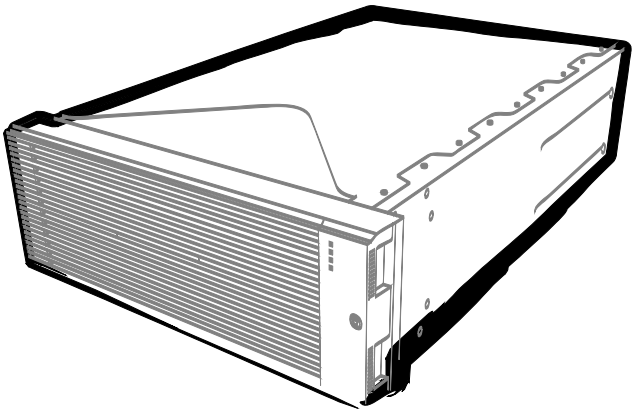
Express5800

NEC



NEC Express Server
Express5800 Series

Express5800/R320c-E4

Model Number: N8800-173F, EXP320P

Express5800/R320c-M4

Model Number: N8800-174F, EXP320Q

Installation Guide (VMware)

Chapter 1 Installing OS

Chapter 2 Installing Bundled Software

30.004.01-102.01
December 2013, Second Edition

Documents Provided with This Product

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

📖 Precautions for Use	Describes points of caution to ensure the safe use of this server. **Read these cautions before using this server.**
📖 Getting Started	Describes how to use this server, from unpacking to operations. Refer to this guide as you begin for an overview of this server.

💿 EXPRESSBUILDER

PDF 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

PDF 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

PDF 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

PDF Other documents

Provides the detail of NEC ESMPRO and the other features.

Contents

Documents Provided with This Product 2

Contents 3

Notations Used in This Document 5
Notations used in the text 5
Optical disk drives 5
Hard disk drives 5
Removable media 5
POST 6
BMC 6

Trademarks 7

Regulatory Notices 8

Warnings and Additions to This Document 10
Latest editions 10

Chapter 1 Installing OS 11

1. Setup Procedure 12
1.1 Requirements for Setup 13
1.2 Preparations for Setup 14
1.2.1 Prepare NEC Express5800/ft series 14
1.2.2 Prepare external storage device 15
1.3 Enabling internal disk 16
1.4 Enabling FC card 19
1.5 Disabling OS Boot Monitoring Function 22
1.6 Setting HBA configuration by using QLogic 24
1.7 Installing VMware ESXi 32
1.7.1 Installing VMware ESXi 32
1.7.2 Configuring ESXi 35
1.7.3 Configuring the Firewall for the ESXi Host from the vSphere Client 38
1.8 Installing ftSys Management Appliance 39
1.8.1 Checking the Installation Destination Disk 39
1.8.2 Installing ftSys Management Appliance 41
1.9 Installing ft control software 46
1.10 Setup after installing ft control software 49
1.10.1 Log Server 49
1.10.2 Installing Additional Packages 50
1.10.3 Checking status of ft server 51
1.11 Connecting and Configuring Options 53
1.12 Enabling OS Boot Monitoring Function 54
1.13 Backing up System Information 55
1.13.1 BIOS SETUP 55
1.13.2 System information 56
1.13.3 BMC Configuration 56
1.14 Setup Procedures upon Installing Guest OS 57

2. Procedures after Completion of Installation 58
2.1 Confirmation of the Kernel Version 58
2.2 Confirmation of the ft control software Version 59
2.3 Precautions for Changing the Configuration after Setup 60
2.3.1 If the ESXi Host Network Configuration has been Changed 60
2.3.2 If the IP Address of Log Server or Host Name has been Changed 60
2.3.3 Changing the Firewall Rules on ftSys Management Appliance 61

Chapter 2 Installing Bundled Software 63

1. Bundled Software for the Server 64
1.1 NEC ESMPRO Agent 64
1.1.1 Preinclination 65
1.1.2 Install NEC ESMPRO Agent 66

2. Bundled Software for Management PC 68
2.2 NEC ESMPRO Manager 68

3. Steps for Configuring the Log Server 69
3.1 Setting Firewall for Log Server 69
3.2 Setting Syslog for Log Server 70
3.3 Installing Reporting Function onto Log Server 71
3.4 Starting Transferring Logs 72

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, **hardware failure, data loss, and other serious malfunctions could occur**.
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 drives (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 memory**
- **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**

Trademarks

EXPRESSSCOPE is a registered trademark of NEC Corporation.

Microsoft, Windows, Windows Server, and MS-DOS are registered trademarks or trademarks of Microsoft Corporation in the United States and other countries. Intel, Pentium, and Xeon are registered trademarks of Intel Corporation of the United States. AT is a registered trademark of International Business Machines Corporation of the United States and other countries. Adaptec, its logo, and SCSI Select are registered trademarks or trademarks of Adaptec, Inc. of the United States. LSI and the LSI logo design are trademarks or registered trademarks of LSI Corporation. Adobe, the Adobe logo, and Acrobat are trademarks of Adobe Systems Incorporated. DLT and DLTtape are trademarks of Quantum Corporation of the United States. PCI Express is a trademark of Peripheral Component Interconnect Special Interest Group.

VMware is a registered trademark or trademark of VMware, Inc in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

All other product, brand, or trade names used in this publication are the trademarks or registered trademarks of their respective trademark owners.

Regulatory Notices

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Industry Canada Class A Emission Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CE / Australia and New Zealand Statement

This is a Class A product. In domestic environment this product may cause radio interference in which case the user may be required to take adequate measures (EN55022).

BSMI Statement

警告使用者：

此為甲類資訊技術設備，於居住環境中使用時，可能會造成射頻擾動，在此種情況下，使用者會被要求採取某些適當的對策。

Korean KC Standards

KC	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다. Registration NO. : KCC-REM-NEC-EXP320Q Basic Model Number : EXP320Q Trade Name or Registrant: NEC CORPORATION Equipment Name : FT Server Manufacturer : NEC CORPORATION

Turkish RoHS information relevant for Turkish market

EEE Yönetmeliğine Uygundur.

Disposing of your used product

In the European Union

EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes Information and Communication Technology (ICT) equipment or electrical accessories, such as cables or DVDs.

When disposing of used products, you should comply with applicable legislation or agreements you may have. The mark on the electrical and electronic products only applies to the current European Union Member States.

Outside the European Union

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority and ask for the correct method of disposal.

Warnings and Additions to This Document

1. **Unauthorized reproduction of the contents of this document, in part or in its entirety, is prohibited.**
2. **The contents of this document may change without prior notice.**
3. **Do not make copies or alter the document content without permission from NEC Corporation.**
4. **Every effort has been made to ensure the completeness of this document. However, if you have any concerns, or discover errors or omissions, please contact your retailer.**
5. **Regardless of these 4 items, NEC Corporation does not take responsibility for effects resulting from operations.**
6. **The sample values used in this document are not the actual values.**

Keep this document nearby so that you may refer to it as necessary.

Latest editions

This document was created based on the information available at the time of its creation. The screen images, messages and procedures **may differ from the actual screens, messages and procedures.** Substitute as appropriate when content has been modified.

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 Express5800Series
Express5800/R320c-E4, R320c-M4

1 Installing OS

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

1. Setup Procedure

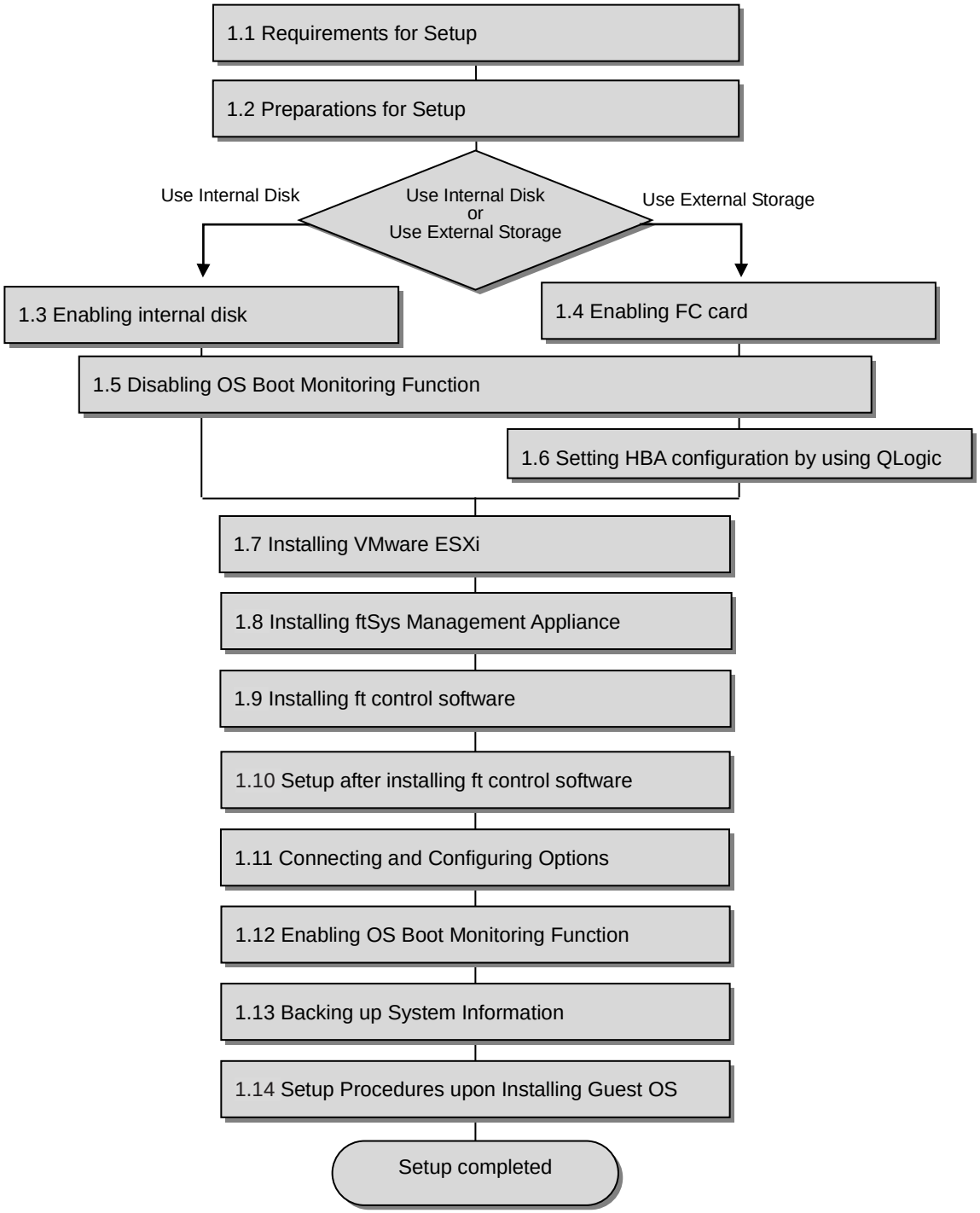
Describes how to set up VMware.

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 5.0.1 for VMware vSphere5.1 Update1 Install DVD
- ☐ User's Guide
- ☐ Installation Guide (this manual)
- ☐ Maintenance Guide

VMware vSphere 5.1 Update1 Media:

Download the install image for VMware vSphere ESXi 5.1 Update1 (VMware's original) from the VMware's web site below.

https://my.vmware.com/web/vmware/details?productId=285&rPId=2769&downloadGroup=VCL-VSP510-ESXI-51U1

This web site is subject to change or delete without notice.

- ■ ESXi 5.1 Update 1 ISO image (Includes VMware Tools)
  VMware-VMvisor-Installer-5.1.0.update01-1065491.x86_64.iso

Important **ft control software 5.0.1 is applicable to VMware vSphere ESXi 5.1 Update1 only. Do not install any other version of ESXi.**

VMware vSphere Client:

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

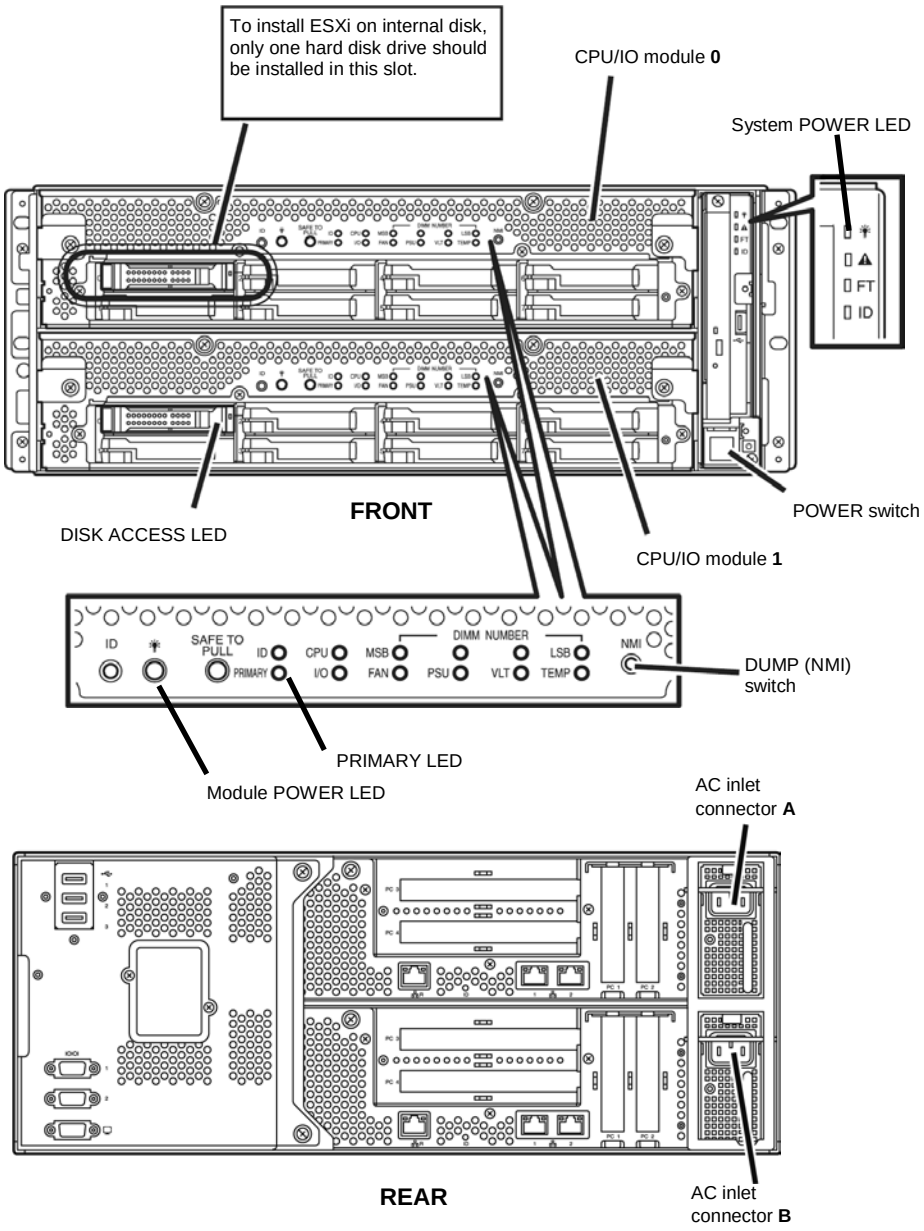
1.2 Preparations for Setup

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 NEC Express5800/ft series 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 a 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.

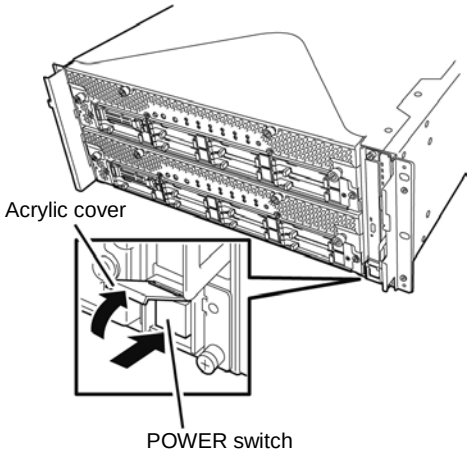
1. Turn on the display and the peripheral equipment connected to the NEC Express5800/ft series.

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.**



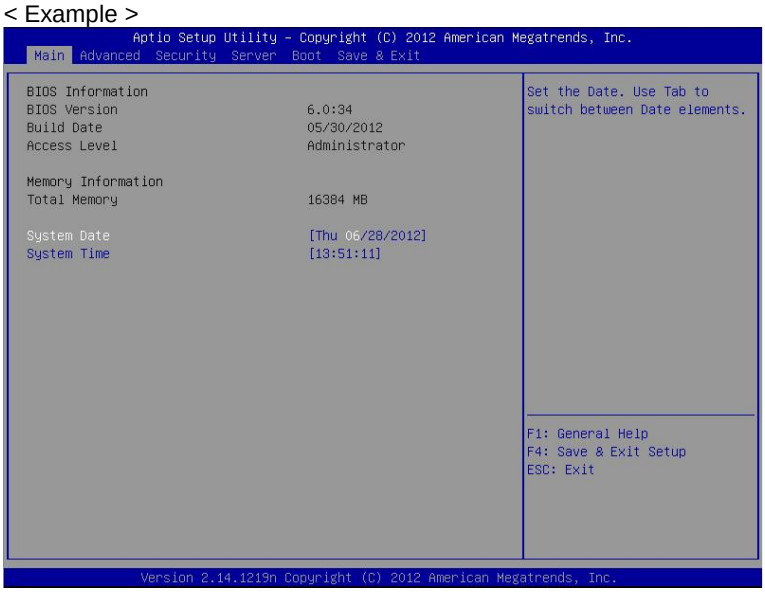
After a while, the "NEC" logo will appear on the screen.

Tips While the "NEC" logo is displayed on the screen, NEC Express5800/ft series 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 finds errors during POST, it will interrupt POST and display the error message. Refer to *Chapter 1 (6.2 POST Error Message)* in *Maintenance Guide*.

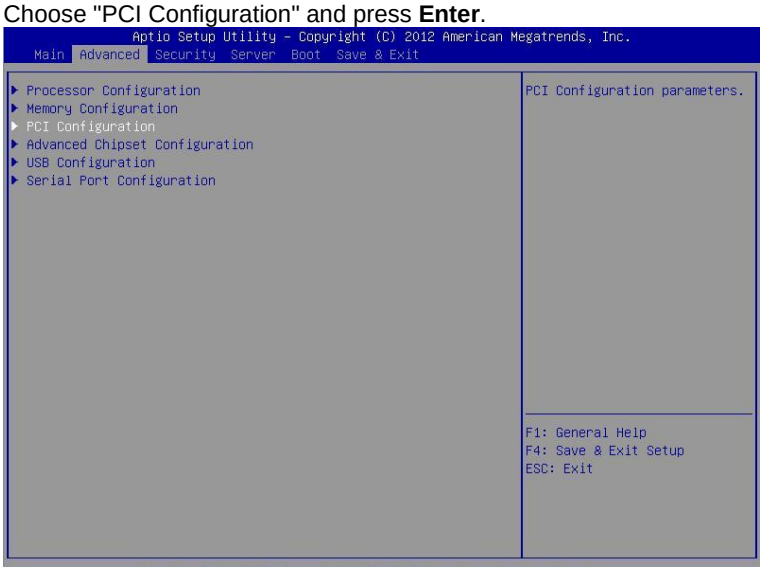
4. Power on the server, and run POST.
After a while, the following message appears at lower left of the screen.
Press <F2> SETUP, <F4> ROM Utility, <F12> Network

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 >

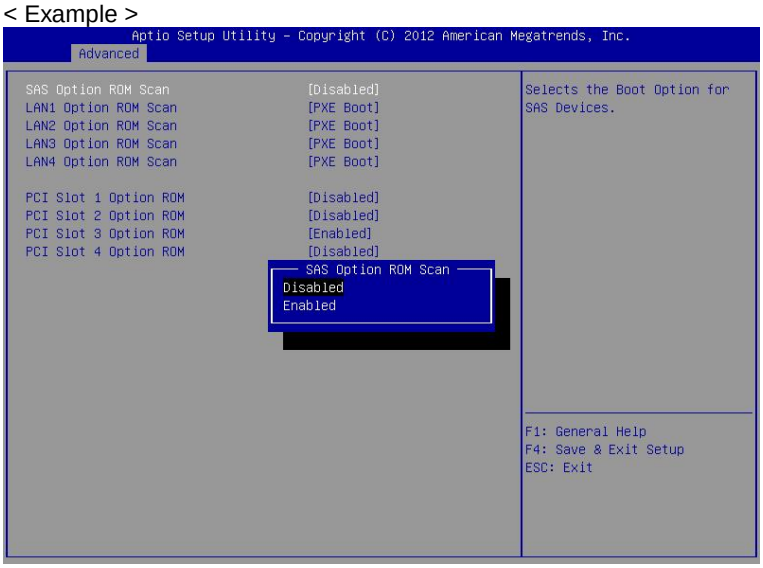


Tips For [System Time], use Coordinated Universal Time (UTC). The specified UTC time is applied to the ESXi host to be installed later. In ftSys Management Appliance or other guest OS, set the time zone for each system.

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



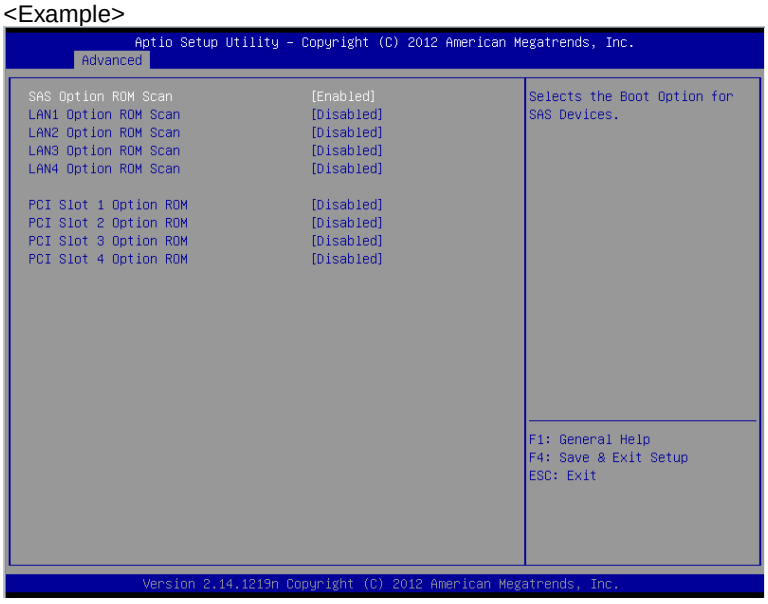
6. Move the cursor onto “SAS Option ROM Scan” apd press **Enter**.
   Parameters will be displayed.
   < Example >



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.

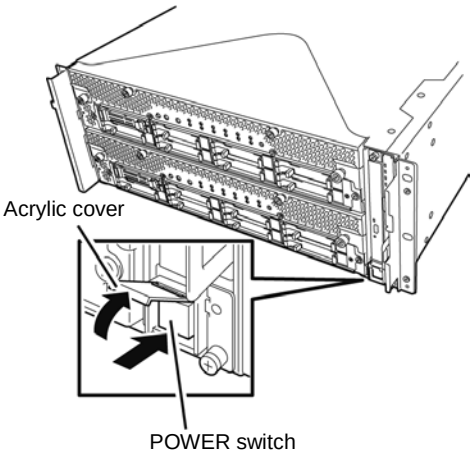
1. Turn on the display and the peripheral equipment connected to the NEC Express5800/ft series.

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.**



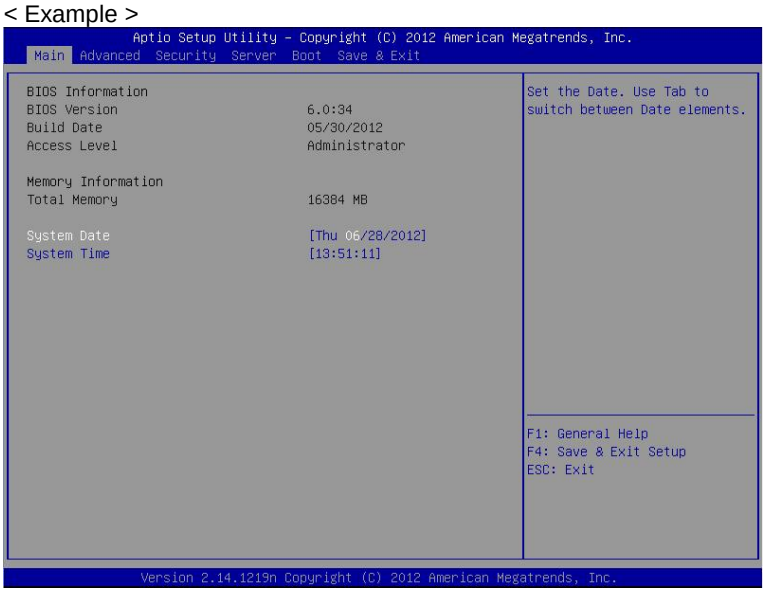
After a while, the "NEC" logo will appear on the screen.

Tips While the "NEC" logo is displayed on the screen, NEC Express5800/ft series 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 finds errors during POST, it will interrupt POST and display the error message. Refer to *Chapter 1 (6.2 POST Error Message)* in *Maintenance Guide*.

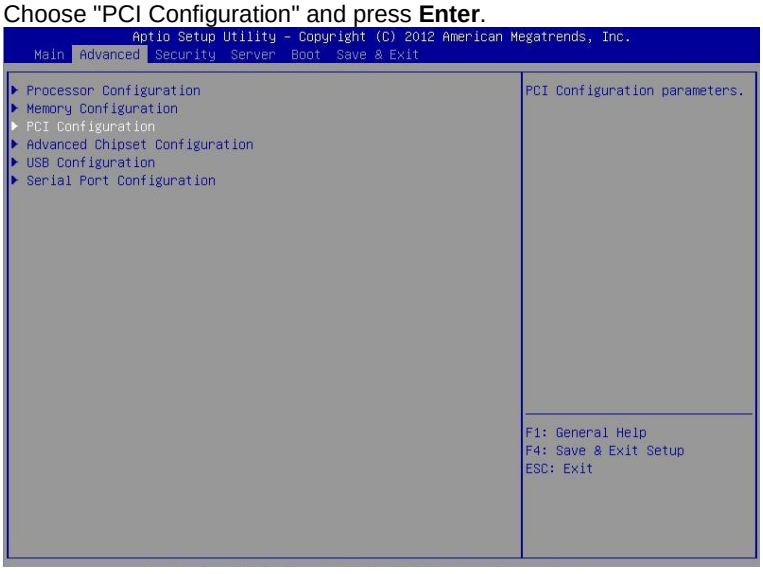
4. Power on the server, and run POST.
After a while, the following message appears at lower left of the screen.
Press <F2> SETUP, <F4> ROM Utility, <F12> Network

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 >

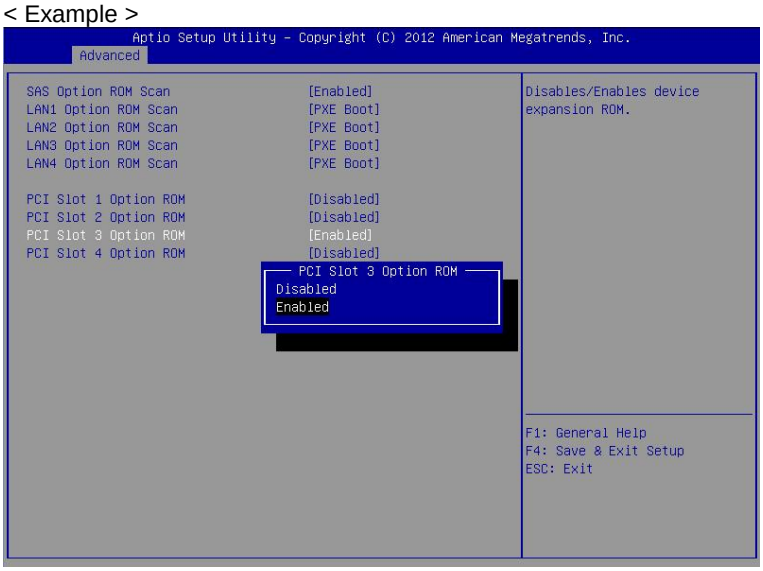


Tips For [System Time], use Coordinated Universal Time (UTC). The specified UTC time is applied to the ESXi host to be installed later. In ftSys Management Appliance or other guest OS, set the time zone for each system.

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



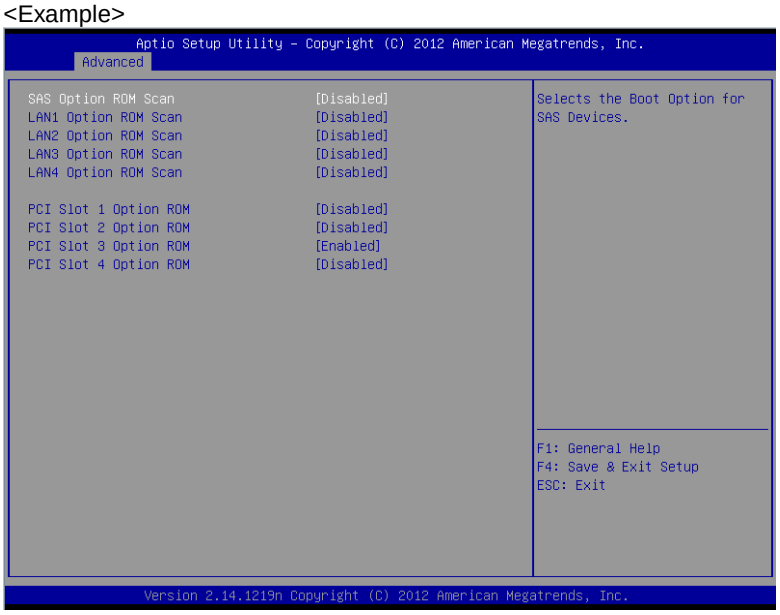
6. Move the cursor onto “PCI Slot x Option ROM” (x: the slot FC card is installed in) and press **Enter**. Parameters will be displayed.
< Example >



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 main unit at startup. (Enabled in the configuration at shipment)

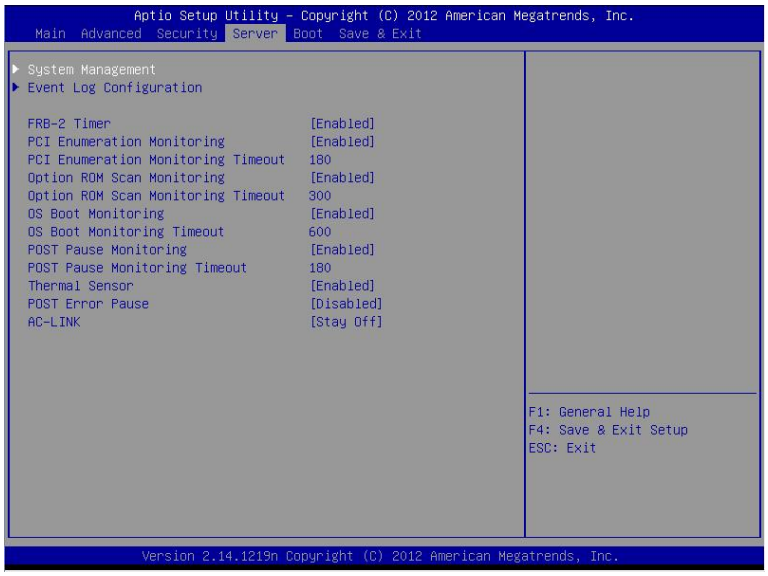
If this function is enabled, the system will be forcibly restarted while OS setup screen is shown and the setup will be unsuccessful. BIOS may repeat OS setup in an invalid manner.

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

Tips

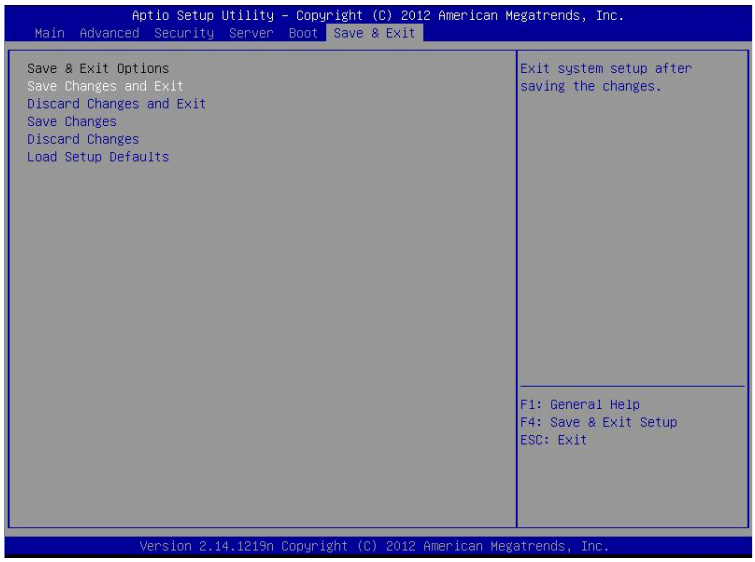
For details of operations for BIOS Setup Utility and parameters for boot monitoring function, refer to *Chapter 3 (1. System BIOS)* in *Maintenance Guide*.

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.

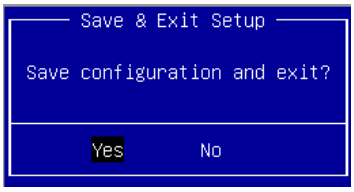


2. Among the parameters, choose "Disabled" and press **Enter**.
The current display of the configuration for OS Boot Monitoring will be changed to "Disabled".

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, once 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.

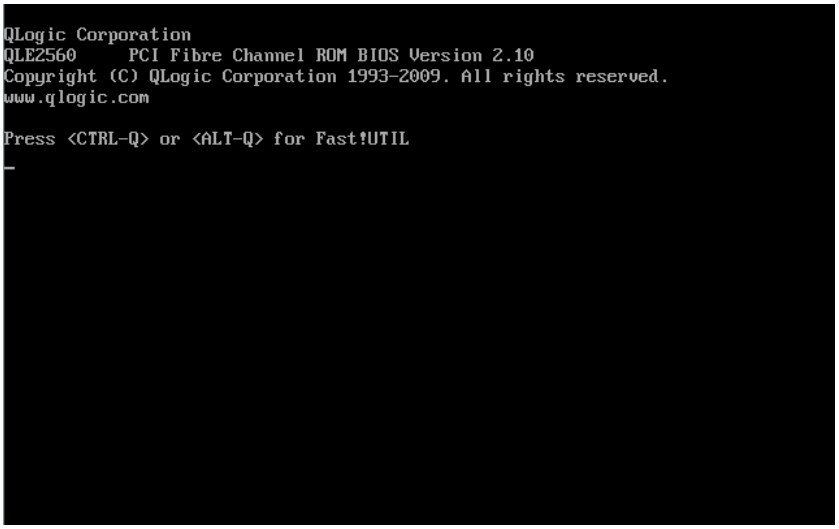
1.6 Setting HBA configuration by using QLogic

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

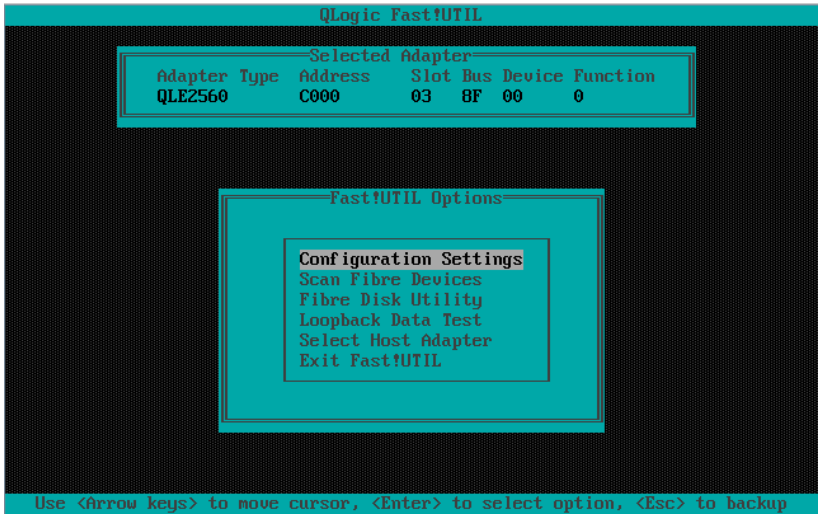
1. Start from the CPU/IO module 0, and then perform the following.

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

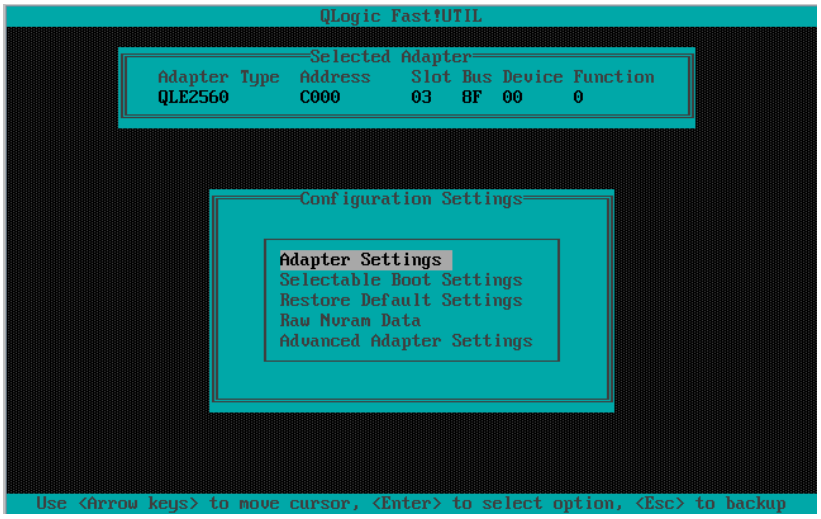
1-1 In the QLogic prompt window which appears during POST, press **CTRL + Q** or **ALT** + **Q**.



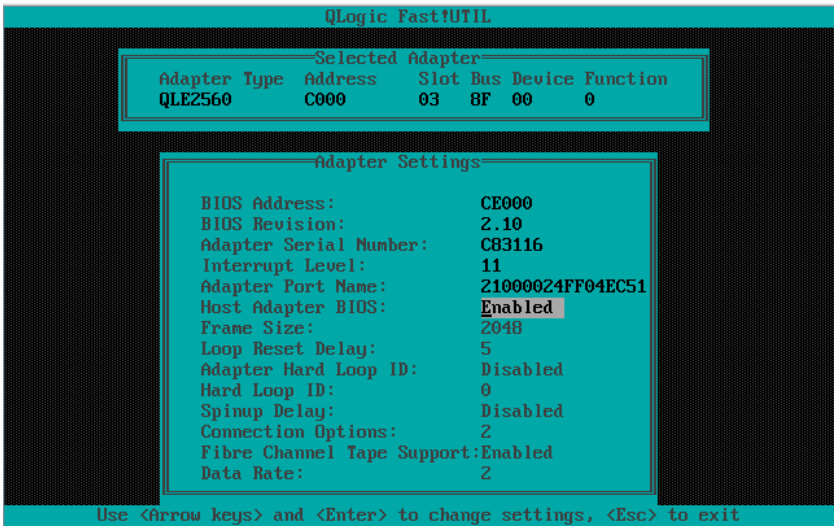
1-2 Select “Configuration Settings”, and then press **Enter**.



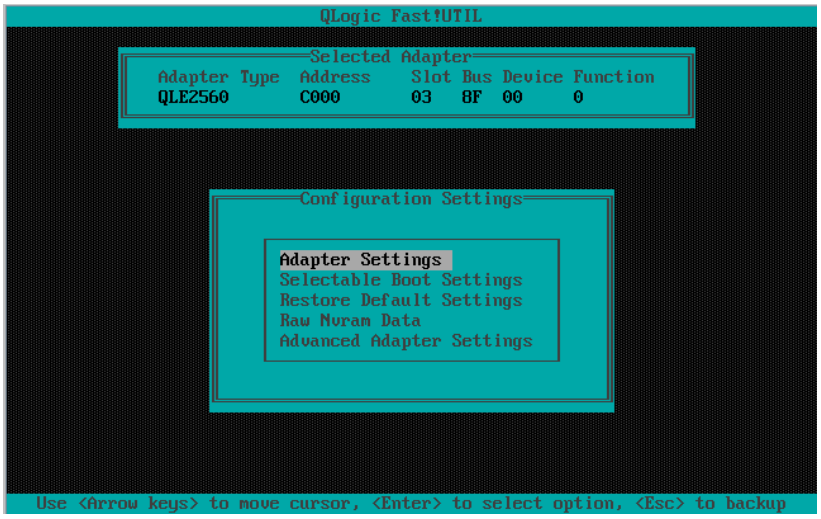
1-3 Select “Adapter Settings”, and then press **Enter**.



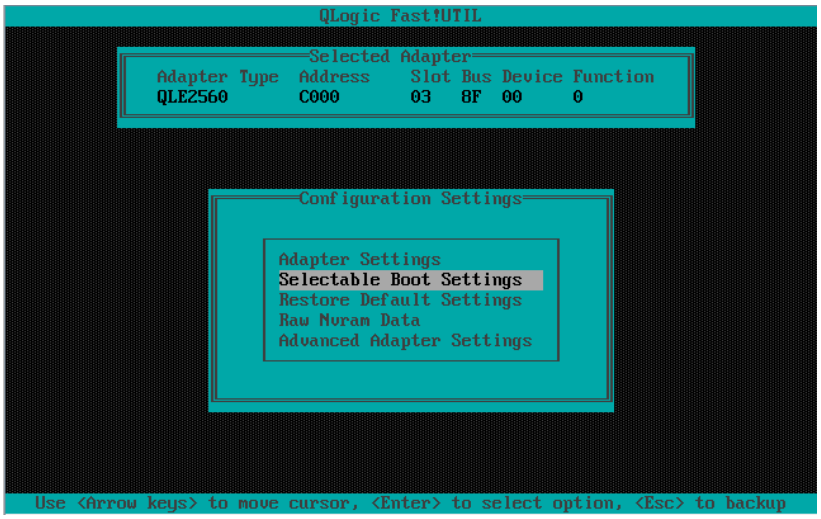
1-4 Select “Host Adapter BIOS”, and then press **Enter** to change the setting to “Enabled”. (The default is “Disabled”.)



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

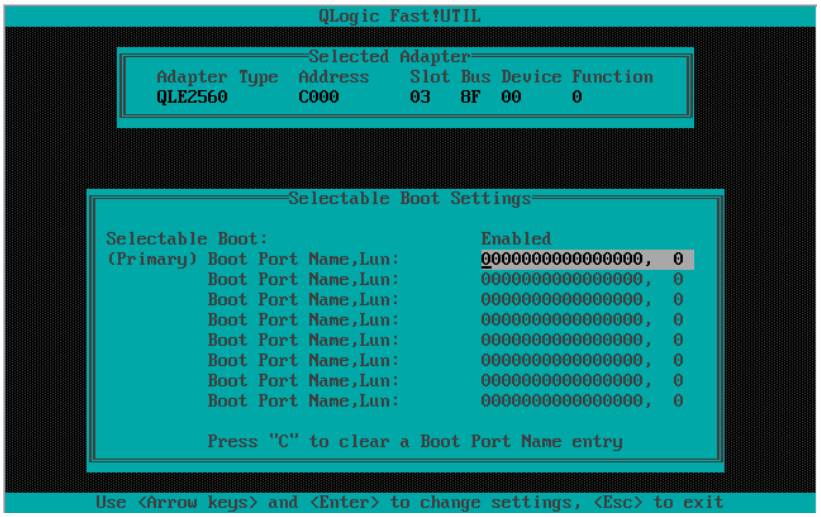


1-6 Select “Selectable Boot Settings”, and then press **Enter**.

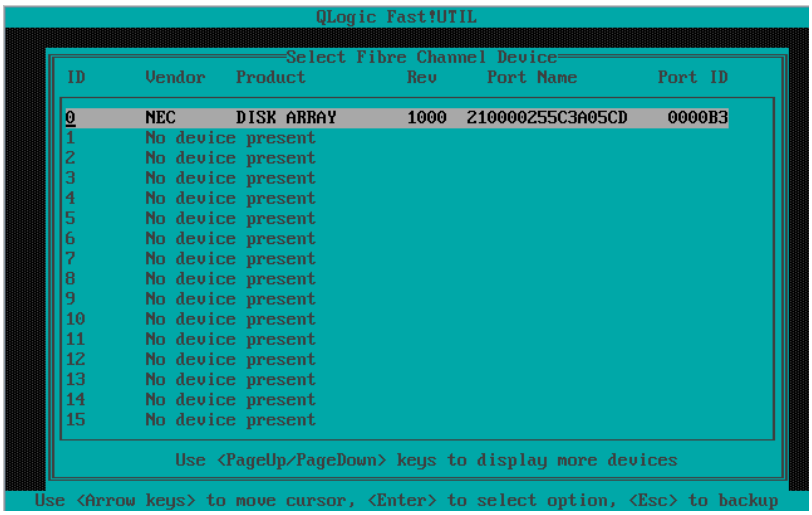


1-7 Select “Selectable Boot”, and then press **Enter** to change the setting to “Enabled”. (The default is “Disabled”.)

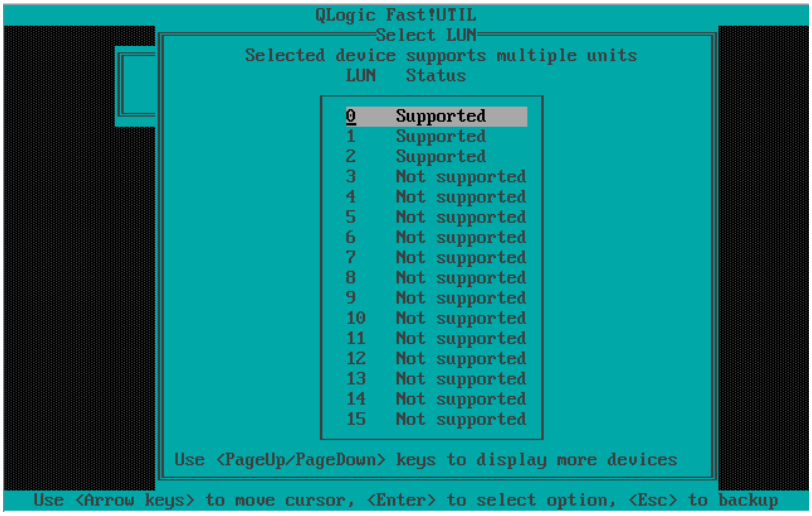
1-8 Select “(Primary) Boot Port Name, Lun:”, and then press **Enter**.



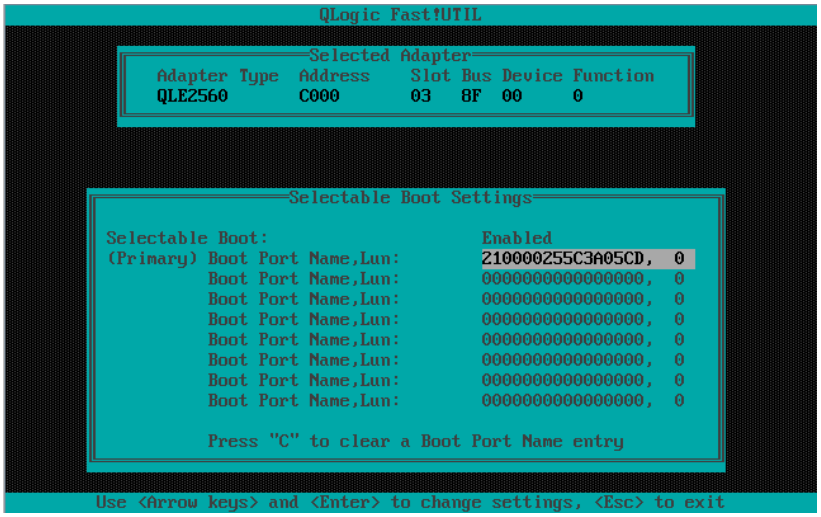
1-9 The storage devices that are recognized by the FC card are displayed in the “Select Fibre Channel Device” window. Select the storage device to boot, and then press **Enter**.



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

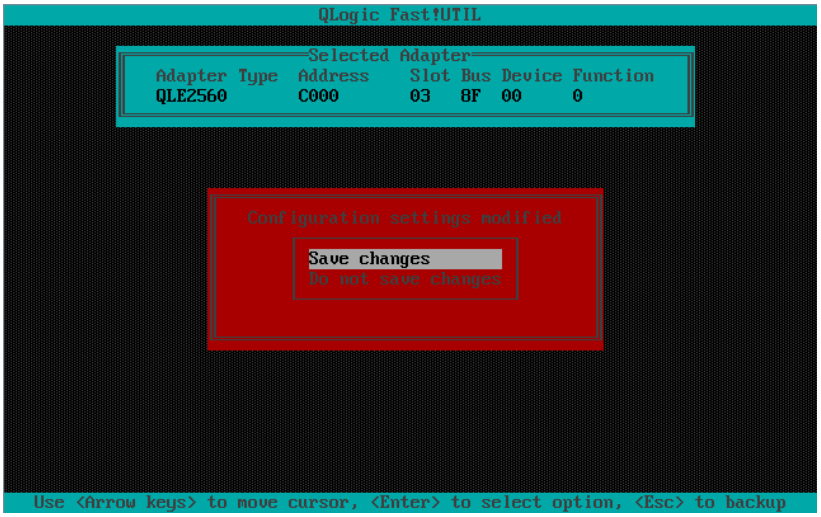


1-11 The port name and LUN specified in steps 1-9 and 1-10 respectively are applied to “(Primary) Boot Port Name, Lun:”.

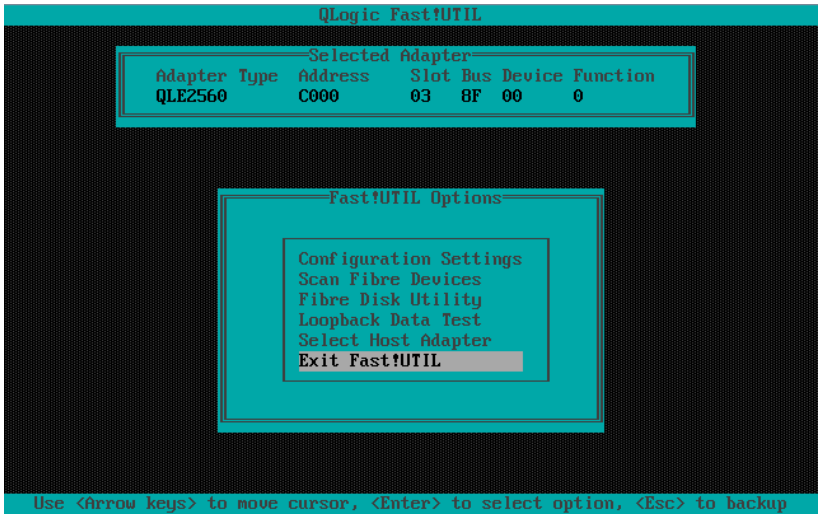


Note **The images shown in steps 1-9 through 1-11 are examples. The information displayed varies depending on the product name of external storage and settings such as logical disk settings.**

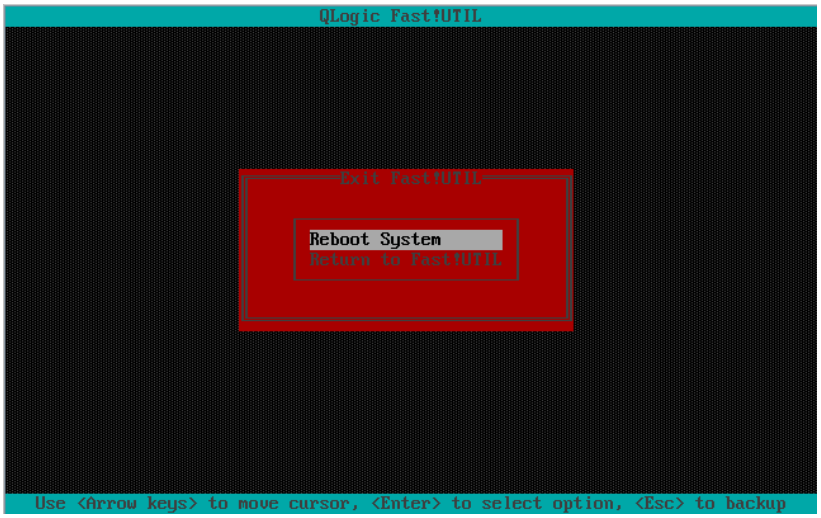
1-12 Press **ESC** twice to display the confirmation window.
Select “Save changes”, and then press **Enter**.



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 the System POWER LED on front panel is unlit.

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.

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.

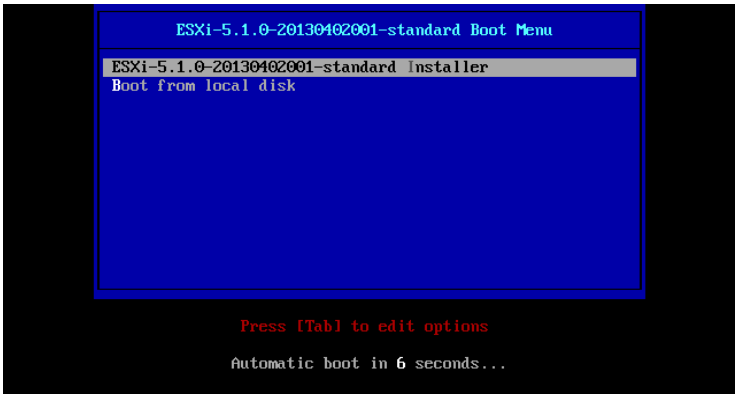
6. Connect power cords in the following order to start the system from CPU/IO module 0.
   (1) Connect a power cord to AC inlet connector A.
   (2) Connect a power cord to AC inlet connector B.

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

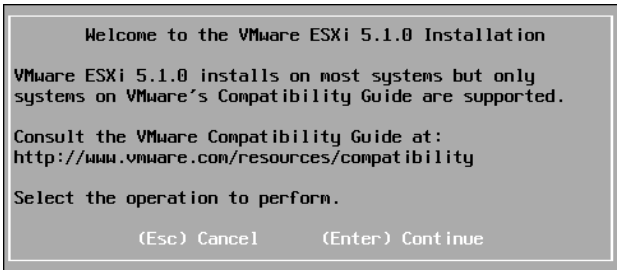
1.7 Installing VMware ESXi

1.7.1 Installing VMware ESXi

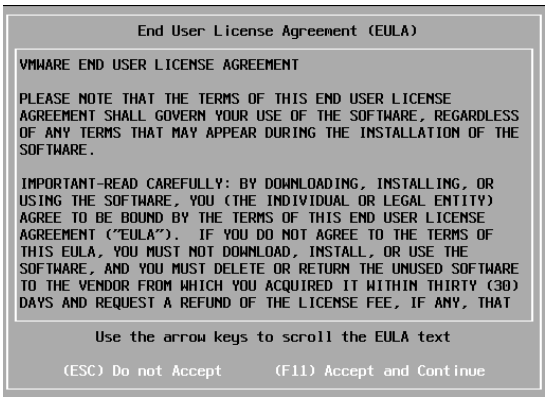
1. Immediately after powering on the server, insert the ESXi 5.1 Update1 Install DVD into the DVD drive of the server.
2. If the Boot Menu screen appears after booting the server, select **ESXi 5.1.0-xxxx standard installer** and press **Enter**. The Installer will automatically starts in a few seconds, even if **Enter** is not pressed.



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



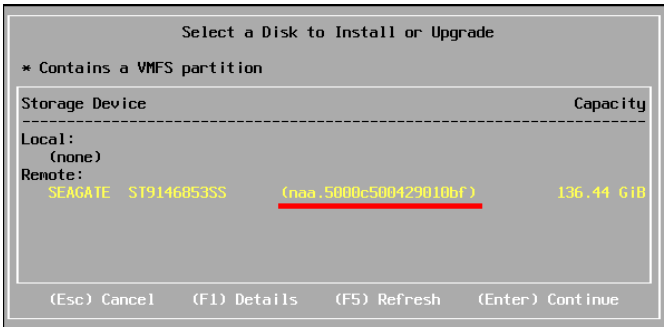
4. When the End User License Agreement (EULA) screen for ESXi appears, press **F11**.



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>

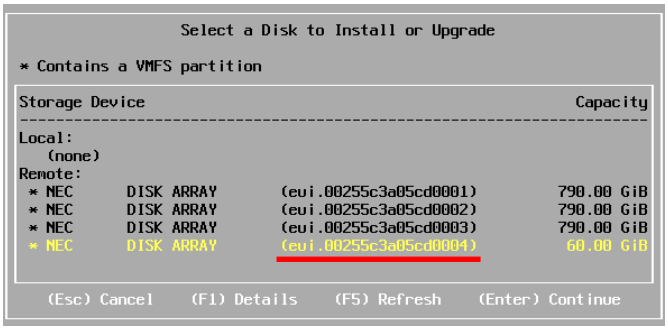


Tips The installer of ESXi recognizes MPM device as a remote disk. Thus, the inserted internal disk is placed under [Remote] category.

Important **Note the following when reinstalling ESXi:**

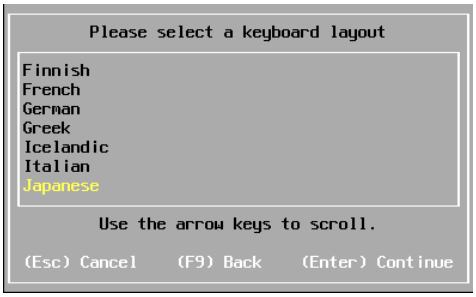
If any data is contained in the destination disk, the installer does not display a message to prompt you to save data because the installer of ESXi cannot recognize the Stratus MPM disk format. Therefore, make sure that the destination disk does not contain any data (or save the data, if any) before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

<When installing ESXi to the external storage>



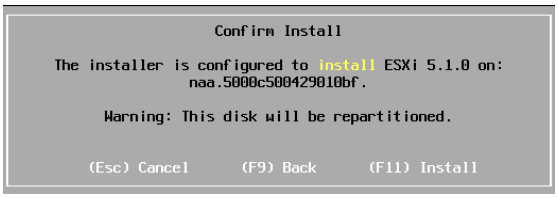
6. When reinstalling ESXi, an overwrite confirmation message appears. Move the cursor onto [Install], press the space bar to determine it, then press **Enter**.

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

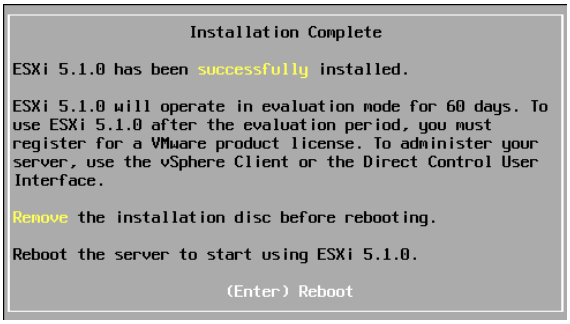


8. When the root password entry screen appears, enter the password and press **Enter**.

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



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

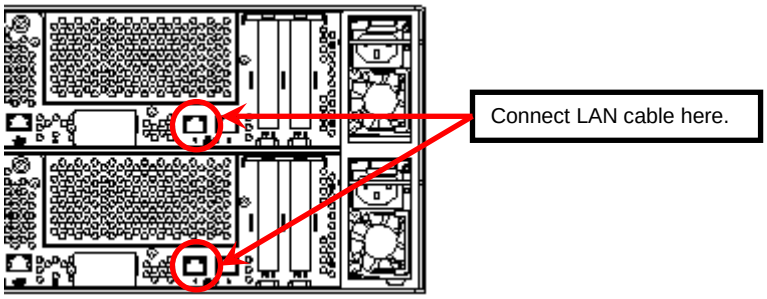


1.7.2 Configuring ESXi

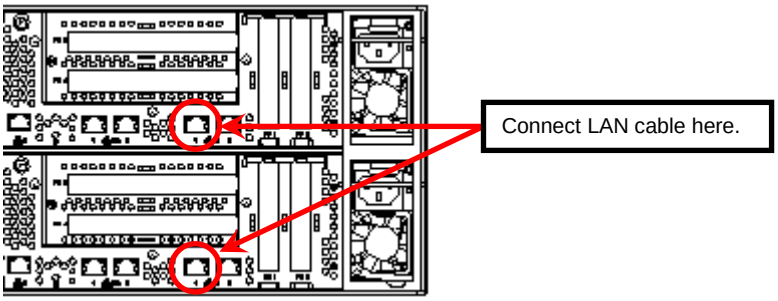
When LAN cables of the CPU/IO module 0 and 1 are removed, connect both of them.

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.)

<R320c-E4 Model>

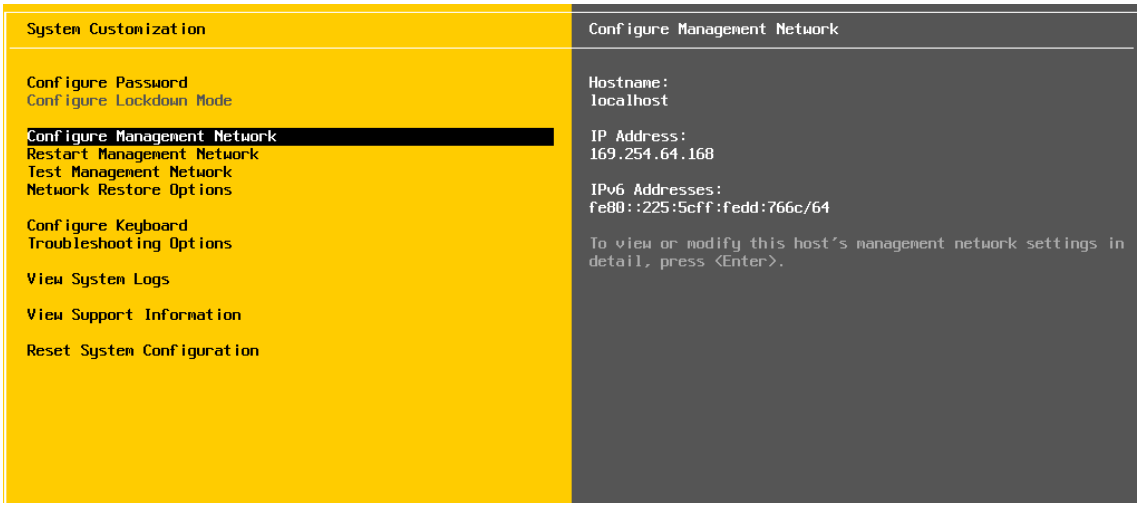


<R320c-M4 Model>



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 **Both the ESXi host and the 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 Network Configuration 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 Network Configuration 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.

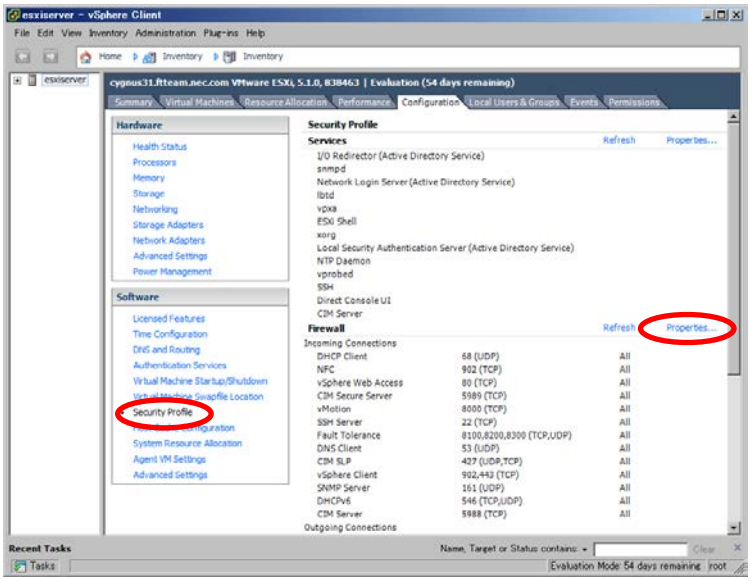
Note Set [Configuration Management Network] and [Troubleshooting Options] according to your environment.

Tips If Ipv6 is disabled in Configure Management Network, the system reboots automatically. (Reboot confirmation message will not appear.)

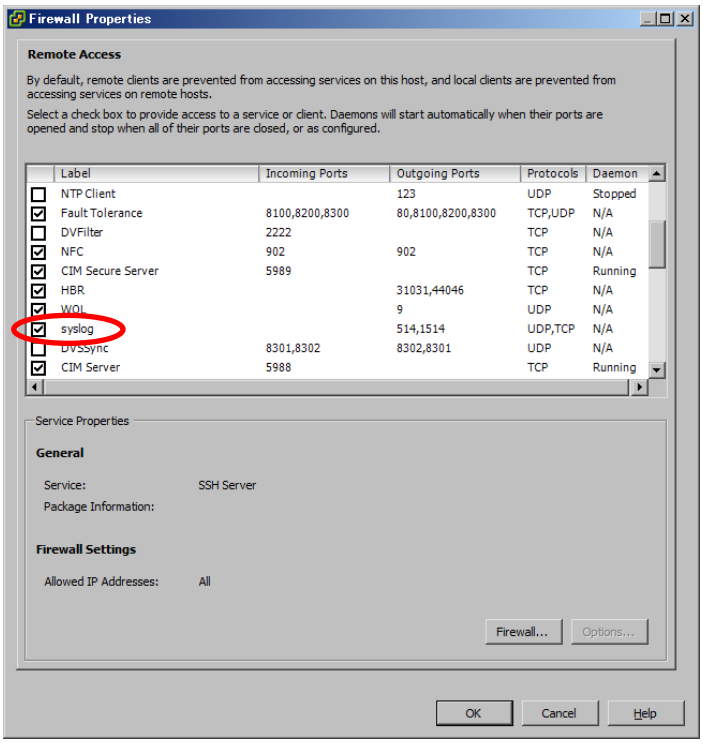
1.7.3 Configuring the Firewall for the ESXi Host from the vSphere Client

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.

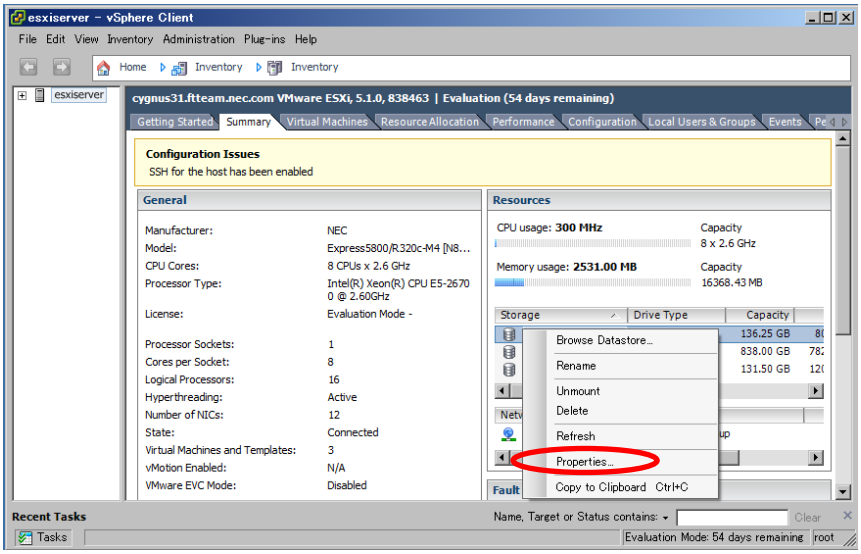
1.8 Installing ftSys Management Appliance

Connect to the ESXi host from vSphere Client to install.

1.8.1 Checking the Installation Destination Disk

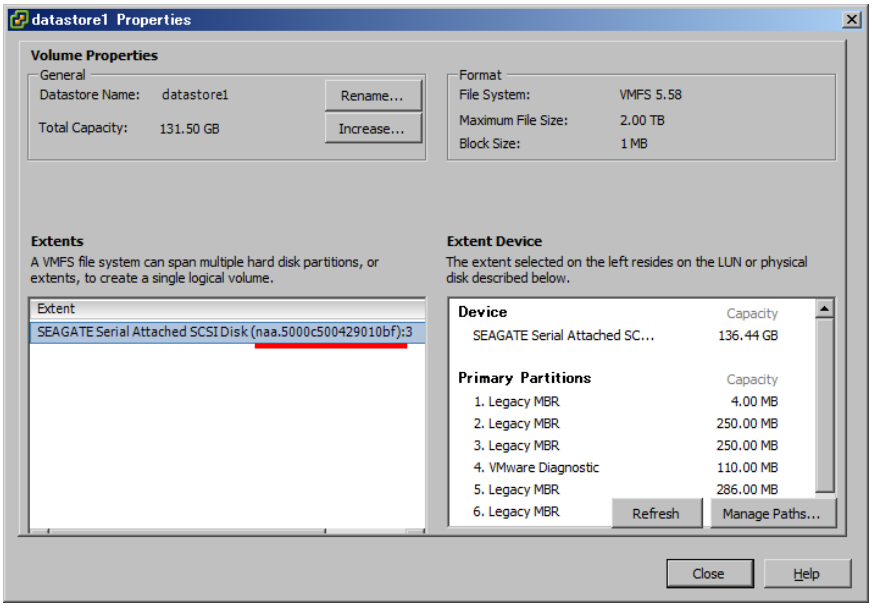
Note ftSys Management Appliance must be installed on the disk where the ESXi host exists. If several disks are contained in your system, perform the steps below in advance.

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

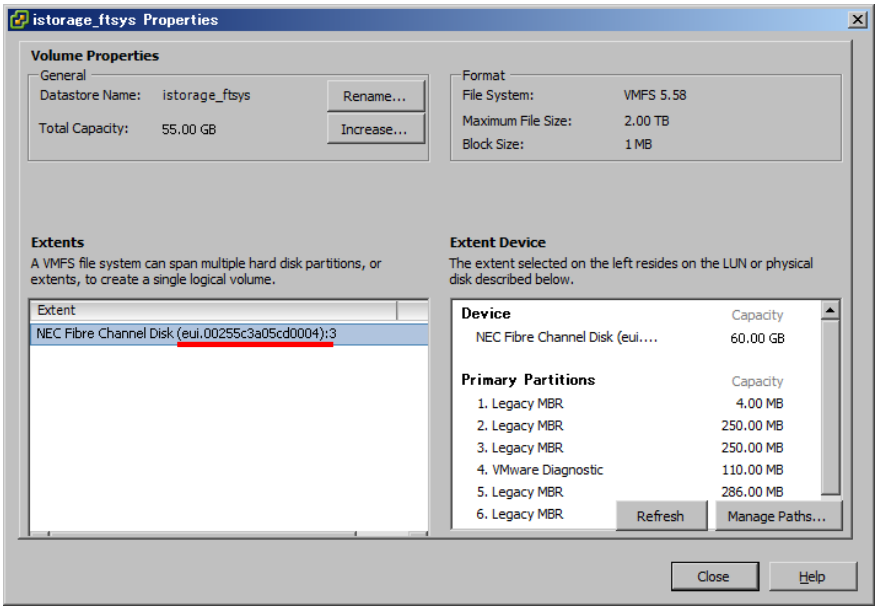


2. Confirm that the selected storage has the same extent value as the disk selected at installation of the ESXi host.

<Example when installed to internal disk>



<Example when installed to external storage>

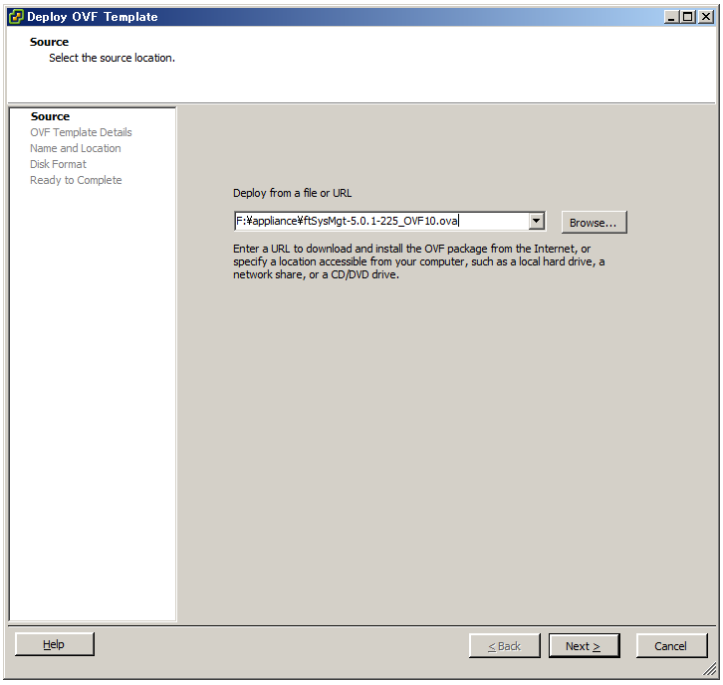


Note Make sure the storage has the same name as that you have written down in *Chapter 1 (1.7 Installing VMware ESXi)*.

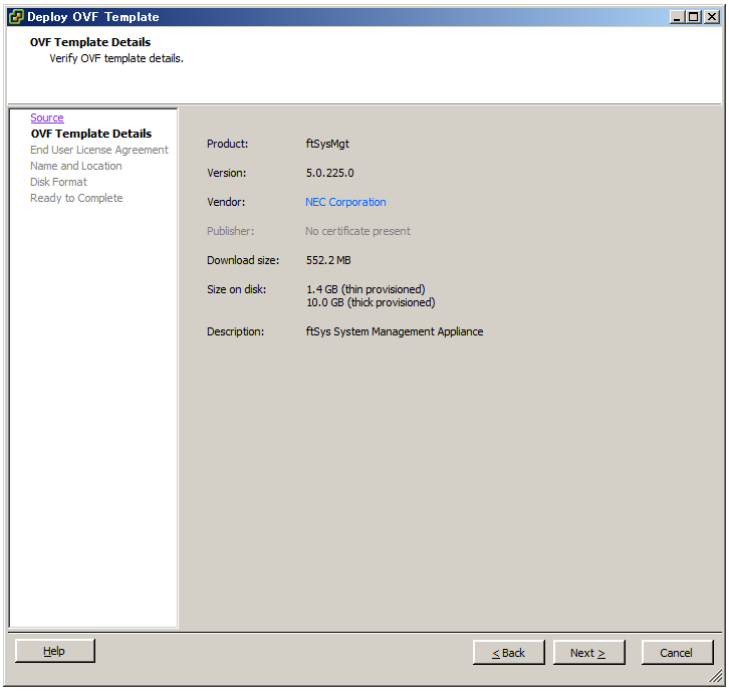
Tips On the Storage screen displayed in *Chapter 1 (1.8.2 Installing ftSys Management Appliance)*, you cannot confirm the property of storage. You need to confirm it in advance by performing steps described here.

1.8.2 Installing ftSys Management Appliance

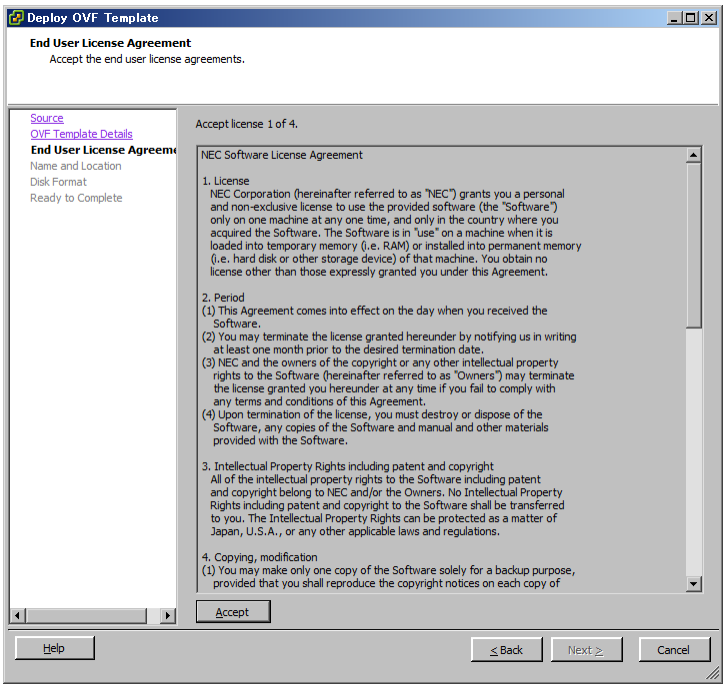
1. Insert the ft control software Install DVD into the DVD drive of the machine on which the vSphere Client is installed.
2. Start vSphere Client and connect to the ESXi host.
3. On the vSphere Client, select [File] → [Deploy OVF Template…].
4. Click [Browse…] in the screen to open the appliance folder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



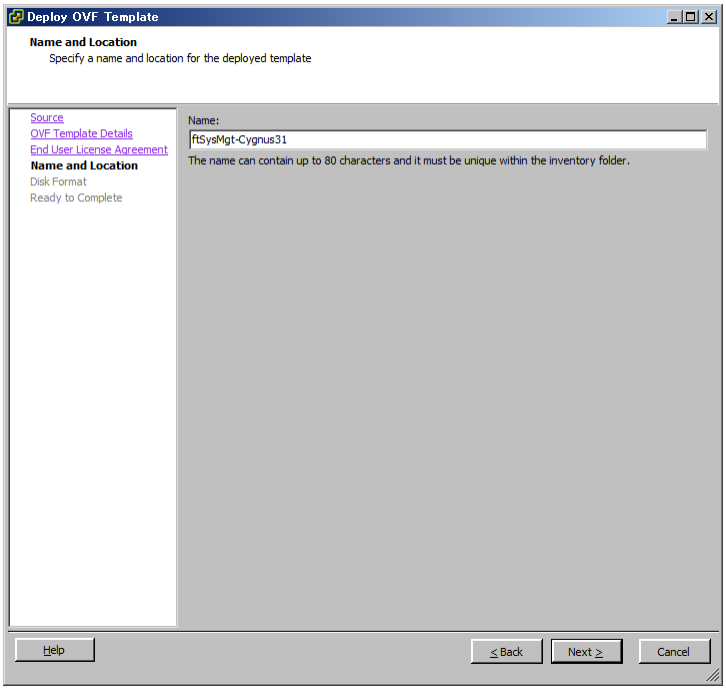
5. In the [OVF Template Details] screen, click [Next].



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].

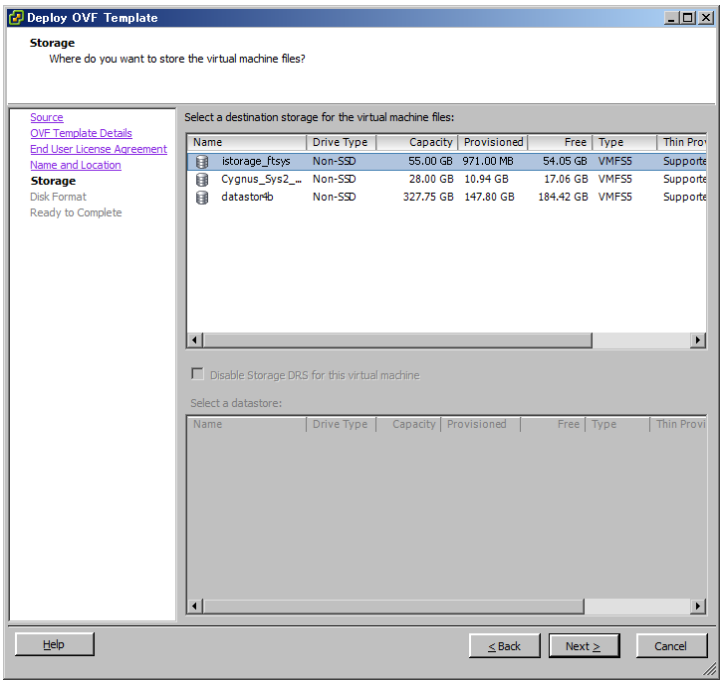


Note

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].

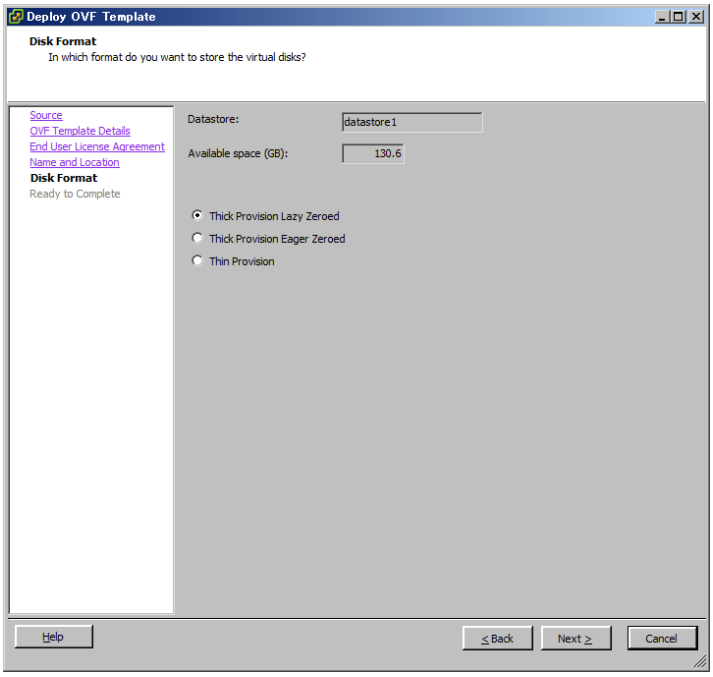


Important

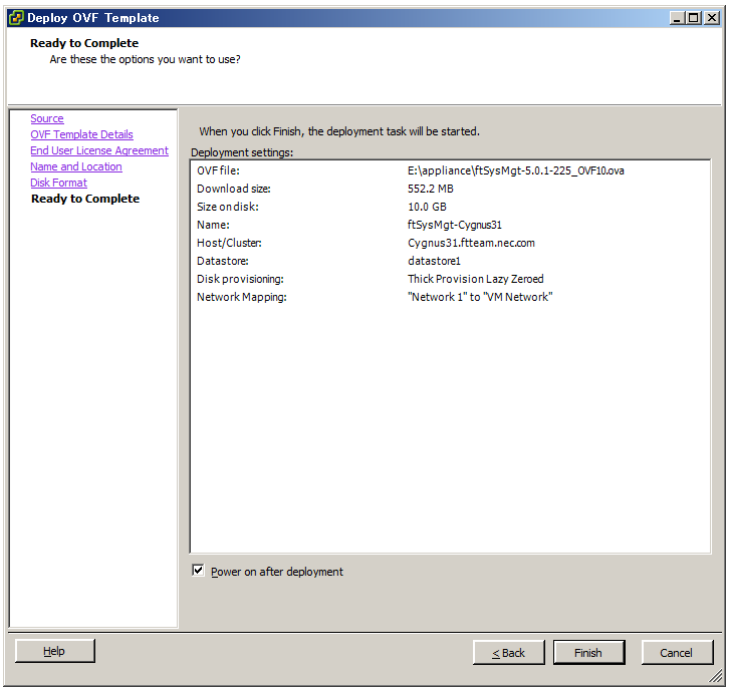
ftSys Management Appliance must be installed on the disk where the ESXi host exists.

Accordingly, you need to select a disk you have selected at installation of ESXi.

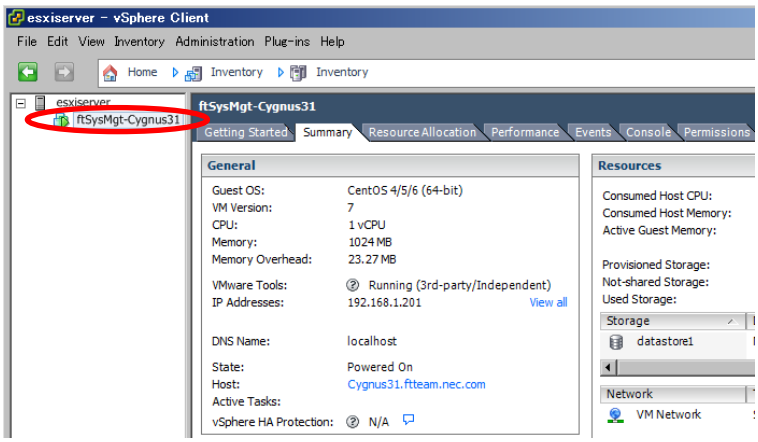
9. On the [Disk Format] screen, the following items are displayed:
– Thick Provision Lazy Zeroed
– Thick Provision Eager Zeroed
– Thin Provision
Select the [Thick Provision Lazy Zeroed] and click [Next].



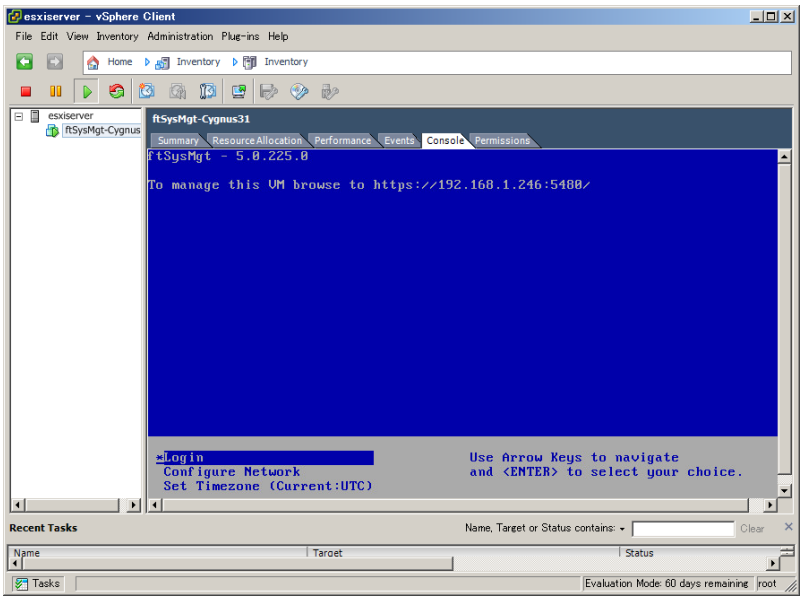
10. On the [Ready to Complete] screen, select the [Power on after deployment] checkbox and click [Finish].



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



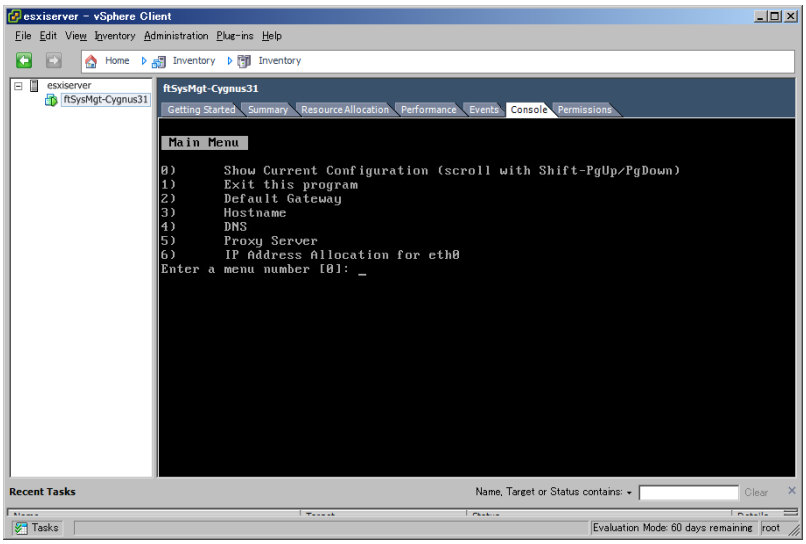
12. To perform the following and the subsequent steps, open the console of ftSys Management Appliance, and use the main menu (blue screen) to configure.



Important **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.

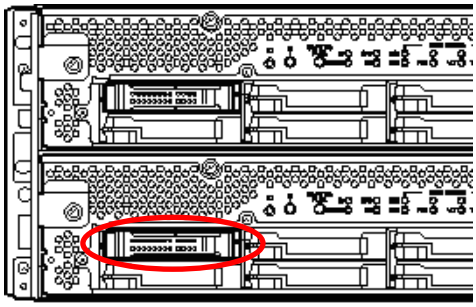
15. To change the initial password
From the main menu of ftSys Management Appliance, select [Login] and log in as a root user with the password "ftServer". Use the following command to change the password as necessary.

```
# passwd root
```

1.9 Installing ft control software

Connect to the ESXi host from vSphere Client to configure.

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. Click the CD/DVD button on toolbar of vSphere Client to mount the 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.

```
# /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...
```

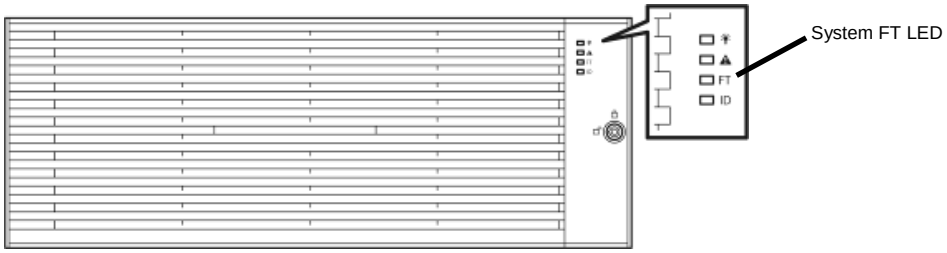
11. When the reboot confirmation message appears at the end of the installation, press **y**. Confirm that the ESXi host is shutdown, and then, remove the ft control software Install DVD.

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

12. The system reboots twice, 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 vaires depending on the disk space.

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



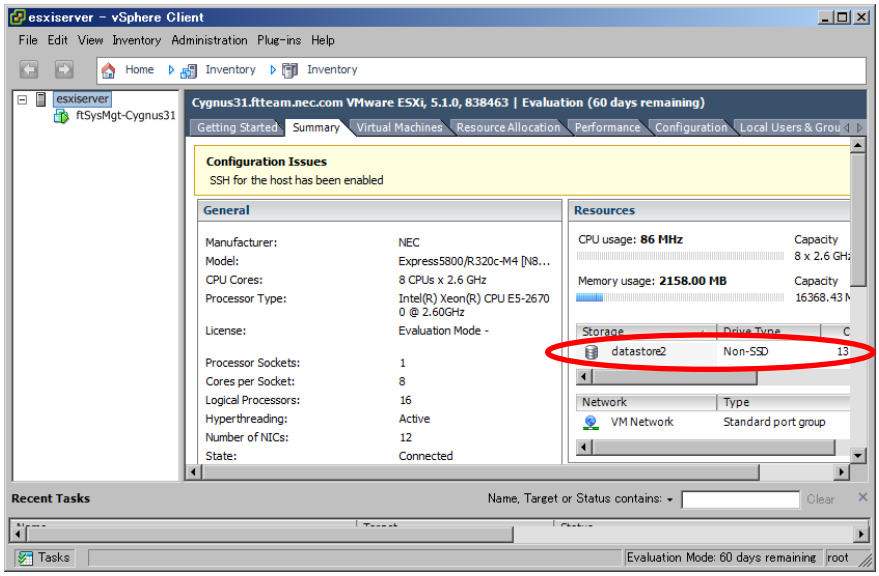
Tips

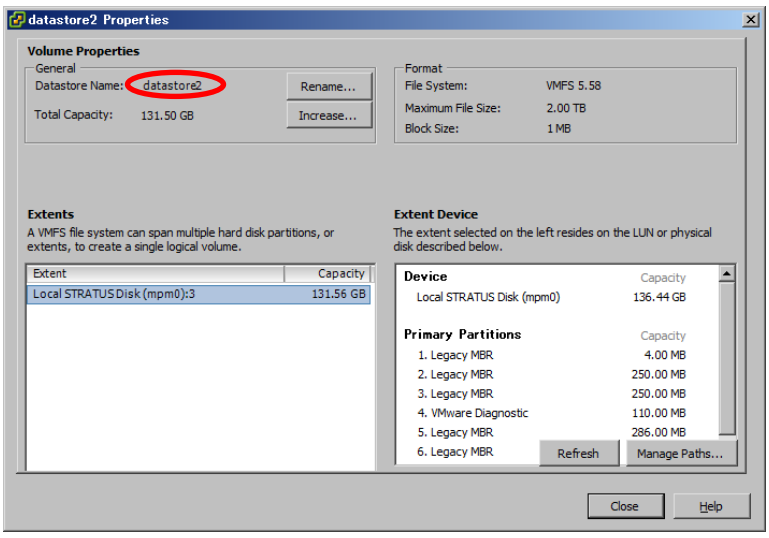
When installing ft control software to an internal disk, the primary LED of the CPU/IO module switches from #0 to #1. However, there is no problem continuing with the setup.

When installing ft control software to an external storage, switching of the primary LED of the CPU/IO module does not occur.

Tips

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

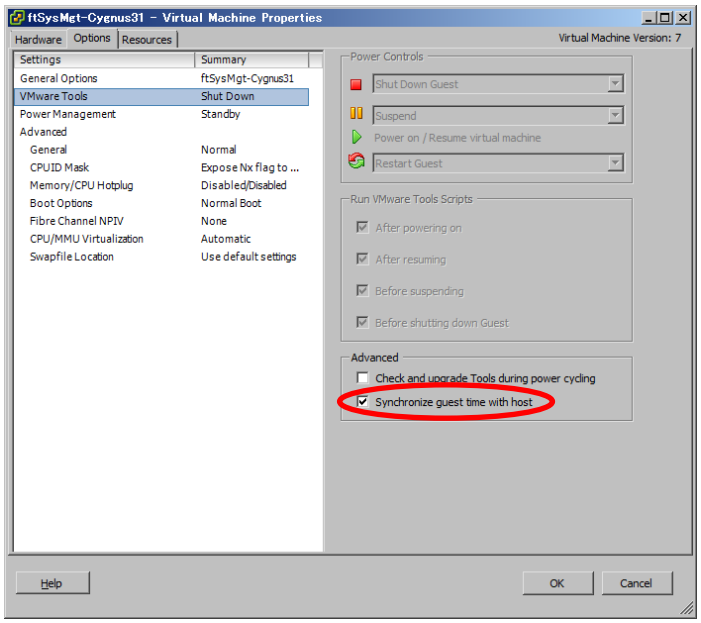
The time synchronization by ntp is unavailable in ftSys Management Appliance.

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 Setup after installing ft control software

1.10.1 Log Server

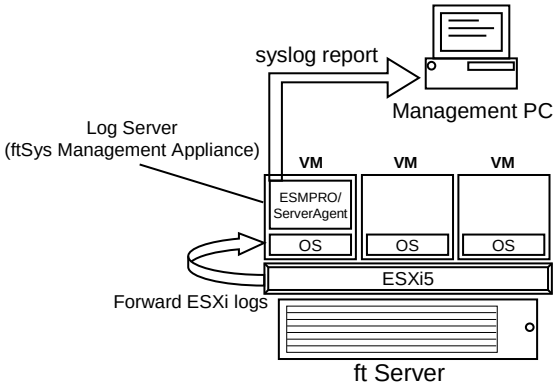
ESXi 5.0 or later version does not include a service console. Therefore, this model achieves the syslog reporting by forwarding the logs generated by ESXi to the log server on which NEC ESMPRO Agent is installed.

To use ftSys Management Appliance as the log server, no additional steps are required after following the steps in *Chapter 1 (1.10.2 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.

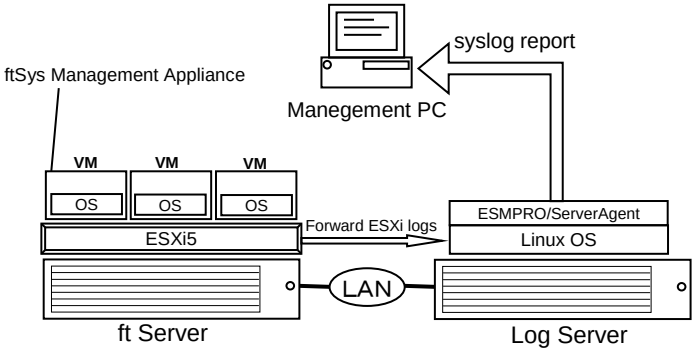
Note

To use any other server than ftSys Management Appliance as the log server, you need to prepare a Linux server separately. See *Chapter 2 (3. Steps for Configuring the 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.



1.10.2 Installing Additional Packages

Connect to the ESXi host from vSphere Client to configure.

1. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
2. Click the CD/DVD button on toolbar of vSphere Client to mount the 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 The 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 Setp 2 in *(3.4 Starting Transferring Logs)* in *Chapter 2*.

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

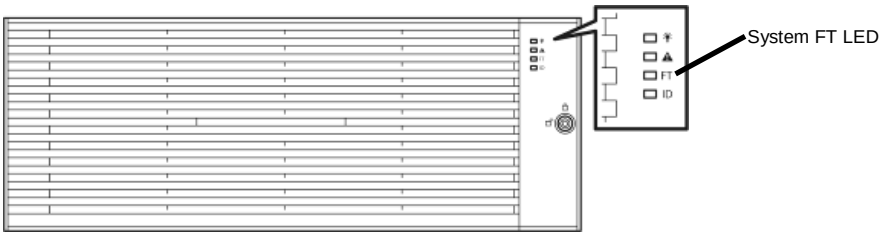
10. When the message below appears, enter "yes" to restart the system. The ESXi host restarts.

```
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]
```

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

1.10.3 Checking status of ft server

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



2. 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 (5.0.1-225)         [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]
Host BIOS up to date - requires 6.2:52, or better           [PASS]
Host BMC up to date - requires Runtime=03.07, or better     [PASS]
```

3. If the following error is detected while running ft-verify command, update the BMC firmware.

Error message:

```
Host BMC up to date - requires Runtime=03.07, or better  [FAIL]
  BMC 10/120 - Runtime=03.07 Boot=00.09 Sdr=01.13
  BMC 11/120 - Runtime=03.07 Boot=00.09 Sdr=01.13
```

Procedure for updating BMC firmware:

1) Log in to ftSys Management Appliance as a root user.
2) Run the following command to update BMC firmware. (Updating takes approximately 20 minutes.)

   # /opt/ft/bin/ftsmaint burnBmcs /opt/ft/firmware/bmc/FT320FE/062*.bin

4. When updataing of BMC firmware completes, repeat steps of ft-verify command. If all items show [PASS], the system is running normally.

1.11 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 "Release5.1"
http://www.vmware.com/support/pubs/vsphere-esxi-vcenter-server-pubs.html
* The contents of the Website above may be changed or deleted without notice.
For how to configure the duplicated network, see *Chapter 2 (3. Duplex LAN Configuration)* in *Maintenance Guide*.

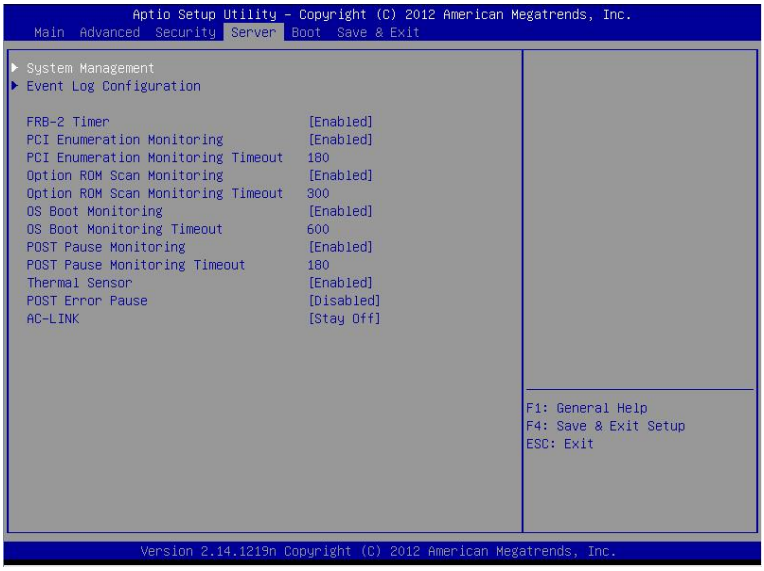
To have enough time to initialize Fibre Channel disk and Fibre Channel switch and so on, adjust [Server] - [Power On Delay Time] by setting System BIOS configuration Utility.

1.12 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).



1.13 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:

1.13.1 BIOS SETUP

1. Power on the server, and 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.)

2. Move the cursor onto “Advanced”, “Security”, “Server” and “Boot”. Dictate BIOS setting.
< 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”

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

1.13.2 System information

1. Power on the server, and 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 **F4**, ROM Utility will start after POST, and the Main menu appears. (You can also start ROM Utility by pressing **F4** while expanding option ROM.)

Off-line TOOL MENU
Maintenance Utility BMC Configuration Exit

2. Choose “Maintenance Utility”-“Sytem Information Viewer”-“Display System Information”-“System Information”. Dictate the below System information.
“Product Name”
“FR Number”
“Serial Number”

3. Press **ESC** several times to display the Main menu.

Off-line TOOL MENU
Maintenance Utility BMC Configuration Exit

1.13.3 BMC Configuration

1. Choose “BMC Configuration”-“BMC Configuration”. Dictate 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 to display the Main menu.

Off-line TOOL MENU
Maintenance Utility BMC Configuration Exit

3. Choose “Exit” to exit.

The setup is now completed.

1.14 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 optical disk drive on the ESXi host during operation.
To use the optical disk 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 ESXi.
Check the version following the steps below.

ESXi

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

```
# esxcli –s <ESXi IPaddress> system version get
Product: VMware ESXi
   Version: 5.1.0
   Build: Releasebuild-1065491
   Update: 1
```

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

ftSys Management Appliance

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

```
# uname –a
Linux ftsysMgt-Cygnus 2.6.18-274.el5 #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. Perform the procedure when you need to check the ft control software version of the current system such as before adding units or attachment to NEC Express5800/ft series.

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 5.0.1-225
```

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 appropriate commands.

Important **Should be changed after setup is complete it can cause unexpected behavior and make configuration changes on the way up.**

2.3.1 If the ESXi Host Network Configuration has been Changed

If the ESXi host network configuration has been changed, run the following commands on ftSys Management Appliance.

```
# /opt/ft/sbin/configure-appliance
# shutdown -r now
```

ftSys Management Appliance reboots after running the commands.

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, run the following command on ftSys Management Appliance. 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>
```

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.

Note For the log server, see *Chapter 2 (3. Steps for Configuring the Log Server)* of this manual.

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 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	sfcbd/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 ESMPRO 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	→ ←	31134/tcp	
Via the Manager Report Service Express	Auto	→ ←	31136/tcp	
HTTPS (Via the Manager) Report Service Express	Auto	→ ←	31138/tcp	
Report Service Express (Internet email)	Auto	→ ←	25/tcp	smtp
		→ ←	110/tcp	pop3
Report Service Express (HTTPS)	Auto	→ ←	443/tcp	https Release port (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 (5.0.1-225)         [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]
   Host BIOS up to date - requires 6.2:52, or better           [PASS]
   Host BMC up to date - requires Runtime=03.07, or better     [PASS]
   ```

If it is found out that the system is not running successfully when checking the firewall behavior, review the rules or revert the rules to default by following the steps provided 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 /R320c-E4, R320c-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.

3. **Steps for Configuring the Log Server**

   Describes forwarding the logs generated by ESXi to the log server.

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 2 (3. Steps for Configuring the Log Server)* for the log server.

Note See *Chapter 1 (1.10.1. 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(optional)
#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 ESMPRO Agent

Connect to the ESXi host from vSphere Client to configure.

1. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
2. Click the CD/DVD button on toolbar of vSphere Client to mount the 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 ESMPRO Agent.

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

6. Run the following command to install the NEC ESMPRO 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/R320c-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 ft control software Install DVD, and then take the ft control software Install DVD out from 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
[ESMPRO] tab
NEC ESMPRO Server Management Guide [ZIP]

2. Bundled Software for Management PC

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

2.1 NEC ESMPRO Manager

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.

3. Steps for Configuring the Log Server

To use a log server separately, prepare a Linux server. 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 the manual that comes with NEC ESMPRO Agent.
After configuring the server as described above, provide the following settings.

3.1 Setting Firewall for Log Server

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

Examples

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

3.2 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

1. 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"

2. 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

3. Restart syslog.

   ```
   # service syslog restart
   ```

Examples of setting an environment to use rsyslog

1. 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

2. 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

3. 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

3.3 Installing Reporting Function onto Log Server

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

Connect to the ESXi host from vSphere Client to configure.

1. Set the ft control software Install DVD to the DVD drive of the machine where vSphere Client is installed.
2. Click the CD/DVD button on toolbar of vSphere Client to mount the ft control software Install DVD.
3. Log in to the log server 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 command below to install the ESMPRO report table onto the log server.

   ```
   # /mnt/cdrom/NEC/install.sh –e
   ```

6. 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)].
   ```

   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.

   # rpm -qa | grep ftexp-report-table

   ftexp-report-table.[languate ID]-[version]

   # rpm -e ftexp-report-table.[languate ID]

7. Change directory, and unmouont ft control software Install DVD.

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

8. Press the Ctrl+Alt keys to release the mouse, click the CD/DVD button on toolbar on the console of vSphere Client to unmount ft control software Install DVD, and then take the ft control software Install DVD out from DVD drive.
9. Restart the NEC ESMPRO Agent on the log server.

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

3.4 Starting Transferring Logs

Perform operations required to start transferring logs. The method to change the log host is also described.

1. Log in to the ftSys Management Appliance as a root user.
2. When you did not specify the IP address of log server or machine name in Step 9 in *Chapter 1 (1.10.2 Installing Additional Packages)* or want to change the log server, specify the log server using `build-loghost` command.

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

   Note

   When running the `build-loghost` command without option, the currently-set IP address of log server or machine name will be displayed.
   Examples of when running the command in the case that the IP address of log server is 192.168.0.7:
   # /opt/ft/sbin/build-loghost
   Default Rotation Size: 1024
   Default Rotations: 8
   Log Output: /scratch/log
   Logto Unique Subdirectory: false
   Remote Host: 192.168.0.7

3. Reload syslog daemon.

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

   Important

   When rebooting the log server, log transfer will be momentarily stopped. In this case, to resume log transfer, it is required to run the `esxcli system syslog reload` command again on the ftSys Management Appliance after the log server has rebooted.
   Log transfer also stops if the log server side is not ready for receiving logs when the log server is changed by the `build-loghost` command. After completing the configuration required on the log server side, run the `esxcli system syslog reload` command.

   Tips

   When a separate log server is installed, some of the logs related with the internal disks are not reported. These logs can also be reported by installing NEC ESMPRO Agent and the report table on ftSys Management Appliance and configuring the reporting settings, because these logs are generated in the syslog of ftSys Management Appliance. Even without following the instructions above, logs indicating that one of a pair of mirrored internal disks is isolated and the other internal disk runs without the counterpart will be reported.