for the report table, you need to uninstall the package installed before running the installer. When report table is uninstalled, restart NEC ESMPRO Agent.

```
rpm -qa | grep ftexp-report-table
ftexp-report-table.[language ID]-[version]
rpm -e ftexp-report-table.[language ID]
/opt/nec/esmpro_sa/bin/ESMRestart
```

1. Log in to the log server as a root user.
2. Mount the ft control software Install DVD. When /mnt/cdrom directory exists, the making of the directory is unnecessary by mkdir command.

```
mkdir /mnt/cdrom
mount /dev/cdrom /mnt/cdrom
```

3. Run the command below to install NEC ESMPRO report table onto the log server.

```
/mnt/cdrom/NEC/install.sh -e
```

4. Select a language for the report table. For English, select “E”, and for Japanese, select “J.”

```
Please choose a language for ESMPRO alert messages: [E(nglish) | J(apanese)].
```

5. Change directory, and unmount ft control software Install DVD.

```
cd /
umount /mnt/cdrom
```

6. Restart NEC ESMPRO Agent on the log server.

```
/opt/nec/esmpro_sa/bin/ESMRestart
```