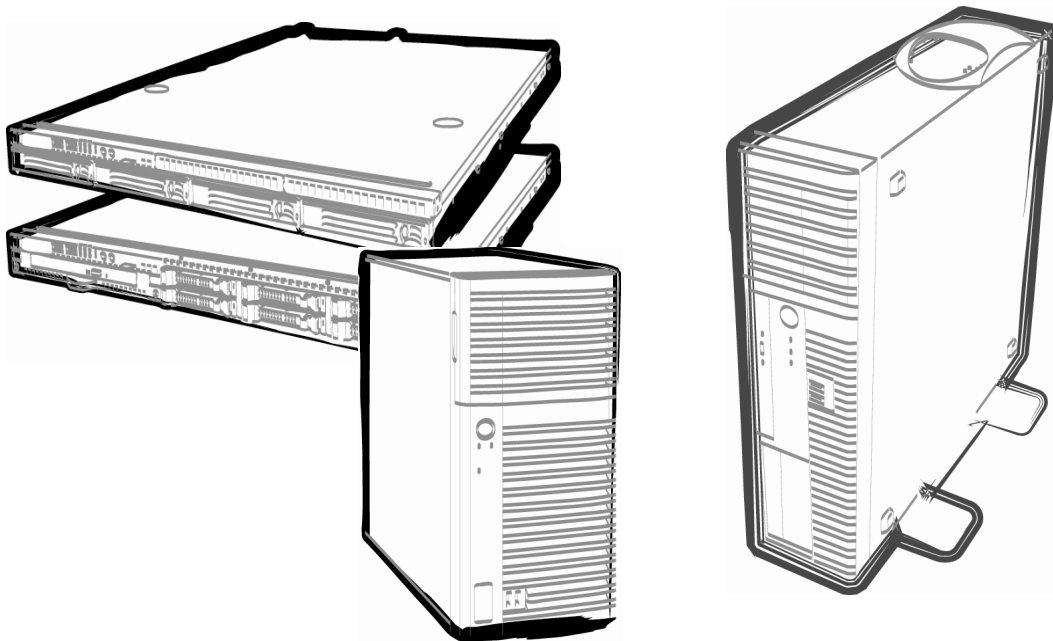




NEC Express Server
Express5800 Series

Express5800/GT110d, GT110d-S, GT110d-S (2C/i3-2120), R110d-1E, E110d-1 EXP280A, EXP281A, EXP282A Installation Guide (Windows)

Model Number: N8100-1738F/1739F/1740F/1741F/1742F/1744F/1745F/1743F

Chapter 1 Installing Windows

Chapter 2 Installing the Bundled Software

Documents Provided with This Product

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



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: Setting Up Your Server	System BIOS configurations and summary of EXPRESSBUILDER
Chapter 4: Appendix	Specifications and other information



Installation Guide (Windows)

Chapter 1: Installing Windows	Installation of Windows and drivers, and important information for installation
Chapter 2: Installing the Bundled Software	Installation of bundled software, such as ESM PRO and Universal RAID Utility



Maintenance Guide

Chapter 1: Maintenance	Server maintenance and troubleshooting
Chapter 2: Convenient Features	Useful features and the detail of system BIOS settings, RAID Configuration Utility, and EXPRESSBUILDER
Chapter 3: Appendix	Error messages and Windows Event Logs



Other documents

Provides the detail of ESM PRO, Universal RAID Utility, 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 server or operating software. If the procedures described are not followed, <u>server failure, data loss, and other serious malfunctions could occur.</u>
Note	Indicates items that must be confirmed when handling the server 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 refer to the following.

- Hard disk drives (HDD)
- Solid state drive (SSD)

Removable media

Unless otherwise stated, removable media described in this document refer to the following.

- USB memory
- Flash FDD

Abbreviations of Operating Systems (Windows)

Windows Operating Systems are referred to as follows.

Notations in this document	Official names of Windows
Windows Server 2008 R2	Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Server 2008 R2 Foundation
Windows Server 2008 ^{*1}	Windows Server 2008 Standard Windows Server 2008 Enterprise
Windows Server 2003 R2 x64 Edition	Windows Server 2003 R2 Standard x64 Edition Windows Server 2003 R2 Enterprise x64 Edition
Windows Server 2003 R2 ^{*2}	Windows Server 2003 R2 Standard Edition Windows Server 2003 R2 Enterprise Edition
Windows Server 2003 ^{*2}	Windows Server 2003 Standard Edition Windows Server 2003 Enterprise Edition
Windows PE	Windows Preinstallation Environment

*1: Includes 64-bit and 32-bit Editions unless otherwise stated.

The following appears on EXPRESSBUILDER screen.

- Windows Server 2008 64-bit Edition: Windows Server 2008 x64
- Windows Server 2008 32-bit Edition: Windows Server 2008 x32

*2: Unless otherwise stated, Windows Server 2003 R2 and Windows Server 2003 are collectively referred to as Windows Server 2003.

Supported Operating Systems differ depending on the model of this product. For details, see the following table.

Editions or Families of Windows	GT110d	GT110d-S	R110d-1E	E110d-1
Windows Server 2008 R2 Standard	✓	✓	✓	✓
Windows Server 2008 R2 Enterprise	✓	✓	✓	✓
Windows Server 2008 R2 Foundation	✓	✓	—	—
Windows Server 2008 Standard	✓	✓	✓	✓
Windows Server 2008 Enterprise	✓	✓	✓	✓
Windows Server 2003 R2 Standard x64 Edition ^{*1}	✓	✓	✓	✓
Windows Server 2003 R2 Enterprise x64 Edition ^{*1}	—	—	✓	✓
Windows Server 2003 R2 Standard Edition ^{*1}	✓	✓	✓	✓
Windows Server 2003 R2 Enterprise Edition ^{*1}	—	—	✓	✓
Windows Server 2003 Standard Edition ^{*1}	✓	✓	—	—
Windows Server 2003 Enterprise Edition ^{*1}	—	—	—	—
Windows PE	— ^{*2}			

*1: Service Pack2 or later.

*2: Used as an installation platform only.

✓: Supported —: Not supported

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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.

CE 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

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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 Express5800 Series

Express5800/GT-110d, GT-110d-S, R110d-1E, E110d-1

1

Installing Windows

This chapter describes setup procedures. Read through this chapter to set up the system correctly.

1. Before Starting Setup

Describes the Service Packs and mass storage device controllers that support EXPRESSBUILDER supplied with this product)

2. Setting Up the Operating System

Describes the general process of setting up the operating system

3. Setting Up Windows Server 2008 R2

Describes how to set up the system for operation with Windows Server 2008 R2

4. Setting Up Windows Server 2008

Describes how to set up the system for operation with Windows Server 2008

5. Setting Up Windows Server 2003 R2 x64 Edition

Describes how to set up the system for operation with Windows Server 2003 R2 x64 Edition

6. Setting Up Windows Server 2003

Describes how to set up the system for operation with Windows Server 2003

7. Setting Up for Solving Problems

Describes the features that must be set up in advance so that the server can recover from any trouble immediately and precisely

8. Windows OS Parameter File

Describes how to set up the operating system by using the parameter file.

This document has descriptions on which a floppy disk is used. However, the server does not have an internal floppy disk drive. Use an optional Flash FDD.

1. Before Starting Setup

This section describes important points for setting up Service Packs that support EXPRESSBUILDER (contained in this product) and for setting up Windows operating systems. Setting up the server begins with the hardware.

1.1 Starting EXPRESSBUILDER

Follow the procedure below to start EXPRESSBUILDER.

1.1.1 When using the EXPRESSBUILDER DVD

1. Turn peripheral device power on, and then turn the server power on.
2. Set EXPRESSBUILDER DVD to the optical disk drive.
3. Once the DVD is set, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on.
The system starts up and runs EXPRESSBUILDER.
4. When the boot menu appears, select **Os installation *** default *****.
You will advance automatically to the next screen, with no need for further input.

1.1.2 When using Internal Flash Memory

1. Turn peripheral device power on, and then turn the server power on.
2. When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears, press the <F3> key. EXPRESSBUILDER starts from the Internal Flash Memory.
3. When the boot menu appears, select **Os installation *** default *****.
You will advance automatically to the next screen, with no need for further input.

1.2 Service Pack Support

The following combination of operating system installation media and Service Packs are supported by EXPRESSBUILDER.

OS Installation Media	No SP	SP1	No SP + SP2	SP2	SP1 + SP2
Windows Server 2008 R2	✓	—	—	—	—
Windows Server 2008	✓	—	✓	✓	—
Windows Server 2003 R2 x64 Edition	—	—	✓	✓	—
Windows Server 2003 R2	—	—	✓	✓	—
Windows Server 2003	—	—	—	—	✓

✓: Supported —: Not supported

Note

You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.

1.3 Large-Capacity Storage Controllers Supported by EXPRESSBUILDER

When you install the Windows operating system, device drivers supporting the controllers (boards) connected to the Hard Disk Drive and/or other types of large-capacity storages are required.

The table below lists the controllers for this server, supported by the supplied EXPRESSBUILDER.

If an optional board not mentioned below is connected, set it up while referring to the instructions supplied with the board and *Chapter 1 (1.4 When Using a Large-Capacity Storage Controller Not Supported by EXPRESSBUILDER)*.

OS	Windows Server 2008 R2	Windows Server 2008	Windows Server 2003 R2 x64 Edition	Windows Server 2003
RAID Controllers supporting EXPRESSBUILDER OS installation				
N8103-128 RAID Controller (128 MB, RAID 0/1)	✓	✓	✓	✓
N8103-G128 RAID Controller (128 MB, RAID 0/1)*1	✓	✓	✓	✓
N8103-129 RAID Controller (256 MB RAID 0/1)	✓	✓	✓	✓
N8103-130 RAID Controller (256 MB RAID 0/1/5/6)	✓	✓	✓	✓
N8103-134 RAID Controller (512 MB RAID 0/1/5/6)	✓	✓	✓	✓
Onboard RAID Controller (LSI Embedded MegaRAID)	✓	✓	✓	✓
Other options				
N8103-75 SCSI controller*1	✓	✓	✓	✓
N8103-104A SAS controller*2	✓	✓	✓	✓
N8103-107 SCSI controller	✓	✓	✓	✓
N8103-135 RAID Controller (512 MB, RAID 0/1/5/6)*3	✓	✓	✓	✓
N8103-142 SAS controller*2	✓	✓	✓	✓
N8190-127 Fibre Channel controller *3	✓	✓	—	—
N8190-131 Fibre Channel controller (2 ch)*3	✓	✓	—	—
N8190-153 Fibre Channel controller (1 ch) *3	✓	✓	—	—
N8190-154 Fibre Channel controller (2 ch) *3	✓	✓	—	—

*1: Available for Express5800/GT110d and GT110d-S only

*2: Available for Express5800/GT110d, R110d-1E, and E110d-1 only

*3: Available for Express5800/R110d-1E and E110d-1 only

✓: Supported —: Not supported

Tips

The drivers for the optional boards listed above are included in EXPRESSBUILDER.

If a RAID Controller not listed above is used, the RAID System cannot be configured by using EXPRESSBUILDER. In this case, refer to the instructions supplied with the board for how to configure the RAID System.

1.4 When Using a Large-Capacity Storage Controller Not Supported by EXPRESSBUILDER

Use the following setup process when reinstalling an operating system to a system on which a large capacity controller is connected that is not supported by EXPRESSBUILDER (such as the newest RAID Controllers).

1. When you are about to set up the system, have the manual for the large capacity storage controller ready.

Note

If the contents of this document differ from that of the large capacity storage controller, prioritize the contents of the controller manual.

2. When using a RAID Controller, follow the controller manual to set up the RAID System.
If using a large capacity storage controller for which RAID setting is not required, go to step 3.

When you install using OS standard installer, refer to (*setup with OS standard installer*) section of each OS.

Note

Click [Skip] in **RAID settings**.

3. Start the system from EXPRESSBUILDER.
4. Select **Configure EXPRESSBUILDER settings** from the top menu, and then select Load a driver into EXPRESSBUILDER from the screen that appears. Next, click [Next].
Insert the media in which the driver for the large capacity storage controller is copied to the optical device drive, select the destination, and then click [Perform].

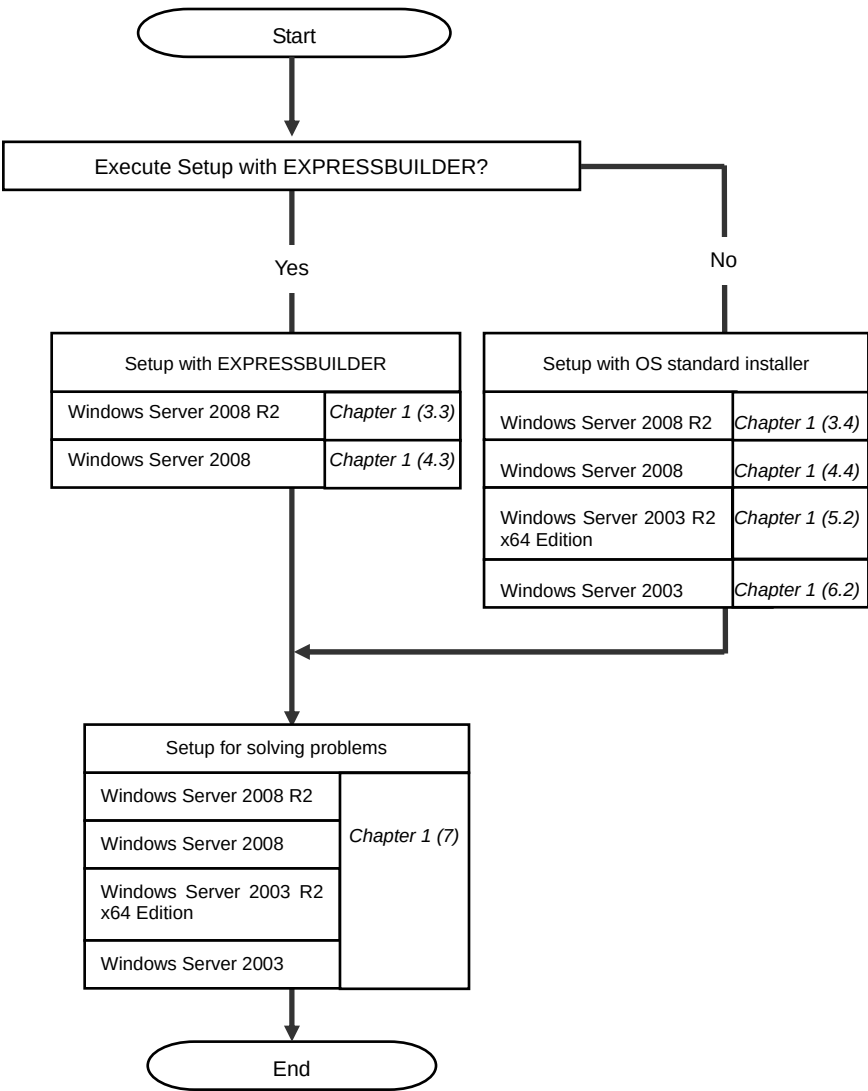
Tips

By selecting this option, the driver supplied by the CD-ROM or floppy disk is loaded, and you can proceed with the EXPRESSBUILDER setup.

5. Execute Setup with EXPRESSBUILDER by using the following procedure:
 - Click [Skip] in **RAID settings**.
 - Confirm that **Apply drivers for mass storage controller** appears under **Selected applications** in **Application settings**.

2. Setting Up the Operating System

After setting up the hardware, read through the explanation below for the operating system you use. If you reinstall the operating system, read through the explanation before you start reinstallation.



3. Setting Up Windows Server 2008 R2

Set up Windows Server 2008 R2 and the system.

3.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB

: Confirm during Setup with EXPRESSBUILDER

OS

: Confirm during Setup with OS standard installer

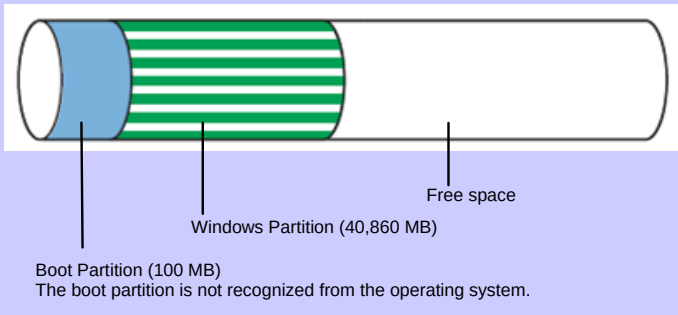
(1/3)

Setup		Items to confirm	
EB	OS	Windows family	The following editions of the Windows Server 2008 R2 family may be installed. For information about Service Packs, refer to <i>Chapter 1 (1.2 Service Pack Support)</i>. • Windows Server 2008 R2 Standard • Windows Server 2008 R2 Enterprise • Windows Server 2008 R2 Foundation* * Only supported by GT110d-E and GT110d-S Inquiries about installing other editions may be made at your sales dealer or maintenance service company.
EB	OS	Hardware configuration warnings	When installing Windows Server 2008 R2, the following hardware configurations require special procedures. • Reinstalling to a mirrored volume When reinstalling to a Hard Disk Drive that has been converted to a dynamic disk, the operating system can only be installed to a simple dynamic volume. If installing to a mirrored volume by using Disk Management, disable mirroring and return to a basic disk prior to installation. After the operating system is installed, return to the mirrored state. Click on Computer Management and then Disk Management to create, release, or delete mirrored volumes
EB	OS		• Connecting MO devices Installing Windows while an MO device is connected can result in installation failure. Remove the MO device, and then start installation from the beginning.
EB	OS		• DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
EB	OS		• RDX and similar peripheral devices Depending on the configuration of the hardware being used, it may be necessary to remove or stop peripheral devices prior to starting setup. Refer to the manuals of each peripheral device to make sure each is in its appropriate state, and then proceed with setup.
EB	OS		• Reinstalling to Hard Disk Drives that have been upgraded to dynamic disks If the Hard Disk Drive has been upgraded to a dynamic disk, an operating system cannot be reinstalled to it with the existing partitions. Set up the operating system with the OS standard installer.
EB	OS		

(2/3)

Setup		Items to confirm	
EB	OS	Hardware configuration warnings	Connecting to multiple Hard Disk Drives (Logical Drives) For details on installing operating systems to a system in which multiple Logical Drives exist, refer to <i>Chapter 1 (3.8 Installation When Multiple Logical Drives Exist)</i>.
	OS	System partition size	The system partition size can be calculated by using the following formula. Size required to install the OS + paging file size + dump file size + application size Size required to install the OS = 8,000 MB (Full installations) = 3,500 MB (Server Core installations) Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application For example, if the installed memory size is 1 GB (1,024 MB) and Full installation is selected, the partition size is calculated as follows: 8,000 MB + (1,024 MB × 1.5) + 1,024 MB + 300 MB + application size = 10,860 MB + application size Important - The above mentioned partition size is the minimum partition size required for system installation. Ensure that the partition size is sufficient for system operations. The following partition sizes are recommended. - Full installations: 32,768 MB (32 GB) or more - Server Core installations: 10,240MB (10 GB) or more *1 GB = 1,024 MB - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information. - Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 300 MB". - When installing other applications or other items, add the amount of space needed by the application to the partition.

(3/3)

Setup		Items to confirm	
EB	OS	System partition size	If the partition size for installing the system is smaller than the size required for installation + paging file size, expand the partition size or add another disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the following steps. 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Write the debug information of the dump file onto another disk by referring to 7. <i>Setup for Solving Problems</i>. If there is not enough disk space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another disk for the dump file. Tips When creating a new partition, Windows OS assigns an initial boot partition of 100 MB. For example, when making a partition of 40,960 MB (40 GB), usable space will be 40,960 MB – 100 MB = 40,860 MB. 
EB	OS	Using BitLocker	If using BitLocker, note the following. • Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker. • To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation. • Microsoft releases software updates for BitLocker encryption. If using BitLocker, it is important that you read through the information provided by Microsoft. Also read through the checklist published by Microsoft. For details, visit http://support.microsoft.com/kb/975496/en-us. Important If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more. The recovery password might be required at startup of the OS after the following: – Replacement of motherboard – Initialization of trusted platform module (TPM) – Change of BIOS setting
EB	OS	Installing Service Pack	You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.
EB	OS	License authentication	License authentication might be required, depending on the operating environment. For details, refer to 3.7 <i>License Authentication</i>. Important • Activate within 30 days following installation. • A virtual product key is used when installing in a virtual environment. It is not used when directly installing an operating system to a physical server.

3.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide " in advance.

Important

- The Scalable Networking Pack (SNP) function is disabled on systems that have been installed by using EXPRESSBUILDER. The setting of SNP function may affect the system performance. Contact the sales agent for details.
- Setup with EXPRESSBUILDER may delete some data in the Hard Disk Drive depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:
 - RAID settings wizard
 - Partition Settings in the Windows Setup wizardBacking up user data, as needed, is recommended.

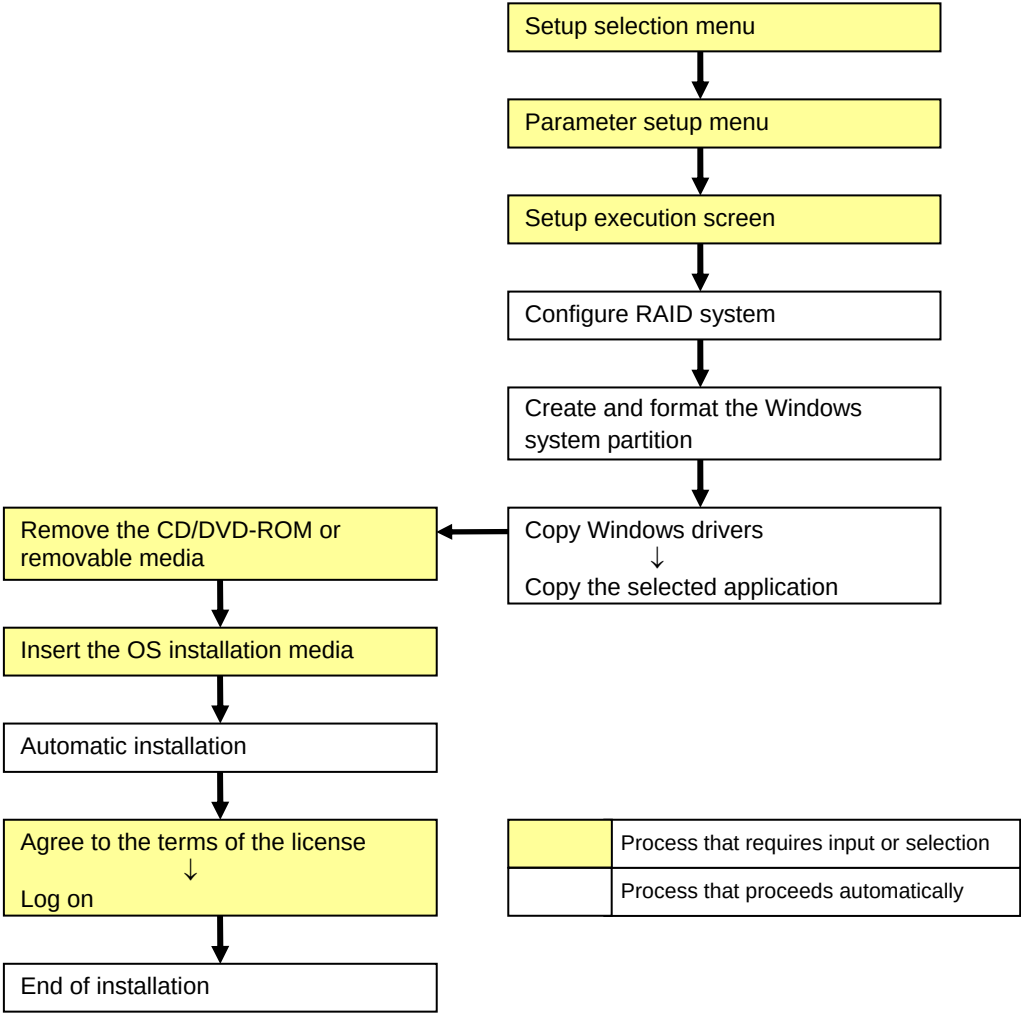
Note

For a non-standard setup procedure without using EXPRESSBUILDER, refer to the descriptions in *Chapter 1 (1.4 When Using a Large-Capacity Storage Controller Not Supported by EXPRESSBUILDER)* or *(3.8 Installation When Multiple Logical Drives Exist)*.

Tips

- Setup with EXPRESSBUILDER allows you to use a prespecified parameter file or save the parameters specified in setup as a parameter file on a removable media or Internal Flash Memory (if purchased optionally).
- You can create a parameter file by using the **Create a parameter file for Windows OS** function in EXPRESSBUILDER.
- For details on creating a parameter file, refer to *8 Windows OS Parameter File*.

3.2.1 Setup flow



3.2.2 Setup procedure

During Setup with EXPRESSBUILDER, parameters are specified through the wizard. You can also save the parameters as one file (a parameter file) to removable media.

Important

- Read through the items in *Chapter 1 (3.1 Before Starting Setup)* prior to installing Windows.
- If modifying or adding network adapters or other drivers, refer to *Chapter 1 (3.5 Setting Up Device Drivers)*.

1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to start EXPRESSBUILDER.

Note

Be sure to disconnect removable media before starting EXPRESSBUILDER.

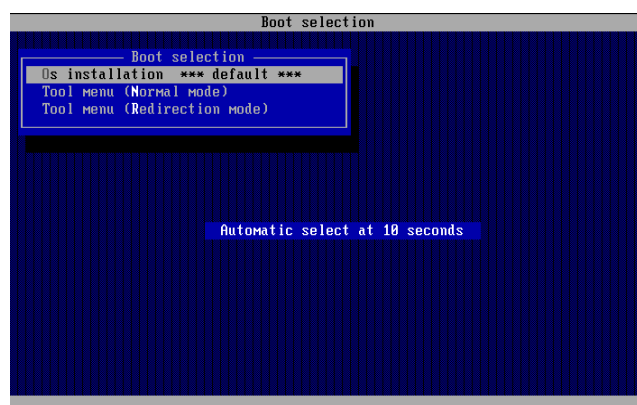
When using the EXPRESSBUILDER DVD

- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again.
EXPRESSBUILDER starts.

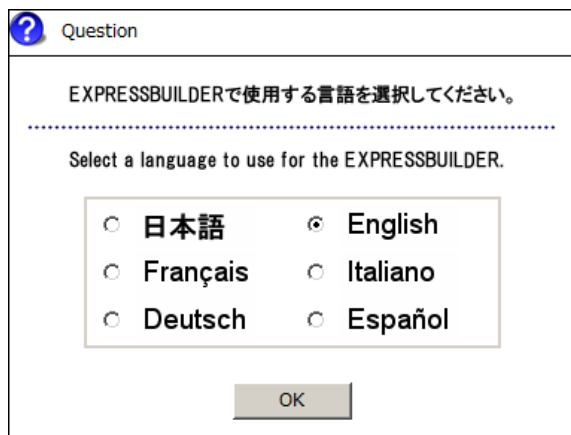
When using the Internal Flash Memory

- (1) When “Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network” appears below the POST window, press the <F3> key.
EXPRESSBUILDER starts.

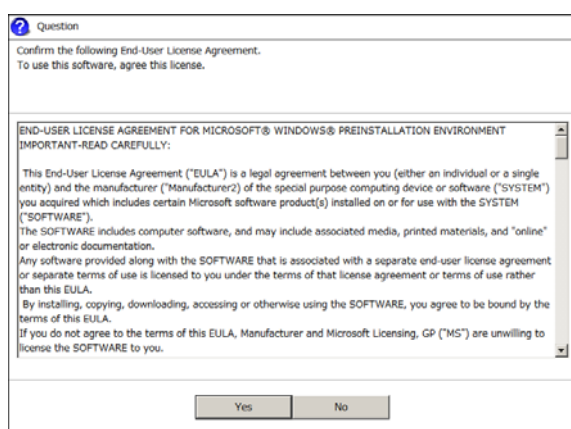
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



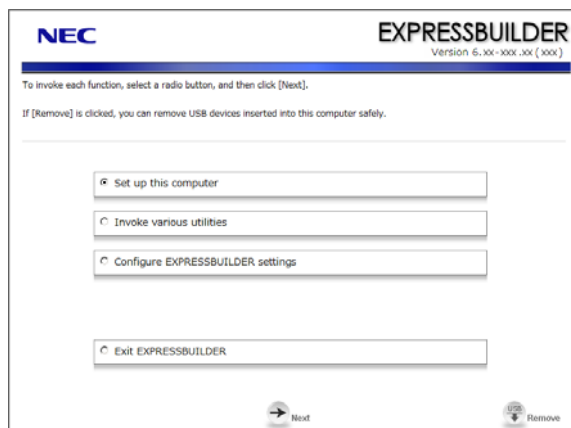
4. Select **English** on the language selection window, and then click [OK].



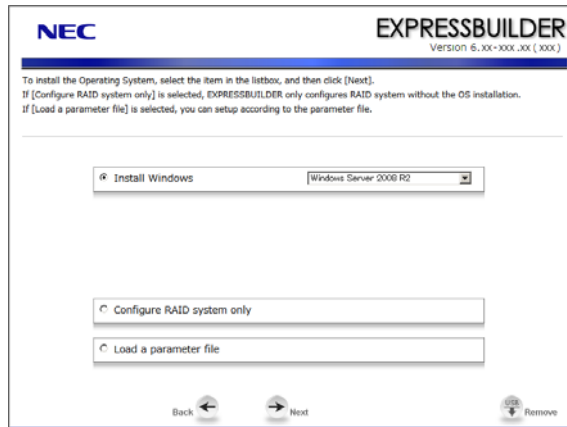
5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to specify the parameters.



Note

When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

When not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

When using a parameter file:

Select **Load a parameter file**, and then click [Next].

Load the desired parameter file according to the onscreen instructions.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (4) *Executing setup*.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard
- Partition Settings in the Windows Setup wizard

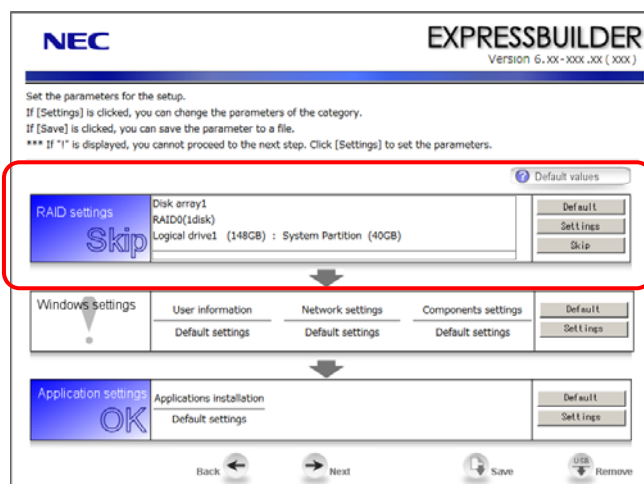
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.

You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

When skipping the creation of a new Logical Drive

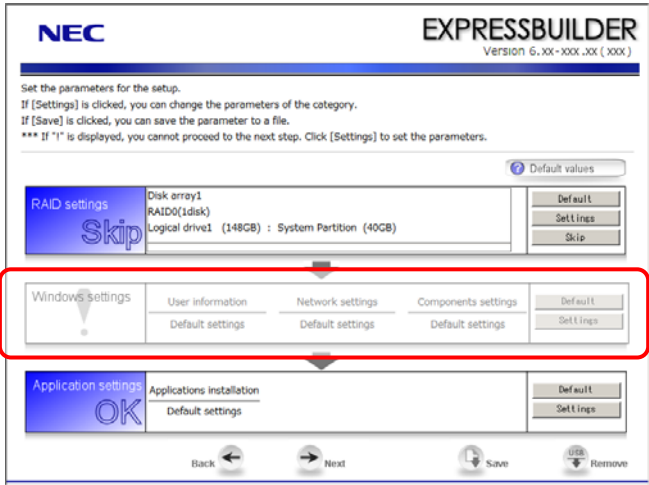
1. Click [Skip] in **RAID settings**.

Tips

Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the existing configurations without modifying them.

(2) Windows settings

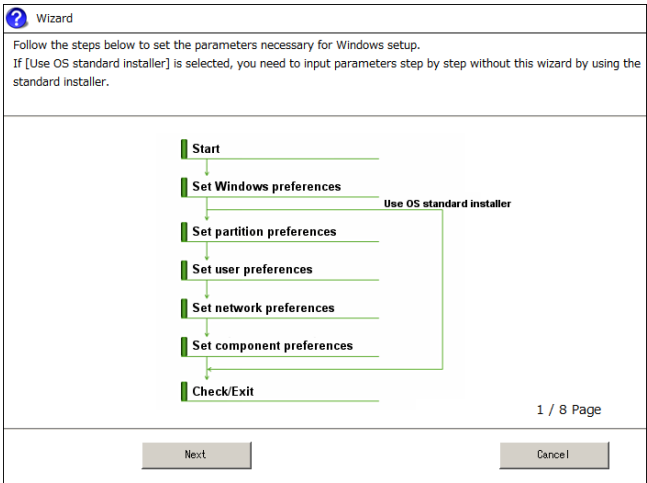
Set up Windows by using the Windows settings wizard on the parameter setup menu.



Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

- 1. Click [Settings] in **Windows settings**.
- 2. Click [Next] in the Windows settings wizard.



3. Specify the Windows basic settings.

The basic information window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

If [Use OS standard installer] is selected, Windows is installed by using the standard installer contained in the OS media, and applications such as ESMPRO must be installed separately after Windows installation.
If [Setup with EXPRESSBUILDER] is selected, both Windows and applications can be installed easily.

Basic information

Operating System : Windows Server 2008 R2

☐ Use OS standard installer

☐ Copy OEM drivers into a removable media

☒ Setup with EXPRESSBUILDER

Edition : (Standard/Full Installation)

Language : English

Time zone : (UTC-08:00) Pacific Time (US & Canada)

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Back Next Cancel

4. Set up the partitions.

The partitioning window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Set parameters about the partition of Windows installation.
Windows can be installed into the first hard disk drive or logical drive. The partition size can be set within 2TB. (The area where 2TB is exceeded cannot be used.)
If there are any partitions in the destination disk, below red-framed area is deleted.

Current partitions(the red-framed area is deleted) :

⏏ Data partition (40.0GB) ⏏ Free area (108.1GB)

Partitioning

☒ Use the existing partition

☒ Create a new partition

☐ Specify the maximum amount

☒ Enter a value : 40 (GB) *1TB=1024GB (17GB - 148GB)

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Back Next Cancel

Important

- **Partition size**

- Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (3.1 Before Starting Setup)*.)
- Do not specify a size that is greater than the capacity of the connected Hard Disk Drive.
- The maximum partition size is 2,097,152 MB.

- If you select *Create a new partition* under *Partitioning*, the entire contents of the Hard Disk Drive will be deleted.

- If you select *Use the existing partition* under *Partitioning*, data in the boot partition (if it exists) and Windows partition is formatted and deleted. Data in other partitions will be kept.

The figure below shows in which partitions data will be deleted.

Boot partition	Windows partition	User data partition
Deleted	Deleted	Retained

- You cannot reinstall to an existing partition that has been upgraded to a Dynamic Disk (refer to *Chapter 1 (3.1 Before Starting Setup)*). Do not select *Use the existing partition* under *Partitioning*.

5. Enter user information.

The user information window appears. Enter the user information, and then click [Next].

Important

For Windows Server 2008 R2, you must enter a computer name and administrator password that satisfies the following conditions:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "Auto", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, ●●●●● is displayed in the Administrator password and Confirm Administrator password text boxes even if no value has been entered.

6. Set up the network.

The network setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

Tips

The order of entry in **Custom settings** may differ from the numbering of LAN ports.

Note

Even when an optional network board is connected, the custom setting list only shows standard network boards. Optional network boards are not displayed. When an optional network board has been mounted, the optional network board may need to be configured for the custom settings. After finishing Setup with EXPRESSBUILDER, specify the network settings again.

7. Enter the domain or workgroup name to be used.

The domain and workgroup setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Join this computer to a domain or a workgroup.
Select [Workgroup] or [Domain], and then input other parameters.

☒ Join a workgroup

Workgroup name : WORKGROUP

☐ Join a domain

Domain name :

Account name :

Password :

Confirm password :

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Back Next Cancel

8. Select the Windows components for installation.

The Windows components selection window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Set parameters about Windows components.
Select Windows features and Server roles to be enabled.

Server roles

☒ Web server(IIS)

☐ DHCP server

☐ DNS server

☐ File services

☐ Print and Document services

Windows features

☒ SNMP service Advanced

☐ Simple TCP/IP services

☐ WINS server

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Back Next Cancel

9. Click [Finish] on the confirmation window.

Wizard

Parameter setting is completed.
To finish this wizard, click [Finish].

Installed OS : Windows Server 2008 R2

(Setup with EXPRESSBUILDER)

Edition : Standard(Full Installation)

Language : English

Time zone : (UTC-08:00) Pacific Time (US & Canada)

Partition : Create a new partition(40GB)

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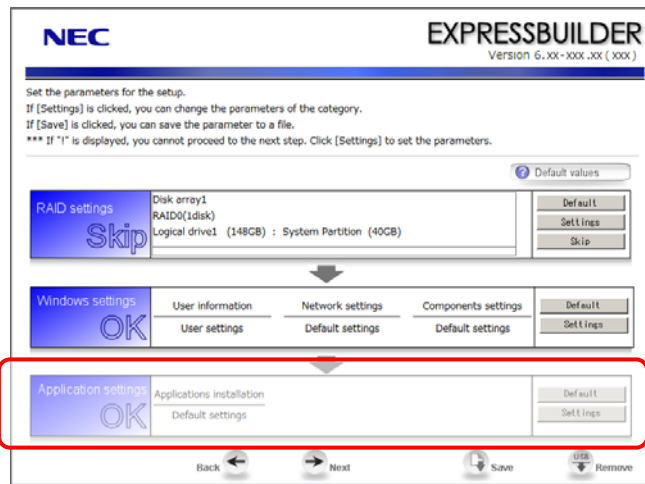
Back Finish

Return to the parameter setup menu.

Proceed to application setup.

(3) Application settings

Set up applications using the Application settings wizard in the parameter setup menu.

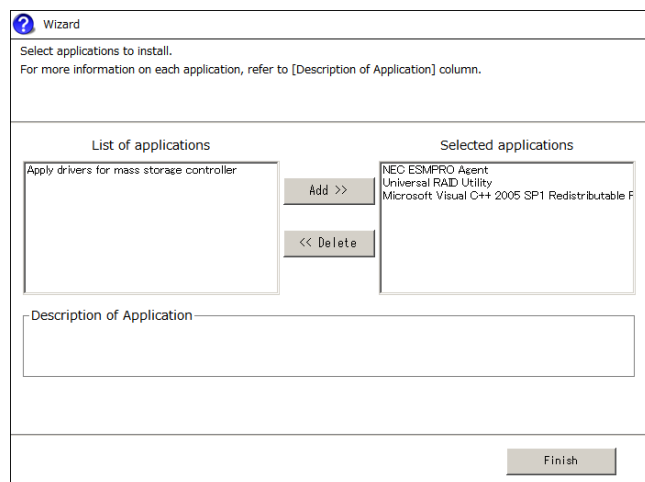


Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

1. Click [Setting] in **Application settings**.

The application setting window appears. Confirm the settings, making corrections as needed, and then click [Finish].



2. Save the parameters.

If you are not saving a parameter file:

→ Go to the following (4) *Executing setup*.

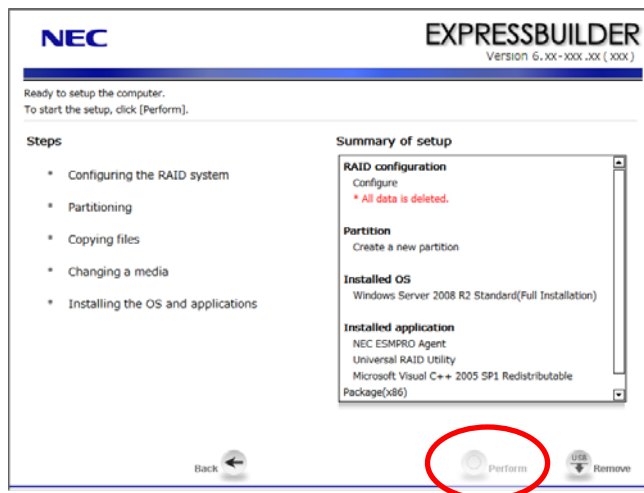
If you are saving a parameter file:

Click [Save], and then follow the onscreen instructions to save the parameter file.

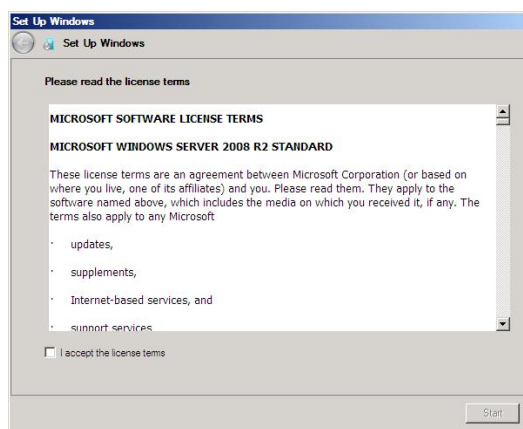
→ Go to the following (4) *Executing setup*.

(4) Executing setup

1. Click [Next] on the parameter setup menu.
2. From the setup execution window, click [Perform].



3. Remove the EXPRESSBUILDER DVD and any removable media if inserted or connected.
4. Insert the Windows Server 2008 R2 DVD-ROM into the optical disk drive.
Windows Server 2008 R2 and selected applications will be installed automatically and restart several times.
5. When the software license agreement window appears, select **I accept the license terms**, and then click [Start] (Full installation only).



6. When the following message appears, press <Ctrl> + <Alt> + <Del>.

Press CTRL + ALT + DELETE to log on

7. Follow the onscreen instructions to log on to the system.

For Full installations:

When the following window appears, enter your password into the text box, and then click .

**For Server Core installations:**

When the following window appears, enter your password into the text box, and then click .

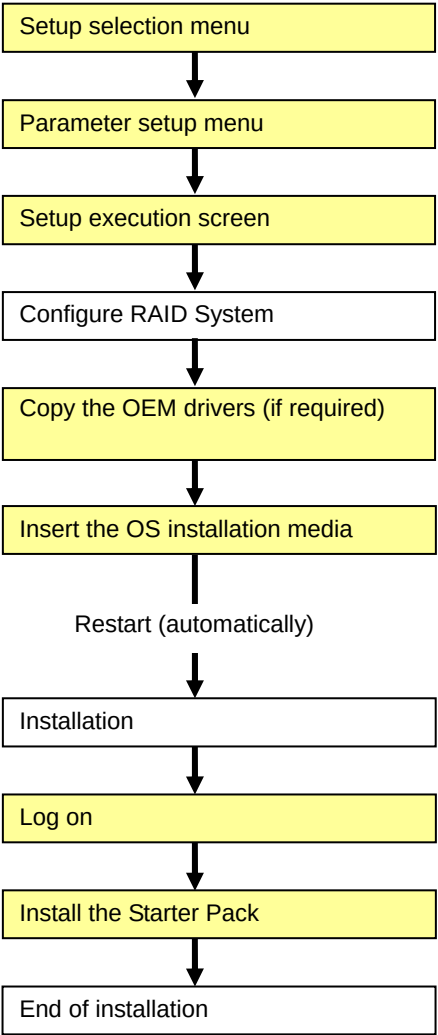
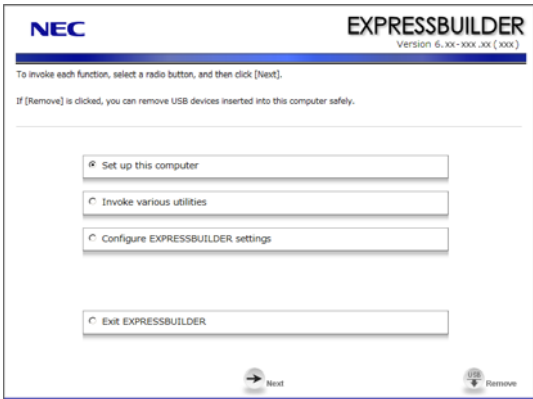


8. Click [OK] in the Setup Complete window.
9. Follow the instructions described in *Chapter 1 (3.5 Setting Up Device Drivers)* to set up the device drivers.
10. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
11. Execute setup by following the instructions described in *Chapter 1 (7. Setup for Solving Problems)*.

Setup with EXPRESSBUILDER is now complete.

3.3 Setup with OS Standard Installer

3.3.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

3.3.2 Requirements for Setup with OS standard installer

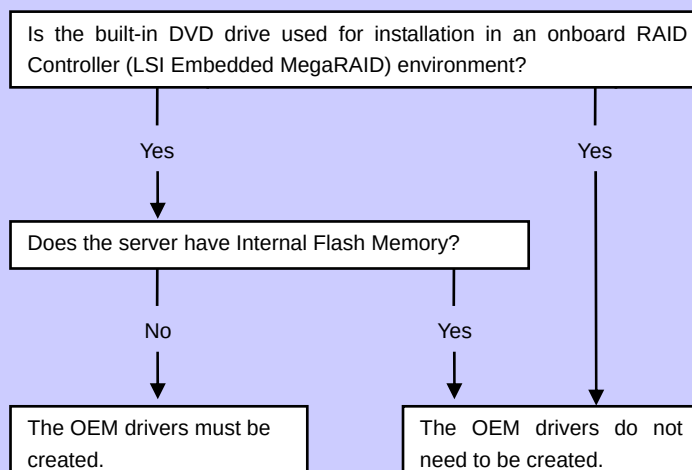
Prepare the following disks and instruction manuals before starting setup.

- Operating system installation media
 - NEC operating system installation media (hereafter referred to as *backup DVD-ROM*)
 - Microsoft operating system installation media (hereafter referred to as *Windows Server 2008 R2 DVD-ROM*)
- First Steps Guide
- EXPRESSBUILDER DVD

If you purchased optional Internal Flash Memory, you can use it during installation.
- Prepare if needed:
 - OEM drivers (Windows Server 2008 R2)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from the Internal Flash Memory if it is installed in the server.
- If you are using a server with Internal Flash Memory installed, you can install the OS without using the EXPRESSBUILDER DVD. .
- OEM drivers are required in the following cases. Prepare Flash FDD or other removable media should these conditions apply.



3.3.3 Setup procedure

This section describes the procedure for installing Windows Server 2008 R2 with OS standard installer.

Important

- Before starting setup, refer to *Chapter 1 (3.1 Before Starting Setup)*. It describes how to make partitions.
- The procedure differs depending on the media on which EXPRESSBUILDER is stored. Use Internal Flash Memory if you have purchased it as an option.

1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to start EXPRESSBUILDER.

Note

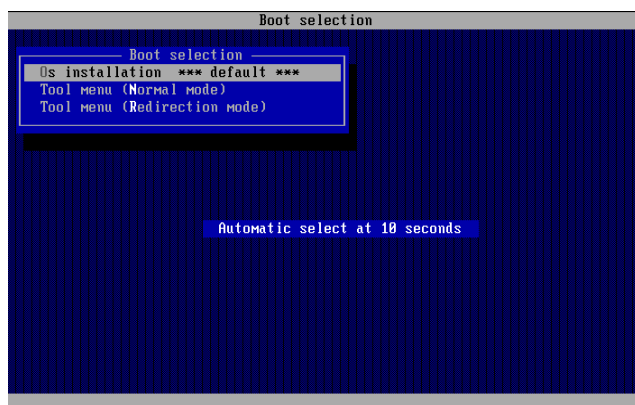
Be sure to disconnect removable media before starting EXPRESSBUILDER.

When using the EXPRESSBUILDER DVD:

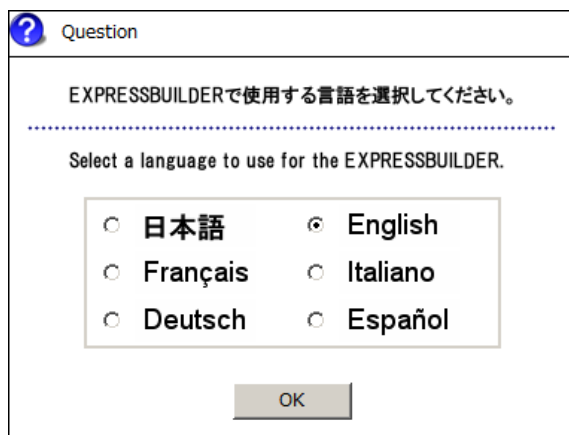
- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again. EXPRESSBUILDER starts.

When using Internal Flash Memory:

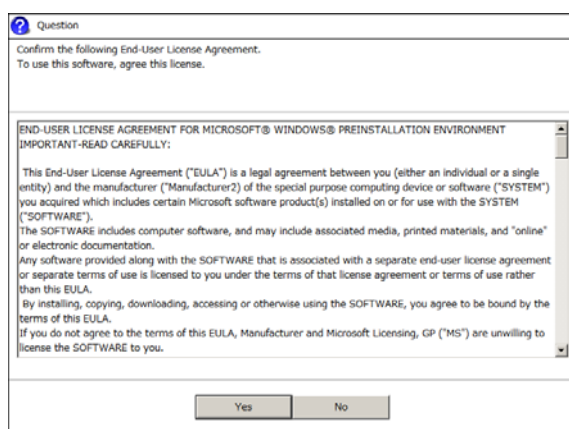
- (1) When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key. EXPRESSBUILDER starts.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



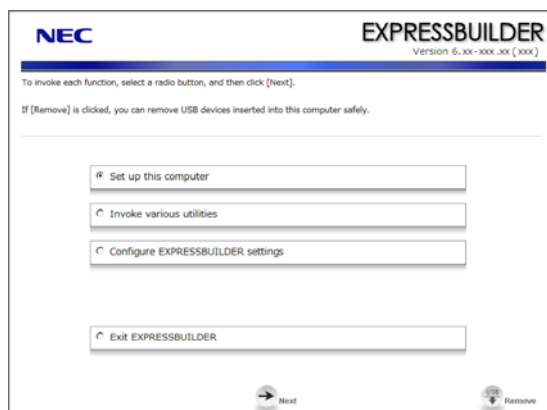
4. Select **English** on the language selection window, and then click [OK].



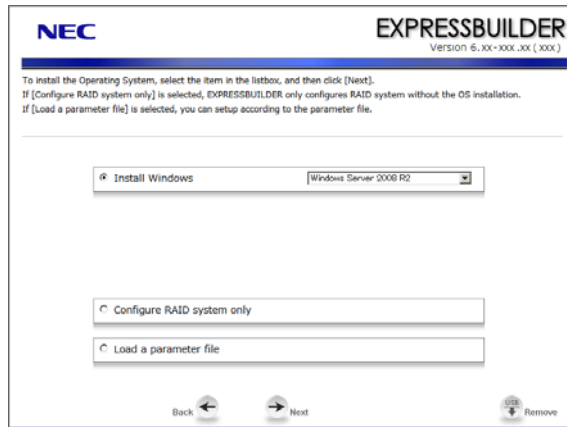
5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to set up the parameters.



Note

When setting up again, an already saved parameter file can be loaded, so that you can skip inputting parameters in the wizard.

If not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

If using a parameter file:

Select **Load a parameter file**, and then click [Next].

Follow the onscreen instructions to load the parameters.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (2) *Executing setup – Executing setup 5*.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard

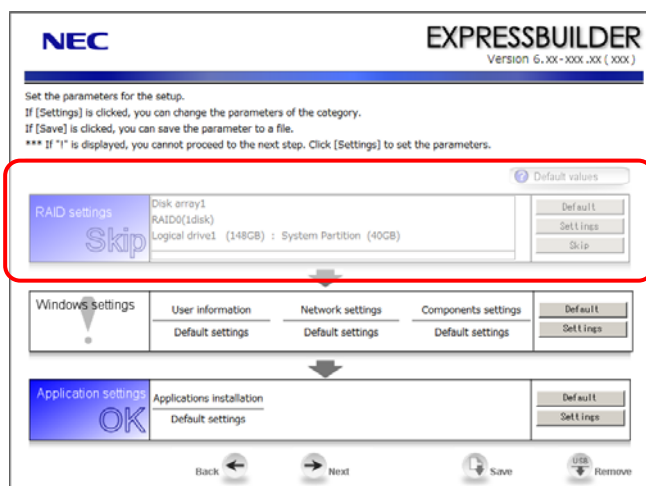
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard. You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive:

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

When skipping the creation of a new Logical Drive:

1. Click [Skip] in **RAID settings**.

Tips

Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the already existing configurations without modifying them.

3. Specify the Windows basic settings.

The basic information window appears. Select **Use OS standard installer**, and then click [Next].

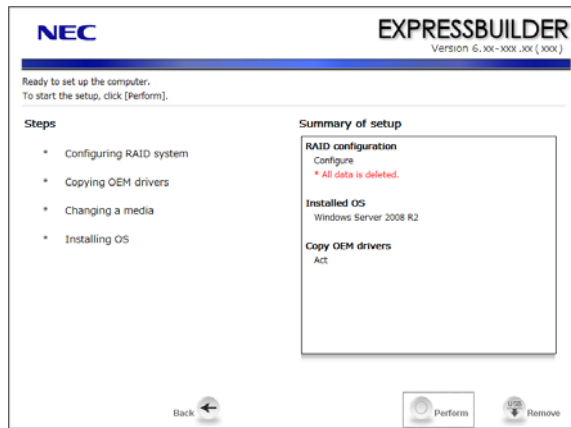
If copying the OEM drivers to the removable media, select **Copy OEM drivers into a removable media**.

Note

- If using Internal Flash Memory:
Clear the **Copy OEM drivers into a removable media** check box.
You must enable Internal Flash Memory when installing the operating system.
- If using the EXPRESSBUILDER DVD:
Select the **Copy OEM drivers into a removable media** check box only if the OEM drivers are required to be copied.

4. After clicking [Finish] on the confirmation window, click [Next] in the parameter setup menu.

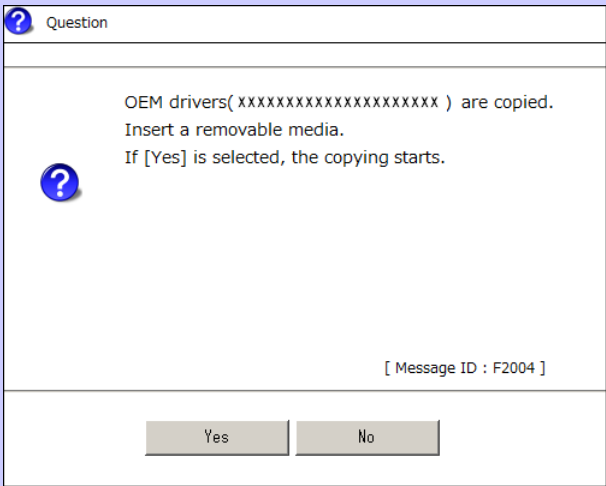
5. From the setup execution window, click [Perform].
The server automatically restarts.



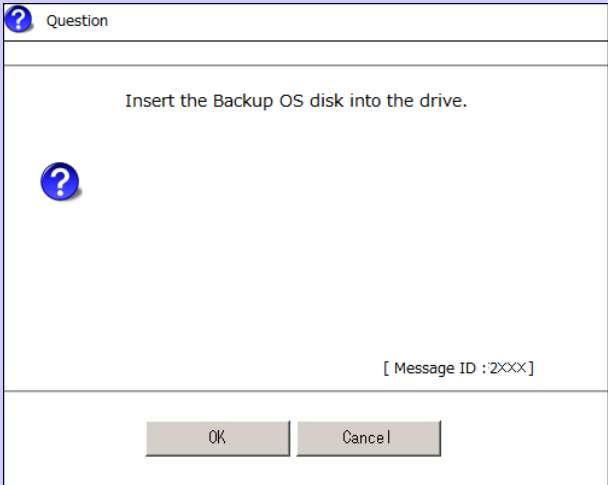
- If using Internal Flash Memory: Go to step 6
- If using the EXPRESSBUILDER DVD: Go to step 7

Note

- If the **Copy OEM drivers into a removable media** checkbox is selected in step 3, the following window appears. Follow the onscreen instructions and continue the operation.



- When the following message appears, insert the OS installation media, and then click [OK].



6. Enable Internal Flash Memory.
- If the following message appears below the POST window during reboot, press the <F3> key.
- Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network

Note

Because this setting enables the Internal Flash Memory to be used, start the OS from the OS media, not from the Internal Flash Memory.

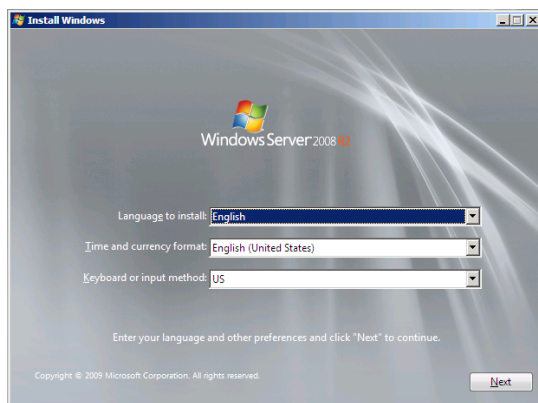
7. Run from the OS installation media.

Important

- If a bootable operating system is already installed on the Hard Disk Drive, press the <Enter> key while the message “Press any key to boot from CD or DVD...” is displayed on the top of the screen. This step is unnecessary if no bootable operating system exists.
- If the Windows installation window (from step 8) does not appear, the <Enter> key was not pressed correctly. Turn the system power on and start again from the beginning.
- Do not remove the media while copying OEM drivers.

The message “Windows is loading files...” appears.

8. When the following window appears, select a language, enter information for the other items, and then click [Next].



9. When the following message appears, click [Install Now 



- If the following message appears, go to step 10.
- If the following message does not appear, go to step 12.

Load Driver

A required CD/DVD drive device driver is missing. If you have a driver floppy disk, CD, DVD, or USB flash drive, please insert it now.

Note: If the Windows installation media is in the CD/DVD drive, you can safely remove it for this step.

[Browse] [OK] [Cancel]

Tips

- The above message appears if you are using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment equipped with an internal DVD drive.
- When this message appears, the message will say “CD, DVD, or USB flash drive”, but you must use Internal Flash Memory or removable media with the OEM drivers copied onto it.

10. Select the destination, and then click [OK].

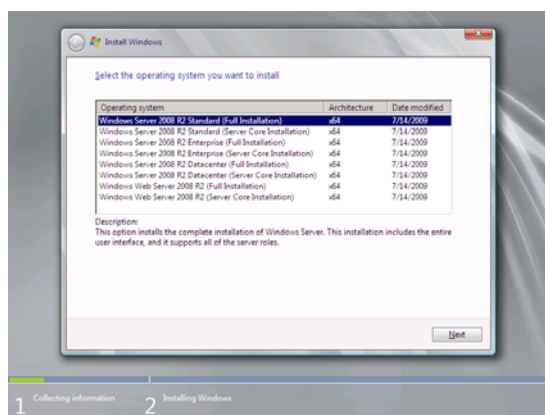
- If using OEM drivers:
Removable media drive letter:\OEM_Driver\ws2008r2\megasr1
- If using Internal Flash Memory:
Internal Flash Memory drive letter:\020\win\winnt\oemfd\ws2008r2\megasr1

Tips

The volume label of the Internal Flash Memory is INTER-FLASH.

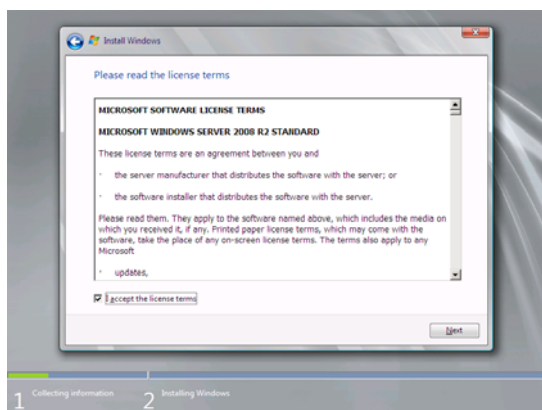
11. Select **LSI Embedded MegaRAID**, and then click [Next].

12. When the following window appears, select the Windows edition you have purchased and your preferred installation method.

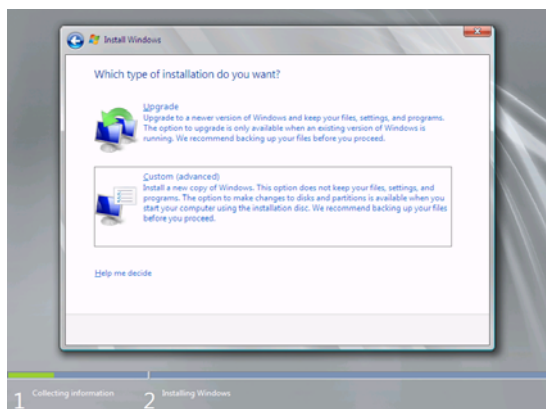
**Tips**

The Windows versions that appear on the screen differ depending on the OS installation media used.

13. When the following window appears, confirm the content of the license agreement. If you agree, select **I agree** and then click [Next].



14. When the following message appears, select the installation type. Select **Custom (advanced)** in this case.



15. The “Where do you want to install Windows?” window appears.

Tips

If the driver was loaded in steps 10 to 11, or if not using a RAID Controller, go to step 19.

Click **Load Driver**.

If the following message appears, replace the OS installation media and EXPRESSBUILDER DVD in the optical disk drive, and then click [Browse]. Next, go to step 16.

Load Driver
To install the driver needed to access your hard drive, insert the installation media containing the driver files, and then click OK.
 Note: The installation media can be a floppy disk, CD, DVD, or USB flash drive.
 [Browse] [OK] [Cancel]

Tips

- If using the Internal Flash Memory, you do not need to remove the OS installation media.
- At this time, a message “The Installation media can be a floppy disk, CD, DVD, or USB flash drive.” Appears on the screen, you must use the supplied EXPRESSBUILDER DVD or Internal Flash Memory.

16. Specify one of the following locations, and then click [OK].

If using the EXPRESSBUILDER DVD:

- When using the N8103-129/130 RAID Controller
Optical disk drive letter: \020\win\winnt\oemfd\ws2008r2\megasas2
- When using the N8103-128/G128/134 RAID Controller
Optical disk drive letter: \020\win\winnt\oemfd\ws2008r2\stexstpt
- If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection
Optical disk drive letter: \020\win\winnt\oemfd\ws2008r2\megasr1

If using Internal Flash Memory:

- When using the N8103-129/130 RAID Controller
Internal Flash Memory Drive letter: \020\win\winnt\oemfd\ws2008r2\megasas2
- When using the N8103-128/G128/134 RAID Controller
Internal Flash Memory Drive letter: \020\win\winnt\oemfd\ws2008r2\stexstpt
- If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection
Internal Flash Memory Drive letter: \020\win\winnt\oemfd\ws2008r2\megasr1

Tips

- The driver does not have to be loaded at this time if it was loaded in steps 10 and 11.
- The volume label of the Internal Flash Memory is INTER-FLASH.

17. Select the necessary driver from the driver list shown, and then click [Next].

- When using an N8103-129/130 RAID Controller
[LSI MegaRAID SAS 9264-8i]
- When using an N8103-128/G128/134 RAID Controller
[Promise SuperTrak SAS 6G RAID Controller]
- If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection
[LSI Embedded MegaRAID]

18. If you used the EXPRESSBUILDER DVD, remove it and then insert the OS installation media.

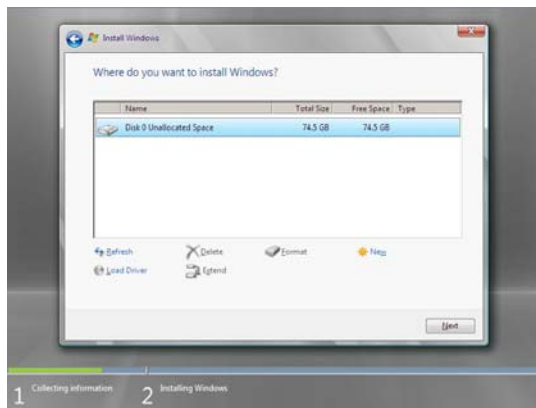
Tips

If you have not replaced the OS installation media after loading the driver, the following message may appear.



If it appears, replace the OS installation media, and then click [Refresh].

19. When the following window appears, select the disk in which the partition will be created, and then click **Drive options (advanced)**.



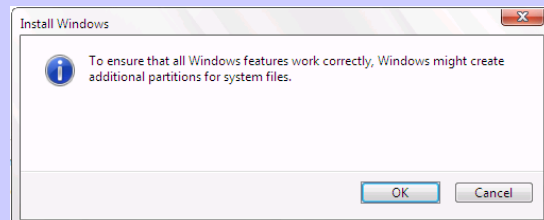
Important • If a partition has already been created, go to step 22.

20. Click [New], enter the partition size into the size input box, and then click [Apply].

Important When installing the OS to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

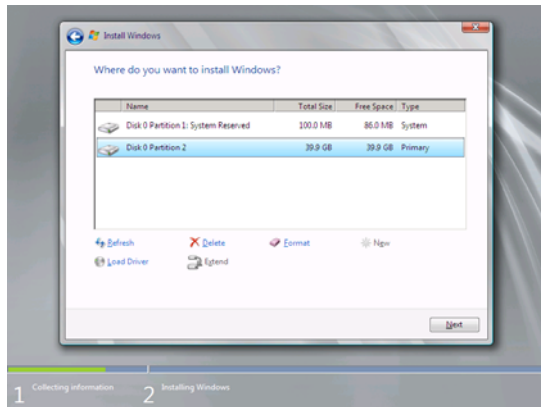
Tips

When creating a new partition and installing the OS, a 100 MB boot partition is created. When the following window appears, click [OK].



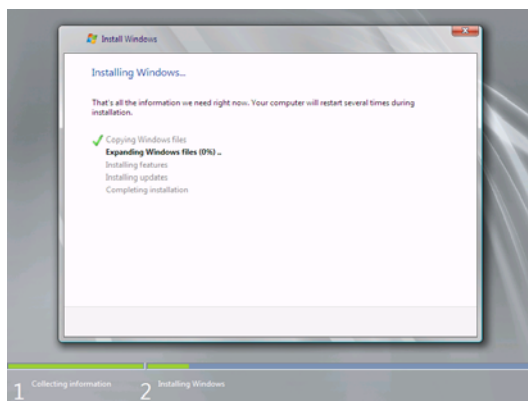
21. Select the partition created in step 20, and then click [Format].

22. In the window below, select the created partition, and then click [Next].

**Tips**

The number of partitions displayed differs depending on the environment used.

When the following message appears, Windows installation starts automatically.

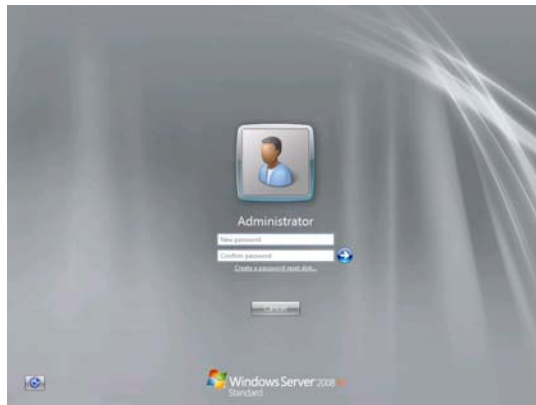


23. After a Full installation of Windows Server 2008 R2 is completed, the following window appears, prompting you to change your password before logging on. Click [OK].

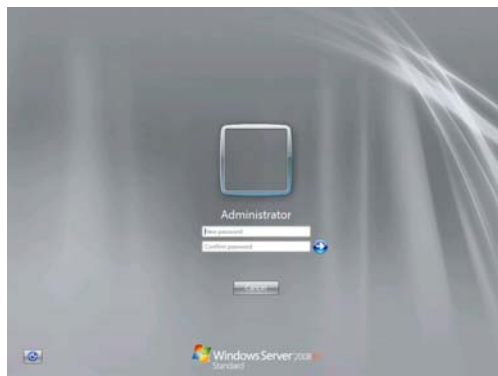


24. Change your password, and then click the [🌐] button.

Full installations:



Server Core installations:



Tips

Passwords must fulfill the following requirements in Windows Server 2008 R2.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

25. When the following message appears, click [OK].

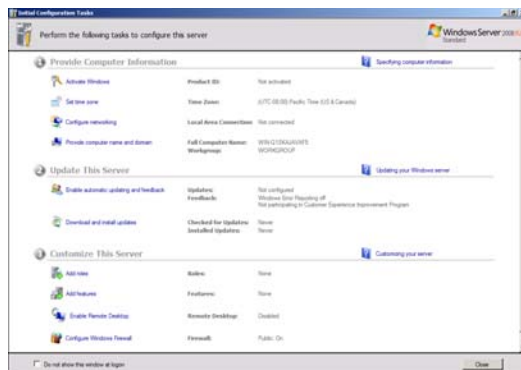


26. The content displayed differs depending on what you selected in step 12. Confirm the following, and then proceed.

- Full installations
- Server Core installations

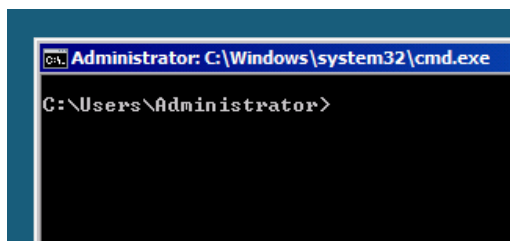
For Full installations:

When the Initial Configuration Tasks window appears after you log on, enter the user information.



For Server Core installations:

The command prompt will appear. Set the user information.



Tips

For detailed setup procedures, refer to the Microsoft "Step by Step Guide".

27. Install the Starter Pack by referring to *Chapter 1 (3.4 Installing the Starter Pack)*.
28. Install drivers and specify detailed settings by referring to *Chapter 1 (3.5 Setting Up Device Drivers)*.
29. Execute setup by following the instructions described in *Chapter 1 (7.Setup for Solving Problems)*.

Setup with OS standard installer is now complete.

3.4 Installing the Starter Pack

After installing Windows Server 2008 R2, follow the steps below and install the Starter Pack. The Starter Pack installs all drivers required by the Express5800 Series.

Important

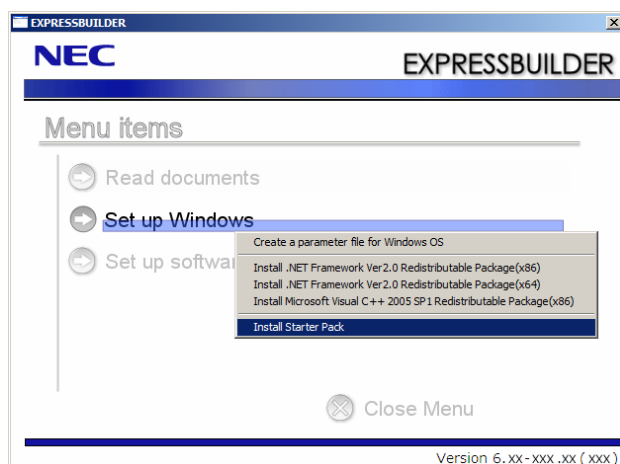
- Also install the Starter Pack in the following cases.
 - The system configurations have changed (when internal option devices have been added or removed)
 - If a dialog box prompting you to restart appears after changing system configurations, click [No] and then install the Starter Pack.
 - If the system was restored using a restore process
 - If a system has been restored using the backup tool
- The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
 - The setting of SNP function may affect the system performance. Contact the sales agent for details.

3.4.1 When using the EXPRESSBUILDER DVD

1. Log on to the system with the built-in administrator, which has administrative privileges.
2. Insert the EXPRESSBUILDER DVD into the optical disk drive.
3. The content displayed differs depending on what the content selected when installing Windows Server 2008 R2. Confirm the following, and then proceed.
 - Full installations
 - Server Core installations

For Full installations

When the menu window appears, click **Set up Windows** to open the short-cut menu and then select **Install Starter Pack**.



Tips

The short-cut menu also appears by right-clicking on the menu window.

For Server Core installations

- (1) Enter the following command at the command prompt, and then specify the optical disk drive letter (for example, the D drive).

```
Cd /d D:\020\win\winnt\bin
```

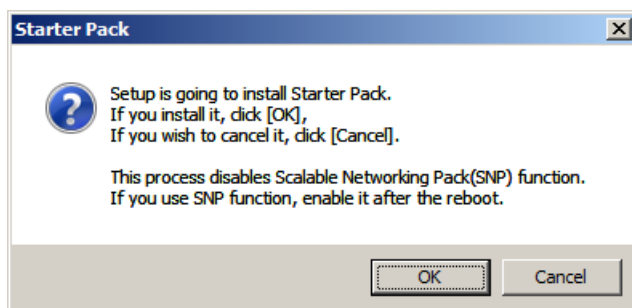
```
C:\Users\administrator>cd /d D:\020\win\winnt\bin
```

- (2) Enter the following, and then press the <Enter> key.

```
Pkgsetup.vbs
```

```
D:\020\win\winnt\bin>pkgsetup.vbs
```

4. A setup message appears.

**Tips**

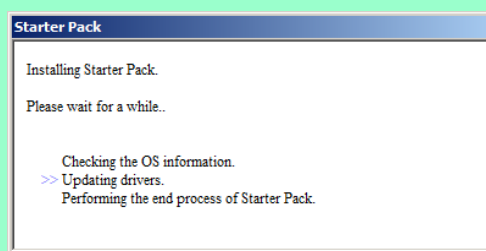
Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

Read the message that appears, and then click [OK].

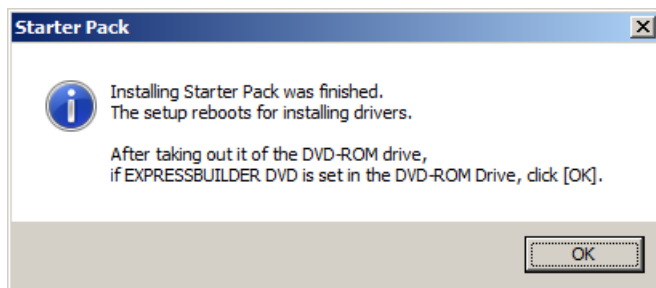
Starter Pack installation starts.

Note

If you chose Full installation, the following progress message will appear while the Starter Pack is being installed. Wait a moment until the update is complete.



- When the following message appears, Starter Pack installation is complete. Follow the instructions in the message, and remove the EXPRESSBUILDER DVD.



- Click [OK] and then restart the system.

Installation of Starter Pack is now complete.

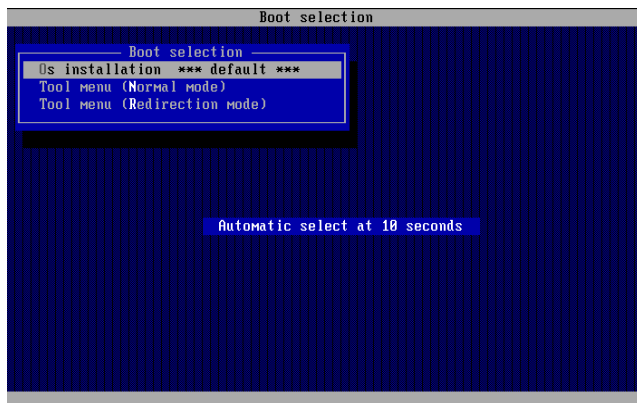
3.4.2 When using Internal Flash Memory

- After installing the operating system, the system will restart.
- Use the Internal Flash Memory to run EXPRESSBUILDER.
When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key.

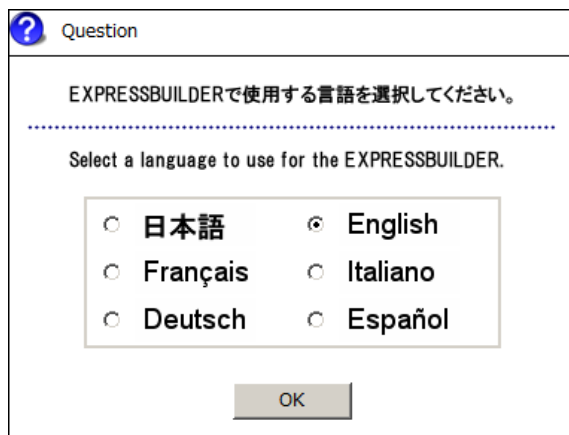
Note

- At this time, be sure to remove the DVD from the optical disk drive.
- If running from the OS, restart, and then press the <F3> key on the POST window.

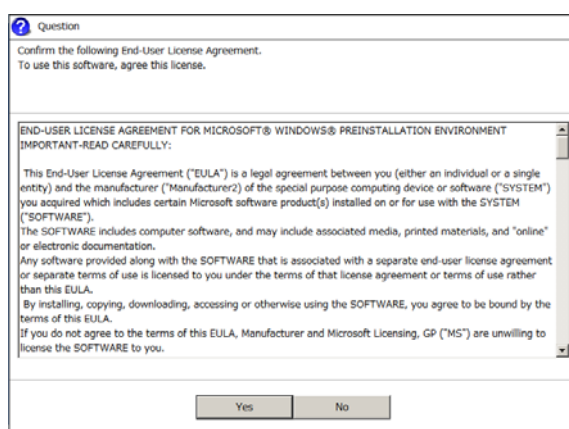
- When the following message appears, select **Os installation *** default *****.
You will automatically advance to the next window, with no need for further input.



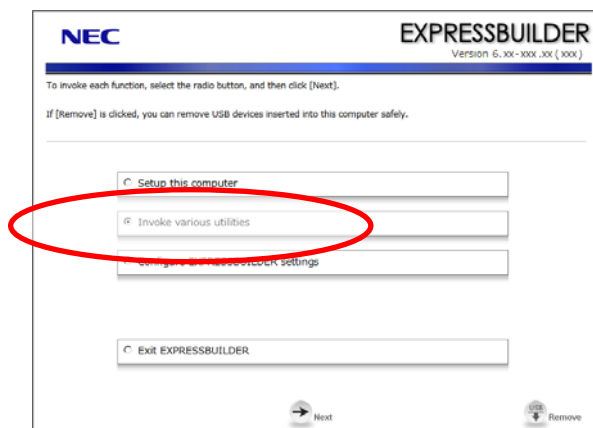
4. Select **English** on the language selection window, and then click [OK].



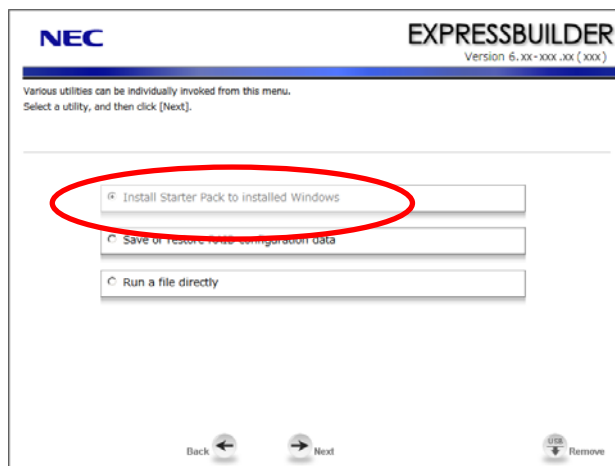
5. When the Windows PE software license agreement window appears, click [Yes].



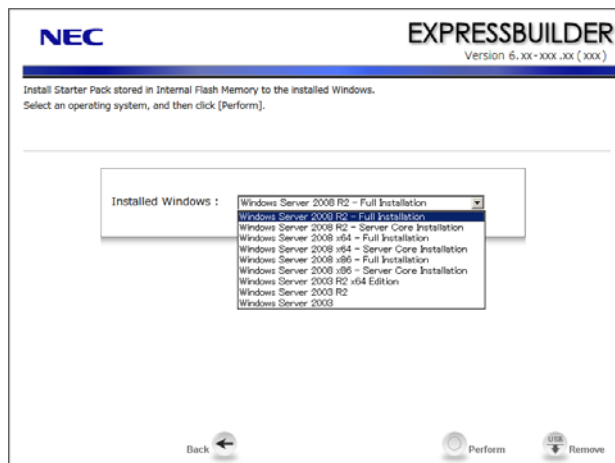
6. Select **Invoke various utilities** from the top menu, and then click [Next].



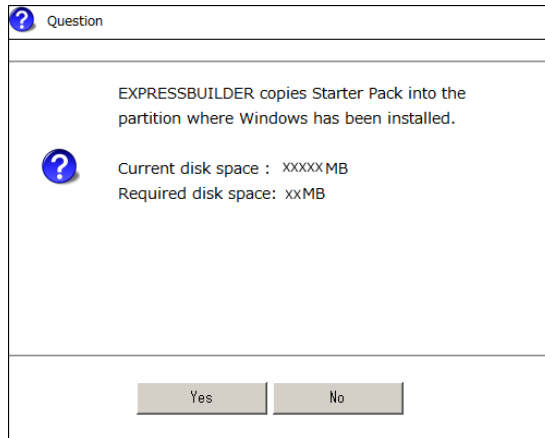
7. When the utility start menu appears, select **Install Starter Pack to installed Windows** and then click [Next].



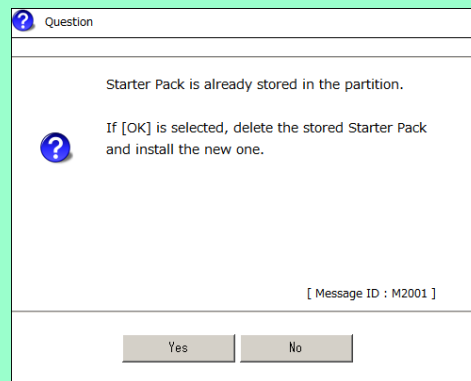
8. When the window for selecting Windows to install the Starter Pack appears, select the installed Windows from the drop-down list, and then click [Perform].



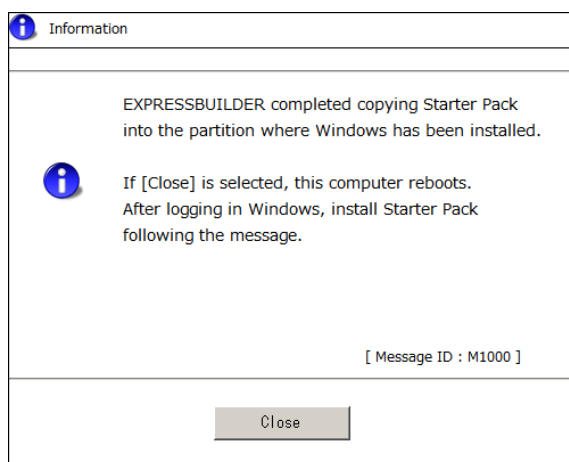
9. When the following confirmation window appears, read the content and then click [Yes].

**Note**

The following window will appear if the Starter Pack has been installed using the Internal Flash Memory.
Read the message, and then click [Yes].



10. After copying the module, the following window appears. Click [Close].



The server then restarts.

Note

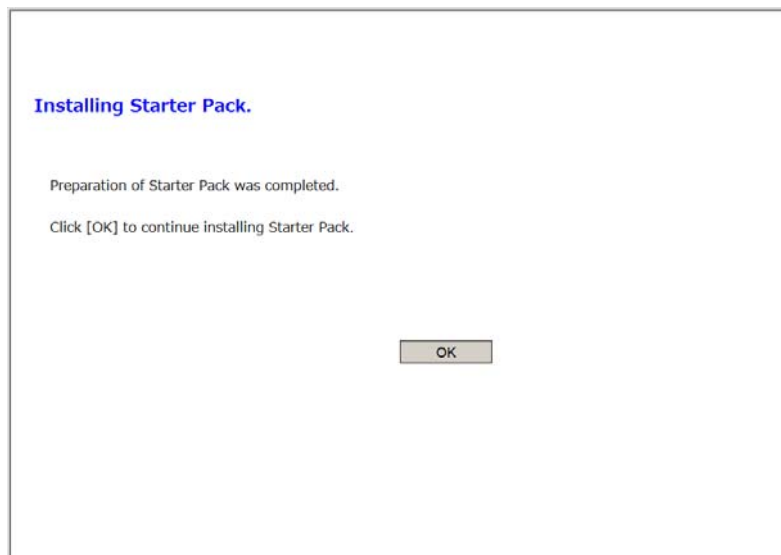
You do not need to press the <F3> key at this time.

11. The content displayed differs depending on what content was selected when installing Windows Server 2008 R2. Confirm the following, and then proceed.

- Full installations
- Server Core installations

For Full installations

After Windows starts, the following window appears. Click [OK].



For Server Core installations

Enter the following command at the command prompt, and then specify the system drive letter (for example, the C drive).

```
Cd /d C:\StartPKG\bin
```

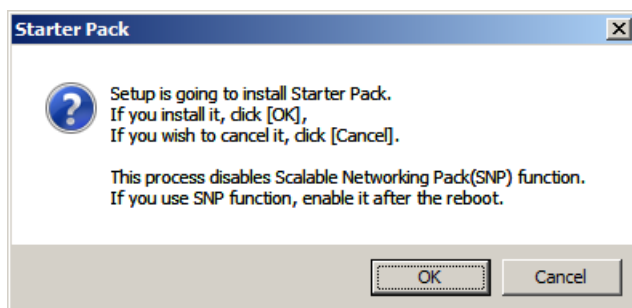
```
C:\Users\administrator>cd /d C:\StartPKG\bin
```

Enter the following, and then press the <Enter> key.

```
Pkgsetup.vbs
```

```
C:\StartPKG\bin>pkgsetup.vbs
```

12. Read the message that appears, and then click [OK].



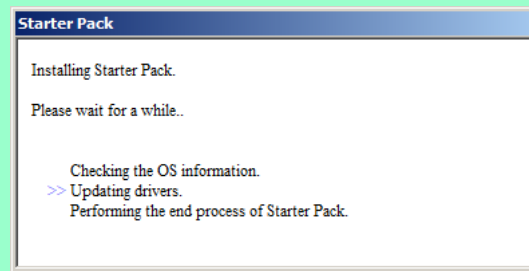
Tips

Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

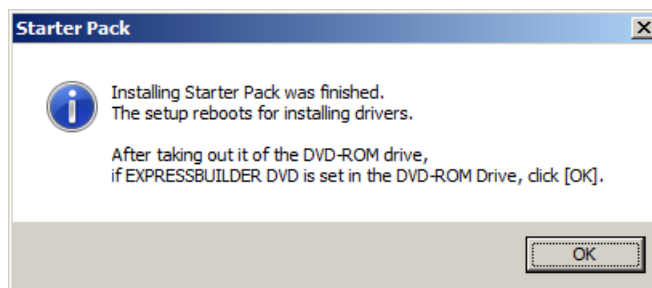
Installation of the Starter Pack starts.

Note

If you chose Full installation, the following progress message appears while the Starter Pack is being installed. Wait a moment until the update is complete.



13. When the following message appears, Starter Pack installation is complete.



14. Click [OK] to restart the system.

Installation of the Starter Pack is now complete.

3.5 Setting Up Device Drivers

Install and set up device drivers provided for the standard configuration.

For details regarding the installation and setup of a driver for an optional device, refer to the manual supplied with the optional device.

3.5.1 Installing the LAN and BACS (teaming) drivers

(1) LAN and BACS drivers

If EXPRESSBUILDER is used for setup, the driver will automatically be installed.

If the OS standard installer is used for setup, install the Starter Pack to install the LAN and BACS driver.

Note

- To change the LAN or BACS driver settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

Optional LAN boards: N8104-128/134*

* N8104-128 is supported by Express5800/R110d-1E and E110d-1 only.

When an optional LAN board is added, the drivers for LAN boards are automatically installed using the OS plug-and-play function.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration

Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:

[N8104-128] Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #xx*

[N8104-134] Broadcom BCM5709C NetXtreme II GigE (NDIS VBD Client) #xx*

* If there are adapters with the same name, a different identification number will be assigned to xx.

Important

The ID for N8104-128/134 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

3.5.2 Setting up LAN drivers

Important

About WOL

- WOL is supported by the standard network adapters only.
- The Change of WOL setting is not supported.
- WOL from a shutdown is only supported if the system is started using MagicPacket.
- WOL from hibernation is not supported.

Tips

MagicPacket refers to a packet dedicated to WOL.

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the Device Manager.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the **Advanced** tab, and then set the **Speed & Duplex** values to the same as those of the switching hub.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete.

(2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)

If using N8104-134 with the server, TCP/iSCSI Offload Engine must be set to off.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Device Management** under **Explorer View**, and then **N8104-134 network adapter** from **System device (VBD)**.
3. Select the **Configurations** tab, and then expand **Resource Reservations**.
4. Clear the **iSCSI Offload Engine** and **TCP Offload Engine** check boxes (if selected) under **Pre-Allocated Resource**, and then click [Apply].

Tips

If **TCP Offload Engine** does not exist, proceed to the next step.

5. Select N8104-134 network adapter from **Network Adapters (NDIS driver)** in the **Explorer View**.
6. Select the **Configurations** tab, specify **Disable** for **TCP Connection Offload (IPv4)** and **TCP Connection Offload (IPv6)**, and then click [Apply].
Do not make changes if they are already disabled.
7. Complete steps 2 to 6 for each N8104-134 network adapter.
8. Restart the system.

TCP/iSCSI Offload Engine setup is now complete.

3.5.3 Setting up team/LiveLink

Important

- You must set up LiveLink when setting up a team. Teams that are not configured for LiveLink are not supported.
- When deleting the team, refer to *Chapter 1 (3.5.3 Setting up team/LiveLink) – (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and then create it again after replacement.
- Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team.

(1) Team types

The following team types are supported.

- Smart Load Balancing and Failover (without Standby Member)
All adapters that compose the team perform communication.
If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
Among the adapters that compose the team, primary adapters except the standby member perform communication.
If a communication failure occurs, the standby member continues the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and the standby adapter returns to the standby state.

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.

It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.

If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Important

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

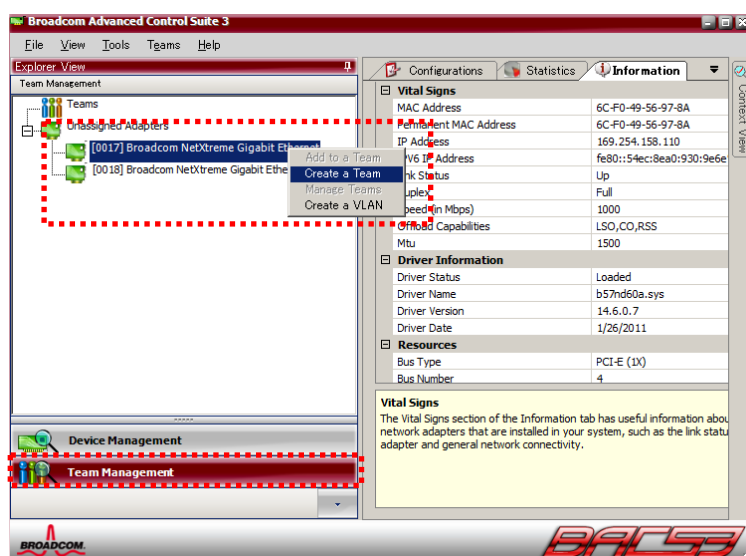
Important

- The team must be composed of two adapters.
- Possible combinations of network adapters that compose the team are as follows.
 - Between standard network adapters.
 - Between N8104-128 adapters
 - Between N8104-134 adapters
 - A standard network adapter and an N8104-134 adapter
- For details about how to specify a team and enable LiveLink for N8104-128, refer to “N8104-128 LAN Driver Installation Guide” supplied with the LAN board.

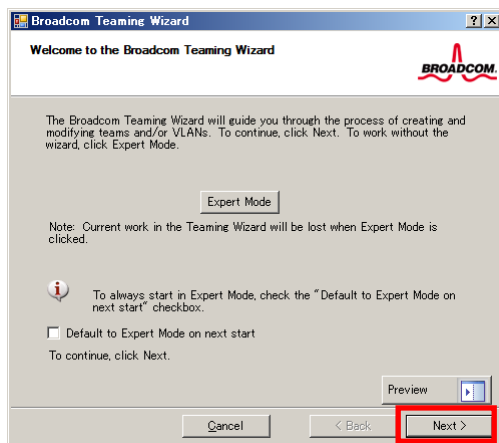
Tips

To edit a team, right-click on the BACS team, and then select **Edit TEAM**. Then refer to step 3 and later in *Chapter 1 (3.5.3 Setting up team/LiveLink) – (3) Setting up team* to edit the team.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Team Management** from the left menu, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu. The **Broadcom Teaming wizard** appears.

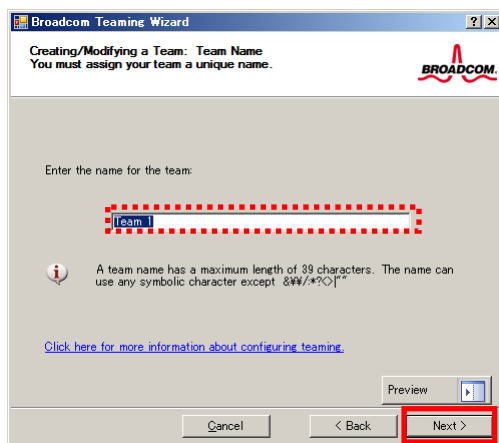


3. Click [Next].

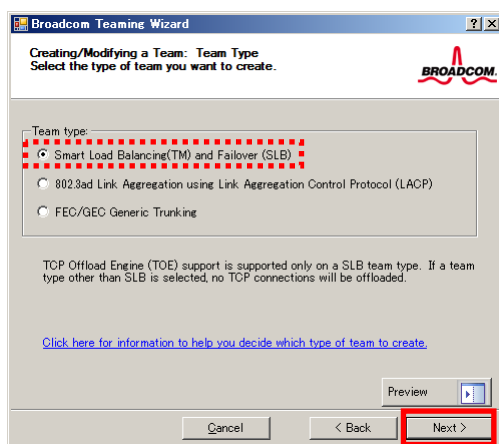


Important Do not use Expert Mode.

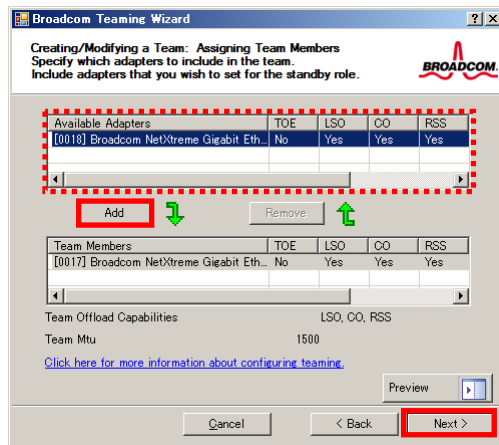
4. Enter any name into the team name entry column, and then click [Next].



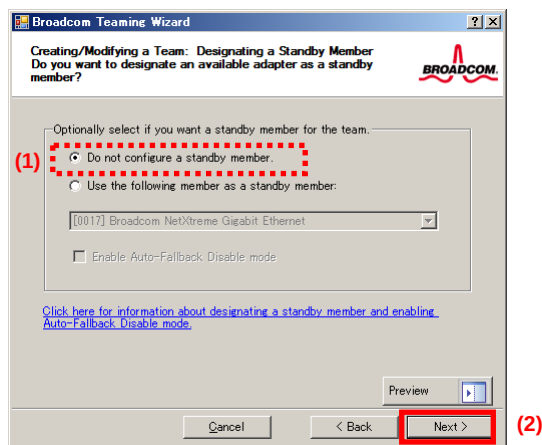
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing WITH and Failover (SLB)



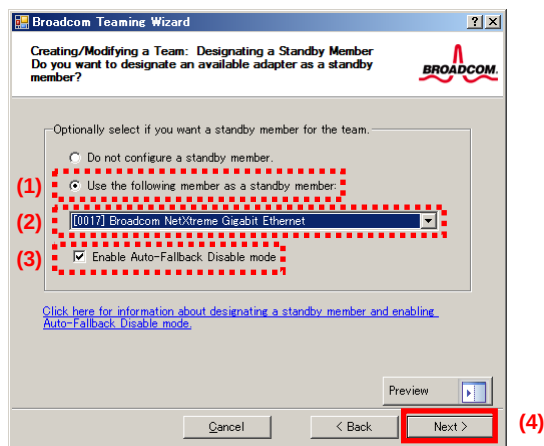
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



7. Proceed according to your desired team type.
- Smart Load Balancing and Failover (without Standby Member)
 - (1) Select **Do not configure a standby member**.
 - (2) Click [Next].

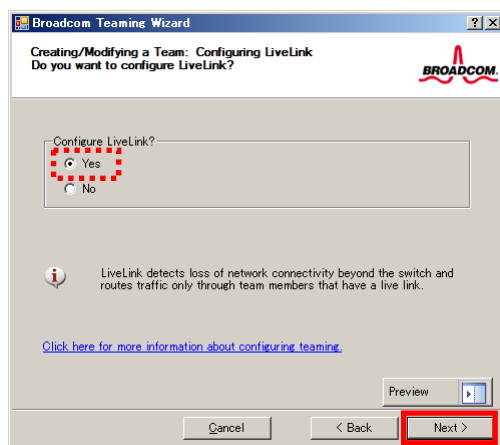


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

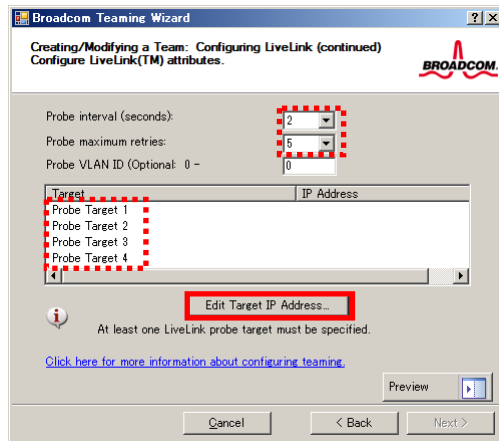


Important *Enable Auto-Failback Disable mode is cleared while editing the team. Select it again.*

8. Select **Yes** for **Configure LiveLink?**, and then click [Next].



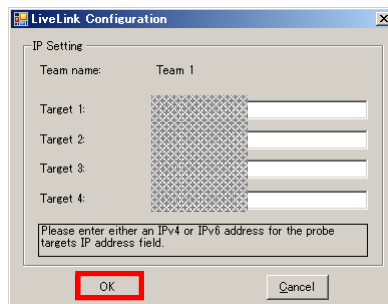
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes $(\text{Probe maximum retries} + 1) \times \text{Probe interval (seconds)}$ at maximum. If an optional LAN board detects that a link is down, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

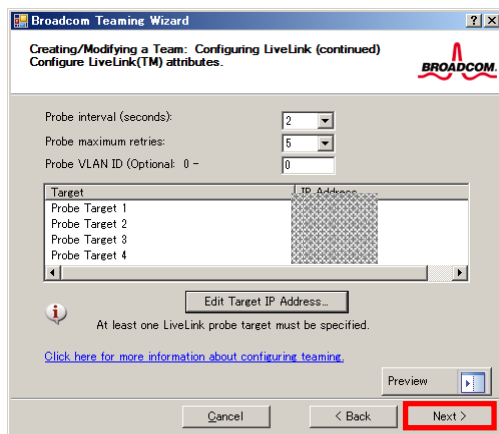
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



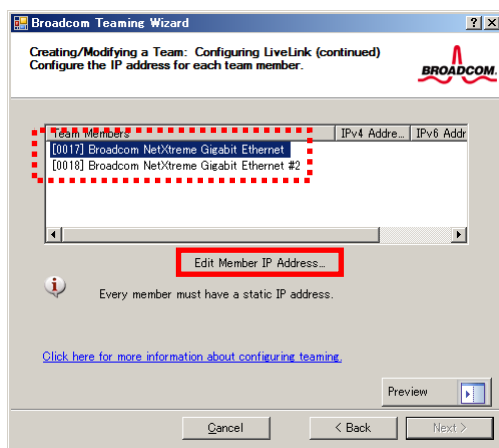
Important

- **Target xx** must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in **Target xx** is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using **Probe Target**. Up to four IP addresses can be specified.

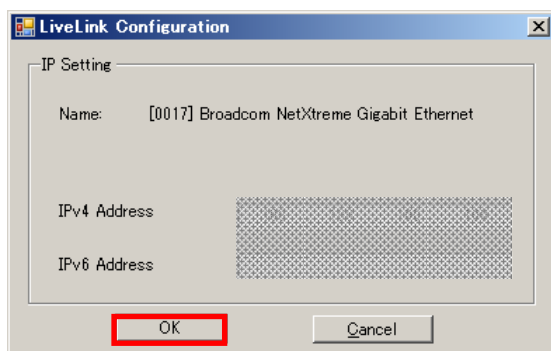
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address...].



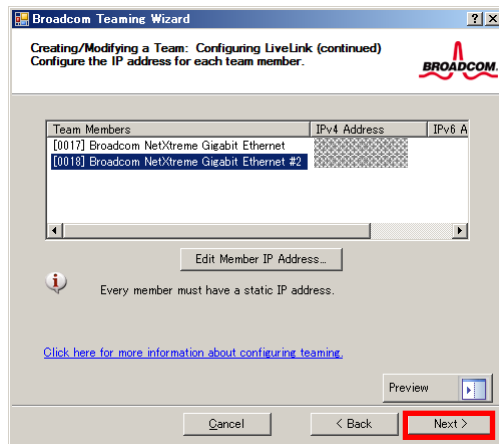
13. Enter the IP address used for LiveLink communication, and then click [OK].



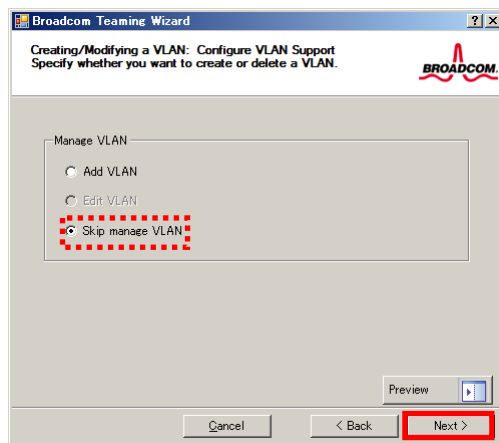
Important

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

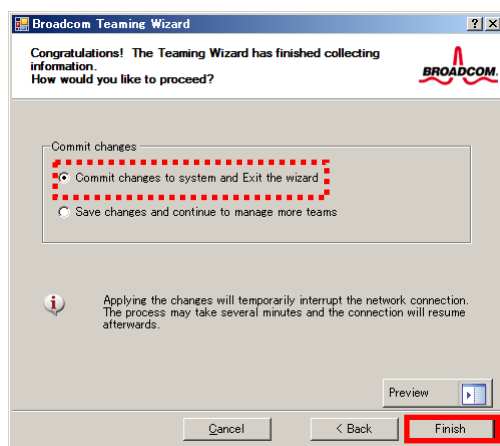
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].



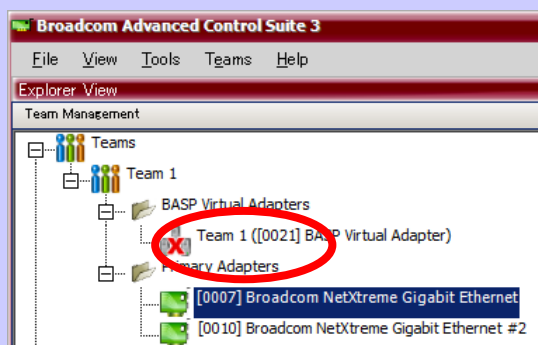
Note

When the message below appears, select [Yes].

“Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards. Do you want to continue?”

Tips

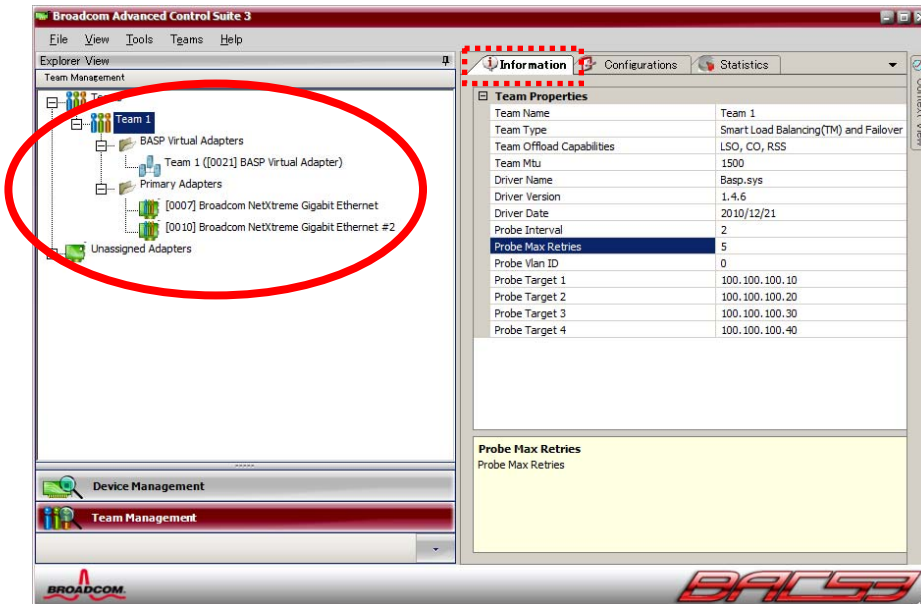
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



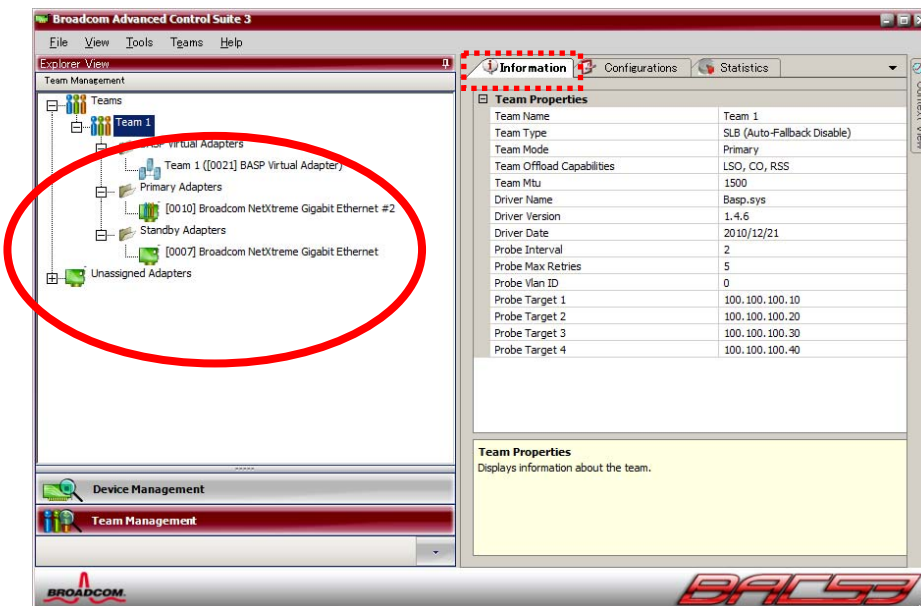
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite3** and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

– Smart Load Balancing and Failover (without Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)

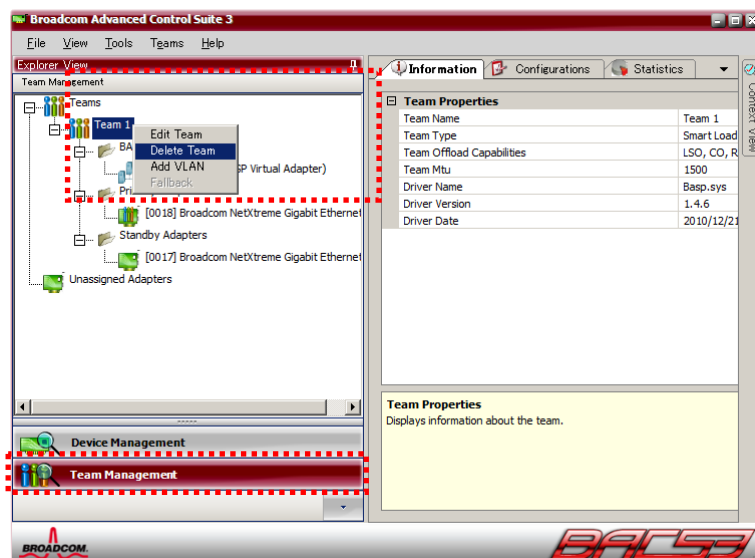


Team setup is now complete.

(4) Procedure for deleting team

Important You must delete teams from **Broadcom Control Suite3**.
You cannot delete the team from the team adapter displayed in the Device Manager.

1. Double-click **Broadcom Control Suite3** in the Control Panel window.
Broadcom Advanced Control Suite3 starts.
2. Click **Team Management** from the left menu, right-click the team name under **Teams**, and then select **Delete Team** from the short-cut menu.



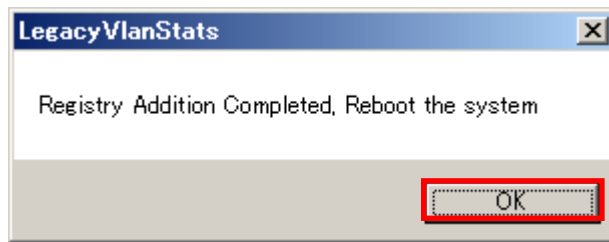
Tips When the message below appears, select [Yes].
“The selected team will be deleted from system, do you want to proceed?”
NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards.”

3. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Important You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using the EXPRESSBUILDER DVD:
Optical disk drive letter: \020\win\winnt\ws2008x64\lan
 - If the Starter Pack was installed from the Internal Flash Memory:
System drive letter: \StartPKG\ws2008x64\lan

5. When the following message appears, click [OK].



6. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

3.5.4 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when the Starter Pack is installed from EXPRESSBUILDER.

If you completed Setup with EXPRESSBUILDER, then the graphics accelerator driver has been automatically installed.

Tips

The graphics accelerator driver is only enabled in Full installations. Standard VGA is used in the case of Server Core installation.

To reinstall drivers separately, complete the following steps.

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. From the **Start** menu, point to **All programs, Accessories**, and then select **Explorer**.
3. Double-click the **install.bat** icon in the following folder.

- When using the EXPRESSBUILDER DVD:
Optical disk drive letter:\020\win\winnt\ws2008x64\video
- If the Starter Pack was installed from the Internal Flash Memory:
System drive letter:\StartPKG\ws2008x64\video

You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.

4. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Graphic accelerator driver installation is now complete.

3.5.5 When using a SCSI controller (N8103-75/107)

The driver for SCSI controller N8103-75/107 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

3.5.6 When using a SAS controller (N8103-104A/142)

The driver for SAS controller N8103-104A/142 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

3.5.7 When using a RAID Controller (N8103-135)

The driver for RAID Controller N8103-135 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

3.5.8 When using a Fibre Channel controller (N8190-127/131/153/154)

The driver for Fibre Channel controller N8190-127/131/153/154 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

3.6 Installing the Bundled Software

The supplied EXPRESSBUILDER DVD contains the server monitoring software NEC ESMPRO Agent and system management software NEC ESMPRO Manager. You can install NEC ESMPRO Agent automatically by performing Setup with EXPRESSBUILDER.

Open the Programs or Control Panel window from the **Start** menu, and make sure that the folders for the utilities you have installed are contained. If you did not install them at the time of Setup with EXPRESSBUILDER, refer to *Chapter 2 Installing the Bundled Software* to install the software separately.

3.7 License Authentication

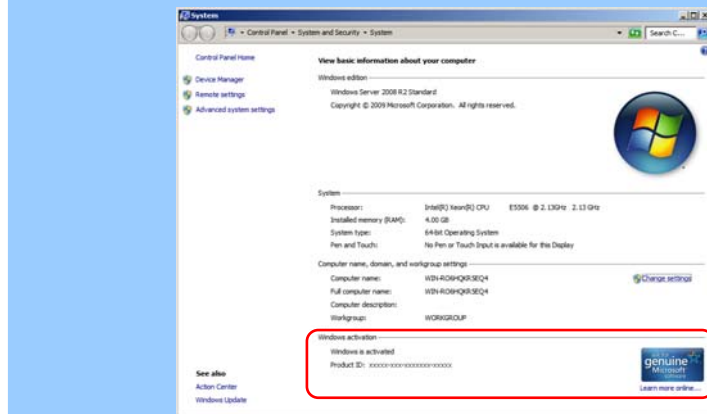
To use Windows Server 2008 R2, confirm whether the license has been authenticated, and if it has not, perform the license authentication procedure.

The following describes the license authentication procedure.

(1) For Full installations

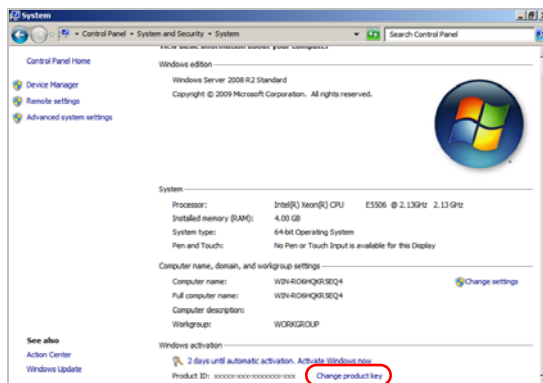
1. Open the **Control Panel** from the **Start** menu, click **System and Security**, and then select **System**.

Important If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure.

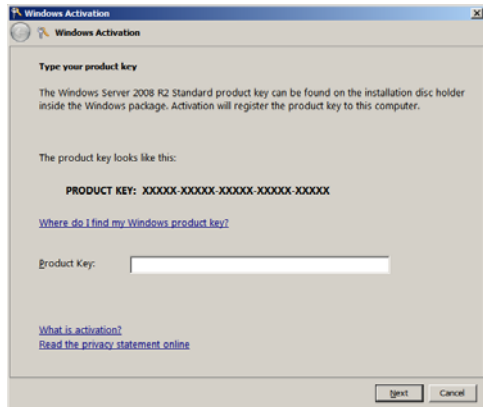


2. For installation from the backup DVD, replace the product key.

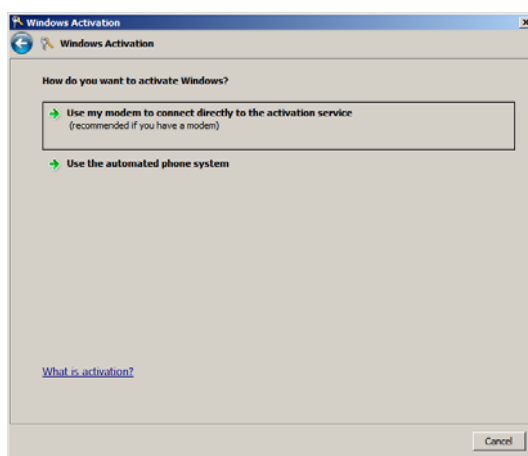
When the following window appears, click **Change product key**.



3. When the following window appears, enter the product key found on the COA label, and then click [Next].



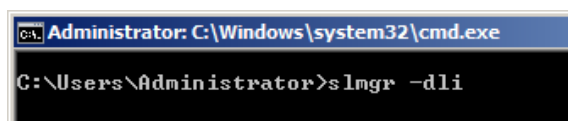
4. Follow the instructions in the following message to start the license authentication process.



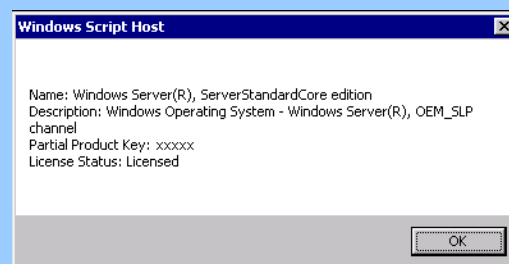
Windows activation is now complete.

(2) For Server Core installations

1. At the command prompt, enter the following, and then press the <Enter> key.
slmgr -dli



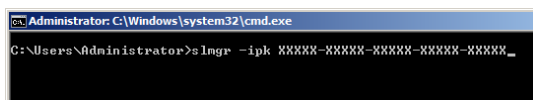
Important If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.



2. For installation from the backup DVD, replace the product key

At the command prompt, enter the following, and then press the <Enter> key. Set the product key found on the COA label in *PID*.

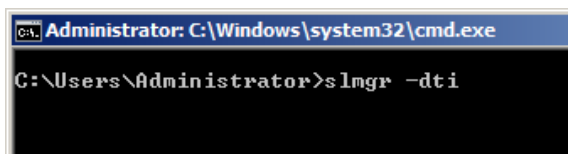
```
slmgr -ipk PID
```



3. Obtain an installation ID for Windows activation.

At the command prompt, enter the following, and then press the <Enter> key.

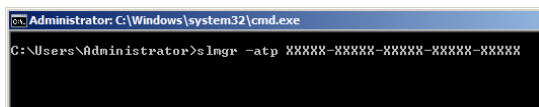
```
slmgr -dti
```



4. Reference %systemroot%\system32\sppui\phone.inf for the telephone number of the license authentication customer service.
5. Call the above number, inform the representative of the installation ID which you obtained in step 3, and receive a confirmation ID.
6. Type the confirmation ID you received in step 5.

At the command prompt, enter the following, and then press the <Enter> key. *CID* is the confirmation ID that you received from customer service.

```
slmgr -atp CID
```



Windows activation is now complete.

3.8 Installation When Multiple Logical Drives Exist

Before starting reinstallation, backup data for future use in case of data loss.

(1) Installation process

- Setup with EXPRESSBUILDER

Refer to *Chapter 1 (3.2 Setup with EXPRESSBUILDER)*, and proceed with setup.

Important

The operating system will be installed on the first detected Hard Disk Drive or logical disk drive.

- Setup with OS standard installer

1. Refer to *Chapter 1 (3.3 Setup with OS Standard Installer)*, and start setup.
2. When the following message appears, select the partition to which you want to install the operating system.

Select the location to which Windows will be installed

Important

- When you install a Windows system into an environment where multiple Hard Disk Drives are connected, these drives are displayed as a destination to install the system during setup.

At this time, the order and numbers of the disks displayed on the screen might not match those of the Hard Disk Drives connected to the Hard Disk Drive bay.

Distinguish between the Hard Disk Drives by viewing the Hard Disk Drive capacity and partition size displayed on the screen, and then select a drive to install the Windows system.

Selecting an improper drive might cause an unintentional corruption of the existing data. Be careful when selecting a Hard Disk Drive on which to install the system.

For details, refer to the following Microsoft website:

<http://support.microsoft.com/kb/937251/en-us>

- You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.

3. Refer to *Chapter 1 (3.3 Setup with OS Standard Installer)*, and proceed to setup Windows with OS standard installer and the instructions.

The installation process is now complete.

Tips

The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

The steps below cannot change drive letter assignments for the system volume or boot volume. Be careful when assigning these.

1. From the **Start** menu, right-click **Computer** and then select **Management**. Next, launch **Server Manager**.
2. From the window on the left, select **Storage** and then **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

Some programs are dependent on drive letters, and may not run properly. Continue?

8. Close the Server Manager.

4. Setting Up Windows Server 2008

Set up Windows Server 2008 and the system.

4.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB: Confirm during Setup with EXPRESSBUILDER

OS: Confirm during Setup with OS standard installer

(1/5)

Setup		Items to confirm	
EB	OS	Windows family	The following editions of the Windows Server 2008 family may be installed. For information about Service Packs, refer to <i>1.2 Service Pack Support</i>. - Windows Server 2008 Standard 64-bit (x64) Edition - Windows Server 2008 Enterprise 64-bit (x64) Edition - Windows Server 2008 Standard 32-bit (x86) Edition - Windows Server 2008 Enterprise 32-bit (x86) Edition Inquiries about installing other editions may be made at your sales dealer or maintenance service company.
EB	OS	Hardware configuration warnings	When installing Windows Server 2008, the following hardware configurations require special procedures. Reinstalling to a mirrored volume When reinstalling to a Hard Disk Drive that has been converted to a dynamic disk, the operating system can only be installed to a simple dynamic volume. If installing to a mirrored volume by using Disk Management, disable mirroring and return to a basic disk prior to installation. After the operating system is installed, return to the mirrored state. Click on Computer Management and then Disk Management to create, release, or delete mirrored volumes
EB	OS		Connecting MO devices Installing Windows while an MO device is connected can result in installation failure. Remove the MO device, and then start installation from the beginning.
EB	OS		DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
EB	OS		RDX and similar peripheral devices Depending on the configuration of the hardware being used, it may be necessary to remove or stop peripheral devices prior to starting setup. Refer to the manuals of each peripheral device to make sure each is in its appropriate state, and then proceed with setup.

(2/5)

Setup		Items to confirm	
EB	OS	Hardware configuration warnings	Connecting to multiple Hard Disk Drives (Logical Drives) For details on reinstalling operating systems to a system in which multiple Logical Drives exist, refer to <i>Chapter 1 (4.9 Installation When Multiple Logical Drives Exist)</i>.
EB	OS	System partition size <Windows Server 2008 64-bit Edition>	The system partition size can be calculated by using the following formula. Size required to install the OS + paging file size + dump file size + application size [Full installations] Size required to install the OS = 11,600 MB (Windows Server 2008) = 12,300 MB (Windows Server 2008 with Service Pack 2) = 16,720 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application [Server Core installations] Size required to install the OS = 4,100 MB (Windows Server 2008) = 12,300 MB (Windows Server 2008 with Service Pack 2) = 9,300 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application Important - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information. - Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 300 MB". - When installing other applications or other items, add the amount of space needed by the application to the partition.

(3/5)

Setup		Items to confirm	
EB	OS	System partition size <Windows Server 2008 64-bit Edition>	For example, if the installed memory size is 1 GB (1,024 MB) and Full installation is selected, the partition size is calculated as follows: $11,600 \text{ MB} + (1,024 \text{ MB} \times 1.5) + 1,024 \text{ MB} + 300 \text{ MB} + \text{application size} = 14,460 \text{ MB} + \text{application size}$ If the partition size for installing the system is smaller than the size required for installation + paging file size, expand the partition size or add another disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the following steps. 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Write the debug information of the dump file onto another disk by referring to <i>Chapter 1 (7. Setup for Solving Problems)</i>. If there is not enough disk space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another disk for the dump file.
EB	OS	System partition size <Windows Server 2008 32-bit Edition>	The system partition size can be calculated by using the following formula. Size required to install the OS + paging file size + dump file size + application size [Full installations] Size required to install the OS = 6,300 MB (Windows Server 2008) = 9,300 MB (Windows Server 2008 with Service Pack 2) = 9,400 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) Paging file size (recommended) = installed memory size $\times$ 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application [Server Core installations] Size required to install the OS = 2,200 MB (Windows Server 2008) = 9,300 MB (Windows Server 2008 with Service Pack 2) = 5,300 MB (Windows Server 2008 + Service Pack 2 DVD-ROM) Paging file size (recommended) = installed memory size $\times$ 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application For example, if the installed memory size is 1 GB (1,024 MB) and Full installation is selected, the partition size is calculated as follows: $6,300 \text{ MB} + (1,024 \text{ MB} \times 1.5) + 1,024 \text{ MB} + 300 \text{ MB} + \text{application size} = 9,160 \text{ MB} + \text{application size}$

(4/5)

Setup		Items to confirm	
EB	OS	System partition size <Windows Server 2008 32-bit (x86) Edition>	Important • The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information. • A paging file size of 4096 MB or greater cannot be specified for one partition in some system configurations. If a message prompting you to specify a value smaller than 4096 MB appears, specify 4095 MB. • If the mounted memory size is 2 GB or greater, the maximum size of the dump file is "2048 MB + 300 MB". • When installing other applications or other items, add the amount of space needed by the application to the partition. If the partition size for installing the system is smaller than the size required for installation + paging file size, expand the partition size or add another disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the following steps. 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Write the debug information of the dump file onto another disk by referring to <i>Chapter 1 (7. Setup for Solving Problems)</i>. If there is not enough disk space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another disk for the dump file.
EB	OS	Upgrade to Windows Server 2008	Inplace upgrade from Windows Server 2003 to Windows Server 2008 is not recommended because it overwrites the files and registries and might make an unexpected effect on the system and applications. If you want to use Windows Server 2008, back up the necessary data before installing Windows Server 2008. Tips Inplace upgrade refers to overwriting an existing OS (in this case, Windows 2003) with another OS (Windows Server 2008).

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Setup		Items to confirm	
EB	OS	Using BitLocker	If using BitLocker, note the following. - Before installing an OS, be sure to create the following two partitions in the Hard Disk Drive: - System partition (to store the loader) - Boot partition (to store the OS) Note For details, refer to the following document provided in Microsoft TechNet: BitLocker Drive Encryption Step-by-Step Guide - Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker. Important If the recovery password is not entered, the OS cannot be started, and the content of the partition encrypted by BitLocker cannot be referenced any more. The recovery password might be required at startup of the OS after the following: - Replacement of motherboard - Initialization of trusted platform module (TPM) - Change of BIOS setting - To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.
EB	OS	Application of Service Pack	You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.
EB	OS	License authentication	License authentication might be required, depending on the operating environment. For details, refer to <i>Chapter 1 (4.8 License Authentication)</i>. Important - Activate within 60 days following installation. - A virtual product key is used when installing in a virtual environment. It is not used when directly installing an operating system to a physical server.

4.2 Setup with EXPRESSBUILDER

This section describes how to install Windows with EXPRESSBUILDER.

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide " in advance.

Important

- The Scalable Networking Pack (SNP) function is disabled on systems that have been installed by using EXPRESSBUILDER.
- The setting of SNP function may affect the system performance. Contact the sales agent for details.
- Setup with EXPRESSBUILDER may delete some data in the Hard Disk Drive depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:
 - RAID settings wizard
 - Partition Settings in the Windows Setup wizard
- Backing up user data, as needed, is recommended.

Note

For a non-standard setup procedure without using EXPRESSBUILDER, refer to the descriptions in *Chapter 1 (1.4 When Using a Large-Capacity Storage Controller Not Supported by EXPRESSBUILDER)* or *(4.9 Installation When Multiple Logical Drives Exist)*.

Tips

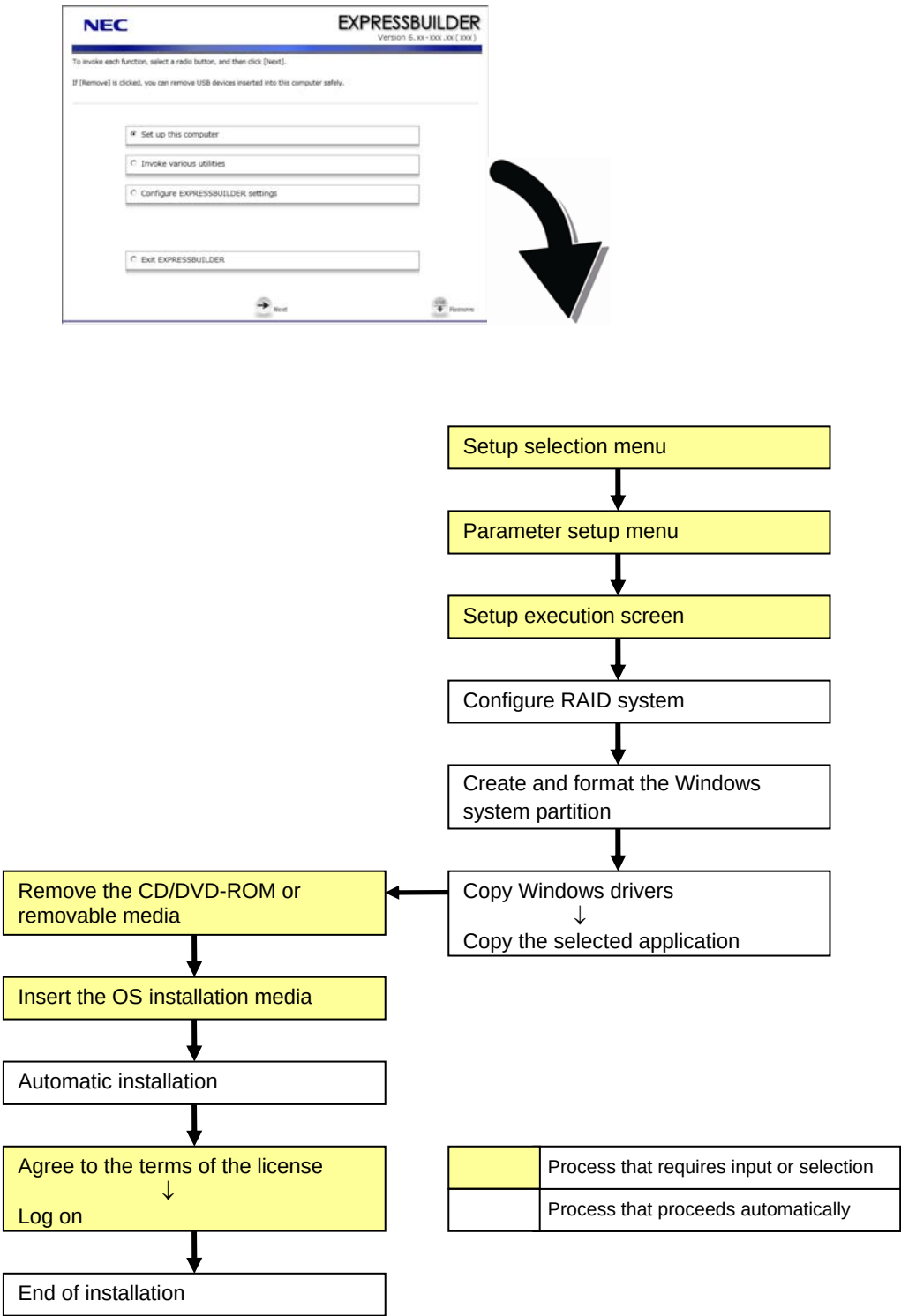
Setup with EXPRESSBUILDER allows you to use a prespecified parameter file or save the parameters specified in setup as a parameter file on a removable media or Internal Flash Memory (if purchased optionally).

You can create a parameter file by using the **Create a parameter file for Windows OS** function in EXPRESSBUILDER.

For details on creating a parameter file, refer to *Chapter 1 (8 Windows OS Parameter File)*.

4.2.1 Setup flow

The following flowchart shows the installation procedure with EXPRESSBUILDER.



4.2.2 Setup procedure

During Setup with EXPRESSBUILDER, parameters are specified through the wizard. You can also save the parameters as one file (a parameter file) to removable media.

Important Read through the items in *Chapter 1 (4.1 Before Starting Setup)* prior to installing Windows.

1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to start EXPRESSBUILDER.

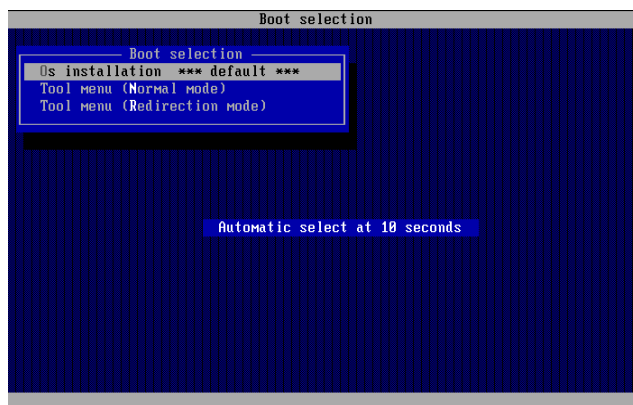
Note Be sure to disconnect removable media before starting EXPRESSBUILDER.

When using the EXPRESSBUILDER DVD:

- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again.
EXPRESSBUILDER starts.

When using the Internal Flash Memory:

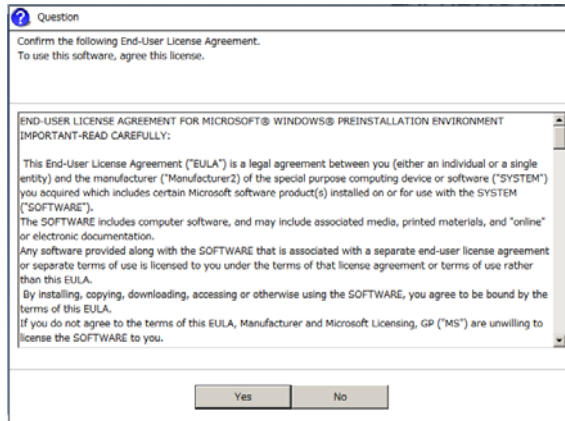
- (1) When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key.
EXPRESSBUILDER starts.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



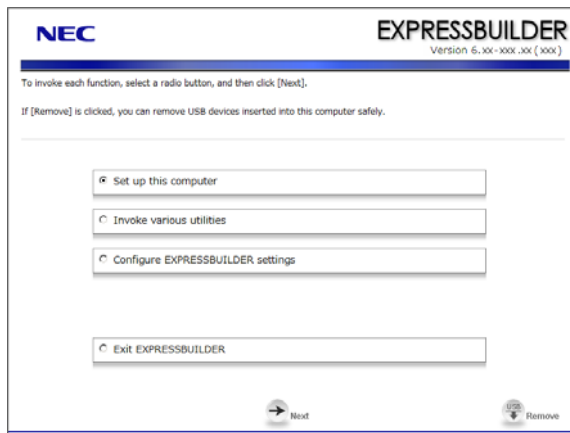
4. Select **English** on the language selection window, and then click [OK].



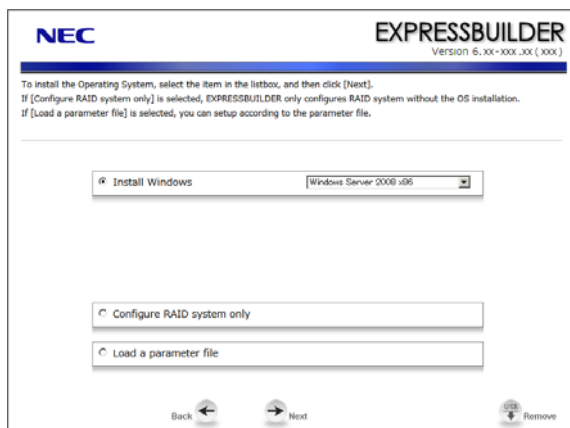
5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to specify the parameters.



Note

When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

When not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

When using a parameter file:

Select **Load a parameter file**, and then click [Next].

Load the desired parameter file according to the onscreen instructions.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (4) *Executing setup*.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard
- Partition Settings in the Windows Setup wizard

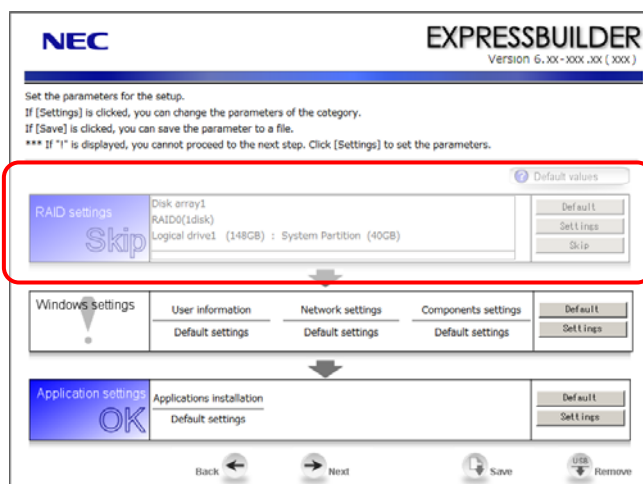
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.

You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

When skipping the creation of a new Logical Drive

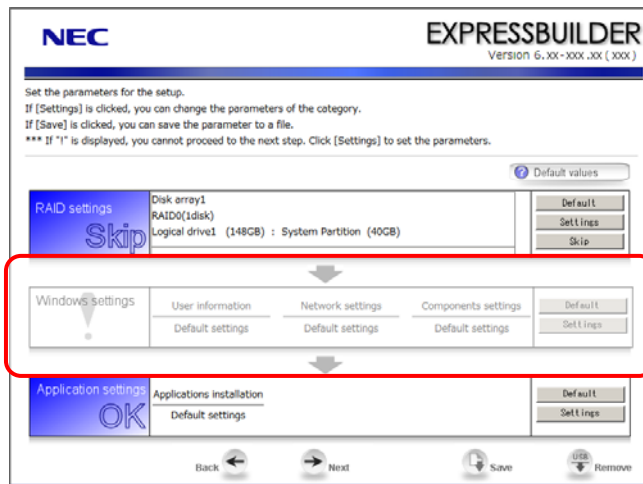
1. Click [Skip] in **RAID settings**.

Tips

Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the existing configurations without modifying them.

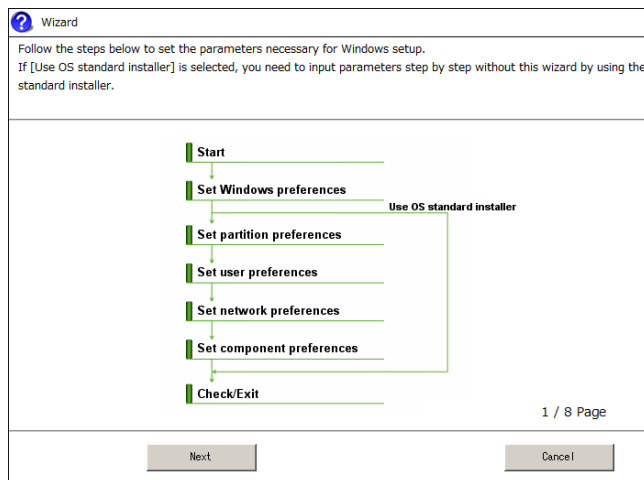
(2) Windows settings

Set up Windows by using the Windows settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

1. Click [Settings] in **Windows settings**.
2. Click [Next] in the Windows settings wizard.



3. Specify the Windows basic settings.

The basic information window appears. Confirm the settings, making corrections as needed, and then click [Next].

4. Set up the partitions.

The partitioning window appears. Confirm the settings, making corrections as needed, and then click [Next].

Important

- **Partition size**

- Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (4.1 Before Starting Setup)*.)
- Do not specify a size that is greater than the capacity of the connected Hard Disk Drive.
- The maximum partition size is 2,097,152 MB.

- If you select *Create a new partition* under *Partitioning*, the entire contents of the Hard Disk Drive will be deleted.

- If you select *Use the existing partition* under *Partitioning*, data in the first partition is formatted and deleted. Data in other partitions will be kept. The figure below shows in which partitions data will be deleted.

First partition	Second partition	Third partition
Deleted	Retained	Retained

- You cannot reinstall to an existing partition that has been upgraded to a Dynamic Disk (refer to *Chapter 1 (4.1 Before Starting Setup)*). Do not select *Use the existing partition* under *Partitioning*.

5. Enter user information.

The user information window appears. Enter the user information, and then click [Next].

 Auto'; 'User name' with value 'Administrator'; 'Administrator password' (empty, '(Required)'); and 'Confirm Administrator password' (empty, '(Required)'). At the bottom right is '4 / 8 Page'. At the bottom are 'Back', 'Next', and 'Cancel' buttons."/>

Important

For Windows Server 2008, you must enter a computer name and administrator password that satisfies the following conditions:

- **Contains 6 or more characters**
- **Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.**

Tips

- The Computer name has been assigned by automatic assignment function. If you need to assign another computer name, remove the checkmark from "Auto", and enter the desired computer name.
- If a parameter file is used for setup or if you return to a previous screen, ●●●●● is displayed in the **Administrator password** and **Confirm Administrator password** text boxes even if no value has been entered.

6. Set up the network.

The network setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

Tips

The order of entry in **Custom settings** may differ from the numbering of LAN ports.

7. Enter the domain or workgroup name to be used.

The domain and workgroup setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

8. Select the Windows components for installation.

The Windows components selection window appears. Confirm the settings, making corrections as needed, and then click [Next].

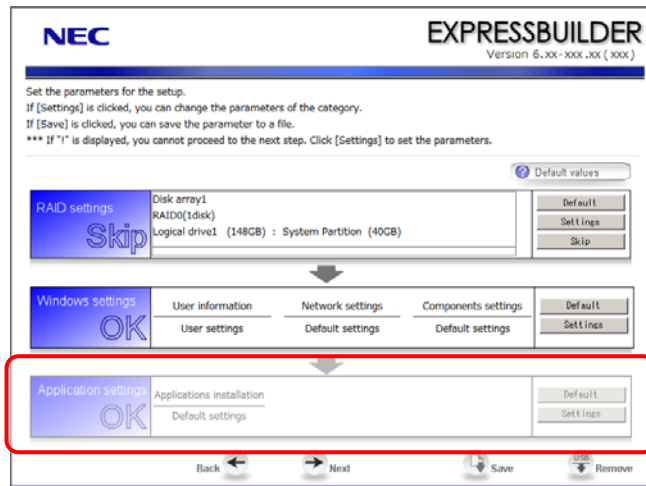
9. Click [Finish] on the confirmation window.

Return to the parameter setup menu.

Proceed to application setup.

(3) Application settings

Set up applications using the Application settings wizard in the parameter setup menu.

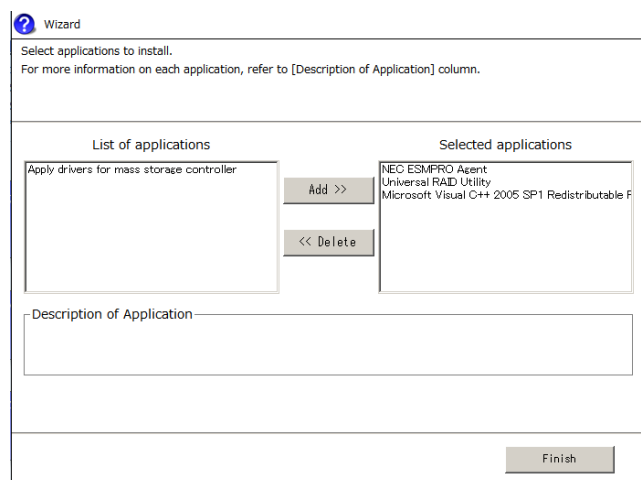


Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

1. Click [Settings] in **Application settings**.

The application setting window appears. Confirm the settings, making corrections as needed, and then click [Finish].



2. Save the parameters.

If you are not saving a parameter file:

→ Go to the following (4) *Executing setup*.

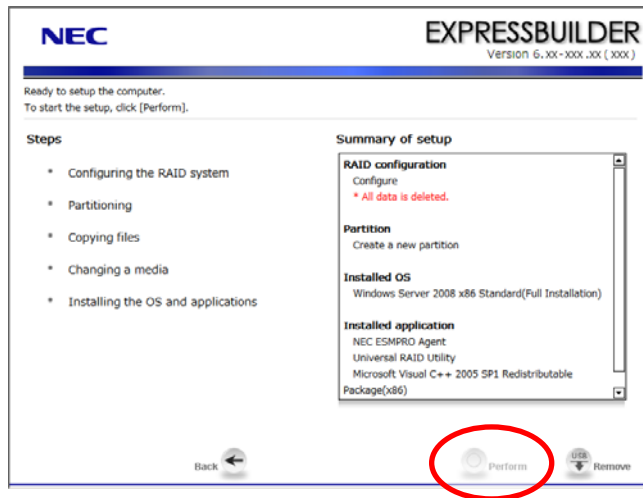
If you are saving a parameter file:

Click [Save], and then follow the onscreen instructions to save the parameter file.

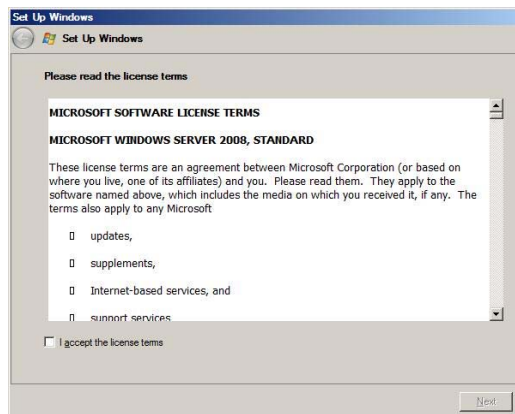
→ Go to the following (4) *Executing setup*.

(4) Executing setup

1. Click [Next] on the parameter setup menu.
2. From the setup execution window, click [Perform].



3. Remove the EXPRESSBUILDER DVD and any removable media if inserted or connected.
4. Insert the Windows Server 2008 DVD-ROM into the optical disk drive.
Windows Server 2008 and selected applications will be installed automatically and restart several times.
5. When the software license agreement window appears, select **I accept the license terms**, and then click [Next].



6. When the message "Thank you" appears, click [Start].

**Tips**

It may take several minutes until the logon window appears. Wait until it appears, even though nothing changes on the screen.

7. When the following message appears, press <Ctrl> + <Alt> + <Del>.

Press CTRL + ALT + DELETE to log on

8. Follow onscreen instructions to log on to the system.

Full installations:

When the following window appears, enter your password into the text box, and then click .

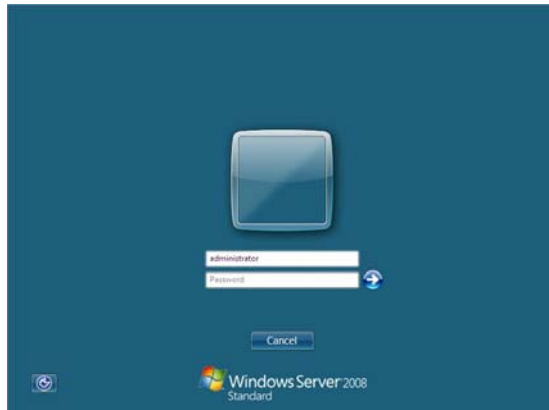


Server Core installations:

When the following window appears, click **Someone**.



When the following window appears, enter administrator into the **User** text box and the specified password into the **Password** text box, and then click .

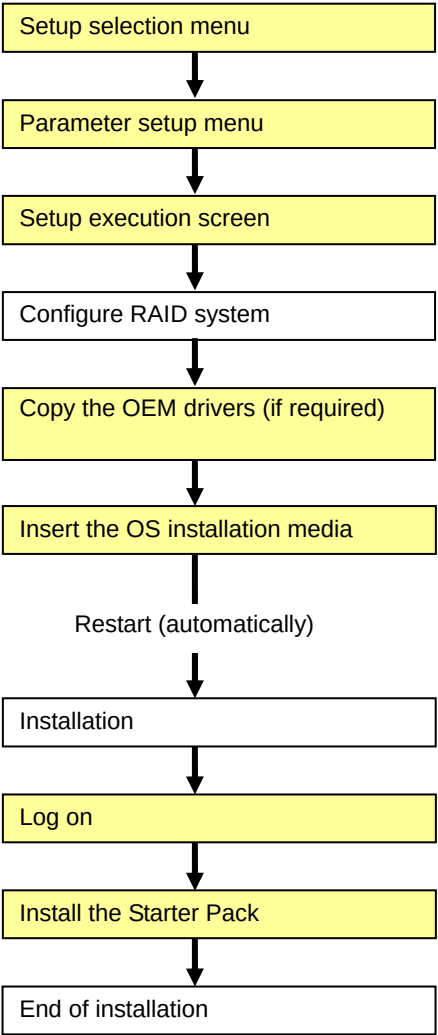
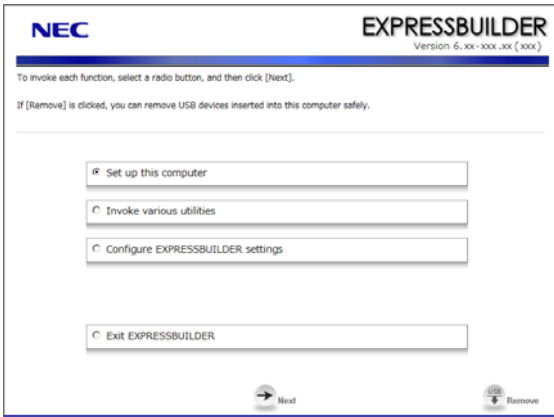


9. Click [OK] in the Setup Complete window.
10. Follow the instructions described in *Chapter 1 (4.5 Setting Up Device Drivers)* to set up the device drivers supplied with this server as standard.
11. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
12. Execute setup by following the instructions described in *Chapter 1 (7. Setup for Solving Problems)*.

Setup with EXPRESSBUILDER is now complete.

4.3 Setup with OS Standard Installer

4.3.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

4.3.2 Requirements for Setup with OS standard installer

Prepare the following disks and instruction manuals before starting setup.

- Operating system installation media
 - NEC operating system installation media (hereafter referred to as *backup DVD-ROM*)
 - Microsoft operating system installation media (hereafter referred to as *Windows Server 2008 DVD-ROM*)
- First Steps Guide
- EXPRESSBUILDER DVD

If you purchased optional Internal Flash Memory, you can use it during installation.
- Prepare if needed:
 - OEM drivers (Windows Server 2008)
 - OEM drivers (Windows Server 2008 x64)

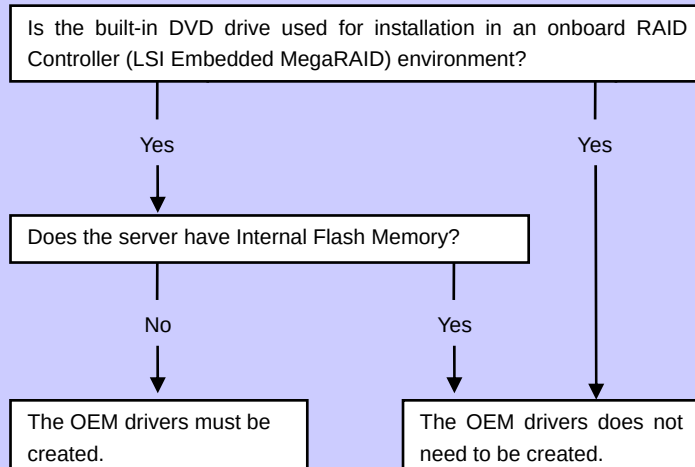
Tips

EXPRESSBUILDER may be distributed in Internal Flash Memory.

EXPRESSBUILDER can be run from the Internal Flash Memory if it is installed in the server.

If you are using a server with Internal Flash Memory installed, you can install the OS without using the EXPRESSBUILDER DVD.

OEM drivers are required in the following cases. Prepare Flash FDD or other removable media should these conditions apply.



4.3.3 Setup procedure

This section describes the procedure for installing Windows Server 2008 with OS standard installer.

Important

- Before starting setup, refer to *Chapter 1 (4.1 Before Starting Setup)*. It describes how to make partitions.
- The procedure differs depending on the media on which EXPRESSBUILDER is stored. Use Internal Flash Memory if you have purchased it as an option.

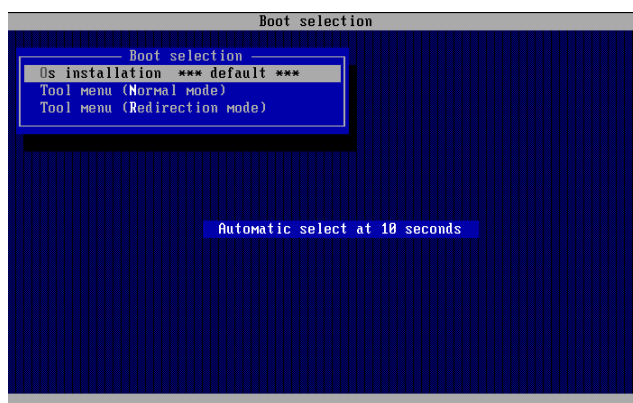
1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to set EXPRESSBUILDER.

When using the EXPRESSBUILDER DVD:

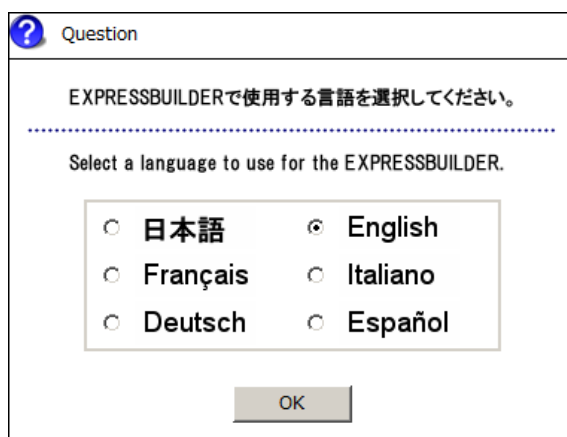
- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again. EXPRESSBUILDER starts.

When using Internal Flash Memory:

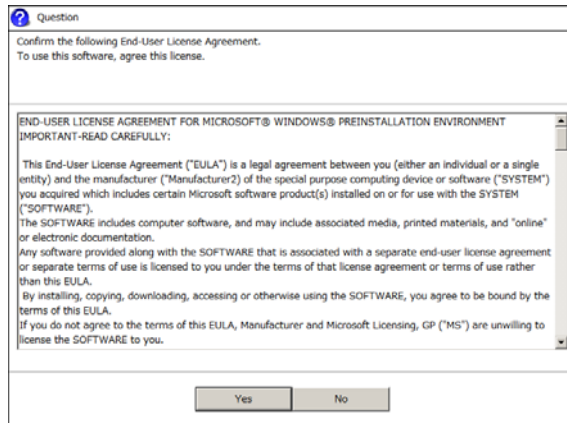
- (1) When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key. EXPRESSBUILDER starts.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



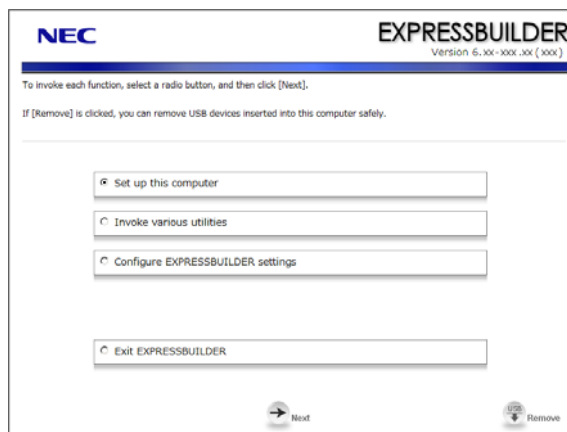
4. Select **English** on the language selection window, and then click [OK].



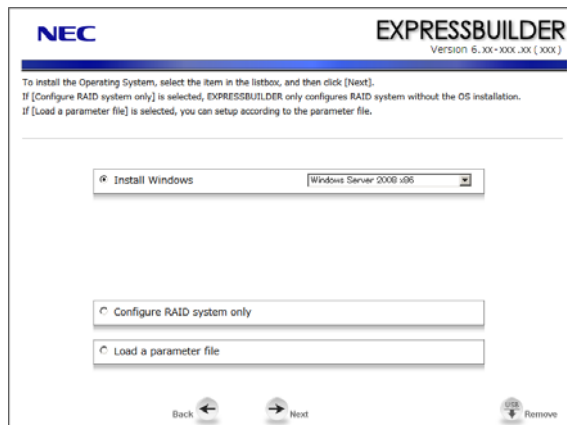
5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to set up the parameters.



Note

When setting up again, an already saved parameter file can be read, so that you can skip inputting parameters in the wizard.

If not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

If using parameter file:

Select **Load a parameter file**, and then click [Next].

Follow the onscreen instructions to load the parameters.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (2) *Executing setup - Executing setup 5*.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard

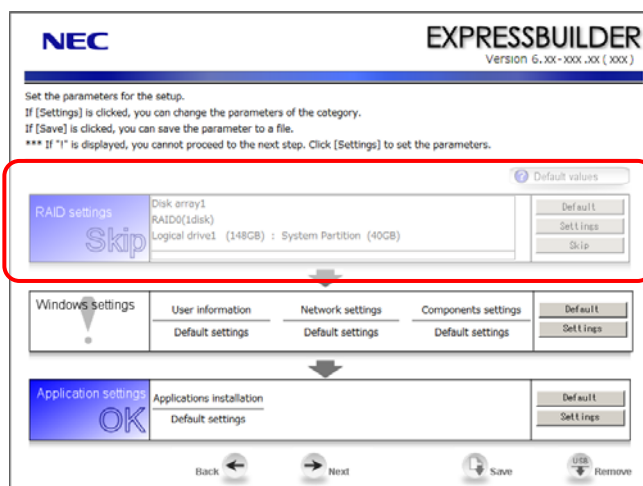
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard. You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive:

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

When skipping the creation of a new Logical Drive:

1. Click [Skip] in **RAID settings**.

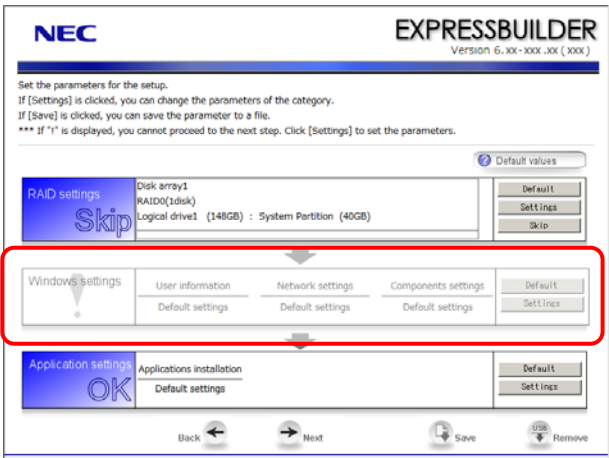
Tips

Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the already existing configurations without modifying them.

(2) Executing setup

Install Windows using the following procedure.

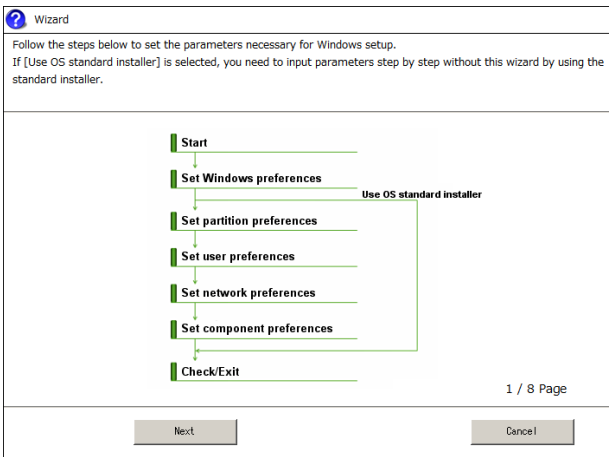
- 1. Click [Settings] in **Windows settings**.



Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

- 2. Click [Next] in the Windows settings wizard.



3. Specify the Windows basic settings

The basic information window appears. Select **Use OS standard installer**, and then click [Next].

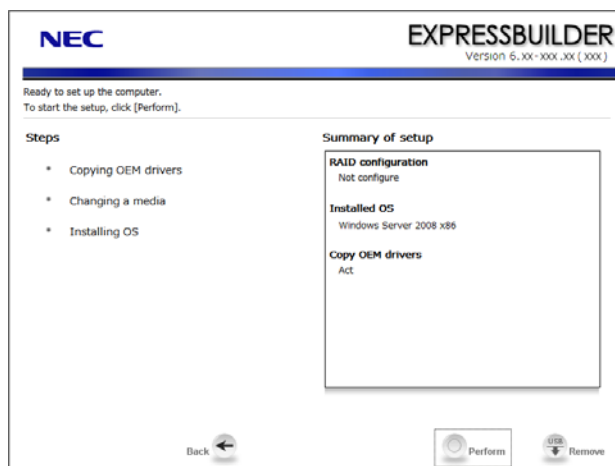
If copying the OEM drivers to the removable media, select **Copy OEM drivers into a removable media**.

Note

- If using Internal Flash Memory:
Clear the **Copy OEM drivers into a removable media** check box.
You must enable Internal Flash Memory when installing the operating system.
- If using the EXPRESSBUILDER DVD:
Select the **Copy OEM drivers into a removable media** check box only if the OEM drivers is required to be copied.

4. After clicking [Finish] on the confirmation window, click [Next] in the parameter setup menu.

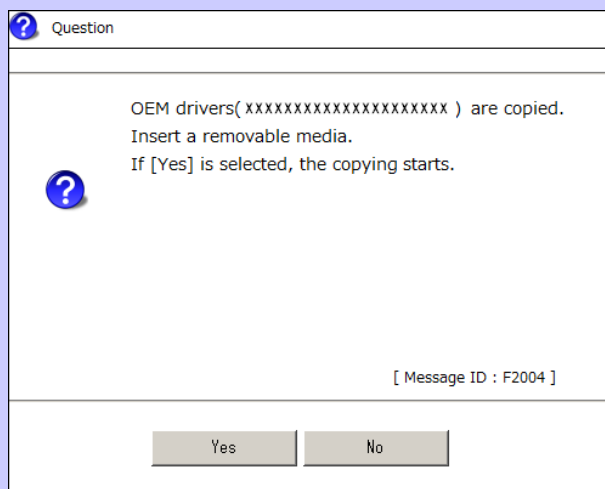
5. From the setup execution window, click [Perform].
The server automatically restarts.



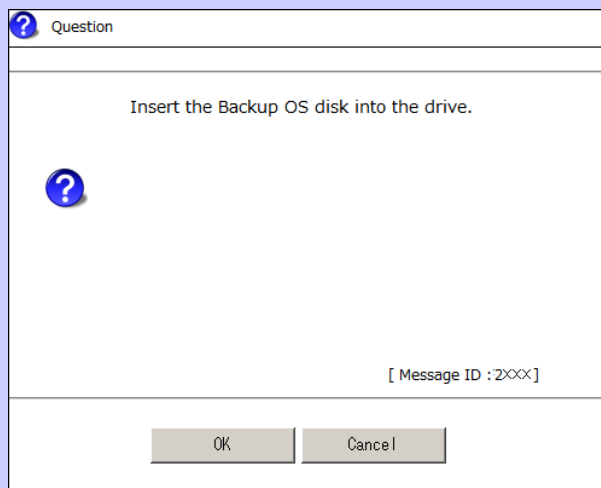
- If using Internal Flash Memory: Go to step 6
- If using the EXPRESSBUILDER DVD: Go to step 7

Tips

- If the **Copy OEM drivers into a removable media** checkbox is selected in step 3, the following window appears. Follow the onscreen instructions and continue the operation.



- When the following message appears, insert the OS installation media, and then click [OK].



6. Enable Internal Flash Memory.

If the following message appears below the POST window during reboot, press the <F3> key.

Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network

Note

Because this setting enables the Internal Flash Memory to be used, start the OS from the OS media, not from the Internal Flash Memory.

7. Run from the OS installation media.

Important

- If a bootable operating system is already installed on the Hard Disk Drive, press the <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen. This step is unnecessary if no bootable operating system exists.
- If the Windows installation window (from step 8) does not appear, the <Enter> key was not pressed correctly. Turn the system power on and start again from the beginning.
- Do not remove the media while copying OEM drivers.

The message "Windows is loading files..." appears.

8. When the following window appears, select a language, enter information for the other items, and then click [Next].



9. When the following message appears, click [Install Now 



- If the following message appears, go to step 10.
- If the following message does not appear, go to step 12.

Load Driver

A required CD/DVD drive device driver is missing. If you have a driver floppy disk, CD, DVD, or USB flash drive, please insert it now.

Note: If the Windows installation media is in the CD/DVD drive, you can safely remove it for this step.

[Browse] [OK] [Cancel]

Tips

- The above message appears if you are using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment equipped with an internal DVD drive.
- When this message appears, the message will say "CD, DVD, or USB flash drive", but you must use Internal Flash Memory or removable media with the OEM drivers copied onto it.
 - <Windows Server 2008 64-bit Edition>
OEM drivers (Windows Server 2008 x64)
 - <Windows Server 2008 32-bit Edition>
OEM drivers (Windows Server 2008)

10. Select the destination, and then click [OK].

- If using the OEM drivers:
 - <Windows Server 2008 64-bit Edition>
Removable media drive letter: \OEM_Driver\ws2008x64\megasr1
 - <Windows Server 2008 32-bit Edition>
Removable media drive letter: \OEM_Driver\ws2008\megasr1
- If using Internal Flash Memory:
 - <Windows Server 2008 64-bit Edition>
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008x64\megasr1
 - <Windows Server 2008 32-bit Edition>
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008\megasr1

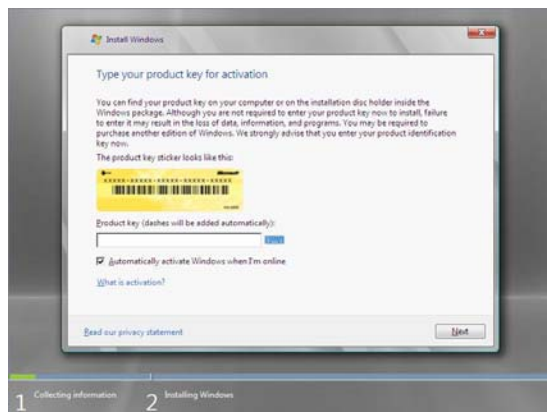
Tips

The volume label of the Internal Flash Memory is INTER-FLASH.

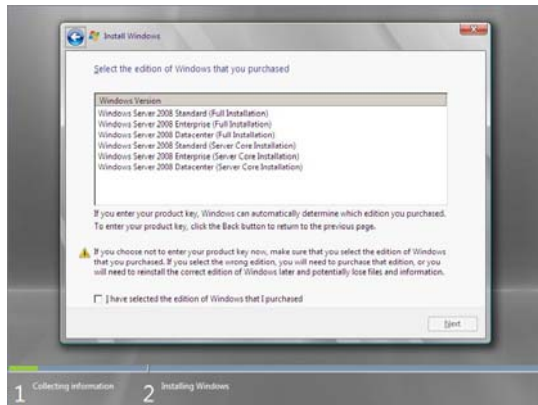
11. Select **LSI Embedded MegaRAID**, and then click [Next].

12. When the following window appears, enter the product key and then click [Next].

Note that this window does not appear if you use a backup DVD-ROM for installation. Go to the next step.



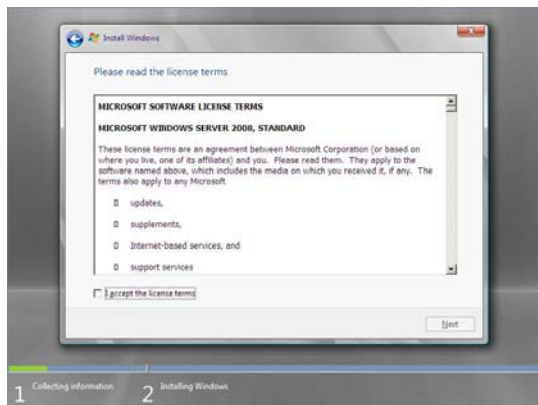
13. When the following window appears, select the Windows edition you have purchased. Select the **I have selected the edition of Windows that I purchased** check box, and then click [Next]. If the product key was entered, only the corresponding editions are displayed.



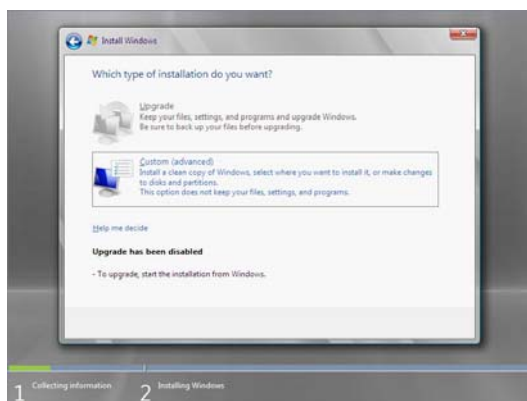
Tips

The Windows versions that appear on the screen differ depending on the OS installation media used.

14. When the following window appears, confirm the content of the license agreement. If you agree, select **I agree** and then click [Next].



15. When the following message appears, select the installation type. Select **Custom (advanced)** in this case.



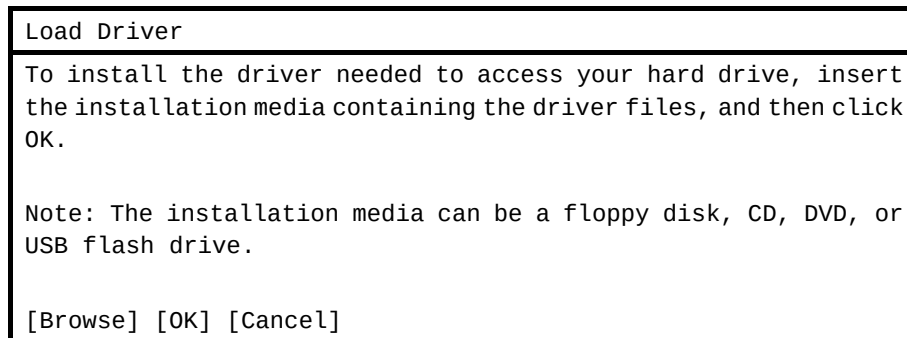
16. The "Where do you want to install Windows?" window appears.

Tips

If the driver was loaded in steps 10 to 11, and if not using a RAID Controller, go to step 20.

Click **Load Driver**.

If the following message appears, replace the OS installation media and EXPRESSBUILDER DVD in the optical disk drive, and then click [Browse]. Next, go to step 17.



Tips

- If using the Internal Flash Memory, you do not need to remove the OS installation media.
- At this time, a message "The Installation media can be a floppy disk, CD, DVD, or USB flash drive." appears on the screen, you must use the supplied EXPRESSBUILDER DVD or Internal Flash Memory.

17. Specify one of the following locations, and then click [OK].

If using the EXPRESSBUILDER DVD:

When using the N8103-129/130 RAID Controller

- Windows Server 2008 64-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008x64\megasas2
- Windows Server 2008 32-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008\megasas2

When using the N8103-128/G128/134 RAID Controller

- Windows Server 2008 64-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008x64\stexstpt
- Windows Server 2008 32-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008\stexstpt

If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection

- Windows Server 2008 64-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008x64\megasr1
- Windows Server 2008 32-bit Edition
Optical disk drive letter: \020\win\winnt\oemfd\ws2008\megasr1

If using Internal Flash Memory:

When using the N8103-129/130 RAID Controller

- Windows Server 2008 64-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008x64\megasas2
- Windows Server 2008 32-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008\megasas2

When using the N8103-128/G128/134 RAID Controller

- Windows Server 2008 64-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008x64\stexstpt
- Windows Server 2008 32-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008\stexstpt

If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection

- Windows Server 2008 64-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008x64\megasr1
- Windows Server 2008 32-bit Edition
Internal Flash Memory drive letter: \020\win\winnt\oemfd\ws2008\megasr1

Tips

- The driver does not have to be loaded at this time if it was loaded in steps 10 and 11.
- The volume label of the Internal Flash Memory is INTER-FLASH.

18. Select the necessary driver from the driver list shown, and then click [Next].

- When using an N8103-129/130 RAID Controller
[LSI MegaRAID SAS 9264-8i]
- When using an N8103-128/G128/134 RAID Controller
[Promise SuperTrak SAS 6G RAID Controller]
- If using an onboard RAID Controller (LSI Embedded MegaRAID) in an environment containing the DVD drive with USB connection
[LSI Embedded MegaRAID]

19. If you used the EXPRESSBUILDER DVD, remove it and then insert the OS installation media.

20. Select the disk in which the partition will be created, and then click **Drive options (advanced)**.

Important

If a partition has already been created, go to step 23.

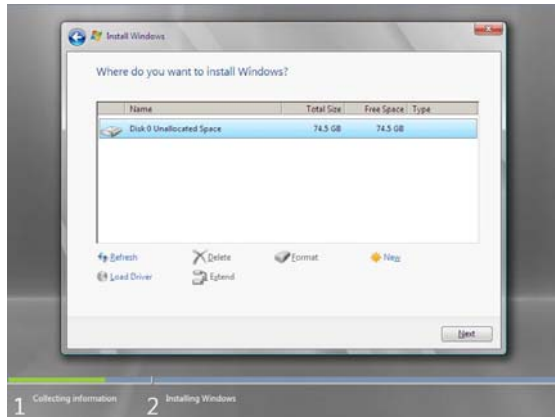
21. Click [New], enter the partition size into the size input box, and then click [Apply].

Important

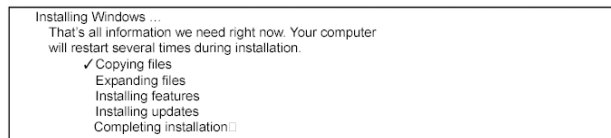
When installing the OS to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

22. Select the partition created in step 21, and then click [Format].

23. In the window below, select the created partition, and then click [Next].

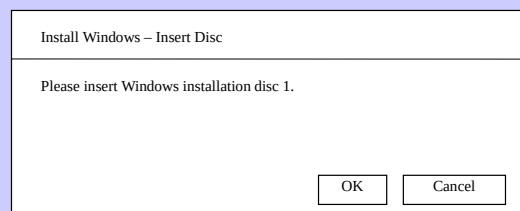


When the following message appears, Windows installation starts automatically.



Tips

At this time, if the EXPRESSBUILDER DVD is still in the optical disk drive, a message prompting you to replace it with an OS installation media appears. Remove the EXPRESSBUILDER DVD and then insert the OS installation media.



24. The content displayed differs depending on what you selected in step 13. Confirm the following, and then proceed.

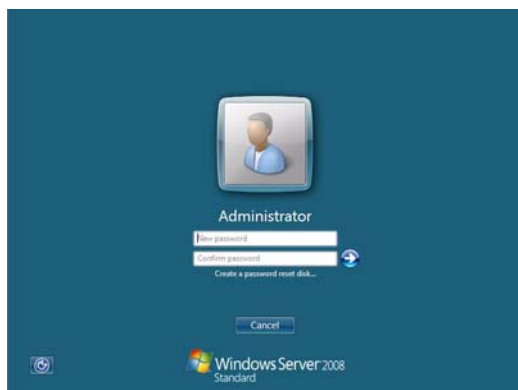
- Full installations
- Server Core installations

For Full installations:

- (1) After setup of Windows Server 2008 is completed, the following window appears, prompting you to change your password before logging on. Click [OK].



- (2) Change your password, and then click the [] button.

**Tips**

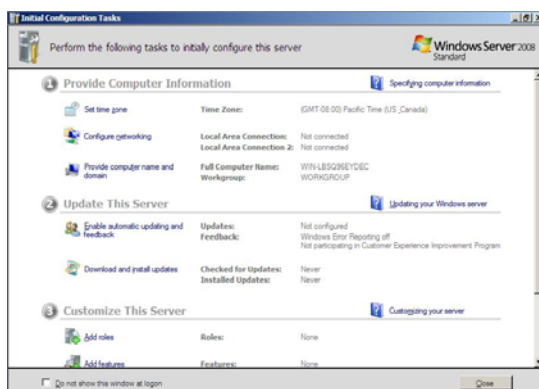
Passwords must fulfill the following requirements in Windows Server 2008.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

- (3) When the following message appears, click [OK].



- (4) When the Initial Configuration Tasks window appears after you log on, enter the user information.



For Server Core installations:

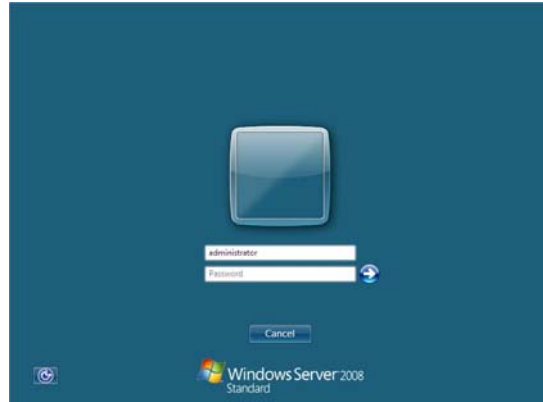
- (1) If the following message appears after Windows Server 2008 setup has completed, press <Ctrl> + <Alt> + <Del>.



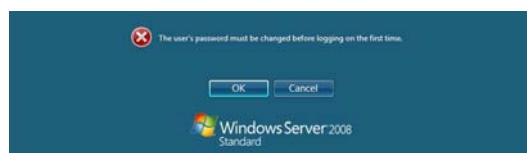
- (2) When the following message appears, click **Someone**.



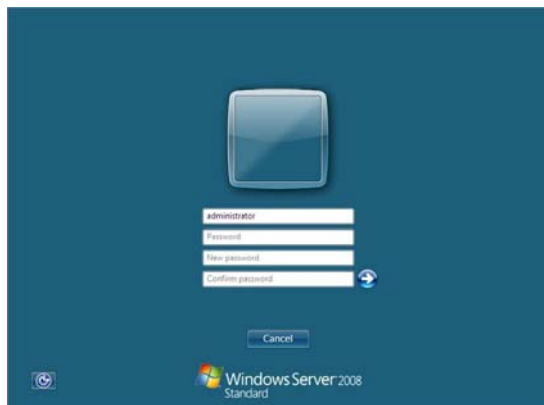
- (3) When the following window appears, enter administrator into the **User** text box and then click . Password entry is not required at this time.



- (4) The following window appears, prompting you to change your password before logging on. Click [OK].



- (5) Change your password, and then click [↩].

**Tips**

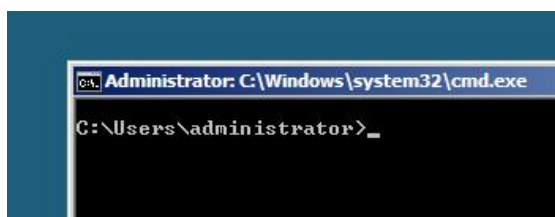
Passwords must fulfill the following requirements in Windows Server 2008.

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

- (6) When the following message appears, click [OK].



- (7) The command prompt will appear. Set the user information.

**Tips**

For detailed setup procedures, refer to the Microsoft "Step by Step Guide".

25. Install the Starter Pack by referring to *Chapter 1 (4.4 Installing the Starter Pack)*.
26. Install drivers and specify detailed settings by referring to *Chapter 1 (4.5 Setting Up Device Drivers)*.
27. Execute setup by following the instructions described in *Chapter 1 (7. Setup for Solving Problems)*.

Setup with OS standard installer is now complete.

4.4 Installing the Starter Pack

After installing Windows Server 2008, follow the steps below and install the Starter Pack. The Starter Pack installs all drivers required by the Express5800 Series.

Important

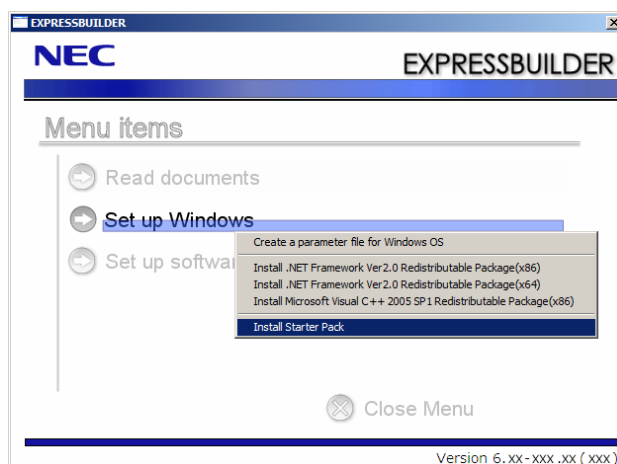
- Also install the Starter Pack in the following cases.
 - The system configurations have changed (when internal option devices have been added or removed)
If a dialog box prompting you to restart appears after changing system configurations, click [No] and then install the Starter Pack.
 - If the system was restored using a restore process
 - If a system has been restored using the backup tool
- The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
The setting of SNP function may affect the system performance. Contact the sales agent for details.

4.4.1 When using the EXPRESSBUILDER DVD

1. Log on to the system with the built-in administrator, which has administrative privileges.
2. Insert the EXPRESSBUILDER DVD into the optical disk drive.
3. The content displayed differs depending on what the content selected when installing Windows Server 2008. Confirm the following, and then proceed.
 - Full installations
 - Server Core installations

For Full installations

When the menu window appears, click **Set up Windows** to open the short-cut menu and then select **Install Starter Pack**.



Tips

The short-cut menu also appears by right-clicking on the menu window.

For Server Core installations

- (1) Enter the following command at the command prompt, and then specify the optical disk drive letter (for example, the D drive).

```
cd /d D:\020\win\winnt\bin
```

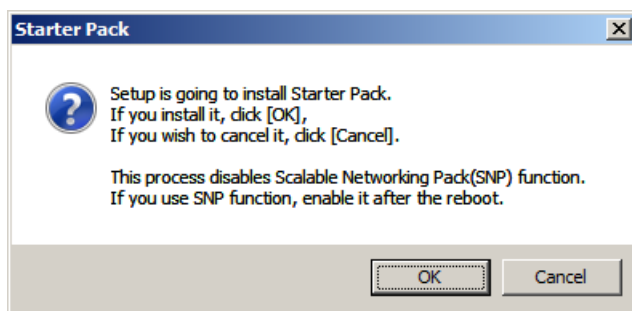
```
C:\Users\administrator>cd /d D:\020\win\winnt\bin
```

- (2) Enter the following, and then press the <Enter> key.

```
pkgsetup.vbs
```

```
D:\020\win\winnt\bin>pkgsetup.vbs
```

4. A setup message appears.

**Tips**

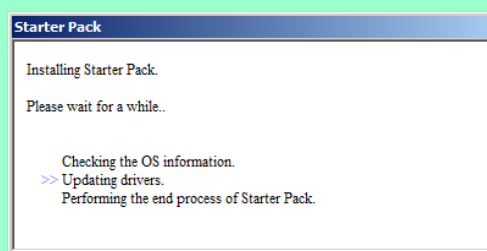
Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

Read the message that appears, and then click [OK].

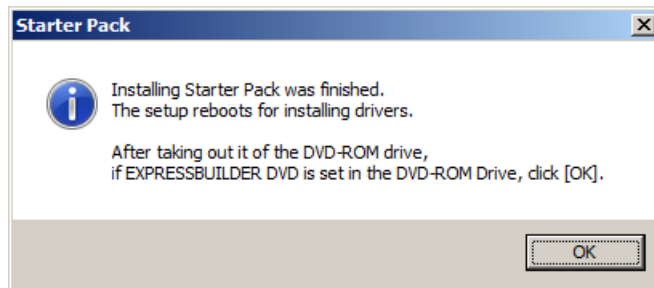
Starter Pack installation starts.

Note

If you chose Full installation, the following progress message will appear while the Starter Pack is being installed. Wait a moment until the update is complete.



- When the following message appears, Starter Pack installation is complete. Follow the instructions in the message, and remove the EXPRESSBUILDER DVD.



- Click [OK] and then restart the system.

Installation of Starter Pack is now complete.

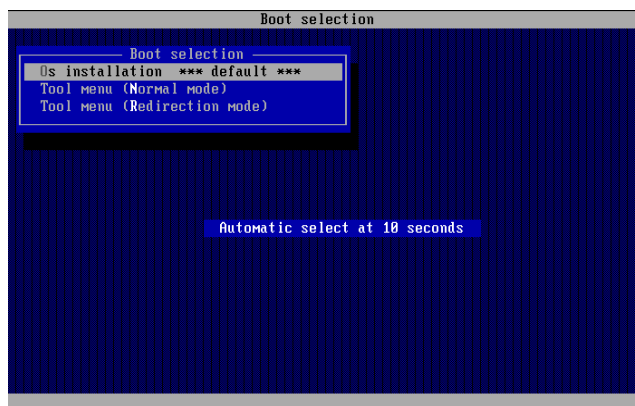
4.4.2 When using Internal Flash Memory

- After installing the operating system, the system will restart.
- Use the Internal Flash Memory to run EXPRESSBUILDER.
When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key.

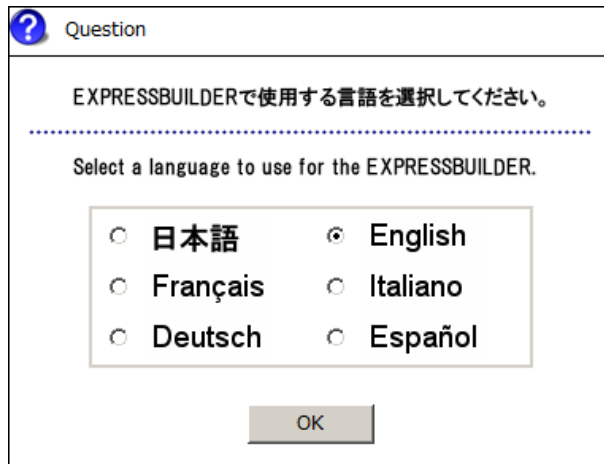
Note

- At this time, be sure to remove the DVD from the optical disk drive.
- If running from the OS, restart, and then press the <F3> key on the POST window.

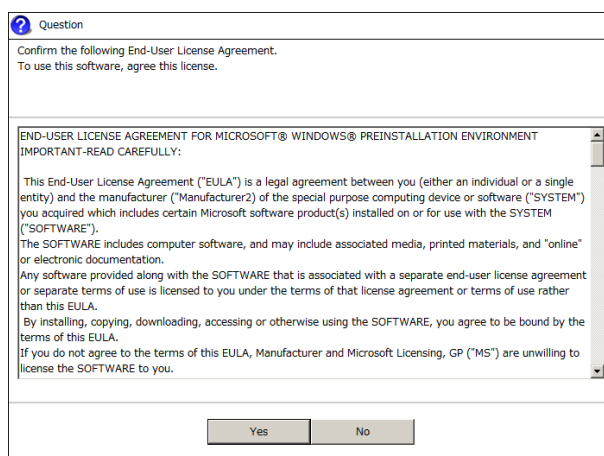
- When the following message appears, select **Os installation *** default *****.
You will automatically advance to the next window, with no need for further input.



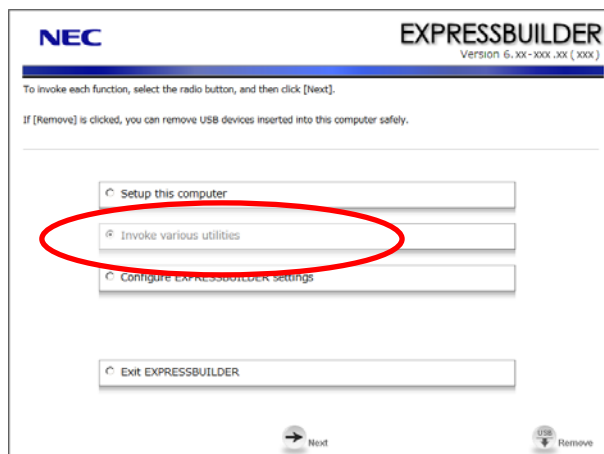
4. Select **English** on the language selection window, and then click [OK].



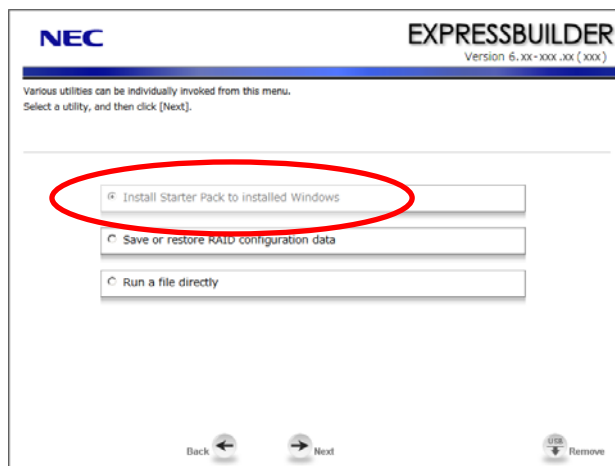
5. When the Windows PE software license agreement window appears, click [Yes].



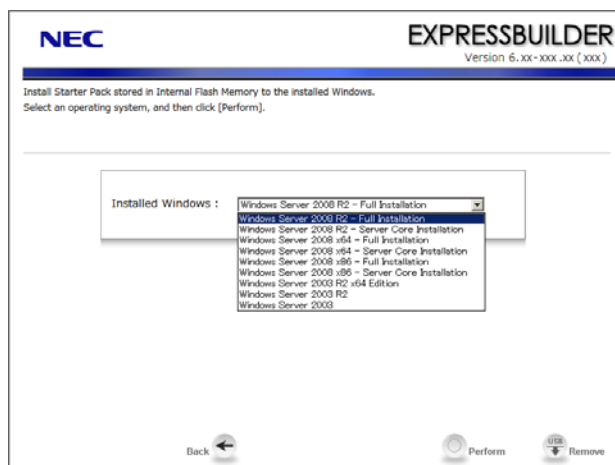
6. Select **Invoke various utilities** from the top menu, and then click [Next].



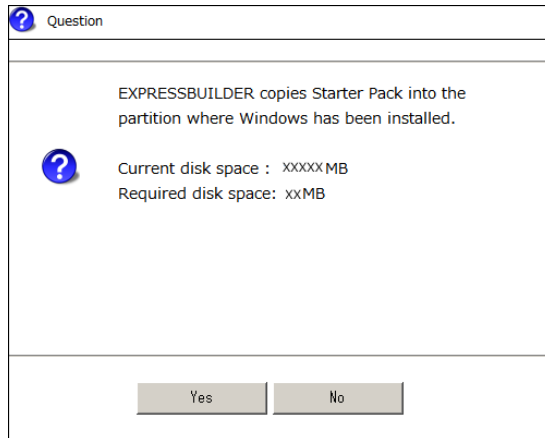
7. When the utility start menu appears, select **Install Starter Pack to installed Windows** and then click [Next].



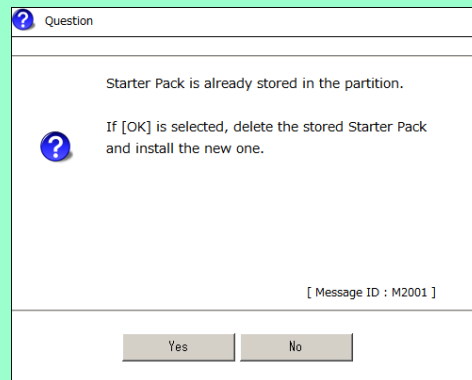
8. When the window for selecting Windows to install the Starter Pack appears, select the installed Windows from the drop-down list, and then click [Perform].



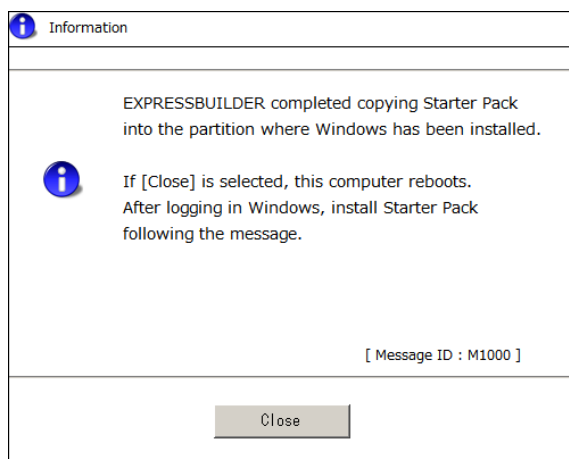
9. When the following confirmation window appears, read the content and then click [Yes].

**Note**

The following window will appear if the Starter Pack is already installed. Read the message, and then click [Yes].



10. After copying the module, the following window appears. Click [Close].



The server then restarts.

Note

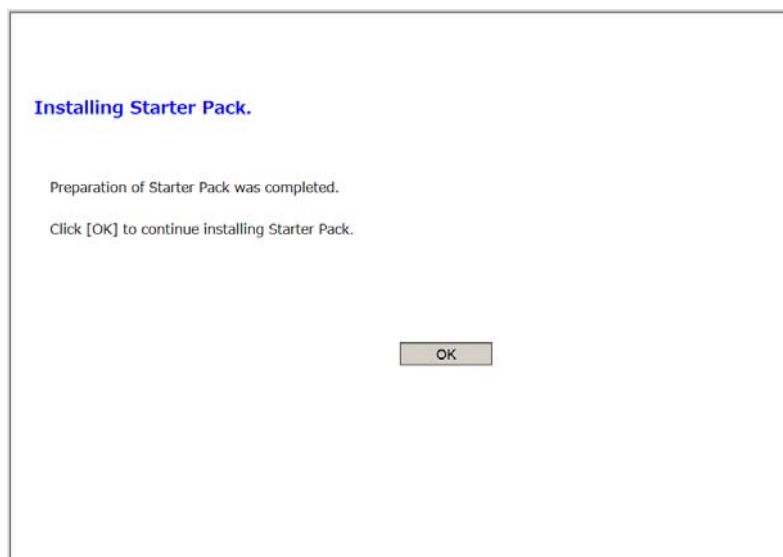
You do not need to press the <F3> key at this time.

11. The content displayed differs depending on what content was selected when installing Windows Server 2008. Confirm the following, and then proceed.

- Full installations
- Server Core installations

For Full installations

After Windows starts, the following window appears. Click [OK].



For Server Core installations

- (1) Enter the following command at the command prompt, and then specify the system drive letter (for example, the C drive).

```
cd /d C:\StartPKG\bin
```

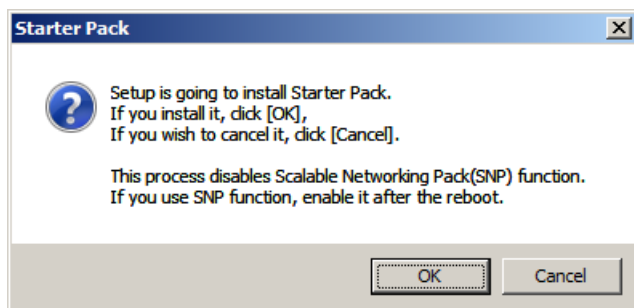
```
C:\Users\administrator>cd /d C:\StartPKG\bin
```

- (2) Enter the following, and then press the <Enter> key.

```
pkgsetup.vbs
```

```
C:\StartPKG\bin>pkgsetup.vbs
```

12. Read the message that appears, and then click [OK].



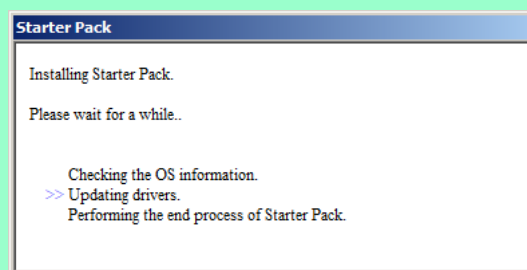
Tips

Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

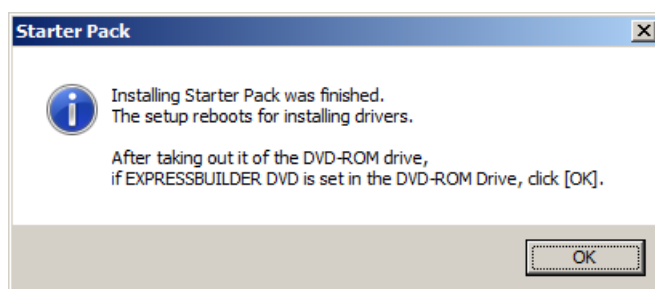
Installation of the Starter Pack starts.

Note

If you chose Full installation, the following progress message appears while the Starter Pack is being installed. Wait a moment until the update is complete.



13. When the following message appears, Starter Pack installation is complete.



14. Click [OK] to restart the system.

Installation of the Starter Pack is now complete.

4.5 Setting Up Device Drivers

Install and set up device drivers provided for the standard configuration.

For details regarding the installation and setup of a driver that is not described here, refer to the manual supplied with the driver.

4.5.1 Installing the LAN and BACS (teaming) drivers

(1) LAN and BACS drivers

If EXPRESSBUILDER is used for setup, the driver will automatically be installed.

If the OS standard installer is used for setup, install the Starter Pack to install the LAN and BACS driver.

Note

- To change the LAN or BACS driver settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

The drivers for LAN boards are automatically installed using the OS plug-and-play function.

Optional LAN boards: N8104-128/134*

* N8104-128 is supported by Express5800/R110d-1E and E110d-1 only.

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration

Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:

[N8104-128] Broadcom BCM57711 NetXtreme II 10 GigE (NDIS VBD Client) #xx*

[N8104-134] Broadcom BCM5709C NetXtreme II GigE (NDIS VBD Client) #xx*

* If there are adapters with the same name, a different identification number will be assigned to xx.

Important

The ID for N8104-128/134 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

4.5.2 Setting up LAN drivers

Important

About WOL

- WOL is supported by the standard network adapters only.
- The Change of WOL setting is not supported.
- WOL from a shutdown is only supported if the system is started using MagicPacket.
- WOL from hibernation is not supported.

Tips

MagicPacket refers to a packet dedicated to WOL.

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the Device Manager.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the **Advanced** tab, and then set the **Speed & Duplex** values to the same as those of the switching hub.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete. Proceed to set up WOL.

(2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)

If using N8104-134 with the server, TCP/iSCSI Offload Engine must be set to off.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Device Management** under **Explorer View**, and then **N8104-134 network adapter** from **System device (VBD)**.
3. Select the **Configurations** tab, and then expand **Resource Reservations**.
4. Clear the **iSCSI Offload Engine** and **TCP Offload Engine** check boxes (if selected) under **Pre-Allocated Resource**, and then click [Apply].

Tips

If TCP Offload Engine does not exist, proceed to the next step.

5. Select N8104-134 network adapter from **Network Adapters (NDIS driver)** in the **Explorer View**.
6. Select the **Configurations** tab, specify **Disable** for **TCP Connection Offload (IPv4)** and **TCP Connection Offload (IPv6)**, and then click [Apply].
Do not make changes if they are already disabled.
7. Complete steps 1 to 6 for each N8104-134 network adapter.
8. Restart the system.

TCP/iSCSI Offload Engine setup is now complete.

4.5.3 Setting up team/LiveLink

Important

- You must set up LiveLink when setting up a team. Teams that are not configured for LiveLink are not supported.
- When deleting the team, refer to *Chapter 1 (4.5.3 Setting up team/LiveLink) - (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and create it again after replacement.
- Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team

(1) Team types

The following team types are supported.

- Smart Load Balancing and Failover (without Standby Member)
All adapters that compose the team perform communication.
If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
Among the adapters that compose the team, primary adapters except the standby member perform communication.
If a communication failure occurs, the standby member continues the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and the standby adapter returns to the standby state.

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.

It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.

If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Important

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

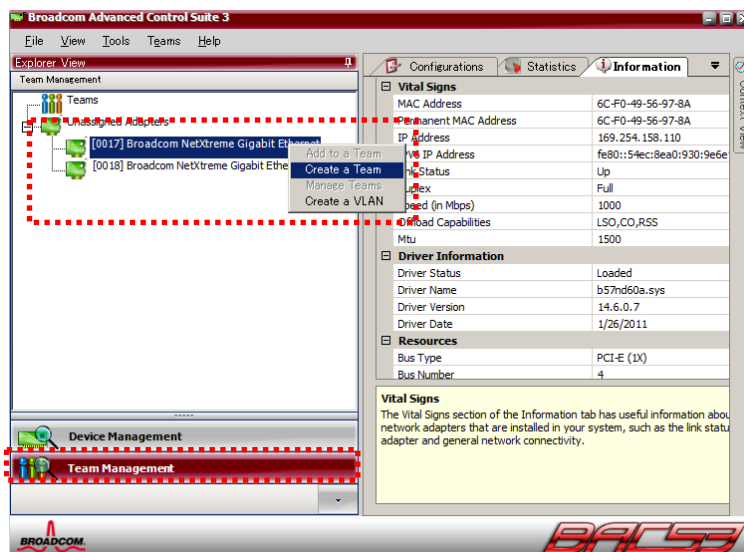
Important

- The team must be composed of two adapters.
- Possible combinations of network adapters that compose the team are as follows.
 - Between standard network adapters.
 - Between N8104-128 adapters
 - Between N8104-134 adapters
 - A standard network adapter and an N8104-134 adapter
- For details about how to specify a team and enable LiveLink for N8104-128, refer to "N8104-128 LAN Driver Installation Guide" supplied with the LAN board.

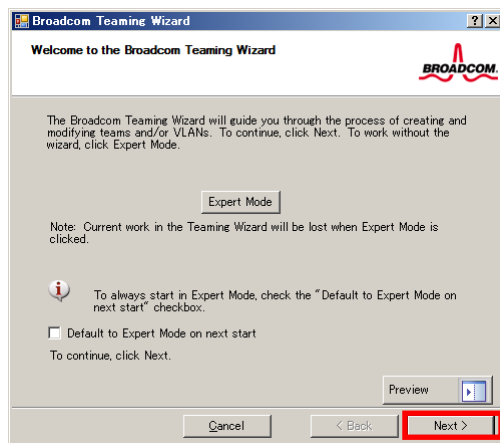
Tips

To edit a team, right-click on the BACS team, and then select **Edit TEAM**. Then refer to step 3 and later in *Chapter 1 (4.5.3 Setting up team/LiveLink) - (3) Setting up team/LiveLink* to edit the team.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Team Management** from the left menu, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu. The **Broadcom Teaming wizard** appears.

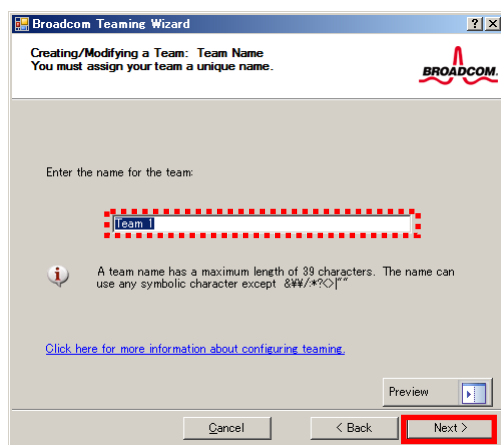


3. Click [Next].

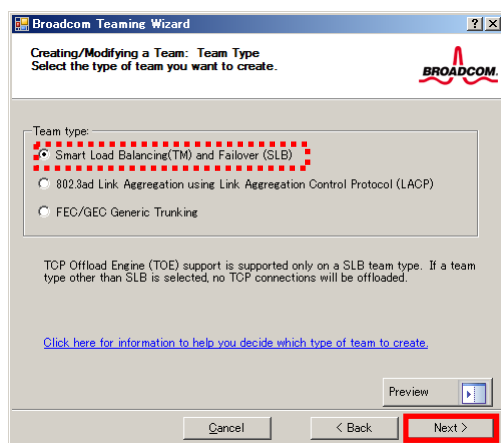


Important Do not use Expert Mode.

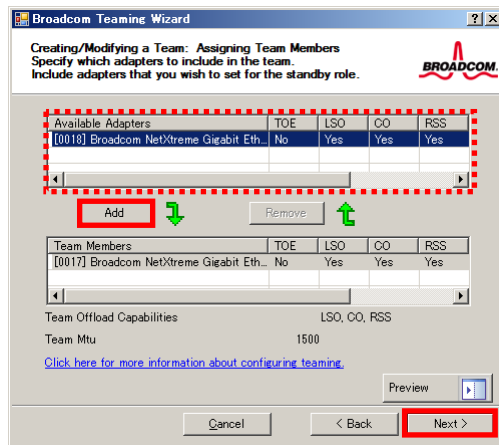
4. Enter any name into the team name entry column, and then click [Next].



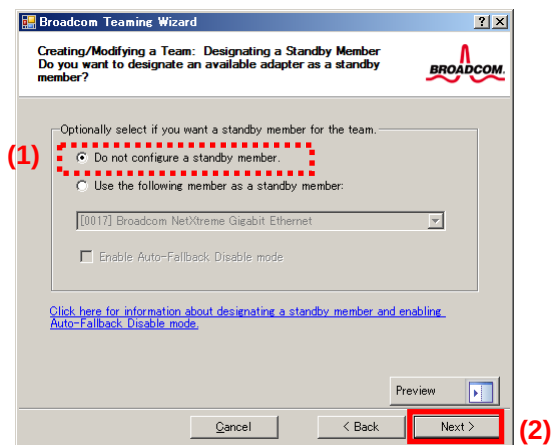
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



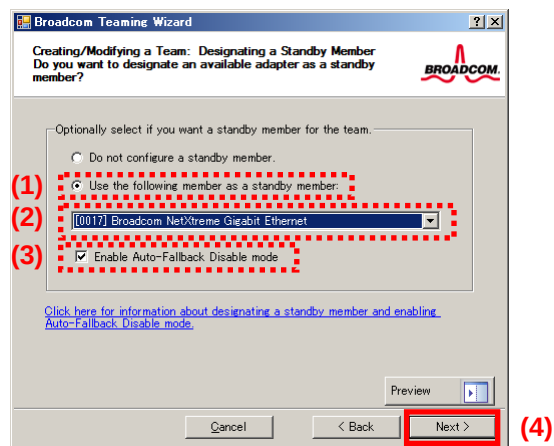
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



7. Proceed according to your desired team type.
- Smart Load Balancing and Failover (without Standby Member)
 - (1) Select **Do not configure a standby member**.
 - (2) Click [Next].

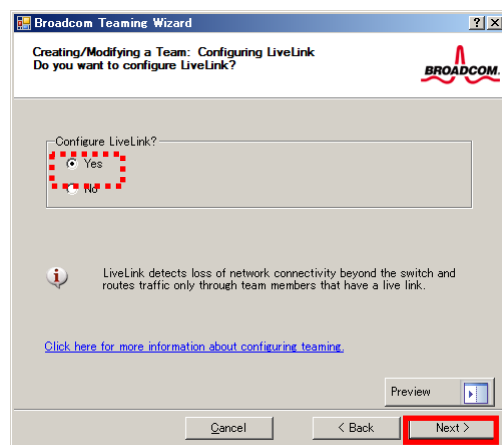


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

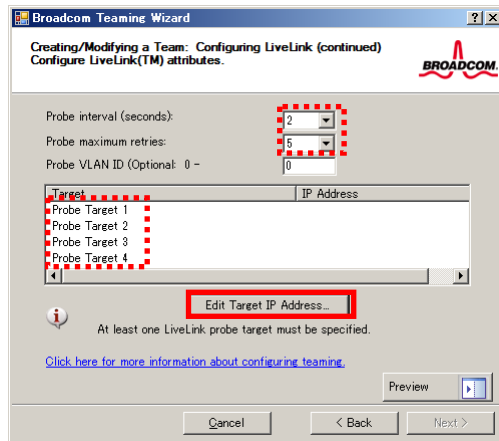


Important *Enable Auto-Failback Disable mode is cleared while editing the team. Select it again.*

8. Select **Yes** for **Configure LiveLink?**, and then click [Next].



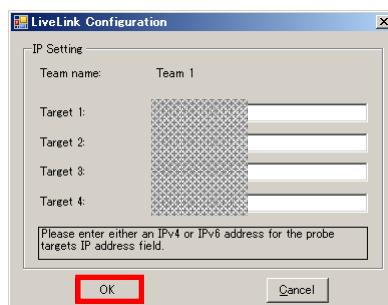
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If an optional LAN board detects that a link is down, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

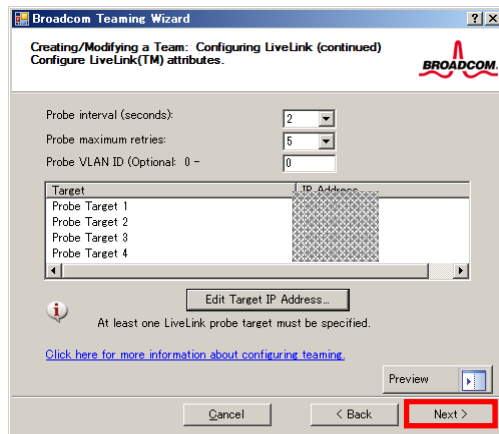
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



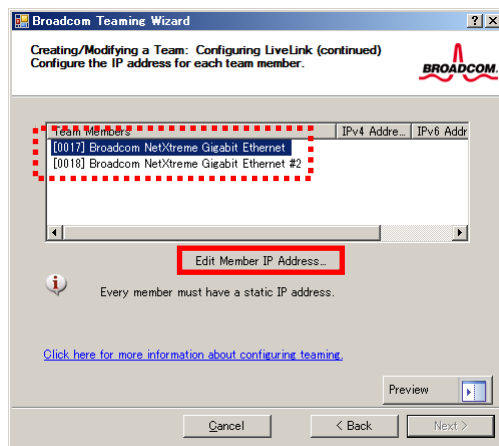
Important

- **Target xx** must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in **Target xx** is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using **Probe Target**. Up to four IP addresses can be specified.

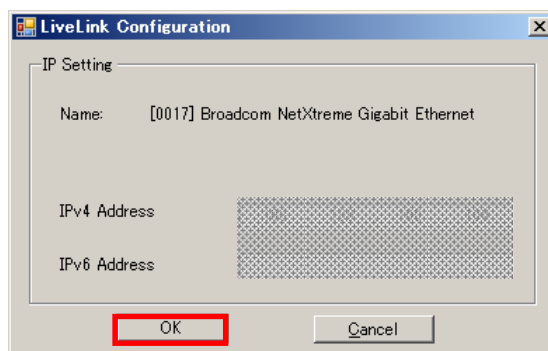
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address...].



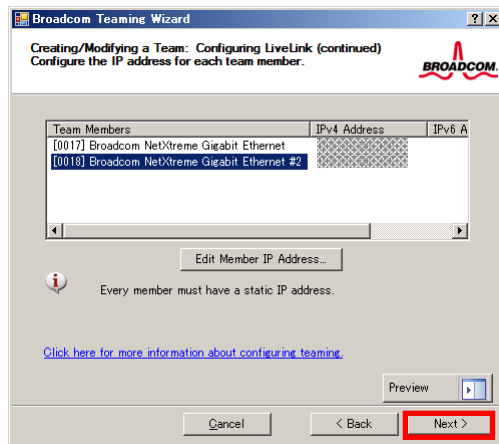
13. Enter the IP address used for LiveLink communication, and then click [OK].



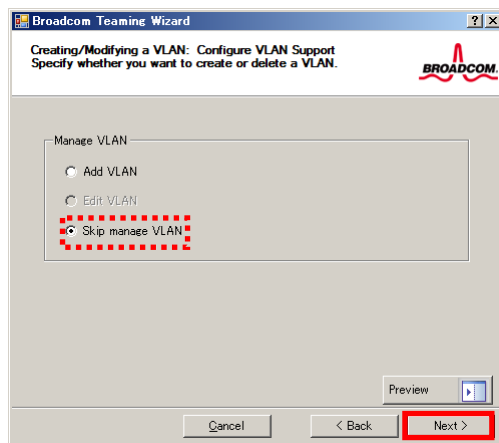
Important

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

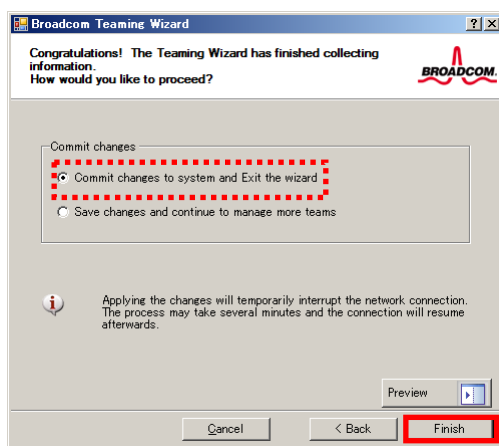
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].



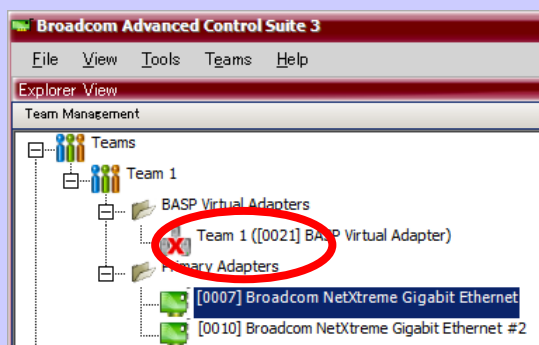
Note

When the message below appears, select [Yes].

"Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards. Do you want to continue?"

Tips

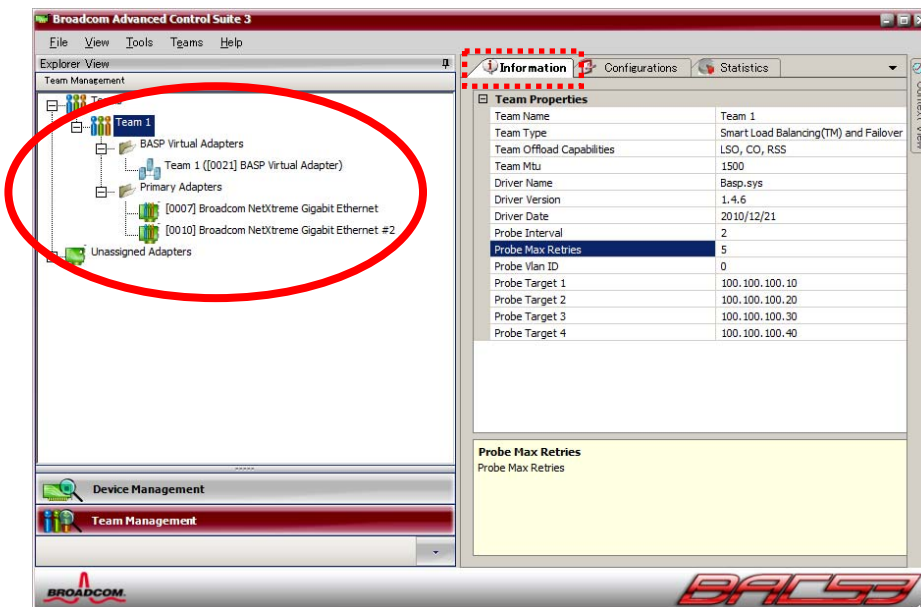
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



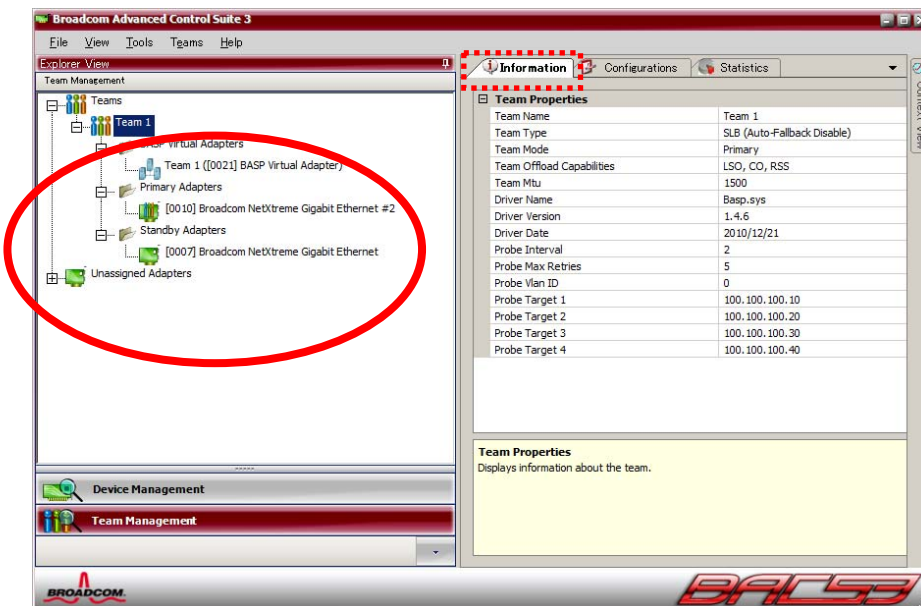
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite3** and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

– Smart Load Balancing and Failover (without Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



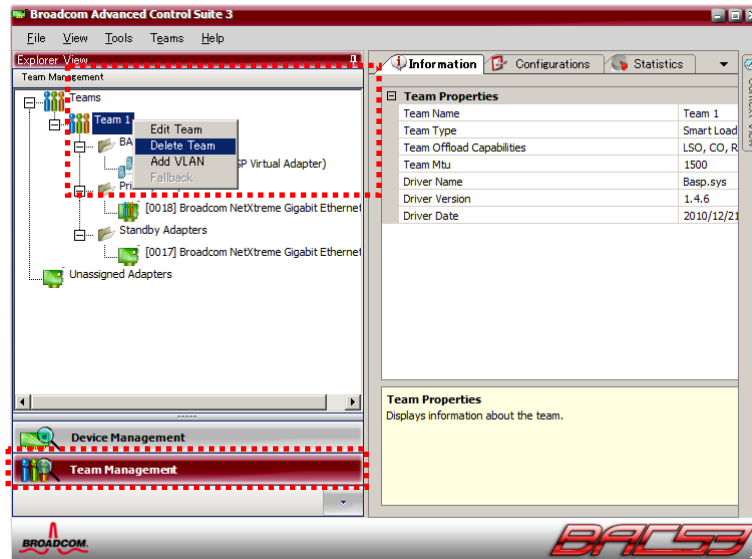
Team setup is now complete.

(4) Procedure for deleting team**Important**

You must delete teams from **Broadcom Control Suite3**.

You cannot delete the team from the team adapter displayed in the Device Manager.

1. Double-click **Broadcom Control Suite3** in the Control Panel window.
Broadcom Advanced Control Suite3 starts.
2. Click **Team Management** from the left menu, right-click the team name under **Teams**, and then select **Delete Team** from the short-cut menu.

**Tips**

When the message below appears, select [Yes].

"The selected team will be deleted from system, do you want to proceed?"

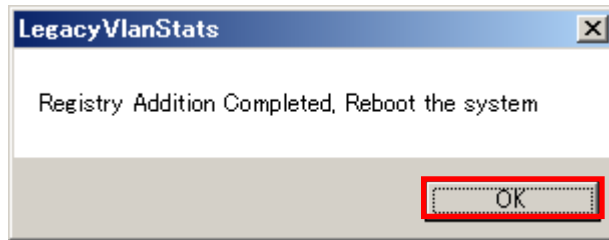
NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

3. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Important

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using the EXPRESSBUILDER DVD:
 - <Windows Server 2008 64-bit Edition>
Optical disk drive letter: \020\win\winnt\ws2008x64\lan
 - <Windows Server 2008 32-bit Edition>
Optical disk drive letter: \020\win\winnt\ws2008\lan
 - If the Starter Pack was installed from the Internal Flash Memory:
 - <Windows Server 2008 64-bit Edition>
System drive letter: \StartPKG\ws2008x64\lan
 - <Windows Server 2008 32-bit Edition>
System drive letter: \StartPKG\ws2008\lan
5. When the following message appears, click [OK].



6. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

4.5.4 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when the Starter Pack is installed from EXPRESSBUILDER.

If you completed Setup with EXPRESSBUILDER, then the graphics accelerator driver has been automatically installed.

Tips

The graphics accelerator driver is only enabled in Full installations. Standard VGA is used in the case of Server Core installation.

To reinstall drivers separately, complete the following steps.

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. From the **Start** menu, point to **All programs, Accessories**, and then select **Explorer**.
3. Double-click the **install.bat** icon in the following folder.

When using the EXPRESSBUILDER DVD:

- Windows Server 2008 64-bit Edition
optical disk drive letter: \020\win\winnt\ws2008x64\video
- Windows Server 2008 32-bit Edition
optical disk drive letter: \020\win\winnt\ws2008\video

If the Starter Pack was installed from the Internal Flash Memory:

- Windows Server 2008 64-bit Edition
system drive letter: \StartPKG\ws2008x64\video
- Windows Server 2008 32-bit Edition
system drive letter: \StartPKG\ws2008\video

Continue installation according to the onscreen messages.

You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.

4. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Graphic accelerator driver installation is now complete.

4.5.5 When using a SCSI controller (N8103-75/107)

The driver for SCSI controller N8103-75/107 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

4.5.6 When using a SAS controller (N8103-104A/142)

The driver for SAS controller N8103-104A/142 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

4.5.7 When using a RAID Controller (N8103-135)

The driver for RAID Controller N8103-135 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

4.5.8 When using a Fibre Channel controller (N8190-127/131/153/154)

The driver for Fibre Channel controller N8190-127/131/153/154 is automatically installed by Windows Plug-and-Play. You do not need to install it manually.

4.6 Specifying PAE Option

If the server can mount a memory of more than 4 GB in a 32-bit system, specify the PAE option settings to use that memory.

Important The PAE option is not supported by Windows Server 2008 Standard.

For Windows Server 2008, the PAE option can be specified by using the Bcdedit.exe file. Follow the procedure below to specify the PAE option.

1. Select **Run** from the **Start** menu.
2. Enter cmd.exe in the **Open** text box, and then click [OK] to start the command prompt.
3. Execute the following command at the command prompt:
bcdedit /set pae forceenable
4. Restart the system.
The above setting is applied after restart.
5. Execute the following command at the command prompt:
bcdedit
Make sure that pae ForceEnable is added to **Windows Boot Loader**.

Specification of the PAE option settings is now complete.
For details about Bcdedit.exe, refer to the following:

Boot Configuration Data Editor Frequently Asked Questions

[http://technet.microsoft.com/en-us/library/cc721886\(ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc721886(ws.10).aspx)

4.7 Installing the Bundled Software

The supplied EXPRESSBUILDER DVD contains the server monitoring software NEC ESMPRO Agent and system management software NEC ESMPRO Manager.

You can install NEC ESMPRO Agent automatically by performing Setup with EXPRESSBUILDER.

Open the Programs or Control Panel window from the **Start** menu, and make sure that the folders for the utilities you have installed are contained. If you did not install them at the time of Setup with EXPRESSBUILDER, refer to *Chapter 2 Installing the Bundled Software* to install the software separately.

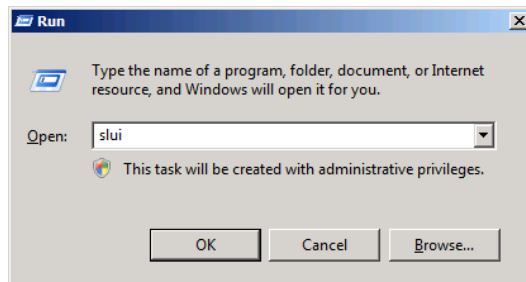
4.8 License Authentication

To use Windows Server 2008, confirm whether the license has been authenticated, and if it has not, perform the license authentication procedure.

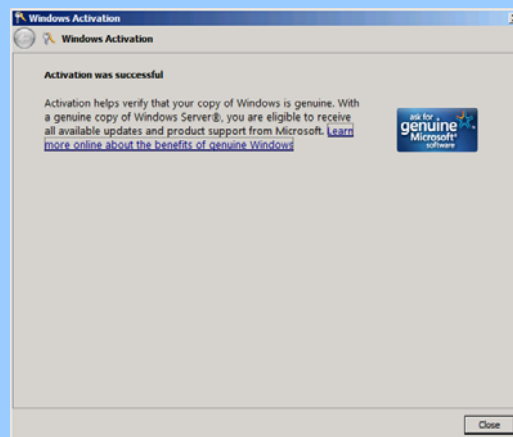
The following describes the license authentication procedure.

(1) For Full installations

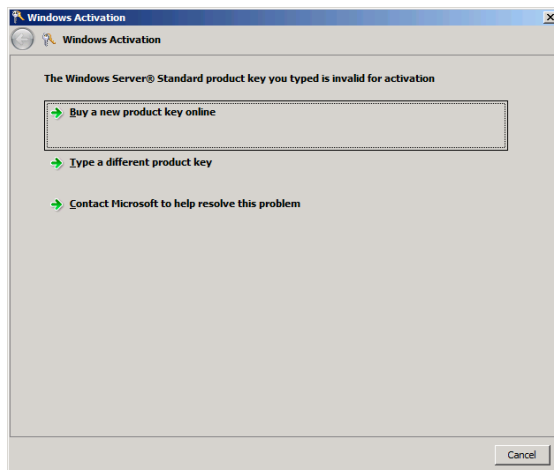
1. Select **Run** from the **Start** menu.
Enter the following, and then press the <Enter> key.
slui



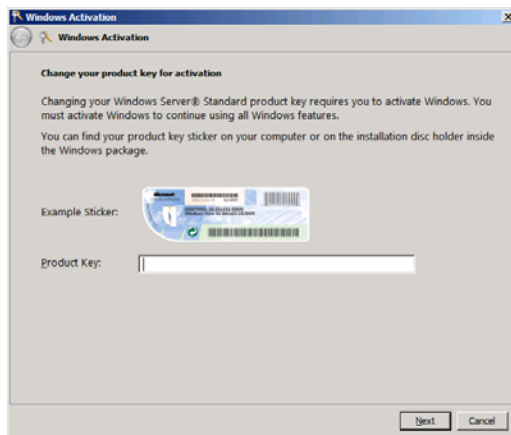
Important If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [Close] to exit.



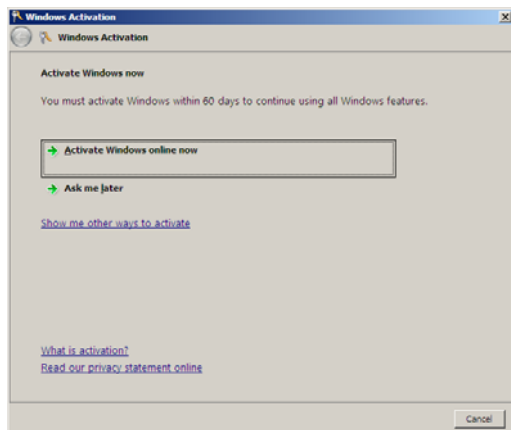
2. For installation from the backup DVD, replace the product key.
When the following window appears, click **Change product key**.



3. When the following window appears, enter the product key found on the COA label, and then click [Next].



4. Follow the instructions in the following message to start the license authentication process.



Windows activation is now complete.

(2) For Server Core installations

1. At the command prompt, enter the following, and then press the <Enter> key.
slmgr -dli

```

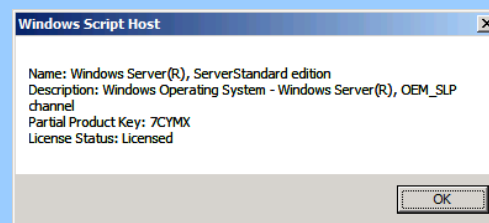
C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation.

C:\Users\Administrator>slmgr -dli

```

Important

If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.



2. For installation from the backup DVD, replace the product key.

At the command prompt, enter the following, and then press the <Enter> key. Set the product key found on the COA label in *PID*.

slmgr -ipk *PID*

```

C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>slmgr -ipk XXXXX-XXXXX-XXXXX-XXXXX-XXXXX_

```

3. Obtain an installation ID for Windows activation.

At the command prompt, enter the following, and then press the <Enter> key.

slmgr -dti

```

C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>slmgr -dti_

```

4. Reference %systemroot%\system32\slui\phone.inf for the telephone number of the license authentication customer service.
5. Call the above number, inform the representative of the installation ID which you obtained in step 3, and receive a confirmation ID.
6. Type the confirmation ID you received in step 5.

At the command prompt, enter the following, and then press the <Enter> key. *CID* is the confirmation ID that you received from customer service.

slmgr -atp *CID*

```

C:\> Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>slmgr -atp XXXXX-XXXXX-XXXXX-XXXXX-XXXXX_

```

Windows activation is now complete.

4.9 Installation When Multiple Logical Drives Exist

Before starting reinstallation, backup data for future use in case of data loss.

(1) Installation process

- Setup with EXPRESSBUILDER

Refer to *Chapter 1 (4.2 Setup with EXPRESSBUILDER)*, and proceed with setup.

Important

The operating system will be installed on the first detected Hard Disk Drive or logical disk drive.

- Setup with OS standard installer

1. Refer to *Chapter 1 (4.3 Setup with OS Standard Installer)*, and start setup.
2. When the following message appears, select the partition to which you want to set up the operating system.

Select the location to which Windows will be installed

Important

- When you install a Windows system into an environment where multiple Hard Disk Drives are connected, these drives are displayed as a destination to install the system during setup.

At this time, the order and numbers of the disks displayed on the screen might not match those of the Hard Disk Drives connected to the Hard Disk Drive bay.

Distinguish between the Hard Disk Drives by viewing the Hard Disk Drive capacity and partition size displayed on the screen, and then select a drive to install the Windows system.

Selecting an improper drive might cause an unintentional corruption of the existing data. Be careful when selecting a Hard Disk Drive on which to install the system.

For details, refer to the following Microsoft website:

<http://support.microsoft.com/kb/937251/en-us>

- You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.

3. Refer to *Chapter 1 (4.3 Setup with OS Standard Installer)*, and proceed to setup Windows with OS standard installer and the instructions.

The installation process is now complete.

Tips

The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

The steps below cannot change drive letter assignments for the system volume or boot volume. Be careful when assigning these.

1. From the **Start** menu, right-click **Computer** and then select **Management**. Next, launch **Server Manager**.
2. From the window on the left, select **Storage** and then **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

Some programs are dependent on drive letters, and may not run properly. Continue?

8. Close the Server Manager.

5. Setting Up Windows Server 2003 R2 x64 Edition

Set up Windows Server 2003 R2 x64 Edition and the system.

5.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB: Confirm during Setup with EXPRESSBUILDER

OS: Confirm during Setup with OS standard installer

(1/3)

Setup		Items to confirm	
–	OS	Windows family	The following editions of the Windows Server 2003 family may be installed. - Windows Server 2003 R2 Standard x64 Edition - Windows Server 2003 R2 Enterprise x64 Edition* * Only supported by R110d-1E and E110d-1 Inquiries about installing other editions may be made at your sales dealer or maintenance service company. Important Setup with EXPRESSBUILDER cannot be used.
–	OS	License authentication	If Windows Server 2003 R2 x64 Edition is installed from a backup CD, the license is already activated. If Windows Server 2003 R2 x64 Edition is installed from an OS CD instead of a backup CD, a product key is required for license authentication. At this time, the product key must be the same as that indicated on the COA label of Windows Server 2003 R2 x64 Edition. For details, refer to <i>Chapter 1 (5.6 License Authentication)</i>. Important • Activate within 30 days following installation. The system might be locked if 30 days have passed without activation.
–	OS	Hardware configuration warnings	When installing Windows Server 2003 R2 x64 Edition using the OS standard installer, the following hardware configurations require special procedures.
–	OS		When using the OEM drivers, be sure to change the boot order of the Flash FDD on the BIOS setup window as follows: Select Boot, Floppy Drive BBS priorities, Boot Option #1, and then specify the Flash FDD used. Note Change as instructed in <i>Chapter 1 (5.2.3 Setup procedure)</i>.
–	OS		Connecting MO devices Installing Windows while an MO device is connected can result in installation failure. Remove the MO device, and then start installation from the beginning.
–	OS		DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.

(2/3)

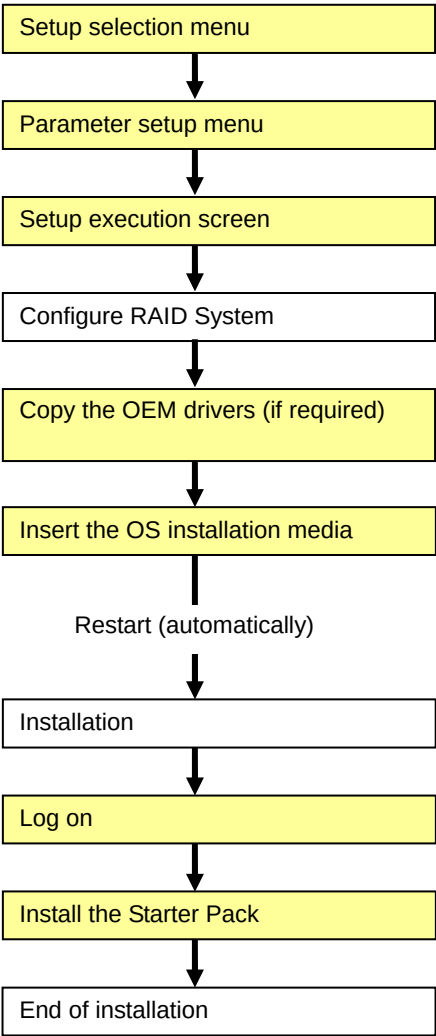
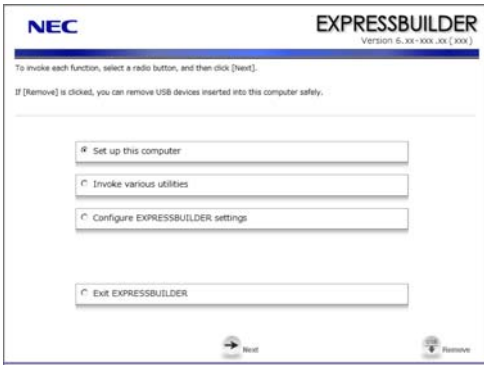
Setup		Items to confirm	
–	OS	Hardware configuration warnings	Connecting to multiple Hard Disk Drives (Logical Drives) For details on installing operating systems to a system in which multiple Logical Drives exist, refer to <i>Chapter 1 (5.7 Installation When Multiple Logical Drives Exist)</i>.
–	OS		- Reinstallation to a dynamic disk: When installing the OS on a Hard Disk Drive with multiple partitions that was upgraded to a dynamic drive and you wish to retain the existing partition configuration and data areas, note the following:  Data area (partition to be retained) - Select the partition on which the OS was previously installed. - Select Leave the current file system intact (no change) for the OS partition format.
–	OS	Application of Service Packs	Before applying a Service Pack, make sure that Windows Server 2003 R2 Edition DISC 2 has been installed.
–	OS		Use the Starter Pack when you apply a Service Pack from the Service Pack 2 CD-ROM.
–	OS		If you used OS installation media including Service Pack 2 for installation, you do not have to install Service Pack 2 again.
–	OS	System partition size	The system partition size can be calculated by using the following formula. Size required to install the OS + paging file size + dump file size + application size Size required to install the OS = 4,100 MB (Windows Server 2003 R2 x64 Edition with Service Pack 2) = 5,900 MB (Windows Server 2003 R2 x64 Edition + Service Pack 2 CD-ROM) Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 1 MB Application size = as required by the application For example, if the installed memory size is 1 GB (1,024 MB) and Full installation is selected, the partition size is calculated as follows: 4,100 MB + (1,024 MB × 1.5) + 1,024 MB + 1 MB + application size = 6,661 MB + application size Important - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information. - Regardless of the sizes of internal memory and write debug information, the maximum size of the dump file is "size of internal memory + 1 MB". - When installing other applications or other items, add the amount of space needed by the application to the partition.

(3/3)

Setup		Items to confirm	
–	OS	System partition size	If the partition size for installing the system is smaller than the size required for installation + paging file size, expand the partition size or add another disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the following steps. 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Write the debug information of the dump file onto another disk by referring to 7. <i>Setup for Solving Problems</i>. If there is not enough disk space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another disk for the dump file.
–	OS	Setup with OS standard installer	The Hardware Installation/Software Installation dialog box might appear several times during installation, but it does not affect system installation. Click [Yes] on such dialog boxes, and continue installation according to the displayed messages.

5.2 Setup with OS Standard Installer

5.2.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

5.2.2 Requirements for Setup with OS standard installer

Prepare the following disks and instruction manuals before starting setup.

- Operating system installation media (prepare one of the following)
 - Backup CD-ROM Windows Server 2003 R2, Standard x64 Edition DISC 1 (hereafter referred to as *backup CD-ROM DISC 1*), and Microsoft Windows Server 2003 R2 Standard x64 Edition DISC 2 (x2) (hereafter referred to as *Windows Server 2003 R2 Edition x64 DISC 2*)
 - Backup CD-ROM Windows Server 2003 R2, Enterprise x64 Edition DISC 1 (hereafter referred to as *backup CD-ROM DISC 1*), and Microsoft Windows Server 2003 R2, Enterprise x64 Edition DISC 2 (x2) (hereafter referred to as *Windows Server 2003 R2 x64 Edition DISC 2*)
 - Microsoft Windows Server 2003 R2, Standard x64 Edition DISC 1 (hereafter referred to as *Windows Server 2003 R2 x64 Edition DISC 1*), and Microsoft Windows Server 2003 R2 Standard x64 Edition DISC 2 (x2)
 - Microsoft Windows Server 2003 R2, Enterprise x64 Edition DISC 1 (hereafter referred to as *Windows Server 2003 R2 x64 Edition DISC 1*), and Microsoft Windows Server 2003 R2 Enterprise x64 Edition DISC 2 (x2)
- Windows Server 2003 Editions Service Pack 2(CD-ROM)
- First Steps Guide
- EXPRESSBUILDER DVD
 - If you purchased optional Internal Flash Memory, you can use it during installation.
- Prepare if needed:
 - OEM drivers (Windows Server 2003 x64 Edition)

Important For precautions about the Service Pack, refer to *Application of Service Packs in Chapter 1 (5.1 Before Starting Setup)*.

Note OEM drivers are necessary if a RAID Controller or optional board is connected. Use a Flash FDD as the removable media to create OEM drivers.

5.2.3 Setup procedure

This section describes the procedure for installing Windows Server 2003 R2 x64 Edition using the OS standard installer.

- Important**
- Before starting setup, refer to *Chapter 1 (5.1 Before Starting Setup)*. It describes how to make partitions.
 - The procedure differs depending on the media on which EXPRESSBUILDER is stored.
 - The installation procedure depends on the environment. Check your environment before starting installation.

1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to start EXPRESSBUILDER.

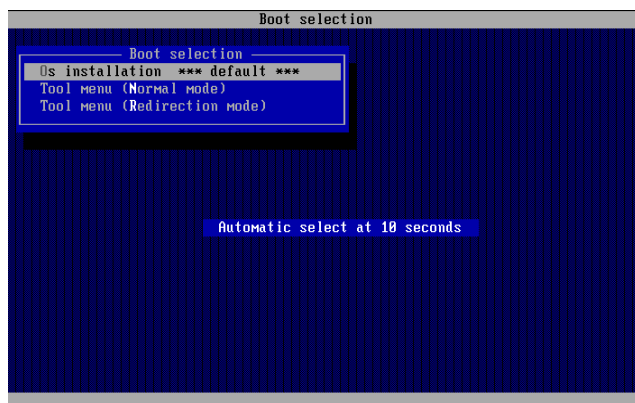
Note Be sure to disconnect removable media before starting EXPRESSBUILDER.

When using the EXPRESSBUILDER DVD:

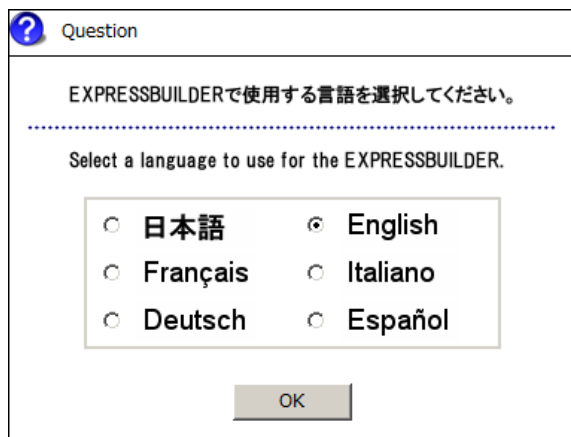
- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again. EXPRESSBUILDER starts.

When using the Internal Flash Memory:

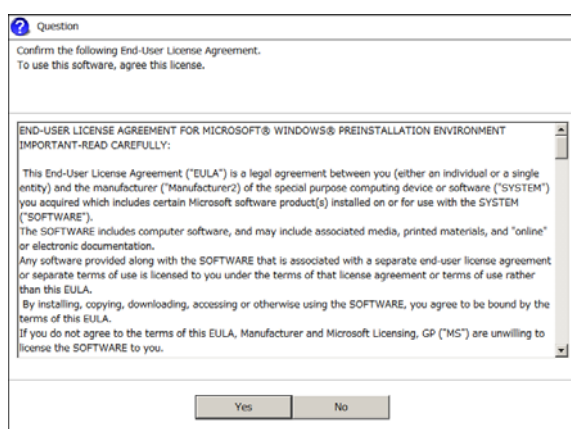
- (1) When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key. EXPRESSBUILDER starts.
3. When the following message appears, select **Os installation *** default *****. You will automatically advance to step 4, with no need for further input.



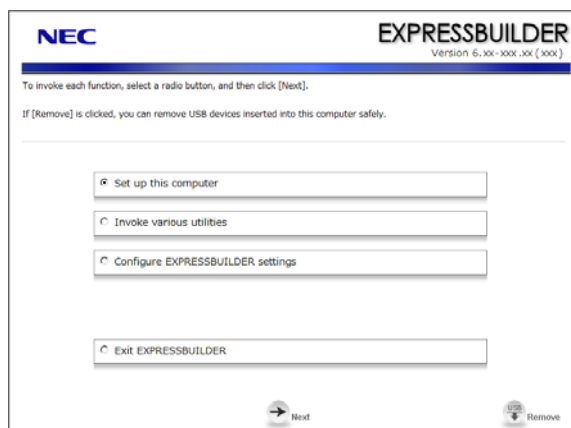
4. Select **English** on the language selection window, and then click [OK].



5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to specify the parameters.



Note

When setting up again, parameter input via the wizard can be omitted by loading the saved parameter file.

When not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

When using a parameter file:

Select **Load a parameter file**, and then click [Next].

Load the desired parameter file according to the onscreen instructions.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (2) *Executing setup-* エラー! 参照元が見つかりません。 5.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard

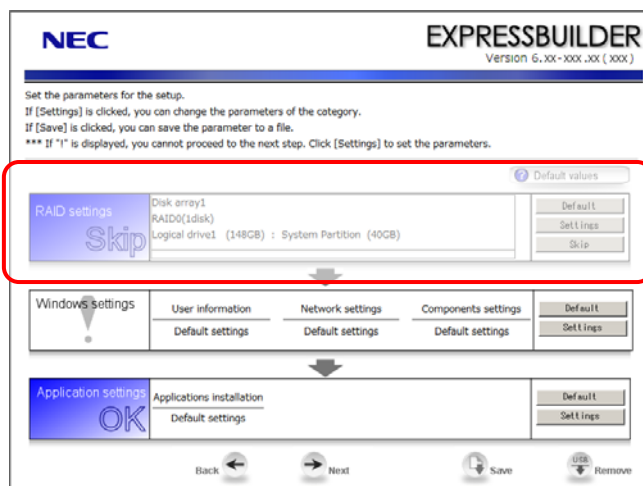
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to Chapter 2 (4. RAID System Configuration) in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard. You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

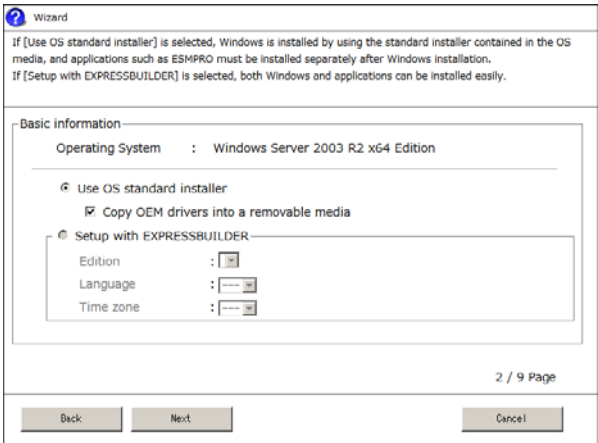
When skipping the creation of a new Logical Drive

1. Click [Skip] in **RAID settings**.

Tips

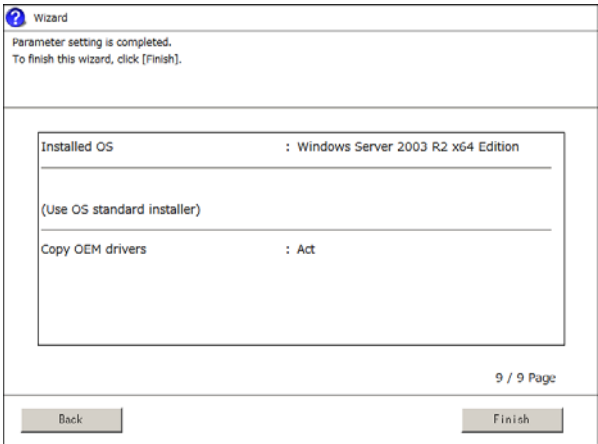
Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the existing configurations without modifying them.

- 3. Specify the Windows basic settings
The basic information window appears. Select **Use OS standard installer**, and then click [Next].
If copying the OEM drivers to the removable media, select **Copy OEM drivers into a removable media**.

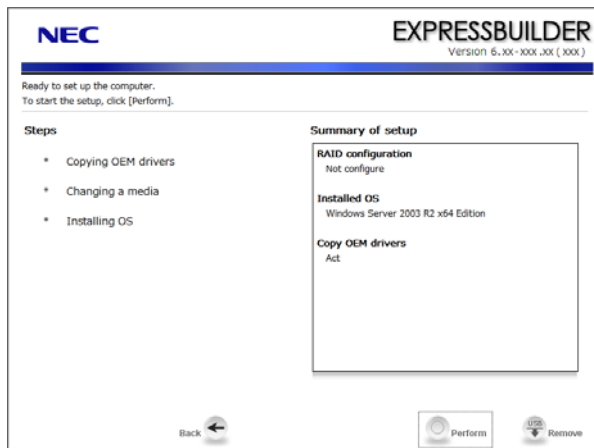


Important If you copied the OEM drivers to a Flash FDD, format it to FAT16.

- 4. After clicking [Finish] on the confirmation window, click [Next] in the parameter setup menu.



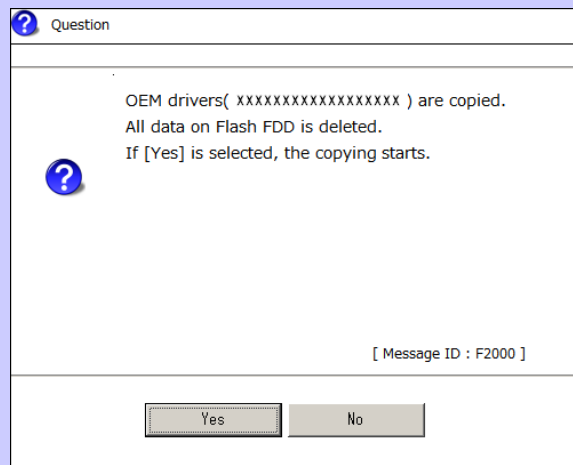
- From the setup execution window, click [Perform].
The server automatically restarts.

**Note**

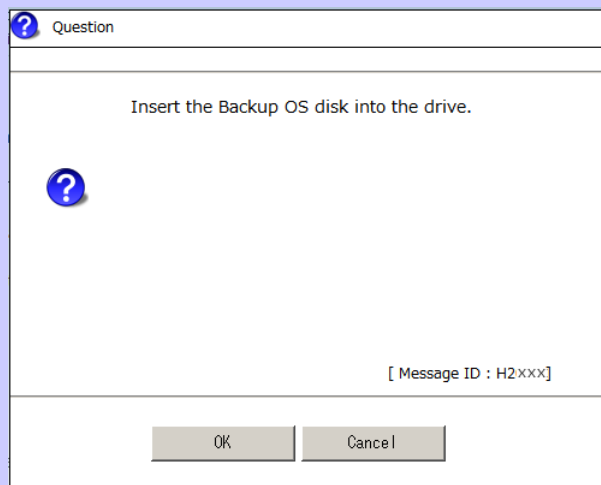
- If you select the **Copy OEM drivers into a removable media** check box, insert a Flash FDD into the server and then click [Perform].
- Do not remove the media while copying OEM drivers.
- When using the OEM drivers, after following step 5 to restart, change the boot order of the Flash FDD from the BIOS settings window. Select **Boot, Floppy Drive BBS priorities, Boot Option #1**, and then specify the Flash FDD used.

Tips

- If the **Copy OEM drivers to a removable media** checkbox is selected in step 3, the following window appears. Follow the onscreen instructions and continue the operation.



- When the following message appears, insert the OS installation media, and then click [OK].



6. The system starts up from the CD-ROM, and the Express5800 server runs.

**Important**

If a bootable operating system is already installed on the Hard Disk Drive, press the <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen. This step is unnecessary if no bootable operating system exists.

If the Windows Setup window does not appear, the <Enter> key was not pressed correctly. Turn the system power on and start again from the beginning.

7. If a RAID Controller or optional Controller is used, press the <F6> key while either of the following messages is displayed.

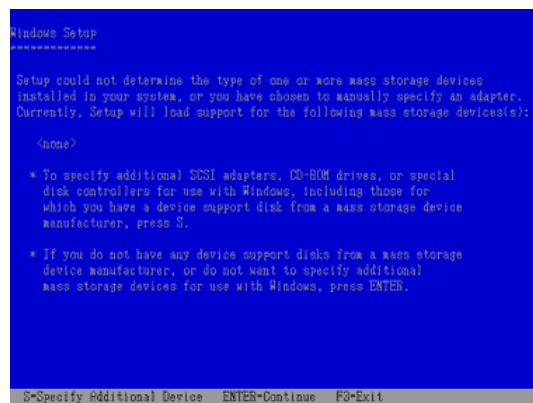
"Setup is inspecting your computer's hardware configuration" (on the top of the screen)

"Press F6 if you need to install a third party SCSI or RAID driver..." (on the bottom of the screen)

Tips

- You do not have to press the <F6> key if no RAID Controller or optional Controller is used. Go to step 14.
- Note that nothing changes on the screen even when the <F6> key is pressed.
- If the OEM drivers list is not displayed, check the boot order of the Flash FDD on the BIOS setup window.

8. The following message appears.



When using a RAID Controller: Press the <S> key and go to step 9.

When not using a RAID Controller: Go to step 10.

9. Select one of the following from the driver list, and then press the <Enter> key.

- When using an onboard RAID Controller (LSI Embedded MegaRAID):
[LSI Embedded MegaRAID (Windows XP/2003 64-bit)]
- When using an N8103-129/130 RAID Controller:
[LSI MegaRAID SAS RAID Controller Driver (Server 2003 for x64)]
- When using an N8103-G128/128/134 RAID Controller:
[Promise SuperTrak EX Family Controller - 64bits platform]

The window shown in step 8 appears.

10. Check the connection status of other options.

When no optional Controller is used: Press the <Enter> key and go to step 14.

When N8103-107 is connected: Press the <S> key on the window in step 8, and go to step 11.

When no N8103-107 is connected: Go to step 12.

11. Select **Adaptec Ultra320 SCSI Cards (Windows 64-bit)**, and then press the <Enter> key.

Important

If the following message appears, press the <S> key to proceed.

The driver you provided seems to be newer than the Windows default driver.

Windows already has a driver that you can use for "Adaptec Ultra 320 SCSI Cards (Windows 64-bit)"

Unless the device manufacturer prefers that you use the driver on the floppy disk, you should use the driver in Windows.

The window shown in step 8 appears. Go to step 12.

12. Check the connection status of other options.

When N8103-104A is connected: Press the <S> key on the window in step 8, and go to step 13.

When no N8103-104A is connected: Press the <Enter> key and go to step 14.

13. Select **LSI Fusion-MPT SAS Driver (Server 2003 x64)**, and then press the <Enter> key.

The window shown in step 8 appears. Press the <Enter> key and go to step 14.

14. If the following message appears, press the <Enter> key to start Windows setup.

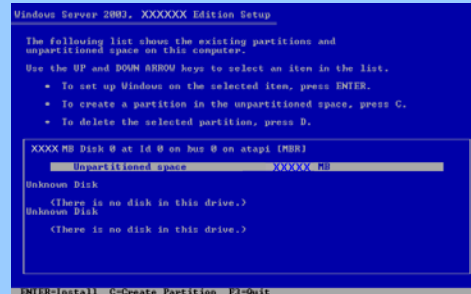
Windows Server 2003, XXXXXXXXXX Edition Setup

Welcome to Setup.

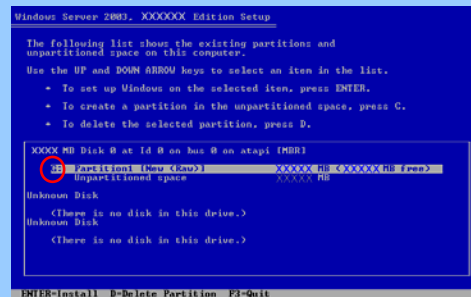
Important

- During setup, the dialog box to specify the size of the partition on which Windows Server 2003 R2 x64 Edition is installed. Consider the partition size if you create a new partition during installation.

1. The window to specify the partition size appears.
(* The windows below are examples. The actual display differs depending on the system configuration.)



2. Create a partition on which Windows is installed.
When creating a new partition, the created partition is displayed as G:.

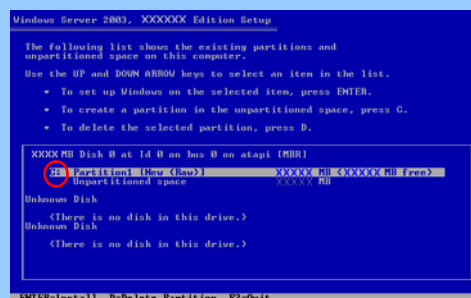


3. Delete the created partition G:, and create a new partition by using the following procedure.

The operation might be different according to the installed language. Delete it carefully according to the instructions on the screen.

- (1) Select the created partition G:, and then press the <D> key.
- (2) Read the displayed content, and then press the <L> key.

4. Create a partition on which Windows is installed again.
Partition creation is complete if the created partition is displayed as C:, as shown below:



- When installing Windows Server 2003 R2 Edition to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

Tips

The system automatically restarts after copying files.

You do not have to remove the Flash FDD or CD-ROM.

Do not remove the CD-ROM if you do not remove the Flash FDD.

After this, follow the onscreen instructions to continue setup.

For details, refer to "First Step Guide" supplied with the OS.

Tips

When a driver is selected from the drive list, a message indicating that the driver has not passed logo testing might appear, but this does not affect the setup. Click [OK] to continue setup.

15. The system automatically restarts after installing Windows Server 2003 R2 x64 Edition.

16. The Windows Setup window appears after login.

**Important**

The Windows Setup window might not appear at this time. In this case, be sure to install the Windows Server 2003 R2 x64 Edition DISC 2 according to the following steps.

17. Insert the Windows Server 2003 R2 x64 Edition DISC 2 into the optical disk drive.

Check the settings, and then click [OK].

18. When the installation procedure completes, remove the Windows Server 2003 R2 x64 Edition DISC 2 from the optical disk drive and then restart the system.

19. Install the Starter Pack by referring to *Chapter 1 (5.3 Installing the Starter Pack (Service Pack))*.

20. Install drivers and specify detailed settings by referring to *Chapter 1 (5.4 Setting Up Device Drivers)*.

21. Execute setup by following the instructions described in *Chapter 1 (7. Setup for Solving Problems)*.

Setup with OS standard installer is now complete.

5.3 Installing the Starter Pack (Service Pack)

After installing Windows Server 2003 R2 x64 Edition, follow the steps below to install the Starter Pack and Windows x64 hotfix: KB921411. The Starter Pack installs all drivers required by the Express5800 Series.

Important

- Also install the Starter Pack and Windows x64 hotfix: KB921411 in the following cases:
 - The system configurations have changed (when internal option devices have been added or removed)
If a dialog box prompting you to restart appears after changing system configurations, click [No] and then update the system.
 - If the system was restored using a restore process
 - If a system has been restored using the backup tool
- Be sure to install Service Pack 2 (CD-ROM) from the Starter Pack.
- If you used a Windows Server 2003 CD-ROM including Service Pack 2 for installation, you do not have to install Service Pack 2 again.

Note

Before applying a Service Pack, make sure that **Windows Server 2003 R2** is displayed in the system properties window.

Tips

If you used the Windows Server 2003 Editions CD-ROM including Service Pack 2 for installation, you do not have to install Windows x64 hotfix: KB921411 again.

Install the Starter Pack after applying Windows x64 hotfix: KB921411.

If Windows Server 2003 R2 x64 Edition is operated in the following environment, the system might halt while returning from the hibernation state:

- The system is in a multi-processor configuration
- Service Pack 2 has not been installed

To set hibernation, apply Service Pack 2 or KB902839 hotfix*.

* KB902839 can be obtained from the following website:

<http://support.microsoft.com/kb/902839/en-us>

5.3.1 Procedures for applying the Starter Pack and Windows x64 hotfix (KB) 921411

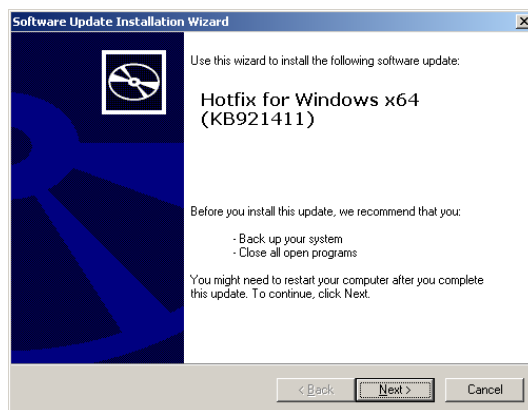
(1) When using the EXPRESSBUILDER DVD

1. Log on to the system with a user account that has administrative privileges (such as an administrator).
2. Insert the EXPRESSBUILDER DVD into the optical disk drive.

Tips

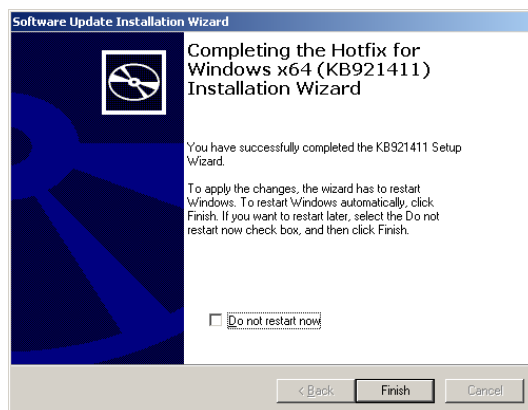
If you are installing with the Windows Server 2003 CD-ROM, which contains Service Pack 2, proceed to step 8.

3. Select **Run** from the **Start** menu, and then execute the following command:
Optical disk drive letter:\020\win\winnt\w2k3amd\qfe\enu\kb921411.exe
4. When the following message appears, click [Next].



After this, continue installation according to the onscreen messages.

5. When the following message appears, you must click [Finish] to restart the system.

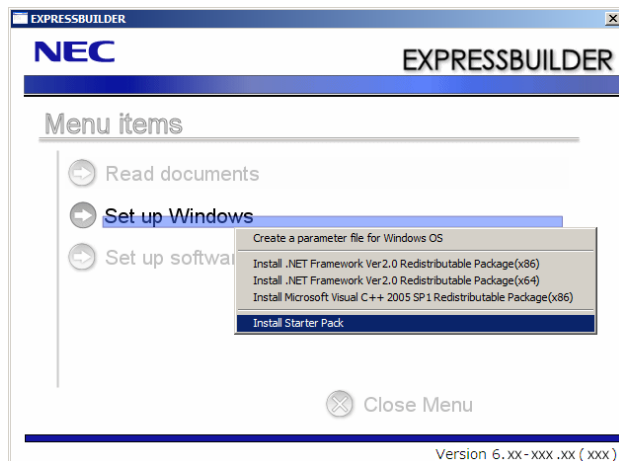


Note

If the EXPRESSBUILDER DVD is inserted, remove it immediately.

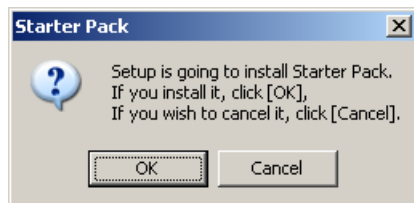
6. Log on to the system with a user account that has administrative privileges (such as an administrator).
7. Insert the EXPRESSBUILDER DVD into the optical disk drive.

8. When the following window appears, click **Set up Windows** to open the short-cut menu, and then select **Install Starter Pack**.

**Tips**

The short-cut menu also appears by right-clicking on the menu window.

9. Read the setup message when it appears, and then click [OK].

**Tips**

Wait until the message appears without attempting any further operation. This may take several minutes.

Starter Pack installation starts.

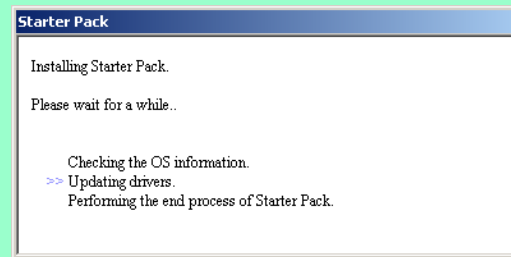
Important

The dialog box shown below might appear while installing the Starter Pack, but this does not affect the installation. This dialog box disappears after several seconds. Do not click [Cancel].

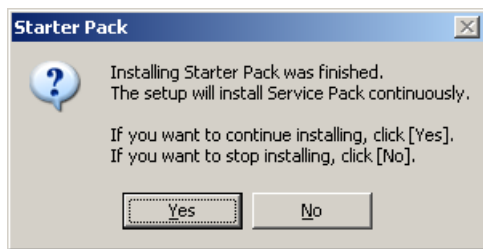


Note

The following progress message will appear while the Starter Pack is being installed. Wait a moment until the update is complete.



10. When the following message appears, Starter Pack installation is complete.



To apply the Service Pack, click [Yes] and go to step 6.

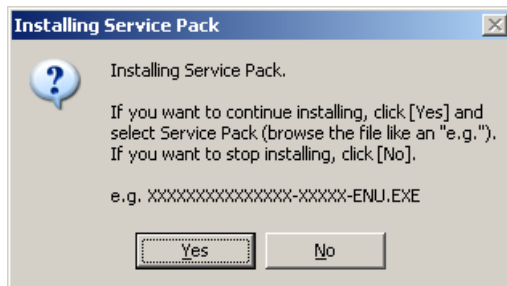
To not apply the Service Pack, click [No] and go to step 8.

Important

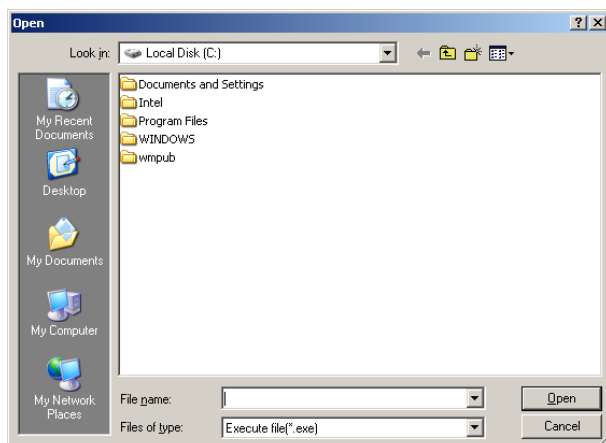
If you are using OS installation media that does not contain Service Pack 2, click [Yes]. You must apply Service Pack 2.

If the Starter Pack is being reinstalled in an environment where Service Pack 2 has already been installed, you do not need to reinstall Service Pack 2.

11. When the following message appears, click [Yes].



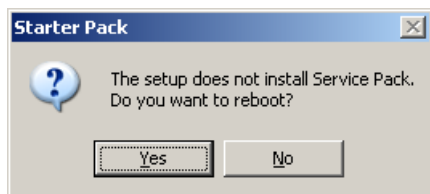
12. When the following dialog box appears, specify the Service Pack to apply and then click [Open].

**Tips**

- If you use a Service Pack CD-ROM, when the dialog box above appears, remove the EXPRESSBUILDER DVD from the optical disk drive and then insert the Service Pack CD-ROM.
- The extension of the Service Pack applicable to the Starter Pack is *.exe or *.msu. No other Service Pack files can be installed.

Installation of the specified Service Pack starts. When the Service Pack installation completion window appears, restart the system.

13. When the following message prompts you to restart the computer, click [Yes].

**Note**

If the EXPRESSBUILDER DVD or Service Pack CD-ROM is in the optical disk drive, remove it immediately.

Installation of Starter Pack is now complete.

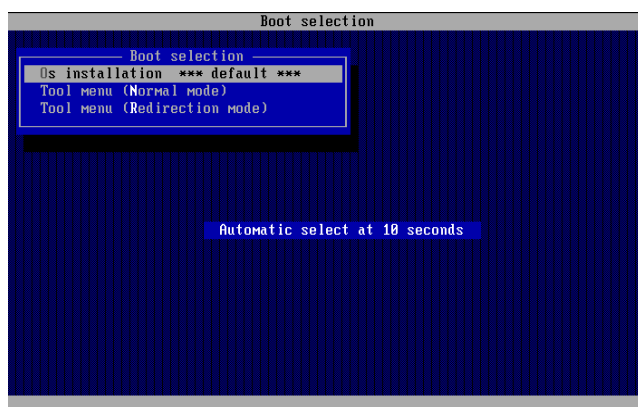
(2) When using Internal Flash Memory

1. After installing the operating system, the system will restart.
2. Use the Internal Flash Memory to run EXPRESSBUILDER.
When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key.

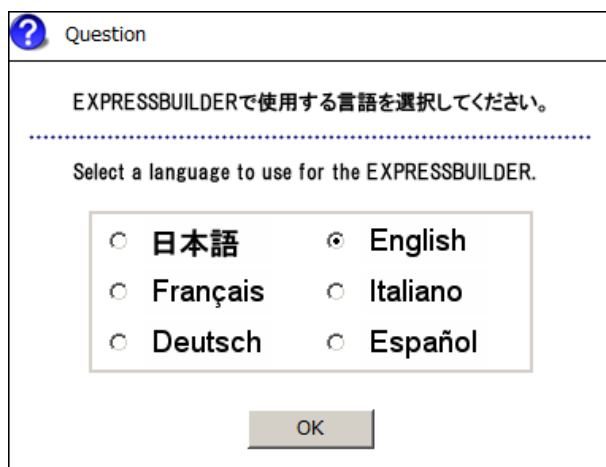
Note

- At this time, be sure to remove the DVD from the optical disk drive.
- If running from the OS, restart, and then press the <F3> key on the POST window.

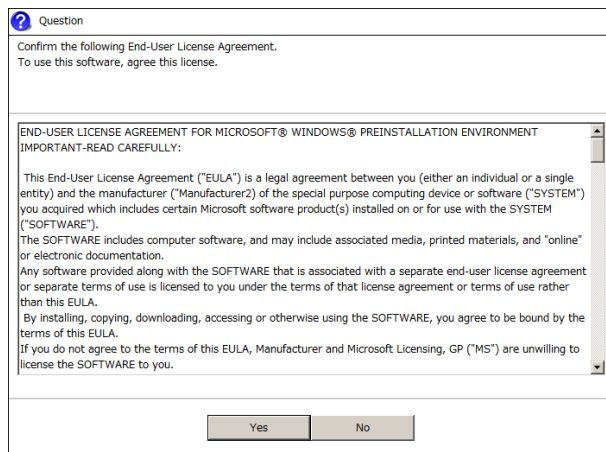
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to the next window, with no need for further input.



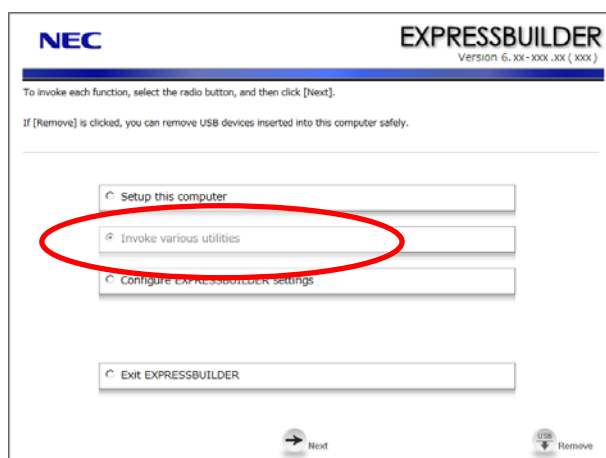
4. Select **English** on the language selection window, and then click [OK].



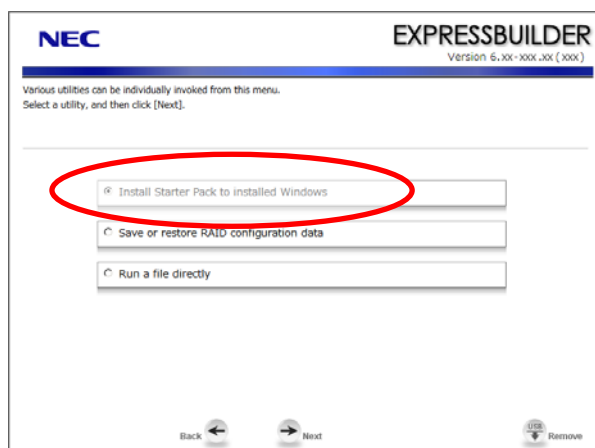
5. When the Windows PE software license agreement window appears, click [Yes].



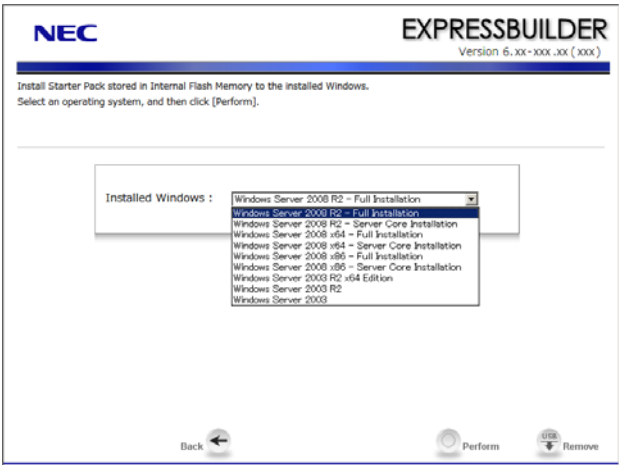
6. Select **Invoke various utilities** from the top menu, and then click [Next].



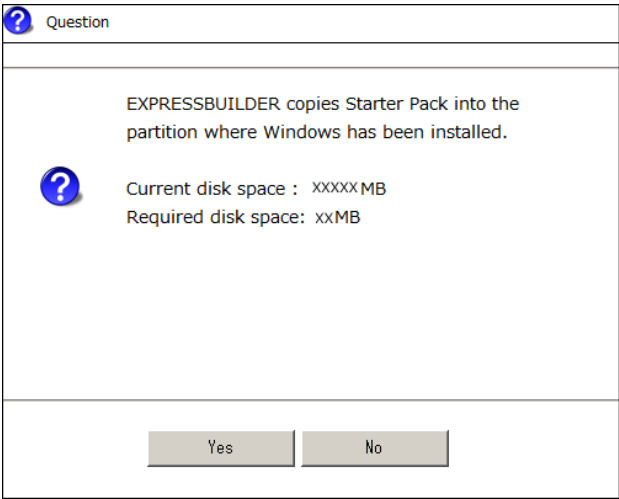
7. When the utility start menu appears, select **Install Starter Pack to installed Windows** and then click [Next].



8. When the window for selecting Windows to install the Starter Pack appears, select the installed Windows from the drop-down list, and then click [Perform].

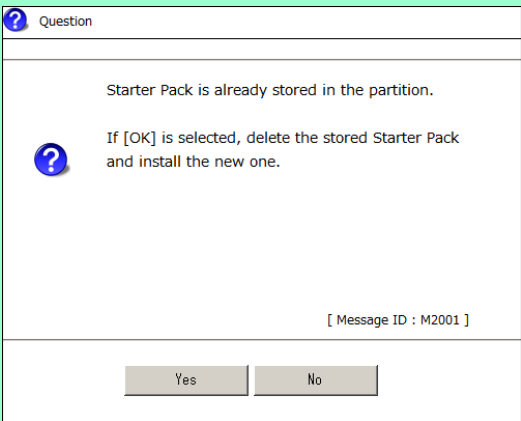


9. When the following confirmation window appears, read the content and then click [Yes].

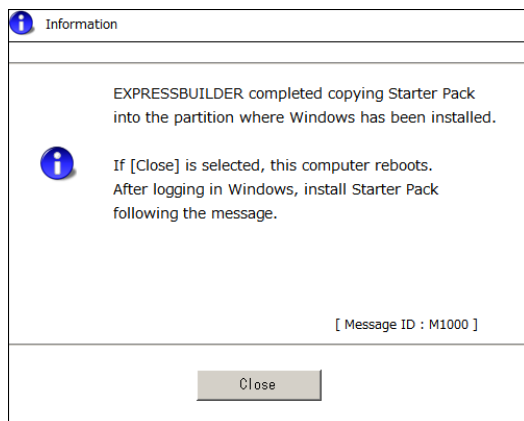


Note

The following window will appear if the Starter Pack is already installed. Read the message, and then click [Yes].



10. After copying the module, the following window appears. Click [Close].



The server then restarts.

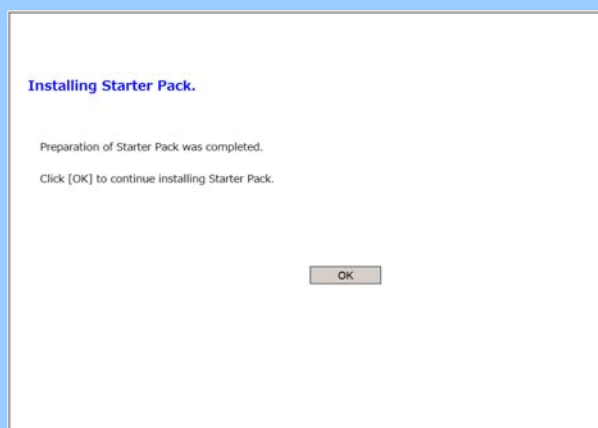
Note

You do not need to press the <F3> key at this time.

11. Log on to the system with a user account that has administrative privileges (such as an administrator).

Important

The screen as shown below appears when Windows starts. Do not click [OK] on this screen. Proceed to Step 12.



If you click [OK], "KB921411" will not be applied.

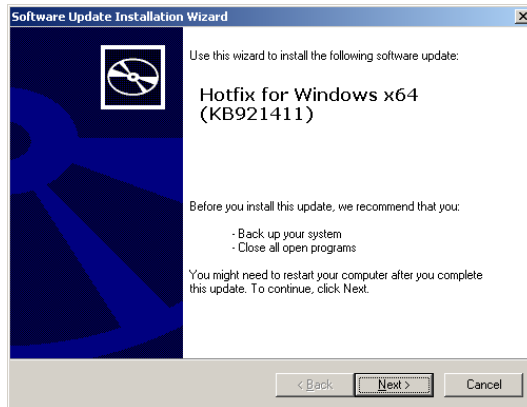
Go to Step 16, and click [Cancel] on the screen to install Starter Pack. Then, perform from Step 1 of (2) When using Internal Flash Memory.

Note

If you are installing with the Windows Server 2003 CD-ROM, which contains Service Pack 2, go to step 15.

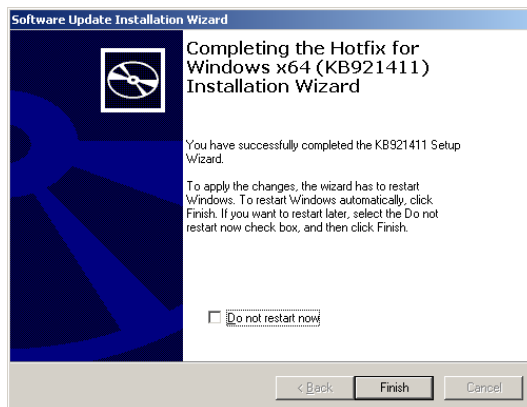
12. Select **Run** from the **Start** menu, and then execute the following command:
system drive letter:\StartPKG\w2k3amd\qfe\enu\kb921411.exe

13. When the following message appears, click [Next].

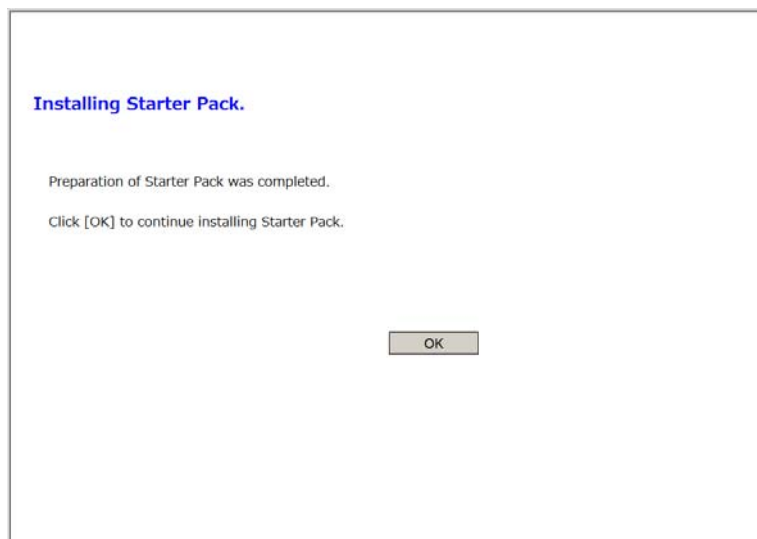


After this, continue installation according to the onscreen messages.

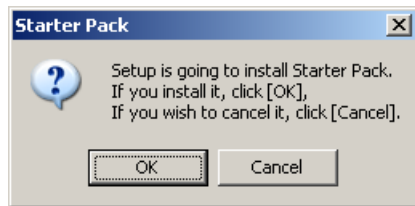
14. When the following message appears, you must click [Finish] to restart the system.



15. After Windows starts, the following window appears. Click [OK].



16. Read the message that appears, and then click [OK].

**Tips**

Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

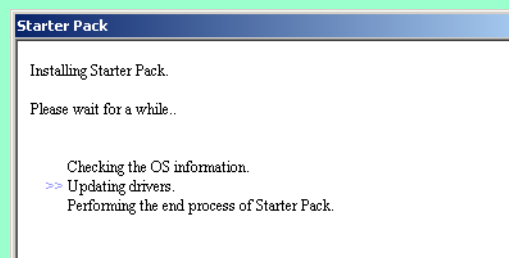
Installation of the Starter Pack starts.

Important

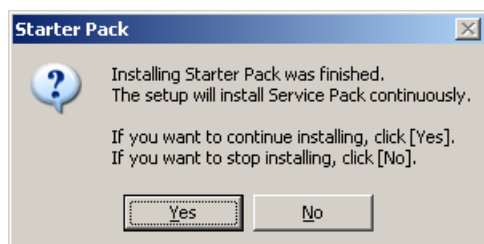
The dialog box shown below might appear while installing the Starter Pack, but this does not affect the installation. This dialog box disappears after several seconds. Do not click [Cancel].

**Note**

The following progress message appears while the Starter Pack is being installed. Wait a moment until the update is complete.



When the following message appears, Starter Pack installation is complete.



To apply the Service Pack, click [Yes] and go to step 17.

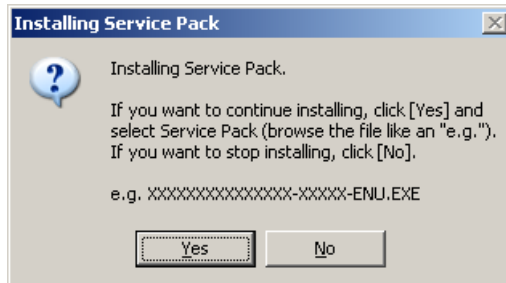
To not apply the Service Pack, click [No] and go to step 19.

Important

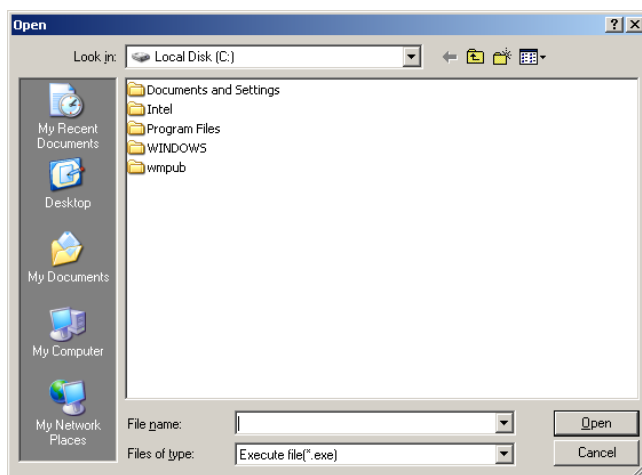
If you are using OS installation media that does not contain Service Pack 2, click [Yes]. You must apply Service Pack 2.

If the Starter Pack is being reinstalled in an environment where Service Pack 2 has already been installed, you do not need to reinstall Service Pack 2.

17. When the following message appears, click [Yes].



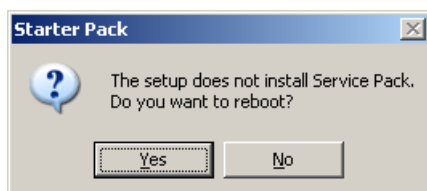
18. When the following dialog box appears, specify the Service Pack to install and then click [Open].

**Tips**

- When the window above appears, insert the Service Pack CD-ROM into the optical disk drive.
- The extension of the Service Pack applicable to the Starter Pack is *.exe or *.msu. No other Service Pack files can be installed.

Installation of the specified Service Pack starts. When the Service Pack installation completion window appears, restart the system.

19. When the following message prompts you to restart the system, click [Yes].



Installation of the Starter Pack is now complete.

5.3.2 Recovery process

If Windows x64 hotfix: KB921411 is not applied before installing the Starter Pack, “!” might be displayed on the USB root hub in the Device Manager window.

In this case, apply Windows x64 hotfix: KB921411 and install the Starter Pack according to the procedure below.

1. Start Windows Explorer, and then select **Folder Options** from the **Tool** menu.
2. In the **Advanced settings** area on the **View** tab, select the **Show hidden files and folders** option button for **Hidden files and folders** under **Files and Folders**.
3. Clear the following check boxes under **Files and Folders**, and then click [OK].

- Hide extensions for known file types
- Hide protected operating system files (recommended)

When the message “You have chosen to display protected operating system files...” appears, click [Yes].

4. Check the files.

Open the `drivers` folder under *System drive*: \WINDOWS\system32, and make sure that `usbhub.sys` and `usbport.sys` are stored in the folder.

If a file is missing, copy the target file(s) according to the procedure below.

- (1) Open the `dllcache` folder under *System drive*: \WINDOWS\system32.
- (2) Copy the `usbhub.sys` and/or `usbport.sys` to the `drivers` folder under *System drive*: \WINDOWS\system32.

5. Restart the system.
6. Refer to *Chapter 1 (5.3.1 Procedures for applying the Starter Pack and Windows x64 hotfix (KB) 921411)* to install the Starter Pack.
7. Restart the system.

The recovery process is now complete.

Note

If the system files and hidden files still do not display, select the check boxes that were cleared in step 3.

5.4 Setting Up Device Drivers

For details regarding the installation and setup of an optional device driver, refer to the manual supplied with the optional device.

5.4.1 Installing the LAN and BACS (teaming) drivers

(1) LAN and BACS drivers

If the OS standard installer is used for setup, install the Starter Pack to install the LAN and BACS driver.

Important

To use the BACS, Microsoft .NET Framework Version 2.0 must be installed. To install Microsoft .NET Framework 2.0, insert the EXPRESSBUILDER DVD to the optical disk drive, select *Setup Windows* and then *Install the .NET Framework Ver2.0 Redistributable Package(x64)* from the autorun menu.

Note

- To change the LAN or BACS driver settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

Optional LAN boards: N8104-134

If **!Ethernet Controller** is displayed under **Other devices** in the Device Manager window after an optional LAN board is added, you must install the driver using the following procedure:

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. Open the Device Manager window, and then double-click the **!Ethernet Controller** icon under **Other devices**.
The Ethernet Controller Properties dialog box appears.
3. Click [Update Driver...] on the **Driver** tab.
The Hardware Update Wizard window appears.
4. Select the **No, not this time** option button, and then click [Next].
5. Select the **Install from a list or specific location (Advanced)** option button, and then click [Next].

6. Select the **Search for the best driver in these locations** option button, select the **Include this location in the search** check box, and then enter the following path. Then, click [Next].

When using the EXPRESSBUILDER DVD

When applying the driver to **!Ethernet Controller** under **Other devices** in the Device Manager window:

Optical disk drive letter: \020\win\winnt\w2k3amd\lan\bcom\drvinst\06020401\w2k3_w2k8_64\b06bdrv

When applying the driver to **NDIS Client For Broadcom NetXtreme II GigE** under **Other devices** in the Device Manager window:

Optical disk drive letter: \020\win\winnt\w2k3amd\lan\bcom\drvinst\06020401\w2k3_w2k8_64\l4nd_w2k3

If the Starter Pack was installed from the Internal Flash Memory

When applying the driver to **!Ethernet Controller** under **Other devices** in the Device Manager window:

System drive letter: \StartPKG\w2k3amd\lan\bcom\drvinst\06020401\w2k3_w2k8_64\b06bdrv

When applying the driver to **NDIS Client For Broadcom NetXtreme II GigE** under **Other devices** in the Device Manager window:

System drive letter: \StartPKG\w2k3amd\lan\bcom\drvinst\06020401\w2k3_w2k8_64\l4nd_w2k3

Note

Be sure to clear the **Search removable media (floppy, CD-ROM...)** check box.

7. Click [Finish].
8. **NDIS Client For Broadcom NetXtreme II GigE** is displayed under **Other devices** in the Device Manager window. Double-click this icon to open the NDIS Client For Broadcom NetXtreme II GigE Properties dialog box.
9. Perform steps 3 to 7 again.
10. After applying the LAN driver to all N8104-134 network adapters, eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Driver installation is now complete.

Important

- After an additional N8104-134 is connected, **!Ethernet Controller** might not be displayed under **Other devices** in the Device Manager window. In that case, the LAN driver has been automatically installed. Confirm that the N8104-134 network adapter is displayed under **Network adapters** in the Device Manager window.
- After the N8104-134 LAN driver has been installed, the following devices might be displayed with "!" under **SCSI and RAID Controllers** in the Device Manager window. They can be deleted from the list by performing the procedure shown in *Chapter 1 (5.4.2 Setting up LAN drivers) – (2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)*.

! Broadcom BCM5709C NetXtreme II GigE iSCSI Adapter
! iSCSI Client For Broadcom NetXtreme II GigE

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration

Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:

[N8104-134] Broadcom BCM5709C NetXtreme II GigE (NDIS VBD Client) #xx*

* If there are adapters with the same name, a different identification number will be assigned to xx.

Important

The ID for N8104-134 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

5.4.2 Setting up LAN drivers

Important

About WOL

- WOL is supported by the standard network adapters only.
- The Change of WOL setting is not supported.
- WOL from a shutdown is only supported if the system is started using MagicPacket.
- WOL from hibernation is not supported.

Tips

MagicPacket refers to a packet dedicated to WOL.

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the Device Manager.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the **Advanced** tab, and then set the **Speed & Duplex** values to the same as those of the switching hub.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete. Proceed to set up WOL.

(2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)

If using N8104-134 with the server, TCP/iSCSI Offload Engine must be set to off.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. Broadcom Advanced Control Suite3 starts.
2. Select **Device Management** under **Explorer View**, and then **N8104-134 network adapter** from **System device (VBD)**.
3. Select the **Configurations** tab, and then expand **Resource Reservations**.
4. Clear the **iSCSI Offload Engine** and **TCP Offload Engine** check boxes (if selected) under **Pre-Allocated Resource**, and then click [Apply].

Tips

If **TCP Offload Engine** does not exist, proceed to the next step.

5. Complete steps 2 to 4 for each N8104-134 network adapter.
6. Restart the system.

TCP/iSCSI Offload Engine setup is now complete.

5.4.3 Setting up team/LiveLink

Important

- You must set up LiveLink when setting up a team. Teams that are not configured for LiveLink are not supported.
- When deleting the team, refer to *Chapter 1 (5.4.3 Setting up team/LiveLink) - (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and create it again after replacement.
- Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team

(1) Team types

The following team types are supported.

- Smart Load Balancing and Failover (without Standby Member)
All adapters that compose the team perform communication.
If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
Among the adapters that compose the team, primary adapters except the standby member perform communication.
If a communication failure occurs, the standby member continues the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and the standby adapter returns to the standby state.

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.

It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.

If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Important

You must set up LiveLink when you create a team.

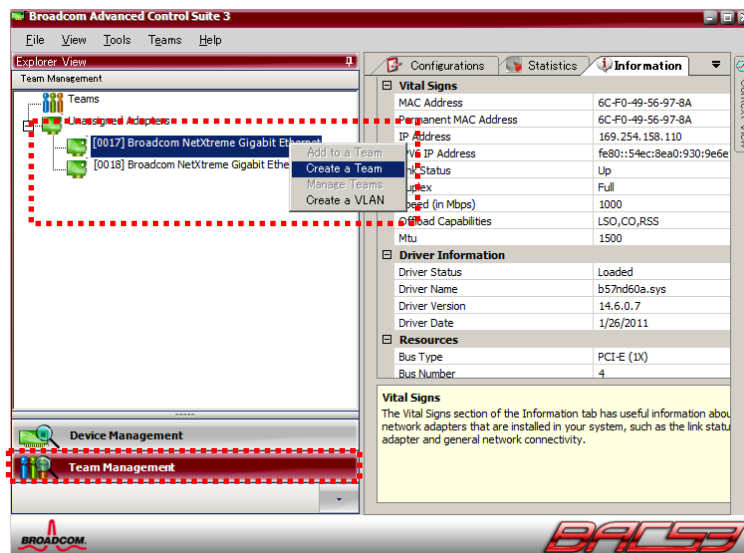
(3) Setting up team/LiveLink**Important**

- The team must be composed of two adapters.
- Possible combinations of network adapters that compose the team are as follows.
 - Between standard network adapters.
 - Between N8104-134 adapters
 - A standard network adapter and an N8104-134 adapter

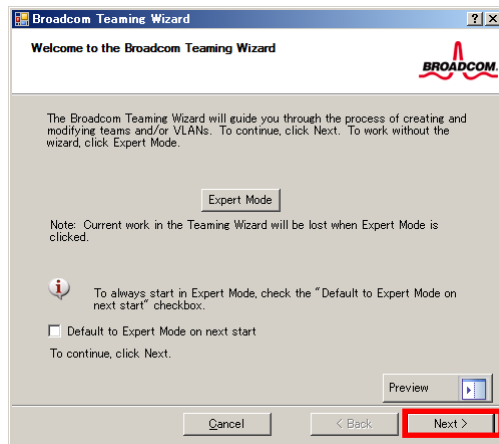
Tips

To edit a team, right-click on the BACS team, and then select **Edit TEAM**. Then refer to step 3 and later in *Chapter 1 (5.4.3 Setting up team/LiveLink) - (3) Setting up team/LiveLink* to edit the team.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Team Management** from the left menu, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu. The **Broadcom Teaming wizard** appears.

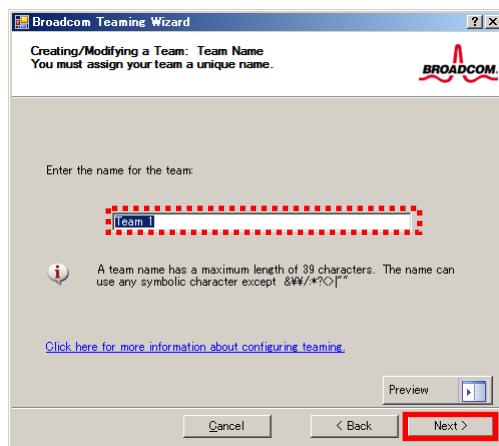


3. Click [Next].

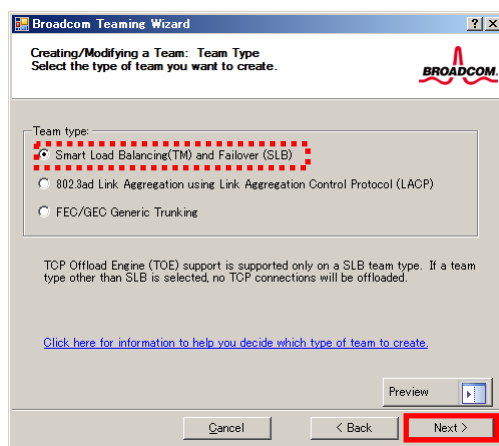


Important Do not use Expert Mode.

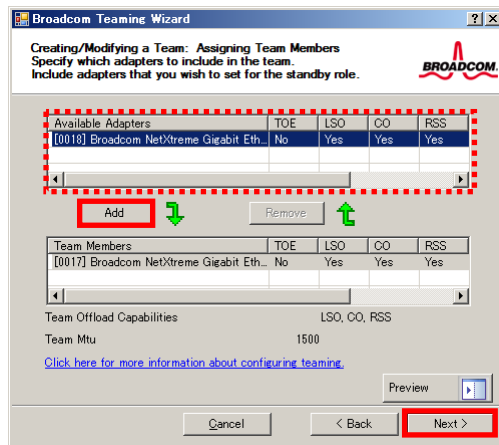
4. Enter any name into the team name entry column, and then click [Next].



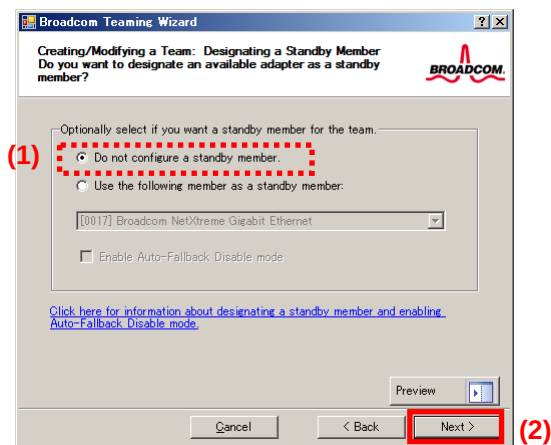
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



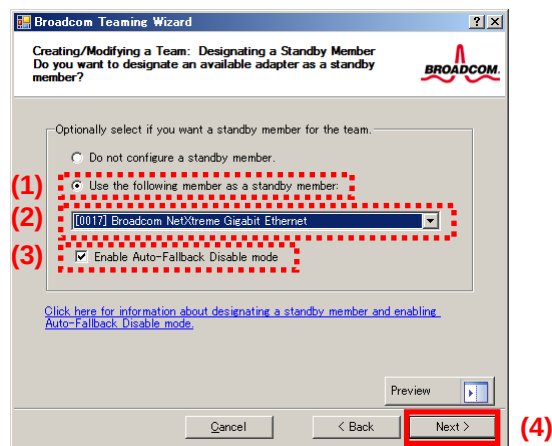
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



7. Proceed according to your desired team type.
- Smart Load Balancing and Failover (without Standby Member)
 - (1) Select **Do not configure a standby member**.
 - (2) Click [Next].

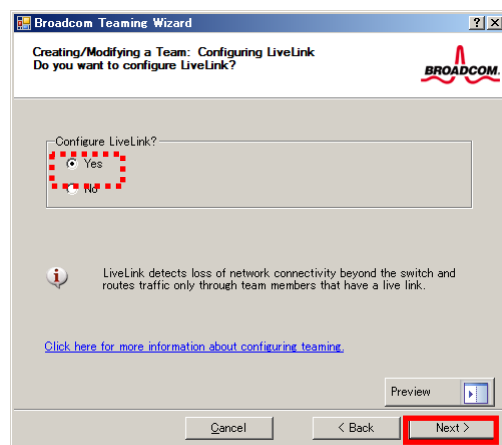


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

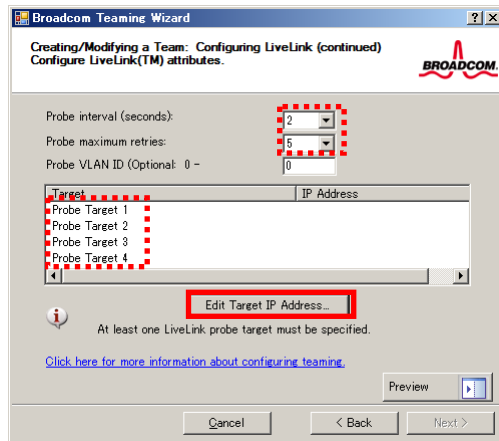


Important *Enable Auto-Failback Disable mode is cleared while editing the team. Select it again.*

8. Select **Yes** for **Configure LiveLink?**, and then click [Next].



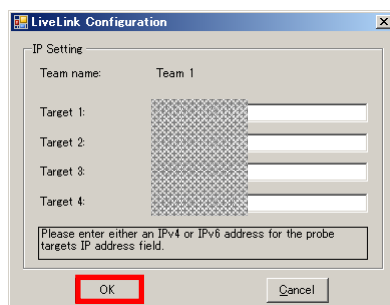
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If an optional LAN board detects that a link is down, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

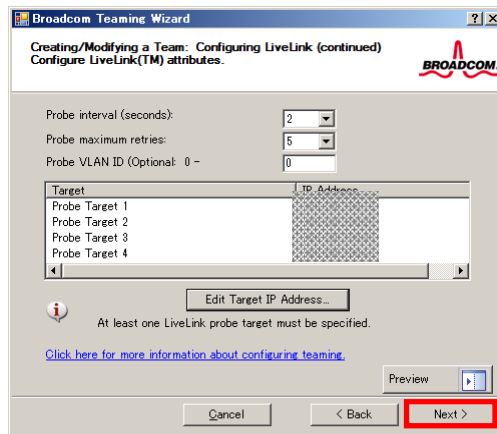
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



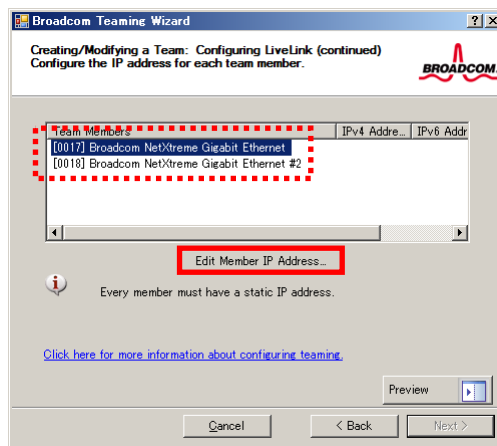
Important

- **Target xx** must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in **Target xx** is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using **Probe Target**. Up to four IP addresses can be specified.

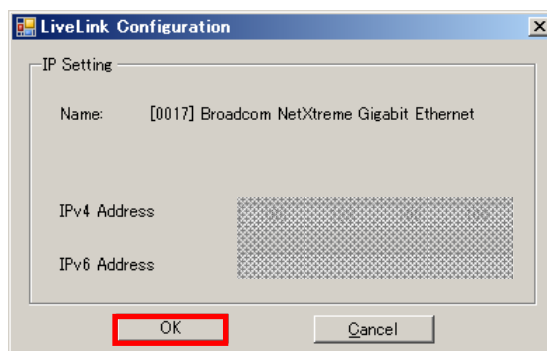
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address...].



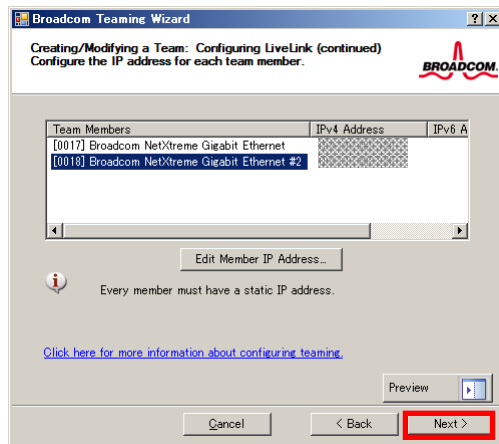
13. Enter the IP address used for LiveLink communication, and then click [OK].



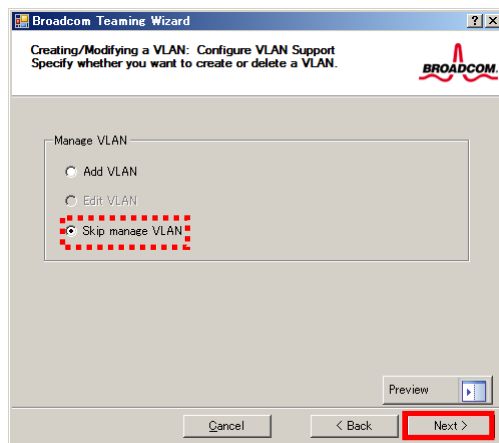
Important

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

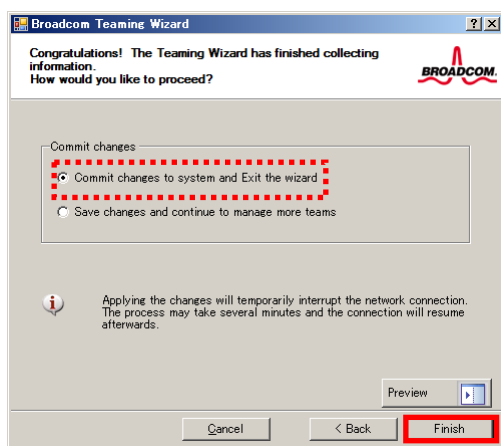
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].



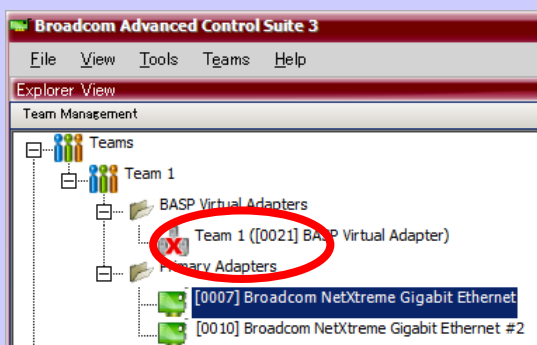
Note

When the message below appears, select [Yes].

"Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards. Do you want to continue?"

Tips

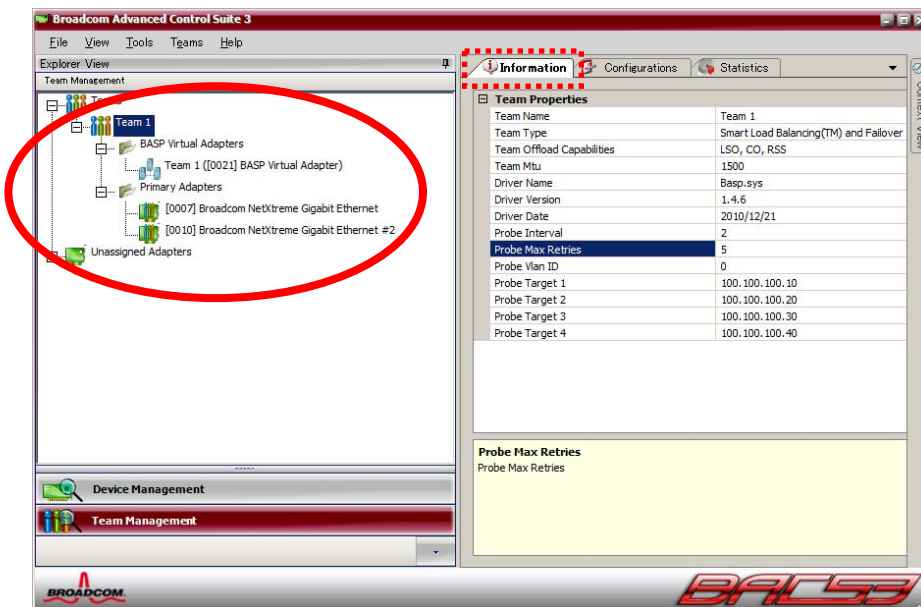
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



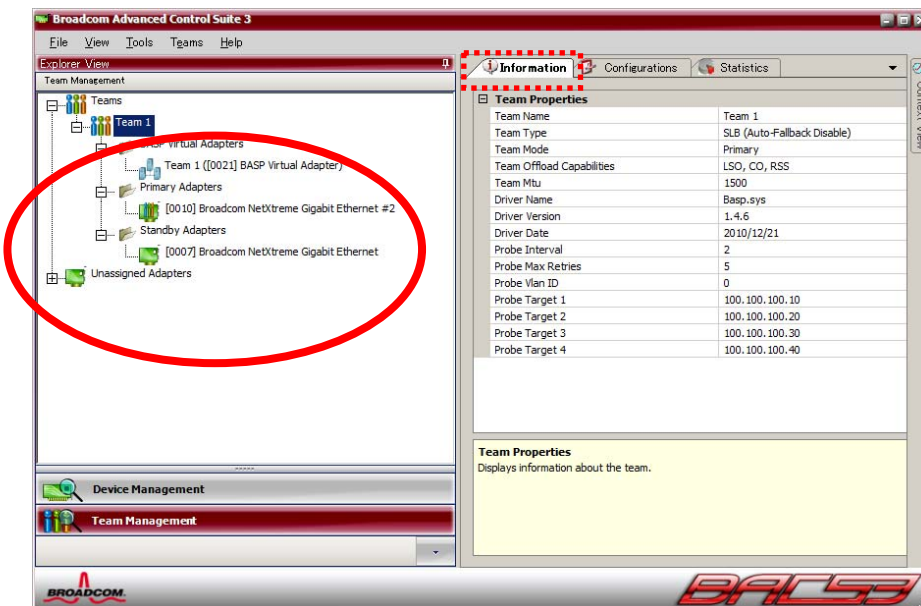
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite3** and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

- Smart Load Balancing and Failover (without Standby Member)



- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



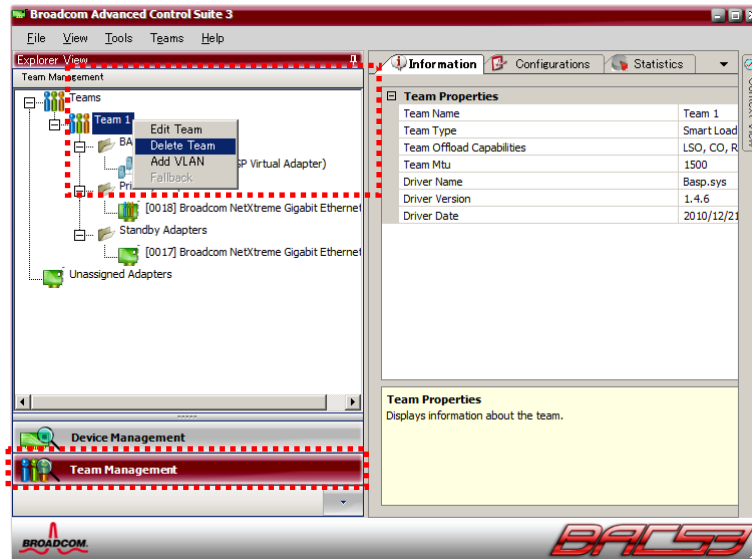
Team setup is now complete.

(4) Procedure for deleting team**Important**

You must delete teams from **Broadcom Control Suite3**.

You cannot delete the team from the team adapter displayed in the Device Manager.

1. Double-click **Broadcom Control Suite3** in the Control Panel window.
Broadcom Advanced Control Suite3 starts.
2. Click **Team Management** from the left menu, right-click the team name under **Teams**, and then select **Delete Team** from the short-cut menu.

**Tips**

When the message below appears, select [Yes].

"The selected team will be deleted from system, do you want to proceed?"

NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

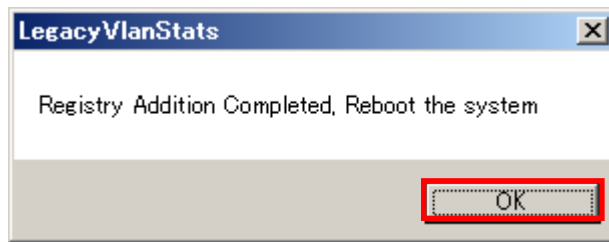
3. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Important

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using the EXPRESSBUILDER DVD:
Optical disk drive letter: \020\win\winnt\w2k3amd\lan
 - If the Starter Pack was installed from the Internal Flash Memory:
System drive letter: \StartPKG\w2k3amd\lan

5. When the following message appears, click [OK].



6. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

5.4.4 When using a SCSI controller (N8103-75/107)

If the OS standard installer is used for setup, install the Starter Pack to install the driver.

If an additional SCSI controller is connected after setup, install the Starter Pack to install the driver.

5.4.5 When using a SAS controller (N8103-104A/142)

If the OS standard installer is used for setup, install the Starter Pack to install the driver.

If an additional SAS controller is connected after setup, install the Starter Pack to install the driver.

5.4.6 When using a RAID Controller (N8103-135)

The driver installation procedure depends on the environment. Use the procedure according to your environment for installing the driver.

- When using a RAID Controller (N8103-128/G128/134)
The OS will run the plug-and-play function and the driver will automatically be installed. You do not need to install it manually.
- When not using a RAID Controller (N8103-128/G128/134)
If the OS standard installer is used for setup, install the Starter Pack to install the driver.
If an additional RAID Controller is connected after setup, install the Starter Pack to install the driver.

5.4.7 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when the Starter Pack is installed from EXPRESSBUILDER.

To reinstall drivers separately, complete the following steps.

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. From the **Start** menu, point to **All programs, Accessories**, and then select **Explorer**.
3. Double-click the **install.bat** icon in the following folder.

When using the EXPRESSBUILDER DVD:

Optical disk drive letter: \020\win\winnt\w2k3amd\video

If the Starter Pack was installed from the Internal Flash Memory:

System drive letter: \StartPKG\w2k3amd\video

You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.

4. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Graphic accelerator driver installation is now complete.

5.5 Installing the Bundled Software

The supplied EXPRESSBUILDER DVD contains the server monitoring software NEC ESMPRO Agent and system management software NEC ESMPRO Manager. Refer to *Chapter 2 Installing the Bundled Software* to install the software separately.

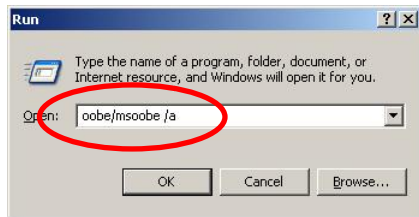
5.6 License Authentication

To use Windows Server 2003 R2 x64 Edition, the license must be authenticated in advance. Following describes the license authentication procedure.

Tips

Following this procedure is not required if you use a backup CD-ROM for installation.

1. Select **Run** from the **Start** menu.
Enter the following to the **Open** text box, and then click [OK].
oobe/msoobe /a



2. When the following message appears, click [Next].



The following message appears.

Generating new Installation ID...

3. Follow the instructions in the following message to start the license authentication process.



Windows activation is now complete.

5.7 Installation When Multiple Logical Drives Exist

Before starting reinstallation, backup data for future use in case of data loss.

(1) Installation process

1. Follow the steps to start installation with OS standard installer.
2. When the following message appears, select the partition to which you want to set up the operating system.

The following list shows the existing partitions and unpartitioned space on this computer.
Use the UP and DOWN ARROW keys to select an item in the list.

Important You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.

3. Follow the steps to proceed with installation with OS standard installer.

Installation is now complete.

Tips The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

The steps below cannot change drive letter assignments for the system volume or boot volume. Be careful when assigning these.

1. From the **Start** menu, right-click **My Computer** and then select **Management**. Next, launch **Computer Management**.
2. From the window on the left, select **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

Changing the drive letter of a volume might cause programs to no longer run. Are you sure you want to change this drive letter?

8. Close the Computer Management window.

Changing drive letter assignments is now complete.

6. Setting Up Windows Server 2003

Set up Windows Server 2003 and the system.

6.1 Before Starting Setup

Read through the cautions explained here before starting setup.

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

(1/3)

Setup		Items to confirm	
–	OS	Windows family	The following editions of the Windows Server 2003 family may be installed. • Windows Server 2003 R2 Standard Edition • Windows Server 2003 R2 Enterprise Edition*1 • Windows Server 2003 Standard Edition*2 *1 Only supported by R110d-1E and E110d-1 *2 Only supported by GT110d and GT110d-S Inquiries about installing other editions may be made at your sales dealer or maintenance service company. Important Setup with EXPRESSBUILDER cannot be used.
–	OS	License authentication	If Windows Server 2003 is installed from a backup CD, the license is already activated. If Windows Server 2003 is installed from an OS CD instead of a backup CD, a product key is required for license authentication. At this time, the product key must be the same as that indicated on the COA label of Windows Server 2003. For details, refer to <i>Chapter 1 (6.7 License Authentication)</i>. Important • Activate within 30 days following installation. The system might be locked if 30 days have passed without activation.
–	OS	Hardware configuration warnings	When installing Windows Server 2003 using the OS standard installer, the following hardware configurations require special procedures.
–	OS		• When using OEM drivers, be sure to change the boot order of the Flash FDD on the BIOS setup window as follows: Select Boot, Floppy Drive BBS priorities, Boot Option #1, and then specify the Flash FDD used. Note Change as instructed in <i>Chapter 1 (6.2.3 Setup procedure)</i>.
–	OS		• Connecting MO devices Installing Windows while an MO device is connected can result in installation failure. Remove the MO device, and then start installation from the beginning.
–	OS		• DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.

(2/3)

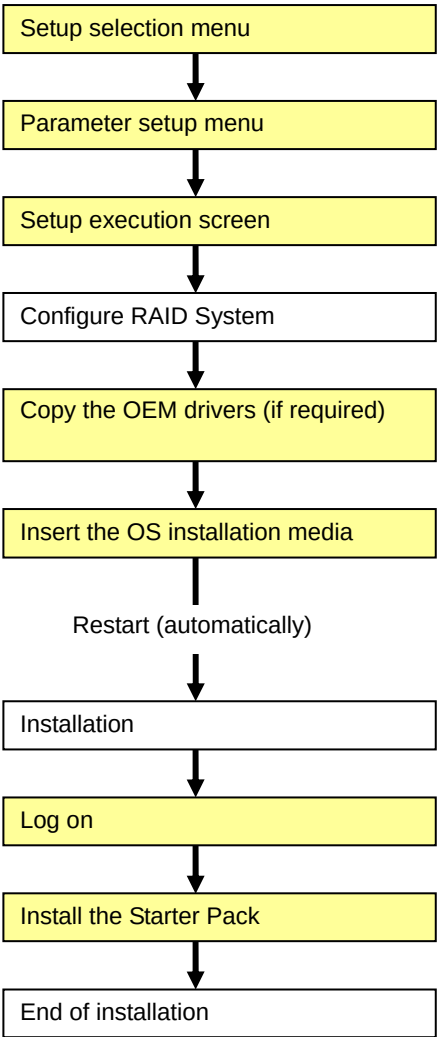
Setup		Items to confirm	
–	OS	Hardware configuration warnings	Connecting to multiple Hard Disk Drives (Logical Drives) For details on installing operating systems to a system in which multiple Logical Drives exist, refer to <i>Chapter 1 (6.8 Installation When Multiple Logical Drives Exist)</i>.
–	OS		- Reinstallation to a dynamic disk: When installing the OS on a Hard Disk Drive with multiple partitions that was upgraded to a dynamic drive and you wish to retain the existing partition configuration and data areas, note the following:  - Select the partition on which the OS was previously installed. - Select Leave the current file system intact (no change) for the OS partition format.
–	OS	Application of Service Packs	If Windows Server 2003 R2 is already installed, make sure that Windows Server 2003 R2 Edition DISC 2 has been installed before applying a Service Pack.
–	OS		Use the Starter Pack when you apply a Service Pack from the Service Pack 2 CD-ROM.
–	OS		If you used OS installation media including Service Pack 2 for installation, you do not have to install Service Pack 2 again.
–	OS	System partition size	The system partition size can be calculated by using the following formula. Size required to install the OS + paging file size + dump file size + application size Size required to install the OS = 3,500 MB (Windows Server 2003 R2 with Service Pack 2) = 5,300 MB (Windows Server 2003 R2 + Service Pack 2 CD-ROM) = 5,300 MB (Windows Server 2003 with Service Pack 1 + Service Pack 2 CD-ROM) Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 12 MB Application size = as required by the application For example, if the installed memory size is 1 GB (1,024 MB), the partition size is calculated as follows: 3,500 MB + (1,024 MB × 1.5) + 1,024 MB + 12 MB + application size = 6,072 MB + application size Important - The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure you set a sufficient paging file size. If the paging file is insufficient, there will be a virtual memory shortage that may result in an inability to collect correct debug information. - The maximum paging file size that can be specified for one partition is 4095 MB. If 1.5 times of the mounted memory size exceeds 4095 MB, specify 4095 MB. - If the mounted memory size is 2 GB or greater, the maximum size of the dump file is "2048 MB + 12 MB". - When installing other applications or other items, add the amount of space needed by the application to the partition.

(3/3)

Setup		Items to confirm	
–	OS	System partition size	If the partition size for installing the system is smaller than the size required for installation + paging file size, expand the partition size or add another disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the following steps. 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Write the debug information of the dump file onto another disk by referring to 7. <i>Setup for Solving Problems</i>. If there is not enough disk space to write the debug information, set the partition size to a size sufficient to install the OS and paging file, and then add another disk for the dump file.
–	OS	Setup with OS standard installer	The Hardware Installation/Software Installation dialog box might appear several times during installation, but it does not affect system installation. Click [Yes] on such dialog boxes, and continue installation according to the displayed messages.
–	OS	Upgrade to Windows Server 2003 R2	Inplace upgrade from Windows Server 2003 to Windows Server 2003 R2 is not recommended because it overwrites the files and registries and might cause an unexpected effect on the system and applications. If you want to use Windows Server 2003 R2, back up the necessary data before installing Windows Server 2003 R2. Tips Inplace upgrade refers to overwriting an existing OS (in this case, Windows 2003) with another OS (Windows Server 2003 R2).

6.2 Setup with OS Standard Installer

6.2.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

6.2.2 Items necessary for installation from an OS media

Prepare the following disks and instruction manuals before starting setup.

- Operating system installation media (prepare one of the following)

<Windows Server 2003 R2>

- Backup CD-ROM Windows Server 2003 R2, Standard Edition DISC 1 (hereafter referred to as *backup CD-ROM DISC 1*), and Microsoft Windows Server 2003 R2 Standard Edition DISC 2 (x2) (hereafter referred to as *Windows Server 2003 R2 DISC 2*)
- Backup CD-ROM Windows Server 2003 R2, Enterprise Edition DISC 1 (hereafter referred to as *backup CD-ROM DISC 1*), and Microsoft Windows Server 2003 R2 Enterprise Edition DISC 2 (x2) (hereafter referred to as *Windows Server 2003 R2 DISC 2*)
- Microsoft Windows Server 2003 R2, Standard Edition DISC 1 (hereafter referred to as *Windows Server 2003 CD-ROM*), and Microsoft Windows Server 2003 R2 Standard Edition DISC 2 (x2)
- Microsoft Windows Server 2003 R2, Enterprise Edition DISC 1 (hereafter referred to as *Windows Server 2003 CD-ROM*), and Microsoft Windows Server 2003 R2 Enterprise Edition DISC 2 (x2)

<Windows Server 2003>

Be sure to prepare a Windows Server 2003 CD-ROM that contains Service Pack 1.

- Microsoft Windows Server 2003 Standard Edition (CD-ROM) (hereafter referred to as *Windows Server 2003 CD-ROM*)
- Microsoft Windows Server 2003 Enterprise Edition (CD-ROM) (hereafter referred to as *Windows Server 2003 CD-ROM*)

- Windows Server 2003 Service Pack (CD-ROM)

- First Steps Guide

- EXPRESSBUILDER DVD

If you purchased optional Internal Flash Memory, you can use it during installation.

- Prepare if needed:

- OEM drivers (Windows Server 2003)

Note

OEM drivers are necessary if a RAID Controller or optional board is connected.
Use a Flash FDD as the removable media to create OEM drivers.

6.2.3 Setup procedure

This section describes the procedure for installing Windows Server 2003 using the OS standard installer.

Important

- Before starting setup, refer to **6.1 Before Starting Setup**. It describes how to make partitions.
- The procedure differs depending on the media on which EXPRESSBUILDER is stored.
- The installation procedure depends on the environment. Check your environment before starting installation.

1. Turn peripheral device power on, and then turn the server power on.
2. Use the following procedure to start EXPRESSBUILDER.

Note

Be sure to disconnect removable media before starting EXPRESSBUILDER.

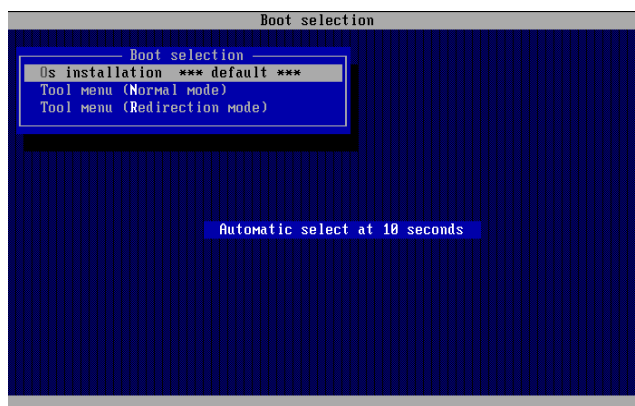
When using the EXPRESSBUILDER DVD

- (1) Insert the EXPRESSBUILDER DVD into the optical disk drive of the server.
- (2) Once the DVD is inserted, restart the server by resetting it (press <Ctrl> + <Alt> + <Delete>) or by turning the power off and then on again.
EXPRESSBUILDER starts.

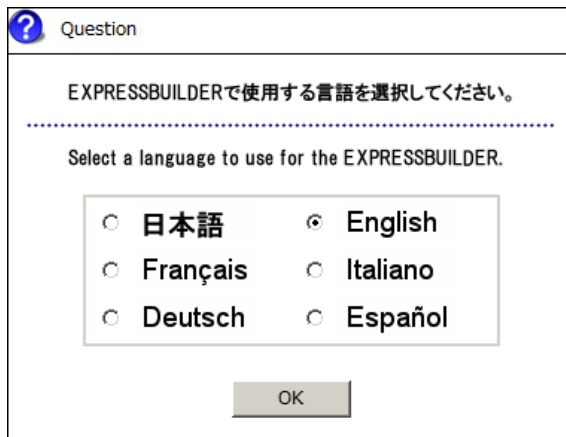
When using Internal Flash Memory

- (1) When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST screen, press the <F3> key.
EXPRESSBUILDER starts.

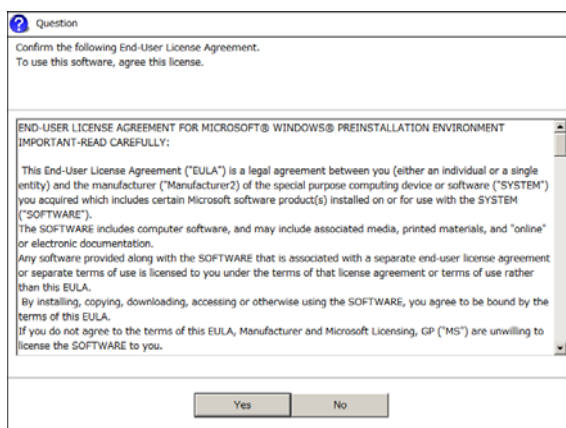
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



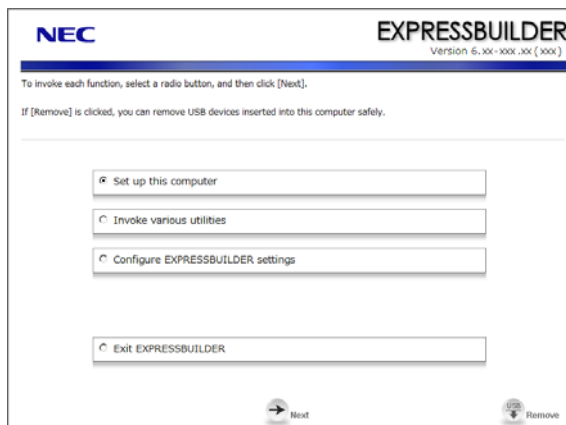
4. Select **English** on the language selection window, and then click [OK].



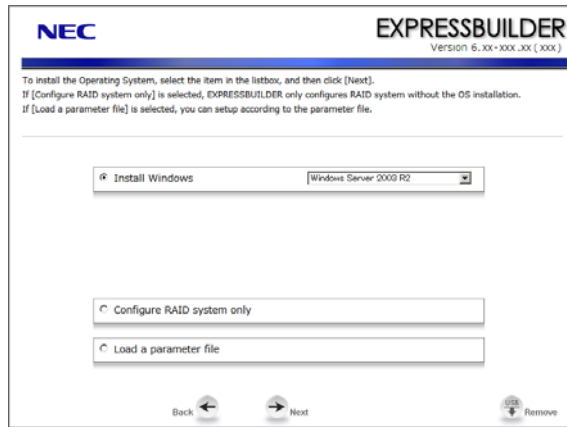
5. When the Windows PE software license agreement window appears, click [Yes].



6. Select **Set up this computer** from the top menu, and then click [Next].



7. When the setup selection menu appears, use the following steps to set up the parameters.



Note

When setting up again, an already saved parameter file can be read, so that you can skip inputting parameters in the wizard

When not using a parameter file:

Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to the following (1) *RAID settings*.

When using a parameter file:

Select **Load a parameter file**, and then click [Next].

Load the desired parameter file according to the onscreen instructions.

Confirm the settings on the parameter setup menu as required, and then click [Next].

→ Go to the following (2) *Executing setup* - エラー! 参照元が見つかりません。 5.

(1) RAID settings

This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important

Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. You must be especially careful when configuring the following:

- RAID settings wizard

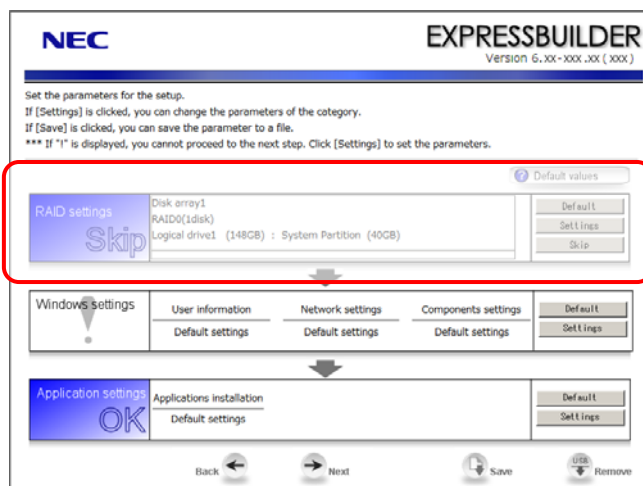
Backing up user data, as needed, is recommended.

Note

When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.

You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

When skipping the creation of a new Logical Drive

1. Click [Skip] in **RAID settings**.

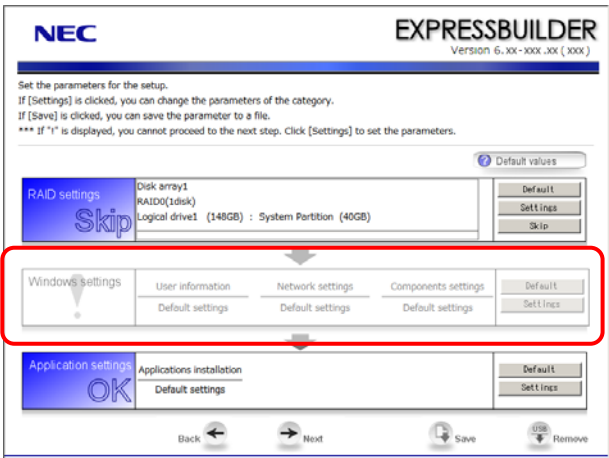
Tips

Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the existing configurations without modifying them.

(2) Executing setup

Install Windows using the following procedure.

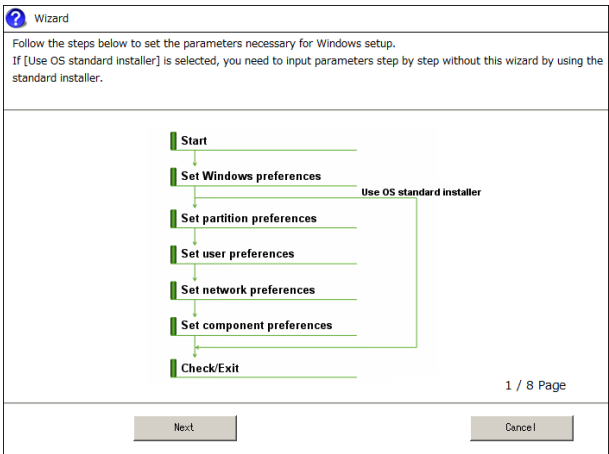
- 1. Click [Settings] in **Windows settings**.



Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

- 2. Click [Next] in the Windows settings wizard.



3. Specify the Windows basic settings
- The basic information window appears. Select **Use OS standard installer**, and then click [Next].
- If copying the OEM drivers to the removable media, select **Copy OEM drivers into a removable media**.

Wizard

If [Use OS standard installer] is selected, Windows is installed by using the standard installer contained in the OS media, and applications such as ESMPRO must be installed separately after Windows installation.
If [Setup with EXPRESSBUILDER] is selected, both Windows and applications can be installed easily.

Basic information

Operating System : Windows Server 2003 R2

Use OS standard installer

☒ Copy OEM drivers into a removable media

Setup with EXPRESSBUILDER

Edition : []

Language : []

Time zone : []

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Back

Next

Cancel

Important If you copied the OEM drivers to a Flash FDD, format it to FAT16.

4. After clicking [Finish] on the confirmation window, click [Next] in the parameter setup menu.

Wizard

Parameter setting is completed.
To finish this wizard, click [Finish].

Installed OS : Windows Server 2003 R2

(Use OS standard installer)

Copy OEM drivers : Act

9 / 9 Page

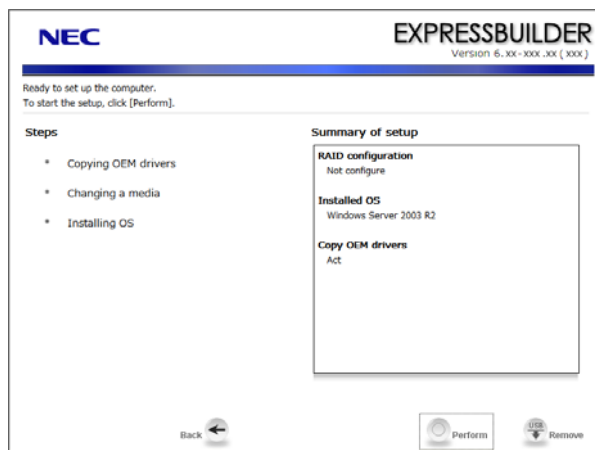
Back

Finish

Express5800/GT-110d, GT-110d-S, R110d-1E, E110d-1 Installation Guide (Windows)

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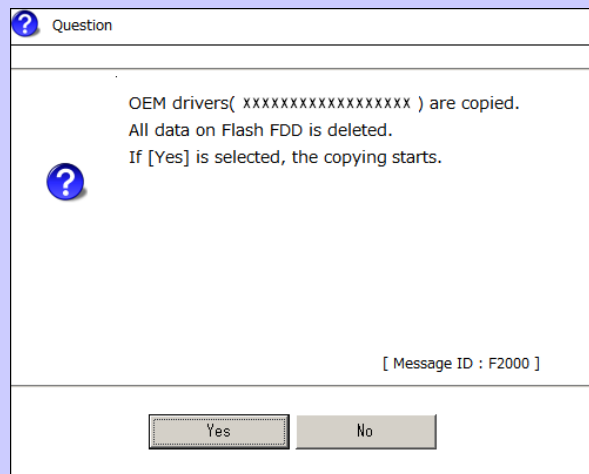
- From the setup execution window, click [Perform].
The server automatically restarts.

**Note**

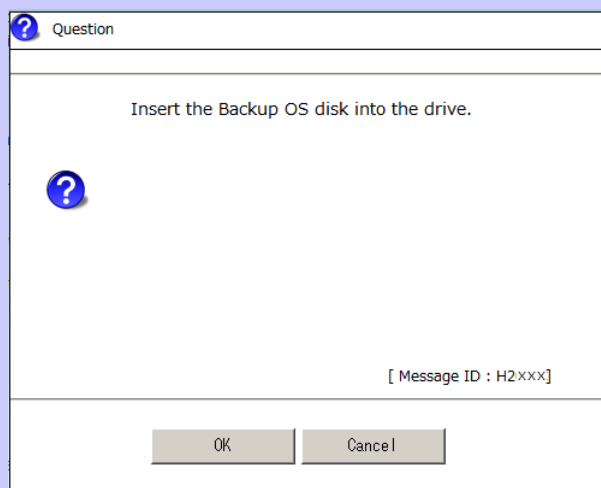
- If you select the **Copy OEM drivers into a removable media** check box, insert a Flash FDD into the server and then click [Perform].
- Do not remove the media while copying OEM drivers.
- When using the OEM drivers, after following step 5 to restart, change the boot order of the Flash FDD from the BIOS settings window. Select **Boot, Floppy Drive BBS priorities, Boot Option #1**, and then specify the Flash FDD used.

Tips

- If the **Copy OEM drivers to a removable media** checkbox is selected in step 3, the following window appears. Follow the onscreen instructions and continue the operation.



- When the following message appears, insert the OS installation media, and then click [OK].



6. The system starts up from the CD-ROM, and the Express5800 server runs.

**Important**

If a bootable operating system is already installed on the Hard Disk Drive, press the <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen. This step is unnecessary if no bootable operating system exists.

If the Windows Setup window does not appear, the <Enter> key was not pressed correctly. Turn the system power on and start again from the beginning.

7. If a RAID Controller or optional Controller is used, press the <F6> key while either of the following messages is displayed.

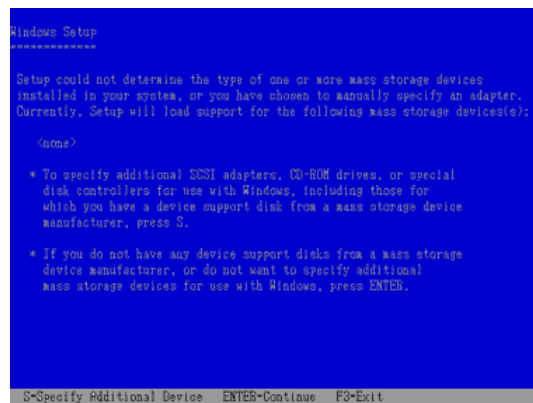
"Setup is inspecting your computer's hardware configuration" (on the top of the screen)

"Press F6 if you need to install a third party SCSI or RAID driver..." (on the bottom of the screen)

Tips

- You do not have to press the <F6> key if no RAID Controller or optional Controller is used. Go to step 14.
- Note that nothing changes on the screen even when the <F6> key is pressed.
- If the OEM drivers list is not displayed, check the boot order of the Flash FDD on the BIOS setup window.

8. The following message appears.



When using a RAID Controller: Press the <S> key and go to step 9.

When not using a RAID Controller: Go to step 10.

9. Select one of the following from the driver list, and then press the <Enter> key.

- When using an onboard RAID Controller (LSI Embedded MegaRAID):
[LSI Embedded MegaRAID (Windows XP/2003)]
- When using an N8103-129/130 RAID Controller:
[LSI MegaRAID SAS RAID Controller Driver (Server 2003 for 32-bit)]
- When using an N8103-G128/128/134 RAID Controller:
[Promise SuperTrak EX SAS 6G RAID Controller-32bits platform]

The window shown in step 8 appears.

10. Check the connection status of other options.

When no optional Controller is used: Press the <Enter> key and go to step 14.

When N8103-107 is connected: Press the <S> key on the window in step 8, and go to step 11.

When no N8103-107 is connected: Go to step 12.

11. Select **Adaptec Ultra320 SCSI Cards (Windows 32-bit)**, and then press the <Enter> key.

Important If the following message appears, press the <S> key to proceed.

The driver you provided seems to be newer than the Windows default driver.

Windows already has a driver that you can use for "Adaptec Ultra 320 SCSI Cards (Windows 32-bit)"

Unless the device manufacturer prefers that you use the driver on the floppy disk, you should use the driver in Windows.

The window shown in step 8 appears. Go to step 12.

12. Check the connection status of other options.

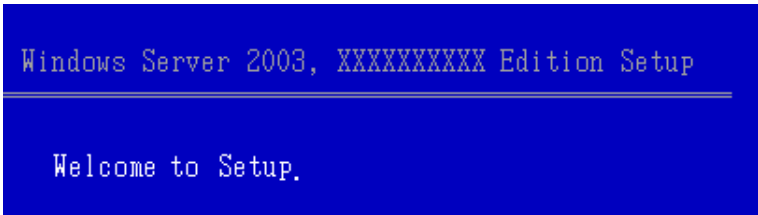
When N8103-104A is connected: Press the <S> key on the window in step 8, and go to step 13.

When no N8103-104A is connected: Press the <Enter> key and go to step 14.

13. Select **LSI Fusion-MPT SAS Driver (Server 2003 32-bit)**, and then press the <Enter> key.

The window shown in step 8 appears. Press the <Enter> key and go to step 14.

14. If the following message appears, press the <Enter> key to start Windows setup.

A screenshot of the Windows Server 2003 installation setup screen. The background is blue. At the top, the text "Windows Server 2003, XXXXXXXXXX Edition Setup" is displayed in a light blue, monospaced font. A horizontal line separates this header from the rest of the screen. Below the line, the text "Welcome to Setup." is displayed in the same light blue, monospaced font.

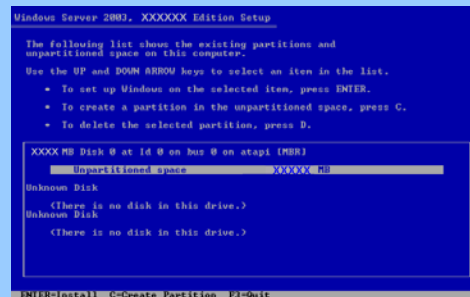
Windows Server 2003, XXXXXXXXXX Edition Setup

Welcome to Setup.

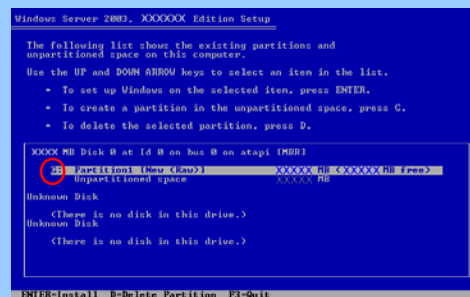
Important

- During setup, the dialog box to specify the size of the partition on which Windows Server 2003 is installed. Consider the partition size if you create a new partition during installation.

1. The window to specify the partition size appears.
(* The windows below are examples. The actual display differs depending on the system configuration.)



2. Create a partition on which Windows is installed.
When creating a new partition, the created partition is displayed as G:.

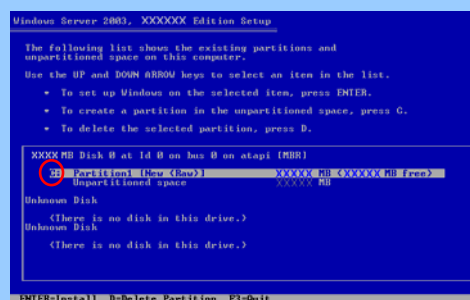


3. Delete the created partition G:, and create a new partition by using the following procedure.

The operation might be different according to the installed language. Delete it carefully according to the instructions on the screen.

- (1) Select the created partition G:, and then press the <D> key.
- (2) Read the displayed content, and then press the <L> key.

4. Create a partition on which Windows is installed again.
Partition creation is complete if the created partition is displayed as C:, as shown below:



- When installing Windows Server 2003 to a disk of over 2,097,152 MB (2 TB), the partition size can only be set to 2,097,152 MB or less.

Tips

The system automatically restarts after copying files.

You do not have to remove the Flash FDD or CD-ROM.

Do not remove the CD-ROM if you do not remove the Flash FDD.

After this, follow the onscreen instructions to continue setup.

For details, refer to "First Step Guide" supplied with the OS.

Tips

When a driver is selected from the drive list, a message indicating that the driver has not passed logo testing might appear, but this does not affect the setup. Click [OK] to continue setup.

15. The system automatically restarts after installing Windows Server 2003.

- If installing Windows Server 2003: Go to step 19.
- If installing Windows Server 2003 R2: Go to step 16.

16. If Windows Server 2003 R2 is installed, the Windows Setup window appears after login.

**Important**

The Windows Setup window might not appear at this time. In this case, be sure to install the Windows Server 2003 R2 DISC 2 according to the following steps.

17. Insert the Windows Server 2003 R2 DISC 2 into the optical disk drive.

Check the settings, and then click [OK].

18. When the installation procedure completes, remove the Windows Server 2003 R2 Edition DISC 2 from the optical disk drive and then restart the system.

19. Install the Starter Pack by referring to *Chapter 1 (6.3 Installing the Starter Pack (Service Pack))*.

20. Install drivers and specify detailed settings by referring to *Chapter 1 (6.4 Setting Up Device Drivers)*.

21. Execute setup by following the instructions described in *Chapter 1 (7. Setup for Solving Problems)*.

Setup with OS standard installer is now complete.

6.3 Installing the Starter Pack (Service Pack)

After installing Windows Server 2003, be sure to install the Starter Pack and Windows Server 2003 hotfix: knowledge base (KB) 921411. The Starter Pack installs all drivers required by the Express5800 Series.

Important

- The Starter Pack and Windows Server 2003 hotfix: KB921411 must also be installed in the following cases. Be sure to install the Starter Pack and Windows x64 hotfix: KB921411 in the following cases:
 - The system configurations have changed (when internal option devices have been added or removed)
If a dialog box prompting you to restart appears after changing system configurations, click [No] and then update the system.
 - If the system was restored using a restore process
 - If a system has been restored using the backup tool
- Be sure to install Service Pack 2 (CD-ROM) from the Starter Pack.
- If you used a Windows Server 2003 CD-ROM including Service Pack 2 for installation, you do not have to install Service Pack 2 again.

Note

For Windows Server 2003 R2, make sure that **Windows Server 2003 R2** is displayed in the system properties window before applying a Service Pack.

Tips

If you used the Windows Server 2003 CD-ROM including Service Pack 2 for installation, you do not have to install Windows Server 2003 hotfix: KB921411.

6.3.1 Procedure to apply Windows Server 2003 hotfix: KB921411

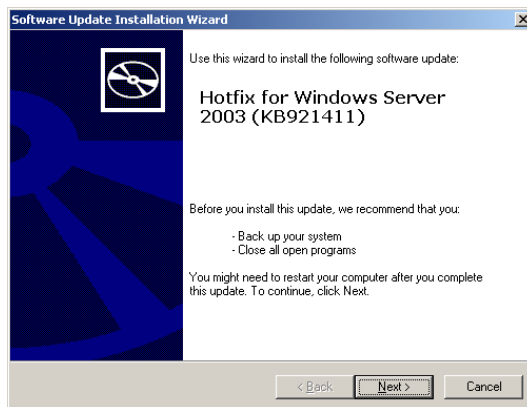
(1) When using the EXPRESSBUILDER DVD

1. Log on to the system with a user account that has administrative privileges (such as an administrator).
2. Insert the EXPRESSBUILDER DVD into the optical disk drive.

Tips

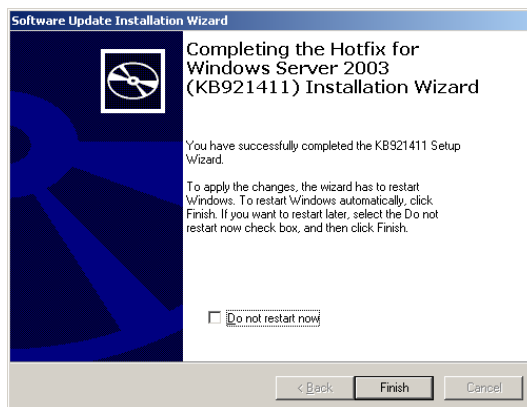
If you are installing with the Windows Server 2003 CD-ROM, which contains Service Pack 2, proceed to step 8.

3. Select **Run** from the **Start** menu, and then execute the following command:
Optical disk drive letter:\020\win\winnt\dotnet\qfe\enu\kb921411.exe
4. When the following message appears, click [OK].



After this, continue installation according to the onscreen messages.

5. When the following message appears, be sure to click [Finish] to restart the system.

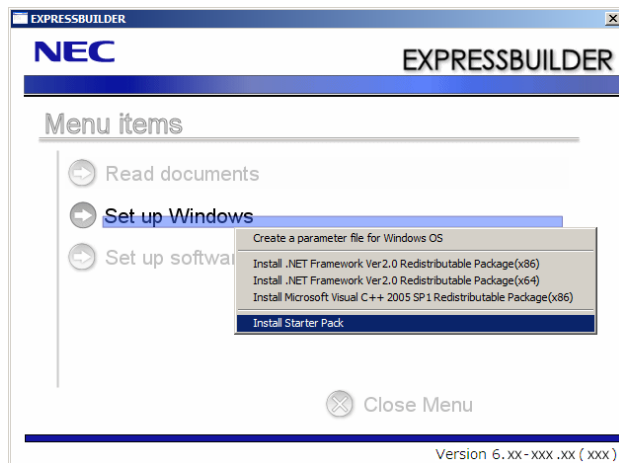


Note

If the EXPRESSBUILDER DVD is inserted, remove it immediately.

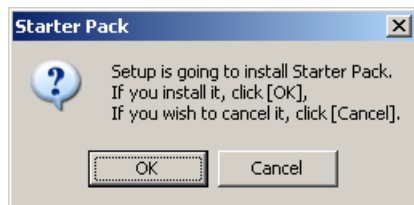
6. Log on to the system with a user account that has administrative privileges (such as an administrator).
7. Insert the EXPRESSBUILDER DVD into the optical disk drive.

8. When the menu window appears, click **Set up Windows** to open the short-cut menu and then select **Install Starter Pack**.

**Tips**

The short-cut menu also appears by right-clicking on the menu window.

9. Read the setup message when it appears, and then click [OK].

**Tips**

Wait until the message appears without attempting any further operation. This may take several minutes.

Starter Pack installation starts.

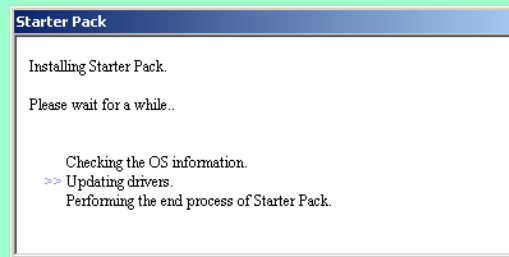
Important

The dialog box shown below might appear while installing the Starter Pack, but this does not affect the installation. This dialog box disappears after several seconds. Do not click [Cancel].

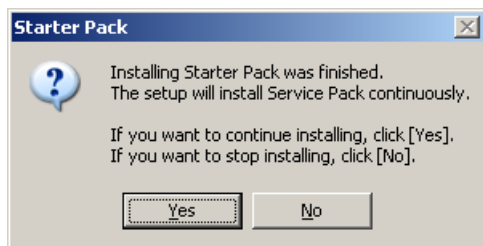


Note

The following progress message will appear while the Starter Pack is being installed. Wait a moment until the update is complete.



10. When the following message appears, Starter Pack installation is complete.



To apply the Service Pack, click [Yes] and go to step 11.

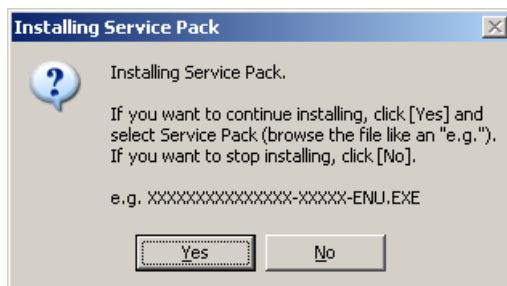
To not apply the Service Pack, click [No] and go to step 13.

Important

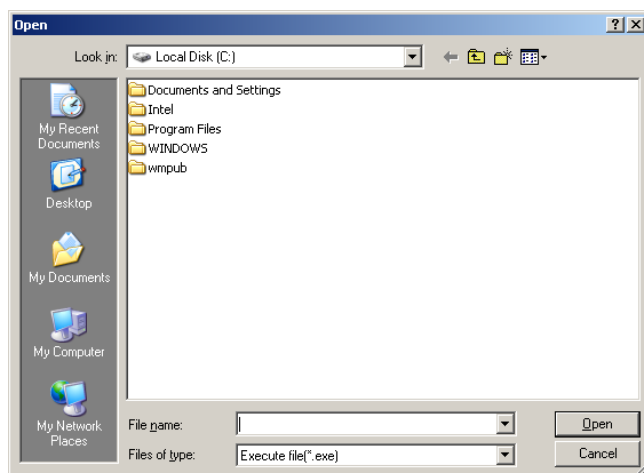
If you are using OS installation media that does not contain Service Pack 2, click [Yes]. You must apply Service Pack 2.

If the Starter Pack is being reinstalled in an environment where Service Pack 2 has already been installed, you do not need to reinstall Service Pack 2.

11. When the following message appears, click [Yes].



12. When the following dialog box appears, specify the Service Pack to apply and then click [Open].

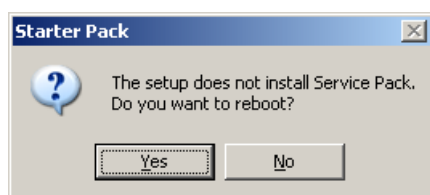


Tips

- If you use a Service Pack CD-ROM, when the dialog box above appears, remove the EXPRESSBUILDER DVD from the optical disk drive and then insert the Service Pack CD-ROM.
- The extension of the Service Pack applicable to the Starter Pack is *.exe or *.msu. No other Service Pack files can be installed.

Installation of the specified Service Pack starts. When the Service Pack installation completion window appears, restart the system.

13. When the following message prompts you to restart the computer, click [Yes].



Note

If the EXPRESSBUILDER DVD or Service Pack CD-ROM is in the optical disk drive, remove it immediately.

Installation of Starter Pack is now complete.

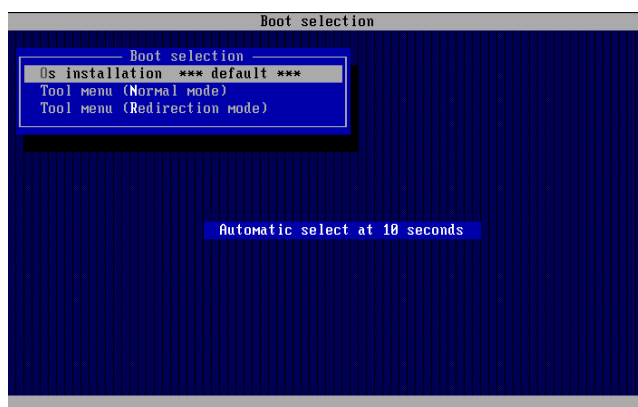
(2) When using Internal Flash Memory

1. After installing the operating system, the system will restart.
2. Use the Internal Flash Memory to run EXPRESSBUILDER.
When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears below the POST window, press the <F3> key.

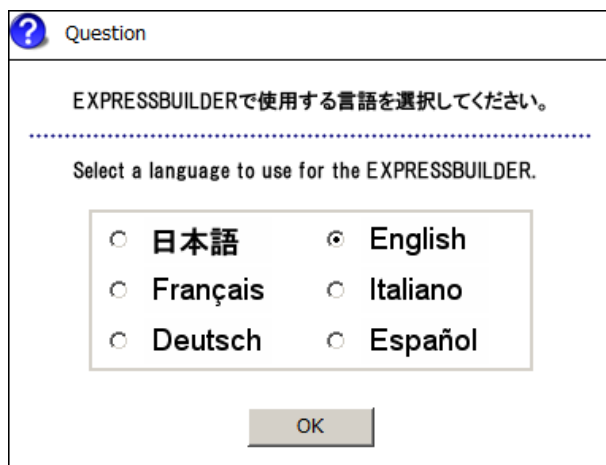
Note

- At this time, be sure to remove the DVD from the optical disk drive.
- If running from the OS, restart, and then press the <F3> key on the POST window.

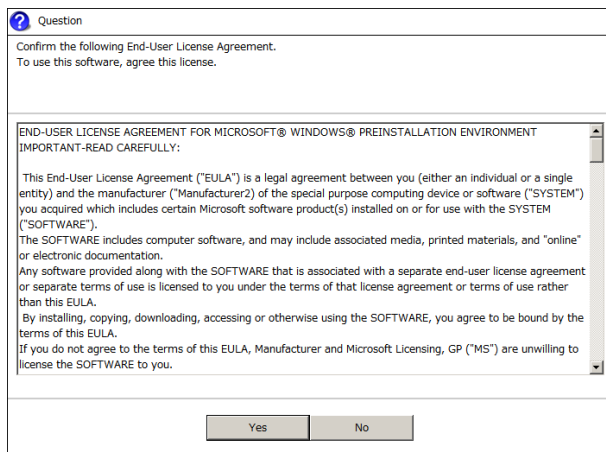
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to the next window, with no need for further input.



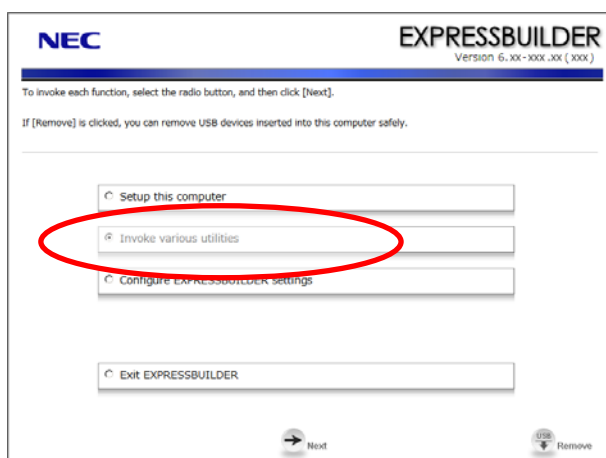
4. Select **English** on the language selection window, and then click [OK].



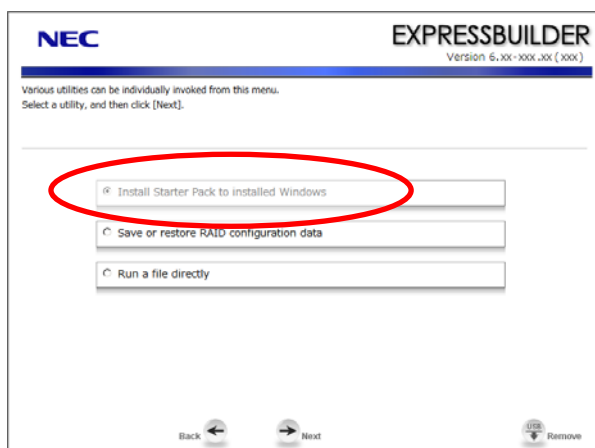
5. When the Windows PE software license agreement window appears, click [Yes].



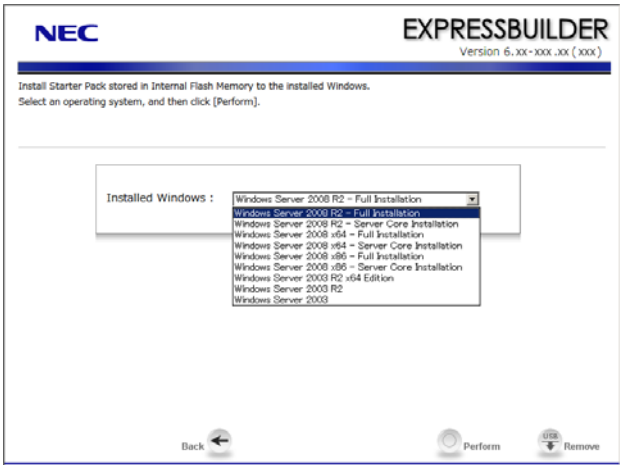
6. Select **Invoke various utilities** from the top menu, and then click [Next].



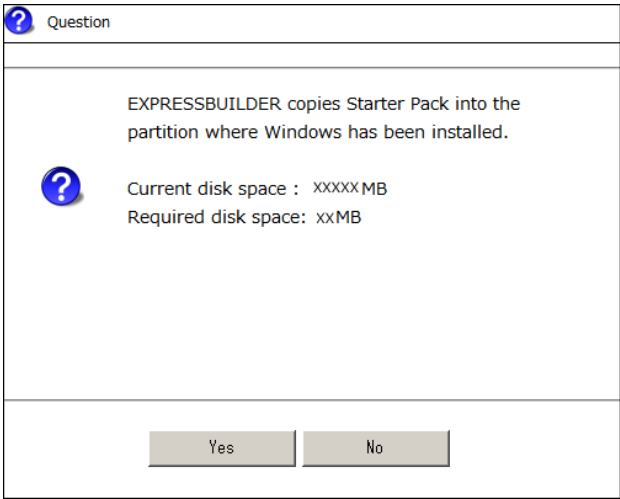
7. When the utility start menu appears, select **Install Starter Pack to installed Windows** and then click [Next].



8. When the window for selecting Windows to install the Starter Pack appears, select the installed Windows from the drop-down list, and then click [Perform].

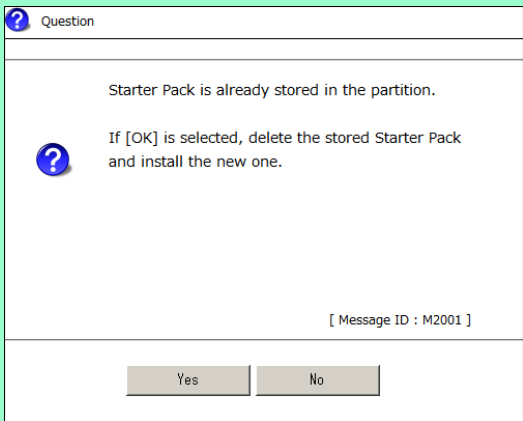


9. When the following confirmation window appears, read the content and then click [Yes].

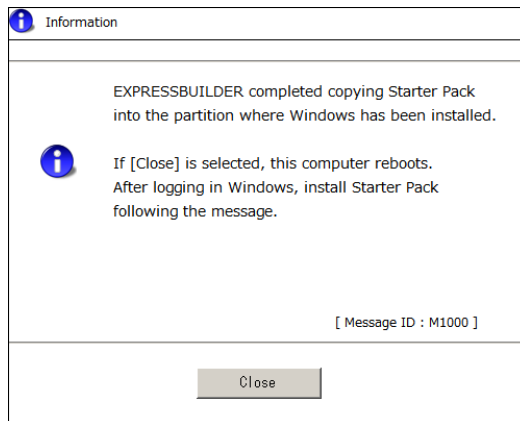


Note

The following window will appear if the Starter Pack is already installed. Read the message, and then click [Yes].



10. After copying the module, the following window appears. Click [Close].



The server then restarts.

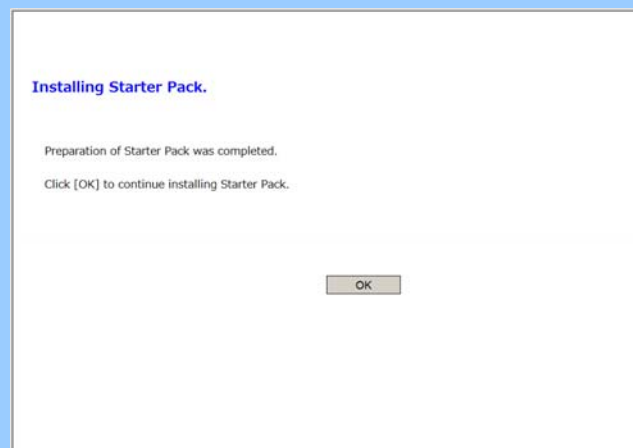
Note

You do not need to press the <F3> key at this time.

11. Log on to the system with a user account that has administrative privileges (such as an administrator).

Important

The screen as shown below appears when Windows starts. Do not click [OK] on this screen. Proceed to Step 12.



If you click [OK], "KB921411" will not be applied.

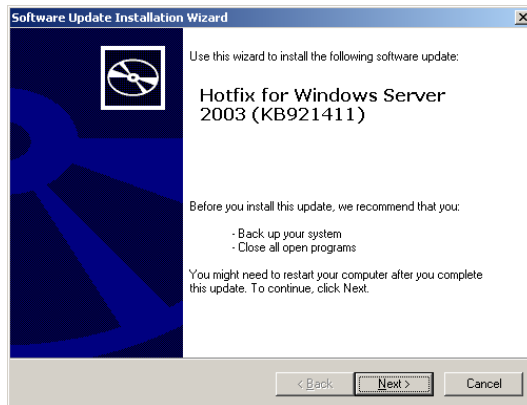
Go to Step 16, and click [Cancel] on the screen to install Starter Pack. Then, perform from Step 1 of (2) *When using Internal Flash Memory*.

Note

If you are installing with the Windows Server 2003 CD-ROM, which contains Service Pack 2, go to step 15.

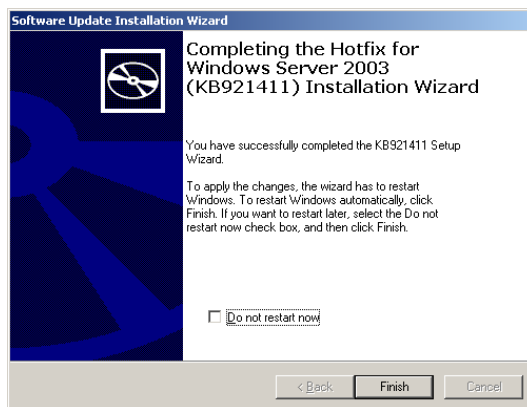
12. Select **Run** from the **Start** menu, and then execute the following command:
System drive letter: \StartPKG\dotnet\qfe\enu\kb921411.exe

13. When the following message appears, click [Next].

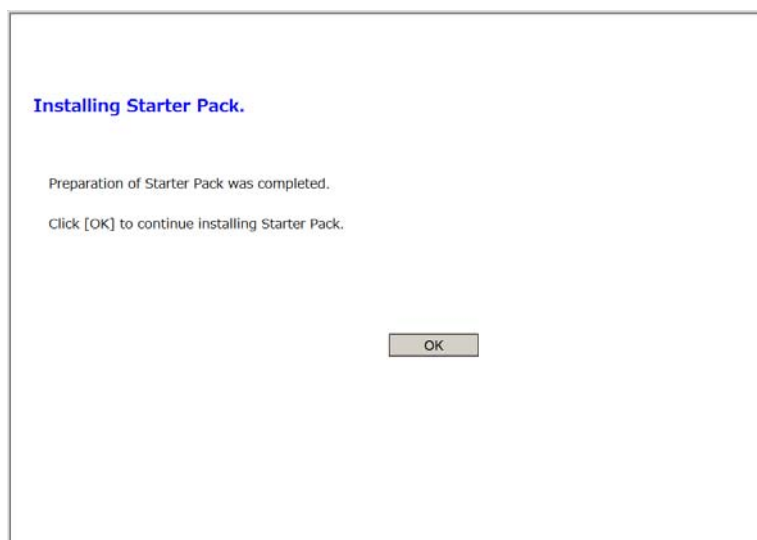


After this, continue installation according to the onscreen messages.

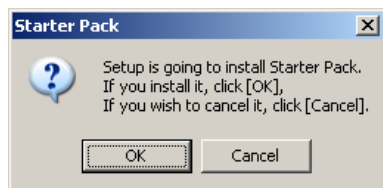
14. When the following message appears, you must click [Finish] to restart the system.



15. After Windows starts, the following window appears. Click [OK].



16. Read the message that appears, and then click [OK].

**Tips**

Although it may take several minutes for the above window to appear, wait for the window to appear without attempting any further operation.

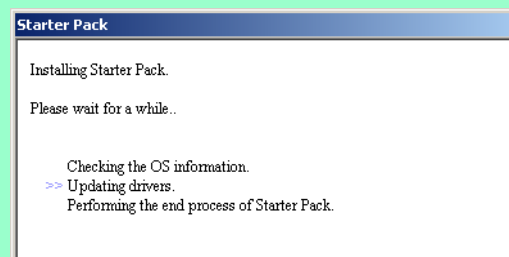
Installation of the Starter Pack starts.

Important

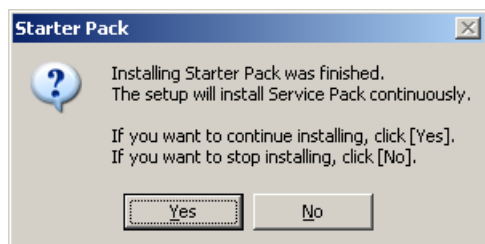
The dialog box shown below might appear while installing the Starter Pack, but this does not affect the installation. This dialog box disappears after several seconds. Do not click [Cancel].

**Note**

The following progress message appears while the Starter Pack is being installed. Wait a moment until the update is complete.



When the following message appears, Starter Pack installation is complete.



To apply the Service Pack, click [Yes] and go to step 17.

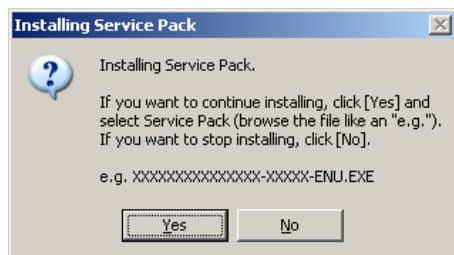
To not apply the Service Pack, click [No] and go to step 19.

Important

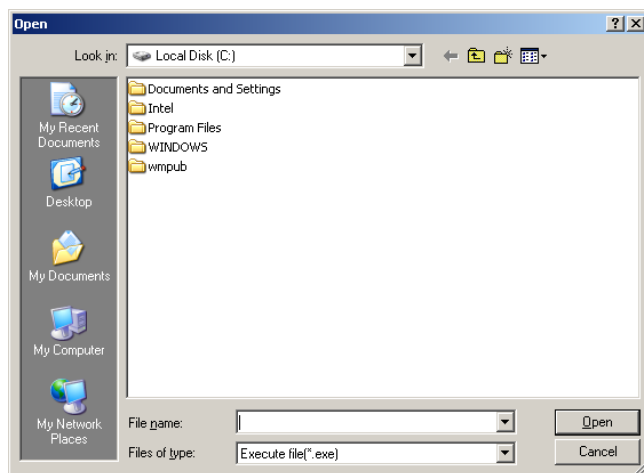
If you are using OS installation media that does not contain Service Pack 2, click [Yes]. You must apply Service Pack 2.

If the Starter Pack is being reinstalled in an environment where Service Pack 2 has already been installed, you do not need to reinstall Service Pack 2.

17. When the following message appears, click [Yes].



18. When the following dialog box appears, specify the Service Pack to install and then click [Open].

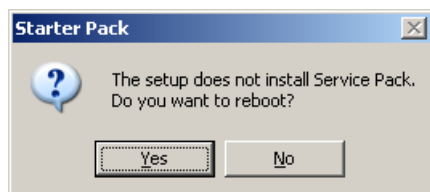


Tips

- When the window above appears, insert the Service Pack CD-ROM into the optical disk drive.
- The extension of the Service Pack applicable to the Starter Pack is *.exe or *.msu. No other Service Pack files can be installed.

Installation of the specified Service Pack starts. When the Service Pack installation completion window appears, restart the system.

19. When the following message prompts you to restart the system, click [Yes].



Installation of the Starter Pack is now complete.

6.3.2 Recovery process

If Windows Server 2003 hotfix: KB921411 is not applied before installing the Starter Pack, "!" might be displayed on the USB root hub in the Device Manager window.

In this case, apply Windows Server 2003 hotfix: KB921411 and install the Starter Pack according to the procedure below.

1. Start Windows Explorer, and then select **Folder Options** from the **Tool** menu.
2. In the **Advanced settings** area on the **View** tab, select the **Show hidden files and folders** option button for **Hidden files and folders** under **Files and Folders**.
3. Clear the following check boxes under **Files and Folders**, and then click [OK].

- Hide extensions for known file types
- Hide protected operating system files (recommended)

When the message "You have chosen to display protected operating system files..." appears, click [Yes].

4. Check the files.

Open the `drivers` folder under *System drive*: \WINDOWS\system32, and make sure that `usbhub.sys` and `usbport.sys` are stored in the folder.

If a file is missing, copy the target file(s) according to the procedure below.

- (1) Open the `dllcache` folder under *System drive*: \WINDOWS\system32.
- (2) Copy the `usbhub.sys` and/or `usbport.sys` to the `drivers` folder under *System drive*: \WINDOWS\system32.

5. Restart the system.
6. Refer to *Chapter 1 (6.3.1 Procedure to apply Windows Server 2003 hotfix: KB921411)* to install the Starter Pack.
7. Restart the system.

The recovery process is now complete.

Note

If the system files and hidden files still do not display, select the check boxes that were cleared in step 3.

6.4 Setting Up Device Drivers

For details regarding the installation and setup of an optional device driver, refer to the manual supplied with the optional device.

6.4.1 Installing the LAN and BACS (teaming) drivers

(1) LAN and BACS drivers

If the OS standard installer is used for setup, install the Starter Pack to install the LAN and BACS driver.

Important

To use the BACS, Microsoft .NET Framework Version 2.0 must be installed. To install Microsoft .NET Framework 2.0, insert the EXPRESSBUILDER DVD to the optical disk drive, select *Setup Windows* and then *Install the .NET Framework Ver2.0 Redistributable Package(x86)* from the autorun menu.

Note

- To change the LAN or BACS driver settings, log on to the system from a local console using an administrator's account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.
- Be sure to select the **Internet Protocol (TCP/IP)** check box when specifying an IP address.

(2) Optional LAN board

This server supports the following optional LAN boards.

Optional LAN boards: N8104-134

If **!Ethernet Controller** is displayed under **Other devices** in the Device Manager window after an optional LAN board is added, you must install the driver using the following procedure:

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. Open the Device Manager window, and then double-click the **!Ethernet Controller** icon under **Other devices**.
The Ethernet Controller Properties dialog box appears.
3. Click [Update Driver...] on the **Driver** tab.
The Hardware Update Wizard window appears.
4. Select the **No, not this time** option button, and then click [Next].
5. Select the **Install from a list or specific location (Advanced)** option button, and then click [Next].

6. Select the **Search for the best driver in these locations** option button, select the **Include this location in the search** check box, and then enter the following path. Then, click [Next].

When using the EXPRESSBUILDER DVD

When applying the driver to **!Ethernet Controller** under **Other devices** in the Device Manager window:

Optical disk drive letter: \020\win\winnt\dotnet\lan\bcom\drvinst\06020401\w2k3_w2k8\b06bdrv

When applying the driver to **NDIS Client For Broadcom NetXtreme II GigE** under **Other devices** in the Device Manager window:

Optical disk drive letter: \020\win\winnt\dotnet\lan\bcom\drvinst\06020401\w2k3_w2k8\l4nd_w2k3

If the Starter Pack was installed from the Internal Flash Memory

When applying the driver to **!Ethernet Controller** under **Other devices** in the Device Manager window:

System drive letter: \StartPKG\dotnet\lan\bcom\drvinst\06020401\w2k3_w2k8\b06bdrv

When applying the driver to **NDIS Client For Broadcom NetXtreme II GigE** under **Other devices** in the Device Manager window:

System drive letter: \StartPKG\dotnet\lan\bcom\drvinst\06020401\w2k3_w2k8\l4nd_w2k3

Note

Be sure to clear the **Search removable media (floppy, CD-ROM...)** check box.

7. Click [Finish].
8. **NDIS Client For Broadcom NetXtreme II GigE** is displayed under **Other devices** in the Device Manager window. Double-click this icon to open the NDIS Client For Broadcom NetXtreme II GigE Properties dialog box.
9. Perform steps 3 to 7 again.
10. After applying the LAN driver to all N8104-134 network adapters, eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Driver installation is now complete.

Important

- After an additional N8104-134 is connected, **!Ethernet Controller** might not be displayed under **Other devices** in the Device Manager window. In that case, the LAN driver has been automatically installed. Confirm that the N8104-134 network adapter is displayed under **Network adapters** in the Device Manager window.
- After the N8104-134 LAN driver has been installed, the following devices might be displayed with "!" under **SCSI and RAID Controllers** in the Device Manager window. They can be deleted from the list by performing the procedure shown in *Chapter 1 (6.4.2 Setting up LAN drivers) – (2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)*.

! Broadcom BCM5709C NetXtreme II GigE iSCSI Adapter
! iSCSI Client For Broadcom NetXtreme II GigE

(3) Network adapter name

After installing the LAN drivers, the following network adapter names will be displayed by the Device Manager or BACS.

Network adapters for the standard configuration

Broadcom NetXtreme Gigabit Ethernet #xx*

If connecting with an optional LAN board:

[N8104-134] Broadcom BCM5709C NetXtreme II GigE (NDIS VBD Client) #xx*

* If there are adapters with the same name, a different identification number will be assigned to xx.

Important

The ID for N8104-134 might be a number of two or more digits. This is due to the LAN driver specifications and not an error. This number cannot be changed.

6.4.2 Setting up LAN drivers

Important

About WOL

- WOL is supported by the standard network adapters only.
- The Change of WOL setting is not supported.
- WOL from a shutdown is only supported if the system is started using MagicPacket.
- WOL from hibernation is not supported.

Tips

MagicPacket refers to a packet dedicated to WOL.

(1) Setting link speed

The transfer rate and duplex mode of the network adapter must be the same as those of the switching hub. Follow the procedure below to specify the transfer rate and duplex mode.

1. Open the Device Manager.
2. Expand **Network Adapters**, and then double-click the name of the network adapter you want to set. The properties of the network adapter will be displayed.
3. Select the **Advanced** tab, and then set the **Speed & Duplex** values to the same as those of the switching hub.
4. Click [OK] in the Network Adapter Properties dialog box.
5. Restart the system.

The link speed setting is now complete. Proceed to set up WOL.

(2) Setting the TCP/iSCSI Offload Engine (if using N8104-134)

If using N8104-134 with the server, TCP/iSCSI Offload Engine must be set to off.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. Broadcom Advanced Control Suite3 starts.
2. Select **Device Management** under **Explorer View**, and then **N8104-134 network adapter** from **System device (VBD)**.
3. Select the **Configurations** tab, and then expand **Resource Reservations**.
4. Clear the **iSCSI Offload Engine** and **TCP Offload Engine** check boxes (if selected) under **Pre-Allocated Resource**, and then click [Apply].

Tips

If **TCP Offload Engine** does not exist, proceed to the next step.

5. Complete steps 2 to 4 for each N8104-134 network adapter.
6. Restart the system.

TCP/iSCSI Offload Engine setup is now complete.

6.4.3 Setting up team/LiveLink

Important

- You must set up LiveLink when setting up a team. Teams that are not configured for LiveLink are not supported.
- When deleting the team, refer to *Chapter 1 (6.4.3 Setting up team/LiveLink) - (4) Procedure for deleting team*. When replacing the motherboard or a LAN board, follow these steps to remove the team and create it again after replacement.
- Be sure to specify the same Jumbo Mtu (Jumbo Packet) setting to all the adapters that compose a team

(1) Team types

The following team types are supported.

- Smart Load Balancing and Failover (without Standby Member)
All adapters that compose the team perform communication.
If a communication failure occurs on an adapter, other adapters that compose the team continue the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and resumes the communication.
- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
Among the adapters that compose the team, primary adapters except the standby member perform communication.
If a communication failure occurs, the standby member continues the communication.
When the adapter on which the communication failure occurred recovers, it joins the team again and the standby adapter returns to the standby state.

(2) LiveLink

LiveLink is a function that detects communication route failures of adapters.

It periodically investigates the communication status of specified destinations (IP address).

Link packets are sent from each adapter within a team.

If a response to the transmission of a link packet within the specified range is not detected, it is identified as a communication route failure and adapter communication is stopped.

When a response to the submission of a link packet is detected, communication LiveLink identifies communication as having been recovered, and communication using that adapter automatically resumes.

Important

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

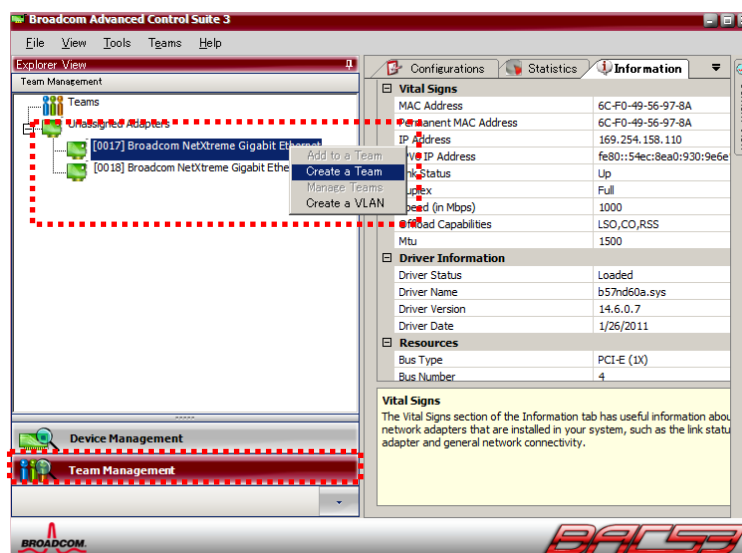
Important

- The team must be composed of two adapters.
- Possible combinations of network adapters that compose the team are as follows.
 - Between standard network adapters.
 - Between N8104-134 adapters
 - A standard network adapter and an N8104-134 adapter

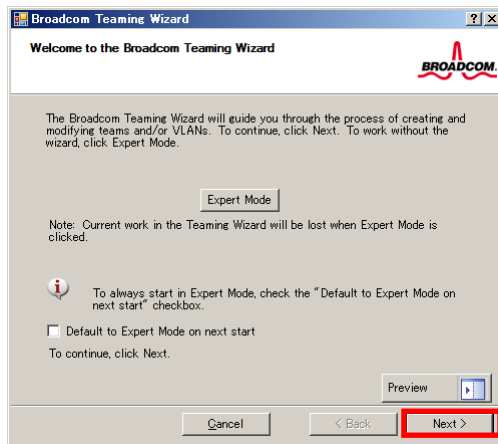
Tips

To edit a team, right-click on the BACS team, and then select **Edit TEAM**. Then refer to step 3 and later in *Chapter 1 (6.4.3 Setting up team/LiveLink) - (3) Setting up team/LiveLink* to edit the team.

1. Double-click the **Broadcom Control Suite3** icon on the Control Panel window. **Broadcom Advanced Control Suite3** starts.
2. Select **Team Management** from the left menu, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu. The **Broadcom Teaming wizard** appears.

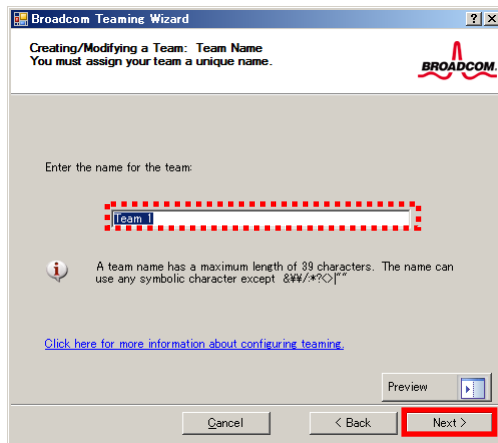


3. Click [Next].

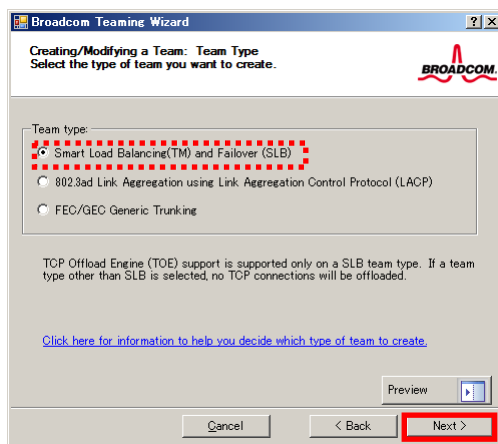


Important Do not use Expert Mode.

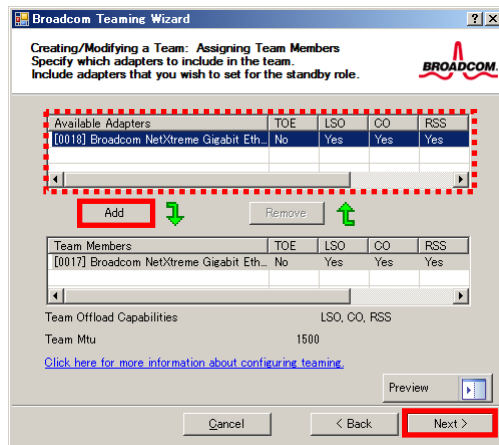
4. Enter any name into the team name entry column, and then click [Next].



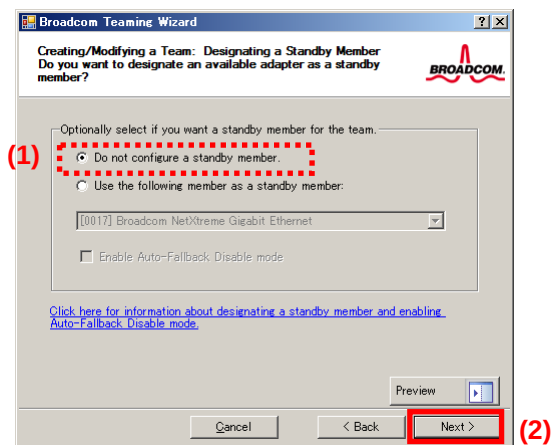
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



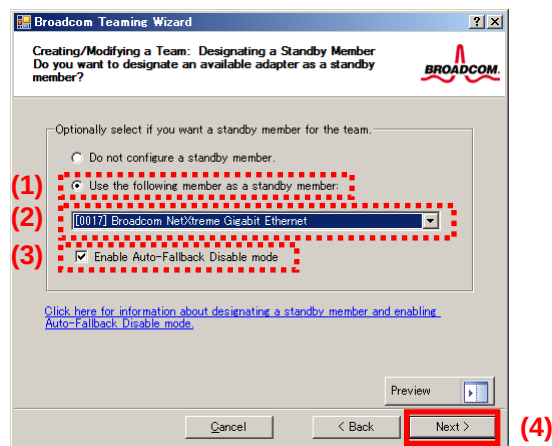
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



7. Proceed according to your desired team type.
- Smart Load Balancing and Failover (without Standby Member)
 - (1) Select **Do not configure a standby member**.
 - (2) Click [Next].

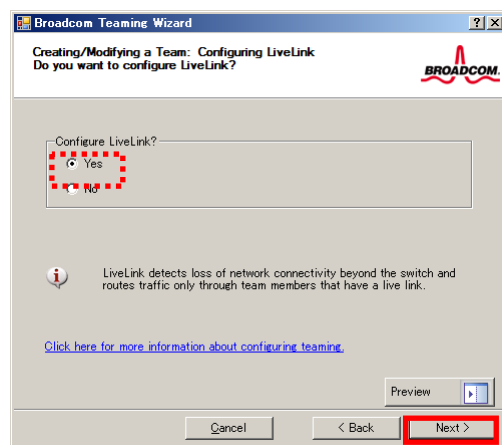


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

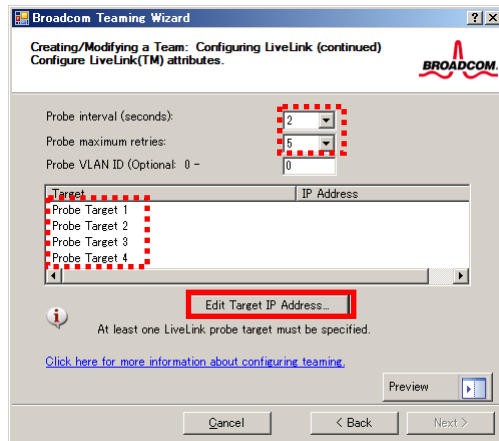


Important *Enable Auto-Failback Disable mode is cleared while editing the team. Select it again.*

8. Select **Yes** for **Configure LiveLink?**, and then click [Next].



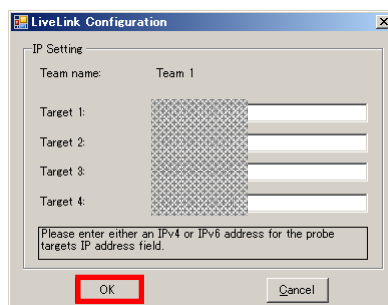
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



Tips

- The setting range of Probe interval (link packet transmission interval) is 1 to 60 (units: seconds).
- The setting range of Probe maximum retries (link packet retry count) is 1 to 10 (times).
- Switching a path upon detection of a communication path error by LiveLink takes (Probe maximum retries + 1) x Probe interval (seconds) at maximum. If an optional LAN board detects that a link is down, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

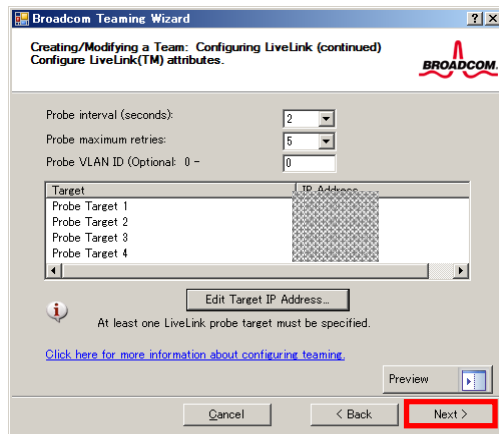
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



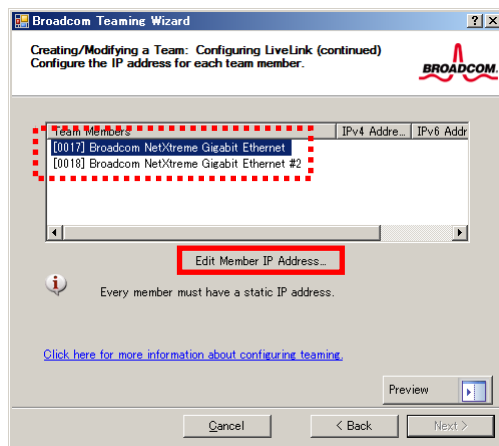
Important

- **Target xx** must be the same broadcast domain as that specified for the data communication IP and LiveLink communication IP (described in step 13). Specify an IP address that exists on the network and with which communication is possible.
- If communication with the IP address specified in **Target xx** is not possible, the team will also be unable to communicate. It is therefore recommended that you specify multiple IP addresses using **Probe Target**. Up to four IP addresses can be specified.

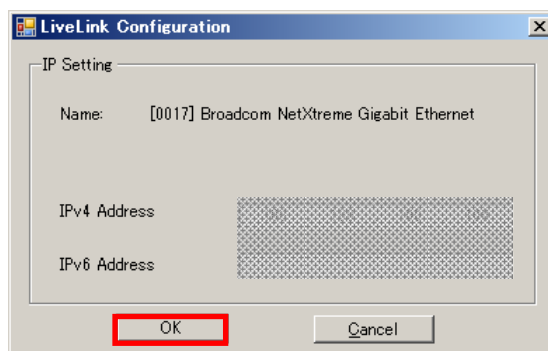
11. Click [Next].



12. Select an adapter from the **Team Members** area, and then click [Edit Member IP Address...].



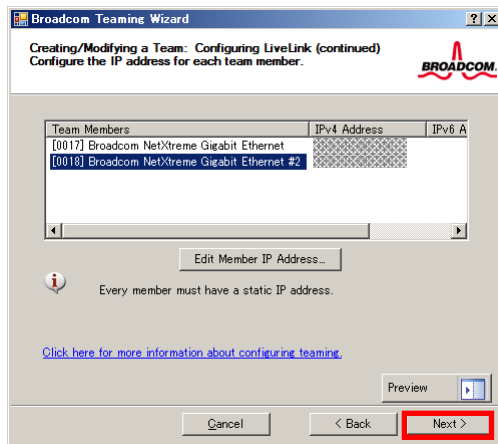
13. Enter the IP address used for LiveLink communication, and then click [OK].



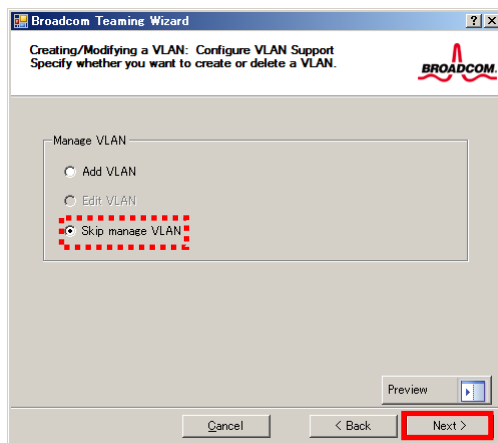
Important

- Be sure to specify an IP address for LiveLink communication for all the adapters that compose the team. The address specified here is the IP address for LiveLink communication. Specify a different IP address for data communication.
- For *Target xx*, specify an IP address that is unique on the network and with which communication is possible.

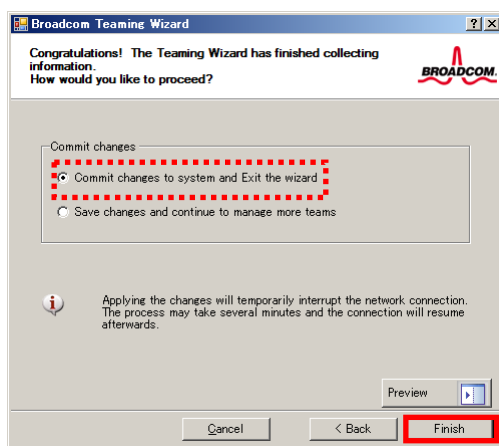
14. Click [Next].



15. Make sure that **Skip manage VLAN** is selected under **Manage VLAN**, and then click [Next].



16. Make sure that **Commit changes to system and Exit the wizard** is selected under **Commit changes**, and then click [Finish].

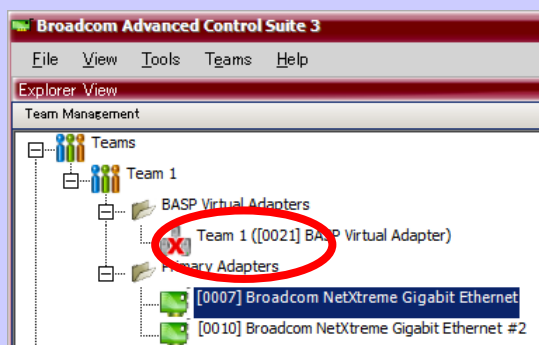
**Note**

When the message below appears, select [Yes].

"Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards. Do you want to continue?"

Tips

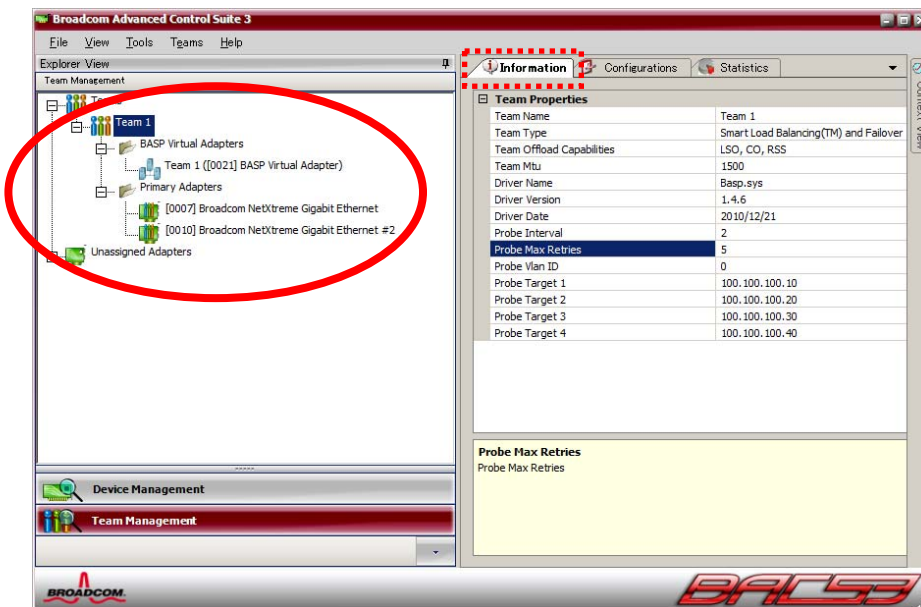
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



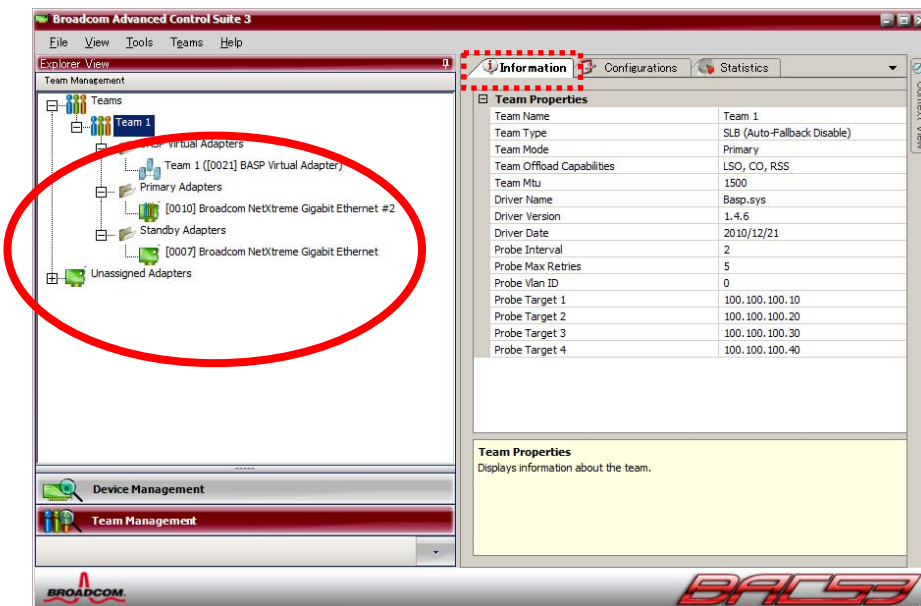
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite3** and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

– Smart Load Balancing and Failover (without Standby Member)



– Smart Load Balancing (Auto-Failback Disable) (with Standby Member)



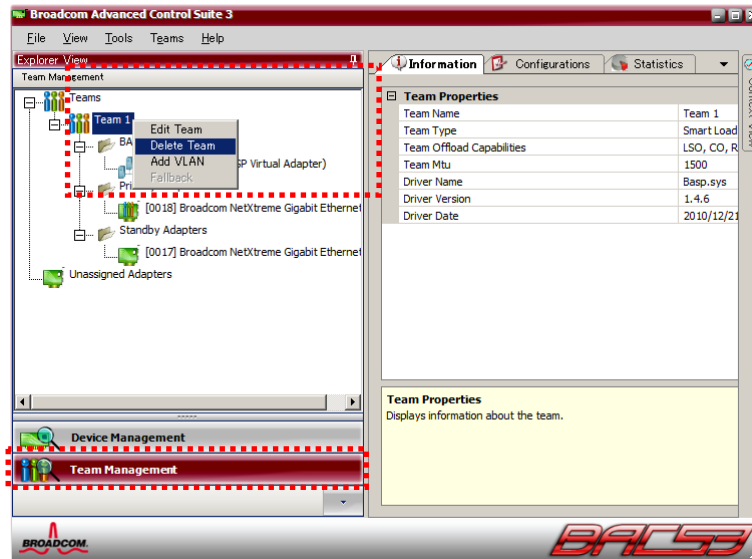
Team setup is now complete.

(4) Procedure for deleting team**Important**

You must delete teams from **Broadcom Control Suite3**.

You cannot delete the team from the team adapter displayed in the Device Manager.

1. Double-click **Broadcom Control Suite3** in the Control Panel window.
Broadcom Advanced Control Suite3 starts.
2. Click **Team Management** from the left menu, right-click the team name under **Teams**, and then select **Delete Team** from the short-cut menu.

**Tips**

When the message below appears, select [Yes].

"The selected team will be deleted from system, do you want to proceed?"

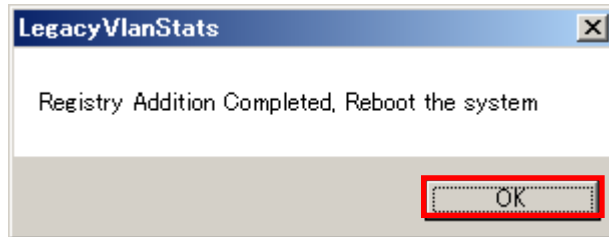
NOTE: Applying the changes will temporarily interrupt the network connection. The process may take several minutes and the connection will resume afterwards."

3. Insert the EXPRESSBUILDER DVD into the optical disk drive.
If an autorun menu appears, close the menu window.

Important

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory. Proceed to the next step.

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using the EXPRESSBUILDER DVD:
Optical disk drive letter: \020\win\winnt\dotnet\lan
 - If the Starter Pack was installed from the Internal Flash Memory:
System drive letter: \StartPKG\dotnet\lan
5. When the following message appears, click [OK].



6. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

Team deletion is now complete.

6.4.4 Graphics accelerator driver

The graphics accelerator driver for standard configurations is installed when the Starter Pack is installed from EXPRESSBUILDER.

To reinstall drivers separately, complete the following steps.

1. Insert the EXPRESSBUILDER DVD into the optical disk drive.

If an autorun menu appears, close the menu window.

Tips

You do not have to insert the EXPRESSBUILDER DVD if the Starter Pack was installed from the Internal Flash Memory.

2. From the **Start** menu, point to **All programs, Accessories**, and then select **Explorer**.

3. Double-click the **install.bat** icon in the following folder.

When using the EXPRESSBUILDER DVD:

Optical disk drive letter: \020\win\winnt\dotnet\video]

If the Starter Pack was installed from the Internal Flash Memory:

System drive letter: \StartPKG\dotnet\video]

You will be prompted to confirm the End User License Agreement during this process. Click the [ACCEPT] button and continue.

4. Eject the EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

6.4.5 When using a SCSI controller (N8103-75/107)

If the OS standard installer is used for setup, install the Starter Pack to install the driver.

If an additional SCSI controller is connected after setup, install the Starter Pack to install the driver.

6.4.6 When using a SAS controller (N8103-104A/142)

If the OS standard installer is used for setup, install the Starter Pack to install the driver.

If an additional SAS controller is connected after setup, install the Starter Pack to install the driver.

6.4.7 When using a RAID Controller (N8103-135)

The driver installation procedure depends on the environment. Use the procedure according to your environment for installing the driver.

- When using a RAID Controller (N8103-128/G128/134)
The OS will run the plug-and-play function and the driver will automatically be installed. You do not need to install it manually.
- When not using a RAID Controller (N8103-128/G128/134)
If the OS standard installer is used for setup, install the Starter Pack to install the driver.
If an additional RAID Controller is connected after setup, install the Starter Pack to install the driver.

6.5 Specifying PAE Option

If the server can mount a memory of more than 4 GB in a 32-bit system, specify the PAE option settings to use that memory.

Important

The PAE option is not supported by all products.

Refer to the following knowledge base to confirm whether your product supports the PAE option:

KB291988

A description of the 4 GB RAM Tuning feature and the Physical Address Extension parameter

For Windows Server 2003, the PAE option can be specified by editing the `Boot.ini` file. The following shows an example of editing the `Boot.ini` file.

1. From the **Start** menu, point to **Settings** and then click **Control Panel**.
2. Double-click the **System** icon in the Control Panel window.
The System Properties dialog box appears.
3. Select the **Advanced** tab, and then click [Settings] under **Startup and Recovery**.
4. Click [Edit] in the **System startup** area on the Startup and Recovery dialog box, and then open the `Boot.ini` file.
5. Add `/PAE` to operating systems, and then save the `Boot.ini` file.
`Boot.ini` example:

```
[boot loader]
timeout=30
default=multi(0)disk(0)rdisk(0)partition(2)\WINDOWS
[operating systems]
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS=Windows Server 2003"
/fast detect
multi(0)disk(0)rdisk(0)partition(2)\WINDOWS="Windows Server 2003,
PAE"/fastdetect/PAE
C:\CMDCONS\BOOTSECT.DAT="Microsoft Windows Recovery Console"/cmdcons
```

Editing of the `Boot.ini` file is now complete.

Tips

You can specify an OS to start up automatically from the **Default operating system** drop-down list in the Startup and Recovery dialog box.

6.6 Installing the Bundled Software

The supplied EXPRESSBUILDER DVD contains the server monitoring software NEC ESMPRO Agent and system management software NEC ESMPRO Manager. Refer to *Chapter 2 Installing the Bundled Software* to install the software separately.

Tips

Some utilities should be installed into PC for Management on the network. For details, refer to *Chapter 2 Installing the Bundled Software*.

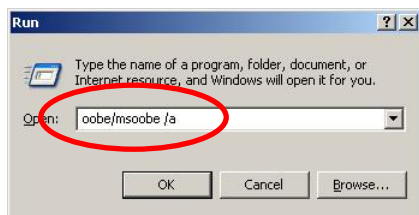
6.7 License Authentication

To use Windows Server 2003, the license must be authenticated in advance. The following describes the license authentication procedure.

Tips

Following this procedure is not required if you use a backup CD-ROM for installation.

1. Select **Run** from the **Start** menu.
Enter the following to the **Open** text box, and then click [OK].
oobe/msoobe /a



2. When the following message appears, click [Next].



The following message appears.

Generating new Installation ID...

3. Follow the instructions in the following message to start the license authentication process.



License authentication is now complete.

6.8 Installation When Multiple Logical Drives Exist

Before starting reinstallation, backup data for future use in case of data loss.

(1) Installation process

1. Follow the steps to start Setup with OS standard installer.
2. When the following message appears, select the partition to which you want to set up the operating system.

The following list shows the existing partitions and unpartitioned space on this computer.
Use the UP and DOWN ARROW keys to select an item in the list.

Important You cannot edit the drive letters for the system volume or boot volume after setup is complete. Make sure that the drive letters assigned in this window are correct, and then proceed with setup.

3. Follow the steps to proceed with Setup with OS standard installer.

Installation is now complete.

Tips The drive letter might change after installation. If you want to change the drive letter, use the procedure shown in *Changing drive letter assignments* below.

(2) Changing drive letter assignments

The steps below cannot change drive letter assignments for the system volume or boot volume. Be careful when assigning these.

1. From the **Start** menu, right-click **My Computer** and then select **Management**. Next, launch **Computer Management**.
2. From the window on the left, select **Disk Management**.
3. Right-click the volume whose drive letter you want to change, and then select **Change drive letter and path**.
4. Click [Change].
5. Click [Assign next drive letter], and then select the drive letter you want to assign.
6. Click [OK].
7. When the following message appears, read the contents and then click [OK].

Changing the drive letter of a volume might cause programs to no longer run. Are you sure you want to change this drive letter?

8. Close the Computer Management window.

Changing drive letter assignments is now complete.

7. Setup for Solving Problems

This section describes the features that must be set up in advance so that the server can recover from any trouble immediately and precisely.

7.1 Specifying Memory Dump Settings (Debug Information)

This section describes the procedures for collecting a memory dump (debug information) in the server.

Important

- **Cautions concerning memory dumps**Memory dumps must be collected by a staff member from the maintenance service company. Customers only need to specify the settings for the memory dump.
- If any trouble occurs after specifying the settings below and you attempt to restart the system to save the memory dump, a message informing you that the system is short of virtual memory might appear. However, this message can be ignored and you can proceed with the restart. If you restart the system a second time, the memory dump might not be stored normally.

7.1.1 For Windows Server 2008 R2

Follow the procedure below to specify the memory dump settings.

1. Select **Control Panel** from the **Start** menu.
The Control Panel window appears.
2. Click **System and Security** on the Control Panel window.

Tips

If **View by** is not **Category**, select **System** from **Control Panel** directly.

3. Click **System**.
4. Click **Advanced system settings**.
The System Properties dialog box appears.
5. Select the **Advanced** tab, and then click [Settings] under **Startup and Recovery**.
6. Specify the folder to store the debug information in the **Dump file:** text box.

Example: To store the debug information in D drive under the file name MEMORY.DMP:
D:\MEMORY.DMP

Important

- For the *Write debugging information* drop-down list, we recommend specifying *Complete memory dump*. If the mounted memory size is greater than 2 GB, however, *Complete memory dump* cannot be specified because it is not displayed on the drop-down list. In this case, specify *Kernel memory dump* instead.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB".
- If you attempt to add memory that will cause the mounted memory size to exceed 2 GB, specify *Kernel memory dump* from the *Write debugging information* drop-down list before adding the memory. The size of the debug information (memory dump) to be collected changes if memory is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

7. Click [Settings] under **Performance**.
The Performance Options dialog box appears.
8. Click the **Advanced** tab on the Performance Options dialog box.
9. Click [Change] under **Virtual memory**.
10. Clear the **Automatically manage paging file size for all drives** check box, and then select the **Custom size** option button.
11. In the **Paging file size for each drive** group box, specify as follows:

For the **Initial size** text box, specify a value equal to or greater than the **Recommended** value shown in the **Total paging file size for all drives** area.

For the **Maximum size** text box, specify a value equal to or greater than the value specified in the **Initial size** text box.

After specifying the above values, click [Set].

Important

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the Windows partition paging file must be large enough to store dump files. Make sure to set a sufficient paging file size. If the paging file size is insufficient, correct debug information might not be able to be collected due to a shortage of virtual memory.
- For details about the *Recommended* value in the *Total paging file size for all drives* area, refer to *System partition size in Before Starting Setup*.
- When memory is added, re-specify the paging file according to the increased memory size.

12. Click [OK].

A message to restart the system might appear, depending on the modifications made.
In this case, restart the system.

Specification of the memory dump settings is now complete.

7.1.2 For Windows Server 2008

Follow the procedure below to specify the memory dump settings.

1. Select **Control Panel** from the **Start** menu, and then click **System**.
The System dialog box appears.
2. Click **Advanced system settings**.
The System Properties dialog box appears.
3. Select the **Advanced** tab, and then click [Settings] under **Startup and Recovery**.
4. Specify the folder to store the debug information in the **Dump file:** text box.

Example: To store the debug information in D drive under the file name MEMORY.DMP:

D:\MEMORY.DMP

Important

For Windows Server 2008 64-bit (x64) Edition

- For the *Write debugging information* drop-down list, we recommend specifying *Complete memory dump*. If the mounted memory size is greater than 2 GB, however, *Complete memory dump* cannot be specified because it is not displayed on the drop-down list. In this case, specify *Kernel memory dump* instead.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB".
- If you attempt to add memory that will cause the mounted memory size to exceed 2 GB, specify *Kernel memory dump* from the *Write debugging information* drop-down list before adding the memory. The size of the debug information (memory dump) to be collected changes if memory is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

For Windows Server 2008 32-bit (x86) Edition

- For the *Write debugging information* drop-down list, we recommend specifying *Complete memory dump*. If the mounted memory size is greater than 2 GB, however, *Complete memory dump* cannot be specified because it is not displayed on the drop-down list. In this case, specify *Kernel memory dump* instead.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 300 MB" (or 2048 MB + 300 MB if the memory size exceeds 2 GB).
- If you attempt to add memory that will cause the mounted memory size to exceed 2 GB, specify *Kernel memory dump* from the *Write debugging information* drop-down list before adding the memory. The size of the debug information (memory dump) to be collected changes if memory is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

5. Click [Settings] under **Performance**.
The Performance Options dialog box appears.
6. Click the **Advanced** tab on the Performance Options dialog box.
7. Click [Change] under **Virtual memory**.
8. Clear the **Automatically manage paging file size for all drives** check box, and then select the **Custom size** option button.

9. In the **Paging file size for each drive** group box, specify as follows:

For the **Initial size** text box, specify a value equal to or greater than the **Recommended** value shown in the **Total paging file size for all drives** area.

For the **Maximum size** text box, specify a value equal to or greater than the value specified in the **Initial size** text box.

After specifying the above values, click [Set].

Important

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure to set a sufficient paging file size. If the paging file size is insufficient, correct debug information might not be able to be collected due to a shortage of virtual memory.
- For details about the *Recommended* value in the *Total paging file size for all drives* area, refer to *System partition size* in *Before Starting Setup*.
- When memory is added, re-specify the paging file according to the increased memory size.

10. Click [OK].

A message to restart the system might appear, depending on the modifications made.

In this case, restart the system.

Specification of the memory dump settings is now complete.

7.1.3 For Windows Server 2003

Follow the procedure below to specify the memory dump settings.

Tips

Although the procedure below uses Windows Server 2003 as an example, Windows Server 2003 R2 x64 Edition can be set up using the same procedure.

1. Select **Control Panel** from the **Start** menu, and then click **System**.
The System Properties dialog box appears.
2. Click the **Advanced** tab.
3. Click [Settings] under **Startup and Recovery**.
4. Specify the folder to store the debug information in the **Dump file:** text box.

Example: To store the debug information in D drive under the file name MEMORY.DMP:

D:\MEMORY.DMP

Important

For Windows Server 2003 R2 x64 Edition

- For the *Write debugging information* drop-down list, we recommend specifying *Complete memory dump*. If the mounted memory size is greater than 2 GB, however, *Complete memory dump* cannot be specified because it is not displayed on the drop-down list. In this case, specify *Kernel memory dump* instead.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 1 MB".
- If you attempt to add memory that will cause the mounted memory size to exceed 2 GB, specify *Kernel memory dump* from the *Write debugging information* drop-down list before adding the memory. The size of the debug information (memory dump) to be collected changes if memory is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

For Windows Server 2003

- For the *Write debugging information* drop-down list, we recommend specifying *Complete memory dump*. If the mounted memory size is greater than 2 GB, however, *Complete memory dump* cannot be specified because it is not displayed on the drop-down list. In this case, specify *Kernel memory dump* instead.
- Specify a drive that has a free space of at least "the memory capacity mounted on the server + 12 MB" (or 2048 MB + 12 MB if the memory size exceeds 2 GB).
- If you attempt to add memory that will cause the mounted memory size to exceed 2 GB, specify *Kernel memory dump* from the *Write debugging information* drop-down list before adding the memory. The size of the debug information (memory dump) to be collected changes if memory is added. Make sure that the free space of the drive to store the debug information (memory dump) is sufficient.

5. Click [Settings] under **Performance**.
The Performance Options dialog box appears.
6. Click the **Advanced** tab on the Performance Options dialog box.
7. Click [Change] under **Virtual memory**.

8. For the **Initial size** text box in the **Paging file size for selected drive** group box, specify a value equal to or greater than the **Recommended** value shown in the **Total paging file size for all drives** area, and then click [Set].

Important

- The above paging file sizes are recommended for collecting debug information (dump file). The initial size of the boot volume paging file must be large enough to store dump files. Make sure to set a sufficient paging file size. If the paging file size is insufficient, correct debug information might not be able to be collected due to a shortage of virtual memory.
- For details about the *Recommended* value in the *Total paging file size for all drives* area, refer to *System partition size* in *Before Starting Setup*.
- When memory is added, re-specify the paging file according to the increased memory size.

9. Click [OK].

A message to restart the system might appear, depending on the modifications made. In this case, restart the system.

Specification of the memory dump settings is now complete.

7.2 How to Create a User-mode Process Dump File

7.2.1 For Windows Server 2008 R2 and Windows Server 2008

The user-mode process dump file records information when an application error occurs.

If an application error occurs, obtain user-mode process dump information using the following procedures without closing the pop-up window that reported the error:

1. Right-click an empty area of the taskbar and then click **Task Manager**, or press the <CTRL> + <SHIFT> + <ESC> keys to start **Task Manager**.
2. Click the **Processes** tab.
3. Right-click the name of the process that you want to obtain dump information for, and then click **Create Dump File**.
4. A dump file for the process is created in the following folder:
C:\Users\user name\AppData\Local\Temp

Tips

The folder above may be treated as a hidden folder.

If the folder is not displayed, perform the following:

- For Windows Server 2008 R2:
Open Explorer, click **Organize** and then **Folder and search options**. Click the **View** tab and then select the **Show hidden files, folders, and drives** check box.
- For Windows Server 2008:
Open Explorer, select **Folder and search options** from the **Tools** menu. Click the **View** tab and then select the **Show hidden files and folders** option button.

Once the user-mode process dump file has been created, obtain the file from the folder shown in step 4.

For details about how to create a user-mode process dump file, visit the following Microsoft Support web page:

How to create a user-mode process dump file in Windows Server 2008

<http://support.microsoft.com/kb/949180/en-us>

Tips

For Windows Server 2008 R2 and Windows Server 2008, because Dr. Watson is replaced by Problem Reports and Solutions, it is not possible to obtain a crash dump file by executing Dr. Watson. Use the procedure above to obtain information equivalent to a crash dump file.

User-mode process dump file creation is now complete.

7.2.2 For Windows Server 2003 (setting up Dr. Watson)

Dr. Watson for Windows is a debugger for application errors. If an application error is detected, Dr. Watson analyzes the system and records the diagnostic information (log). Follow the procedure below for collecting diagnostic information.

1. Select **Run** from the **Start** menu.
2. Enter `drwtsn32.exe` in the **Open** text box, and then click [OK].
The Dr. Watson for Windows dialog box appears.
3. Specify the path to save the diagnostic information file in the **Log File Path** text box.
The diagnostic information file is saved under the file name `DRWTSN32.LOG`.

Note

A network path cannot be specified. Specify a path on the local computer.

4. Specify the path to save the crash dump file into the **Crash Dump** text box.

Tips

A crash dump file is a binary file that can be read by Windows Debugger.

5. For **Crash Dump Type**, select the **Full** option button.
6. In the **Options** group box, select the following check boxes:
 - **Dump Symbol Table**
 - **Dump All Thread Context**
 - **Append To Existing Log File**
 - **Create Crash Dump File**

For details about the function of each option, refer to the online help.

7. Click [OK].

Dr. Watson setup is now complete.

7.3 Installing Network Monitor

Utilizing Network Monitor helps you investigate and manage network troubles.

7.3.1 For Windows Server 2008 R2 and Windows Server 2008

(1) Setting up Network Monitor

Tips

Windows Server 2008 R2 and Windows Server 2008 do not provide Network Monitor.

To capture network traces on Windows Server 2008 R2 or Windows Server 2008, Microsoft Network Monitor must be installed using the procedure described below.

1. Download Network Monitor from the following Microsoft web page:
<http://support.microsoft.com/kb/933741/en-us>
2. Run the downloaded file to start the installer.
Follow the onscreen instructions to install Network Monitor.

Tips

If the Security Alert message appears, click [Run].
In the setup format selection window, select **Complete**.

Network Monitor installation is now complete.

Tips

To uninstall Network Monitor, use **Programs and Features**.

(2) Capturing network traces

1. Select **Microsoft Network Monitor** from the **Start** menu to start Network Monitor.
2. On the **Start Page** tab, click [Create a new capture tab...]. Or, select **New** from the **File** menu, and then click [Capture...].
A new tab for capturing network traces is created.
3. On the **Select Networks** pane, select the network whose traces are to be captured.
4. Select **Start** from the **Capture** menu to start capturing the network traces.
5. Select **Stop** from the **Capture** menu to stop capturing the network traces.
6. Select **Save As...** from the **File** menu.
The Save As dialog box appears. Select **All captured frames** from **Frame selection**, and then enter the folder and file names.

Tips

The default folder is as follows:
C:\Users\<User name>\Documents\Network Monitor 3\Captures

7. Click [Save].
The network trace file is created in the folder specified in step 6.

The setup for capturing network traces is now complete.

7.3.2 For Windows Server 2003

Utilizing Network Monitor helps you investigate and manage network failures. Because the system must be restarted after installing Network Monitor, it is recommended to perform installation before a failure occurs.

1. From the **Start** menu, point to **Settings** and then click **Control Panel**.
The Control Panel window appears.
2. Double-click the **Add/Remove Programs** icon.
The Add/Remove Programs dialog box appears.
3. Click the **Add/Remove Windows Components** icon.
The Windows Components Wizard dialog box appears.
4. Select **Management and Monitoring Tools** under **Components**, and then click [Details].
The Management and Monitoring Tools dialog box appears.
5. Select the **Network Monitor Tools** check box under **Subcomponents of Management and Monitoring Tools**, and then click [OK].
6. The Windows Components Wizard dialog box appears again. Click [Next].
7. When a message prompting you to insert an installation disk appears, insert the required CD into the optical disk drive and then click [OK].

Tips

The message prompting insertion of the disk states that it is required to insert the CD with the label **Service Pack 1 CD-ROM**. For Windows Server 2003 R2, however, insert **Windows Server 2003 R2 DISC 1** into the optical disk drive.

8. Click [Finish] in the Windows Components Wizard dialog box.
9. Click the [Close] button in the Add/Remove Programs dialog box.
10. Close the Control Panel window.

Network Monitor installation is now complete. To start Network Monitor, point to **Programs** and then **Management Tools** from the **Start** menu, and then select **Network Monitor**. For details about how to operate Network Monitor, refer to the online help.

8. Windows OS Parameter File

This section describes a parameter file for Windows OS.

8.1 Creating a Parameter File

If a parameter file is used when performing Setup with EXPRESSBUILDER, a series of setup procedures from installing of the OS to installing several utilities can be executed automatically just by pressing keys for confirmation.

The settings from the previous installation can also be used when re-installing the system.

It is therefore recommended to use a parameter file to set up the server.

Tips

Windows can be installed without a parameter file.

A parameter file can be created or modified during Setup with EXPRESSBUILDER.

8.1.1 How to create a parameter file

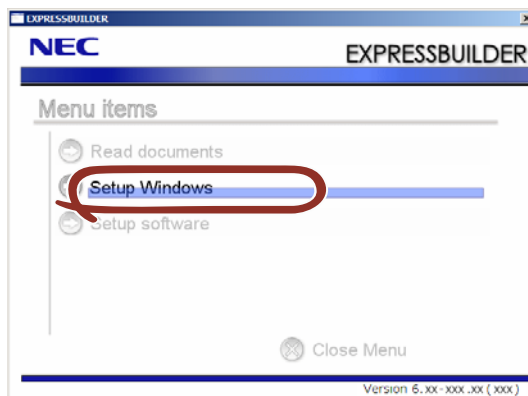
This section describes how to specify the setup information necessary for OS installation and how to create a parameter file.

Follow the procedure described below.

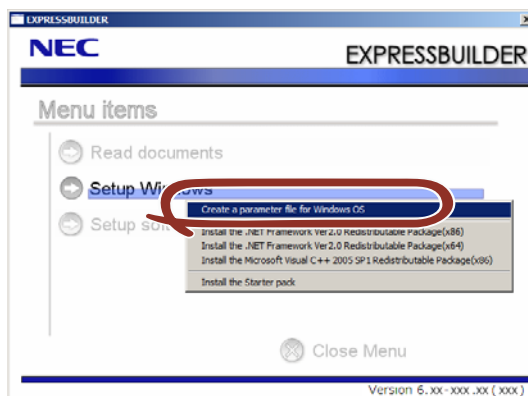
Important Do not remove the EXPRESSBUILDER DVD from the drive while creating a parameter file.

- Tips**
- A parameter file can be created when using PC98-NX series, PC-9800 series, and PC-AT compatible PCs.
 - A parameter file can be created when using the following operating systems:
 - Windows Server 2008 R2 (Full installation)
 - Windows Server 2008 (Full installation)
 - Windows Server 2003 x64 Edition, Windows Server 2003
 - Windows 7
 - Windows Vista
 - Windows XP x64 Edition, Windows XP

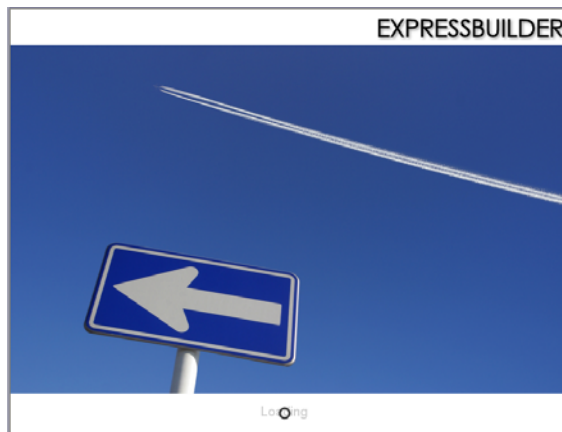
1. Start the OS.
2. Insert the supplied EXPRESSBUILDER DVD into the optical disk drive. The EXPRESSBUILDER menu item window appears.
3. Right-click on the window or click **Setup Windows** to open the short-cut menu.



4. Select **Create a parameter file for Windows OS**.



The following window appears.



5. When the setup selection menu window appears, specify the parameters according to the following procedure.



Select the appropriate OS from the **Install Windows** drop-down list, and then click [Next].

→ Go to *Chapter 1 (8.1.1 How to create a parameter file) - (1) RAID settings*.

Tips

- To modify an existing parameter file, click **Load a Parameter file** on the setup selection menu.
- To cancel parameter file creation in the middle, click [X] on the upper right of the dialog box.

(1) RAID settings

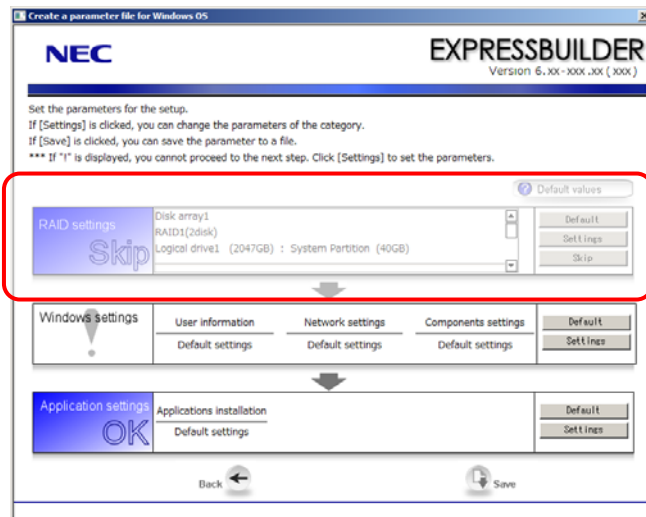
This function automatically recognizes the RAID Controller connected to the server and configures the RAID System, so you must complete setup of the server by following the "User's Guide" in advance.

Important Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters.
Backing up user data, as needed, is recommended.

Note When using an onboard RAID Controller (LSI Embedded MegaRAID):

- This function does not support the creation of RAID10 by using the onboard RAID Controller.
- Refer to *Chapter 2 (4. RAID System Configuration)* in "Maintenance Guide" when creating RAID10.

Specify the RAID settings using the RAID settings wizard on the parameter setup menu.



Important The number of Physical Devices displayed on the *RAID settings* wizard is the upper limit supported by the RAID Controller.
Make sure that the number of actually connected Physical Devices does not exceed this value.

Tips Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

When creating a new Logical Drive

1. Click [Settings] in **RAID settings**.
2. Use the wizard to set up the Logical Drive.

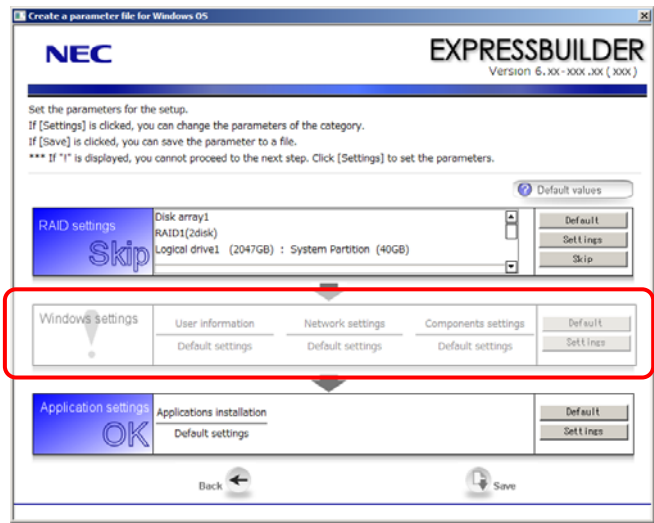
When skipping the creation of a new Logical Drive

1. Click [Skip] in **RAID settings**.

Tips Use the [Skip] button if, after modifying the settings with the RAID settings wizard, you want to install the existing configurations without modifying them.

(2) Windows settings

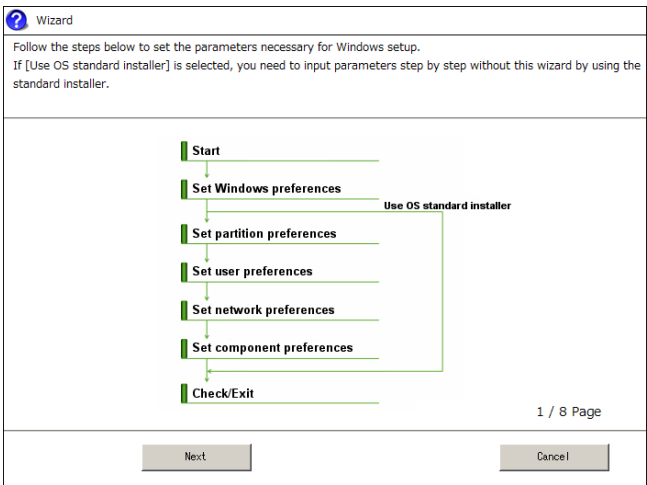
Set up Windows by using the Windows settings wizard on the parameter setup menu.



Tips

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

- 1. Click [Settings] in **Windows settings**.
- 2. Click [Next] in the Windows settings wizard.



3. Specify the Windows basic settings.
- The basic information window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

If [Use OS standard installer] is selected, Windows is installed by using the standard installer contained in the OS media, and applications such as ESMPRO must be installed separately after Windows installation.
If [Setup with EXPRESSBUILDER] is selected, both Windows and applications can be installed easily.

Basic information

Operating System : Windows Server 2008 R2

☐ Use OS standard installer

☐ Copy the OEM drivers into the removable media

☒ Setup with EXPRESSBUILDER

Edition : Standard(Full Installation)

Language : English

Time zone : (UTC-08:00) Pacific Time (US & Canada)

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Next

Cancel

4. Set up the partitions.

The partitioning window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Set parameters about the partition of Windows system.
Windows is installed into the first hard disk drive or logical drive. The partition size can be set within 2TB.(The area where 2TB is exceeded cannot be used.)

Partitioning

☐ Use the existing partition

☒ Create a new partition

☐ Specify the maximum amount

☒ Enter a value : 40 (GB) *1TB=1024GB
(15GB - 2047GB)

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Cancel

Express5800/GT-110d, GT-110d-S, R110d-1E, E110d-1 Installation Guide (Windows)

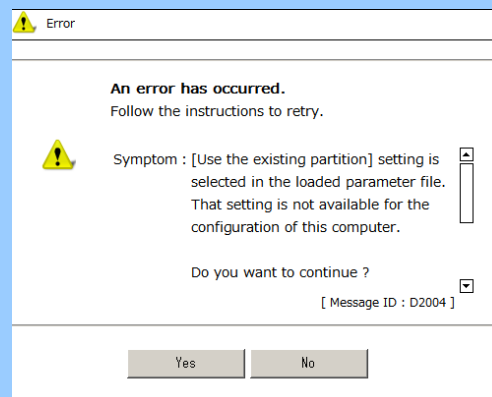
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Important

- Some data in the Hard Disk Drive might be deleted depending on the system settings. Pay attention to input parameters. Backing up user data, as needed, is recommended.
 - Partition size
 - Specify a partition size larger than the minimum size required for installing the operating system. (Refer to *System partition size* in *Before Starting Setup*.)
 - Do not specify a size that is greater than the capacity of the connected Hard Disk Drive.
 - If you select *Create a new partition* under *Partitioning*, the entire contents of the Hard Disk Drive will be deleted.
 - If you select *Use the existing partition* under *Partitioning*, data in the boot partition (if it exists) and Windows partition is formatted and deleted. Data in other partitions will be kept.
- The figure below shows in which partitions data will be deleted.

Boot partition	Windows partition	User data partition
Deleted	Deleted	Retained

- You cannot reinstall the operating system in an existing partition that has been upgraded to a Dynamic Disk (refer to *Hardware configuration warnings* in *Before Starting Setup*). Do not select *Use the existing partition* under *Partitioning*.
- The following message might be displayed when a created parameter file is loaded. In this event, installation using an existing partition cannot be executed. Select *Create a new partition* under *Partitioning* for installation. If there is a data partition, it will be deleted.



5. Enter the user information.
The user information window appears. Enter the user information, and then click [Next].

Important For Windows Server 2008 R2/Windows 2008, you must enter a computer name and administrator password that satisfies the following conditions:

- Contains 6 or more characters
- Contains characters from at least three of the following categories: numbers, uppercase letters, lowercase letters, and symbols.

Tips

- If a parameter file is used for setup or if you return to the previous screen, ... is displayed in the **Administrator password** and **Confirm Administrator password** text boxes even if no value has been entered.

6. Set up the network.
The network setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

Tips

The order of entry in the custom settings might differ from the numbering of the LAN ports.

Note

Even when an optional network board is connected, the custom setting list only shows standard network boards. Optional network boards are not displayed.
When an optional network board has been mounted, the optional network board may need to be configured for the custom settings. After finishing Setup with EXPRESSBUILDER, specify the network settings again.

7. Enter the domain or workgroup name to be used.
- The domain and workgroup setting window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Join this computer to a domain or a workgroup.
Select [Workgroup] or [Domain], and then input other parameters.

Join a workgroup

Workgroup name : WORKGROUP

Join a domain

Domain name :

Account name :

Password :

Confirm password :

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Next

Cancel

8. Select the Windows components for installation.
- The Windows components selection window appears. Confirm the settings, making corrections as needed, and then click [Next].

Wizard

Set parameters about Windows components.
Select Windows features and Server roles to be enabled.

Server roles

☐ Web server(IIS)

☐ DHCP server

☐ DNS server

☐ File services

☐ Print and Document services

Windows features

☒ SNMP service

☐ Simple TCP/IP services

☐ WINS server

Advanced

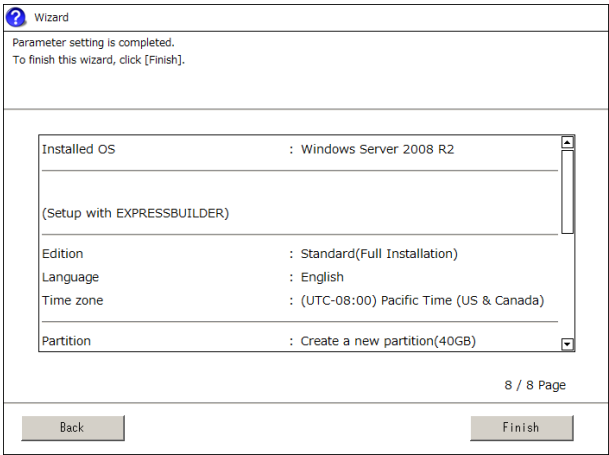
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Next

Cancel

9. Click [Finish] on the confirmation window.

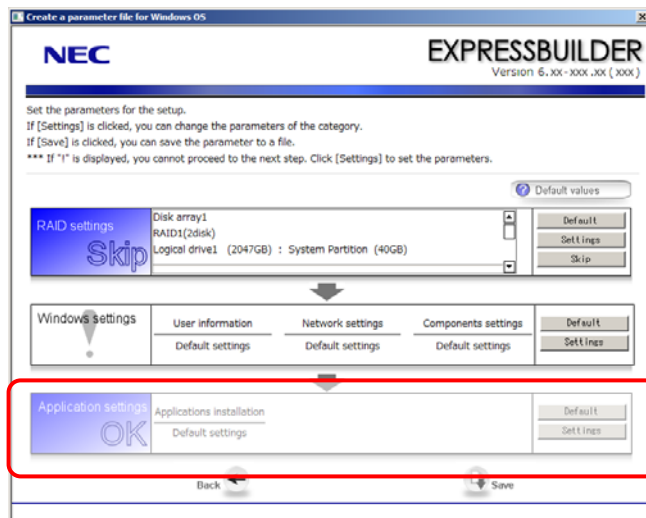


Return to the parameter setup menu.

Proceed to application setup.

(3) Application settings

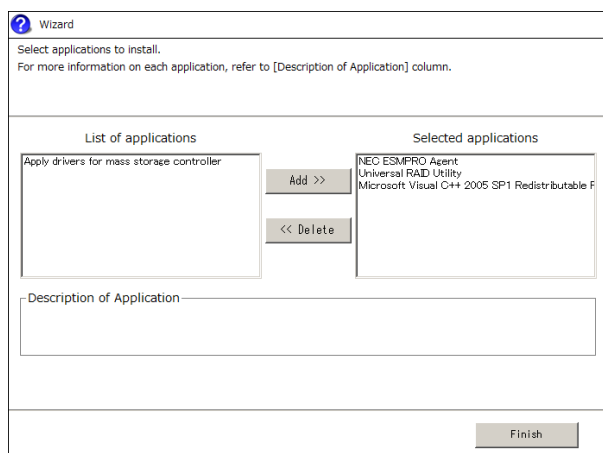
Set up applications using the Application settings wizard on the parameter setup menu.

**Tips**

Use the [Default] button when you want to return to the default value of parameters after having modified them with the wizard.
You can confirm the value set by clicking the [Default] button if you click the [Default values] button.

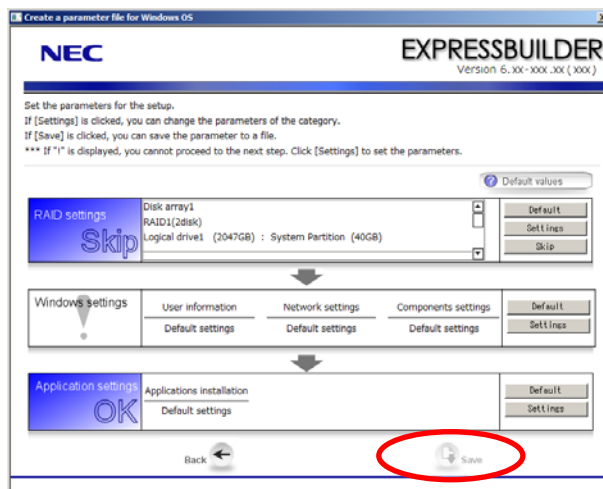
Click [Settings] in **Application settings**.

The application setting window appears. Confirm the settings, making corrections as needed, and then click [Finish].

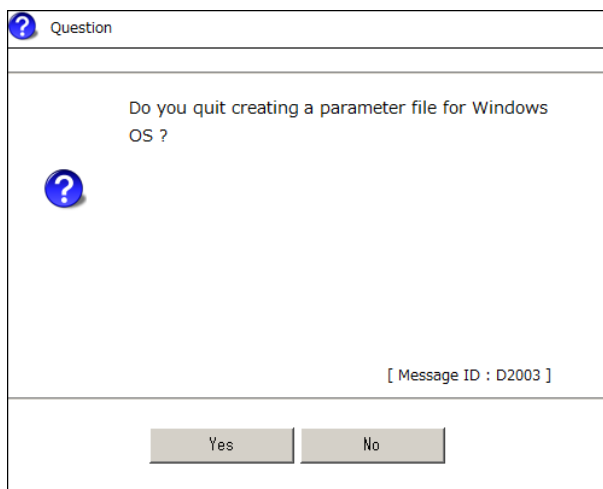


(4) Saving the parameter file

When the dialog box shown below appears, click [Save] to save the parameter file to removable media.



When the following message appears, click [Yes] to complete parameter file creation.



Parameter file creation is now complete.

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NEC Express5800 Series Express5800/GT-110d, GT-110d-S, R110d-1E, E110d-1

Installing the Bundled Software

This chapter describes the software provided for the Express5800 Series.

1. Bundled software for the server

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

2. Bundled software for PC for Management

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

***1.* Bundled Software for the Server**

This section introduces the software bundled in the server package. For details, refer to the online software documents.

***1.1* NEC ESMPRO Agent (for Windows)**

NEC ESMPRO Agent (for Windows) is an application used to monitor the server.

It is automatically installed when a Windows OS is installed by using EXPRESSBUILDER.

To install NEC ESMPRO Agent (for Windows) separately, refer to "*NEC ESMPRO Agent Installation Guide (Windows)*" supplied with this product.

1.2 NEC ESMPRO Agent Extension

NEC ESMPRO Agent Extension allows you to manage this server remotely by the server's BMC connecting with NEC ESMPRO Manager.

For details about how to install NEC ESMPRO Agent Extension, refer to "*NEC ESMPRO Agent Extension Installation Guide*" on the NEC EXPRESSBUILDER DVD.

1.3 BMC Configuration

BMC Configuration enables you to specify configuration information to this server's BMC.

For details about how to install BMC Configuration, refer to "*BMC Configuration User's Guide*" on the NEC EXPRESSBUILDER DVD.

1.4 NEC ExpressUpdate Agent

NEC ExpressUpdate Agent enables you to manage and update the versions of the firmware and software installed in this server.

By using NEC ESMPRO Manager, you can download update packages automatically and install them without interrupting the system.

For details about how to install NEC ExpressUpdate Agent, refer to "*NEC ExpressUpdate Agent Installation Guide*" on the NEC EXPRESSBUILDER DVD.

Important

Updates are available for some firmware and software that do not support NEC ExpressUpdate. Refer to the following website to install these packages.

<http://www.nec.com/global/prod/express/index.html>

1.5 Universal RAID Utility

Universal RAID Utility is an application used to manage and monitor the following RAID Controllers:

- Onboard RAID Controller (LSI Embedded MegaRAID)
- N8103-128 RAID Controller (128 MB, RAID 0/1)
- N8103-G128 RAID Controller (128 MB, RAID 0/1)
- N8103-129 RAID Controller (256 MB, RAID 0/1)
- N8103-130 RAID Controller (256 MB, RAID 0/1/5/6)
- N8103-134 RAID Controller (512 MB, RAID 0/1/5/6)
- N8103-135 RAID Controller (512 MB, RAID 0/1/5/6)

For details about how to install and operate Universal RAID Utility and its functions, refer to "*Universal RAID Utility User's Guide*" on the supplied EXPRESSBUILDER DVD.

If the operating environment (such as the operating system) for Universal RAID Utility described in the user's guide differs from the one described in the user's guide of this product, follow the operating environment in the user's guide of this product.

1.5.1 Setup of Universal RAID Utility

This section describes setup of Universal RAID Utility.

(1) Setup for BTO (Built To Order) models

If you purchased a BTO model configured with a RAID System, Universal RAID Utility is already installed. You do not need to install Universal RAID Utility for such models.

(2) Setup with EXPRESSBUILDER

You can easily install Universal RAID Utility by using EXPRESSBUILDER. When you execute Setup with EXPRESSBUILDER, Universal RAID Utility is installed along with Windows. Select **Universal RAID Utility** in the application selection dialog box during setup.

(3) Setup using Universal RAID Utility setup program

The Universal RAID Utility setup program can be launched from the autorun menu of EXPRESSBUILDER.

From the autorun menu, select **Setup software** and then **Universal RAID Utility**.

For Windows, the following runtime components are required:

- Microsoft .NET Framework 2.0 to 3.5
- Microsoft Visual C++ 2005 SP1 library

These applications can also be installed from the autorun menu.

To install Microsoft .NET Framework 2.0, select **Setup Windows** and then **Install the .NET Framework Ver2.0 Redistribution Package (x86)** (**Install the .NET Framework Ver2.0 Redistribution Package (x64)** in the case of x64) from the autorun menu.

To install the Microsoft Visual C++ 2005 SP1 library runtime component, select **Setup Windows** and then **Install the Microsoft Visual C++ 2005 SP1 Redistribution Package (x86)** (use x86 regardless of the CPU architecture) from the autorun menu.

Tips

- Microsoft .NET Framework
To use the RAID Viewer and Log Viewer, Microsoft .NET Framework Version 2.0 to 3.5 or later is required.
Windows Server 2008 and Windows Server 2008 R2 include .NET Framework 2.0 to 3.5.
Therefore, .NET Framework does not need to be installed when using these operating systems.
- Microsoft Visual C++ 2005 SP1 library runtime component
To use the RAID Viewer, the Microsoft Visual C++ 2005 SP1 library runtime component is required.
Windows Server 2008 R2 includes the Microsoft Visual C++ 2005 SP1 library.
Therefore, the Microsoft Visual C++ SP1 library runtime component does not need to be installed when using these operating systems.

1.5.2 Management by NEC ESMPRO Manager

NEC ESMPRO Manager Ver. 5.3 or later is used to remotely reference and monitor the RAID System that is managed by Universal RAID Utility.

For details about the operating environment NEC ESMPRO Manager, refer to "*NEC ESMPRO Manager Installation Guide*".

1.6 NEC Product Info Collection Utility

NEC Product Info Collection Utility is used to collect server information during maintenance or in the case of failure.

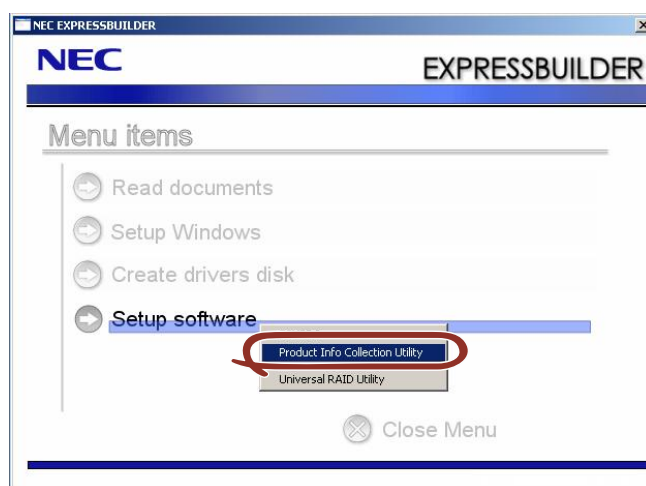
It can be installed from the EXPRESSBUILDER DVD.

This utility might be pre-installed in some server models.

1.6.1 Installation

You can install this utility through the following procedure.

1. Log in to Windows, and then insert the EXPRESSBUILDER DVD into the optical disk drive. The autorun menu shown below appears.
2. From the autorun menu, select **Setup Software** and then **Product Info Collection Utility**. Installation of this utility starts. After this, follow the instructions in the dialog boxes until installation is complete. (By default, it is installed in the *System drive*: \ezclct folder.)



Important

- Log in to the system with an account that has administrator rights.
- The installation drive must have at least 2.5 GB of free space.

1.6.2 Uninstallation

- **When the server is not in a Server Core configuration:**

From **Control Panel**, select **Add/Remove Programs** and then **Product Info Collection Utility (Vx.x.x)**. After this, follow the instructions in the dialog boxes until uninstallation is complete.

- **When the server is in the Server Core configuration:**

Execute the following command at the command prompt:

```
Wmic product where name="Product Info Collection Utility" call uninstall
```

2. Bundled Software for PC for Management

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 is an application used to remotely manage and monitor the hardware and RAID System of the server.

To use this function, install the bundled software such as NEC ESMPRO Agent for the server.

For details about the operating environment of NEC ESMPRO Manager and how to install it, refer to "*NEC ESMPRO Manager Installation Guide*" on the EXPRESSBUILDER DVD supplied with this product.