

NEC Express Server
Express5800 Series




Express5800/GT110e, GT110e-S, R110e-1E EXP280A, EXP281A, EXP282A Installation Guide (Windows)

Model Number: N8100-1890F/1891F/1892F/1894F/1932F/1933F

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

Optical disk drives

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

- DVD-ROM drive
- DVD Super MULTI drive

Hard Disk Drives

Unless otherwise stated, Hard Disk 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.

Refer to Chapter 1 (1.2 Supported Windows OS) for detailed information.

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 7	Windows 7 Professional 64-bit (x64) Edition Windows 7 Professional 32-bit(x86) Edition
Windows Vista	Windows Vista Business 64-bit (x64) Edition Windows Vista Business 32-bit(x86) Edition
Windows XP	Windows XP Professional x64 Edition Windows XP Professional
Windows PE ^{*3}	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 x86

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

*3: Used as an installation platform only.

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Industry Canada Class A Emission Compliance Statement

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

Avis de conformité à la réglementation d'Industrie Canada

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

CE / Australia and New Zealand Statement

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

BSMI Statement

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Turkish RoHS information relevant for Turkish market

EEE Yönetmeliğine Uygundur

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声 明

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部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷线路板	×	○	○	○	○	○
HDD、DVD等	×	○	○	○	○	○
机箱、支架	○	○	○	○	○	○
电源	×	○	○	○	○	○
键盘	×	○	○	○	○	○
其他（电缆、鼠标等）	×	○	○	○	○	○

○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。
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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-110e, GT-110e-S, R110e-1E

1

Installing Windows

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

1. Before Starting Setup

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

2. Setting Up the Operating System

Describes the flow chart of setting up the operating system

3. Setting Up Windows Server 2008 R2

Describes how to set up Windows Server 2008 R2

4. Setting Up Windows Server 2008

Describes how to set up Windows Server 2008

5. Setting Up Windows Server 2003 R2 x64 Edition

Describes how to set up Windows Server 2003 R2 x64 Edition

6. Setting Up Windows Server 2003

Describes how to set up 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.

1. Before Starting Setup

This section describes the points of using EXPRESSBUILDER (contained in this product) to set up Windows operating systems.

Important

If you have purchased your server by BTO and ordered to install Windows, a COA (Certificate of Authenticity) label that describes your product key is stuck on your server.



The product key is required when setting up or re-installing the OS. Do not intentionally peel off or damage the label. The product key cannot be reissued in any occasion. It is recommended to take a note of product key and store it carefully with other accessories.

1.1 Starting EXPRESSBUILDER

Use the attached EXPRESSBUILDER to reconfigure the RAID System or re-install the OS.

Start EXPRESSBUILDER by either of the following two ways according to the media in which the EXPRESSBUILDER is stored. Refer to *Chapter 2 (5. Details of EXPRESSBUILDER)* in Maintenance Guide for more information.

With the pre-installation model, you do not need to start the EXPRESSBUILDER.

EXPRESSBUILDER DVD

Insert the DVD to the optical disk drive of the server, and then reboot by turning off and on the server or by pressing <Ctrl> + <Alt> + <Delete> keys.

Internal Flash Memory (optional)

Press <F3> key when the following message appears on POST screen. At this time, **be sure to remove a bootable disc from the optical disk drive.**

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

1.2 Supported Windows OS

EXPRESSBUILDER supports the following editions of Windows operating systems:

See the next section (1.3 *Service Pack Support*) for Service Pack.

Name of Windows OS		Supported		
		GT110e	GT110e-S	R110e-1E
Windows Server 2008 R2	Windows Server 2008 R2 Standard	✓	✓	✓
	Windows Server 2008 R2 Enterprise	✓	✓	✓
	Windows Server 2008 R2 Foundation	✓	✓	–
Windows Server 2008	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	Windows Server 2003 R2 Standard	✓	✓	✓
	Windows Server 2003 R2 Enterprise	–	–	✓
Windows Server 2003	Windows Server 2003 Standard	✓	✓	–
	Windows Server 2003 Enterprise	–	–	–

✓ : Supported

– : Not Supported

1.3 Service Pack Support

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

Service Pack	Windows Server 2008 R2
Service Pack 1 Included	✓
NO Service Pack + Service Pack 1	✓
NO Service Pack	✓

Service Pack	Windows Server 2008
Service Pack 2 Included	✓
NO Service Pack + Service Pack 2	✓
NO Service Pack	✓

Service Pack	Windows Server 2003 R2 x64 Edition
Service Pack 2 Included	✓
NO Service Pack + Service Pack 2	✓
NO Service Pack	–

Service Pack	Windows Server 2003 R2
Service Pack 2 Included	✓
NO Service Pack + Service Pack 2	✓
NO Service Pack	–

Service Pack	Windows Server 2003
Service Pack 2 Included	–
Service Pack 1 Included + Service Pack 2	✓
NO Service Pack + Service Pack 2	–
Service Pack 1 Included	–
NO Service Pack	–

- ✓ : 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.

1.4 Mass Storage Controllers Supported by EXPRESSBUILDER

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 Mass Storage Controller Not Supported by EXPRESSBUILDER)*.

Express5800/GT110e

OS	Windows Server 2008 R2	Windows Server 2008	Windows Server 2003 R2 x64 Edition	Windows Server 2003
RAID Controllers supporting OS installation by EXPRESSBUILDER				
N8103-128 RAID Controller (128MB, RAID 0/1)	✓	✓	✓	✓
N8103-149 RAID Controller(512MB, RAID 0/1)	✓	✓	✓	✓
N8103-150 RAID Controller (512MB, RAID 0/1/5/6)	✓	✓	✓	✓
N8103-151 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓	✓
Onboard RAID Controller (LSI Embedded MegaRAID)	✓	✓	✓	✓
Other options				
N8103-104A SAS Controller	✓	✓	✓	✓
N8103-142 SAS Controller	✓	✓	✓	✓

Express5800/GT110e-S

OS	Windows Server 2008 R2	Windows Server 2008	Windows Server 2003 R2 x64 Edition	Windows Server 2003
RAID Controllers supporting OS installation by EXPRESSBUILDER				
N8103-128 RAID Controller (128MB, RAID 0/1)	✓	✓	✓	✓
N8103-149 RAID Controller(512MB, RAID 0/1)	✓	✓	✓	✓
N8103-150 RAID Controller (512MB, RAID 0/1/5/6)	✓	✓	✓	✓
N8103-151 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓	✓
Onboard RAID Controller (LSI Embedded MegaRAID)	✓	✓	✓	✓

Express5800/R110e-1E

OS	Windows Server 2008 R2	Windows Server 2008	Windows Server 2003 R2 x64 Edition	Windows Server 2003
RAID Controllers supporting OS installation by EXPRESSBUILDER				
N8103-128 RAID Controller (128MB, RAID 0/1)	✓	✓	✓	✓
N8103-149 RAID Controller (512MB, RAID 0/1)	✓	✓	✓	✓
N8103-150 RAID Controller (512MB, RAID 0/1/5/6)	✓	✓	✓	✓
N8103-151 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓	✓
Onboard RAID Controller (LSI Embedded MegaRAID)	✓	✓	✓	✓
Other options				
N8103-104A SAS Controller	✓	✓	✓	✓
N8103-142 SAS Controller	✓	✓	✓	✓
N8103-160 RAID Controller (1GB, RAID 0/1/5/6)	✓	✓	✓	✓
N8190-153 Fibre Channel Controller (1ch) (8Gbps/Optical)	✓	✓	*	*
N8190-154 Fibre Channel Controller (2ch) (8Gbps/Optical)	✓	✓	*	*

✓: Supported by EXPRESSBUILDER

*: Supported by accessory of optional board

1.5 When Using a Mass Storage Controller Not Supported by EXPRESSBUILDER

To install the Windows when using a mass storage controller not supported by EXPRESSBUILDER (such as the newest RAID controller), follow the steps below.

You do not need to perform the following instructions usually.

1. Have the instructions for the mass storage controller ready.

Note

If the contents of this document differ from that of the mass storage controller, prioritize the contents of the controller 's document.

2. If you use a RAID controller, follow the controller instructions to configure the RAID system.
3. If you want to set up by using EXPRESSBUILDER, go to Step 4.

Refer to (*Setup with OS standard installer*) section of each OS and click [Skip] in **RAID settings**.

4. Boot from EXPRESSBUILDER.
5. Select **Configure EXPRESSBUILDER settings** from Top Menu, and then select **Load a driver into EXPRESSBUILDER**. Next, click [Next].
Insert the media in which the driver for the mass storage controller is copied, select the destination, and then click [Perform].

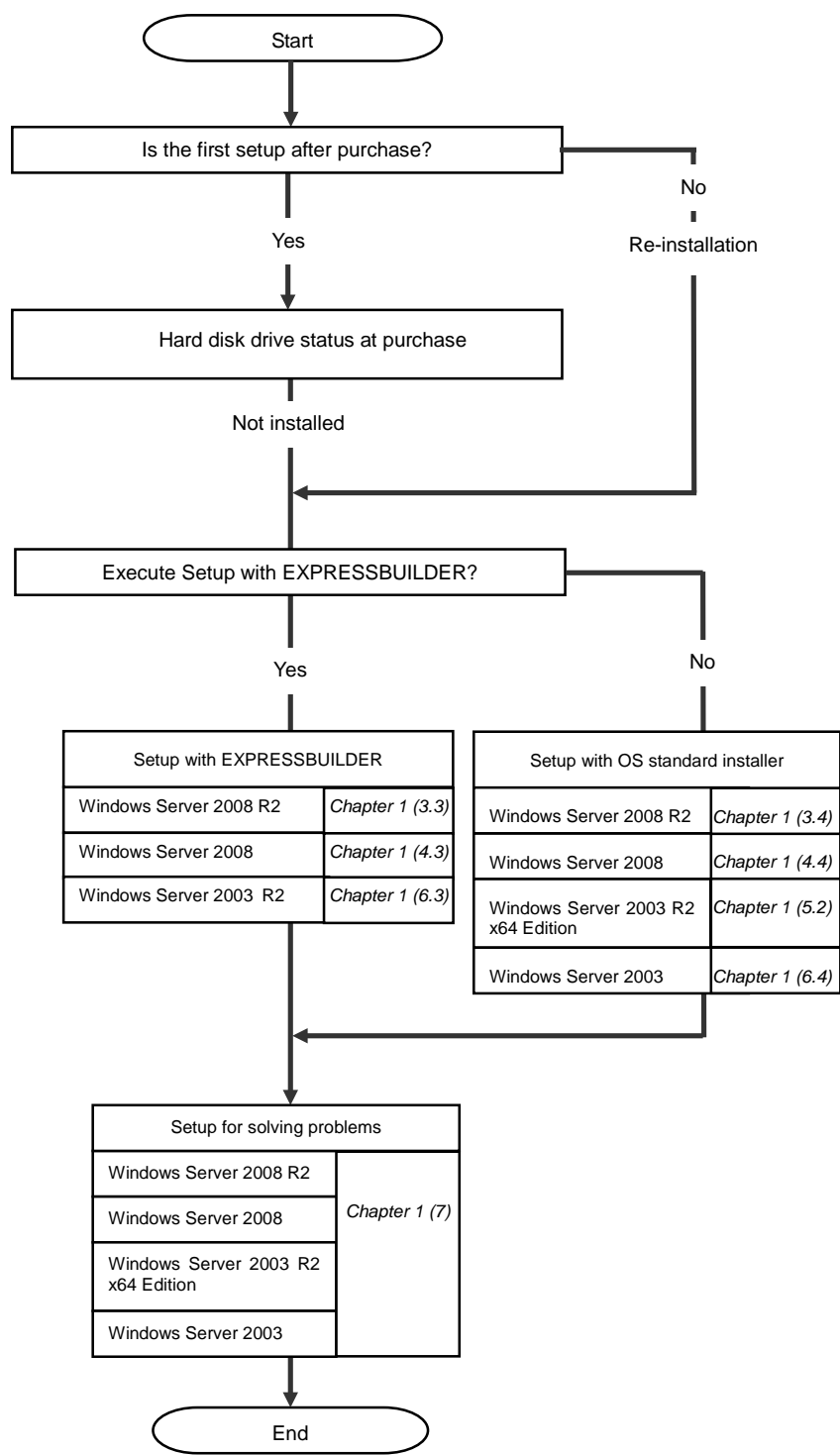
Tips

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

6. Setup the server according to "Setup with EXPRESSBUILDER" for each OS.
 - 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

See the figure below to find a section appropriate to your OS installation.



3. Setting Up Windows Server 2008 R2

Set up Windows Server 2008 R2.

3.1 Before Starting Setup

Read through the cautions explained here before starting setup.

BTO : Setting up of Pre-installed model

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

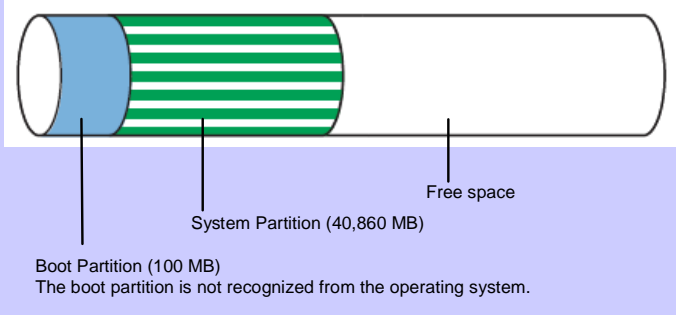
(1/4)

Setup			Items to confirm	
—	EB	OS	Windows family	<p>The following editions of the Windows Server 2008 R2 family may be installed.</p> <ul style="list-style-type: none"> Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Server 2008 R2 Foundation (for GT110e and GT110e-S only) <p>Inquiries about installing other editions may be made at your sales representative. For information about Service Packs, refer to <i>Chapter 1 (1.3 Service Pack Support)</i>.</p>
—	EB	OS	Hardware configuration	<p>The following hardware configurations require special procedures.</p> <ul style="list-style-type: none"> Reinstalling to a mirrored volume Disable the mirroring and reset to the basic disk. After installation, enable the mirroring again. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.
—	EB	OS		<ul style="list-style-type: none"> Peripheral devices such as RDX/MO Remove an MO device before installing an OS. Some peripheral devices need to be halted before installation. Refer to the manual provided with the peripheral devices for how to set a device appropriate to installation.
—	EB	OS		<ul style="list-style-type: none"> DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
—	EB	OS		<ul style="list-style-type: none"> Reinstalling to hard disk drives that have been upgraded to dynamic disks If the hard disk drive has been upgraded to a dynamic disk, the operating system cannot be reinstalled to it with the existing partitions. Set up the operating system with the OS standard installer.
—	EB	OS		<ul style="list-style-type: none"> 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 Applying Service Pack)</i>.
—	EB	OS		<ul style="list-style-type: none"> Setup when mass memory is installed If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured. If you fail to secure the dump file size, use OS standard installer for setup, and allocate the required file space by performing the following steps. <ol style="list-style-type: none"> Set the system partition size to a size sufficient to install the OS and paging file. Specify another disk as destination to store the debug information (required dump file size) by referring to <i>Chapter 1 (7. Setup for Solving Problems)</i>. <p>If the hard disk drive does not have enough 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 hard disk drive for the dump file.</p>
			Note	<p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>

(2/4)

Setup			Items to confirm	
—	EB	OS	System partition size	<p>The system partition size can be calculated by using the following formula.</p> <p>Size required to install the OS + paging file size + dump file size + application size</p> <p>Full installations</p> <p>Size required to install the OS = 15,600 MB (Windows Server 2008 R2 + Service Pack 1) = 8,400 MB (Windows Server 2008 R2 with Service Pack 1) = 8,000 MB (Windows Server 2008 R2)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 300 MB</p> <p>Application size = as required by the application</p> <p>Server Core installations</p> <p>Size required to install the OS = 11,100 MB (Windows Server 2008 R2 + Service Pack 1) = 3,700 MB (Windows Server 2008 R2 with Service Pack 1) = 3,500 MB (Windows Server 2008 R2)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 300 MB</p> <p>Application size = as required by the application</p> <p>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:</p> $8,000 \text{ MB} + (1,024 \text{ MB} \times 1.5) + 1,024 \text{ MB} + 300 \text{ MB} + \text{application size}$ $= 10,860 \text{ MB} + \text{application size}$ <p>The above mentioned partition size is the minimum partition size required for system installation.</p> <p>Ensure that the partition size is sufficient for system operations.</p> <p>The following partition sizes are recommended.</p> <p>Full installations : 32,768 MB (32 GB) or more</p> <p>Server Core installations : 10,240MB (10 GB) or more</p> <p>*1 GB = 1,024 MB</p> <p>Note</p> <ul style="list-style-type: none"> • 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.

(3/4)

Setup			Items to confirm	
—	EB	OS	System partition size	<p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p> <p>Tips</p> <p>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.</p>  <p>Boot Partition (100 MB) The boot partition is not recognized from the operating system.</p>
—	EB	OS	Hyper-V 2.0 support	<p>Refer to the following web site for information related to Hyper-V 2.0. http://support.express.nec.co.jp/os/w2008r2/hyper-v-v2.html</p>
—	EB	OS	Using BitLocker	<p>If using BitLocker, note the following.</p> <ul style="list-style-type: none"> • 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. <p>Important</p> <p>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.</p> <p>The recovery password might be required at startup of the OS after the following:</p> <ul style="list-style-type: none"> – Replacement of motherboard – Initialization of trusted platform module (TPM) – Change of BIOS setting
—	EB	OS	Installing Service Pack	<ul style="list-style-type: none"> • If the OS installation media contains Service Pack 1, you need not apply the service pack again. • 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	<p>License authentication is required depending on the installation of Windows. For details, refer to 3.7 <i>License Authentication</i>.</p> <p>Note</p> <ul style="list-style-type: none"> • 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 feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following " *User's Guide* ".

Important

- Setup with EXPRESSBUILDER may delete all data of the hard disk drive depending on the 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.
- Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.

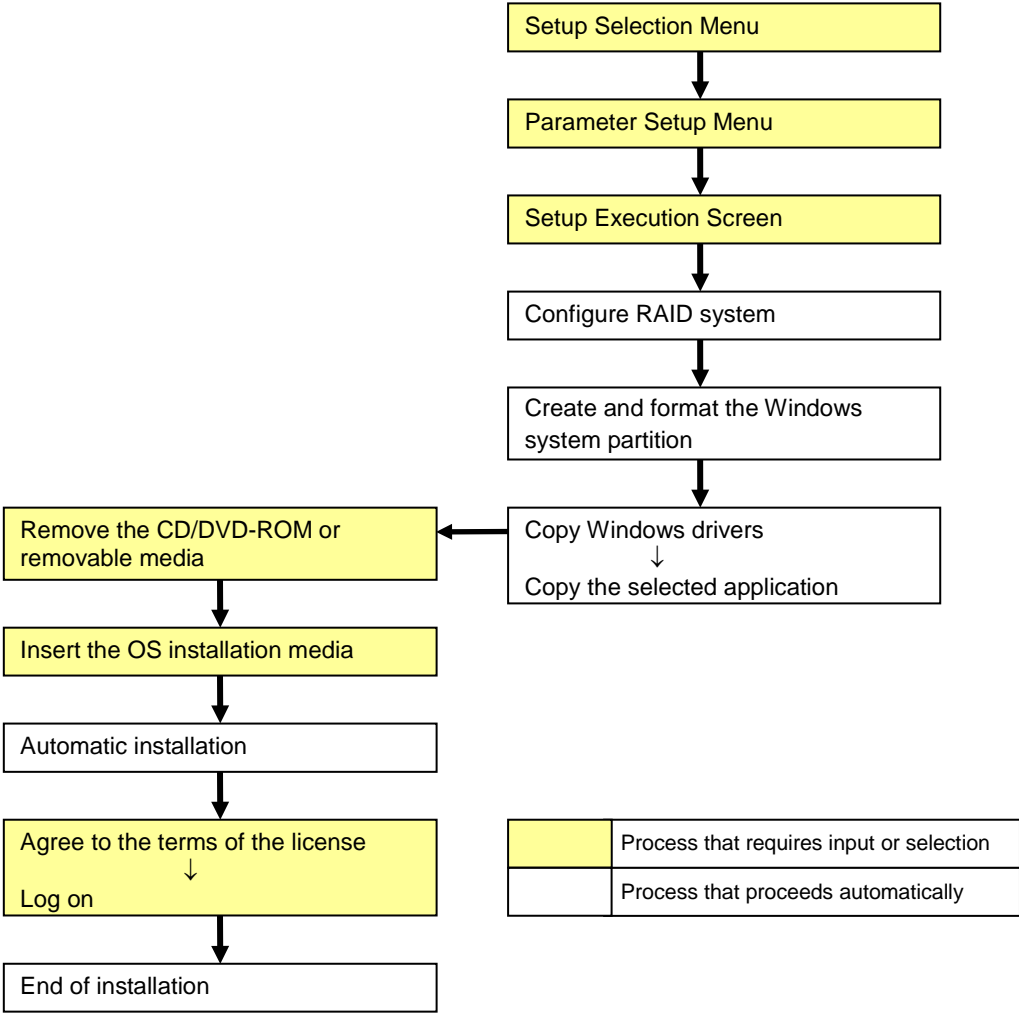
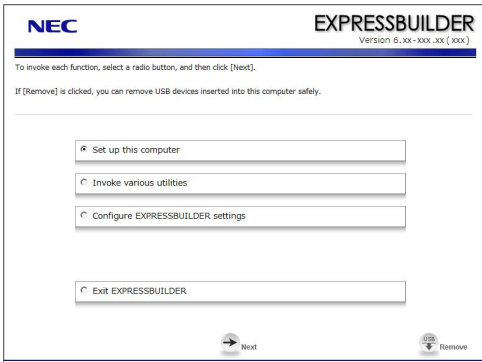
Note

- 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 your sales representative for details.
- When using an onboard RAID controller (LSI Embedded MegaRAID):
Do 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.

Tips

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

3.2.1 Setup flow



3.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS 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**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for Windows OS parameter file**
 - **Service Pack**
(If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from 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 EXPRESSBUILDER DVD. .

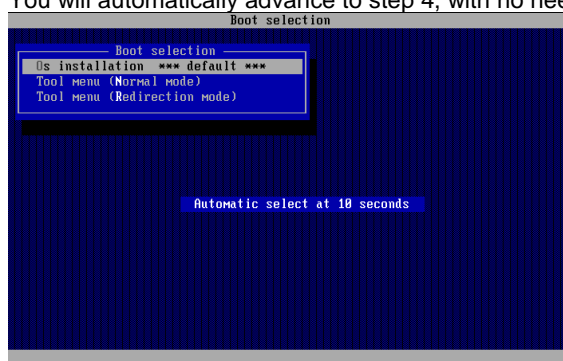
3.2.3 Setup procedure

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.

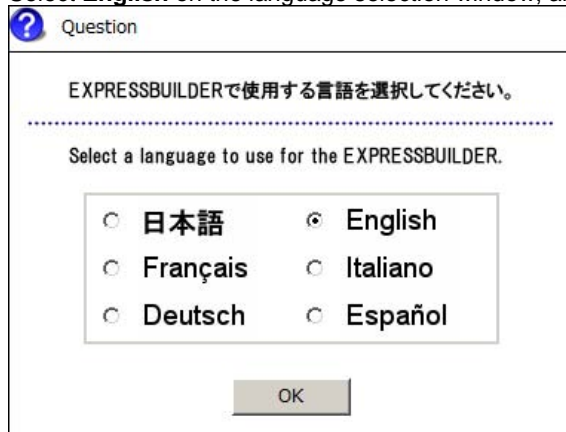
Note

- 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).

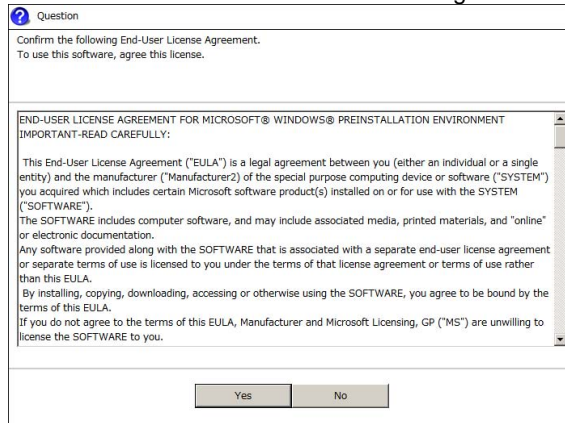
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



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



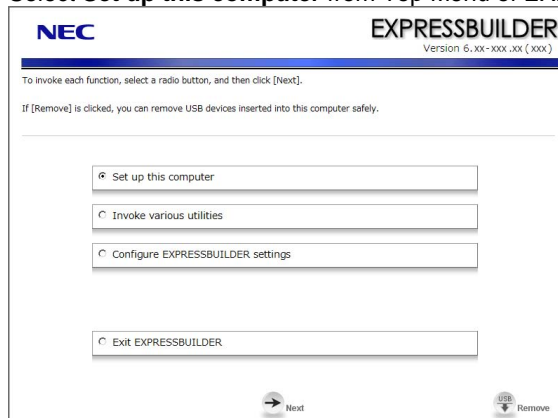
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Set up this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].



7. Set parameters on this menu according to your requirement.

- ☐ When not using parameter file: Go to Step 8.
- ☐ When using a parameter file: Go to Step 9.

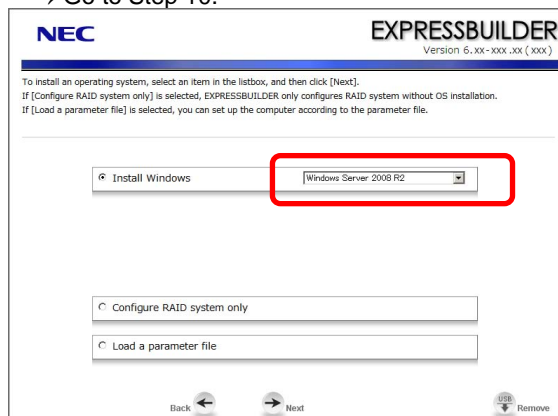
Note

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

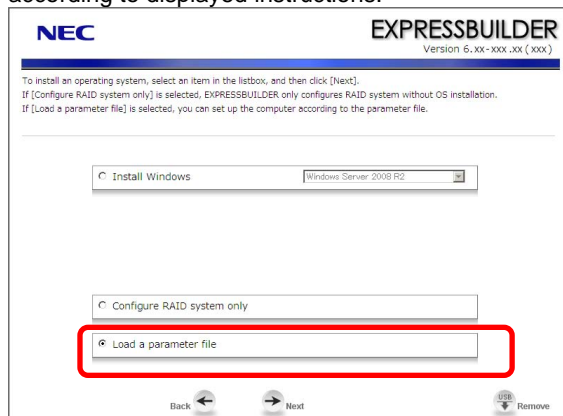
8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next].

On this dialog, select "Windows Server 2008 R2" from the pull-down menu.

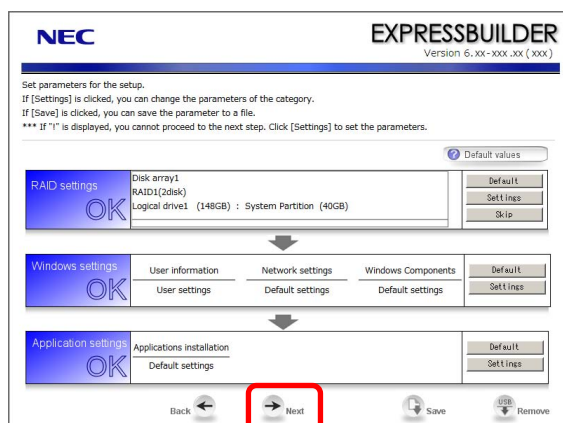
→ Go to Step 10.



9. If you use a parameter file, select **Load a parameter file** and click [Next]. Load a parameter file according to displayed instructions.

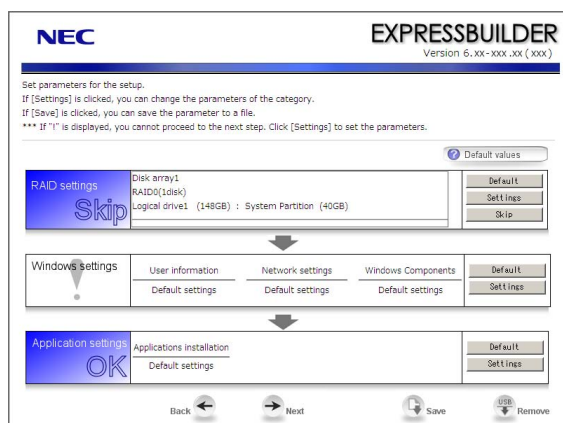


Confirm settings on Parameter Setup Menu as needed, then click [Next].
→ Go to Step 13.

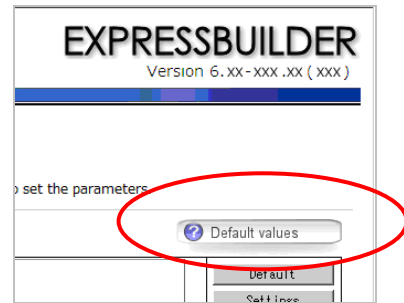


10. Set parameters required for setup.

Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values. You can see the default values by clicking [Default values].



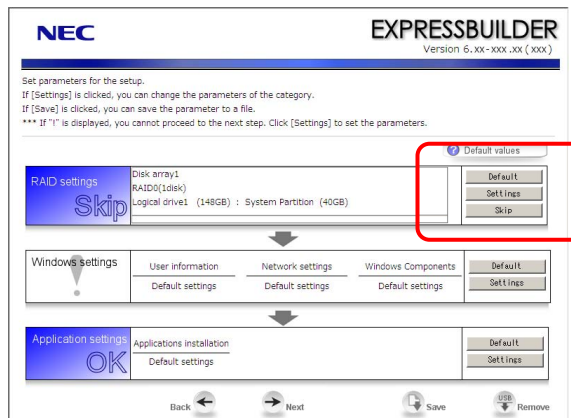
10-1 RAID settings

Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

Important

If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

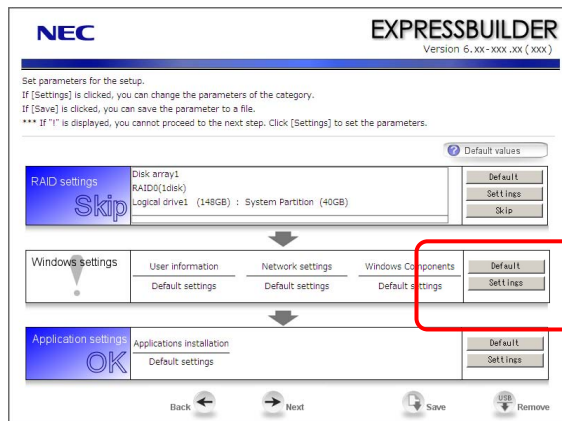
When skipping the creation of new logical drives

Click [Skip] in RAID settings.

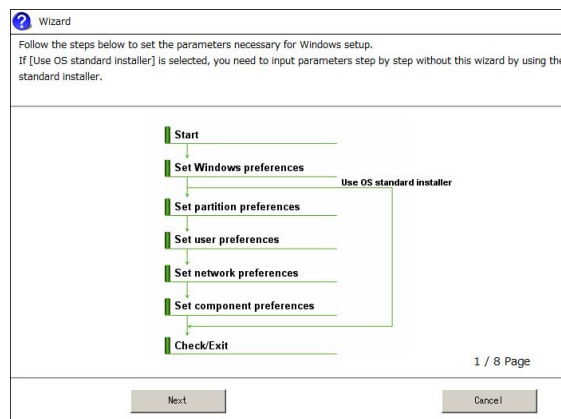
When the RAID settings wizard is terminated, Parameter Setup Menu appears again.

10-2 Windows settings

Set up Windows by using the Windows settings wizard on Parameter Setup Menu.

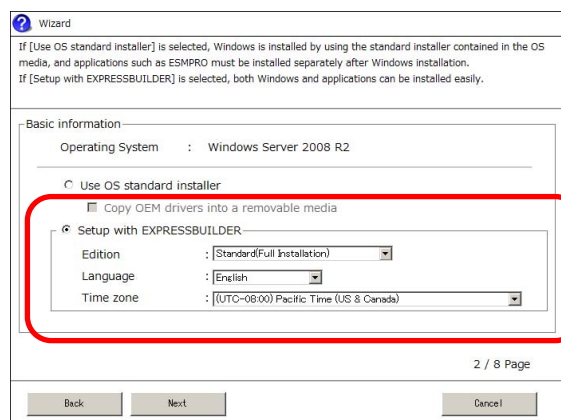


- (1) Click [Settings] in **Windows settings**.
- (2) Click [Next] in the Windows settings wizard.



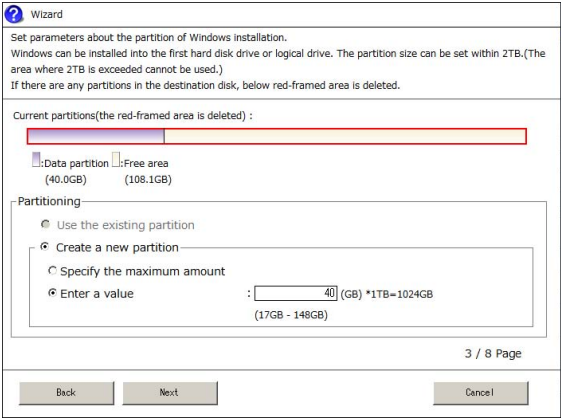
- (3) Specify the Windows basic settings.

Change settings for "Edition" and "Time Zone" as needed, and click [Next].



(4) Set up the partitions.

Confirm settings on the dialog shown below, change them as needed, and then click [Next].



Important

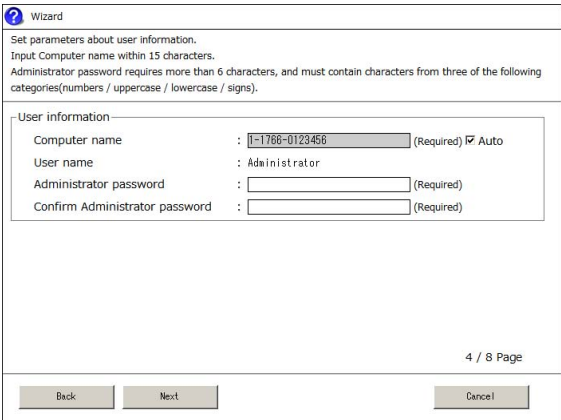
- **Partition size**
 - Specify a partition size larger than the minimum required for installing the operating system. (Refer to *Chapter 1 (3.1 Before Starting Setup)*.)
 - The maximum partition size is 2,097,152 MB.
- If you select *Create a new partition* under *Partitioning*, the entire contents 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 system 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	system 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.

Confirm settings on the dialog shown below, change them as needed, and then click [Next].



Note

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.

Confirm settings on the dialog shown below, change them 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, **Custom setting** list only shows standard network boards.

After finishing Setup with EXPRESSBUILDER, specify the optional network settings again.

- (7) Enter the domain or workgroup name to be used.

Confirm settings on the dialog shown below, change them 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.

Confirm settings on the dialog shown below, change them 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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Back

Next

Cancel

- (9) Confirm settings.

Confirm settings on the dialog shown below, and click [Finish].

?

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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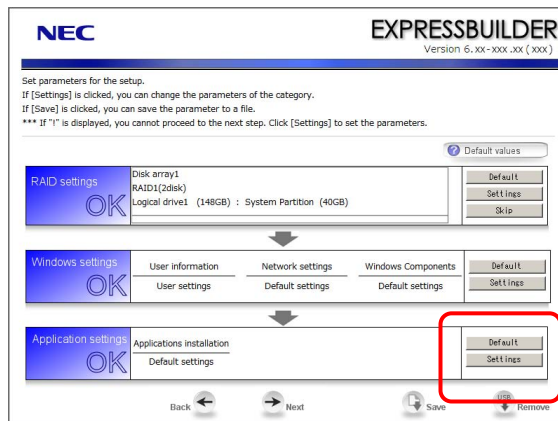
Back

Finish

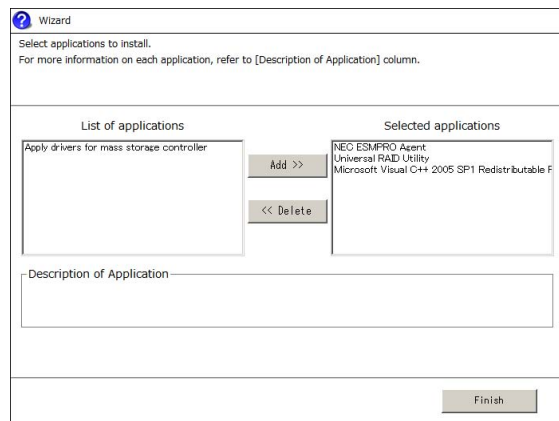
When the Windows settings wizard is terminated, Parameter Setup Menu appears again.

10-3 Application settings

Set up applications using the Application settings wizard in the Parameter Setup Menu.



- (1) Click [Setting] in **Application settings**.
- (2) Confirm settings on the dialog shown below, change them as needed, and click [Finish].

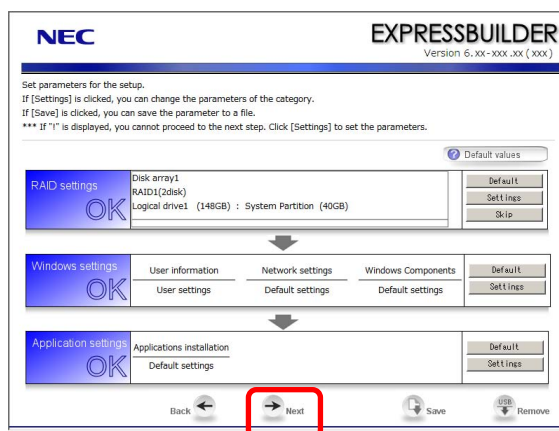


11. Save parameters on Parameter Setup Menu as needed.

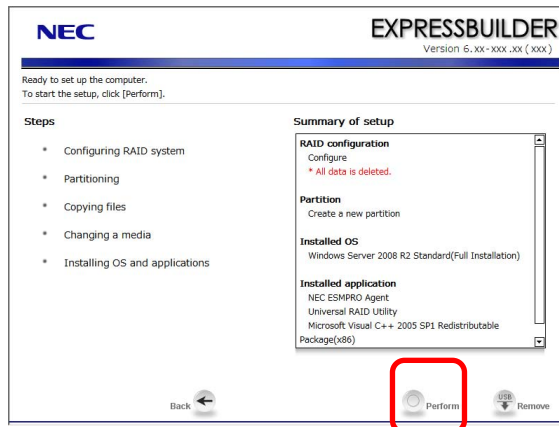
Click [Save], and save the parameter file according to displayed instructions.

If you do not need to save parameters, go to Step 12.

12. Click [Next] on Parameter Setup Menu.

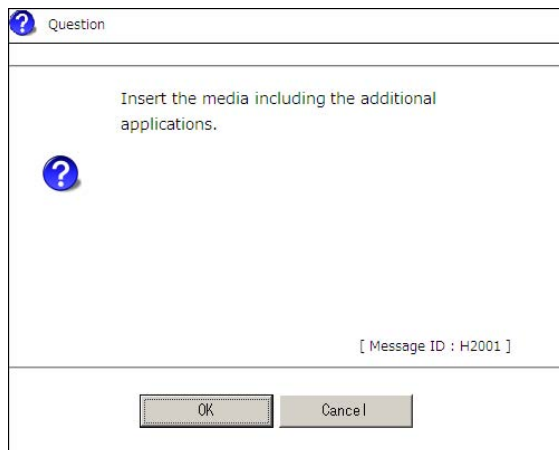


13. Confirm the summary of setup on the screen below, and click [Perform].



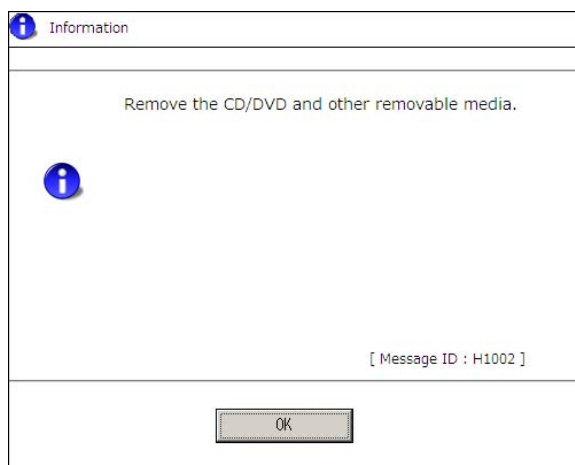
14. Install the additional applications.

If **Installing the OS and applications** is selected, the following message will appear.



Insert the CD-ROM or removable media that contains the necessary applications, and install them according to displayed messages.

15. Remove the removable media and DVD (EXPRESSBUILDER) from the server.

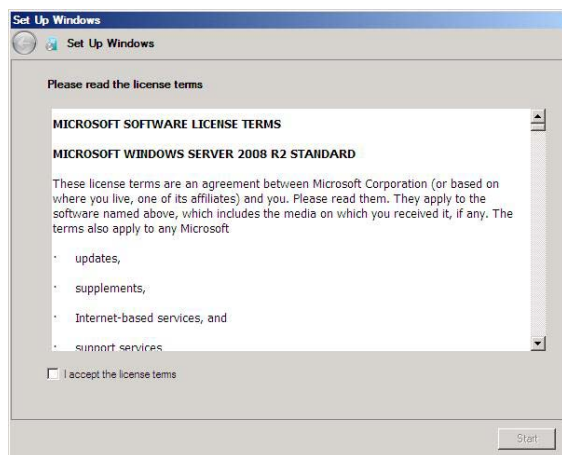


16. Insert the Windows Server 2008 R2 DVD-ROM into the optical disk drive, and then click [OK].



Windows Server 2008 R2 and selected applications will be installed automatically and restart several times.

17. When the software license agreement window appears, select **I accept the license terms**, and then click [Start] (Full installation only).




18. When the following message appears, press <Ctrl> + <Alt> + keys.

Press CTRL + ALT + DELETE to log on


19. Follow displayed instructions to log on to the system.

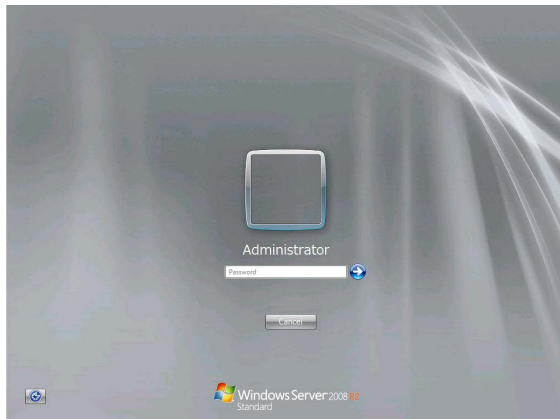
Full installations:

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



Server Core installations:

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



20. Click [OK] in the Setup Complete window.
21. Follow the instructions described in *Chapter 1 (3.5 Setting Up Device Drivers)* to set up the device drivers.
22. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
23. Apply Service Pack as needed according to *Chapter 1 (3.8 Applying Service Pack)*.
24. 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

This section describes how to install Windows with OS Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following " *User's Guide* ".

Important

Setup with OS standard Installer may delete all data of the hard disk drive depending on the 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

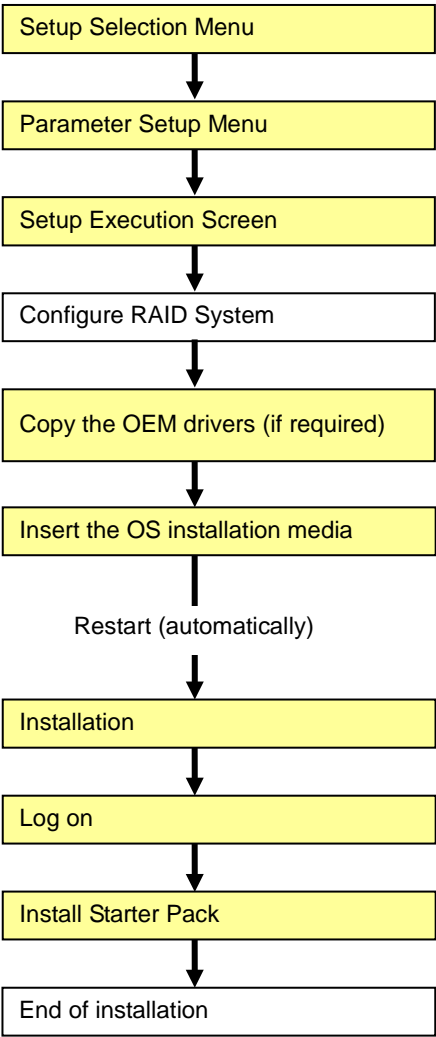
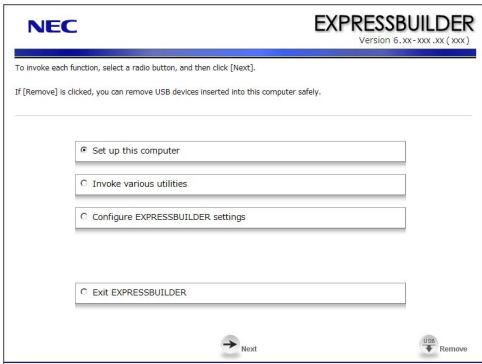
When using an onboard RAID controller (LSI Embedded MegaRAID):

Do 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.

Tips

- Setup with OS Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to 8 *Windows OS Parameter File*.

3.3.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

3.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

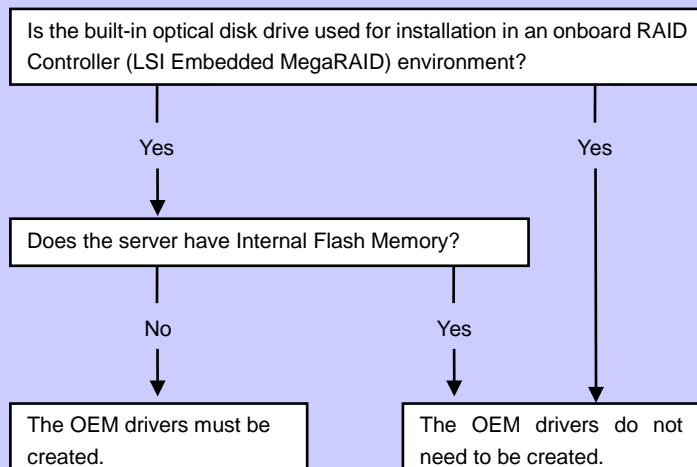
- Either of the following OS installation media
 - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
 - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 R2 DVD-ROM*)
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for Windows OS parameter file**
 - **Removable media for creating OEM drivers** (Windows Server 2008 R2)
 - **Service Pack**
(If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Note

OEM driver is required when using the onboard RAID controller (LSI Embedded MegaRAID) on the server equipped with internal optical disk drive.

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from 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 other removable media should these conditions apply.



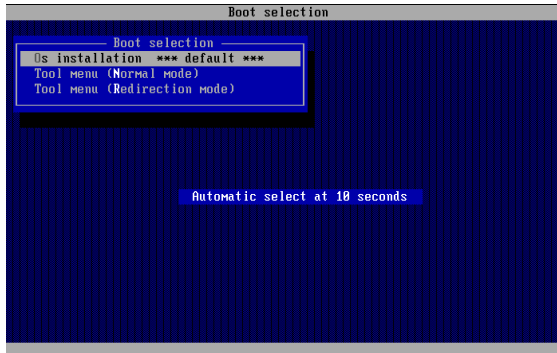
3.3.3 Setup procedure

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

Note

Read through the items in *Chapter 1 (3.1 Before Starting Setup)* prior to installing Windows.

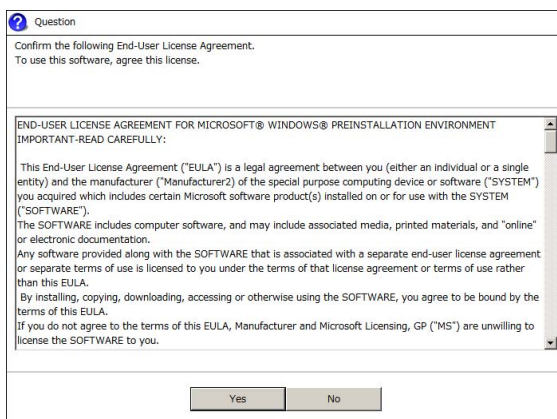
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



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



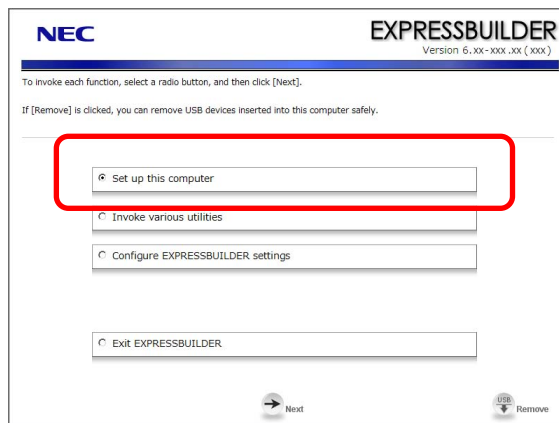
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Set up this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].



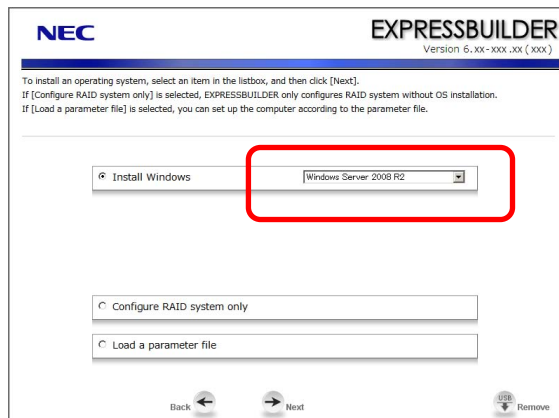
7. Set parameters on this menu according to your requirement.

- ☐ When not using parameter file: Go to Step 8.
- ☐ When using a parameter file: Go to Step 9.

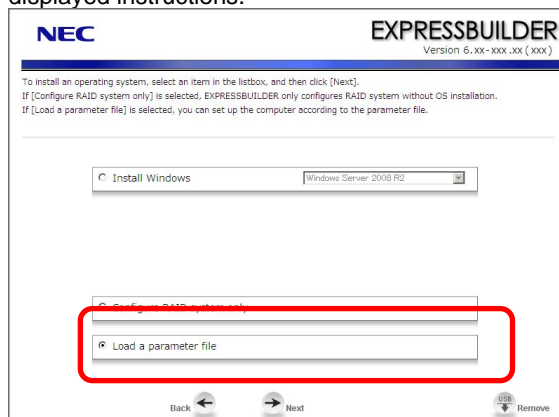
Note

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

8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next]. On this dialog, select "Windows Server 2008 R2" from the pull-down menu.
→ Go to Step 10.

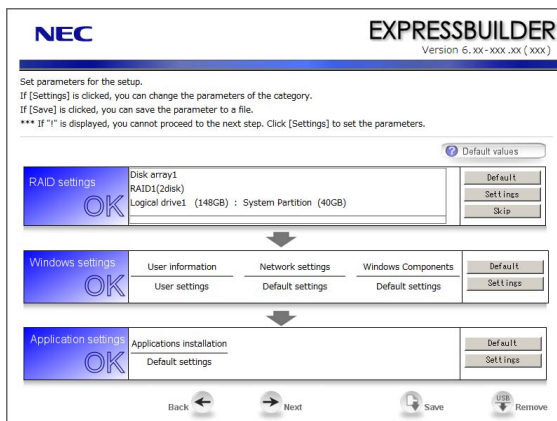


9. If you use a parameter file, select [Load a parameter file] and click [Next]. Load a parameter file according to displayed instructions.



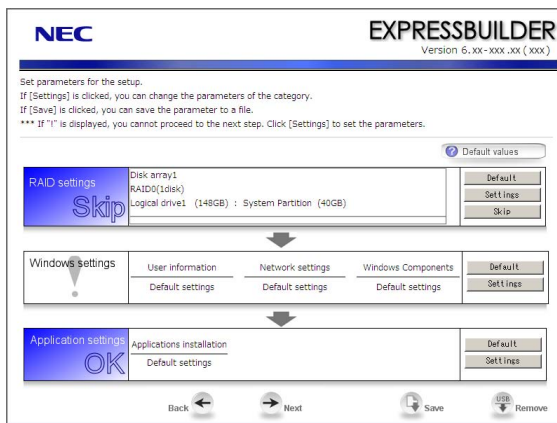
Confirm settings on Parameter Setup Menu as needed, then click [Next].

→ Go to Step16 .



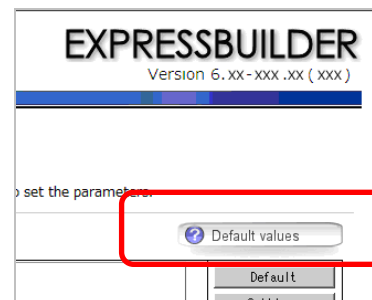
10. Set parameters required for setup.

Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



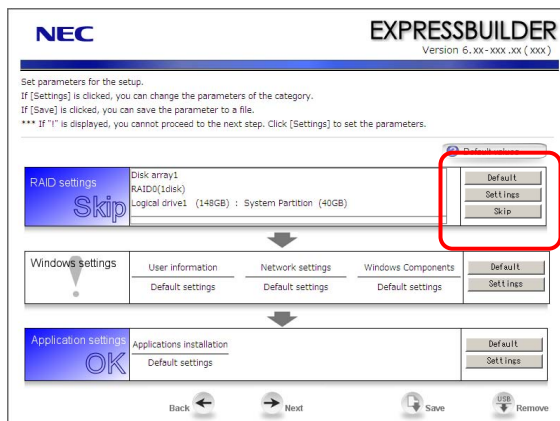
10-1 RAID settings

Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

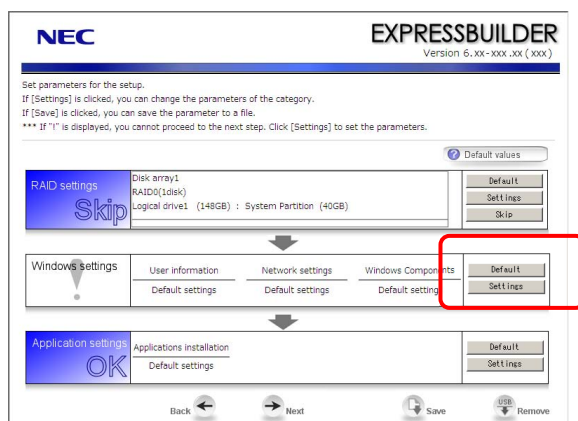
Important

If you proceed with wizard, the existing RAID system is destructured and the contents of hard disk drive will be erased.

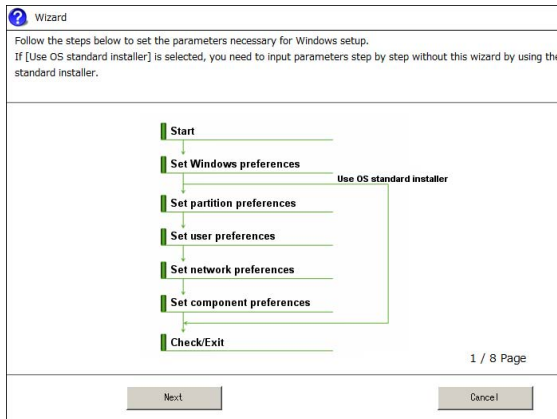
When skipping the creation of new logical drives

Click [Skip] in RAID settings.

11. Click [Settings] in **Windows settings**.

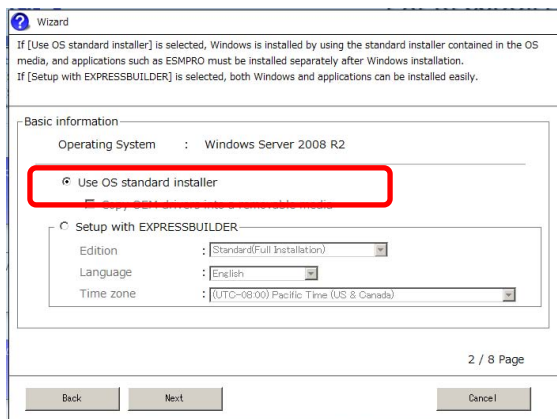


12. Click [Next] in the Windows settings wizard.



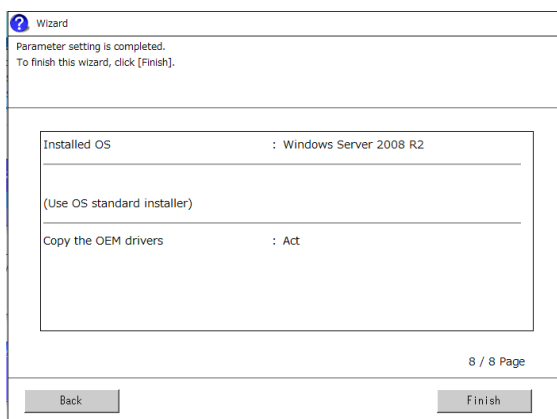
13. Specify the Windows basic settings.

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

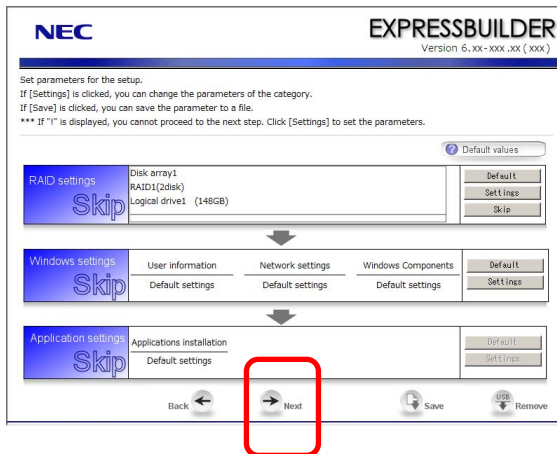


If copying the OEM drivers to the removable media, select **Copy the OEM drivers into the removable media**.

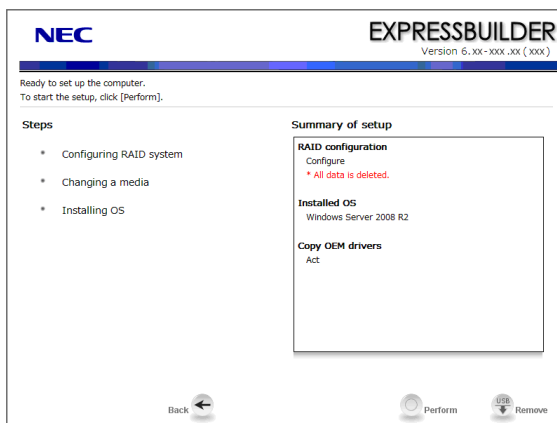
14. Confirm settings on the confirmation window, and click [Finish].



15. Click [Next] on Parameter Setup Menu.



16. Confirm the summary of setup on the screen below, and click [Perform].



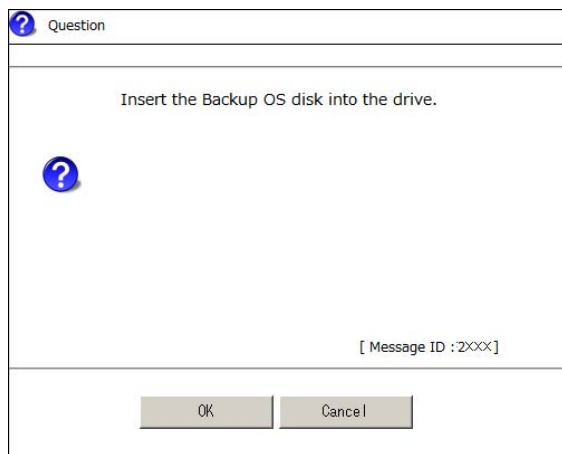
17. Continue setup according to displayed message.

If the Copy the OEM drivers to the removable media checkbox is selected in step 13, the following window appears.

Follow the onscreen instructions and continue the operation.



When the following message appears, set OS installation media, and click [OK].



18. The server reboots automatically.

If you use Internal Flash Memory, press <F3> key when the following message appears during POST.

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

Note

Since the OS installation media is set in the optical disk drive in Step 17, boot the system from the optical disk drive having higher boot priority, not from Internal Flash Memory.

19. Run from the OS installation media.

If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message “Press any key to boot from CD or DVD...” is displayed on the top of the screen.

The boot sequence proceeds and the message “Windows is loading files...” appears.


Note

If “Windows is loading files...” message does not appear, <Enter> key was not pressed correctly. Reboot and retry.

This step is unnecessary if no bootable operating system exists.

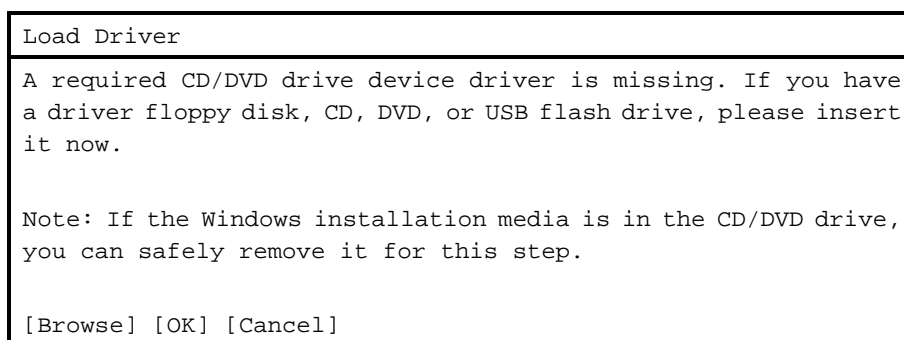
20. When the following window appears, click [Next] at default settings.



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



- If the following message appears, go to step 22.
- If not go to step 24.



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 use Internal Flash Memory or removable media with the OEM drivers copied onto it.

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

If using OEM drivers (made at step 17)

Removable media: \OEM_Driver\ws2008r2\megasr1

If using Internal Flash Memory

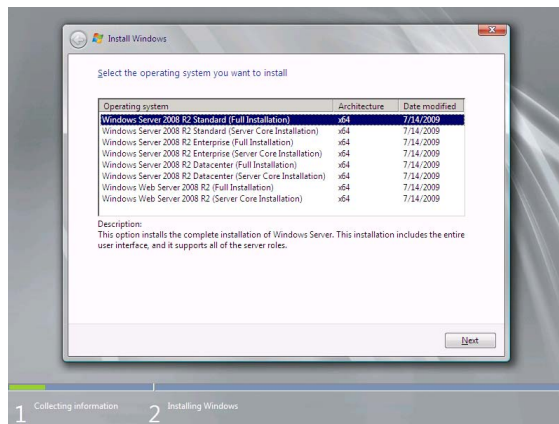
Internal Flash Memory: \024\win\winnt\oemfd\ws2008r2\megasr1

Tips

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

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

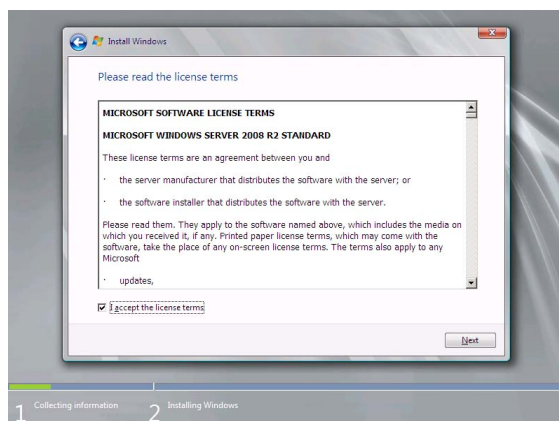
24. When the following window appears, select the Windows edition you have purchased and your preferred installation method.



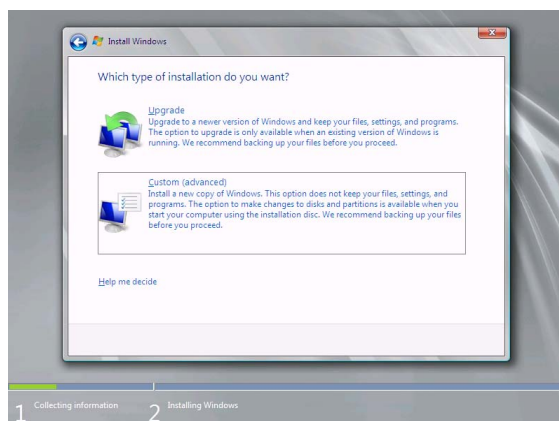
Tips

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

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



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



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

Note

If the driver was loaded in steps 22 to 23, or if not using a RAID Controller, go to step 31.

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 28.

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

Tips

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

28. Specify the following locations, and then click [OK].

(When using EXPRESSBUILDER, select the optical disk drive. When using Internal Flash Memory, select the volume of INTER-FLASH.)

N8103-128 RAID Controller:

\024\win\winnt\oemfd\ws2008r2\stexstpt

N8103-149/150/151 RAID Controller:

\024\win\winnt\oemfd\ws2008r2\megasas2

If using the onboard RAID Controller (LSI Embedded MegaRAID) and a USB-DVD drive:

\024\win\winnt\oemfd\ws2008r2\megasr1

Tips

The driver does not have to be loaded at this time if it was loaded in steps 22 and 23.

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

When using N8103-128 RAID RAID Controller

[Promise SuperTrak SAS 6G RAID Controller]

When using the N8103-149/150/151 RAID Controller

[LSI MegaRAID SAS 9267-8i]

If using the onboard RAID Controller (LSI Embedded MegaRAID) and a USB-DVD drive

[LSI Embedded MegaRAID]

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

Tips

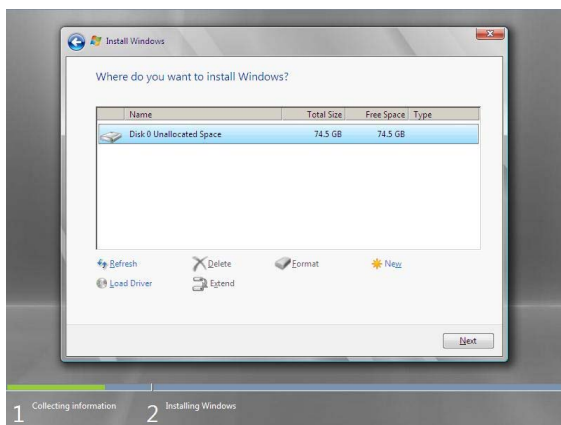
If you have not replaced the OS installation media after loading the driver, the following message may appear.



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

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

If a partition has already been created, go to step 34.



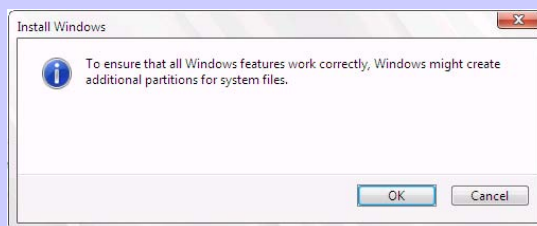
32. Click [New], enter the partition size into the size input box, and then click [Apply].

Note

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.

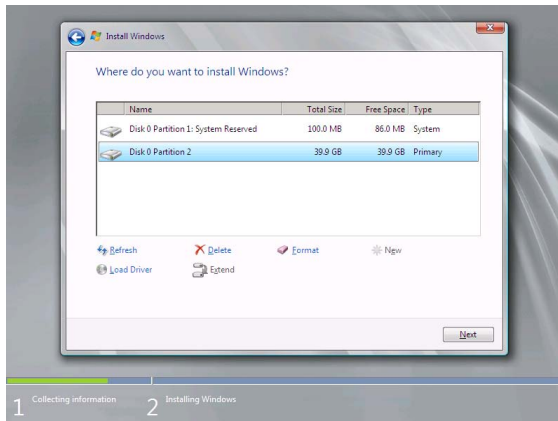
Tips

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



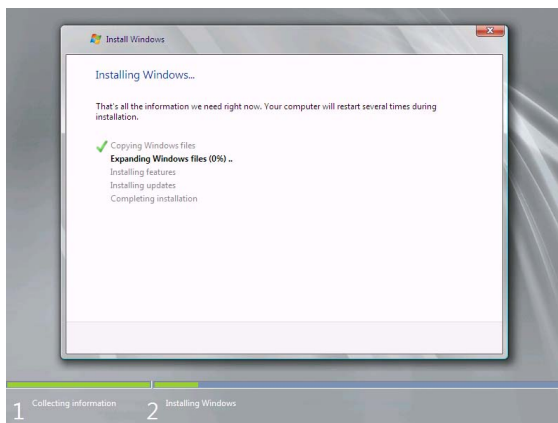
33. Select the partition created in step 32, and then click [Format].

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

**Tips**

The number of partitions displayed differs depending on the hardware configuration.

When the following message appears, Windows installation starts automatically.

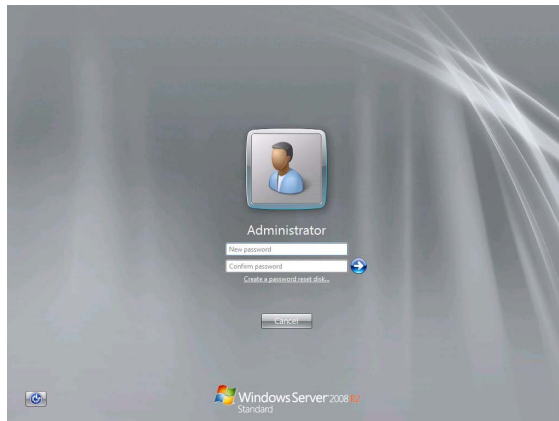


35. After a full installation of Windows Server 2008 R2 is completed, the following window appears, prompting you to change your password before logging on. Click [OK].

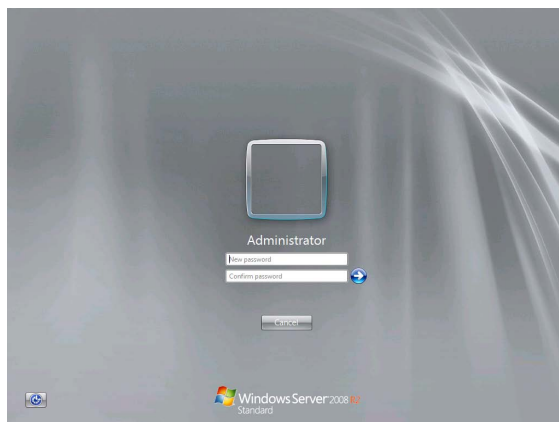


36. Change your password, and then click the [] button.

Full installations:



Server Core installations:

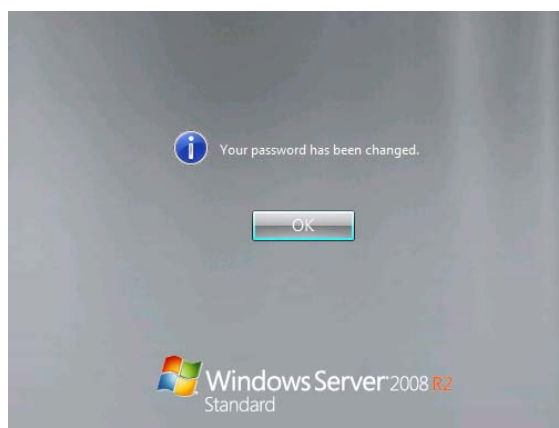


Tips

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.

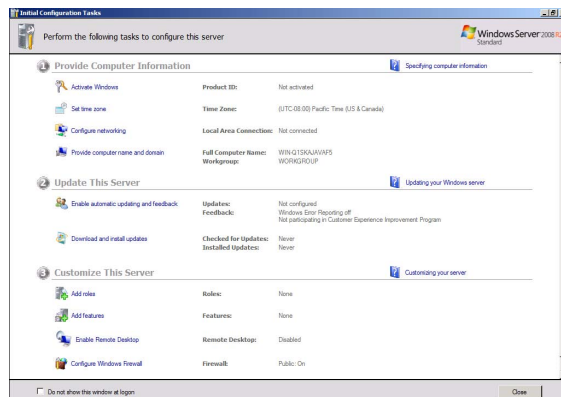
37. When the following message appears, click [OK].



38. Confirm the following according to the settings selected (displayed) in Step 24.

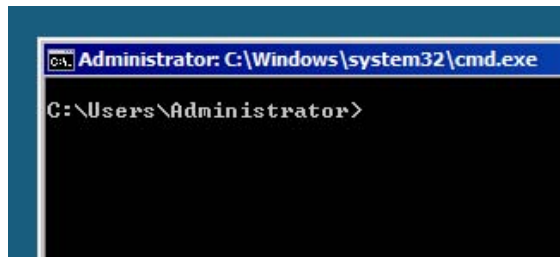
Full installations:

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



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".

39. Install Starter Pack by referring to *Chapter 1 (3.4 Installing Starter Pack)*.
40. Install drivers and specify detailed settings by referring to *Chapter 1 (3.5 Setting Up Device Drivers)*.
41. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
42. Apply Service Pack as needed according to *Chapter 1 (3.8 Applying Service Pack)*.
43. 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 Starter Pack

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

Also install 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 Starter Pack.
- If the system was restored using a restore process
- If a system has been restored using the backup tool

Note

The Scalable Networking Pack (SNP) function is disabled upon Starter Pack installation is complete.
The setting of SNP function may affect the system performance.

Tips

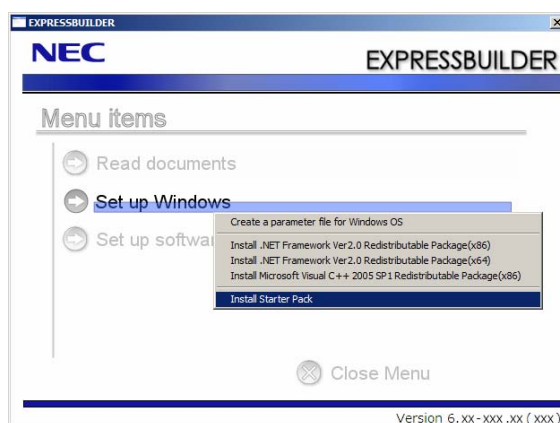
If the OS is installed by using EXPRESSBUILDER, Starter Pack is already applied.
If the configuration is not changed, you do not need to apply Starter Pack again.

3.4.1 When using EXPRESSBUILDER DVD

1. Log on to the system with the built-in administrator, which has administrative privileges.
2. Insert EXPRESSBUILDER DVD into the optical disk drive.
3. Start the installer of Starter Pack according to the installation type.

Full installations

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



Server Core installations

- (1) From the command prompt, type the following command. (In the example below, the optical disk drive is D drive.)

```
Cd /d D:\024\win\winnt\bin
```

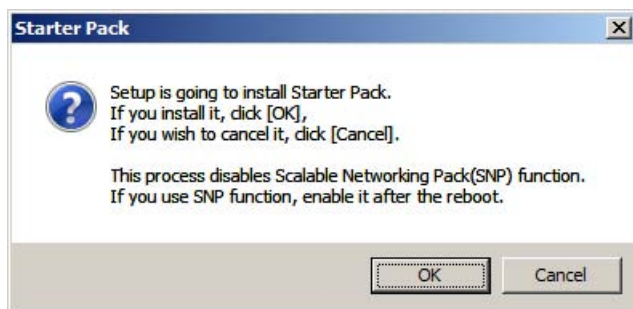
```
C:\Users\administrator>cd /d D:\024\win\winnt\bin
```

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

```
Pkgsetup.vbs
```

```
D:\024\win\winnt\bin>pkgsetup.vbs
```

4. Wait for several minutes without attempting any further operation until the following window appears.



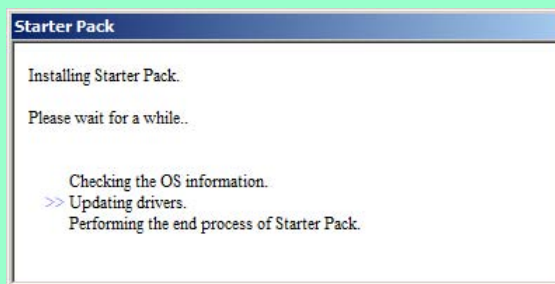
Read the message, and then click [OK].

Starter Pack installation starts. (About 5-10 minutes)

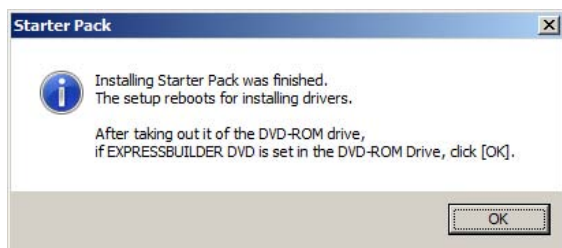
* It changes with states of a system.

Note

If you chose Full installation, the following progress message will appear while 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 EXPRESSBUILDER DVD.



- Click [OK] and then restart the system.

Installation of Starter Pack is now complete.

3.4.2 When using Internal Flash Memory

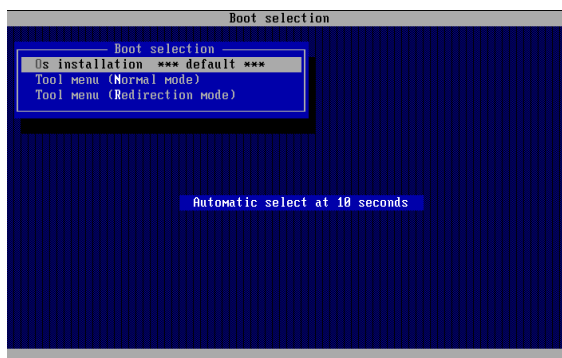
(Optional " Internal Flash Memory " is required)

- After installing the operating system, restart the server.
- When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST , press <F3> key.

Note

At this time, be sure to remove the DVD from the optical disk drive.

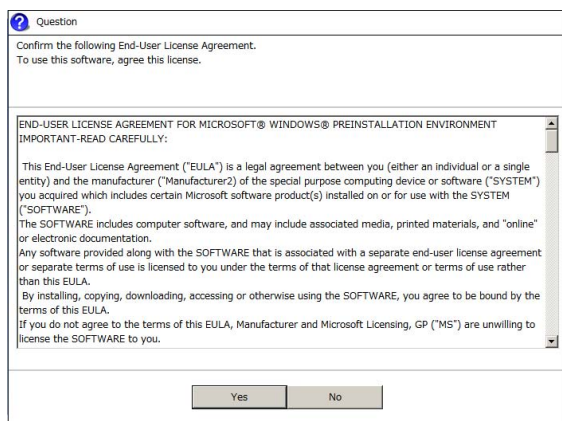
- When the following message appears, select **Os installation *** default *****. You will automatically advance to the next window, with no need for further input.



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



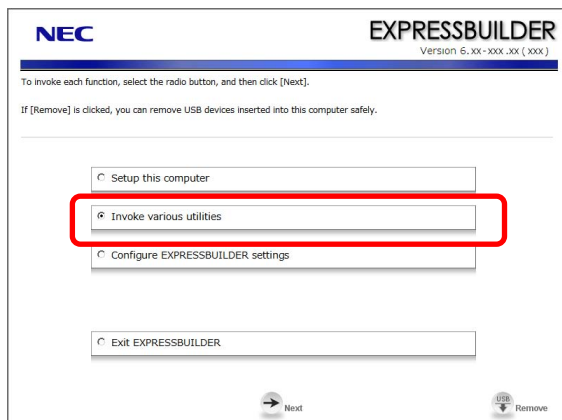
5. When the Windows PE software license agreement window appears, click [Yes].



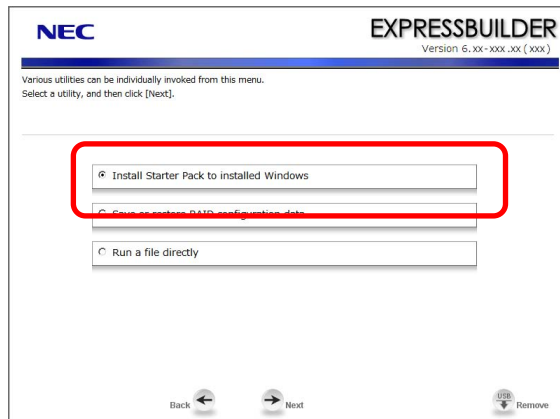
Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

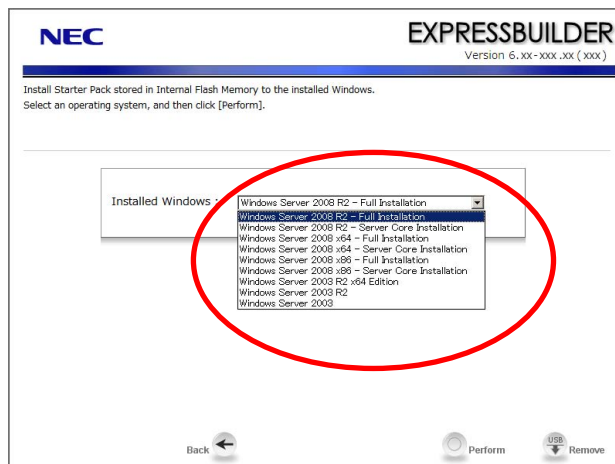
6. Select **Invoke various utilities** from Top Menu of EXPRESSBUILDER, and then click [Next].



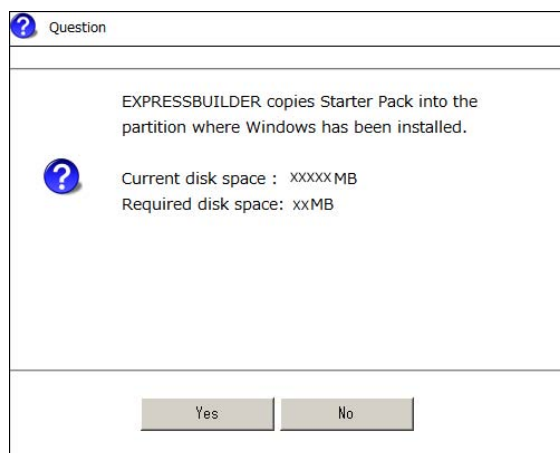
7. Select **Install Starter Pack to installed Windows** and then click [Next].



8. Select the installed Windows from the drop-down list, and then click [Perform].

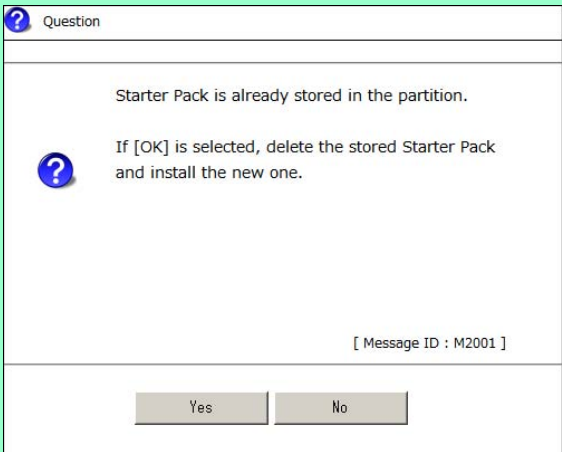


9. When the following confirmation window appears, read the content and then click [Yes].

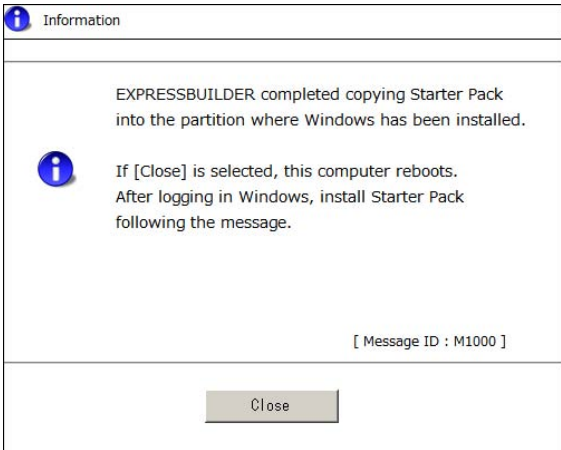


Note

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



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



The server then restarts.

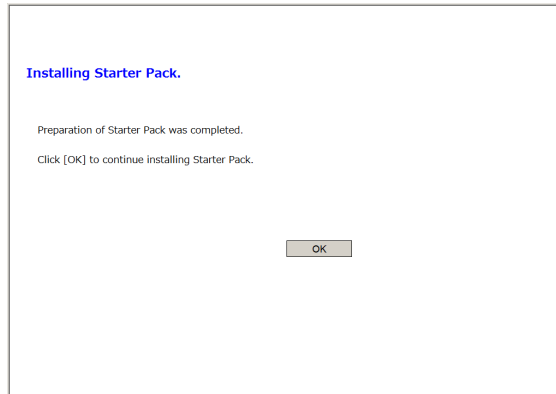
Note

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

11. Proceed application step according to the installation type.

Full installations

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



Server Core installations

- (1) Enter the following command at the command prompt, and then specify the drive letter of System Drive (usually C drive).

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

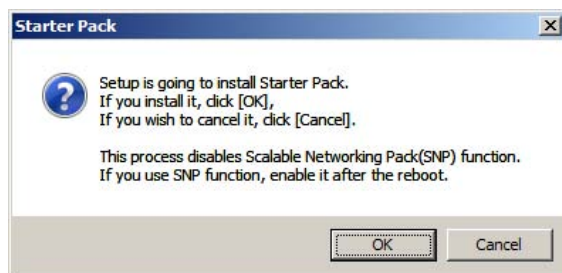
```
C:\Users\administrator>cd /d C:\StartPKG\bin
```

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

```
Pkgsetup.vbs
```

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

12. Wait for several minutes without attempting any further operation until the following window appears, and then click [OK].

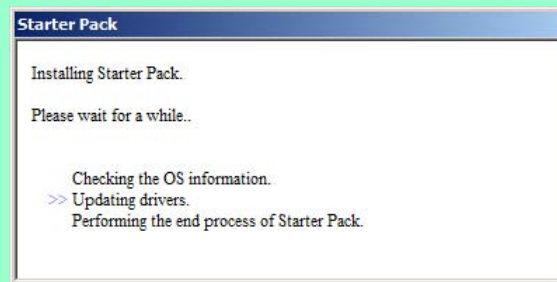


Installation of Starter Pack starts. (About 5-10 minutes)

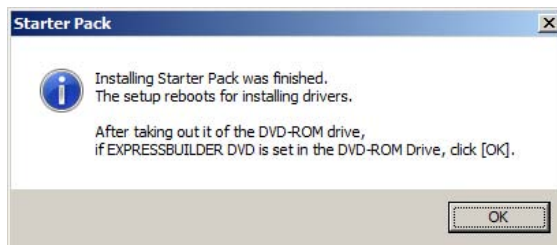
* It changes with states of a system.

Note

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



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



13. Click [OK] to restart the system.

Installation of 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

LAN and BACS driver are installed at the time for Windows pre-installed model.

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

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

Important WOL is supported by the standard network adapters only.

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: N8104-128/132/133/138

Note: N8104-128 is supported by Express5800/R110e-1E only.

Important Using an optional LAN board, perform procedure "3.6.2 Setting up LAN drivers" for each optional LAN board.

(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*

[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx*

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

Tips

The ID for N8104-128 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

(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) Using N8104-128

Using N8104-128 with the server, iSCSI Offload Engine must be disabled.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set **Filter** to **ALL VIEW**, select **Broadcom BCM57711 NetXtreme II 10 GigE # xx** under **Explorer View** the **Adapter xx (BCM57711 A0) - Port x**.
3. Tab on **Configurations** at the right side screen and then expand **Resource Reservations**.
4. Click the [Configure] button on the **Click the button to configure**. The **Hardware and Resource Configuration Wizard** appears.
5. Remove a checkmark from [iSCSI] under **Protocols**, if checked. Select [Next], and then click the [Apply] button.
6. When the following message 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?

7. Complete steps 2 to 6 for each N8104-128 network adapter. Then, close the **Broadcom Advanced Control Suite**.
8. Restart the system.
Setup is now completed.

(3) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click to the following file.

- When using EXPRESSBUILDER DVD:

Optical disk drive:\024\win\winnt\ws2008x64\lan\pgdyavd_Disable.vbs

- If Starter Pack was installed from Internal Flash Memory:

System drive:\StartPKG\ws2008x64\lan\pgdyavd_Disable.vbs

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

Configuration Completed
[Option:PopUp RLV Disabled(Action:Done)]
Reboot the system

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

Setup is now completed.

3.5.3 Setting up team/LiveLink

Important

- When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team. When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- 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.
- Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.

(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.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

Important Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- Between standard network adapters
- Between LAN cards excluding N8104-128
- A standard network adapter and LAN card N8104-128

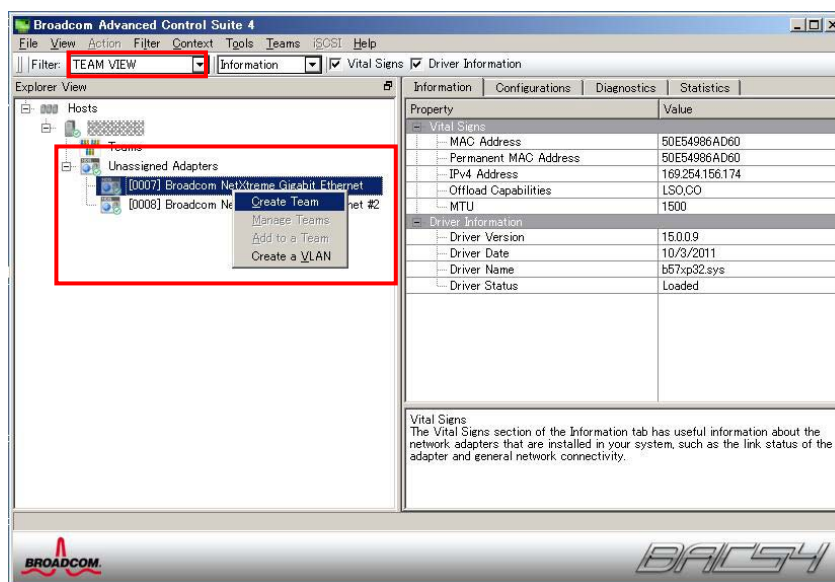
When the number of adapters that composes the team is up to two:

- Between N8104-128 adapters.

Teaming with another N8104-128 on different board is not supported.

Tips To edit a team, right-click on the BACS team, and then select **Edit Team**. Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu.



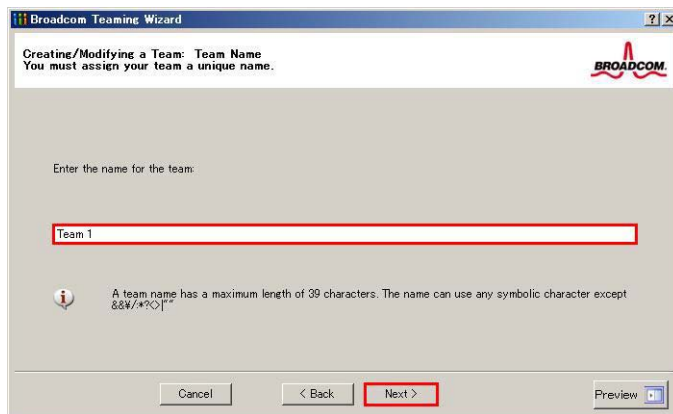
The **Broadcom Teaming wizard** appears.

3. Click [Next].

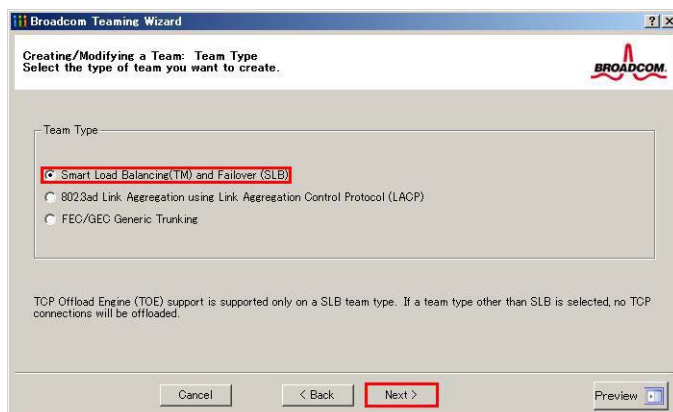
**Note**

Do not use **Expert Mode**.

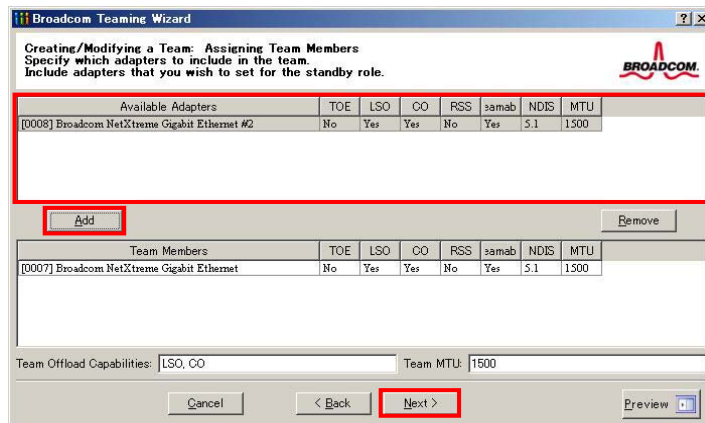
4. Enter any name into the team name entry column, and then click [Next].



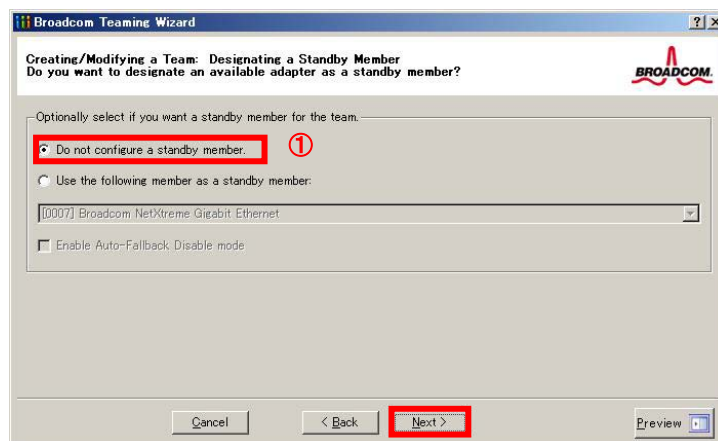
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing(TM) and Failover (SLB)



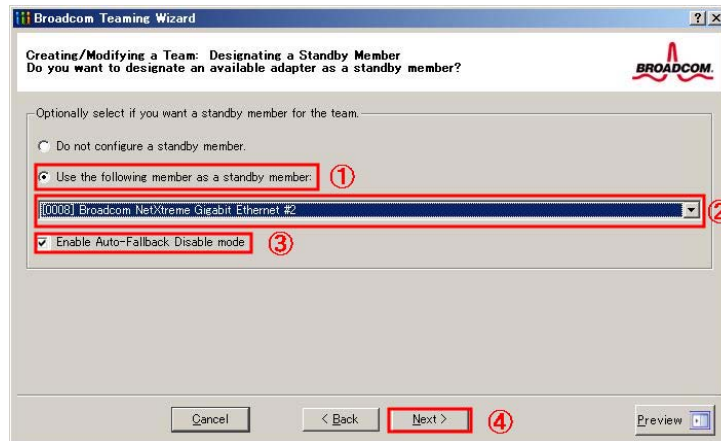
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



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].

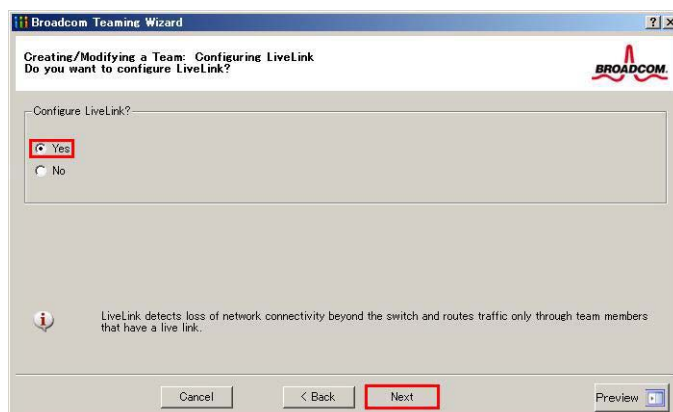


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

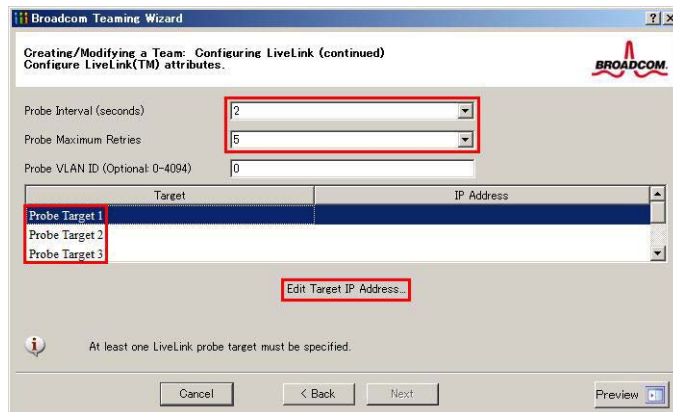
**Note**

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

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



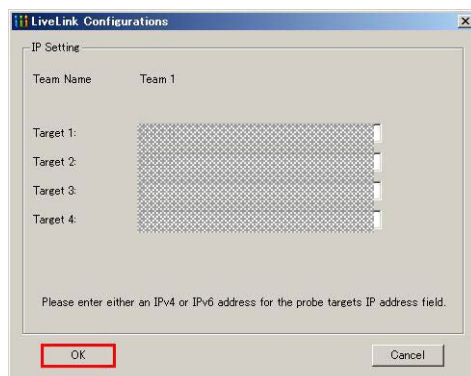
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



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 a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

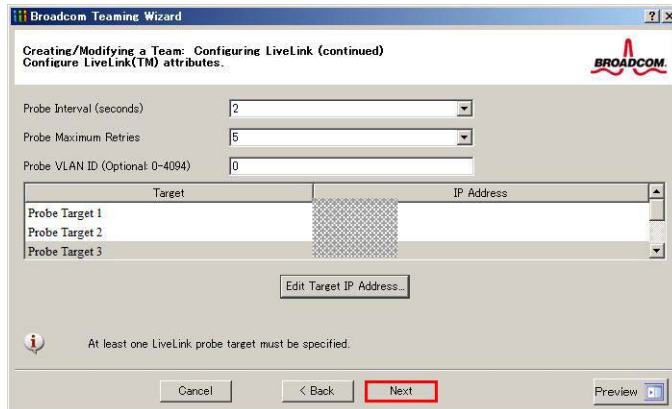
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



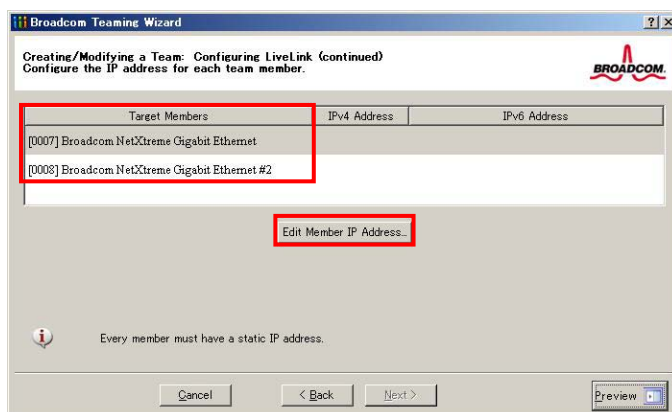
Important

- **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.

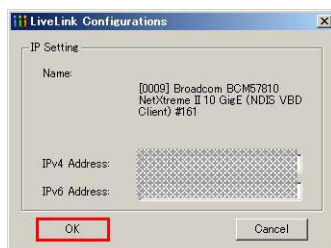
11. Click [Next].



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



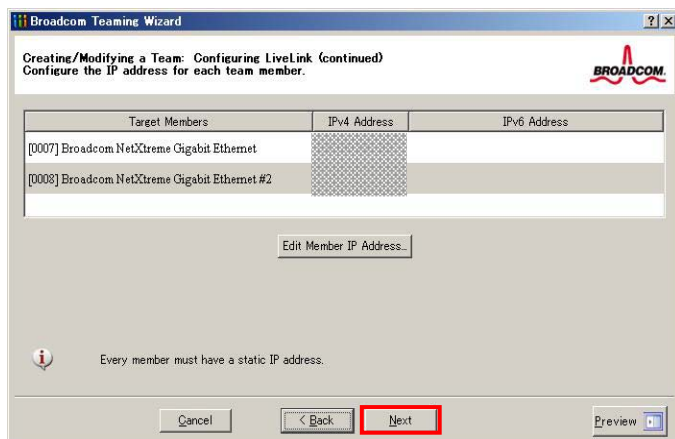
13. Enter the IP address used for LiveLink communication, and then click [OK].



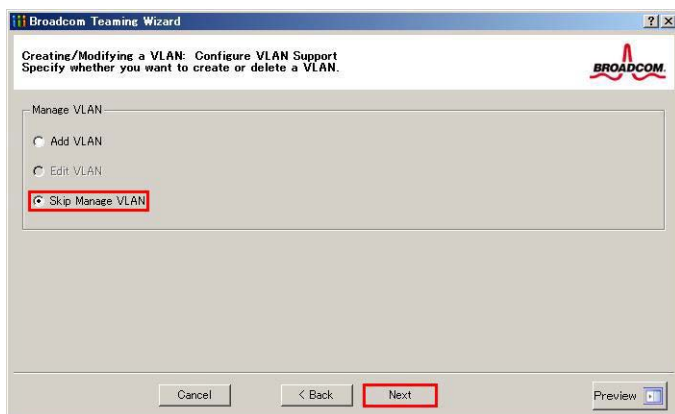
Important

- 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.

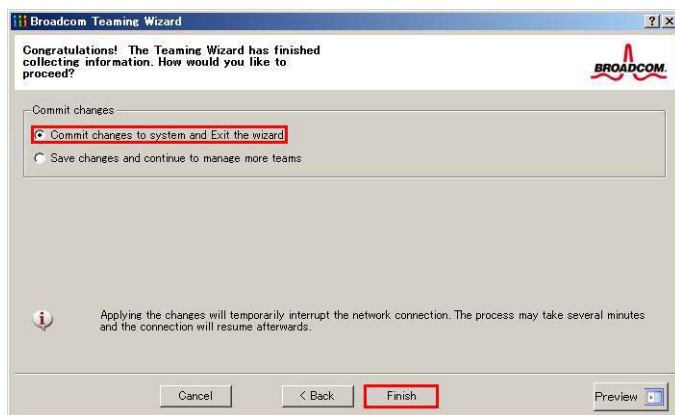
14. Click [Next].



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].



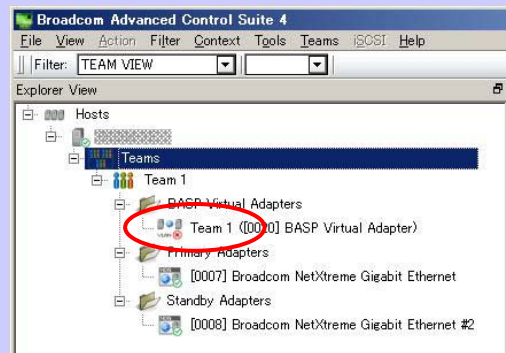
Note

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

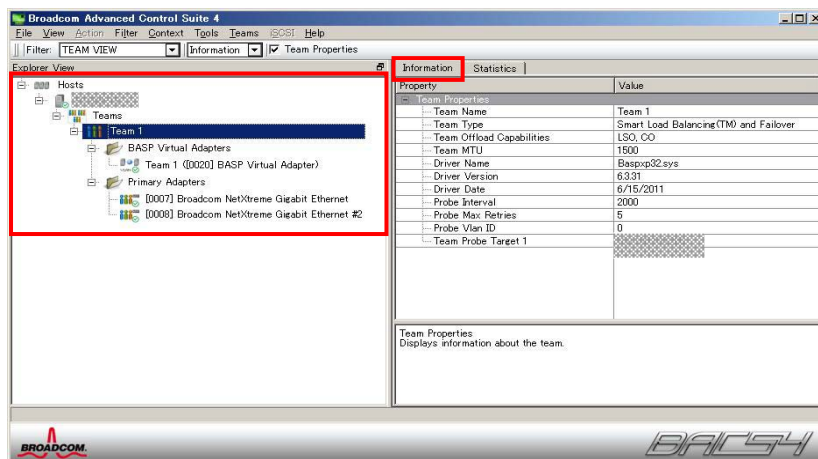
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



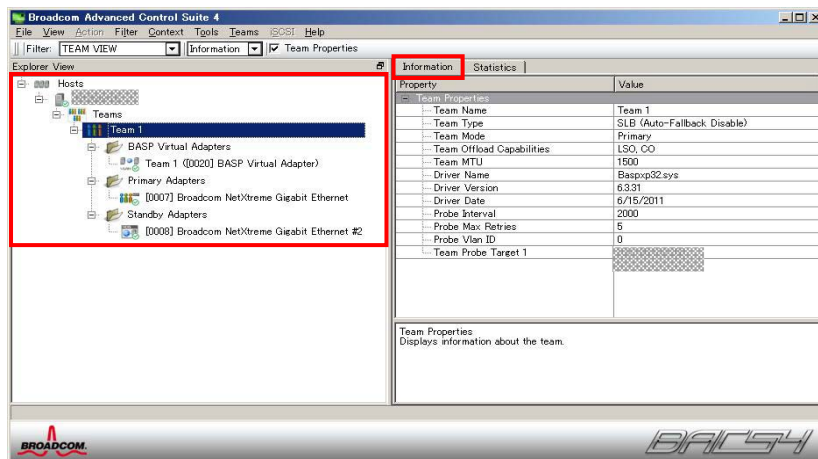
17. Restart the system.

18. After the system starts, start **Broadcom Control Suite** by clicking the **Broadcom Control Suite** icon in **Control Panel**, 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)

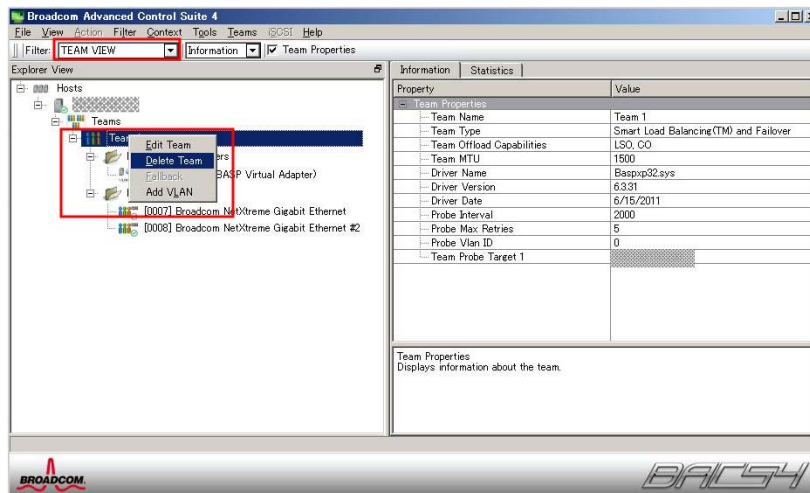


Team setup is now complete.

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

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

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window.
Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, 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 EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Note

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

4. Double-click addlvlanstats.vbs in the following folder.
 - When using EXPRESSBUILDER DVD:
Optical disk drive:\024\win\winnt\ws2008x64\lan
 - If Starter Pack was installed from Internal Flash Memory:
System drive:\StartPKG\ws2008x64\lan

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



6. Eject 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 Starter Pack is installed from EXPRESSBUILDER.

The graphic accelerator driver is automatically installed on pre-installed model or during setup with EXPRESSBUILDER.

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 EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from 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 EXPRESSBUILDER DVD:
Optical disk drive:\024\win\winnt\ws2008x64\video
- If Starter Pack was installed from Internal Flash Memory:
System drive:\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 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 SAS controller (N8103-104A/142)

The driver for SAS controller N8103-104A/142 is automatically installed by Windows Plug-and-Play.

3.5.6 When using a RAID Controller (N8103-160)

The driver for RAID Controller N8103-160 is automatically installed by Windows Plug-and-Play.

3.5.7 When using a Fibre Channel controller (N8190-153/154)

The driver for Fibre Channel controller N8190-153/154 is automatically installed by Windows Plug-and-Play.

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

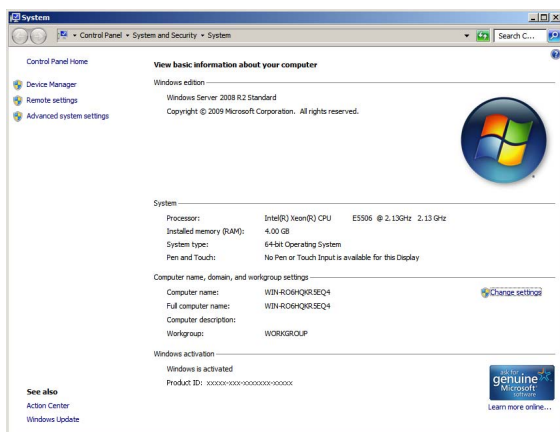
To use Windows Server 2008 R2, confirm whether the license has been authenticated, and if it has not, perform the license authentication procedure.

The following describes the license authentication procedure.

(1) Full installations

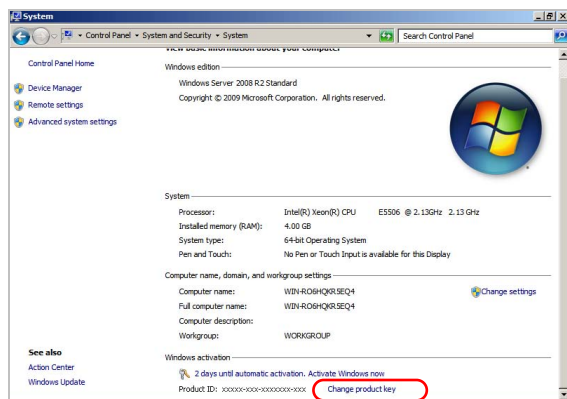
1. Open the **Control Panel** from the **Start** menu, click **System and Security**, and then select **System**.

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

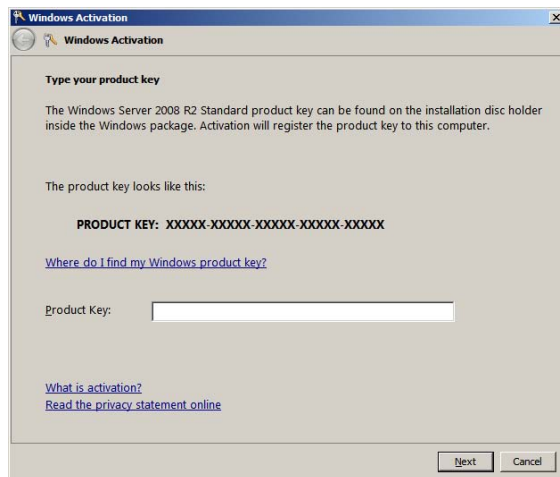


2. For installation from Backup DVD-ROM, replace the product key.

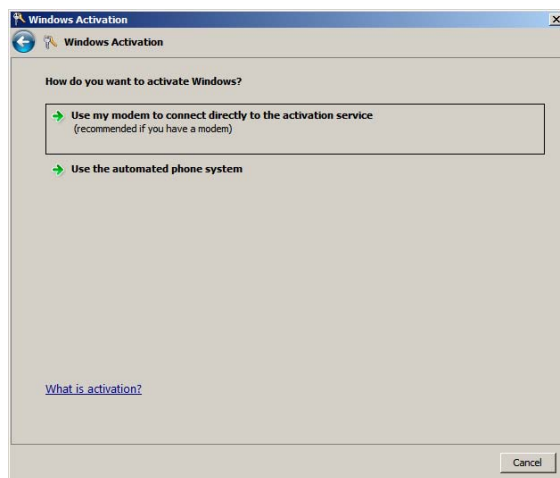
When the following window appears, click **Change product key**.



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



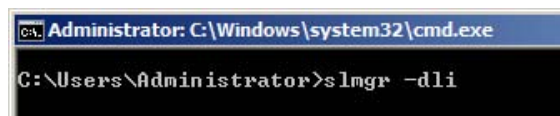
- Follow the instructions in the following message to start the license authentication process.



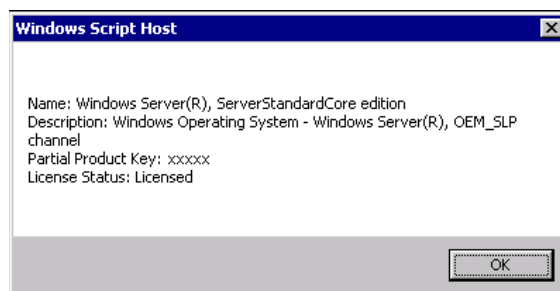
Windows activation is now complete.

(2) Server Core installations

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



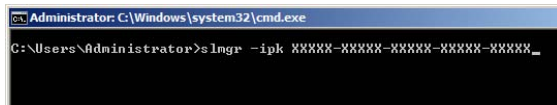
If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.



2. For installation from Backup DVD-ROM, replace the product key.

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

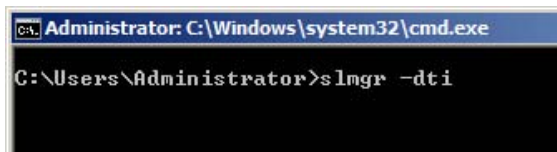
```
slmgr -ipk PID
```



3. Obtain an installation ID for Windows activation.

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

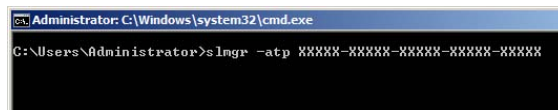
```
slmgr -dti
```



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 <Enter> key. *CID* is the confirmation ID that you received from customer service.

```
slmgr -atp CID
```



Windows activation is now complete.

3.8 Applying Service Pack

When applying Service Pack 1, refer to "About Windows Server 2008 R2 and Windows 7 Service Pack 1".

<http://www.58support.nec.co.jp/global/download/w2008r2/sp1.html>

3.9 Installation When Multiple Logical Drives Exist

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

(1) Installation process

- Setup with EXPRESSBUILDER

Important

Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.

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

In this case, EXPRESSBUILDER installs the Windows on the first detected hard disk drive or logical 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

The order and numbers of the disks displayed on the screen **might not match the server's slot** of the hard disk drives. **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.

Important

- 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.

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

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

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.

4.1 Before Starting Setup

Read through the cautions explained here before starting setup.

BTO : Setting up of Pre-installed model

EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

(1/4)

Setup			Items to confirm	
–	EB	OS	Windows family	<p>The following editions of the Windows Server 2008 family may be installed.</p> <ul style="list-style-type: none"> • 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 <p>Inquiries about installing other editions may be made at your sales representative. For information about Service Packs, refer to <i>1.3 Service Pack Support</i>.</p>
–	EB	OS	Hardware configuration	<p>The following hardware configurations require special procedures.</p> <ul style="list-style-type: none"> • Reinstalling to a mirrored volume Disable the mirroring and reset to the basic disk. After installation, enable the mirroring again. Use [Computer Management] – [Disk Management] to create, disable, or remove the mirrored volume.
–	EB	OS		<ul style="list-style-type: none"> • Peripheral devices such as RDX/MO Remove an MO device before installing an OS. Some peripheral devices need to be halted before installation. Refer to the manual provided with the peripheral devices for how to set a device appropriate to installation.
–	EB	OS		<ul style="list-style-type: none"> • DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
–	EB	OS		<ul style="list-style-type: none"> • 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 (4.10 Installation When Multiple Logical Drives Exist)</i>.
–	EB	OS		<ul style="list-style-type: none"> • Setup when mass memory is installed If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured. If you fail to secure the dump file size, use OS standard installer for setup, and allocate the required file space to multiple disks by performing the following steps. <ol style="list-style-type: none"> 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Specify another disk as destination to store the debug information (required dump file size) by referring to Chapter 1 (7. Setup for Solving Problems). <p>If the hard disk drive does not have enough 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 hard disk drive for the dump file.</p>
			Note	<p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>

(2/4)

Setup			Items to confirm	
–	EB	OS	System partition size <Windows Server 2008 64-bit Edition>	<p>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</p> <p>Full installations</p> <p>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)</p> <p>Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application</p> <p>Server Core installations</p> <p>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)</p> <p>Paging file size (recommended) = installed memory size × 1.5 Dump file size = installed memory size + 300 MB Application size = as required by the application</p> <p>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 MB + (1,024 MB × 1.5) + 1,024 MB + 300 MB + application size = 14,460 MB + application size</p> <p>Note</p> <ul style="list-style-type: none"> • 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. <p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>

(3/4)

Setup			Items to confirm	
-	EB	OS	System partition size <Windows Server 2008 32-bit Edition>	<p>The system partition size can be calculated by using the following formula.</p> <p>Size required to install the OS + paging file size + dump file size + application size</p> <p>Full installations</p> <p>Size required to install the OS = 6,300 MB (Windows Server 2008)</p> <p>= 9,300 MB (Windows Server 2008 with Service Pack 2)</p> <p>= 9,400 MB (Windows Server 2008 + Service Pack 2)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 300 MB</p> <p>Application size = as required by the application</p> <p>Server Core installations</p> <p>Size required to install the OS = 2,200 MB (Windows Server 2008)</p> <p>= 9,300 MB (Windows Server 2008 with Service Pack 2)</p> <p>= 5,300 MB (Windows Server 2008 + Service Pack 2)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 300 MB</p> <p>Application size = as required by the application</p> <p>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:</p> <p>6,300 MB + (1,024 MB × 1.5) + 1,024 MB + 300 MB + application size = 9,160 MB + application size</p> <p>Note</p> <ul style="list-style-type: none">• 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 the 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. <p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>

(4/4)

Setup			Items to confirm	
–	EB	OS	Upgrade to Windows Server 2008	<p>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.</p> <p>If you want to use Windows Server 2008, back up the necessary data before installing Windows Server 2008.</p> <p>Tips Inplace upgrade refers to overwriting an existing OS (in this case, Windows 2003) with another OS (Windows Server 2008).</p>
–	EB	OS	Using BitLocker	<p>If using BitLocker, note the following.</p> <ul style="list-style-type: none"> Before installing an OS, be sure to create the following two partitions in the hard disk drive: <ul style="list-style-type: none"> System partition (to store the loader) Boot partition (to store the OS) <p>Note For details, refer to the following document provided in Microsoft TechNet: BitLocker Drive Encryption Step-by-Step Guide</p> <ul style="list-style-type: none"> Be sure to keep the recovery password secure. Do not keep it near a server running BitLocker. <p>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.</p> <p>The recovery password might be required at startup of the OS after the following:</p> <ul style="list-style-type: none"> Replacement of motherboard Initialization of trusted platform module (TPM) Change of BIOS setting <ul style="list-style-type: none"> To reinstall the operating system into a partition that is encrypted with BitLocker, delete the BitLocker-encrypted partition prior to reinstallation.
–	EB	OS	Installing Service Pack	<p>You can install the Service Pack on the server. When the Service Pack is not attached to your system, prepare it by yourself.</p>
–	EB	OS	License authentication	<p>License authentication is required depending on the installation of Windows. For details, refer to <i>Chapter 1 (4.8 License Authentication)</i>.</p> <p>NOTE</p> <ul style="list-style-type: none"> 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 feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "User's Guide".

Important

- Setup with EXPRESSBUILDER may delete all data of the hard disk drive depending on the 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.
- Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally. It is recommended to make backup copy of user data before starting setup.

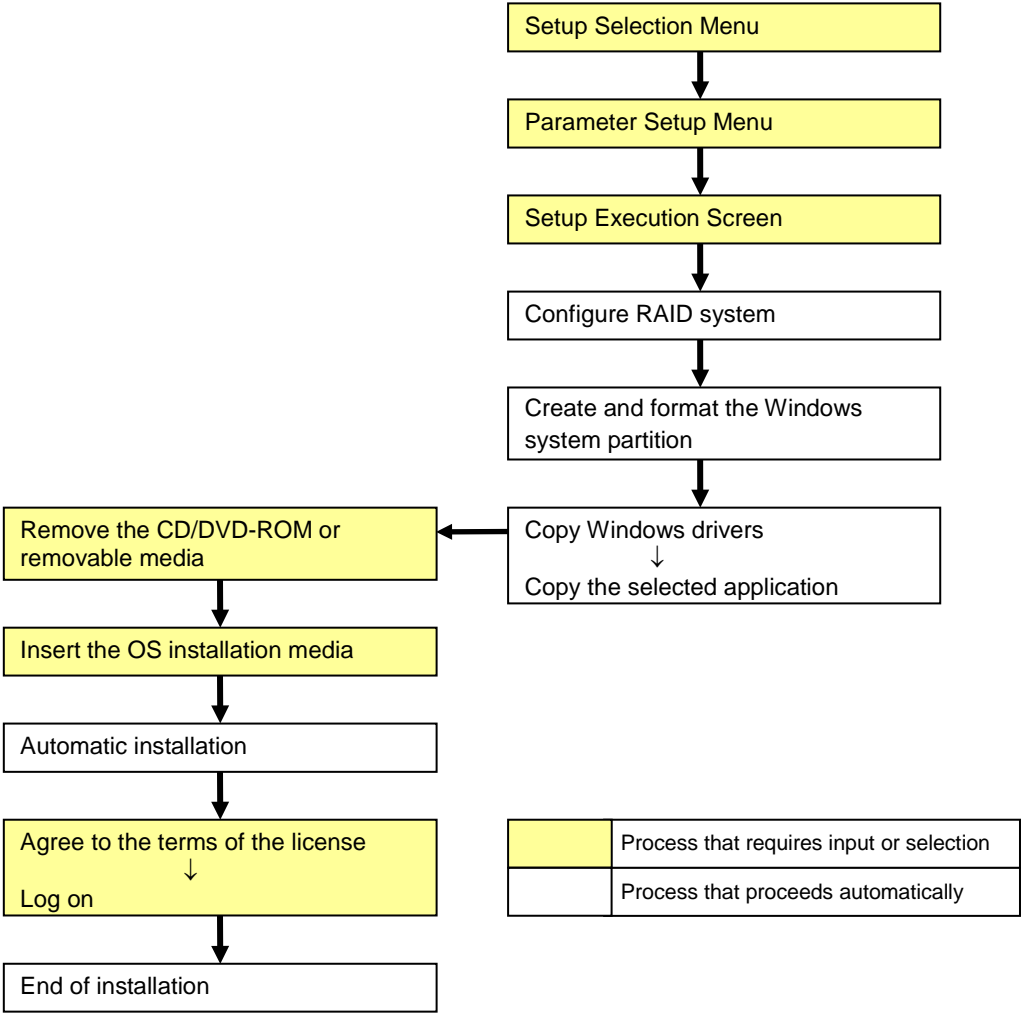
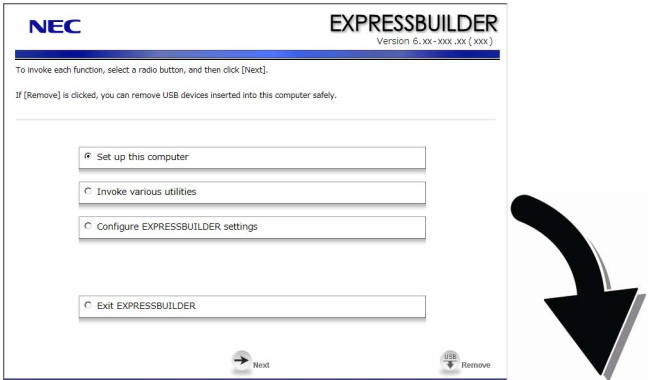
Note

- 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 your sales representative for details.
- When using an onboard RAID controller (LSI Embedded MegaRAID):
Do 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.

Tips

- Setup with EXPRESSBUILDER allows you to use a prespecified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *Chapter 1 (8 Windows OS Parameter File)*.

4.2.1 Setup flow



4.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS 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**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for Windows OS parameter file**
 - **Service Pack**
(If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from 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 EXPRESSBUILDER DVD.

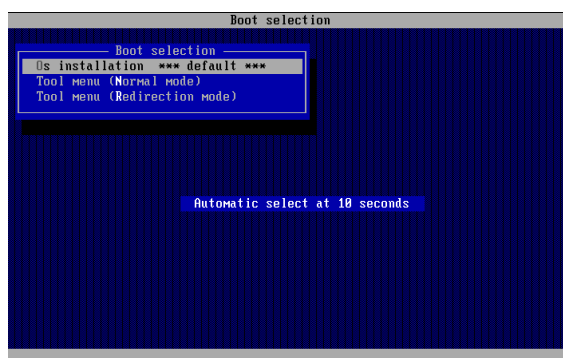
4.2.3 Setup procedure

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.

Note

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

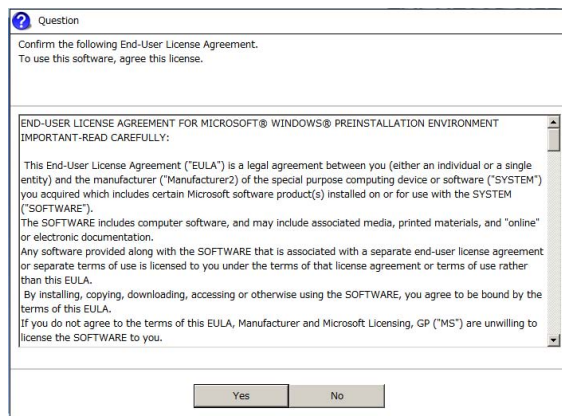
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



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



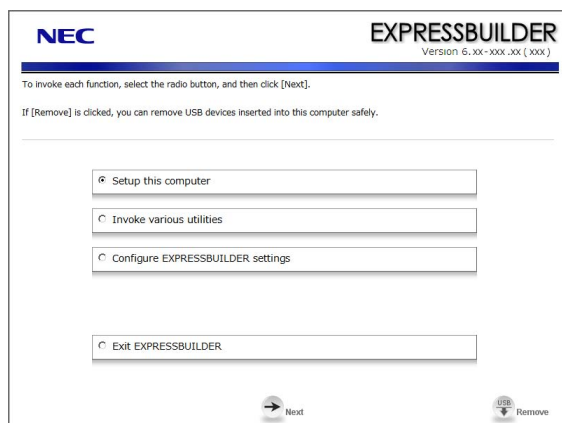
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Set up this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].



7. Set parameters on this menu according to your requirement.

- ☐ When not using parameter file: Go to Step 8.
- ☐ When using a parameter file: Go to Step 9.

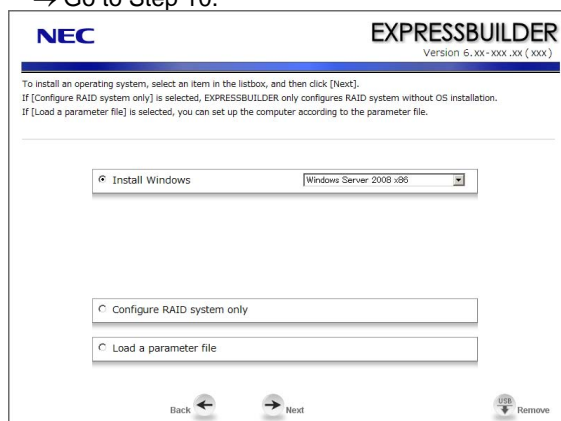
Note

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

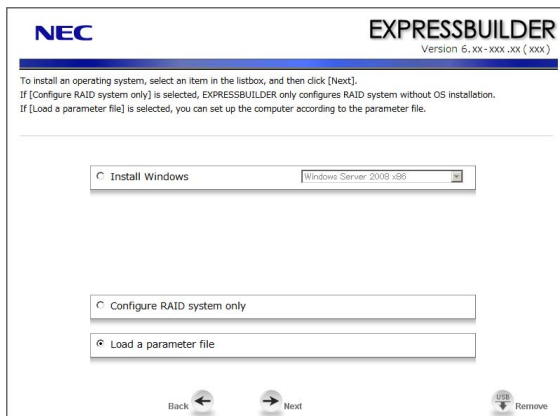
8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next].

On this dialog, select "Windows Server 2008 x86" from the pull-down menu.

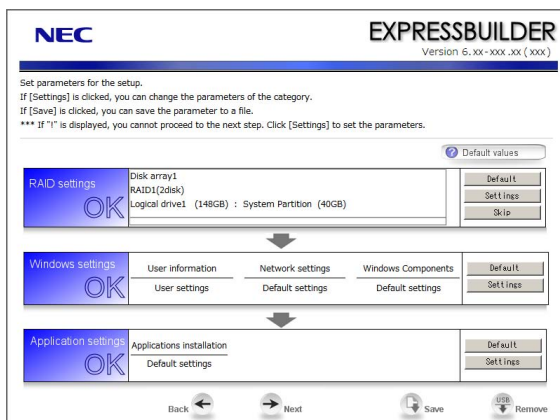
→ Go to Step 10.



9. If you use a parameter file, select [Load a parameter file] and click [Next]. Load a parameter file according to displayed instructions.

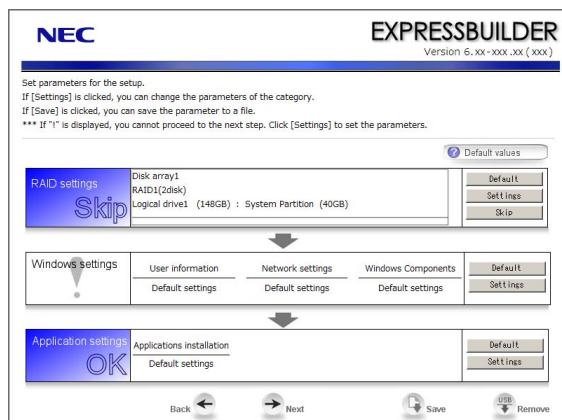


Confirm settings on Parameter Setup Menu as needed, then click [Next].
→ Go to Step 13.



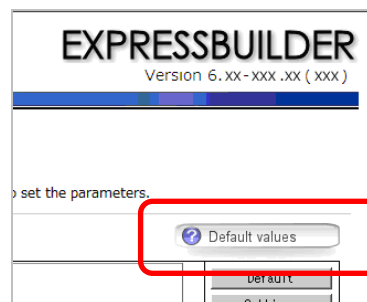
10. Set parameters required for setup.

Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



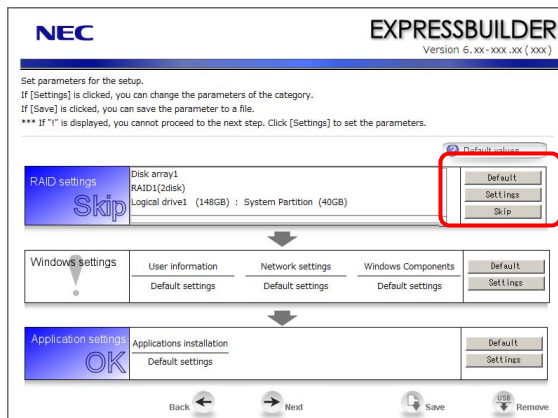
10-1 RAID settings

Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

Important

If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

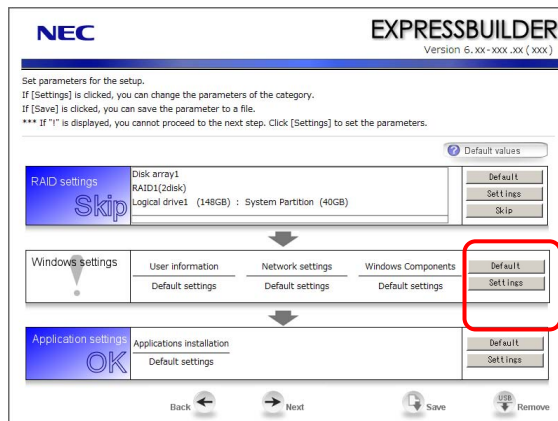
When skipping the creation of new logical drives

Click [Skip] in RAID settings.

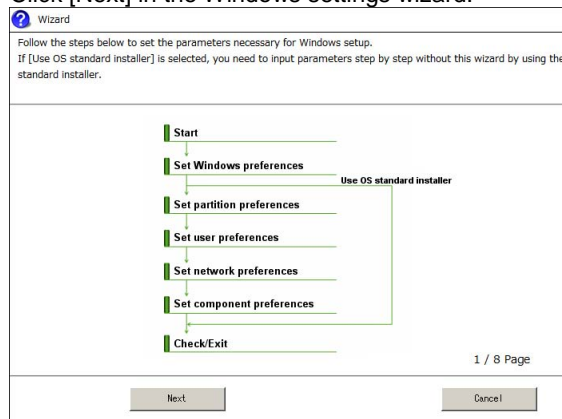
When the RAID settings wizard is terminated, Parameter Setup Menu appears again.

10-2 Windows settings

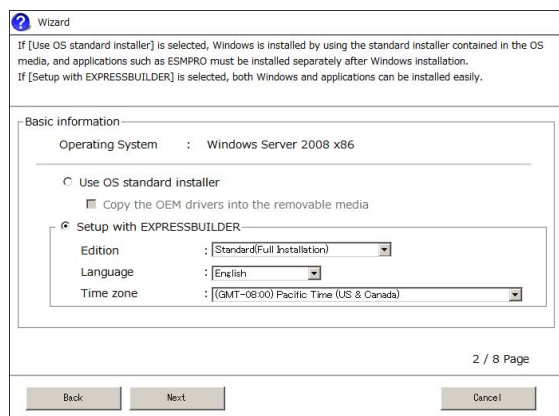
Set up Windows by using the Windows settings wizard on Parameter Setup Menu.



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



- (3) Specify the Windows basic settings.
Change settings for "Edition" and "Time Zone" as needed, and click [Next].



- (4) Set up the partitions.
Confirm settings on the dialog shown below, change them 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) :

Free area
(148.1GB)

Partitioning

☐ Use the existing partition

☒ Create a new partition

☐ Specify the maximum amount

☒ Enter a value : 40 (GB) *1TB=1024GB
(12GB - 148GB)

3 / 8 Page

Back Next Cancel

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)*.)
 - 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.
Confirm settings on the dialog shown below, change them as needed, and then click [Next].

Wizard

Set parameters about user information.
Input Computer name within 15 characters.
Administrator password requires more than 6 characters, and must contain characters from three of the following categories (numbers / uppercase / lowercase / signs).

User information

Computer name : 1786-0123456 (Required) ☒ Auto

User name : Administrator

Administrator password : (Required)

Confirm Administrator password : (Required)

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Back Next Cancel

Note

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.

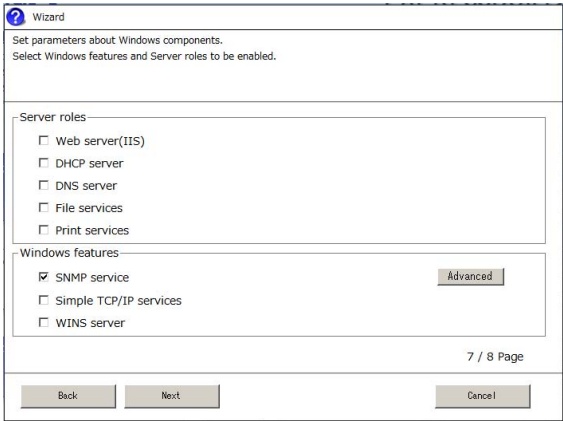
(6) Set up the network.
Confirm settings on the dialog shown below, change them as needed, and then click [Next].

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.
Confirm settings on the dialog shown below, change them as needed, and then click [Next].

- (8) Select the Windows components for installation.
Confirm settings on the dialog shown below, change them as needed, and then click [Next].



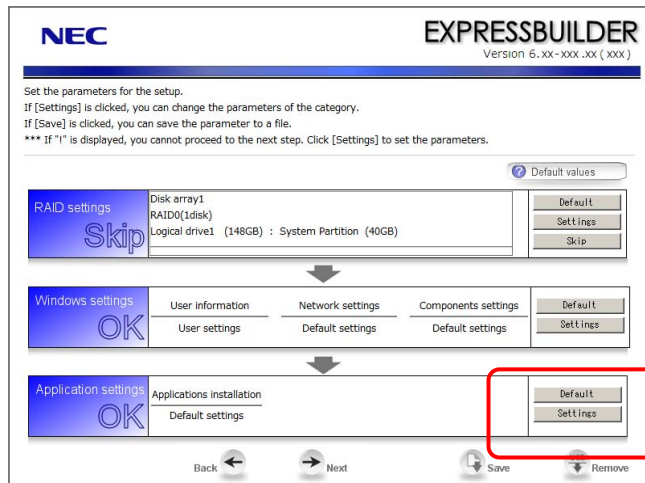
- (9) Confirm settings.
Confirm settings on the dialog shown below, and click [Finish].



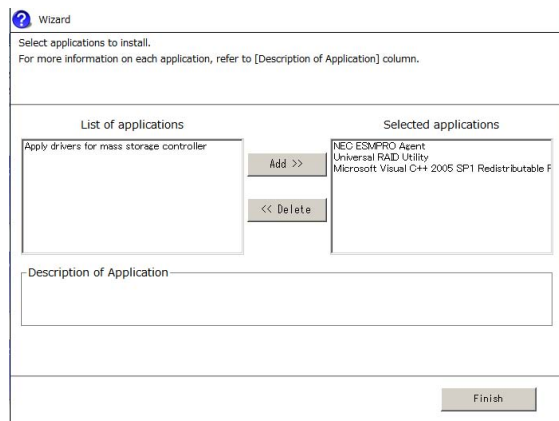
When the Windows settings wizard is terminated, Parameter Setup Menu appears again.

10-3 Application settings

Set up applications using the Application settings wizard in Parameter Setup Menu.

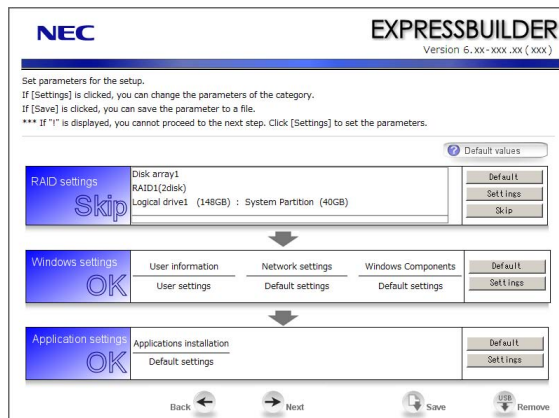


- (1) Click [Settings] in **Application settings**.
- (2) Confirm settings on the dialog shown below, change them as needed, and click [Finish].

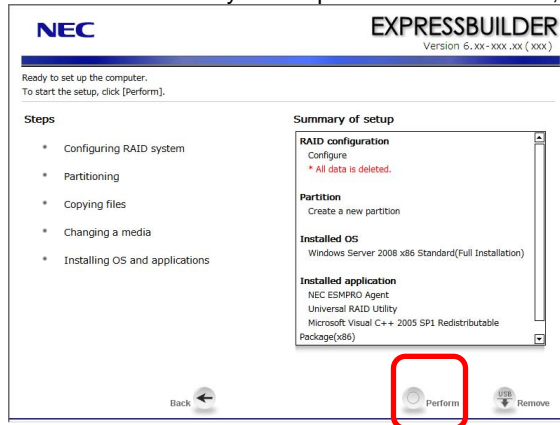


11. Save parameters on Parameter Setup Menu as needed.
Click [Save], and save the parameter file according to displayed instructions.
If you do not need to save parameters, go to Step 12.

12. Click [Next] on Parameter Setup Menu.

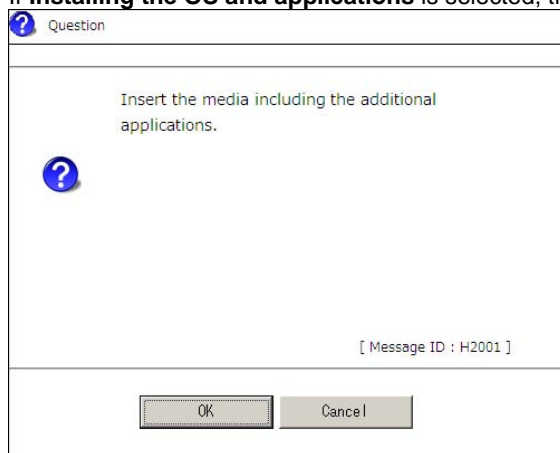


13. Confirm the summary of setup on the screen below, and click [Perform].



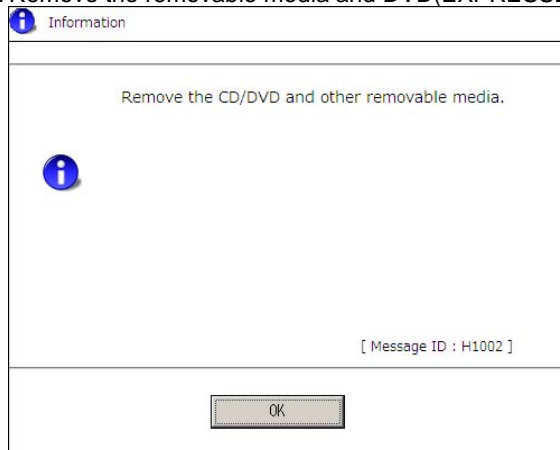
14. Install the additional applications.

If **Installing the OS and applications** is selected, the following message will appear.



Insert the CD-ROM or removable media that contains the necessary applications, and install them according to displayed messages.

15. Remove the removable media and DVD(EXPRESSBUILDER) from the server.

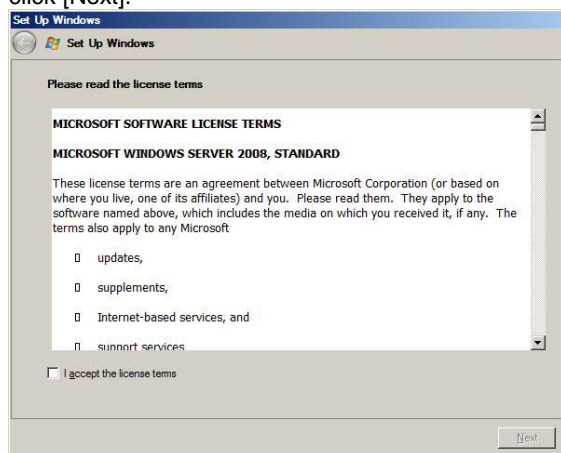


16. Insert the Windows Server 2008 DVD-ROM into the optical disk drive, and then click [OK].

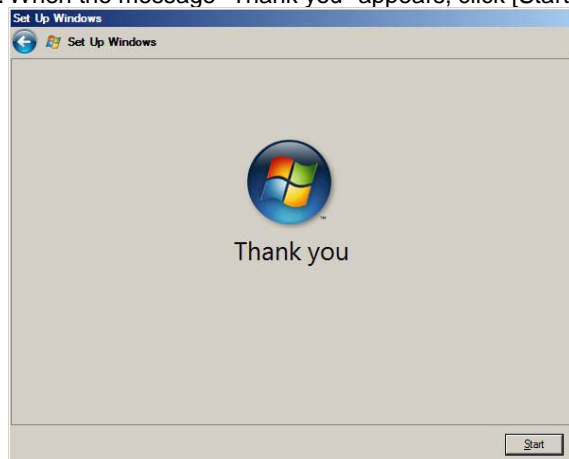


Windows Server 2008 and selected applications will be installed automatically and restart several times.

17. When the software license agreement window appears, select **I accept the license terms**, and then click [Next].



18. 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.

19. When the following message appears, press <Ctrl> + <Alt> + keys.

Press CTRL + ALT + DELETE to log on

20. Follow displayed instructions to log on to the system.

Full installations:

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

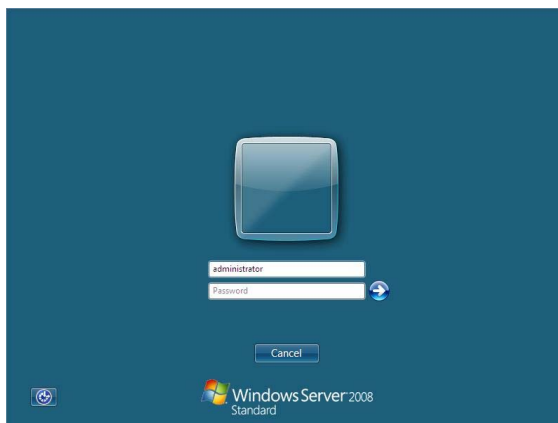


Server Core installations:

When the following screen appears, click **Other User**.



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



21. Click [OK] in the Setup Complete window.
22. 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.
23. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
24. Apply Service Pack as needed according to *Chapter 1 (4.9 Applying Service Pack)*.
25. 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

This section describes how to install Windows with OS Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide*".

Important

Setup with OS standard Installer may delete all data of the hard disk drive depending on the 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.

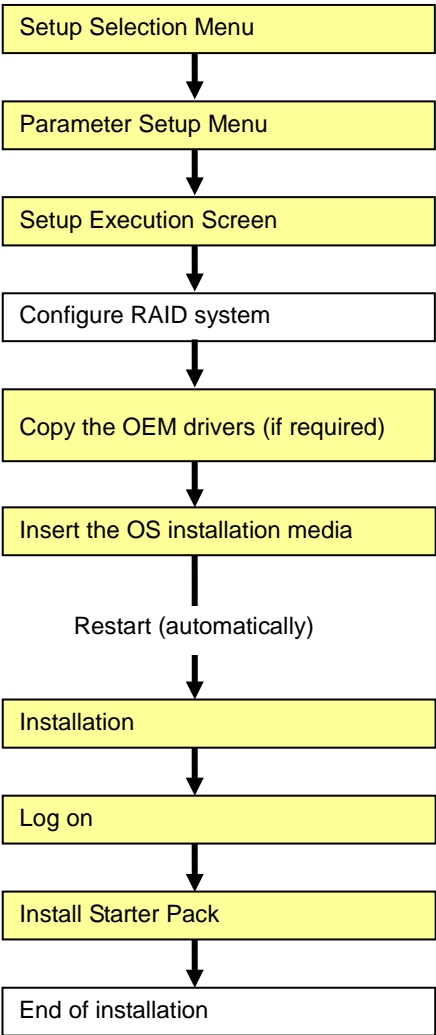
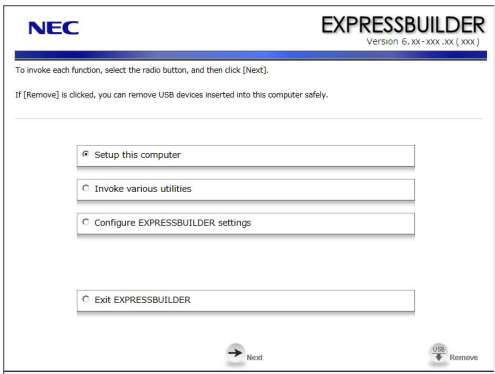
Note

When using an onboard RAID controller (LSI Embedded MegaRAID):
Do 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.

Tips

- Setup with OS Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to 8 *Windows OS Parameter File*.

4.3.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

4.3.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

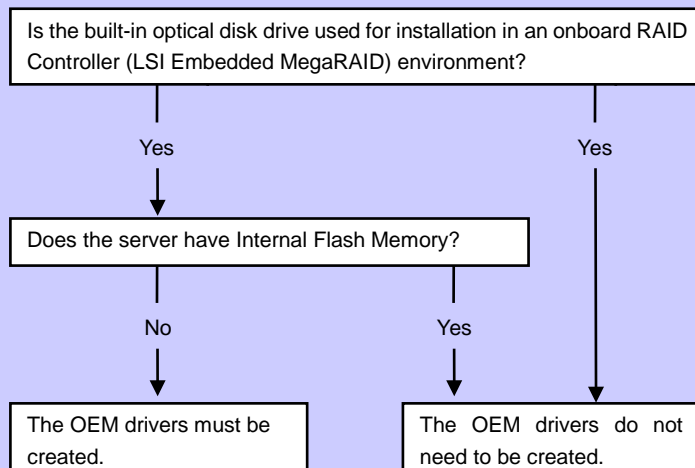
- Either of the following OS installation media
 - **NEC operating system installation media** (hereafter referred to as *Backup DVD-ROM*)
 - **Microsoft operating system installation media** (hereafter referred to as *Windows Server 2008 DVD-ROM*)
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for Windows OS parameter file**
 - **Removable media for creating OEM drivers** (Windows Server 2008 x64)
 - **Removable media for creating OEM drivers** (Windows Server 2008)
 - **Service Pack**
(If the OS installation media contains Service Pack 1, you need not apply the service pack again.)

Note

OEM driver is required when using the onboard RAID controller (LSI Embedded MegaRAID) on the server equipped with internal optical disk drive.

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory. EXPRESSBUILDER can be run from 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 other removable media should these conditions apply.



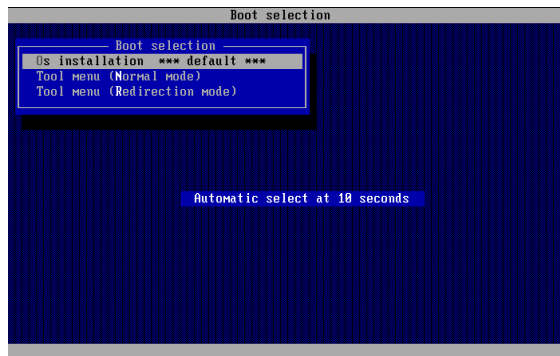
4.3.3 Setup procedure

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

Note

Before starting setup, refer to *Chapter 1 (4.1 Before Starting Setup)*. It describes how to make partitions.

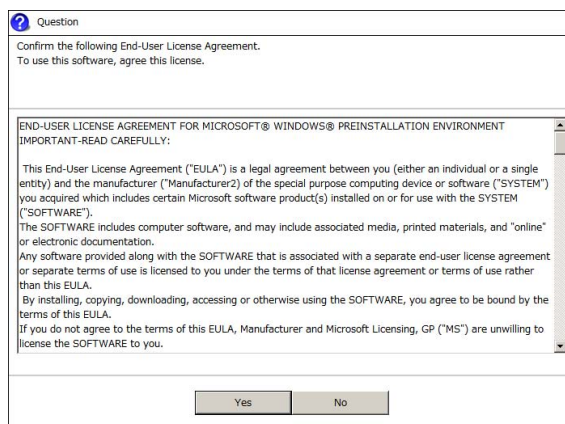
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.
You will automatically advance to step 4, with no need for further input.



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



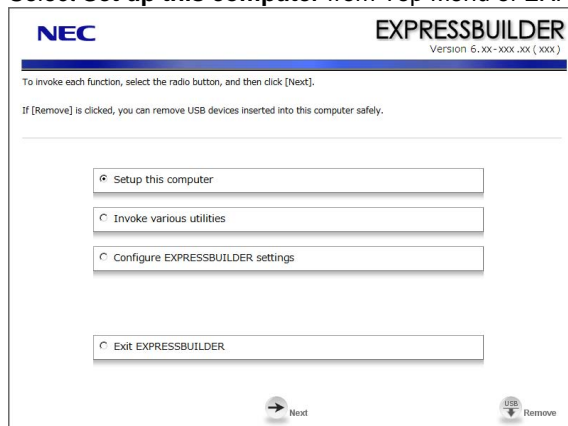
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Set up this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].



7. Set parameters on this menu according to your requirement.

- ☐ When not using parameter file: Go to Step 8.
- ☐ When using a parameter file: Go to Step 9.

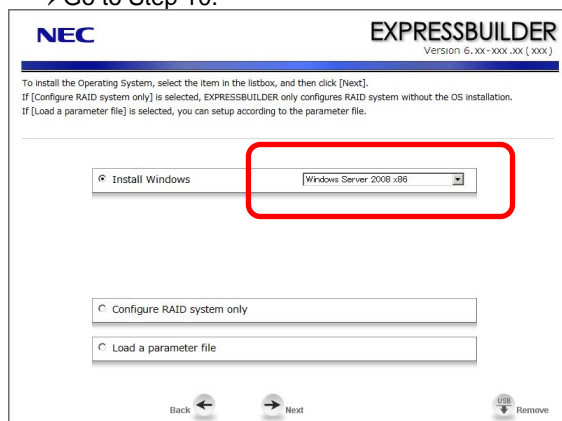
Note

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

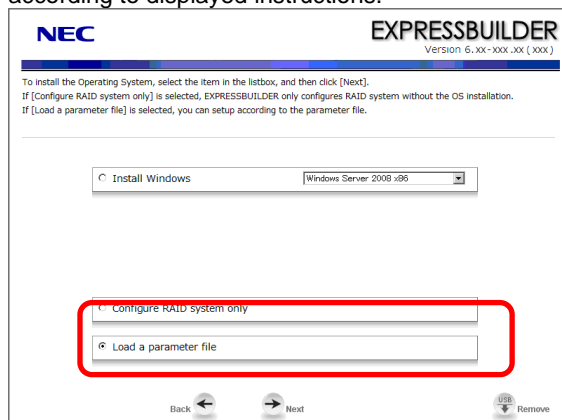
8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next].

On this dialog, select "Windows Server 2008 x86" from the pull-down menu.

→ Go to Step 10.

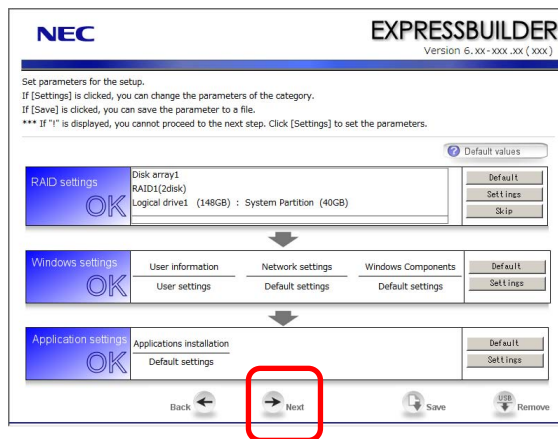


9. If you use a parameter file, select [Load a parameter file] and click [Next]. Load a parameter file according to displayed instructions.



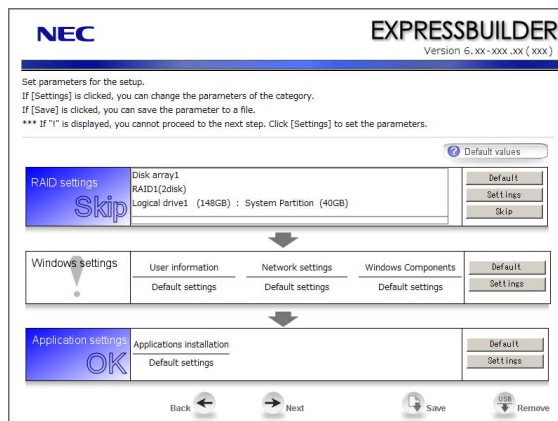
Confirm settings on Parameter Setup Menu as needed, then click [Next].

→ Go to Step 16 .



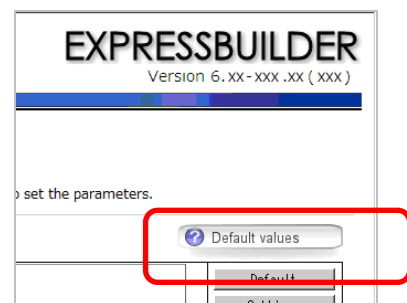
10. Set parameters required for setup.

Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



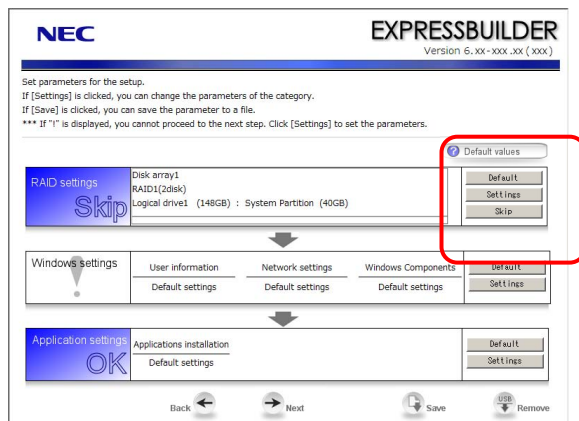
10-1 RAID settings

Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

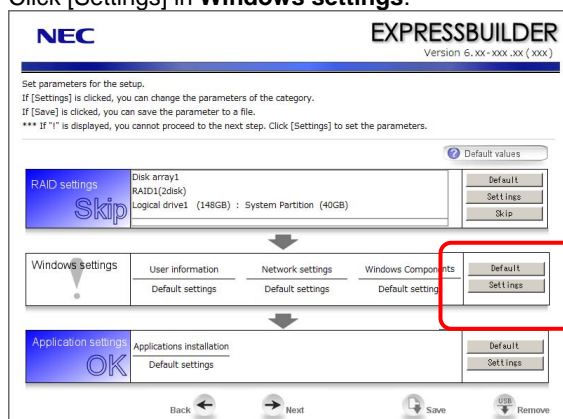
Important

If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

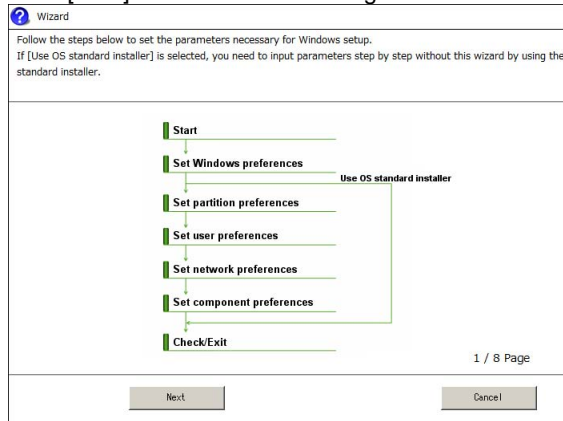
When skipping the creation of new logical drives

Click [Skip] in RAID settings.

11. Click [Settings] in Windows settings.

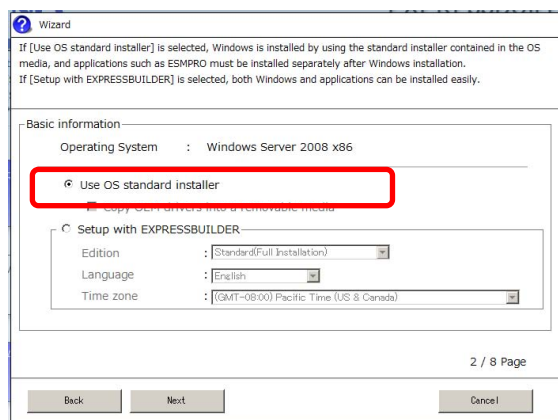


12. Click [Next] in the Windows settings wizard.



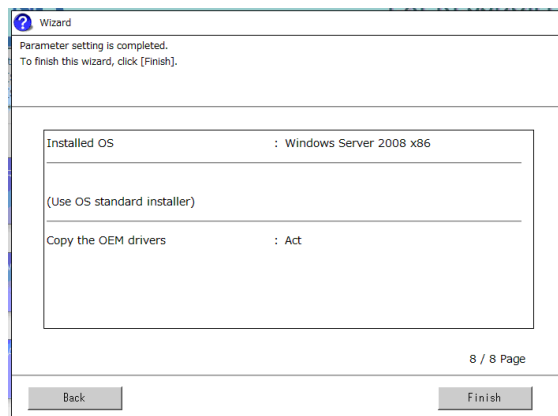
13. Specify the Windows basic settings.

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

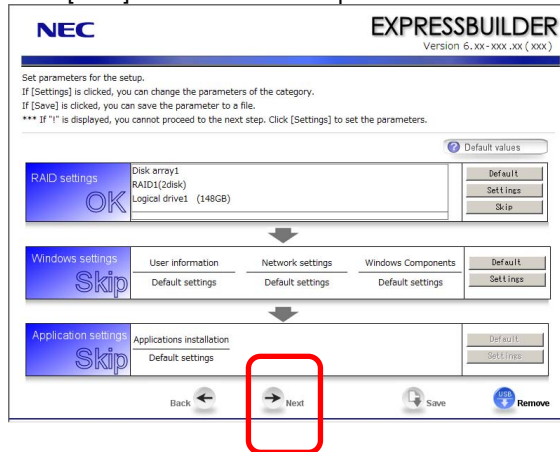


If copying the OEM drivers to the removable media, select **Copy the OEM drivers into the removable media**.

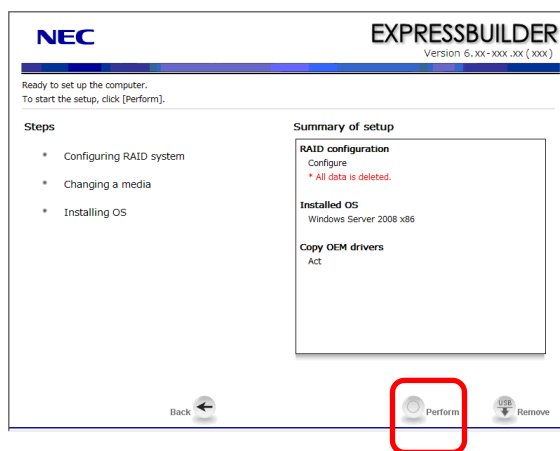
14. Confirm settings on the confirmation window, and click [Finish].



15. Click [Next] on Parameter Setup Menu.



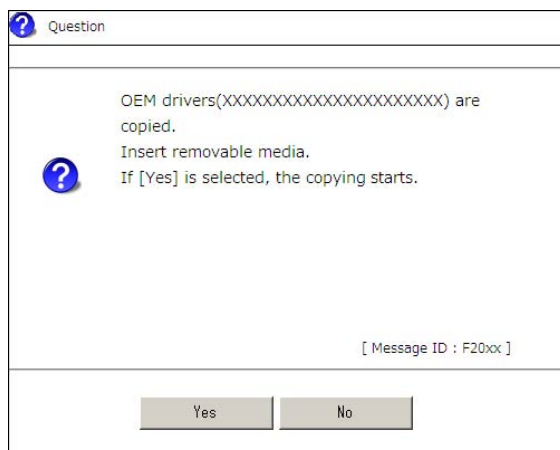
16. Confirm the summary of setup on the screen below, and click [Perform].



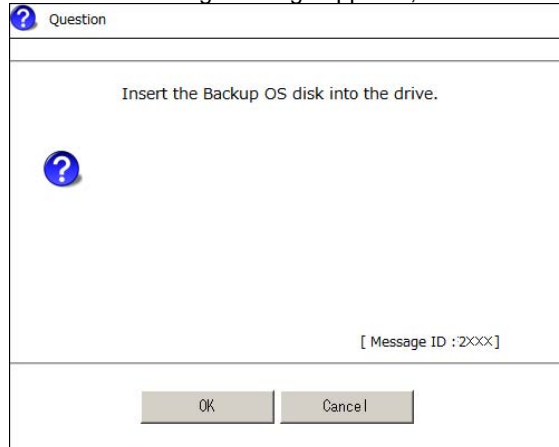
17. Continue setup according to displayed message.

If the Copy the OEM drivers to the removable media checkbox is selected in step 13, the following window appears.

Follow the onscreen instructions and continue the operation.



When the following message appears, set OS installation media and click [OK].



18. The server reboots automatically.

If you use Internal Flash Memory, press <F3> key when the following message appears during POST.

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

Note

Since the OS installation media is set in the optical disk drive in Step 17, boot the system from the optical disk drive having higher boot priority, not from Internal Flash Memory.

19. Run from the OS installation media.

If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen.

The boot sequence proceeds and the message "Windows is loading files..." appears.


Note

If "Windows is loading files..." message does not appear, <Enter> key was not pressed correctly. Reboot and retry.

This step is unnecessary if no bootable operating system exists.

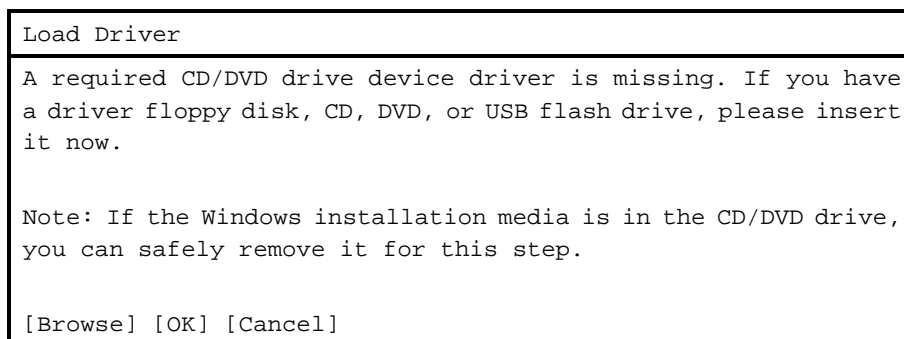
20. When the following window appears, click [Next] at default settings.



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



- If the following message appears, go to step 22.
- If not go to step 24.



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.

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

If using OEM drivers (made at step 17)

- Windows Server 2008 x64
Removable media:\OEM_Driver\ws2008x64\megasr1
- Windows Server 2008 x86
Removable media:\OEM_Driver\ws2008\megasr1

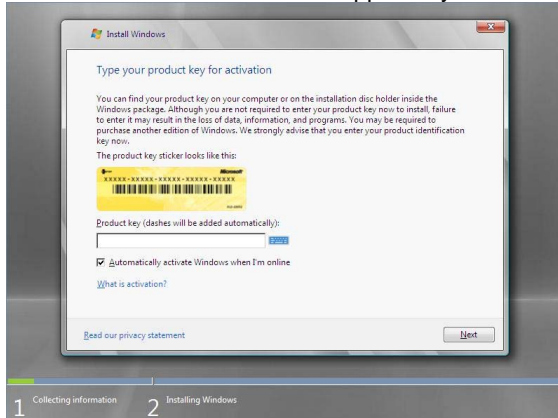
If using Internal Flash Memory

- Windows Server 2008 x64
Internal Flash Memory:\024\win\winnt\oemfd\ws2008x64\megasr1
- Windows Server 2008 x86
Internal Flash Memory:\024\win\winnt\oemfd\ws2008\megasr1

Tips

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

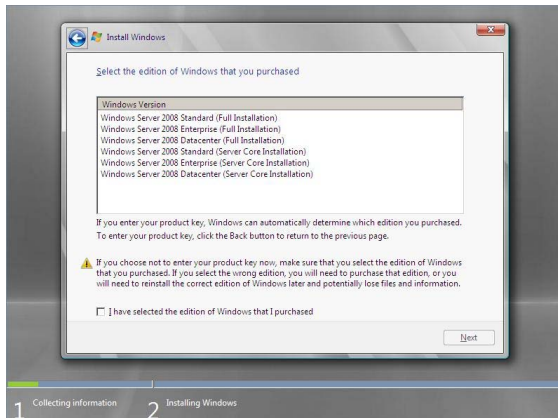
23. Select LSI Embedded MegaRAID, and then click [Next].
24. When the following window appears, enter the product key and then click [Next].
Note that this window does not appear if you use Backup DVD-ROM for installation.



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 use Internal Flash Memory or removable media with the OEM drivers copied onto it.

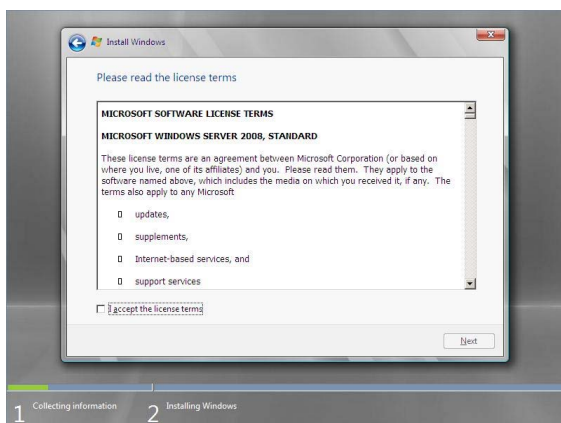
25. When the following window appears, select the Windows edition you have purchased.
Select **I have selected the edition of Windows that I purchased** check box, and then click [Next].
If the product key was entered, only the corresponding editions are displayed.



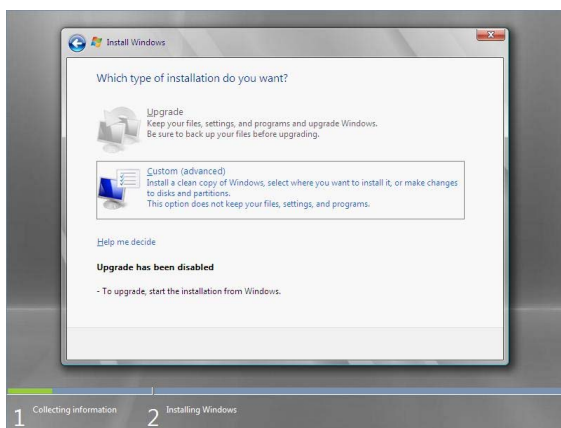
Tips

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

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



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



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

Note

If the driver was loaded in steps 22 to 23, or if not using a RAID Controller, go to step 32.

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 29.

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

29. Specify one of the following locations, and then click [OK].
(When using EXPRESSBUILDER, select the optical disk drive. When using Internal Flash Memory, select the volume of INTER-FLASH.)

When using the N8103-128 RAID Controller :

- Windows Server 2008 x64
 \024\win\winnt\oemfd\ws2008x64\stexstpt
- Windows Server 2008 x86
 \024\win\winnt\oemfd\ws2008\stexstpt

When using the N8103-149/150/151 RAID Controller :

- Windows Server 2008 x64
 \024\win\winnt\oemfd\ws2008x64\megasas2
- Windows Server 2008 x86
 \024\win\winnt\oemfd\ws2008\megasas2

When using the onboard RAID Controller (LSI Embedded MegaRAID) and a USB-DVD drive :

- Windows Server 2008 x64
 \024\win\winnt\oemfd\ws2008x64\megasr1
- Windows Server 2008 x86
 \024\win\winnt\oemfd\ws2008\megasr1

Tips

The driver does not have to be loaded at this time if it was loaded in steps 22 and 23.

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

When using the N8103-128 RAID Controller

[Promise SuperTrak SAS 6G RAID Controller]

When using the N8103-149/150/151 RAID Controller

[LSI MegaRAID SAS 9267-8i]

When using the onboard RAID Controller (LSI Embedded MegaRAID) and a USB-DVD drive

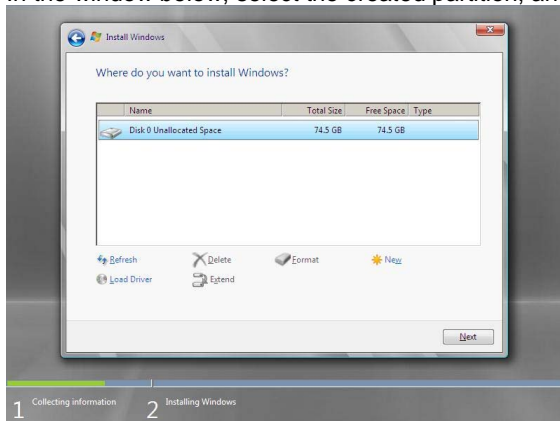
[LSI Embedded MegaRAID]

31. If you used EXPRESSBUILDER DVD, remove it and then insert the OS installation media.
32. Select the disk in which the partition will be created, and then click **Drive options (advanced)**
If a partition has already been created, go to step 35.
33. Click [New], enter the partition size into the size input box, and then click [Apply].

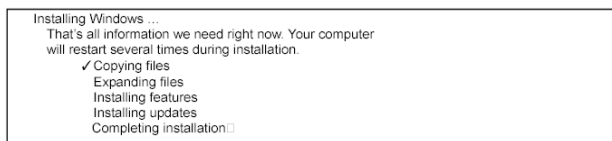
Note

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.

34. Select the partition created in step 33, and then click [Format].
35. In the window below, select the created partition, and then click [Next].

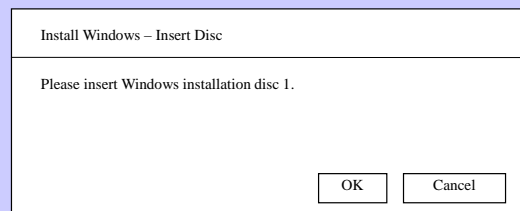


When the following message appears, Windows installation starts automatically.



Tips

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



36. The content displayed differs depending on what you selected in step 25. Confirm the following, and then proceed.

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 [OK] button.

**Tips**

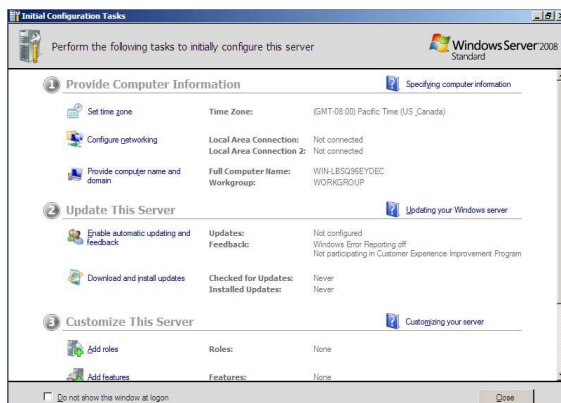
Passwords must fulfill the following requirements in Windows Server 2008.

- 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.




Server Core installations:

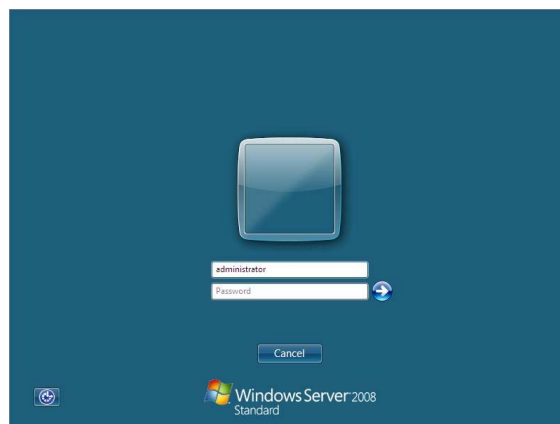
- (1) If the following message appears after Windows Server 2008 setup has completed, press <Ctrl> + <Alt> + keys.



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



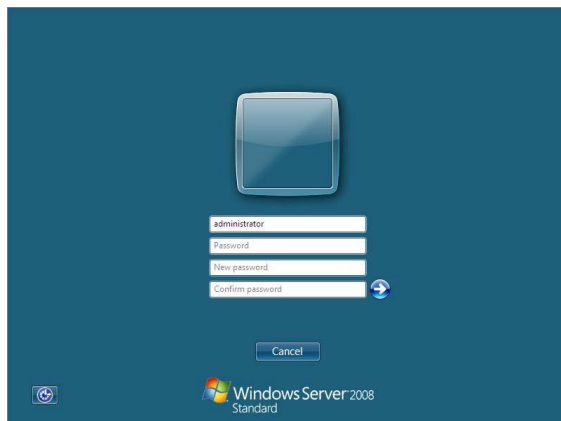
- (3) When the following window appears, enter `administrator` into the **User** text box and then click . Password entry is not required at this time.



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



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



Tips

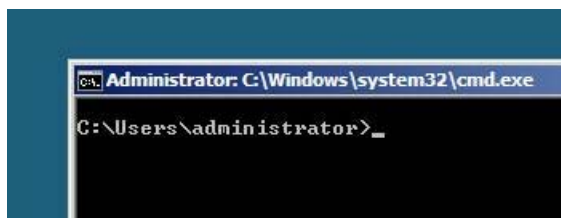
Passwords must fulfill the following requirements in Windows Server 2008.

- 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".

37. Install Starter Pack by referring to *Chapter 1 (4.4 Installing Starter Pack)*.
38. Install drivers and specify detailed settings by referring to *Chapter 1 (4.5 Setting Up Device Drivers)*.
39. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
40. Apply Service Pack as needed according to *Chapter 1 (4.9 Applying Service Pack)*.
41. 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 Starter Pack

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

Also install 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 Starter Pack.
- If the system was restored using a restore process
- If a system has been restored using the backup tool

Note

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 your sales representative for details.

Tips

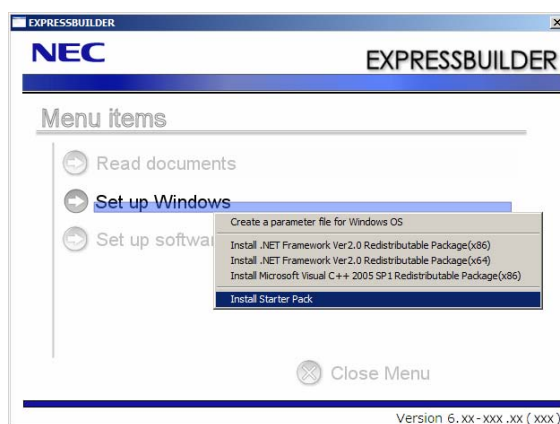
If the OS is installed by using EXPRESSBUILDER, Starter Pack is already applied.
If the configuration is not changed, you do not need to apply Starter Pack again.

4.4.1 When using EXPRESSBUILDER DVD

1. Log on to the system with the built-in administrator, which has administrative privileges.
2. Insert EXPRESSBUILDER DVD into the optical disk drive.
3. Start the installer of Starter Pack according to the installation type.

Full installations

When Autorun Menu appears, click **Setup Windows** to open the short-cut menu and then select **Install Starter Pack**.



Server Core installations

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

```
cd /d D:\024\win\winnt\bin
```

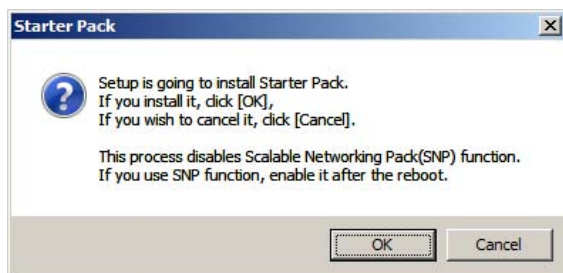
```
C:\Users\administrator>cd /d D:\024\win\winnt\bin
```

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

```
pkgsetup.vbs
```

```
D:\024\win\winnt\bin>pkgsetup.vbs
```

4. Wait for several minutes without attempting any further operation until the following window appears.



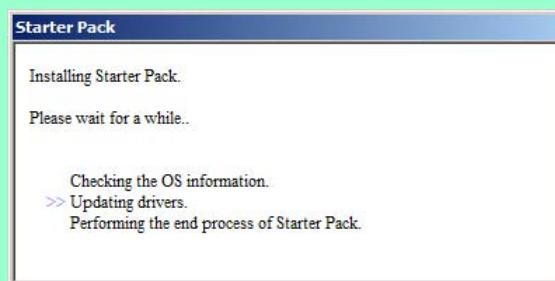
Read the message, and then click [OK].

Starter Pack installation starts. (About 5-10 minutes)

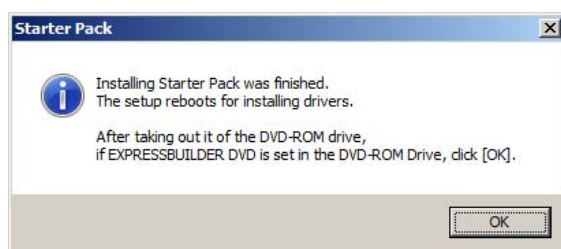
* It changes with states of a system.

Note

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



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



6. Click [OK] and then restart the system.

Installation of Starter Pack is now complete.

4.4.2 When using Internal Flash Memory

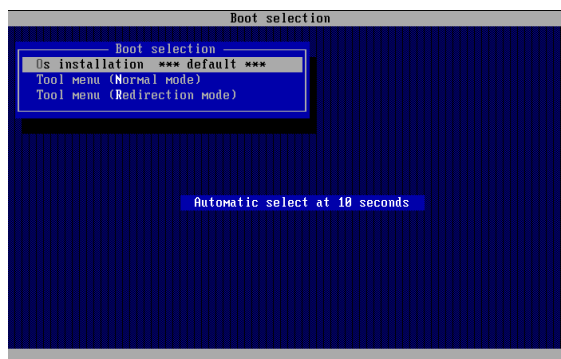
(Optional "Internal Flash Memory " is required)

1. After installing the operating system, restart the server.
2. When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST, press <F3> key.

Note

At this time, be sure to remove the DVD from the optical disk drive.

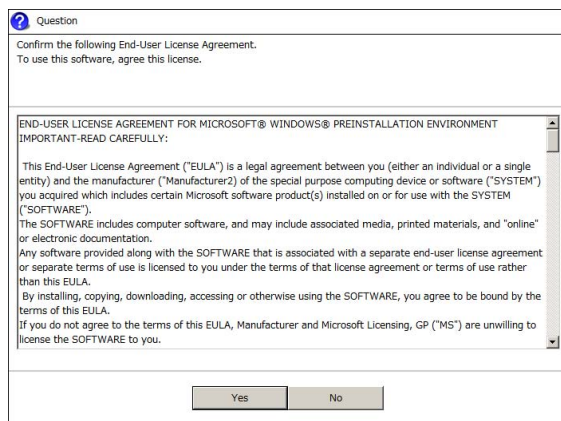
3. When the following message appears, select **Os installation *** default *****. You will automatically advance to the next window, with no need for further input.



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



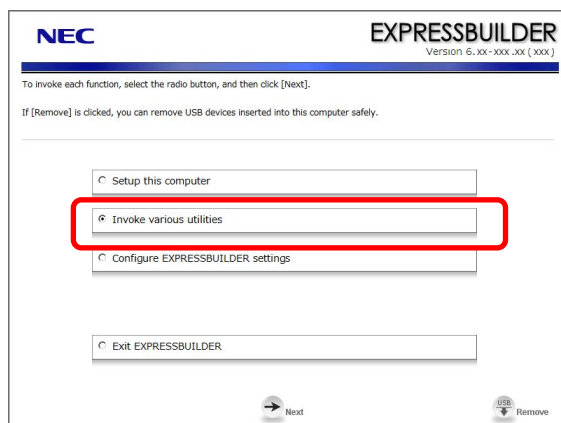
5. When the Windows PE software license agreement window appears, click [Yes].



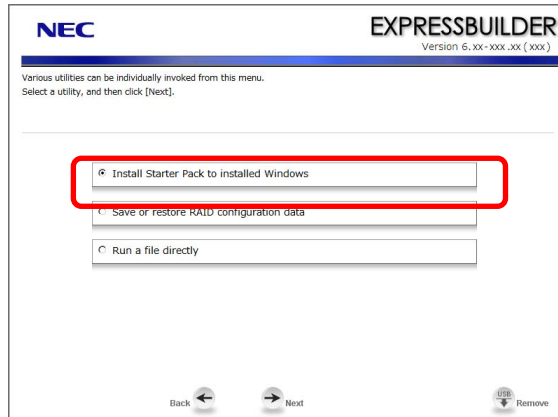
Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

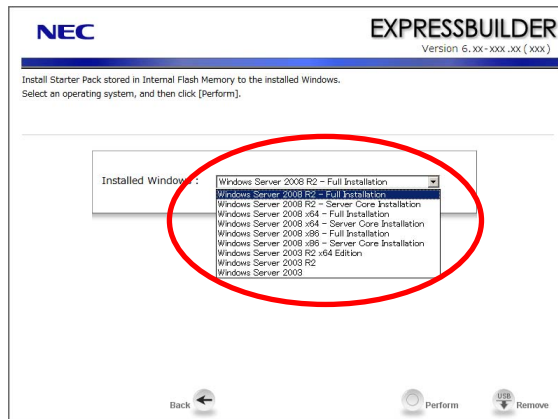
6. Select **Invoke various utilities** from Top Menu of EXPRESSBUILDER, and then click [Next].



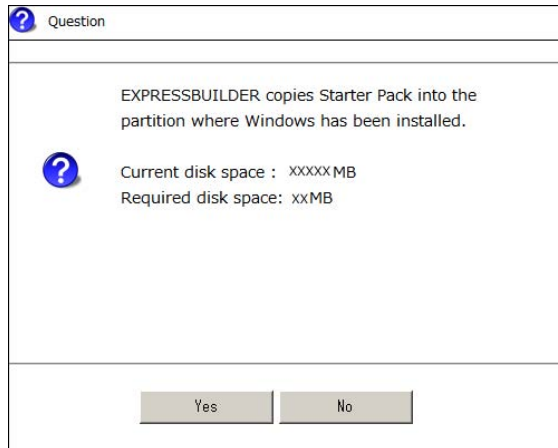
7. Select **Install Starter Pack to installed Windows** and then click [Next].



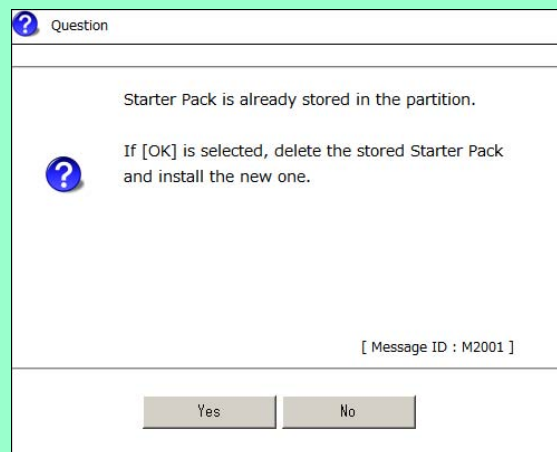
8. Select the installed Windows from the drop-down list, and then click [Perform].



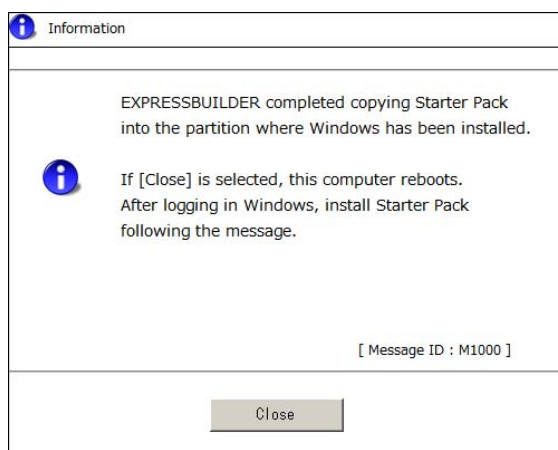
9. When the following confirmation window appears, read the content and then click [Yes].

**Note**

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



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



The server then restarts.

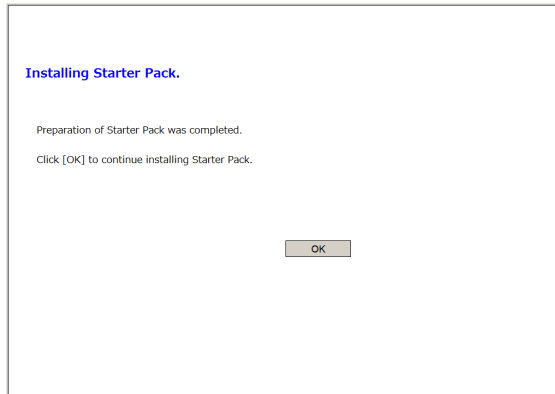
Note

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

11. Proceed application step according to the installation type.

Full installations

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



Server Core installations

- (1) Enter the following command at the command prompt, and then specify the drive letter of System

Drive (usually C drive).

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

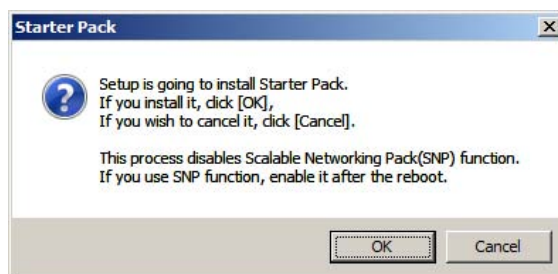
```
C:\Users\administrator>cd /d C:\StartPKG\bin
```

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

```
pkgsetup.vbs
```

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

12. Wait for several minutes without attempting any further operation until the following window appears, and then click [OK].

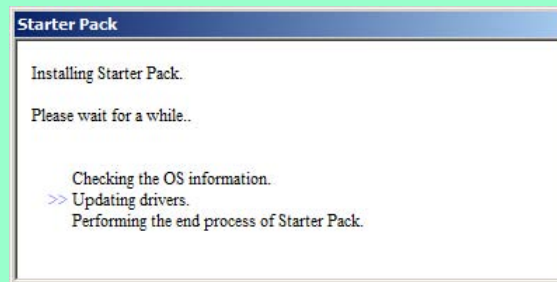


Installation of Starter Pack starts. (About 5-10 minutes)

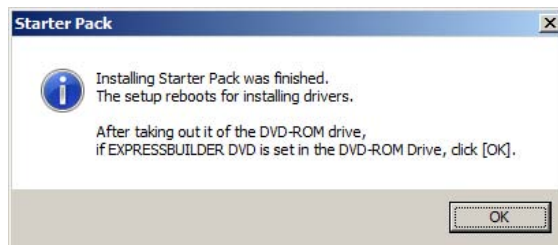
* It changes with states of a system.

Note

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



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



13. Click [OK] to restart the system.

Installation of 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 LAN and BACS driver will automatically be installed.

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

Important WOL is supported by the standard network adapters only.

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: N8104-128/132/133/138

Note: N8104-128 is supported by Express5800/R110e-1E only.

Important Using an optional LAN board, perform procedure "4.5.2 Setting up LAN drivers" for each optional LAN board.

(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*

[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx *

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

Tips The ID for N8104-128 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

(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) Using N8104-128

Using N8104-128 with the server, **iSCSI Offload Engine** and **EnablePMTUBHDetect** must be disabled.

Follow the procedure below to set it.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set **Filter** to **ALL VIEW**, select **Broadcom BCM57711 NetXtreme II 10 GigE # xx** under **Explorer View** the **Adapter xx (BCM57711 A0) - Port x**.
3. Tab on **Configurations** at the right side screen and then expand **Resource Reservations**.
4. Click the [Configure] button on the **Click the button to configure**. The **Hardware and Resource Configuration Wizard** appears.
5. Remove a checkmark from [iSCSI] under **Protocols**, if checked. Select [Next], and then click the [Apply] button.
6. When the following message 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?

7. Complete steps 2 to 6 for each N8104-128 network adapter. Then, close the **Broadcom Advanced Control Suite**.
8. Insert EXPRESSBUILDER DVD into the optical disk drive. If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

9. Double-click **BhdDisabled.vbs** in the following folder.

- When using EXPRESSBUILDER DVD:
 - <Windows Server 2008 64-bit Edition >
Optical disk drive:\024\win\winnt\ws2008x64\lan
 - <Windows Server 2008 32-bit Edition >
Optical disk drive:\024\win\winnt\ws2008\lan
- If Starter Pack was installed from Internal Flash Memory:
 - <Windows Server 2008 64-bit Edition >
System drive:\StartPKG\ws2008x64\lan
 - <Windows Server 2008 32-bit Edition >
System drive:\StartPKG\ws2008\lan

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

Black Hole Router Detect Disable Completed, Reboot the system

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

Setup is now complete.

(3) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click to the following file.
 - When using EXPRESSBUILDER DVD:
 - <Windows Server 2008 64-bit Edition >
Optical disk drive:\024\win\winnt\ws2008x64\lan\pgdyavd_Disable.vbs
 - <Windows Server 2008 32-bit Edition >
Optical disk drive:\024\win\winnt\ws2008\lan\pgdyavd_Disable.vbs
 - If Starter Pack was installed from Internal Flash Memory:
 - <Windows Server 2008 64-bit Edition >
System drive:\StartPKG\ws2008x64\lan\pgdyavd_Disable.vbs
 - <Windows Server 2008 32-bit Edition >
System drive:\StartPKG\ws2008\lan\pgdyavd_Disable.vbs

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

Configuration Completed
 [Option:PopUp RLV Disabled(Action:Done)]
 Reboot the system

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

Setup is now completed.

4.5.3 Setting up team/LiveLink

Important

- When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team. When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- 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.
- Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.

(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.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

Important

Possible combinations of network adapters that compose the team are as follows.

When the number of adapters that composes the team is up to four:

- Between standard network adapters
- Between LAN cards excluding N8104-128
- A standard network adapter and LAN card N8104-128

When the number of adapters that composes the team is up to two:

- Between N8104-128 adapters.

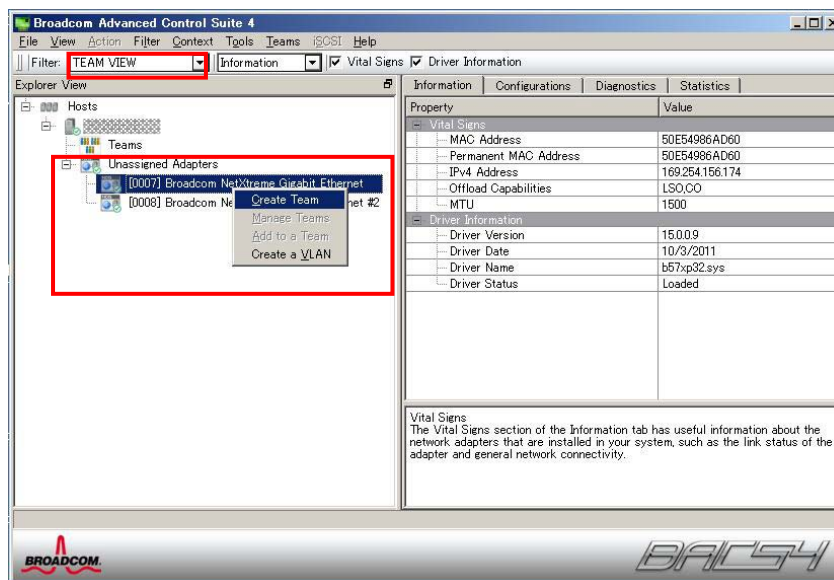
Teaming with another N8104-128 on different board is not supported.

Tips

To edit a team, right-click on the BACS team, and then select **Edit Team**.

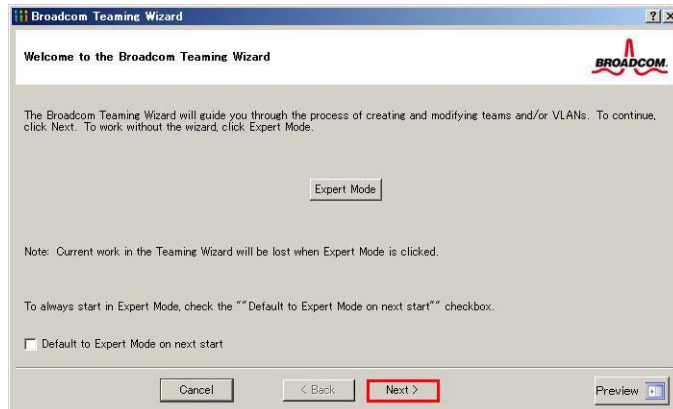
Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu.



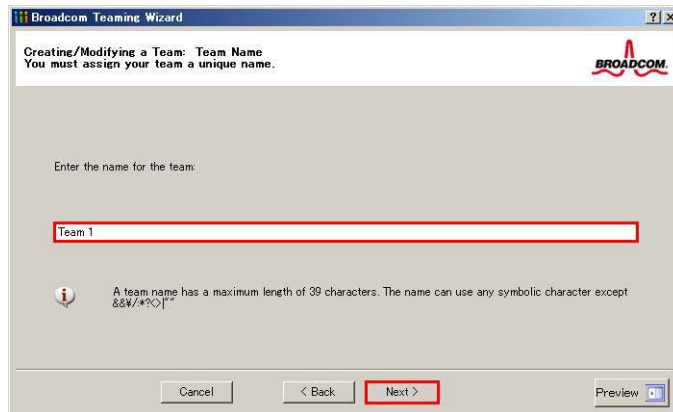
The **Broadcom Teaming wizard** appears.

3. Click [Next].

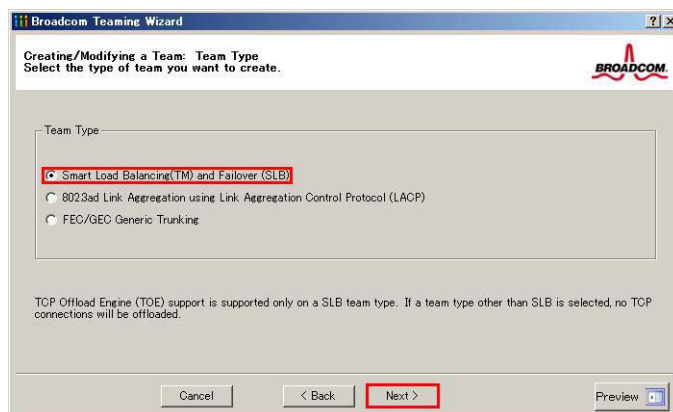
**Note**

Do not use **Expert Mode**.

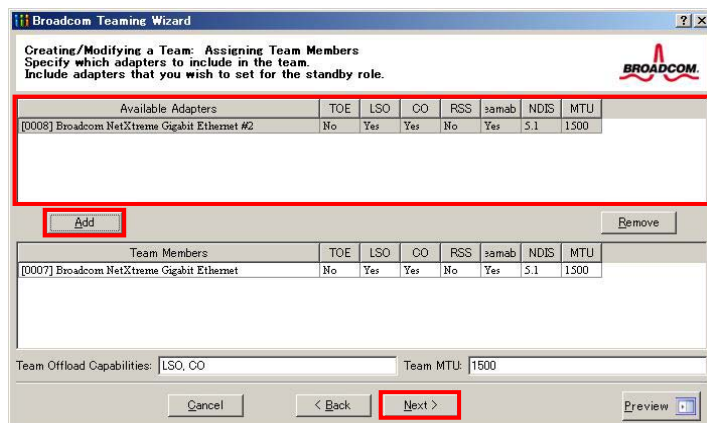
4. Enter any name into the team name entry column, and then click [Next].



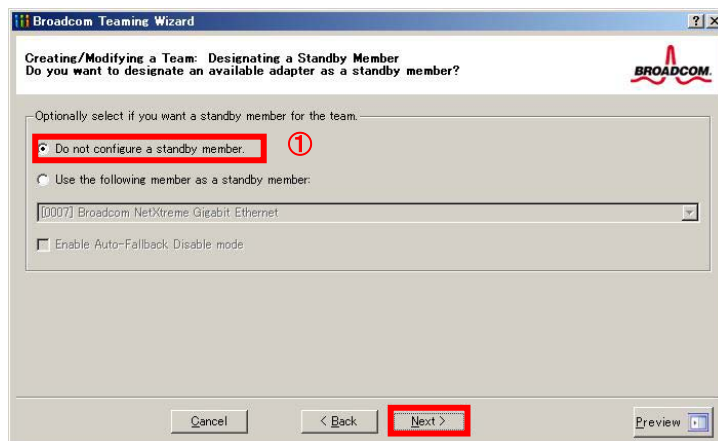
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



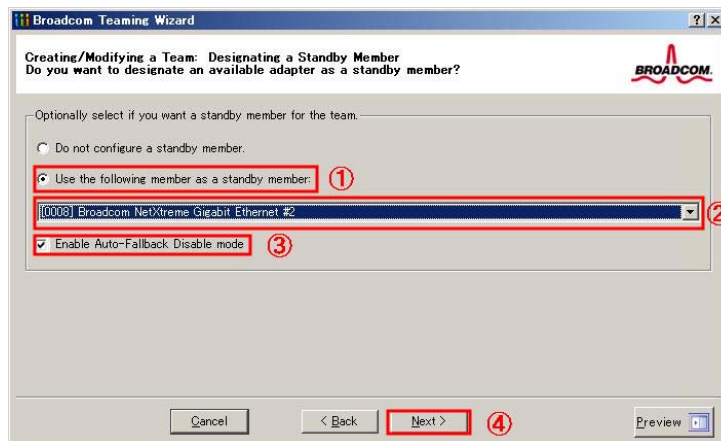
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



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].

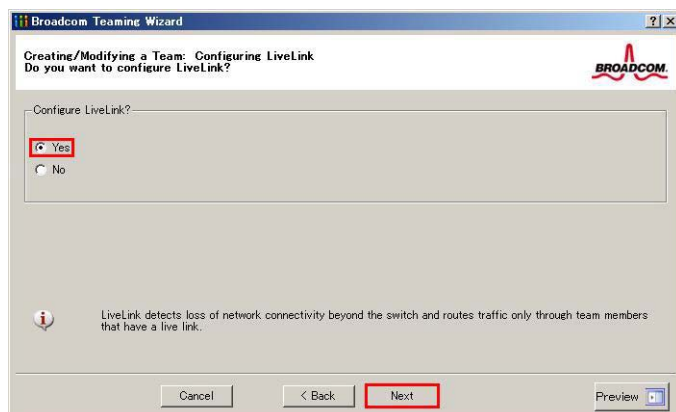


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

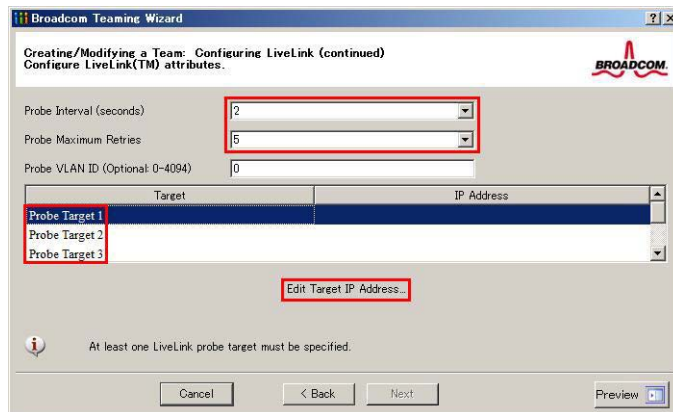
**Note**

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

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



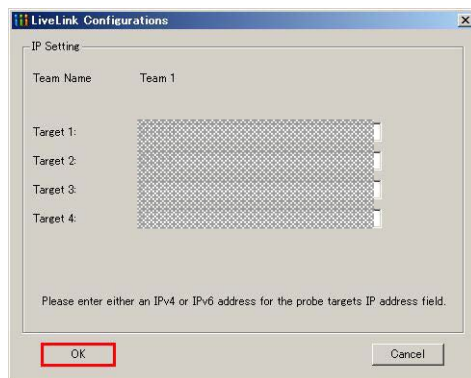
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



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 a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

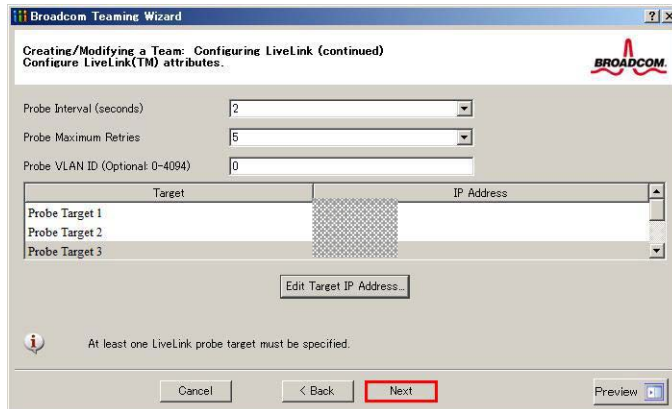
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



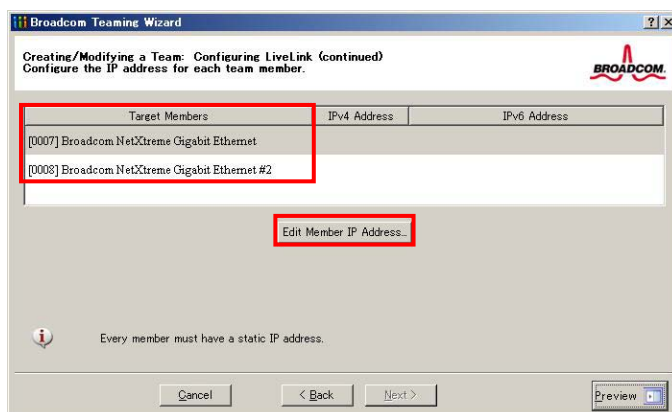
Important

- **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...].



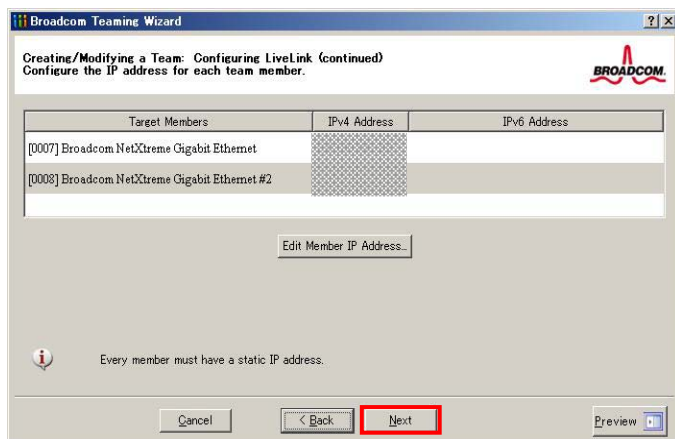
13. Enter the IP address used for LiveLink communication, and then click [OK].



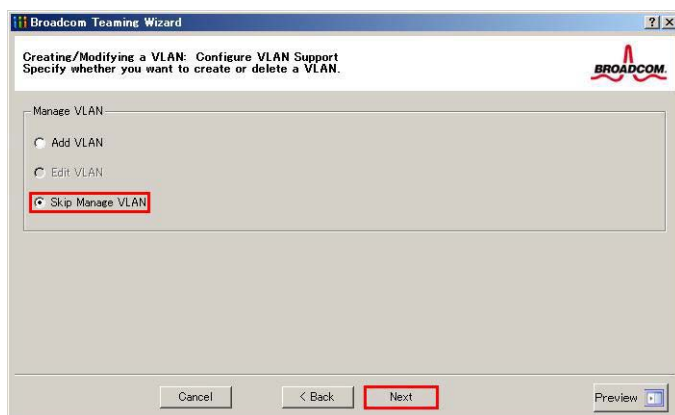
Important

- 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.

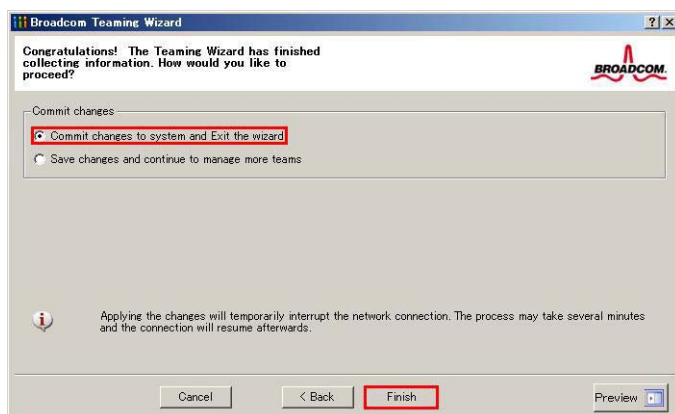
14. Click [Next].



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].



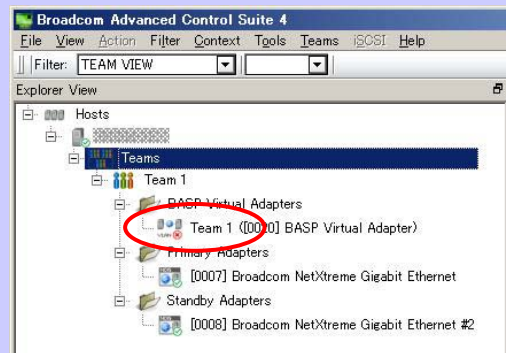
Note

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?"

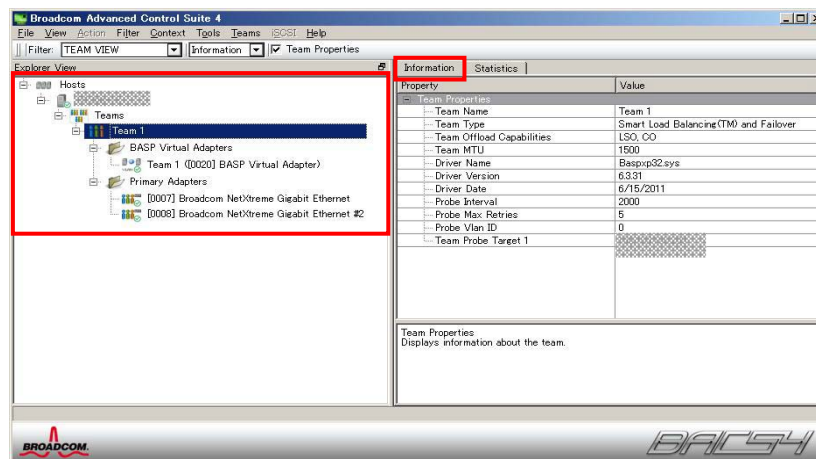
Tips

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

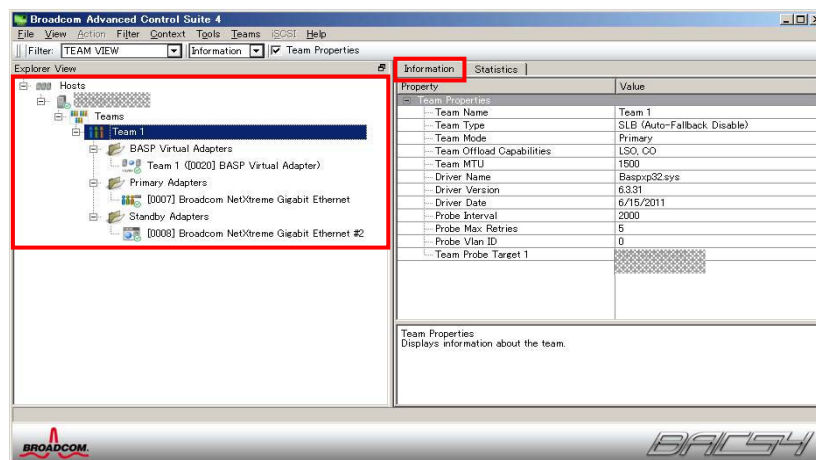


17. Restart the system.
18. After the system starts, start **Broadcom Control Suite** by clicking the **Broadcom Control Suite** icon in **Control Panel**, and confirm that a team has been created. Confirm the team settings on the **Information** window to the right.

– Smart Load Balancing and Failover (without Standby Member)



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



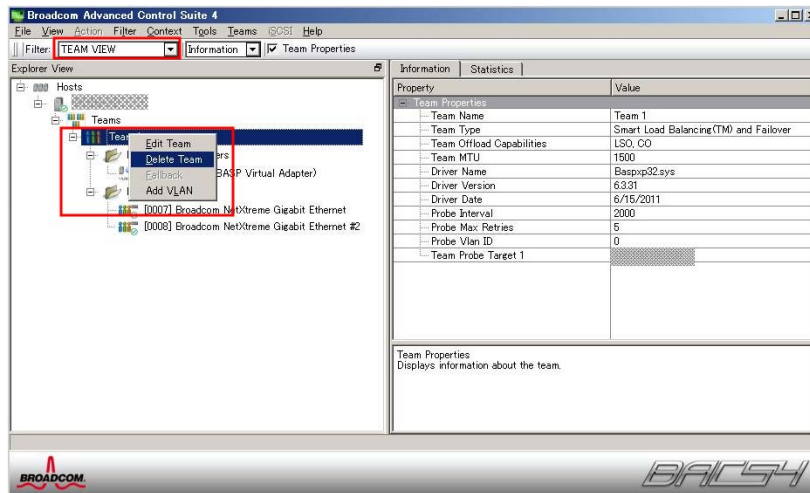
Team setup is now complete.

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

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

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

1. Double-click **Broadcom Control Suite** in the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.

**Note**

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 EXPRESSBUILDER DVD into the optical disk drive. If Autorun Menu appears, close the menu window.

Tips

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

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using EXPRESSBUILDER DVD:
 - <Windows Server 2008 x64 >
Optical disk drive:\024\win\winnt\ws2008x64\lan
 - <Windows Server 2008 x86 >
Optical disk drive:\024\win\winnt\ws2008\lan
 - If Starter Pack was installed from Internal Flash Memory:
 - <Windows Server 2008 64-bit Edition>
System drive:\StartPKG\ws2008x64\lan
 - <Windows Server 2008 32-bit Edition>
System drive:\StartPKG\ws2008\lan

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



6. Eject 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 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 EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu window.

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from 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 EXPRESSBUILDER DVD:

- Windows Server 2008 64-bit Edition
Optical disk drive:\024\win\winnt\ws2008x64\video
- Windows Server 2008 32-bit Edition
Optical disk drive:\024\win\winnt\ws2008\video

If Starter Pack was installed from Internal Flash Memory:

- Windows Server 2008 64-bit Edition
System drive:\StartPKG\ws2008x64\video
- Windows Server 2008 32-bit Edition
System drive:\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 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 SAS controller (N8103-104A/142)

The driver for SAS controller N8103-104A/142 is automatically installed by Windows Plug-and-Play.

4.5.6 When using a RAID Controller (N8103-160)

The driver for RAID Controller N8103-160 is automatically installed by Windows Plug-and-Play.

4.5.7 When using a Fibre Channel controller (N8190-153/154)

The driver for Fibre Channel controller N8190-153/154 is automatically installed by Windows Plug-and-Play.

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.

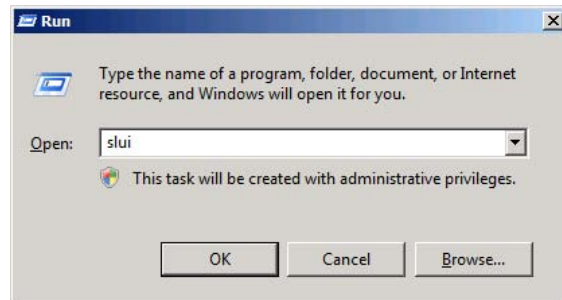
The following describes the license authentication procedure.

(1) Full installations

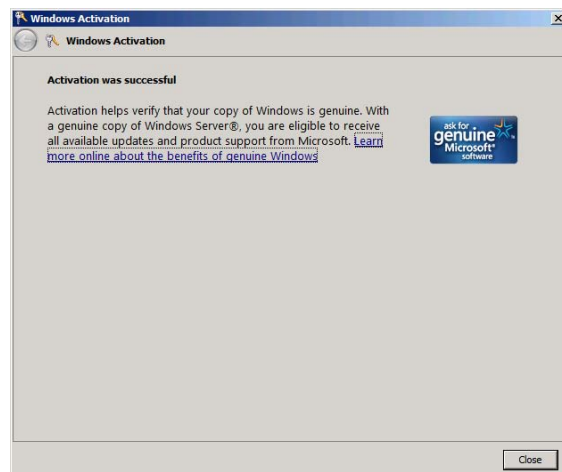
1. Select **Run** from the **Start** menu.

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

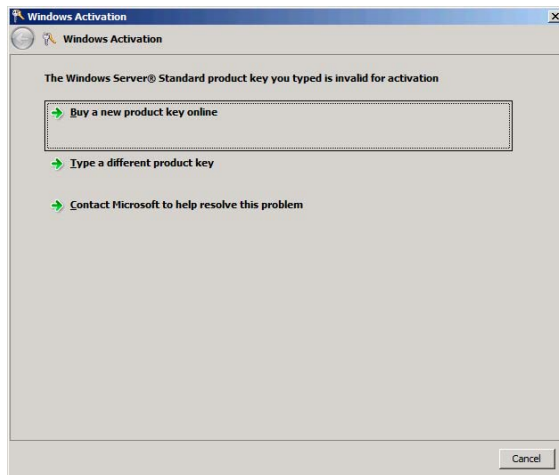
slui



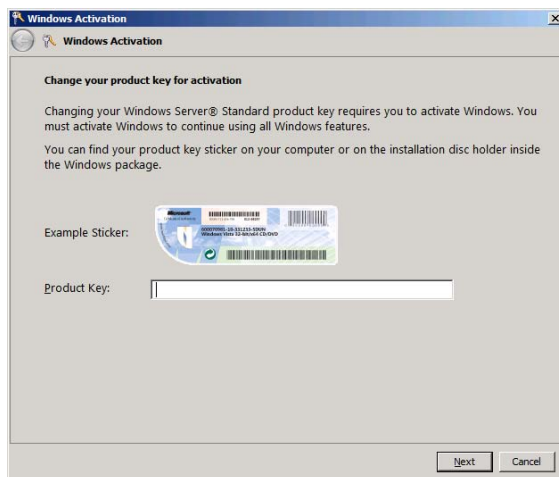
If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [Close] to exit.



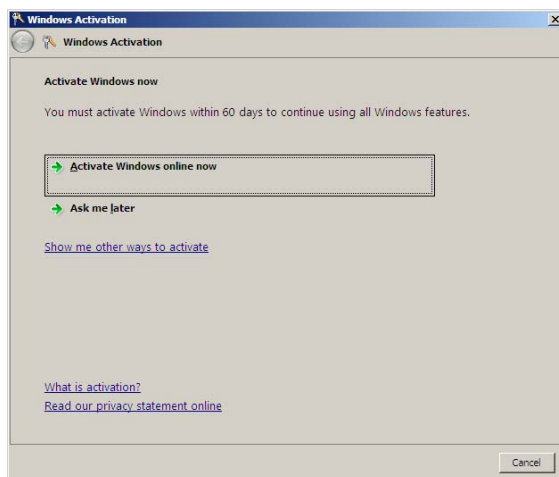
2. For installation from Backup DVD-ROM, replace the product key. When the following window appears, click **Change product key**.



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



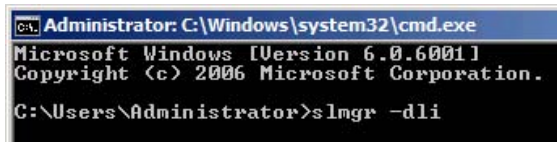
4. Follow the instructions in the following message to start the license authentication process.



Windows activation is now complete.

(2) Server Core installations

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



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

C:\Users\Administrator>slmgr -dli
```

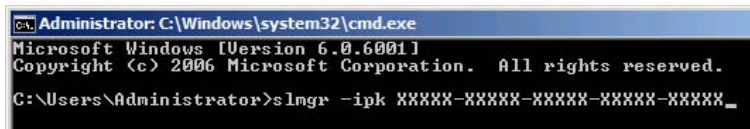
If the following message appears, Windows has already been activated on your system. You do not need to complete this procedure. Click [OK] to finish.



2. For installation from Backup DVD-ROM, replace the product key.

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

slmgr -ipk *PID*



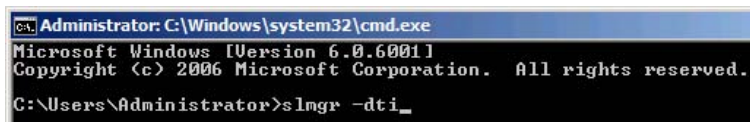
```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

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 <Enter> key.

slmgr -dti



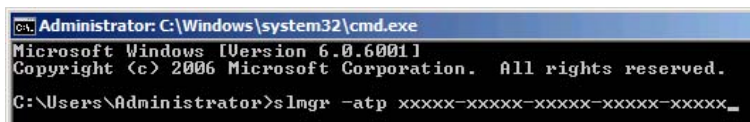
```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

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 <Enter> key. *CID* is the confirmation ID that you received from customer service.

slmgr -atp *CID*



```
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 Applying Service Pack

When applying Service Pack 2, refer to the following Microsoft website:

<http://support.microsoft.com/kb/948465/en-us>

4.10 Installation When Multiple Logical Drives Exist

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

(1) Installation process

- Setup with EXPRESSBUILDER

Important

Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed.

Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.

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

In this case, EXPRESSBUILDER installs the Windows on the first detected hard disk drive or logical 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

The order and numbers of the disks displayed on the screen **might not match the server's slot** of the hard disk drives. **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.

Important

- 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.

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

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

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.

5.1 Before Starting Setup

Read through the cautions explained here before starting setup.

BTO : Setting up of Pre-installed model

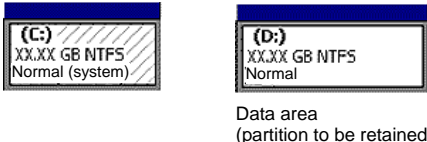
EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

(1/3)

Setup			Items to confirm	
–	–	OS	Windows family	<p>The following editions of the Windows Server 2003 family may be installed.</p> <ul style="list-style-type: none"> Windows Server 2003 R2 Standard x64 Edition Windows Server 2003 R2 Enterprise x64 Edition (supported by R110e-1 only) <p>Inquiries about installing other editions may be made at your sales dealer or maintenance service company. When applying Service Pack 1, refer to the following About Windows Server 2008 R2 and Windows 7 Service Pack 1:</p> <p>Note Setup with EXPRESSBUILDER cannot be used.</p>
–	–	OS	License authentication	<p>If Windows Server 2003 R2 x64 Edition is installed from Backup CD-ROM, the license is already activated. If Windows Server 2003 R2 x64 Edition is installed from an OS CD instead of Backup CD-ROM, 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.</p> <p>For details, refer to <i>Chapter 1 (5.6 License Authentication)</i>.</p> <p>Important • Activate within 30 days following installation. The system is locked if 30 days have passed without activation.</p>
–	–	OS	Hardware configuration	<p>The following hardware configurations require special procedures.</p> <ul style="list-style-type: none"> When using the OEM drivers, be sure to change the boot order of the Flash FDD on the BIOS settings as follows: Select Boot, Floppy Drive BBS priorities, Boot Option #1, and then specify the Flash FDD used. <p>Note Change as instructed in <i>Chapter 1 (5.2.3 Setup procedure)</i>.</p>

(2/3)

Setup			Items to confirm
-	-	OS	<p>Hardware configuration</p> <ul style="list-style-type: none"> Notes on using N8103-149/150/151 on Windows2003: <ol style="list-style-type: none"> When a battery is used: The following message may appear on POST screen at reboot if Service Pack2 is not yet applied. It is not the problem. <div style="border: 1px solid black; padding: 2px; width: fit-content;">cache data recovered successfully</div> When no battery is used: <ul style="list-style-type: none"> Set the cache mode of RAID Controller to the default setting (AutoSwitch or WriteThrough) until Service Pack 2 is applied. To operate the RAID Controller in WriteBack mode, change setting to WriteBack after Service Pack 2 is applied. <p>* The default cache mode of RAID Controller is AutoSwitch. It will not change to WriteBack mode unless it is changed manually at or after creation of VD.</p>
-	-	OS	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
-	-	OS	<ul style="list-style-type: none"> Setup when mass memory is installed If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured. If you fail to secure the dump file size, use OS standard installer for setup, and allocate the required file space to multiple disks by performing the following steps. <ol style="list-style-type: none"> Set the system partition size to a size sufficient to install the OS and paging file. Specify another disk as destination to store the debug information (required dump file size) by referring to <i>Chapter 1 (7. Setup for Solving Problems)</i>. <p>If the hard disk drive does not have enough 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 hard disk drive for the dump file.</p> <p>Note If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>
-	-	OS	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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: <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> 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	<p>Service Pack</p> <p>Before applying a Service Pack, make sure that Windows Server 2003 R2 x64 Edition DISC 2 has been installed.</p> <p>Use Starter Pack when you apply a Service Pack from the Service Pack 2 CD-ROM.</p> <p>If you used OS installation media including Service Pack 2 for installation, you do not have to install Service Pack 2 again.</p>

(3/3)

Setup			Items to confirm	
–	–	OS	System partition size	<p>The system partition size can be calculated by using the following formula.</p> <p>Size required to install the OS + paging file size + dump file size + application size</p> <p>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)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 1 MB</p> <p>Application size = as required by the application</p> <p>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:</p> <p>4,100 MB + (1,024 MB × 1.5) + 1,024 MB + 1 MB + application size = 6,661 MB + application size</p> <p>Note</p> <ul style="list-style-type: none"> • 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. <p>If the partition size for installing the system is smaller than the size recommended size, expand the partition size or add another disk.</p>
–	–	OS	Setup with OS standard installer	<p>Dialog boxes 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.</p>
–	–	OS	When using RAID Controller (N8103-149/150/151/160)	<p>Upon completion of installation of OS and application of Service Pack 2, update the driver for RAID Controller before installing Universal RAID Utility. Take the steps below:</p> <ol style="list-style-type: none"> 1. Insert the EXPRESSBUILDER DVD into optical disk drive. 2. Open the following file using text editor such as notepad. <「EXPRESSBUILDER」DVD> : \024\win\winnt\w2k3amd\dac_driver_update\Readme.txt 3. Update the driver according to instructions in Readme.txt file. <p>When update completes, install the Universal RAID Utility</p>

5.2 Setup with OS Standard Installer

This section describes how to install Windows with OS Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide*".

Important

Setup with OS standard Installer may delete all data of the hard disk drive depending on the 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

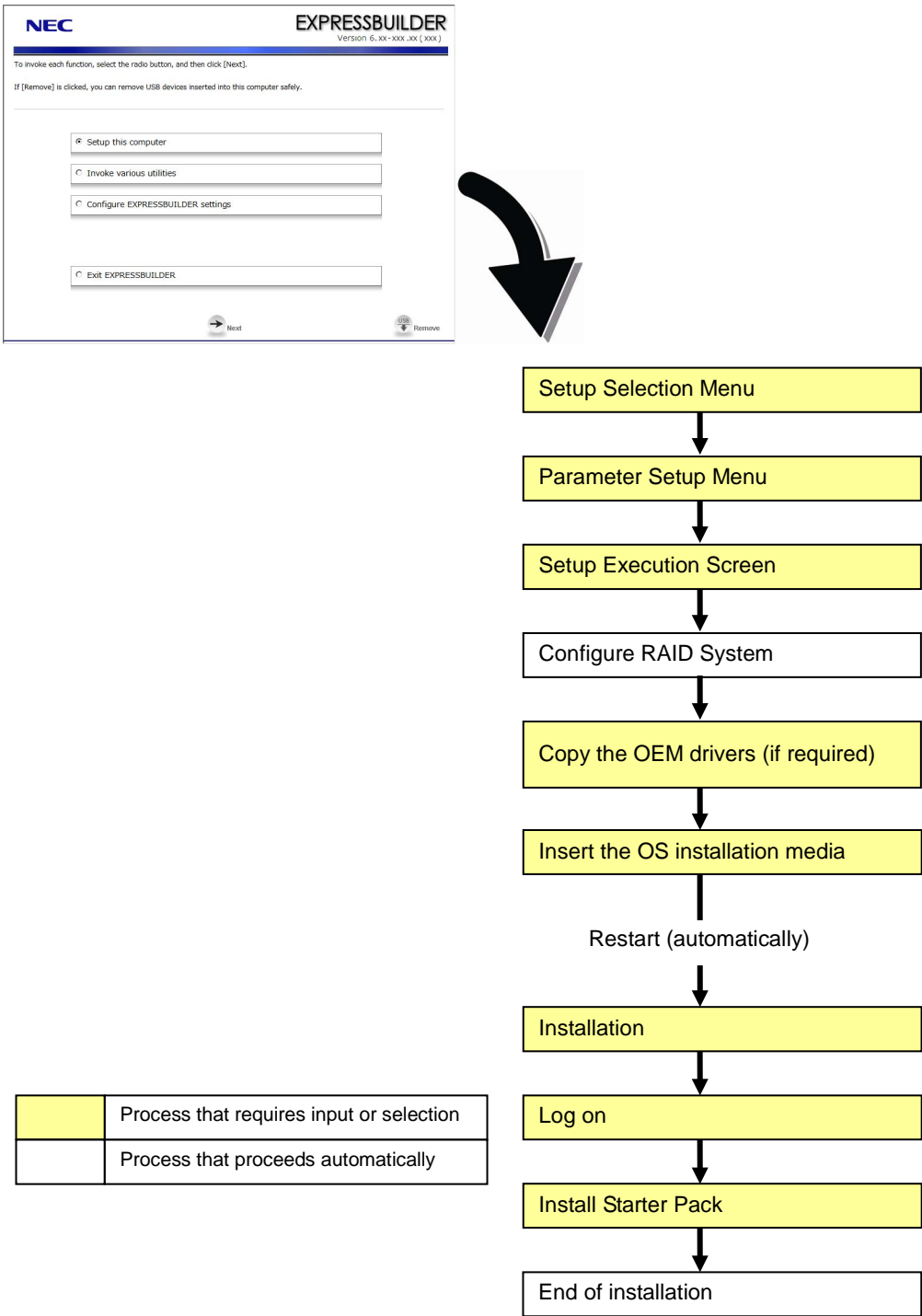
When using an onboard RAID controller (LSI Embedded MegaRAID):

Do 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.

Tips

- Setup with OS Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *Chapter 1 (8 Windows OS Parameter File)*.

5.2.1 Setup flow



5.2.2 Requirements for Setup

Prepare the following media and instruction manuals before starting setup.

- Either of the following OS installation media
 - **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 x64 Edition 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)
(hereafter referred to as *Windows Server 2003 R2 x64 Edition DISC 2*)
 - **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)
(hereafter referred to as *Windows Server 2003 R2 x64 Edition DISC 2*)
- **Windows Server 2003 Editions Service Pack 2 (CD-ROM)**
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for creating Windows OS parameter file**
 - **Flash FDD for creating OEM drivers** (Windows Server 2003 x64 Edition)

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.

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory.
EXPRESSBUILDER can be run from 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 EXPRESSBUILDER DVD.

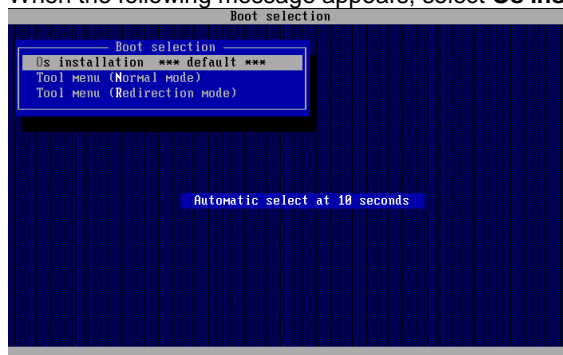
5.2.3 Setup procedure

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

Note

Read through the items in *Chapter 1 (5.1 Before Starting Setup)* prior to installing Windows.

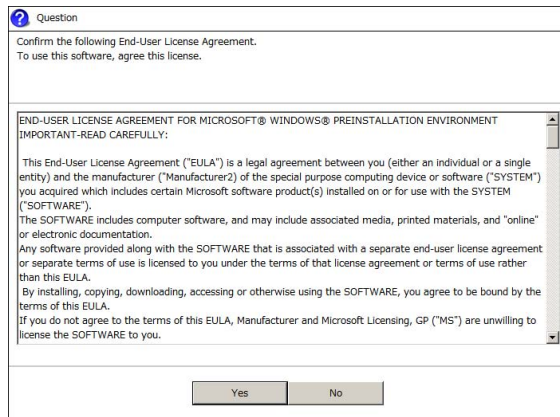
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.



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



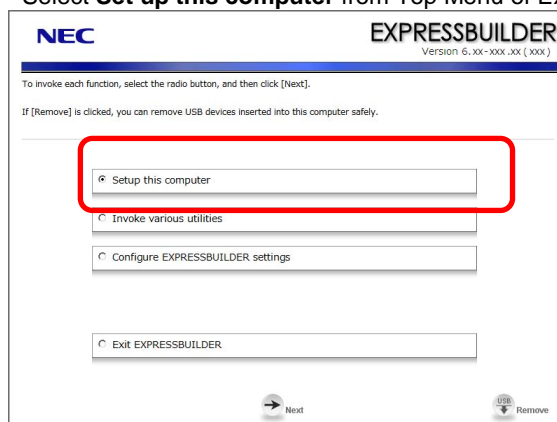
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Set up this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].

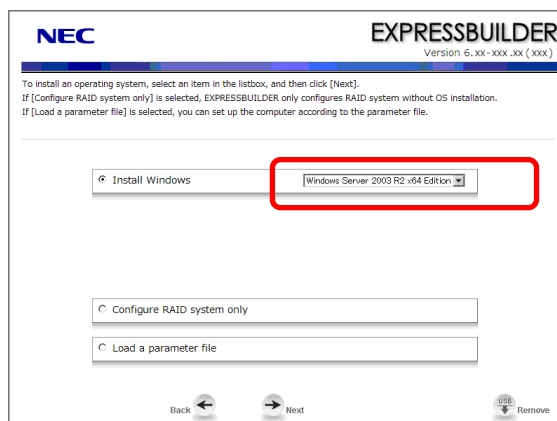


7. Set parameters on this menu according to your requirement.
- ☐ When not using parameter file: Go to Step 8.
 - ☐ When using a parameter file: Go to Step 9.

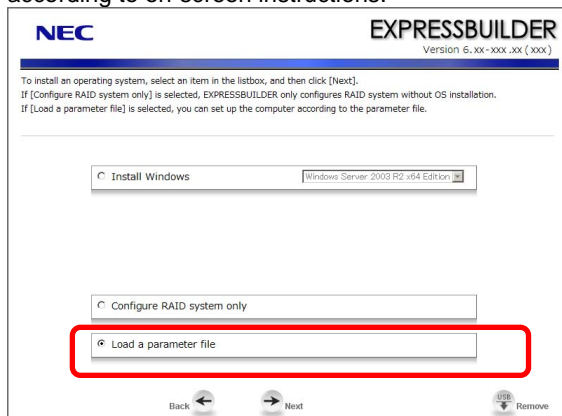
Note

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

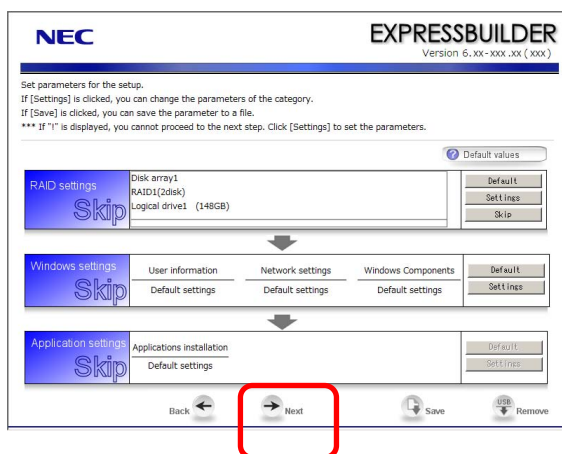
8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next].
On this dialog, select "Windows Server 2003 R2 x64 Edition" from the pull-down menu.
→ Go to Step 10.



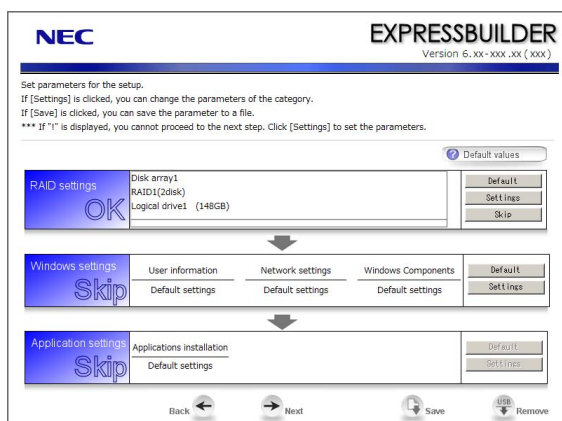
9. If you use a parameter file, select [Load a parameter file] and click [Next]. Load a parameter file according to on-screen instructions.



Confirm settings on Parameter Setup Menu as needed, then click [Next].
→ Go to Step 16.

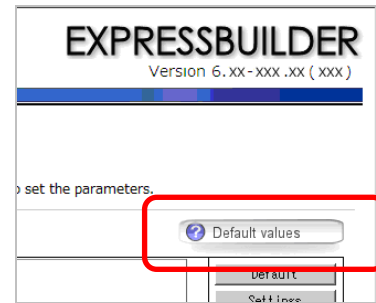


10. Set parameters required for setup.
Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



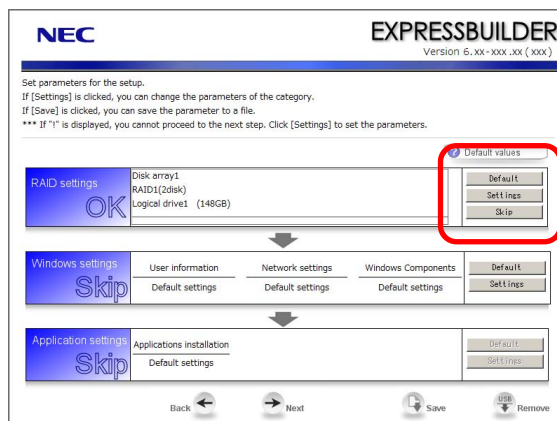
10-1 RAID settings

Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

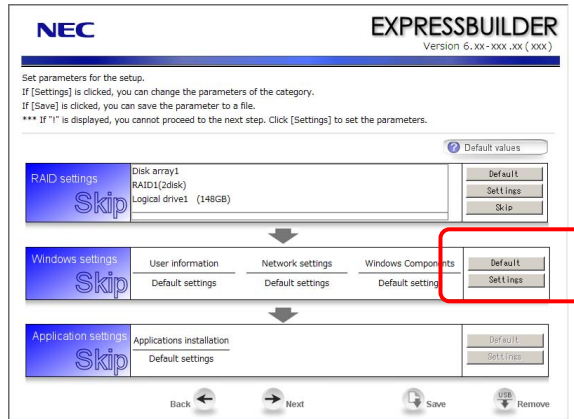
Important

If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

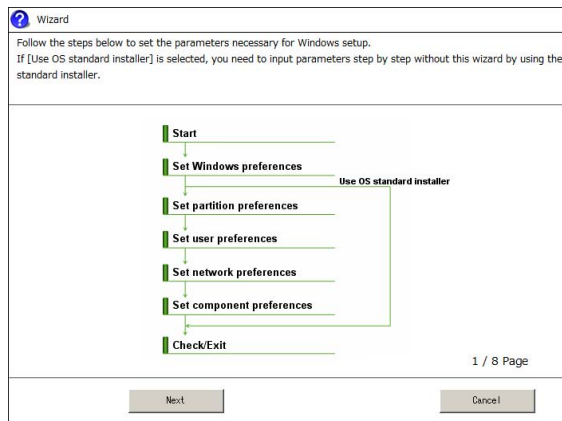
When skipping the creation of new logical drives

Click [Skip] in RAID settings.

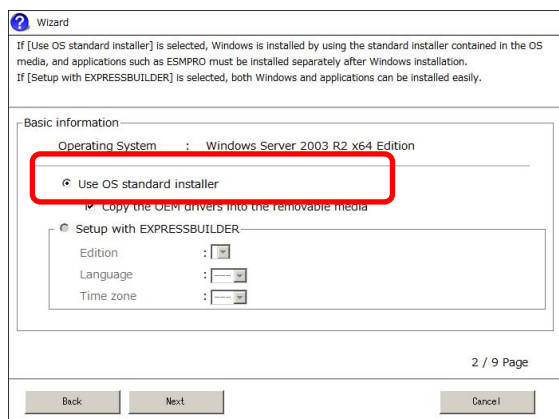
11. Click [Settings] in **Windows settings**.



12. Click [Next] in the Windows settings wizard.



13. Specify the Windows basic settings
The basic information window appears. Select **Use OS standard installer**, and then click [Next].

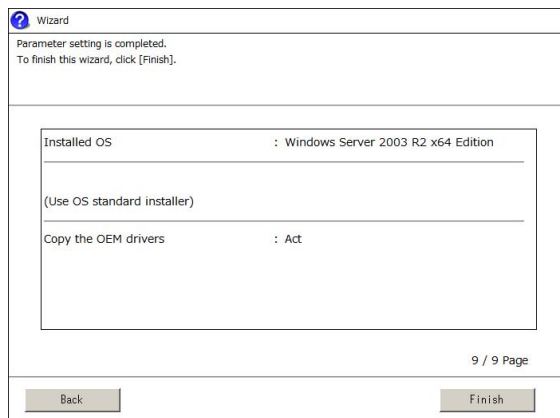


If copying the OEM drivers to the removable media, select **Copy the OEM drivers into the removable media**.

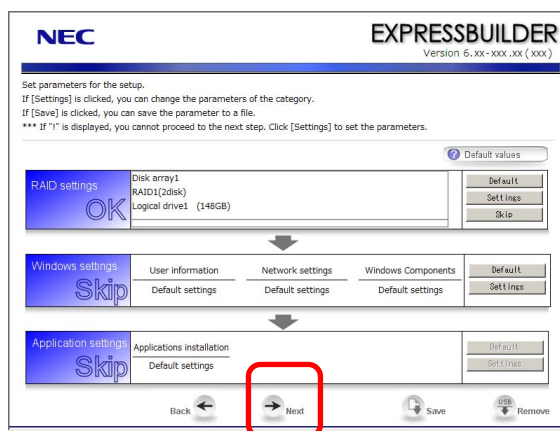
Tips

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

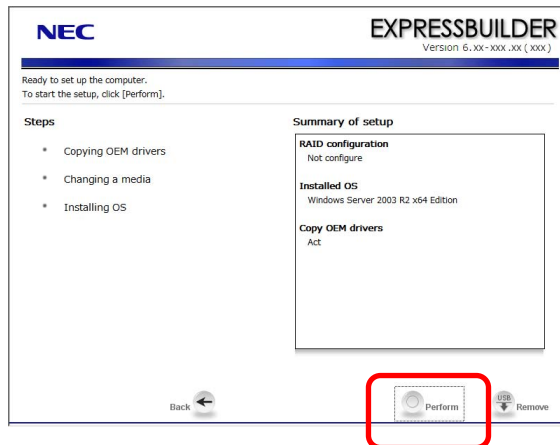
14. Confirm settings on the confirmation window, and click [Finish].



15. Click [Next] on Parameter Setup Menu.



16. Confirm the summary of setup on the screen below, and click [Perform].
The server automatically restarts.

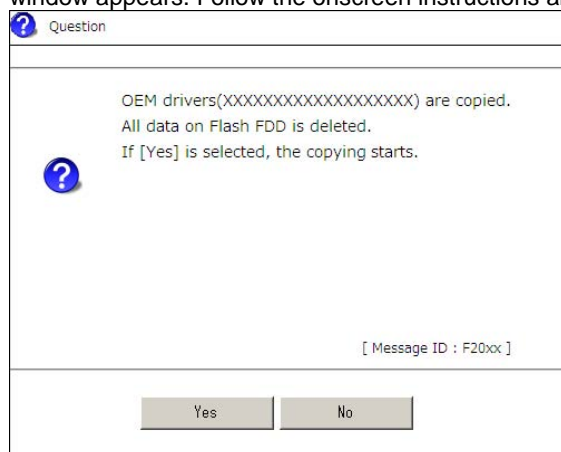


Note

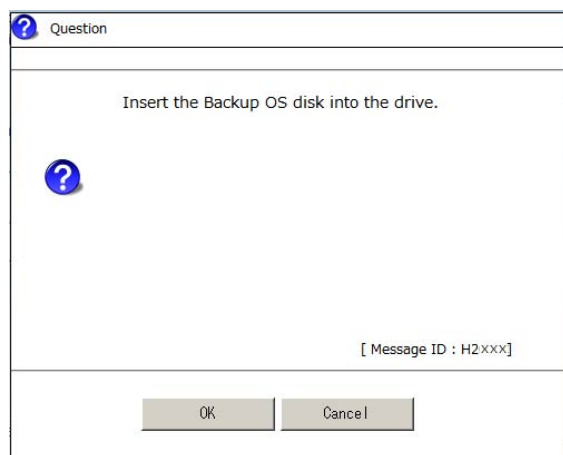
- If you select the **Copy the OEM drivers into the removable media** check box, insert a Flash FDD into the server and then click [Perform].
- Do not remove the media while copying OEM drivers.

17. Continue setup according to on-screen message.

If the **Copy the OEM drivers to the removable media** checkbox is selected in step 13, the following window appears. Follow the onscreen instructions and continue the operation.



When the following message appears, set OS installation media, and click [OK].



18. The server automatically restarts.

To use OEM driver, change boot priority of Flash FDD on BIOS settings, after restarting the server. Select **Boot, Floppy Drive BBS priorities, Boot Option #1**, and then specify the Flash FDD used.

19. Run from the OS installation media.

If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen.

The boot sequence proceeds and the following message appears.



Note

If this message does not appear, reboot the server and retry.

This step is unnecessary if no bootable operating system exists.

20. If a RAID controller or an optional mass storage controller is used, press <F6> key while either of the following messages is displayed. If not, go to step 25 without pressing <F6> key.

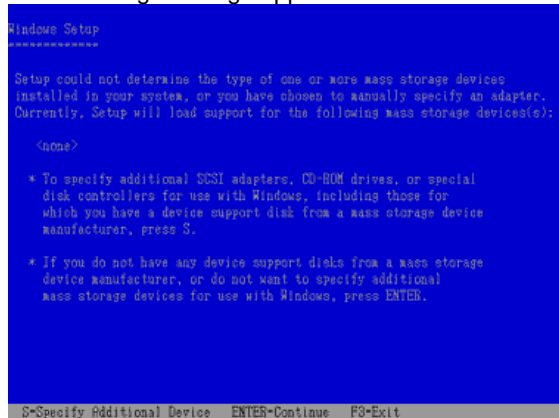
"Setup is inspecting your computer's hardware configuration" (on the top of the screen)

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

Tips

- Note that nothing changes on the screen even when <F6> key is pressed.
- If the OEM drivers list is not displayed at step 22, 24, check the boot order of the Flash FDD on BIOS settings.

21. The following message appears.



If a RAID controller is used on the server, press <S> key and go to step 22.
If not, go to step 23.

22. Select the following from the driver list, and then press <Enter> key.

When using N8103-128 RAID Controller:

Promise SuperTrak EX Family Controller - 64bits platform

When using N8103-149/150/151 RAID Controller:

LSI MegaRAID SAS RAID Controller Driver

When using Onboard RAID Controller (LSI Embedded MegaRAID):

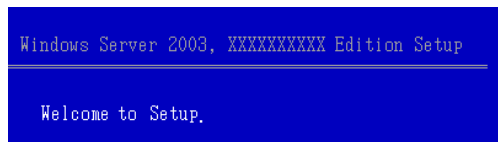
LSI Embedded MegaRAID (Windows 2003 64-bit)

The screen shown in step 21 appears again. Go to step 23.

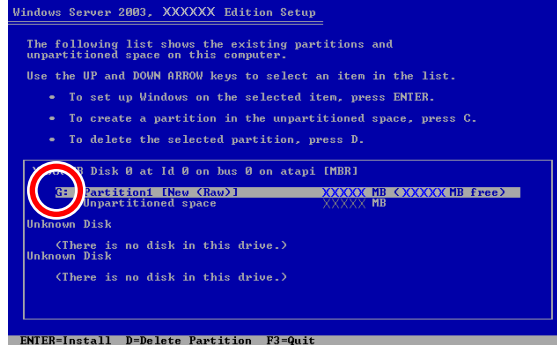
23. If N8103-104A is connected, press <S> key and go to step 24.
If not, press <Enter> key and go to step 25.

24. Select **LSI Fusion-MPT SAS Driver (Server 2003 x64)**, and then press <Enter> key.
The screen shown in step 21 appears again. Press <Enter> key and go to step 25.

25. When the following message appears, press <Enter> key to start Windows setup.



The following screen is displayed for setting the partition of Windows.



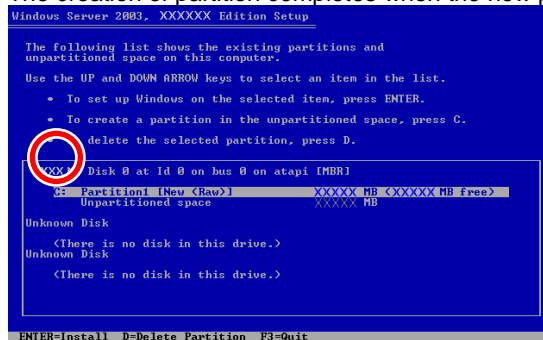
If the partition created is shown as "G:", delete the partition "G:"

Important Pay attention to a partition you are going to delete.

If it is shown as "C:", you do not need to delete the partition and go to step 26.

Create a partition again by pressing <C> key.

The creation of partition completes when the new partition is created in drive "C:", as shown below.



Important

- A partition in which you install Windows must be created in drive "C:".
- 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 server automatically restarts after copying files.
Do not remove the CD-ROM and the Flash FDD.

26. 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, the message indicating that the driver has not passed logo testing might appear, but this does not affect the setup. Click [OK] to continue setup.

27. The server automatically restarts after installing Windows Server 2003 R2 x64 Edition.

28. The Windows Setup dialog box appears after log on.



Important Be sure to install the Windows Server 2003 R2 x64 Edition DISC 2 according to the following steps even if the dialog box does not appear.

29. Insert the Windows Server 2003 R2 x64 Edition DISC 2 into the optical disk drive. Check the settings, and then click [OK].
30. When the installation procedure completes, remove the Windows Server 2003 R2 x64 Edition DISC 2 from the optical disk drive and then restart the server.
31. Install Starter Pack by referring to *Chapter 1 (5.3 Installing Starter Pack)*.
32. Install drivers and specify detailed settings by referring to *Chapter 1 (5.4 Setting Up Device Drivers)*.
33. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
34. 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 Starter Pack

After installing Windows Server 2003 R2 x64 Edition, follow the steps below to install Starter Pack and Windows x64 hotfix: KB921411.

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

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

Install 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*.

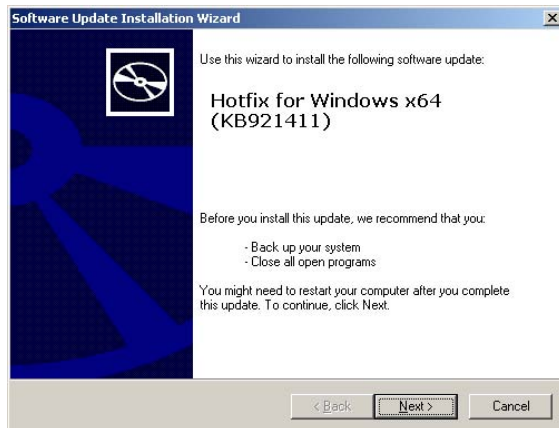
* KB902839 can be obtained from the following website:

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

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

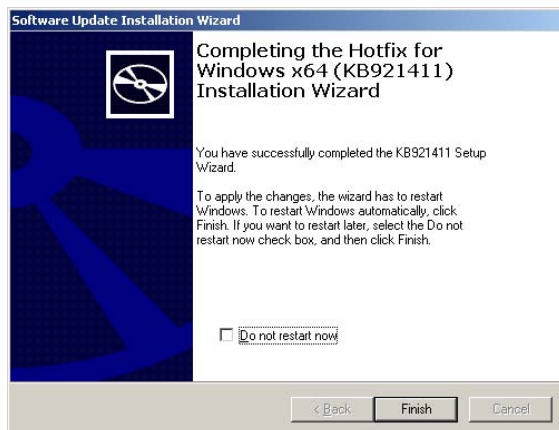
(1) When using EXPRESSBUILDER DVD

1. Log on to the system with a user account that has administrative privileges (such as Administrator).
2. Insert EXPRESSBUILDER DVD into the optical disk drive.
If you installed the Windows Server 2003 with Service Pack 2, go to step 9.
3. When the menu appears automatically, close it.
4. Select **Run** from the **Start** menu, and then execute the following command:
Optical disk drive:\024\win\winnt\w2k3amd\qfe\enu\kb921411.exe
5. When the following message appears, click [Next].



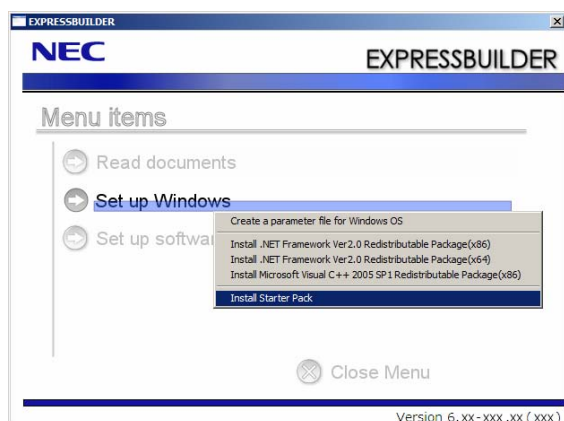
After this, continue installation according to the onscreen messages.

6. When the following message appears, click [Finish] and remove EXPRESSBUILDER DVD before restarting.

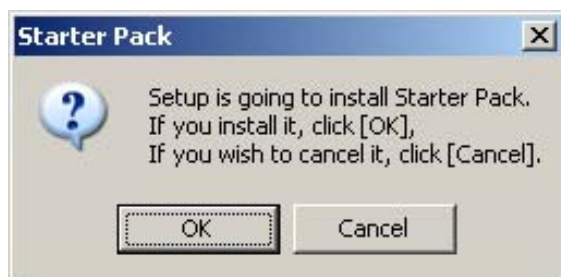


7. Log on to the system with a user account that has administrative privileges (such as Administrator).
8. Insert EXPRESSBUILDER DVD into the optical disk drive.

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



10. Wait for several minutes without attempting any further operation until the following window appears



Starter Pack installation starts when [OK] is clicked.

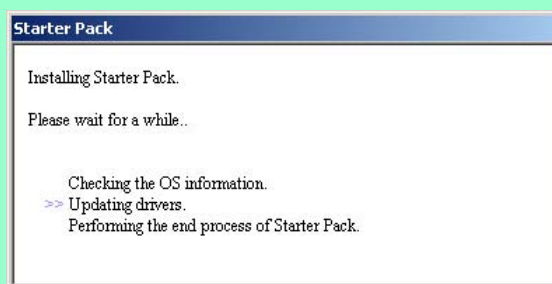
Important

The dialog box shown below might appear while installing 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 Starter Pack is being installed. Wait a moment until the update is complete. (About 5-10 minutes)
* It changes with states of a system.



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



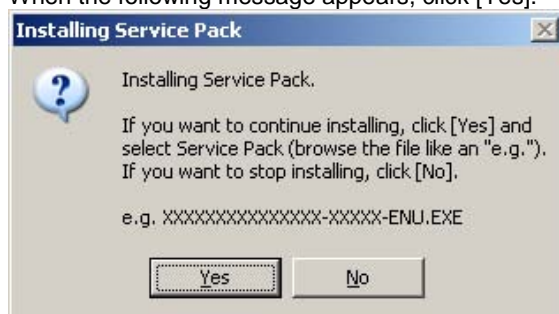
To apply the Service Pack, click [Yes] and go to step 12.

To not apply the Service Pack, click [No] and go to step 14.

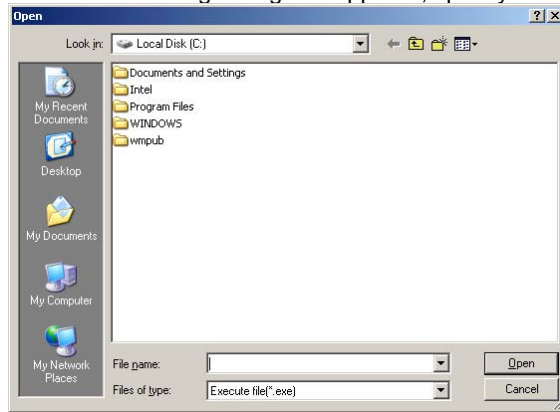
Important

If you are using OS installation media without Service Pack 2, click [Yes]. (Service Pack 2 is mandatory)
If 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.

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



13. 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 EXPRESSBUILDER DVD from the optical disk drive and then insert the Service Pack CD-ROM.
- The extension of the Service Pack applicable to 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.

14. When the following message prompts you to restart the server, click [Yes] and remove media from the optical disk drive before restarting.



Installation of Starter Pack is now complete.

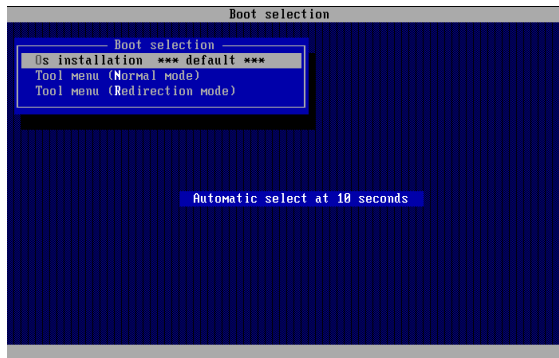
(2) **When using Internal Flash Memory** (Required only when optional "Internal Flash Memory " is installed)

1. After installing the operating system, restart the server.
2. When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST, press <F3> key.

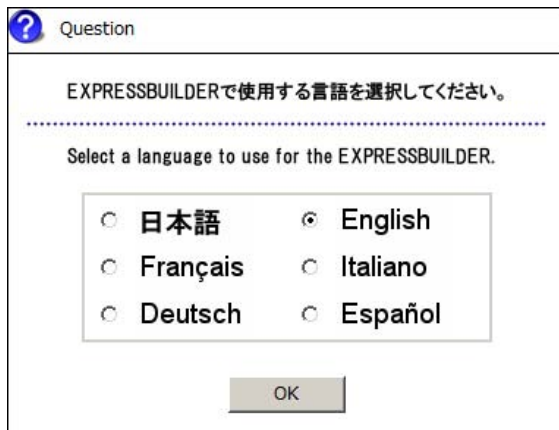
Note

Be sure to remove bootable media from the optical disk drive.

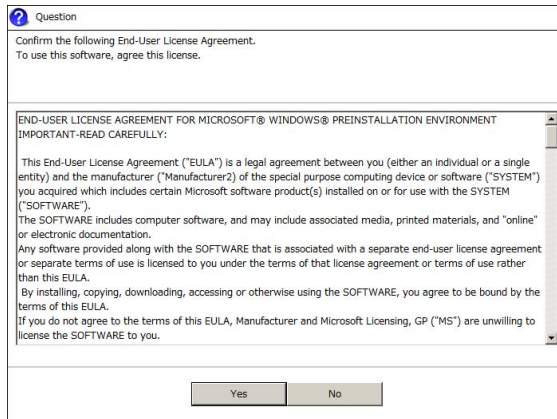
3. When the following message appears, select **Os installation *** default *****.



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



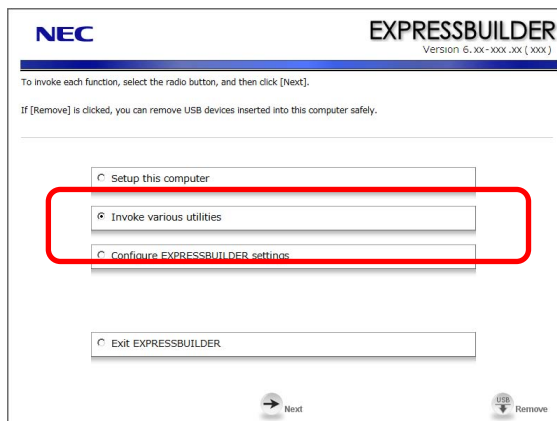
5. When the Windows PE software license agreement window appears, click [Yes].



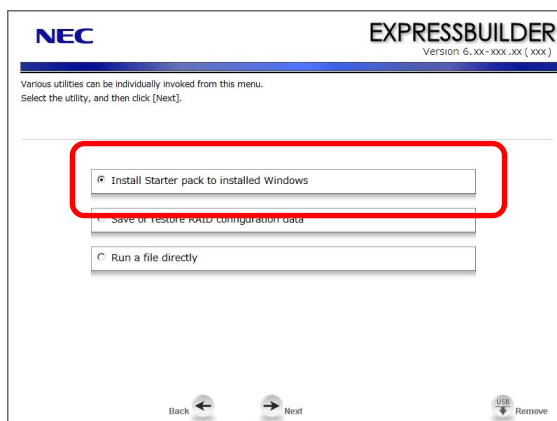
Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

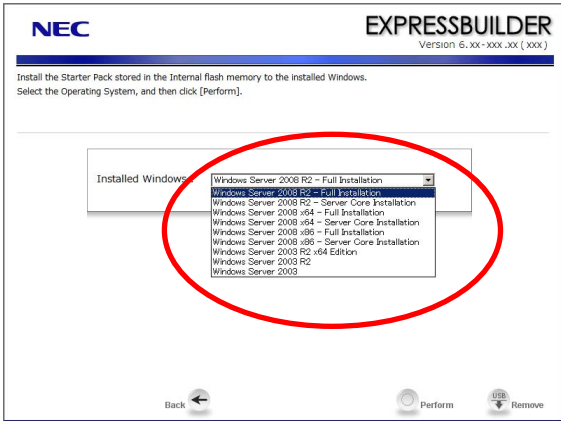
6. Select **Invoke various utilities** from Top Menu of EXPRESSBUILDER, and then click [Next].



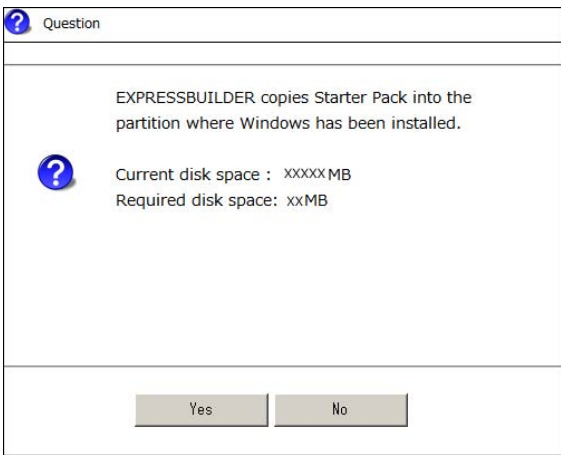
7. Select **Install Starter Pack to installed Windows** and then click [Next].



8. Select the installed Windows from the drop-down list, and then click [Perform].

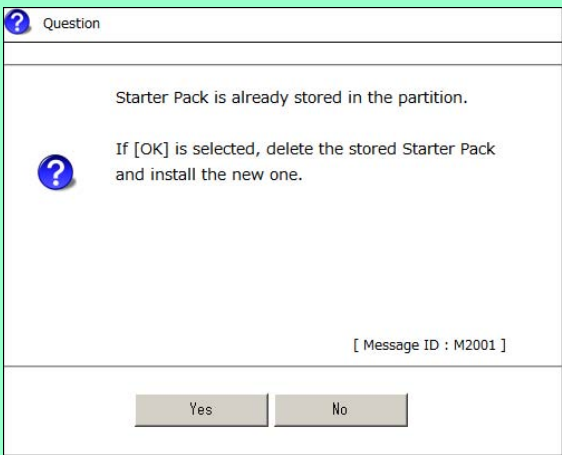


9. Read the message and then click [Yes].

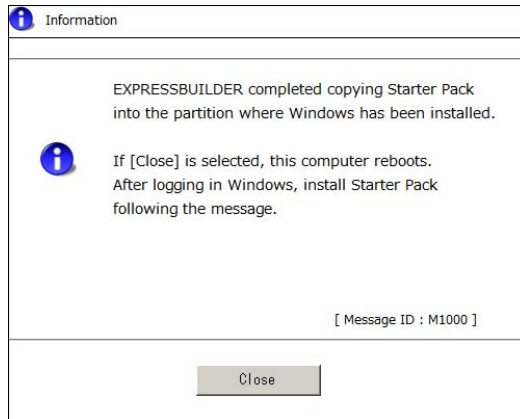


Note

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



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



The server restarts.

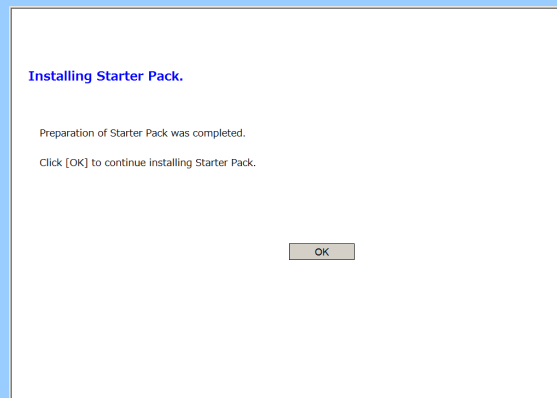
Note

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

11. Log on to the system with a user account that has administrative privileges (such as 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.

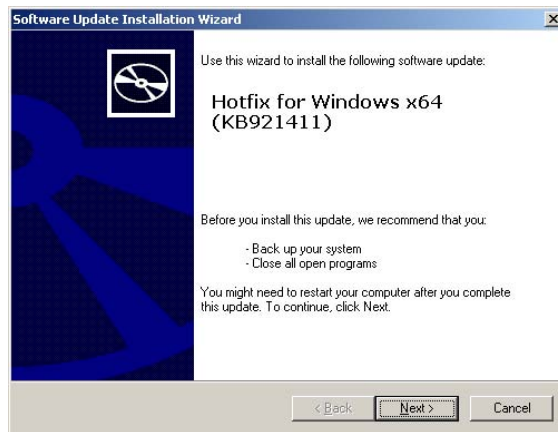
Go to Step 16, and click [Cancel] on the screen to install Starter Pack. Then, perform from Step 1 of (2) When using Internal Flash Memory.

If you installed the Windows Server 2003 x64 Edition with Service Pack 2, go to step 15.

12. Select **Run** from the **Start** menu, and then execute the following command:

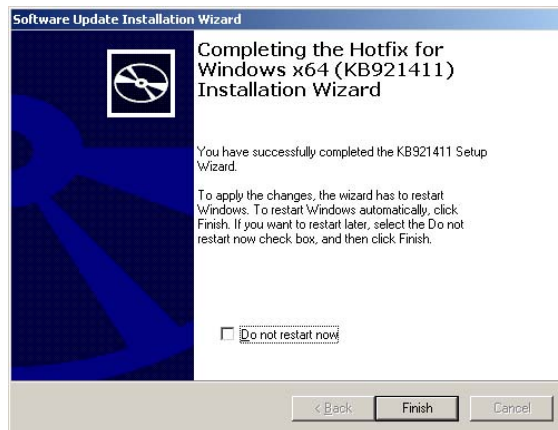
`System drive:\StartPKG\w2k3amd\qfe\enu\kb921411.exe`

13. When the following message appears, click [Next].

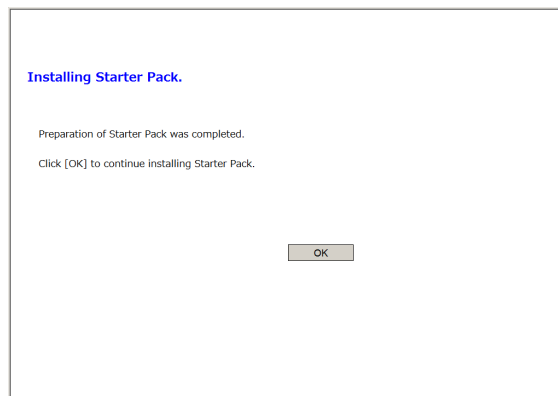


After this, continue installation according to the onscreen messages.

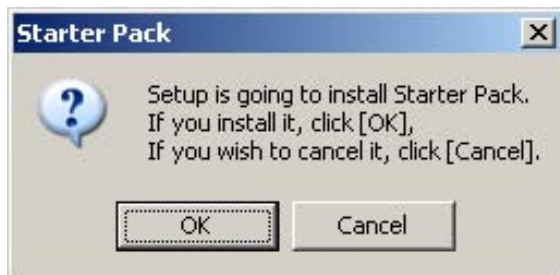
14. When the following message appears, click [Finish] to restart the server.



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



16. Wait for several minutes without attempting any further operation until the following window appears.



Installation of Starter Pack starts when [OK] is clicked.

Important

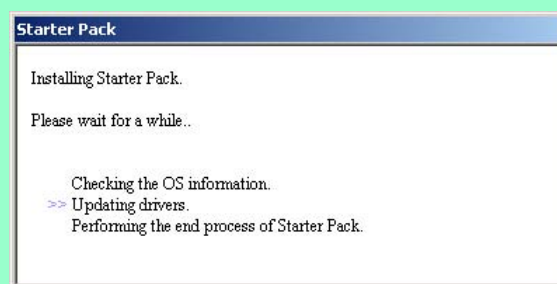
The dialog box shown below might appear while installing Starter Pack, but this does not affect the installation. This dialog box disappears after several seconds. Do not click [Cancel].



Note

The following progress message appears while Starter Pack is being installed. Wait a moment until the update is complete. (About 5-10 minutes)

* It changes with states of a system.



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



To apply the Service Pack, click [Yes] and go to step 17.

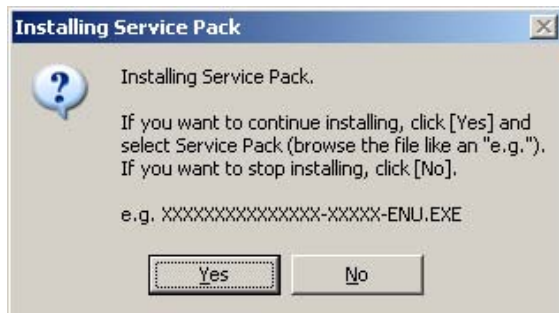
To not apply the Service Pack, click [No] and go to step 19.

Important

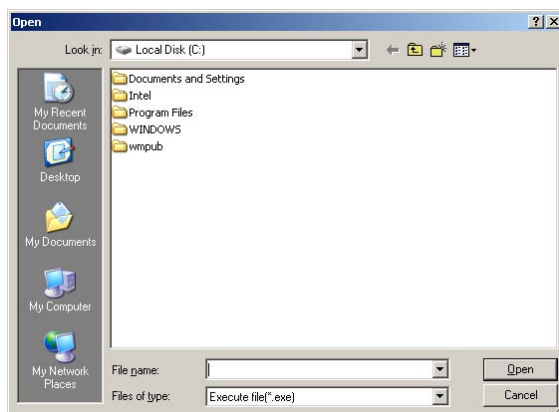
If you are using OS installation media without Service Pack 2, click [Yes]. (Service Pack 2 is mandatory)

If 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 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 Starter Pack is now complete.

5.3.2 Recovery process

If Windows x64 hotfix: KB921411 is not applied before installing 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 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 Starter Pack and Windows x64 hotfix (KB) 921411)* to install 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

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

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 Starter Pack to install the LAN and BACS driver.

Important WOL is supported by the standard network adapters only.

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: N8104-132/133/138

Important Using an optional LAN board, perform procedure "5.4.2 Setting up LAN drivers" for each optional LAN board.

If [! Ethernet Controller] is displayed in Device Manager after LAN boards has been installed, you need to install the driver in the following procedure.

1. Set EXPRESSBUILDER DVD in optical disk drive.

When the Autorun menu appears, close the window.

Tips If you apply Starter Pack from the internal flash memory, you do not need to set EXPRESSBUILDER DVD.

2. Launch **Device Manager**, and double-click [! Ethernet Controller].
The [Ethernet Controller Properties] appears.
3. Click [Update Driver] in [Driver] tab.
[Hardware Update Wizard] appears.
4. Select [No, do not connect now.], and click [Next].
5. Select [Install from a list or specific location], and click [Next].

6. Select [Search for the best driver in these locations], and [Include this location in the search]. Enter the following location and click [Next].

- When using EXPRESSBUILDER DVD:

Optical disk drive: \024\win\winnt\w2k3amd\lan\bcom\drvinst\15000401\x64\win2003\x64

- When applying Starter Pack from internal flash memory:

System drive: \StartPKG\w2k3amd\lan\bcom\drvinst\15000401\x64\win2003\x64

Note

Be sure to uncheck the [Search removable media (floppy, CD-ROM...)] check box, if checked.

7. Click [Finish].
8. When you have applied LAN driver to every [! Ethernet Controller], remove EXPRESSBUILDER DVD from the optical disk drive, and restart the system.

Installing Starter Pack now completes.

Important

[! Ethernet Controller] may not be displayed in Device Manager after LAN card has been installed. In such a case, the LAN driver is installed automatically. Make sure that the network adapter name for LAN card is found on [(Network Adapter Name)] under [Network Adapters] tab.

(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:

[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx*

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

5.4.2 Setting up LAN drivers

(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) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click to the following file.
 - When using EXPRESSBUILDER DVD:
Optical disk drive: \024\win\winnt\w2k3amd\lan\pgdyavd_Disable.vbs
 - If Starter Pack was installed from Internal Flash Memory:
System drive: \StartPKG\w2k3amd\lan\pgdyavd_Disable.vbs
3. When the following message appears, click [OK].

Configuration Completed
[Option:PopUp RLV Disabled(Action:Done)]
Reboot the system

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

Setup is now complete.

5.4.3 Setting up team/LiveLink

Important

- When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team. When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- 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.
- Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.

(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.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink**Important**

- Possible combinations of network adapters that compose the team are as follows.

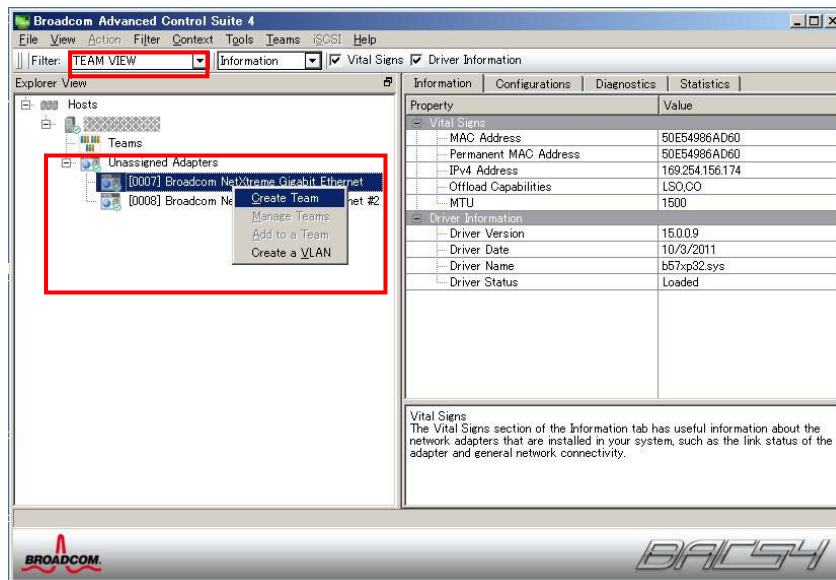
When the number of adapters that composes the team is up to four:

- Between standard network adapters.
- Between LAN boards.
- A standard network adapter and LAN boards

Tips

To edit a team, right-click on the BACS team, and then select **Edit Team**. Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set a **Filter** in a **TEAM VIEW**, 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.

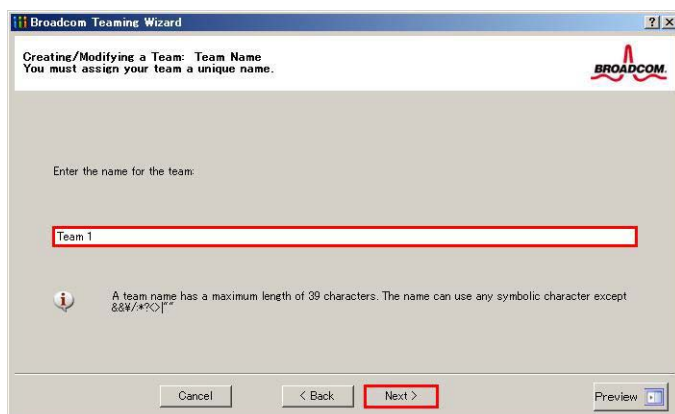
3. Click [Next].



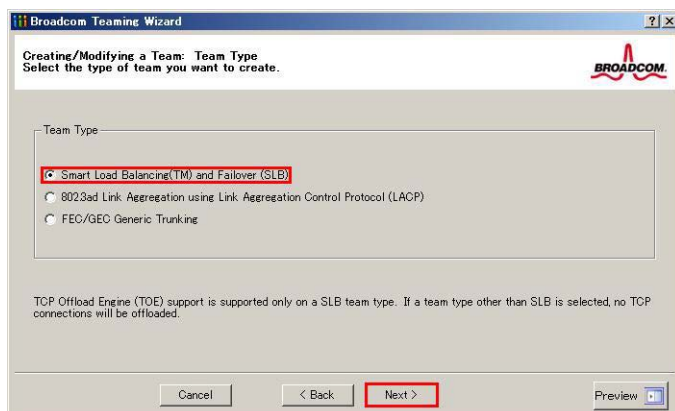
Note

Do not use **Expert Mode**.

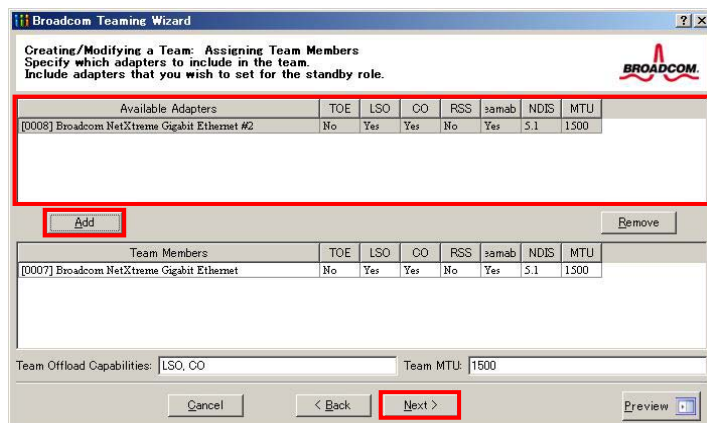
4. Enter any name into the team name entry column, and then click [Next].



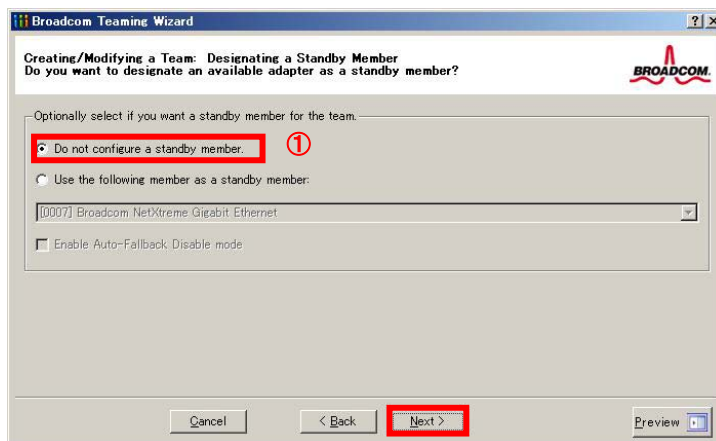
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



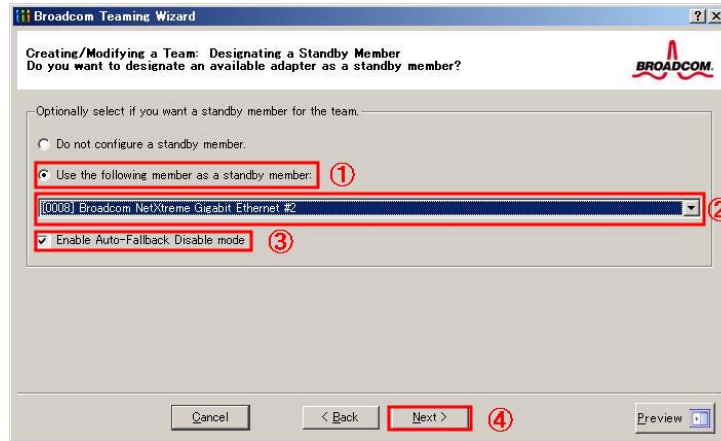
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



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].

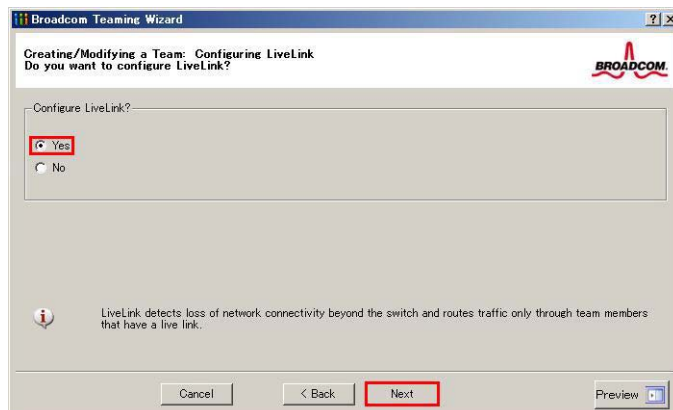


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select **Use the following member as a standby member**.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select **Enable Auto-Failback Disable mode**.
 - (4) Click [Next].

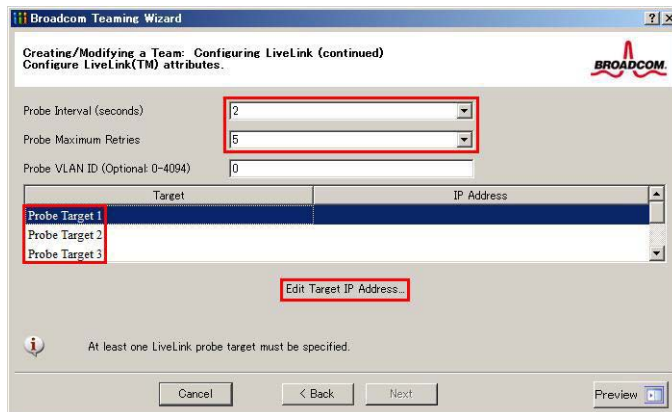
**Note**

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

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



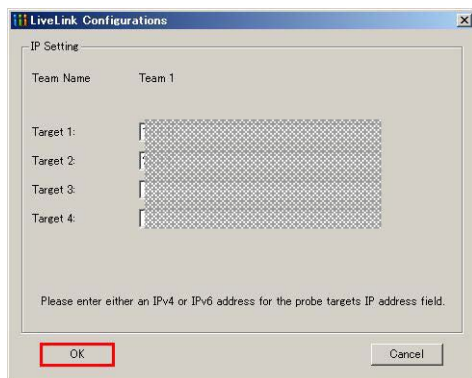
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



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 a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

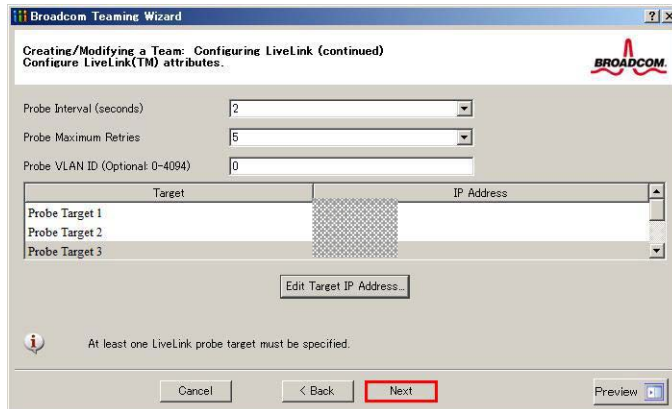
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



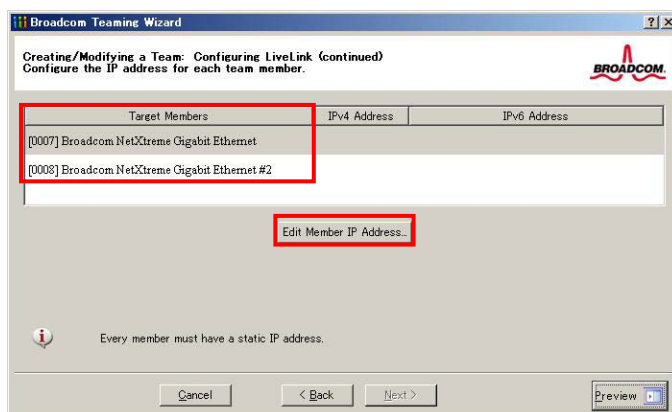
Important

- **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...].



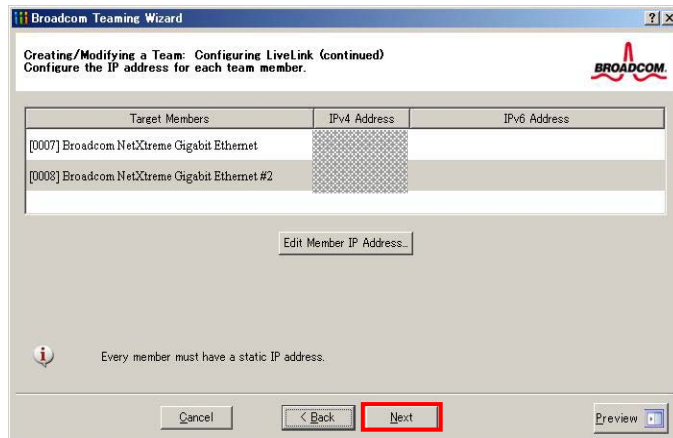
13. Enter the IP address used for LiveLink communication, and then click [OK].



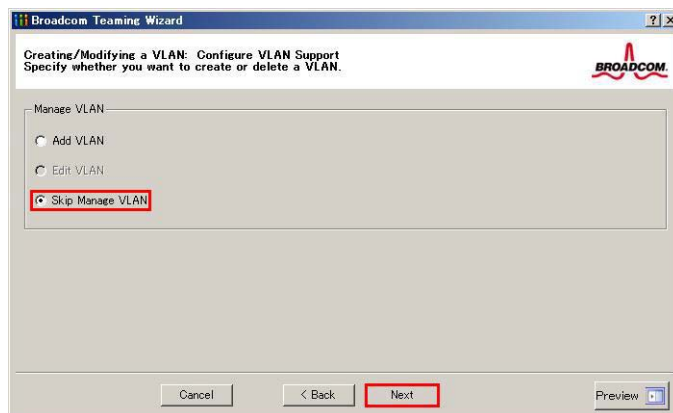
Important

- 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.

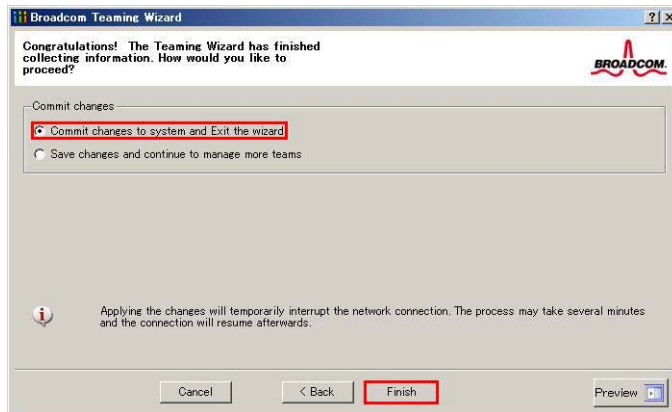
14. Click [Next].



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].

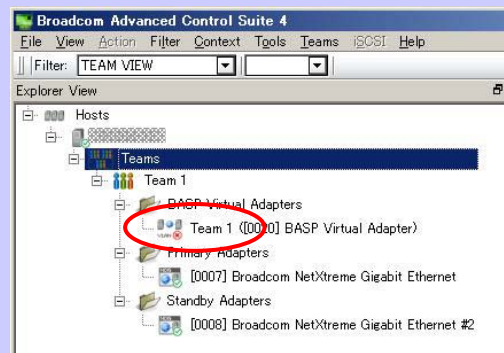
**Note**

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

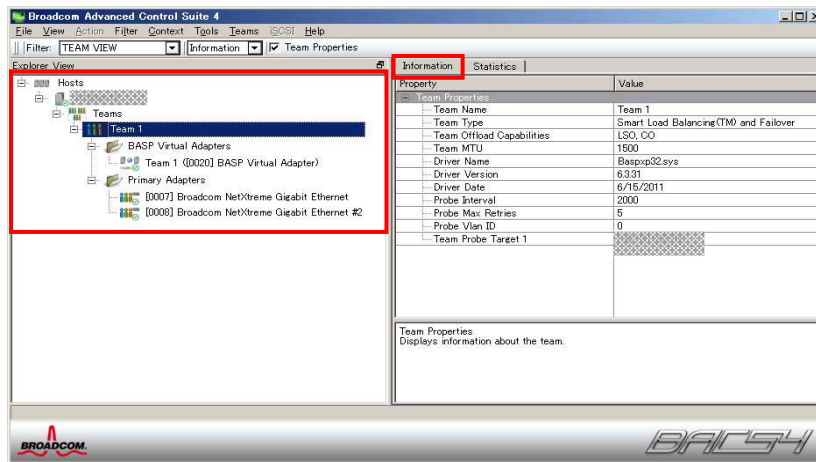
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



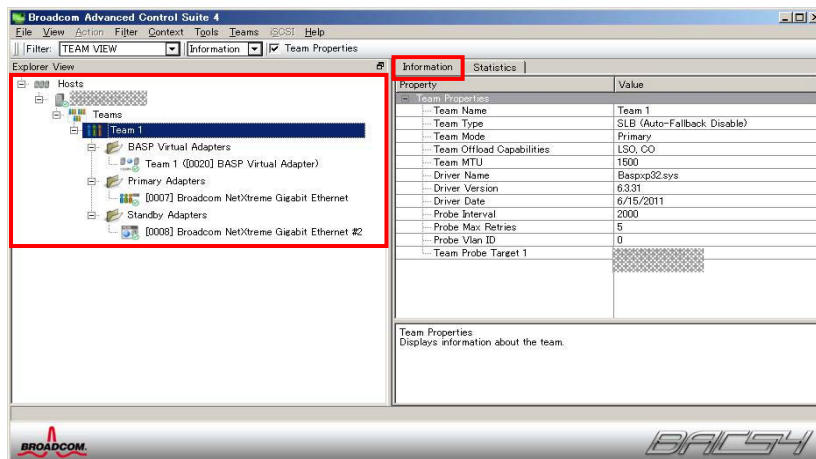
17. Restart the system.

18. After the system starts, follow step 1 to start **Broadcom Control Suite** 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)



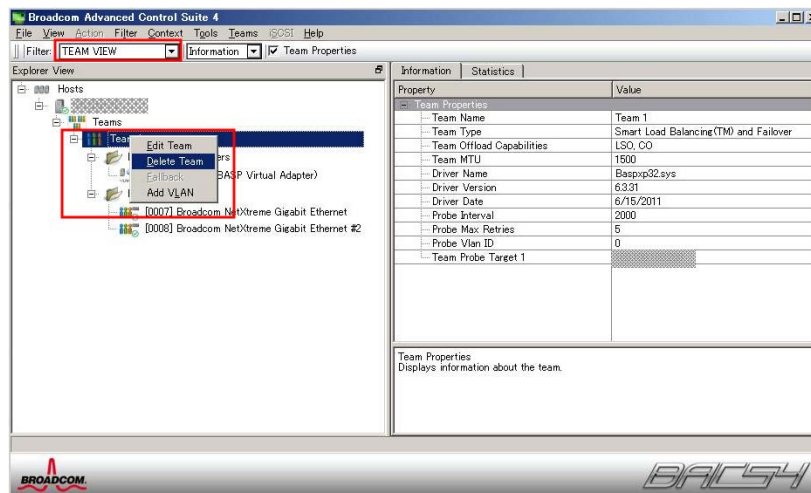
Team setup is now complete.

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

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

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

1. Double-click **Broadcom Control Suite** in the Control Panel window.
Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.

**Note**

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

Tips

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

4. Double-click `addvlanstats.vbs` in the following folder.
 - When using EXPRESSBUILDER DVD:
Optical disk drive:\024\win\winnt\w2k3amd\lan
 - If Starter Pack was installed from Internal Flash Memory:
System drive:\StartPKG\w2k3amd\lan

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



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

Team deletion is now complete.

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

The driver for SAS controller is installed when you apply "Starter Pack".

5.4.5 When using a RAID Controller (N8103-160)

The driver for RAID Controller is installed when you apply "Starter Pack".

Note, however, If RAID Controller (N8103-149/150/151/160) is already used, the driver is automatically installed.

5.4.6 Graphics accelerator driver

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

To reinstall drivers separately, complete the following steps.

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

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from 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 EXPRESSBUILDER DVD:

Optical disk drive: \024\win\winnt\w2k3amd\video

If Starter Pack was installed from Internal Flash Memory:

System drive: \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 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.

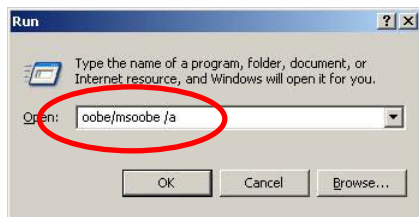
5.6 License Authentication

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 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



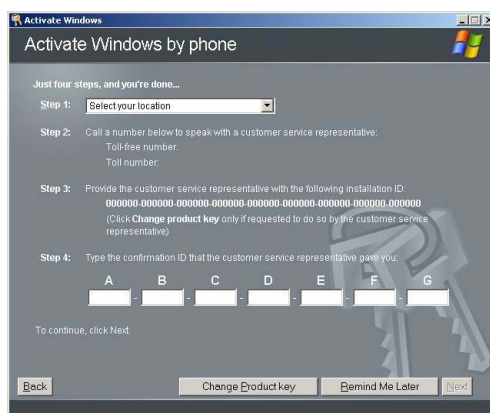
2. When the following message appears, click [Next].



The following message appears.



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 installation, 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

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

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.

BTO : Setting up of Pre-installed model


EB : Confirm during Setup with EXPRESSBUILDER

OS : Confirm during Setup with OS standard installer

(1/3)

Setup			Items to confirm	
–	–	OS	Windows family	<p>The following editions of the Windows Server 2003 family may be installed.</p> <ul style="list-style-type: none"> Windows Server 2003 R2 Standard Edition Windows Server 2003 R2 Enterprise Edition *1 Windows Server 2003 Standard Edition *2 <p>*1 Supported by R110e-1E only *2 Supported by GT110e and GT110e-S</p> <p>Inquiries about installing other editions may be made at your sales dealer or maintenance service company. For information about Service Packs, refer to <i>1.3 Service Pack Support</i>.</p> <p>Note Setup with EXPRESSBUILDER cannot be used.</p>
–	–	OS	License authentication	<p>If Windows Server 2003 is installed from Backup CD-ROM, the license is already activated. If Windows Server 2003 is installed from an OS CD instead of Backup CD-ROM, 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.</p> <p>For details, refer to <i>Chapter 1 (6.8 License Authentication)</i>.</p> <p>Important Activate within 30 days following installation. The system is locked if 30 days have passed without activation.</p>
–	–	OS	Hardware configuration	<p>The following hardware configurations require special procedures.</p> <ul style="list-style-type: none"> When using OEM drivers, be sure to change the boot order of the Flash FDD on the BIOS settings as follows: Select Boot, Floppy Drive BBS priorities, Boot Option #1, and then specify the Flash FDD used. <p>Note Change as instructed in <i>Chapter 1 (6.3.3 Setup procedure)</i>.</p>
–	–	OS		<p>• Notes on using N8103-149/150/151 on Windows2003:</p> <p>1) When a battery is used: The following message may appear on POST screen at reboot if Service Pack2 is not yet applied. It is not the problem.</p> <div style="border: 1px solid black; padding: 2px; width: fit-content;">cache data recovered successfully</div> <p>2) When no battery is used:</p> <ul style="list-style-type: none"> Set the cache mode of RAID Controller to the default setting (AutoSwitch or WriteThrough) until Service Pack 2 is applied. To operate the RAID Controller in WriteBack mode, change setting to WriteBack after Service Pack 2 is applied. <p>* The default cache mode of RAID Controller is AutoSwitch. It will not change to WriteBack mode unless it is changed manually at or after creation of VD.</p>

(2/3)

Setup			Items to confirm	
–	–	OS	Hardware configuration	<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • DAT, LTO, and similar media Do not set media that is unnecessary to installation during setup.
–	–	OS		<ul style="list-style-type: none"> • 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 (6.9 Reinstallation When Multiple Logical Drives Exist)</i>.
–	–	OS		<ul style="list-style-type: none"> • 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: <div style="text-align: center;">  <p>Data area (partition to be retained)</p> </div> <ul style="list-style-type: none"> - 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		<ul style="list-style-type: none"> • Setup when mass memory is installed If mass memory is installed in your system, the large size of paging file is required at installation. Thus, the partition size for storing debug information (dump file) may not be secured. If you fail to secure the dump file size, use OS standard installer for setup, and allocate the required file space to multiple disks by performing the following steps. <ol style="list-style-type: none"> 1. Set the system partition size to a size sufficient to install the OS and paging file. 2. Specify another disk as destination to store the debug information (required dump file size) by referring to <i>Chapter 1 (7. Setup for Solving Problems)</i>. <p>If the hard disk drive does not have enough 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 hard disk drive for the dump file.</p> <p>Note If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>
–	–	OS	Service Pack	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 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.

(3/3)

Setup			Items to confirm	
—	—	OS	System partition size	<p>The system partition size can be calculated by using the following formula.</p> <p>Size required to install the OS + paging file size + dump file size + application size</p> <p>Size required to install the OS = 3,500 MB (Windows Server 2003 R2 with Service Pack 2)</p> <p>= 5,300 MB (Windows Server 2003 R2 + Service Pack 2)</p> <p>= 5300MB (Windows Server 2003 with Service Pack 1 + ServicePack 2 CD-ROM)</p> <p>Paging file size (recommended) = installed memory size × 1.5</p> <p>Dump file size = installed memory size + 12 MB</p> <p>Application size = as required by the application</p> <p>For example, if the installed memory size is 1 GB (1,024 MB), the partition size is calculated as follows:</p> <p>3,500 MB + (1,024 MB × 1.5) + 1,024 MB + 12 MB + application size = 6,072 MB + application size</p> <p>Note</p> <ul style="list-style-type: none"> • 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. <p>If the partition size for installing Windows is smaller than the recommended size, expand the partition size or add another hard disk drive.</p>
—	—	OS	Setup with OS standard installer	<p>Dialog boxes 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.</p>
—	—	OS	When using RAID Controller (N8103-149/150/151/160)	<p>Upon completion of installation of OS and application of Service Pack 2, update the driver for RAID Controller before installing Universal RAID Utility. Take the steps below:</p> <ol style="list-style-type: none"> 1. Insert the EXPRESSBUILDER DVD into optical disk drive. 2. Open the following file using text editor such as notepad. <EXPRESSBUILDER DVD> : \024\win\winnt\dotnet\dac_driver_update\Readme.txt 3. Update the driver according to instructions in Readme.txt file. <p>When update completes, install the Universal RAID Utility.</p>
—	—	OS	Upgrade to Windows Server 2003 R2	<p>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.</p> <p>If you want to use Windows Server 2003 R2, back up the necessary data before installing Windows Server 2003 R2.</p> <p>Tips</p> <p>Inplace upgrade refers to overwriting an existing OS (in this case, Windows 2003) with another OS (Windows Server 2003 R2).</p>

6.2 Setup with OS Standard Installer

This section describes how to install Windows with OS Standard Installer.

This feature automatically recognizes the RAID controller connected to the server and configures the RAID system. Therefore the hardware installation of the server needs to be finished by following "*User's Guide*".

Important

Setup with OS standard Installer may delete all data in the hard disk drive depending on the 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

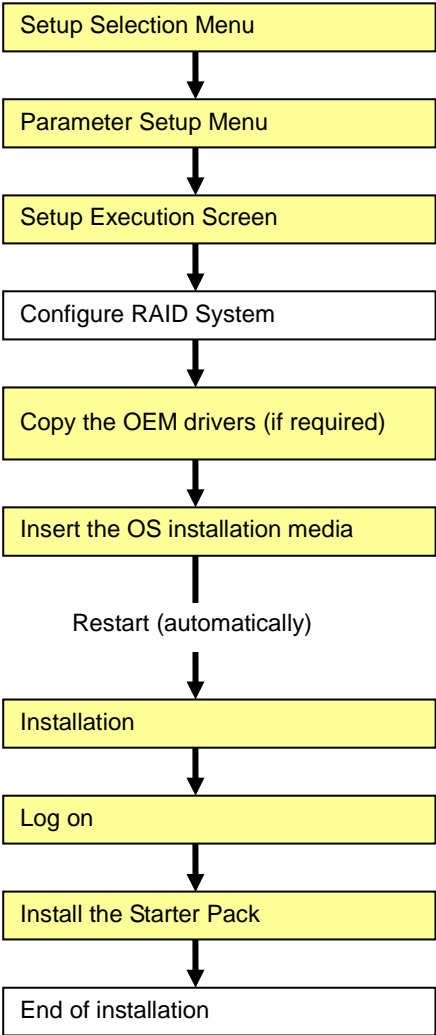
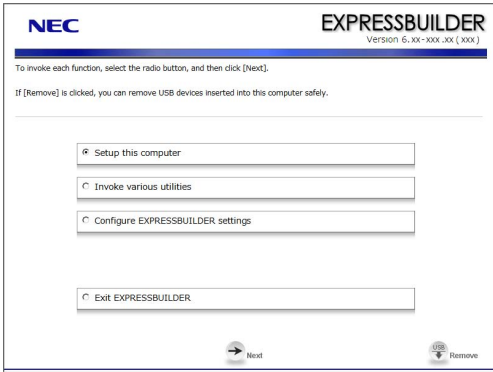
When using an onboard RAID controller (LSI Embedded MegaRAID):

Do 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.

Tips

- Setup with OS Standard Installer allows you to use a pre-specified parameter file or save the parameters specified in setup as a parameter file on removable media or Internal Flash Memory (if purchased optionally).
- For details on creating a parameter file, refer to *Chapter 1 (8 Windows OS Parameter File)*.

6.2.1 Setup flow



	Process that requires input or selection
	Process that proceeds automatically

6.2.2 Requirements for Setup

Prepare the following media 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)
(hereafter referred to as *Windows Server 2003 R2 DISC 2*)
- **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)
(hereafter referred to as *Windows Server 2003 R2 DISC 2*)

<Windows Server 2003 R2>

Be sure to prepare the 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*)
- **Windows Server 2003 Service Pack (CD-ROM)**
- **First Steps Guide**
- Either of the following EXPRESSBUILDER
 - **EXPRESSBUILDER DVD**
 - **Internal Flash Memory** (optional)
- Prepare if needed:
 - **Removable media for creating Windows OS parameter file**
 - **Flash FDD for creating 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.

Tips

- EXPRESSBUILDER may be distributed in Internal Flash Memory.
EXPRESSBUILDER can be run from 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 EXPRESSBUILDER DVD.

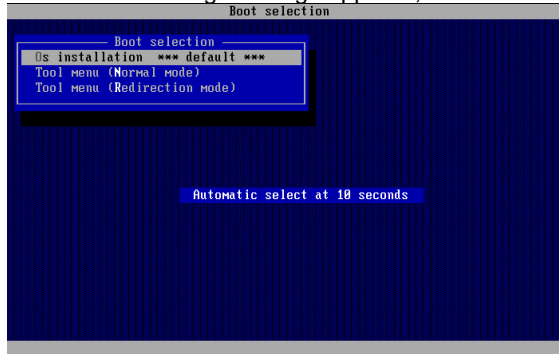
6.2.3 Setup procedure

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

Note

Before starting setup, refer to 6.1 *Before Starting Setup*. It describes how to make partitions.

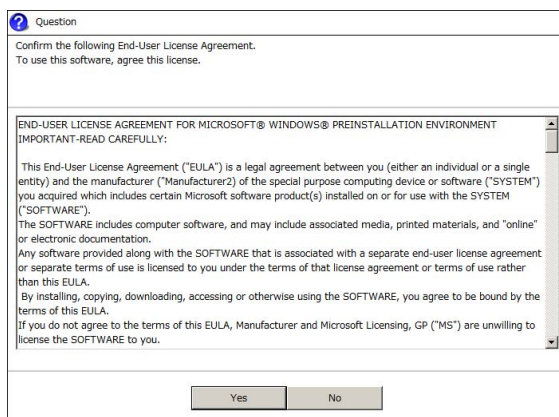
1. Turn peripheral device (such as a display) power on, and then turn the server power on.
2. Start EXPRESSBUILDER according to *Chapter 1 (1.1 Starting EXPRESSBUILDER)*.
3. When the following message appears, select **Os installation *** default *****.



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



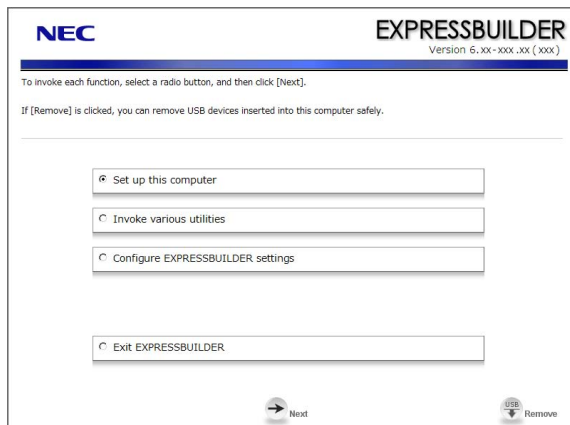
5. When the Windows PE software license agreement window appears, click [Yes].



Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

6. Select **Setup this computer** from Top Menu of EXPRESSBUILDER, and then click [Next].



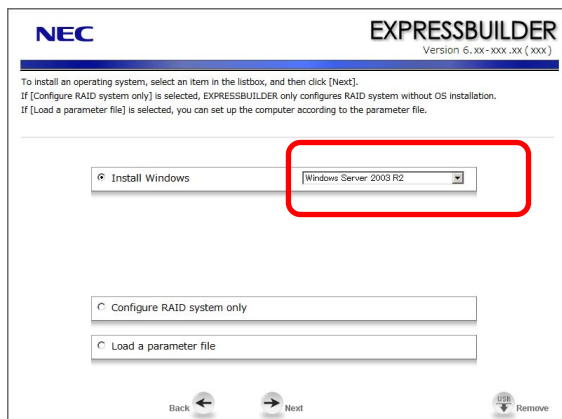
7. Set parameters on this menu according to your requirement.

- ☐ When not using parameter file: Go to Step 8.
- ☐ When using a parameter file: Go to Step 9.

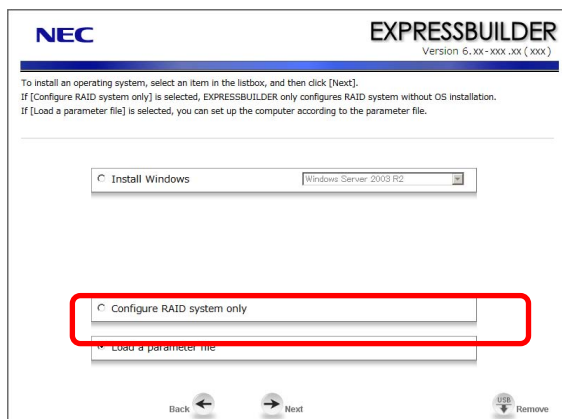
Note

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

8. If you do not use a parameter file, select an OS from the pull-down menu in [Install Windows], and click [Next]. On this dialog, select "Windows Server 2003 R2" from the pull-down menu.
→ Go to Step 10.

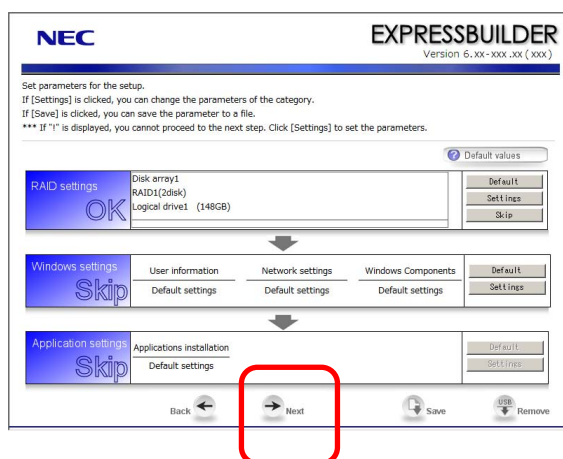


9. If you use a parameter file, select [Load a parameter file] and click [Next]. Load a parameter file according to on-screen instructions.



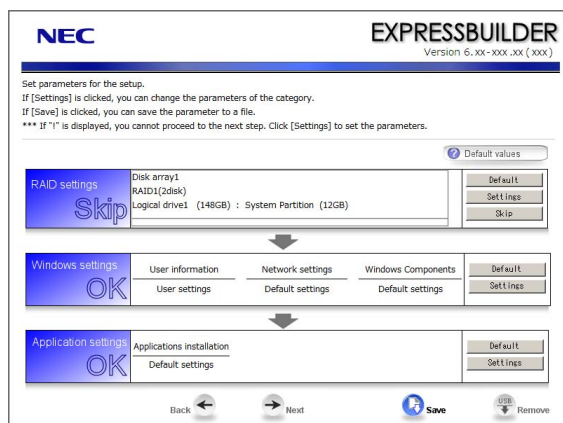
Confirm settings on Parameter Setup Menu as needed, then click [Next].

→ Go to Step 16.



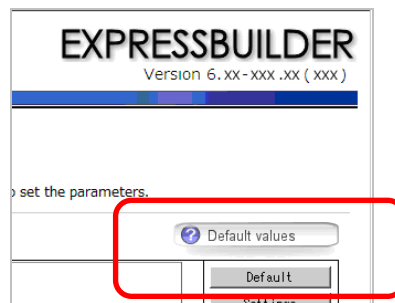
10. Set parameters required for setup.

Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



10-1 RAID settings

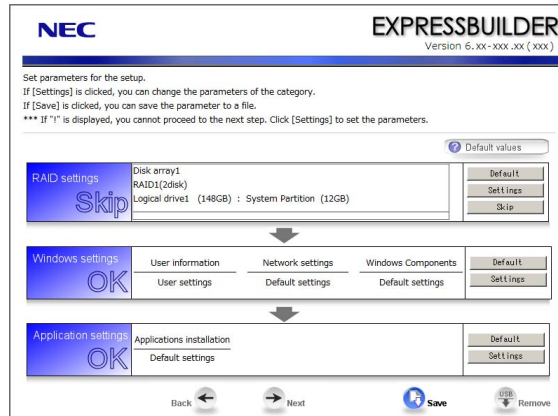
Use this menu to configure the RAID system with the RAID controller detected automatically.

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 Parameter Setup Menu.



When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up logical drives.

Important

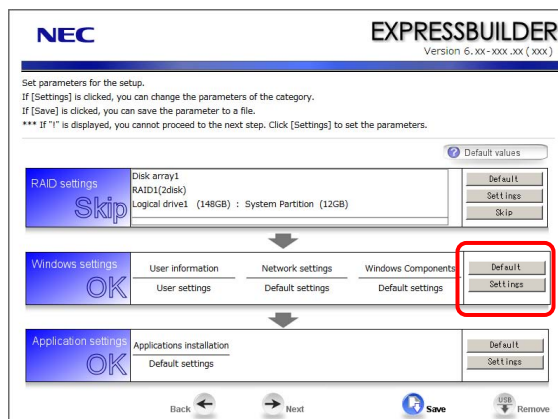
If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

When skipping the creation of new logical drives

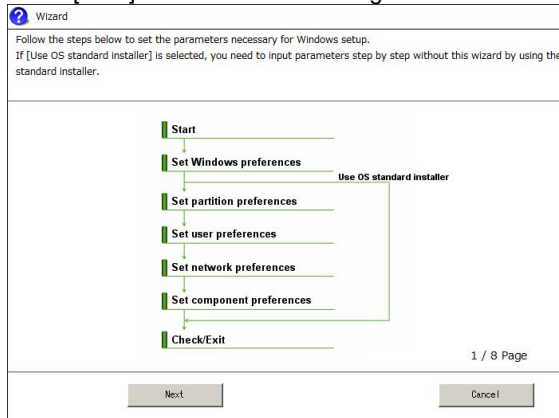
Click [Skip] in RAID settings.

When the RAID settings wizard is terminated, return to Parameter Setup Menu.

11. Click [Settings] in Windows settings.

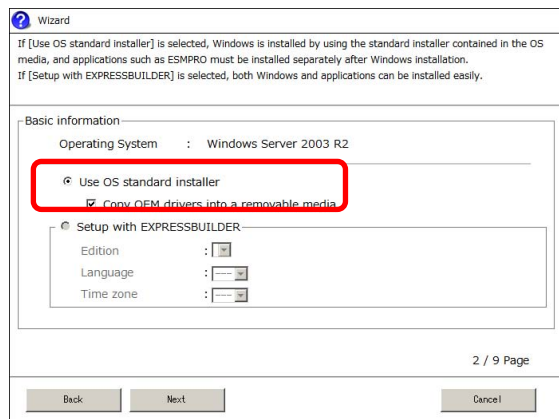


12. Click [Next] in the Windows settings wizard.



13. Specify the Windows basic settings

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

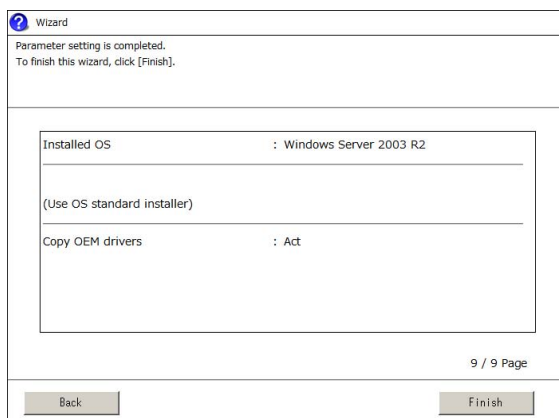


If copying the OEM drivers to the removable media, select **Copy the OEM drivers into the removable media**.

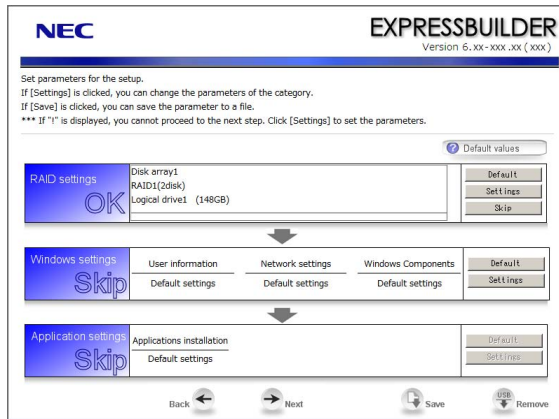
Tips

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

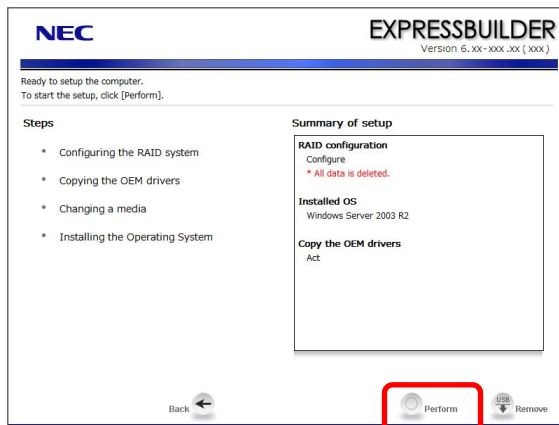
14. After clicking [Finish] on the confirmation window, click [Next] in the parameter setup menu.



15. Click [Next] on Parameter Setup Menu.



16. Confirm the summary of setup on the screen below, and click [Perform].
The server automatically restarts.

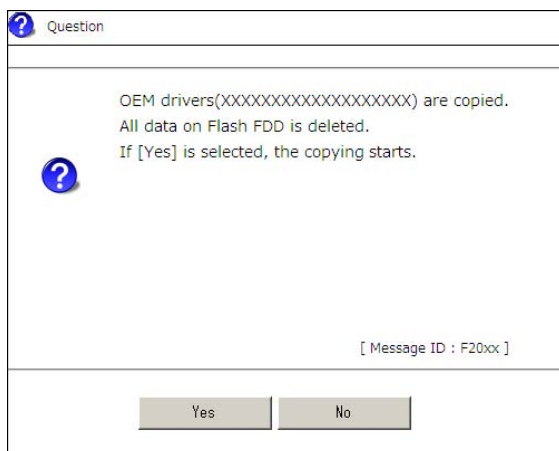


Note

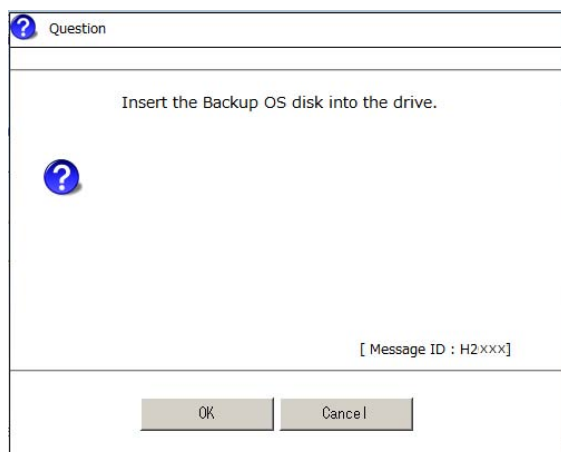
- If you select the **Copy the OEM drivers into the removable media** check box, insert a Flash FDD into the server and then click [Perform].
- Do not remove the media while copying OEM drivers.

17. Continue setup according to on-screen message.

If the **Copy the OEM drivers to the removable media** checkbox is selected in step 13, the following window appears. Follow the onscreen instructions and continue the operation.



When the following message appears, set OS installation media, and click [OK].



18. The server automatically restarts.

To use OEM driver, change boot priority of Flash FDD on BIOS settings, after restarting the server. Select **Boot, Floppy Drive BBS priorities, Boot Option #1**, and then specify the Flash FDD used.

19. Run from the OS installation media.

If a bootable operating system is already installed on the hard disk drive, press <Enter> key while the message "Press any key to boot from CD or DVD..." is displayed on the top of the screen.

The boot sequence proceeds and the following message appears.



Note

If this message does not appear, reboot the server and retry.

This step is unnecessary if no bootable operating system exists.

20. If a RAID controller or an optional mass storage controller is used, press <F6> key while either of the following messages is displayed. If not, go to step25 without pressing <F6> key.

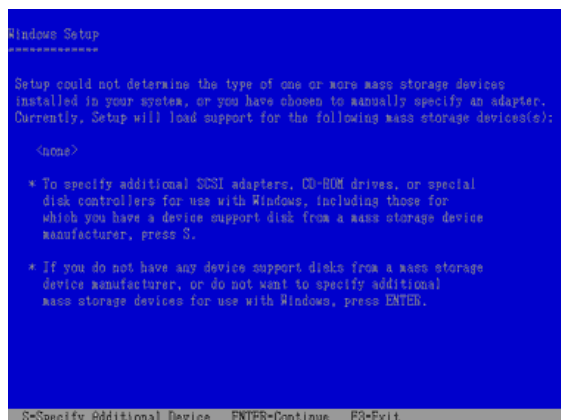
"Setup is inspecting your computer's hardware configuration" (on the top of the screen)

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

Tips

- Note that nothing changes on the screen even when the <F6> key is pressed.
- If the OEM drivers list is not displayed at step 22, 24, check the boot order of the Flash FDD on BIOS settings.

21. The following message appears.



If a RAID controller is used on the server, press <S> key and go to step 22.
If not, go to step 23.

22. Select the following from the driver list, and then press <Enter> key.

When using N8103-128 RAID Controller:

Promise SuperTrak EX SAS 6G RAID Controller-32bits platform

When using N8103-149/150/151 RAID Controller:

LSI MegaRAID SAS RAID Controller Driver

When using Onboard RAID Controller (LSI Embedded MegaRAID):

LSI Embedded MegaRAID (Windows 2003)

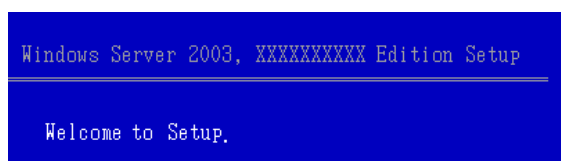
23. When N8103-104A is connected: press <S> key and go to step 24.

If not, press <Enter> key and go to step 25.

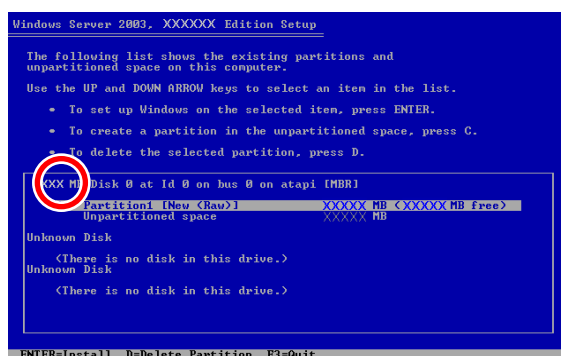
24. Select **LSI Fusion-MPT SAS Driver (Server 2003 32-bit)**, and then press <Enter> key.

The screen shown in step 21 appears again. Press <Enter> key and go to step 25.

25. When the following message appears, press <Enter> key to start Windows setup.



The following screen is displayed for setting the partition of Windows.



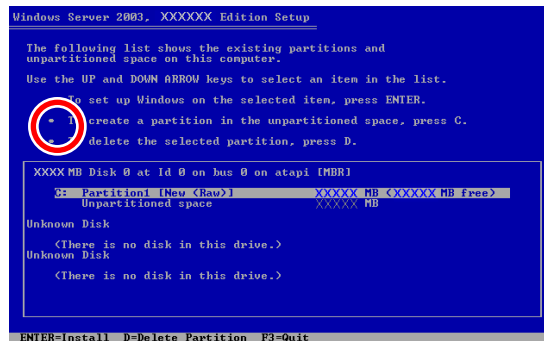
If the partition created is shown as "G:", delete the partition "G:"

Important Pay attention to a partition you are going to delete.

If it is shown as "C:", you do not need to delete the partition and go to step 26.

Create a partition again by pressing <C> key.

The creation of partition completes when the new partition is created in drive "C:", as shown below.



Important

- A partition in which you install Windows must be created in drive "C:".
- 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 server automatically restarts after copying files.
Do not remove the CD-ROM and the Flash FDD.

26. 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, the message indicating that the driver has not passed logo testing might appear, but this does not affect the setup. Click [OK] to continue setup.

27. The server automatically restarts after installing Windows Server 2003.

- When Windows Server 2003 was installed: Go to step 31.
- When Windows Server 2003 R2 was installed: Go to step 28.

28. The Windows Setup dialog box appears after log on.



Important Be sure to install the Windows Server 2003 R2 DISC 2 according to the following steps even if the dialog box does not appear.

29. Insert the Windows Server 2003 R2 DISC 2 into the optical disk drive.
Check the settings, and then click [OK].
30. When the installation procedure completes, remove the Windows Server 2003 R2 Edition DISC 2 from the optical disk drive and then restart the server.
31. Install Starter Pack by referring to *Chapter 1 (6.4 Installing Starter Pack)*.
32. Install drivers and specify detailed settings by referring to *Chapter 1 (6.5 Setting Up Device Drivers)*.
33. For optional devices whose driver has not been installed, install the device drivers according to the instructions supplied in the driver manual.
34. 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 Starter Pack

After installing Windows Server 2003, be sure to install Starter Pack and Windows Server 2003 hotfix: knowledge base (KB) 921411.

Starter Pack contains drivers customized for this server. Be sure to apply Starter Pack before running the system.

Important

- Starter Pack and Windows Server 2003 hotfix: KB921411 must also be installed in the following cases. Be sure to install 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 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 EXPRESSBUILDER DVD

1. Log on to the system with a user account that has administrative privileges (such as Administrator).
2. Insert EXPRESSBUILDER DVD into the optical disk drive.
If you installed the Windows Server 2003 with Service Pack 2, go to step 9.
3. When the menu appears automatically, close it.
4. Select **Run** from the **Start** menu, and then execute the following command:
Optical disk drive:\024\win\winnt\dotnet\qfe\enu\kb921411.exe
5. When the following message appears, click [Next].



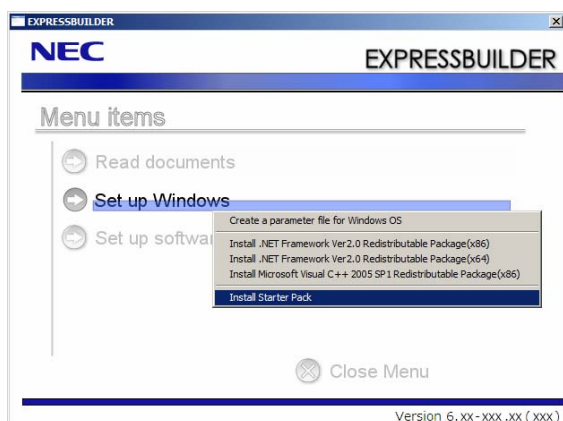
After this, continue installation according to the onscreen messages.

6. When the following message appears, click [Finish] and remove EXPRESSBUILDER DVD before restarting.

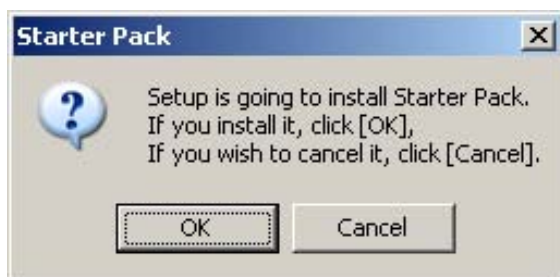


7. Log on to the system with a user account that has administrative privileges (such as Administrator).
8. Insert EXPRESSBUILDER DVD into the optical disk drive.

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



10. Wait for several minutes without attempting any further operation until the following window appears.



Starter Pack installation starts when [OK] is clicked.

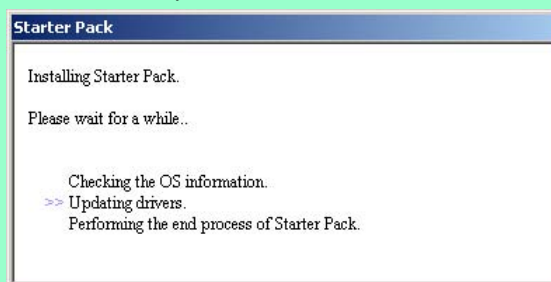
Important

The dialog box shown below might appear while installing 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 Starter Pack is being installed. Wait a moment until the update is complete. (About 5-10 minutes)
* It changes with states of a system.



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



To apply the Service Pack, click [Yes] and go to step 12.

To not apply the Service Pack, click [No] and go to step 14.

Important

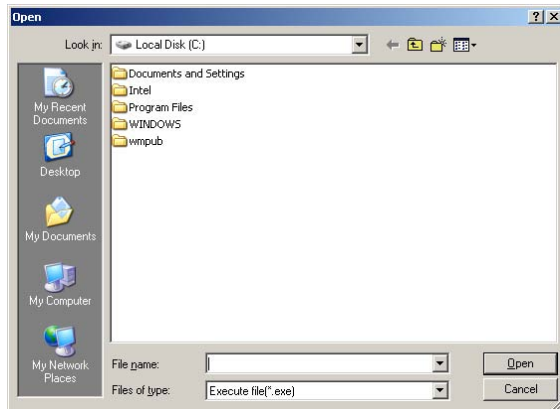
If you are using OS installation media without Service Pack 2, click [Yes]. (Service Pack 2 is mandatory)

If 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.

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



13. 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 EXPRESSBUILDER DVD from the optical disk drive and then insert the Service Pack CD-ROM.
- The extension of the Service Pack applicable to 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.

14. When the following message prompts you to restart the server, click [Yes] and remove media from the optical disk drive before restarting.



Installation of Starter Pack is now complete.

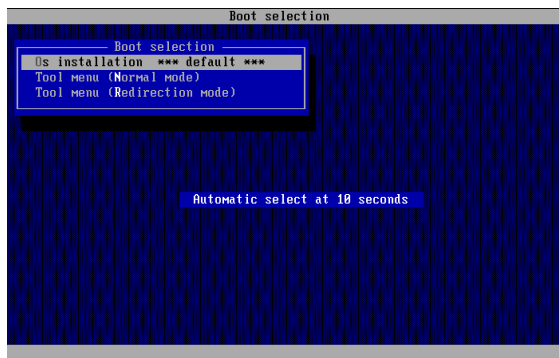
(2) **When using Internal Flash Memory** (Required only when optional "Internal Flash Memory" is installed)

1. After installing the operating system, restart the server.
2. When "Press <F2> Setup, <F3> Internal Flash Memory, <F4> ROM Utility, <F12> Network" appears during POST, press <F3> key.

Note

Be sure to remove bootable media from the optical disk drive.

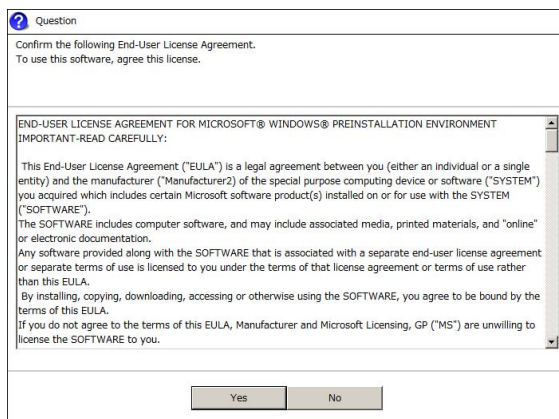
3. When the following message appears, select **Os installation *** default *****.



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



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



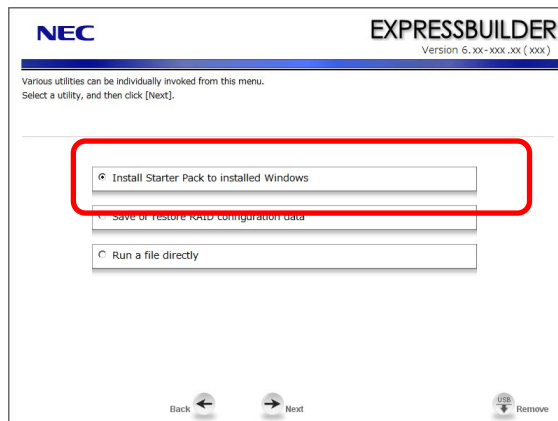
Note

Unless you agree these terms, you cannot use EXPRESSBUILDER.

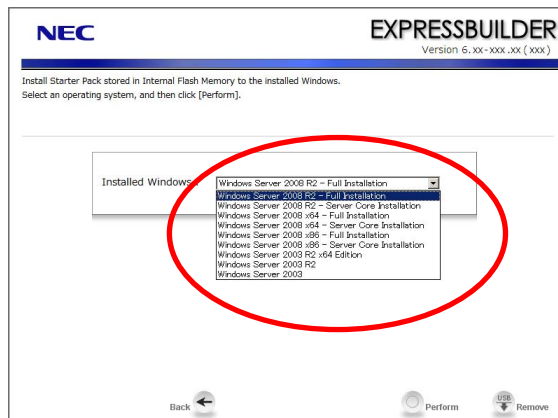
6. Select **Invoke various utilities** from Top Menu of EXPRESSBUILDER, and then click [Next].



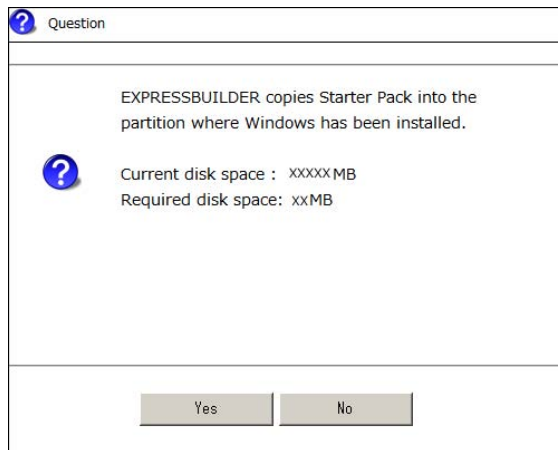
7. Select **Install Starter Pack to installed Windows** and then click [Next].



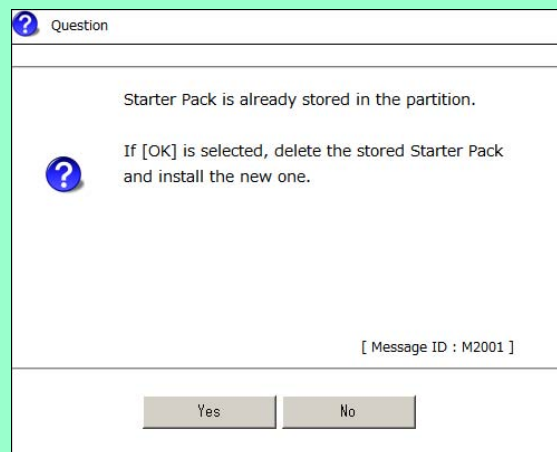
8. Select the installed Windows from the drop-down list, and then click [Perform].



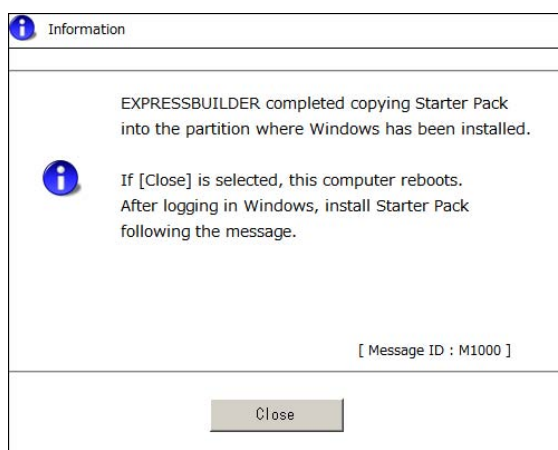
9. Read the message and then click [Yes].

**Note**

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



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



The server restarts.

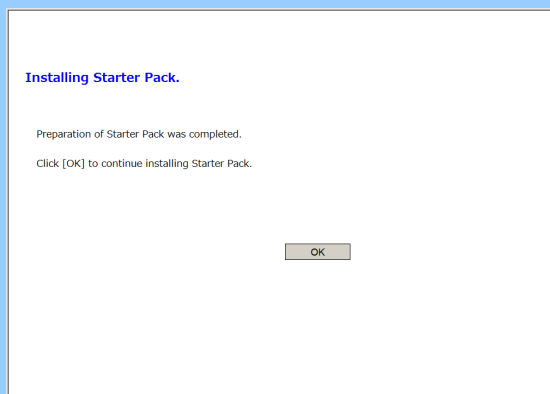
Note

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

11. Log on to the system with a user account that has administrative privileges (such as Administrator).

Important

The screen as shown below appears when Windows starts. Do not click [OK] on this screen. Proceed to Step 12.



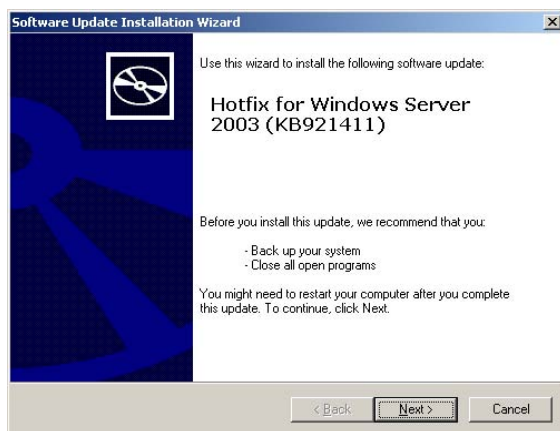
If you click [OK], "KB921411" will not be applied.

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*.

If you installed the Windows Server 2003 with Service Pack 2, go to step 15.

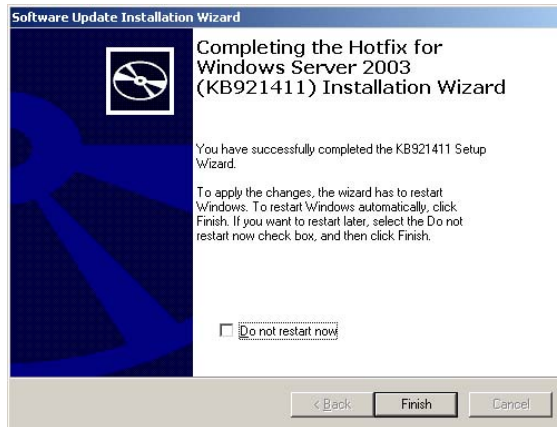
12. Select **Run** from the **Start** menu, and then execute the following command:
`System drive:\StartPKG\dotnet\qfe\enu\kb921411.exe`

13. When the following message appears, click [Next].

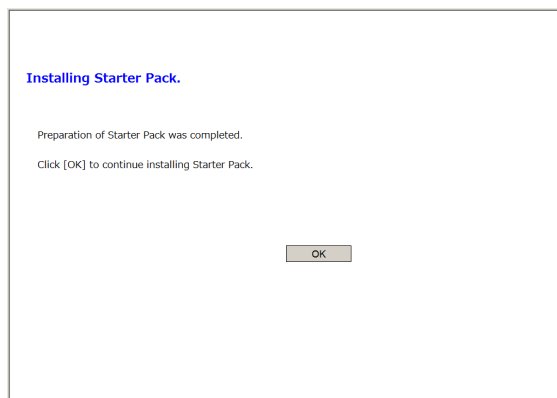


After this, continue installation according to the onscreen messages.

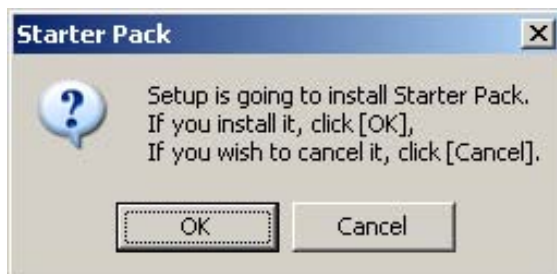
14. When the following message appears, click [Finish] to restart the server.



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



16. Wait for several minutes without attempting any further operation until the following window appears.



Installation of Starter Pack starts when [OK] is clicked.

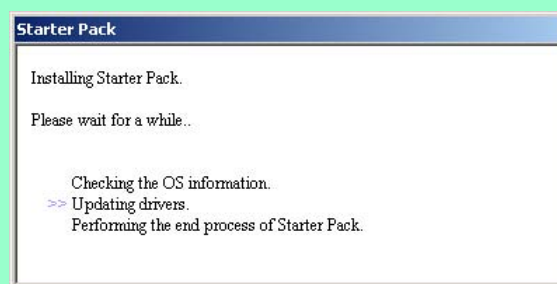
Important

The dialog box shown below might appear while installing 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 Starter Pack is being installed. Wait a moment until the update is complete. (About 5-10 minutes)

* It changes with states of a system.



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



To apply the Service Pack, click [Yes] and go to step 17.

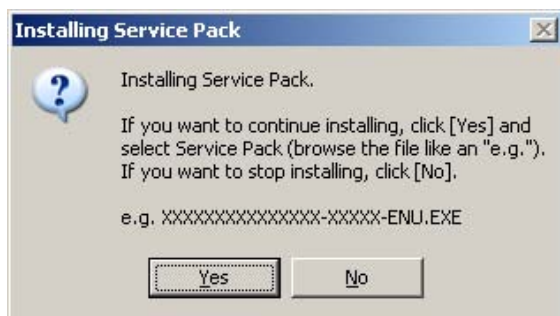
To not apply the Service Pack, click [No] and go to step 19.

Important

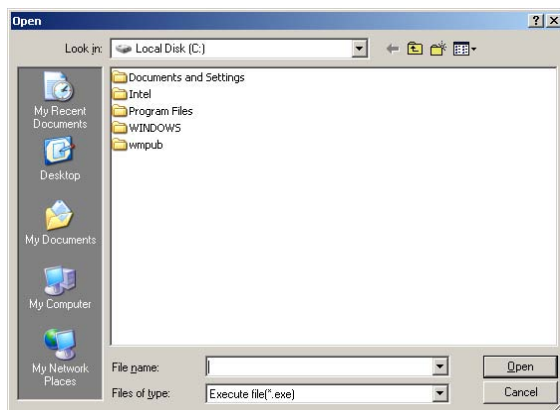
If you are using OS installation media without Service Pack 2, click [Yes]. (Service Pack 2 is mandatory)

If 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 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 Starter Pack is now complete.

6.3.2 Recovery process

If Windows Server 2003 hotfix: KB921411 is not applied before installing 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 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 (6.4.1 Procedure to apply Windows Server 2003 hotfix: KB921411)* to install 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

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

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 EXPRESSBUILDER is used for setup, the LAN and BACS driver will automatically be installed.

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

Important WOL is supported by the standard network adapters only.

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: N8104-132/133/138

Important Using an optional LAN board, perform procedure "6.5.2 Setting up LAN drivers" for each optional LAN board.

If [! Ethernet Controller] is displayed in Device Manager after LAN boards has been installed, you need to install the driver in the following procedure.

1. Set EXPRESSBUILDER DVD in optical disk drive.

When the Autorun menu appears, close the window.

Tips

If you apply Starter Pack from the internal flash memory, you do not need to set EXPRESSBUILDER DVD.

2. Launch **Device Manager**, and double-click [! Ethernet Controller].
The [Ethernet Controller Properties] appears.
3. Click [Update Driver] in [Driver] tab.
[Hardware Update Wizard] appears.
4. Select [No, do not connect now.], and click [Next].
5. Select [Install from a list or specific location], and click [Next].

6. Select [Search for the best driver in these locations], and [Include this location in the search]. Enter the following location and click [Next].

- When using EXPRESSBUILDER DVD:

Optical disk drive: \024\win\winnt\dotnet\lan\bcom\drvinst\15000401\ia32\win2003\ia32

- When applying Starter Pack from internal flash memory:

System drive: \StartPKG\dotnet\lan\bcom\drvinst\15000401\ia32\win2003\ia32

Note

Be sure to uncheck the [Search removable media (floppy, CD-ROM...)] check box, if checked.

7. Click [Finish].
8. When you have applied LAN driver to every [! Ethernet Controller], remove EXPRESSBUILDER DVD from the optical disk drive, and restart the system.

Installing Starter Pack now completes.

Important

[! Ethernet Controller] may not be displayed in Device Manager after LAN card or riser card has been installed. In such a case, the LAN driver is installed automatically. Make sure that the network adapter name for LAN card is found on [(Network Adapter Name)] under [Network Adapters] tab.

(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:

[N8104-132/133/138] Broadcom NetXtreme Gigabit Ethernet #xx*

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

6.4.2 Setting up LAN drivers

(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) Using N8104-132/133/138

Using N8104-132/133/138 with the server, follow the procedure below to set it.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.
If Autorun Menu appears, close the menu.

Tips

EXPRESSBUILDER DVD is unnecessary if Starter Pack was installed from Internal Flash Memory. Proceed to the next step.

2. Double-click to the following file.
 - When using EXPRESSBUILDER DVD:
Optical disk drive:\024\win\winnt\dotnet\lan\pgdyavd_Disable.vbs
 - If Starter Pack was installed from Internal Flash Memory:
System drive:\StartPKG\dotnet\lan\pgdyavd_Disable.vbs

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

Configuration Completed
[Option:PopUp RLV Disabled(Action:Done)]
Reboot the system

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

Setup is now complete.

6.4.3 Setting up team/LiveLink

Important

- When using Smart Load Balancing and Failover (without Standby Member), be sure to setup LiveLink at creation of team. When using Smart Load Balancing and Failover (with Standby Member), setup for LiveLink is not essential.
- When deleting the team, refer to *Chapter 1 (6.5.3 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.
- Using Server Core installations, Not supporting setting up team/LiveLink by the BACS.

(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.

Note

You must set up LiveLink when you create a team.

(3) Setting up team/LiveLink

Important

Possible combinations of network adapters that compose the team are as follows.

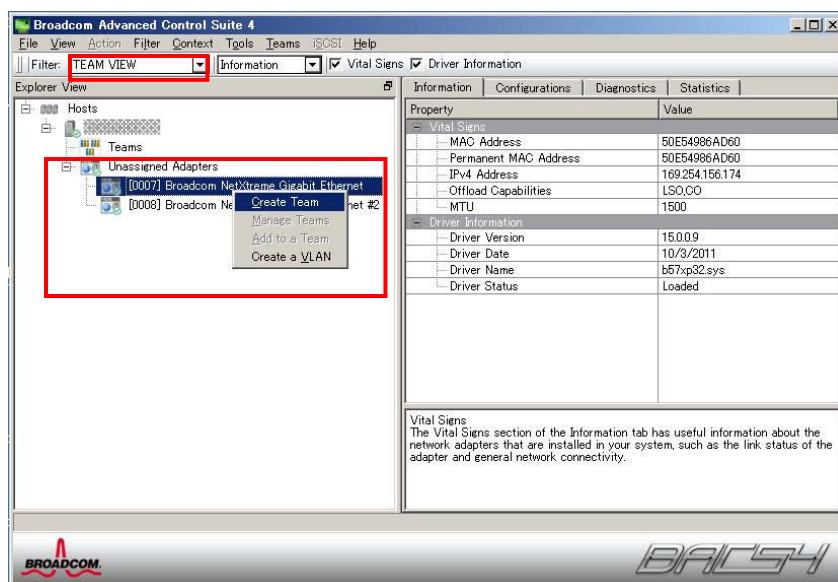
When the number of adapters that composes the team is up to four:

- Between standard network adapters
- Between LAN boards
- A standard network adapter and LAN boards

Tips

To edit a team, right-click on the BACS team, and then select **Edit Team**. Then refer to step 3 and the subsequent steps to edit the team.

1. Double-click the **Broadcom Control Suite** icon on the Control Panel window. **Broadcom Advanced Control Suite** starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Create a Team** from the short-cut menu.



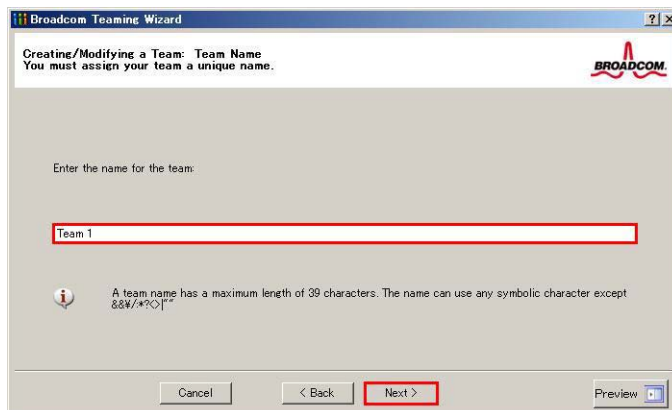
The **Broadcom Teaming wizard** appears.

3. Click [Next].

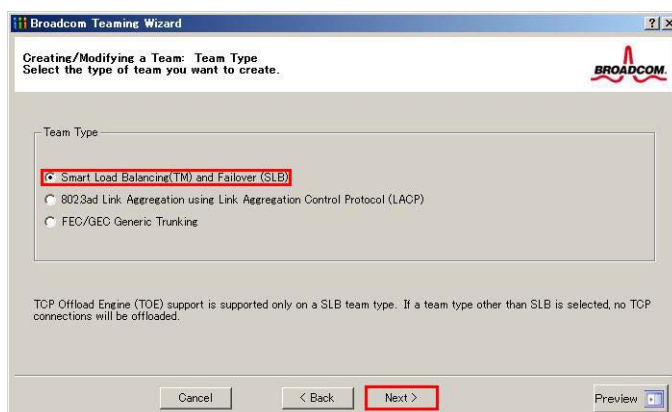


Note Do not use Expert Mode.

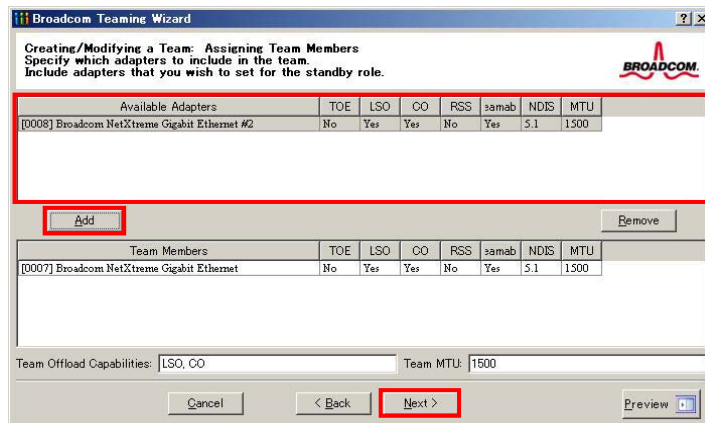
4. Enter any name into the team name entry column, and then click [Next].



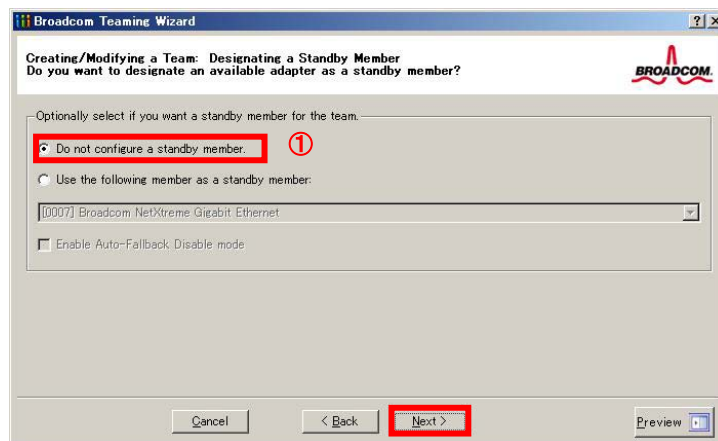
5. Make sure that the following team type is selected, and then click [Next].
Team type: Smart Load Balancing (TM) and Failover (SLB)



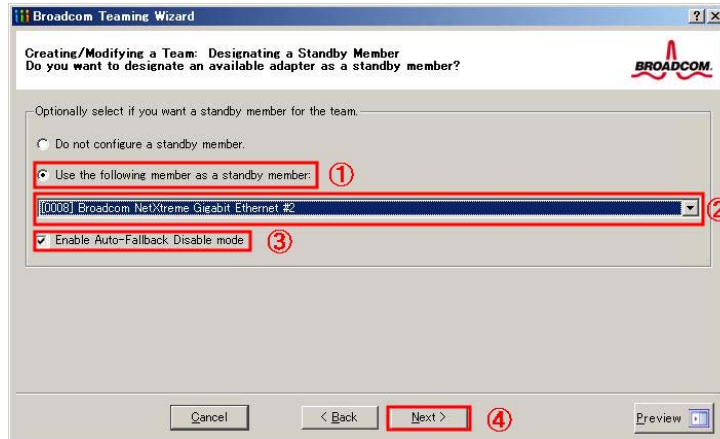
6. Select the adapters that compose the team, click [Add] to add them to the **Team Members** area, and then click [Next].



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].

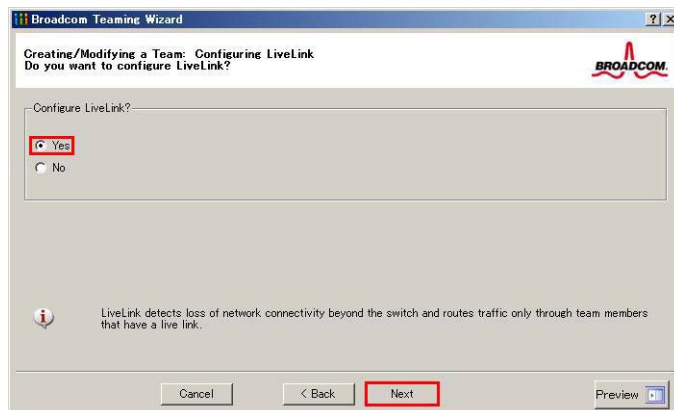


- Smart Load Balancing (Auto-Failback Disable) (with Standby Member)
 - (1) Select Use the following member as a standby member.
 - (2) Select the adapter that is to be a standby member from the drop-down list.
 - (3) Select Enable Auto-Failback Disable mode.
 - (4) Click [Next].

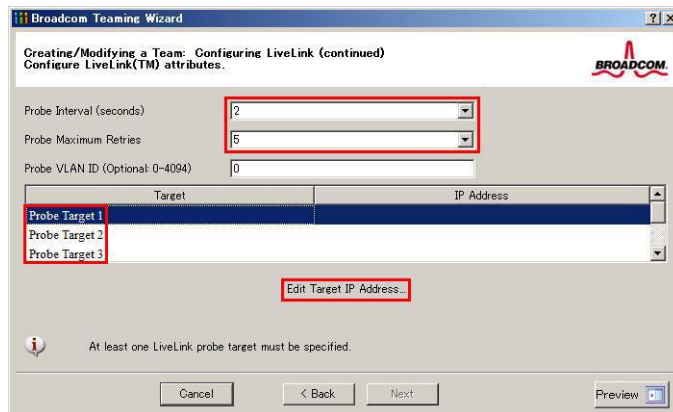
**Note**

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

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



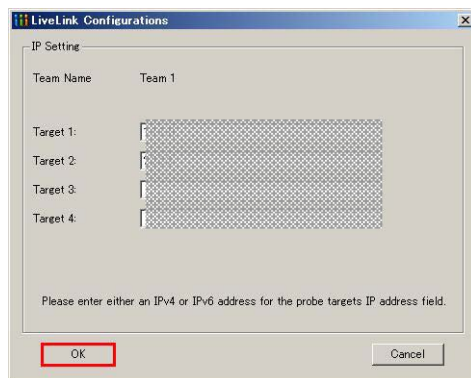
9. You can use the default setting for **Probe interval** and **Probe maximum retries**. If you change these values, select a value from each drop-down list, click the target probe (**Probe Target xx**), and then click [Edit Target IP Address...].



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 a link is down is detected, failover occurs immediately after the link goes down. It takes the time specified for Probe interval (seconds) to recover from the link going down.

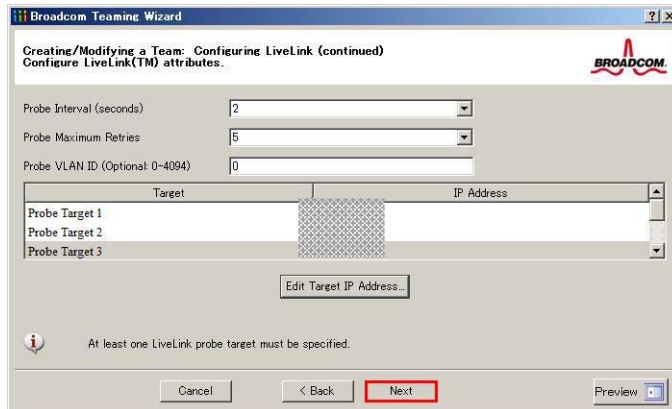
10. In the **Target xx** text box, enter the IP address of the alive monitoring server, and then click [OK].



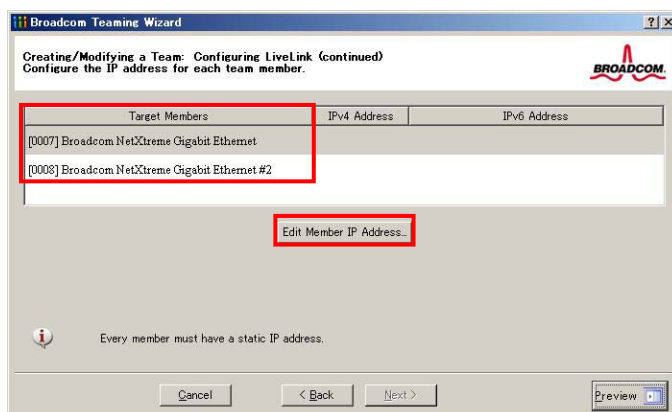
Important

- **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.

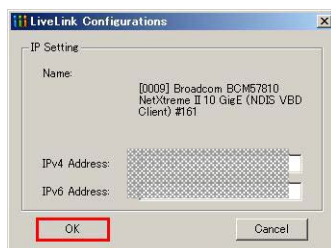
11. Click [Next].



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



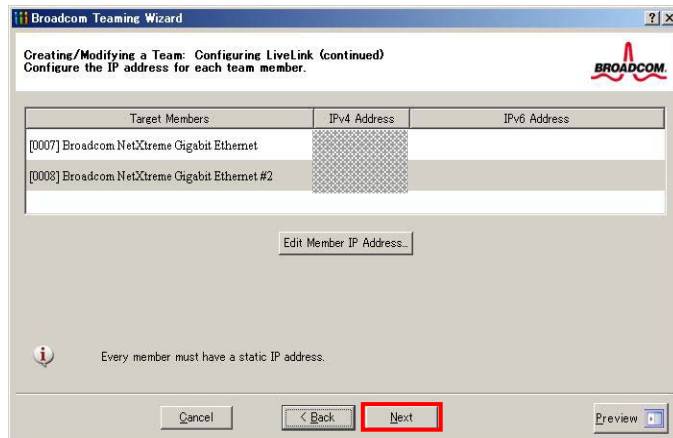
13. Enter the IP address used for LiveLink communication, and then click [OK].



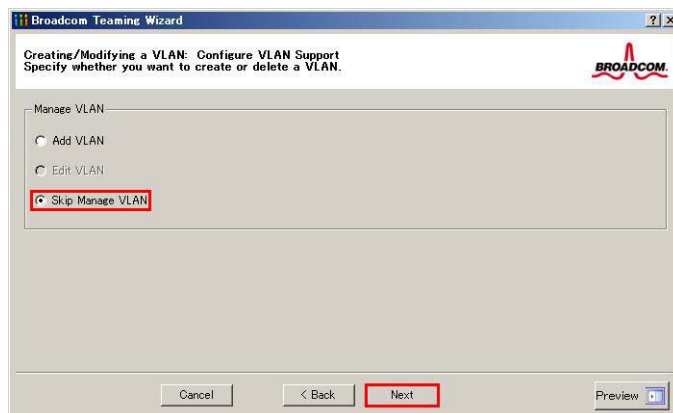
Important

- 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.

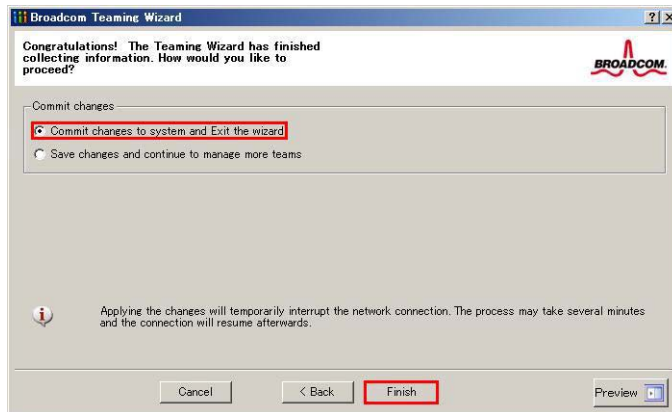
14. Click [Next].



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].

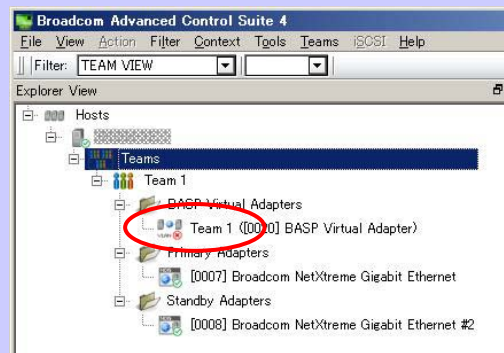
**Note**

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

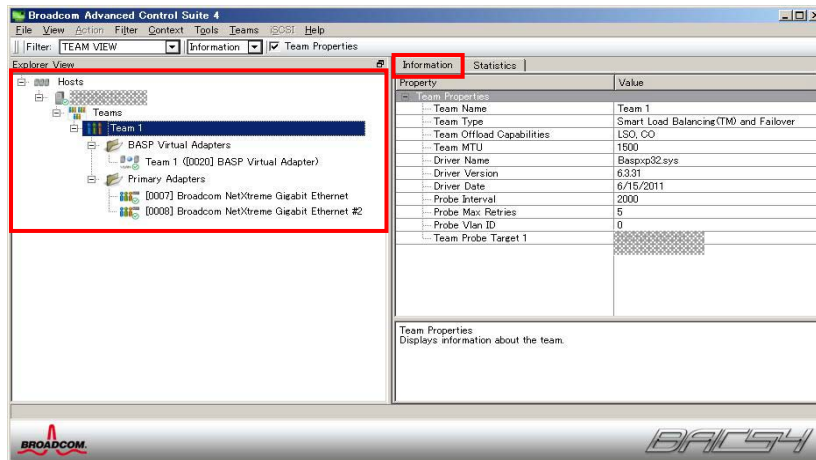
After creating a team, if the teaming adapter displays like the following image, perform steps 8 through 14 again and correct the LiveLink settings.



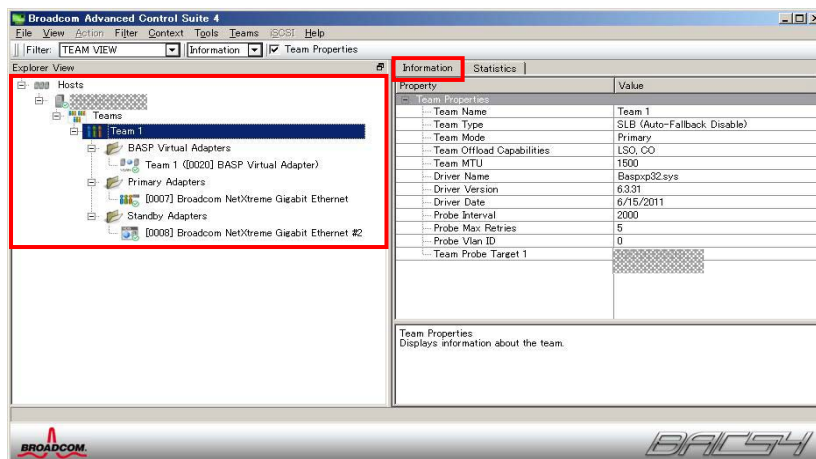
17. Restart the system.

18. After the system starts, start **Broadcom Control Suite** by clicking the **Broadcom Control Suite** icon in **Control Panel**, 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)



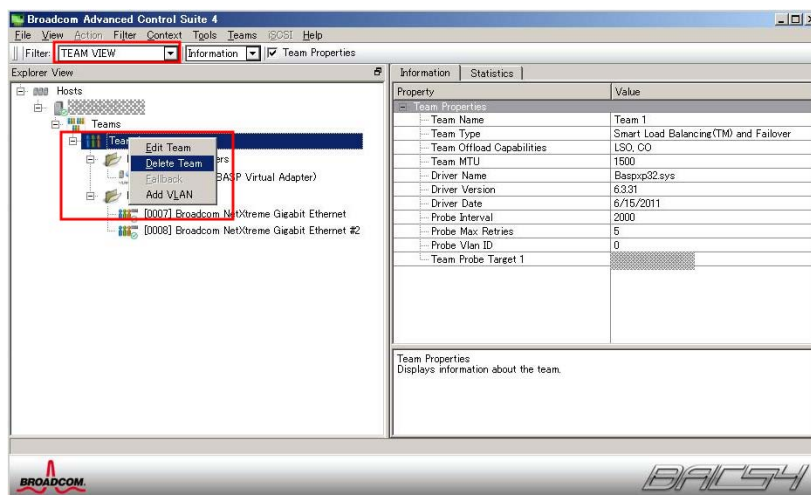
Team setup is now complete.

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

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

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

1. Double-click **Broadcom Control Suite** in the Control Panel window.
Broadcom Advanced Control Suite starts.
2. Set a **Filter** in a **TEAM VIEW**, right-click the adapter to be used for the team, and then select **Delete Team** from the short-cut menu.

**Note**

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

Tips

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

4. Double-click `addlvlanstats.vbs` in the following folder.
 - When using EXPRESSBUILDER DVD:
Optical disk drive: \024\win\winnt\dotnet\lan
 - If Starter Pack was installed from Internal Flash Memory:
System drive: \StartPKG\dotnet\lan

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



6. Eject 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 Starter Pack is installed from EXPRESSBUILDER.

To reinstall drivers separately, complete the following steps.

1. Insert EXPRESSBUILDER DVD into the optical disk drive.

If an autorun menu appears, close the menu window.

Tips

You do not have to insert EXPRESSBUILDER DVD if Starter Pack was installed from 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 EXPRESSBUILDER DVD:

Optical disk drive:\024\win\winnt\dotnet\video

If Starter Pack was installed from Internal Flash Memory:

System drive:\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 EXPRESSBUILDER DVD from the optical disk drive, and then restart the system.

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

The driver for SAS controller is installed when you apply "Starter Pack".

6.4.6 When using a RAID Controller (N8103-160)

The driver for RAID Controller is installed when you apply "Starter Pack".

Note, however, If RAID Controller (N8103-149/150/151/160) is already used, the driver is automatically installed.

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"
/fastdetect
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*.

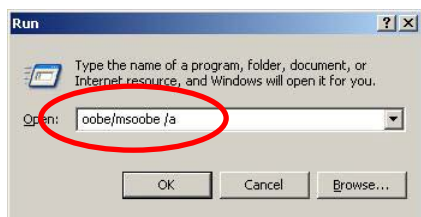
6.7 License Authentication

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 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



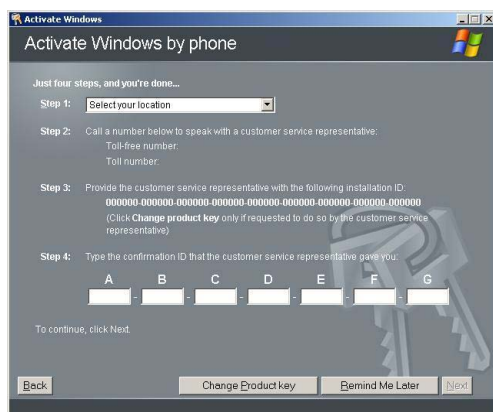
2. When the following message appears, click [Next].



The following message appears.



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



License authentication is now complete.

6.8 Reinstallation When Multiple Logical Drives Exist

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

(1) Reinstallation process

Important Before starting setup, be sure to disconnect hard disk drives from the RAID Controller that is not to be setup. Install those hard disk drives after setup has completed. Conducting setup with hard disk drives being connected with RAID Controller may cause existing data to be erased unintentionally.

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.

Reinstallation is now complete.

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

(2) Changing drive letter assignments

To change the drive letter, follow the steps below. But these steps cannot change drive letter assignments for the system volume or boot volume. If you want to change them, re-install the Windows.

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

Note the following when specifying a dump file.

- 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].

Note the following when specifying a paging file size.

- 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].

The message to restart the system appears 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`

Note the following when specifying a dump file.

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].

Note the following when specifying a paging file size.

- 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].

The message to restart the system appears 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`

Note the following when specifying a dump file.

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].

Note the following when specifying a paging file size.

- 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].
The message to restart the system appears 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 <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.

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 Windows OS 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 EXPRESSBUILDER DVD from the drive while creating a parameter file.

Tips

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

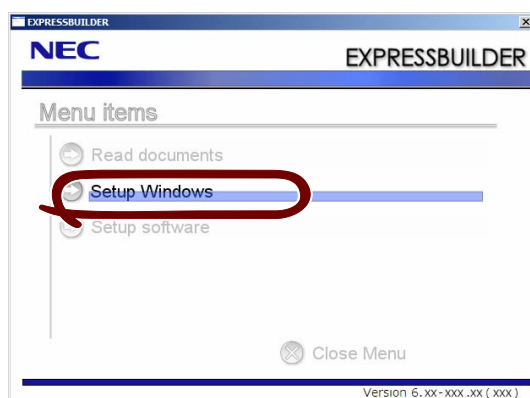
1. Start the OS.
2. Insert the supplied EXPRESSBUILDER DVD into the optical disk drive.
Autorun Menu automatically appears.
3. Click **GT110e/GT110e-S/R110e-1E** on model selection dialog.

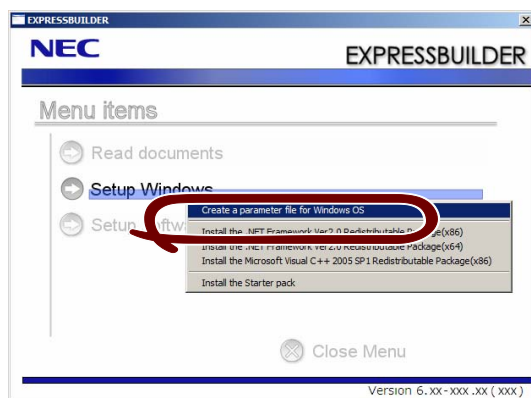


Tips

The dialog shown above may not appear depending on your system environment.

4. Right-click on the window or click **Set up Windows** to open the short-cut menu.

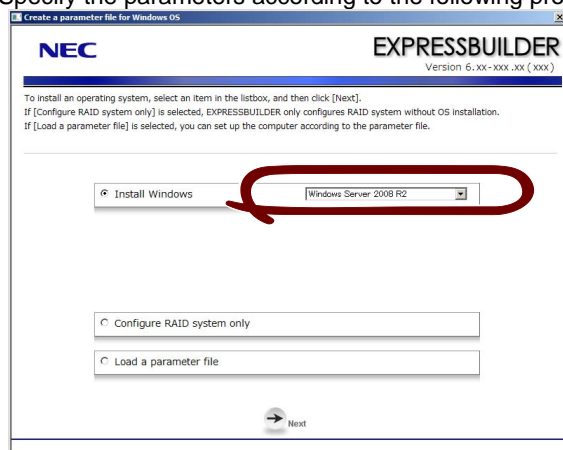


5. Select **Create a parameter file for Windows OS**.

The following window appears.



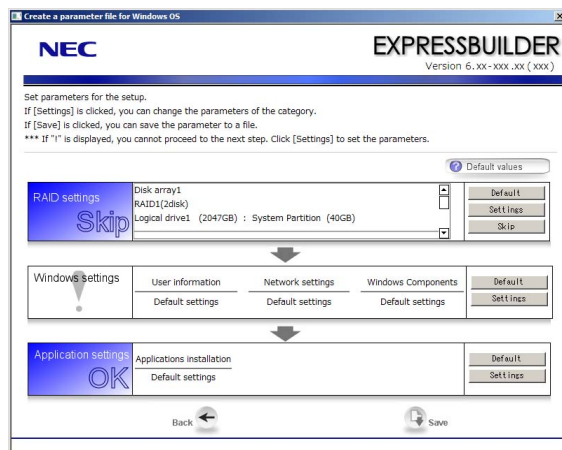
6. Specify the parameters according to the following procedure.



Tips

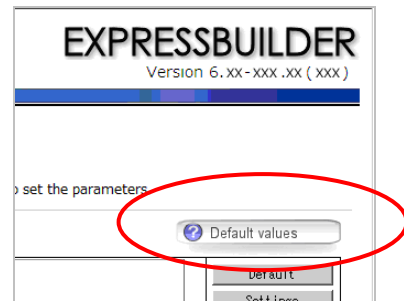
- To modify an existing parameter file, click **Load a Parameter file** on the setup selection menu.
- To cancel parameter file creation in the middle, click [X] on the upper right of the dialog box.

7. Set parameters required for setup.
Click [Settings] of the relevant category to change parameters.



Click [Default] if you want to restore the default values.

You can see the default values by clicking [Default values].



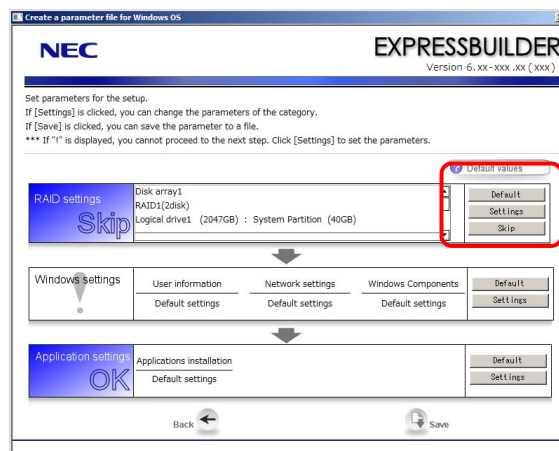
7-1 RAID settings

Use this menu to configure RAID System with the RAID Controller detected automatically.

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 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.

When creating new logical drives

- (1) Click [Settings] in RAID settings.
- (2) Use the wizard to set up the logical drives.

Important

If you proceed with wizard, the existing RAID system is destructed and the contents of hard disk drive will be erased.

When skipping the creation of new logical drives

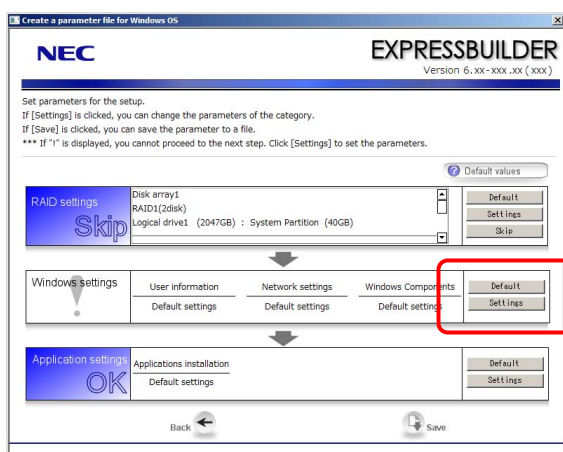
Click [Skip] in RAID settings.

Return to the parameter setup menu.

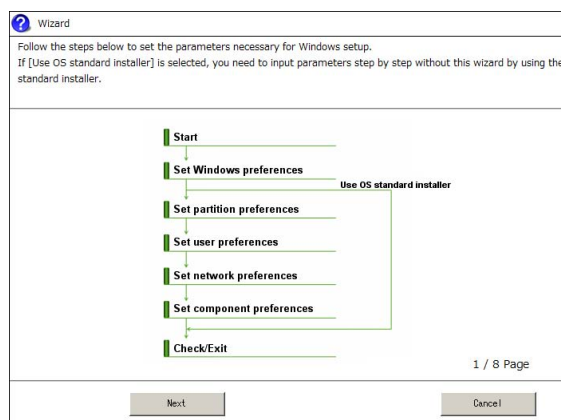
Proceed to Windows setup.

7-2 Windows settings

Set up Windows by using the Windows settings wizard on Parameter Setup Menu.



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



(3) Specify the Windows basic settings.

Change settings for "Edition" and "Time Zone" as needed, and 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 : [StandardFull Installation]

Language : [English]

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

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Next

Cancel

(4) Set up the partitions.

Confirm settings on the dialog shown below, change them 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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Next

Cancel

Express5800/GT-110e, GT-110e-S, R110e-1E Installation Guide (Windows)

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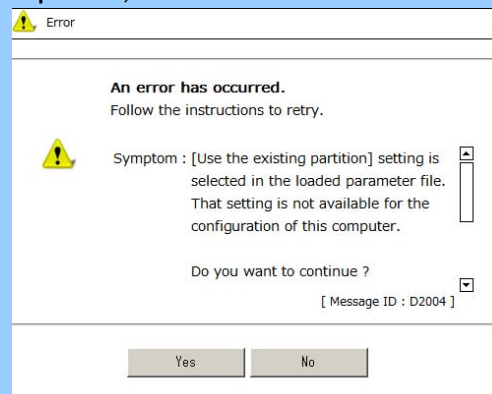
Important

- 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 required for installing the operating system. (Refer to *Chapter 1 (Before Starting Setup)*.)
 - 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 system 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	system 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 (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 user information.

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

Wizard

Set parameters about user information.
Input Computer name within 15 characters.
Administrator password requires more than 6 characters, and must contain characters from three of the following categories(numbers / uppercase / lowercase / signs).

User information

Computer name

: 7-383-635013540 (Required) ☒ Auto

User name

: Administrator (Required)

Administrator password

: (Required)

Confirm Administrator password

: (Required)

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Next

Cancel

Note

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.
- Do not enter the same name for Computer name and User name fields.
- Do not enter "Administrator" nor "Guest" in User name field.
- 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.

Confirm settings on the dialog shown below, change them as needed, and then click [Next].

Wizard

Set parameters about network protocol.
If you input IP address, select [Custom settings], and then click [Advanced].

Network protocols

☒ Standard setting

☐ Custom settings

Standard adapter - Internet Protocol (IPv4)

Advanced

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Next

Cancel

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.
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.
- Confirm settings on the dialog shown below, change them 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.
- Confirm settings on the dialog shown below, change them 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) Confirm settings.

Confirm settings on the dialog shown below, and click [Finish].

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.

7-3 Application settings

Set up applications using the Application settings wizard in Parameter Setup Menu.

Create a parameter file for Windows OS

EXPRESSBUILDER
Version 6.XX-XXX.XX (XXX)

Set parameters for the setup.
If [Settings] is clicked, you can change the parameters of the category.
If [Save] is clicked, you can save the parameter to a file.
*** If "I" is displayed, you cannot proceed to the next step. Click [Settings] to set the parameters.

RAID settings: Disk array1, RAID1(2disk), Logical drive1 (2047GB) : System Partition (40GB)

Windows settings: User information, Network settings, Windows Components, User settings, Default settings, Default settings

Application settings: Applications installation, Default settings

Back Save

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

(2) Confirm settings on the dialog shown below, change settings as needed, and click [Finish].

Wizard

Select applications to install.
For more information on each application, refer to [Description of Application] column.

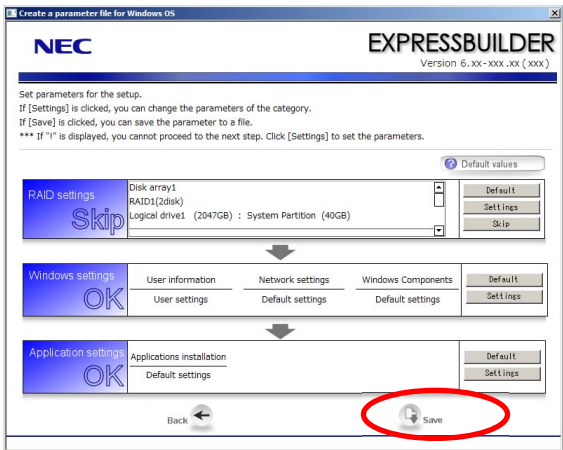
List of applications: Apply drivers for mass storage controller

Selected applications: NEC ESPMRO Agent, Universal RAID Utility, Microsoft Visual C++ 2005 SP1 Redistributable F

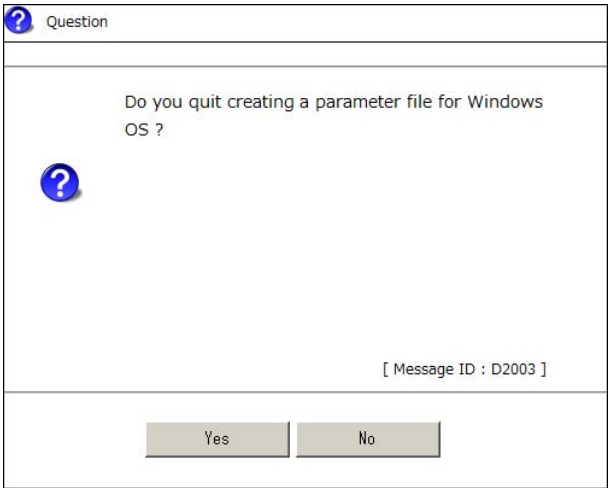
Description of Application

Finish

- 8. Save parameters on Parameter Setup menu.
Click [Save], and save the parameter file onto the removable media according to on-screen instructions.



When the following message appears, click [Yes] to complete parameter file creation.



Parameter file creation is now complete.

NEC Express5800 Series Express5800/GT-110e, GT-110e-S, R110e-1E

2

Installing the Bundled Software

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

1. Bundled software for the server

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

2. Bundled software to be applied to 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.

When installing NEC ESMPRO Agent (for Windows) individually, refer to *NEC ESMPRO Agent Installation Guide (Windows)* in EXPRESSBUILDER.

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)
- N8103-149 RAID Controller (512MB, RAID 0/1)
- N8103-150 RAID Controller (512MB, RAID 0/1/5/6)
- N8103-151 RAID Controller (1GB, RAID 0/1/5/6)
- N8103-160 RAID Controller (1GB, 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 runtime component

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 Redistributable Package (x86)** (**Install the .NET Framework Ver2.0 Redistributable 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 Redistributable 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. 5.5 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 can collect various information related to the server all at once. This utility allows you to collect server information (Product Info) for maintenance.

1.6.1 Installation

You can install this utility by using the following steps.

1. Log on to Windows, and then insert EXPRESSBUILDER into the optical disk drive. The autorun menu appears automatically.
2. From the autorun menu, select **Set up 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, this utility is installed in the `C:\ezclct` folder.)

Tips

- Log on to the system with an account that has administrator privilege.
- The installation drive requires a free space of at least 2.5 GB.

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 can remotely control and monitor the hardware and RAID System of the server. To use these features, install the designated bundle software such as NEC ESMPRO Agent on the server.

For the operating environment, precautions for use, and detailed settings for NEC ESMPRO Manager, refer to "NEC ESMPRO Manager Installation Guide" or online help.