



Microsoft® Windows Server® 2008 Standard/ Microsoft® Windows Server® 2008 Enterprise

Installation Guide

for NEC Express5800/110Ri-1, 120Ei, 120Lj, 120Rh-1, 120Rj-2

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Contents

1. Overview	1
2. Before Your Start.....	2
Prerequisites for Installing Windows Server 2008	2
Downloading a Driver Set.....	2
3. Important Instructions	3
Windows Activation	3
Supported Optional Boards	4
NEC Express5800/110Ri-1	4
NEC Express5800/120Ei.....	4
NEC Express5800/120Lj.....	4
NEC Express5800/120Rh-1	5
NEC Express5800/120Rj-2	5
Updating Your System.....	5
Reinstalling an Operating System in a Dynamic Disk	5
MO Drive	6
Tape Media	6
BIOS Update	6
System Partition Size.....	7
Windows Server 2008 64-bit (x64) Edition.....	7
Windows Server 2008 32-bit (x86) Edition.....	8
Bitlocker	9
NEC ESMPRO	9
4. Installing Windows Server 2008	10
5. Updating the System	20
6. Installing Drivers and Configuring Driver Settings.....	22
LAN Driver and PROSet.....	22
Using N8104-125 Adapter after System Update	22
Optional Network Boards.....	23
To use the N8104-125 Adapter, see" Using N8104-125 Adapter after System Update"	
in the previous page.....	23
Adapter Fault Tolerance (AFT)/ Adaptive Load Balancing (ALB).....	24
<Creating a Team>	24
<Removing a Team>	25
Network Driver.....	26
Changing a link speed	26
SCSI Controller N8103-75/95/107.....	26
Fibre Channel Controller N8190-127/131.....	27
Graphics Accelerator	27

7. Fault Recovery Settings	28
Memory Dump (Debug Information)	28
User Mode Process Dump	34
Network Monitor Setup	34
Network Trace Capture.....	35
8. Activating Windows	36
For a server running a full installation.....	36
For a server running a Server Core installation.....	39
9. Troubleshooting	41
10. Upgrading to Windows Server 2008	44
Overview	44
Before You Upgrade	45
Important Instructions	45
Graphic Accelerator Driver	46
PROSet	46
Upgrading Windows	47
Installing Drivers after Upgrade	52

Introduction

This document provides step-by-step guidance for installing Microsoft® Windows Server® 2008 Standard Edition and Microsoft® Windows Server® 2008 Enterprise Edition ("Windows Server 2008") on the NEC Express5800 110Ri-1, 120Ei, 120Lj, 120Rh-1 and 120Rj-2 servers.

Before your install Windows Server 2008, read this document carefully.

<Windows Server 2008 >

- Microsoft® Windows Server® 2008 Standard 64-bit (x64) Edition
- Microsoft® Windows Server® 2008 Enterprise 64-bit (x64) Edition
- Microsoft® Windows Server® 2008 Standard 32-bit (x86) Edition
- Microsoft® Windows Server® 2008 Enterprise 32-bit (x86) Edition
- Microsoft® Windows Server® 2008 Standard without Hyper-V™ 64-bit (x64) Edition
- Microsoft® Windows Server® 2008 Enterprise without Hyper-V™ 64-bit (x64) Edition
- Microsoft® Windows Server® 2008 Standard without Hyper-V™ 32-bit (x86) Edition
- Microsoft® Windows Server® 2008 Enterprise without Hyper-V™ 32-bit (x86) Edition

IMPORTANT: For the beta version of Windows Server 2008 Hyper-V, no support service is available.

Optical Disk Drives

Throughout this manual, optical disk drives mean:

1. CD-ROM drive
2. CD-R/RW with DVD-ROM drive
3. DVD-ROM drive
4. DVD Super MULTI drive
5. DVD-Combo drive
6. DVD-RAM drive

Text Conventions

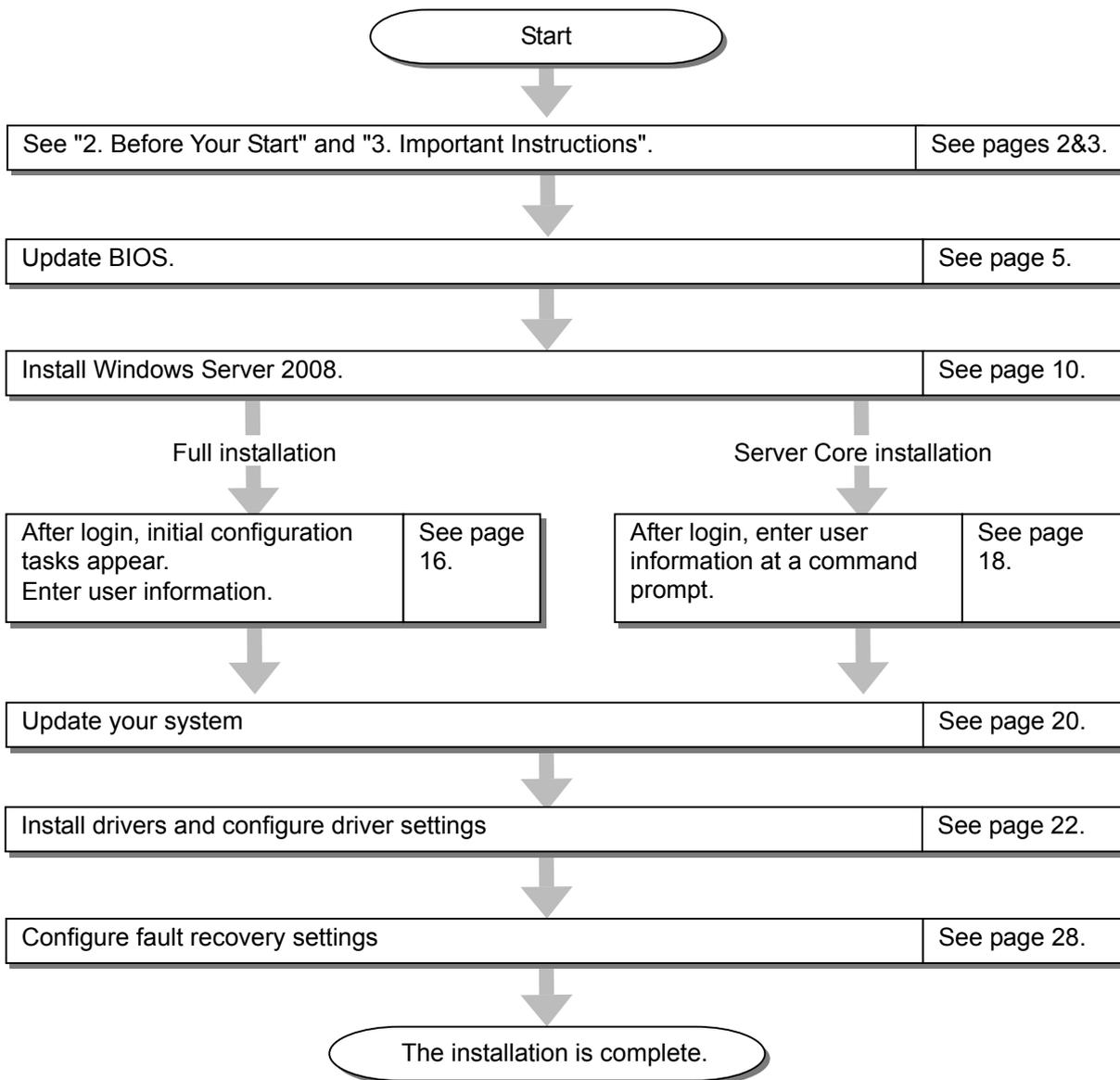
The following conventions are used throughout this manual.

IMPORTANT: Gives important instructions that require your attention

NOTE: Gives helpful information

1. Overview

The Windows Server 2008 installation flow is provided below. Be sure to select "clean installation" when you install Windows Server 2008 on your system.



2. Before Your Start

Prerequisites for Installing Windows Server 2008

To install Windows Server 2008, you need the following:

- The Windows Server 2008 Driver Set ("Driver Set") for the NEC Express5800/110Ri-1, 120Ei, 120Lj, 120Rh-1 and 120Rj-2 [WS2008.10-001.01] *To download, see the section below in this page.
- A removable medium (a CD-R or USB memory stick of 128 MB or larger) to save the Driver Set
- Microsoft® Windows Server® 2008 Standard /Microsoft® Windows Server® 2008 Enterprise Installation Guide for NEC Express5800/110Ri-1, 120Ei, 120Lj, 120Rh-1, 120Rj-2 (This manual)
- The Windows Server 2008 installation media ("Windows Server 2008 DVD-ROM")
- Accessories provided with your NEC Express5800 series server
 - The NEC EXPRESSBUILDER DVD
 - The User's Guide
(Start the NEC EXPRESSBUILDER DVD, and open → **Read Document** on the menu.)

Downloading a Driver Set

Follow the steps below to download the Driver Set appropriate for your system.

1. Download the Driver Set at: [http://www.nec.com/express/..](http://www.nec.com/express/)
2. Unzip the downloaded Driver Set to a temporary folder (e.g. C:\TEMP) in your disk drive.

NOTE: The name of the folder to save the Driver set may include no blank space.

3. Copy the entire winnt folder created in step 2 to your storage media. Copy it to a folder under the root directory.

NOTE: To save the Driver Set, you can use a CD-R, USB memory stick, or USB hard disk drive.

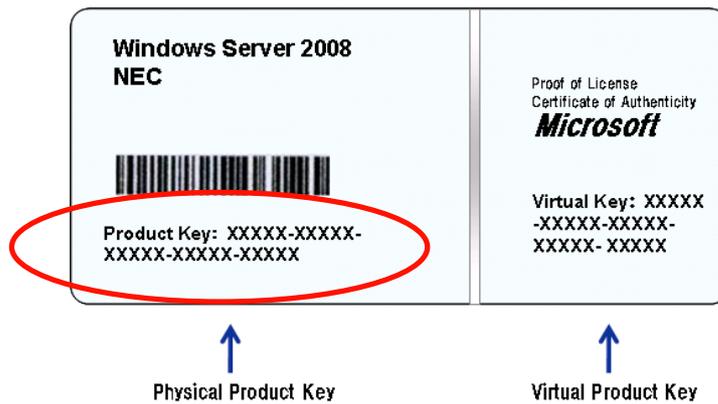
4. After the winnt folder has been copied to your media, delete the temporary folder and all the unzipped files in it.

3. Important Instructions

Before you install Windows Server 2008, read this chapter carefully.

Windows Activation

To activate Windows Server 2008, enter the product key on your Certificate of Authenticity (COA) label.



For more details, see "Activating Windows" (page 34).

IMPORTANT:

- Activate Windows Server 2008 within 30 days after installation, or the system may be locked after the initial 30 days.
 - Use the Virtual Product Key to activate the instance of Windows Server 2008 in a virtual operating system environment. You cannot use it to install Windows Server 2008 on a physical server.
-

Supported Optional Boards

The Driver Set contains the drivers for the following optional boards:

NEC Express5800/110Ri-1

- N8103-116 RAID controller (128 MB, RAID 0/1)
- N8103-117 RAID controller (128 MB, RAID 0/1/5/6)
- N8103-118 RAID controller (256 MB, RAID 0/1/5/6)
- N8103-75 SCSI controller
- N8103-95 SCSI controller
- N8103-107 SCSI controller
- N8190-127 Fibre Channel controller
- N8190-131 Fibre Channel controller (2ch)

NEC Express5800/120Ei

- N8103-116 RAID controller (128 MB, RAID 0/1) and equivalent
- N8103-117 RAID controller (128 MB, RAID 0/1/5/6)
- N8103-118 RAID controller (256 MB, RAID 0/1/5/6)
- N8103-75 SCSI controller
- N8103-95 SCSI controller
- N8103-107 SCSI controller

NEC Express5800/120Lj

- Equivalent of Internal RAID Controller N8103-116
- N8103-117 RAID controller (128 MB, RAID 0/1/5/6)
- N8103-118 RAID controller (256 MB, RAID 0/1/5/6)
- N8103-75 SCSI controller
- N8103-95 SCSI controller
- N8103-107 SCSI controller
- N8190-127 Fibre Channel controller
- N8190-131 Fibre Channel controller (2ch)

NEC Express5800/120Rh-1

- N8103-116 RAID controller (128 MB, RAID 0/1) or equivalent
- N8103-117 RAID controller (128 MB, RAID 0/1/5/6)
- N8103-118 RAID controller (256 MB, RAID 0/1/5/6)
- N8103-75 SCSI controller
- N8103-95 SCSI controller
- N8103-107 SCSI controller
- N8190-127 Fibre Channel controller
- N8190-131 Fibre Channel controller (2ch)

NEC Express5800/120Rj-2

- Equivalent of Internal RAID Controller N8103-116
- N8103-118 RAID controller (256 MB, RAID 0/1/5/6)
- N8103-75 SCSI controller
- N8103-95 SCSI controller
- N8103-107 SCSI controller
- N8190-127 Fibre Channel controller
- N8190-131 Fibre Channel controller (2ch)

Updating Your System

After Windows Server 2008 has been installed, you need to update your system using the Driver Set. To update your system, see "Updating Your System" later in this guide.

Reinstalling an Operating System in a Dynamic Disk

The basic disk upgraded to a dynamic disk contains a partition or partitions other than the partition where you reinstall the operating system. To reinstall the operating system in the dynamic disk without removing the old partition(s):

- Choose the partition where an old operating system was located.
- To format the partition, choose **Use the current File System**.

MO Drive

If you try to set the current file system to NTFS on your system with MO drives connected, you may fail to format the file system.

To format correctly, disconnect the MO drives from your system and repeat the installation procedure.

Tape Media

Remove all tapes from the tape drives before you install.

BIOS Update

To install Windows Server 2008, you may need to update your BIOS.

To check if your system needs the BIOS update, go to: <http://www.nec.com/express/>.

For the update procedure, see Readme.txt that is also available on the above website.

System Partition Size

Use the following formula to gain a total partition size required for Windows Server 2008:

Windows Server 2008 64-bit (x64) Edition

Required partition size = size required to install OS + paging file size + dump file size + application size

Size required to install OS	= 11,600MB (Full Installation)
	or
	= 4,100MB (Server Core Installation)
Paging file size (recommended)	= Installed memory size x 1.5
Dump file size	= Installed memory size + 300MB
Application size	= Required size

IMPORTANT:

- The above paging file size is recommended for collecting debug information (memory dump). The initial paging file size must be large enough to save dump files in the boot volume, or the lack of virtual memory may result in a failure to collect debug information. Ensure that your system has a sufficient paging file size.
 - Regardless of memory size and type of memory dump, the maximum dump file size is the "Installed memory size + 300 MB".
 - To install additional applications, add a disk volume for the applications.
-

Example:

A partition size required for a system with an installed memory size of 512 MB and a full installation of the operating system:

$$11,600\text{MB} + (512\text{MB} \times 1.5) + (512\text{MB} + 300\text{MB}) + \text{application size} \\ = 13,180\text{MB} + \text{application size.}$$

If the provided partition size is smaller than the sum of size required to install OS and paging file size, expand the partition size or provide a larger disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the steps below:

1. Set the system partition size to the sum of the necessary size to install OS and paging file size.
2. See "7. Settings for Fault Recovery" to write the debug information of the dump file into another disk.

If there is no enough disk space to write the debug information, add another disk for Dump file.

Windows Server 2008 32-bit (x86) Edition

Required partition size = size required to install OS + paging file size + dump file size + application size

Size required to install OS	= 6,300MB (Full Installation)
	or
	= 2,200MB (Server Core Installation)
Paging file size (recommended)	= Installed memory size x 1.5
Dump file size	= Installed memory size + 300MB
Application size	= Required size

IMPORTANT:

- The above paging file size is recommended for collecting debug information (memory dump). The initial paging file size must be large enough to save dump files in the boot volume, or the lack of virtual memory may result in a failure to collect debug information. Ensure that your system has a sufficient paging file size.
 - The maximum paging file size allowed per partition is 4095 MB. If the value of the installed memory size x 1.5 exceeds 4095 MB, set the paging file size to 4095 MB.
 - When the installed memory size exceeds 2GB, the maximum dump file size 2048MB + 300MB.
 - To install additional applications, add a disk volume for the applications.
-

Example:

A partition size required for a system with an installed memory size of 512 MB and a full installation of the operating system:

$$6,300\text{MB} + (512\text{MB} \times 1.5) + 512\text{MB} + 300\text{MB} + \text{application size} \\ = 7,880\text{MB} + \text{application size}.$$

If the partition where the operating system is installed is smaller than the sum of necessary size to install OS and paging file size", expand the partition size or provide a larger disk. If your system does not have a sufficient dump file size, divide the required file space into multiple disks by performing the steps below:

1. Set the partition size to the sum of size required to install OS and paging file size".
2. See "7. Settings for Fault Recovery" to write the debug information of the dump file into another disk.

If there is no enough disk space to write the debug information, add another disk for Dump file.

Bitlocker

If you use Bitlocker, note the following:

- Before you install Windows Server 2008, create the two partitions:
 - System partition for a loader
 - Boot partition for the operating system
- Be sure to keep the recovery password secure. Do not keep it around a server running Bitlocker.

IMPORTANT: Without the recovery password, you cannot start the operating system and see the partition content encrypted by Bitlocker.

The recovery password may be needed when you start the operating system after performing the following:

- Replace the motherboard
 - Initialize the TPM
 - Change the BIOS setting
-

- Windows Server 2008 is not installed in the partition encrypted by Bitlocker.

NEC ESMPRO

When Windows Server 2003 is upgraded to Windows Server 2008, the WDT (watch dog timer) and shutdown monitor settings will be changed back to the default. See the current settings in the NEC ESMPRO Agent control panel and change the settings, if necessary.

To use NEC ESMPRO Agent on a server running Windows Server 2008, see the NEC ESMPRO support information.

4. Installing Windows Server 2008

This chapter provides the steps to install Windows Server 2008.

1. Turn on your system.

IMPORTANT: To install Windows Server 2008, you may need to update BIOS. To check if your system needs the BIOS update, go to: <http://www.nec.com/express/>.

2. Insert the Windows Server 2008 DVD-ROM into your DVD-ROM drive.
3. Restart the system.

To restart the system, press **Ctrl + Alt + Del** or turn off the system once, and then turn it on again.

IMPORTANT: When prompted to **press any key to boot from CD or DVD**, press **Enter** while the message is displayed. If the Windows installation screen (shown in step 4) does not appear, turn off the system, and then turn it on again.

The DVD-ROM starts.

4. Select a language and other options from the drop-down lists, and then click **Next**.

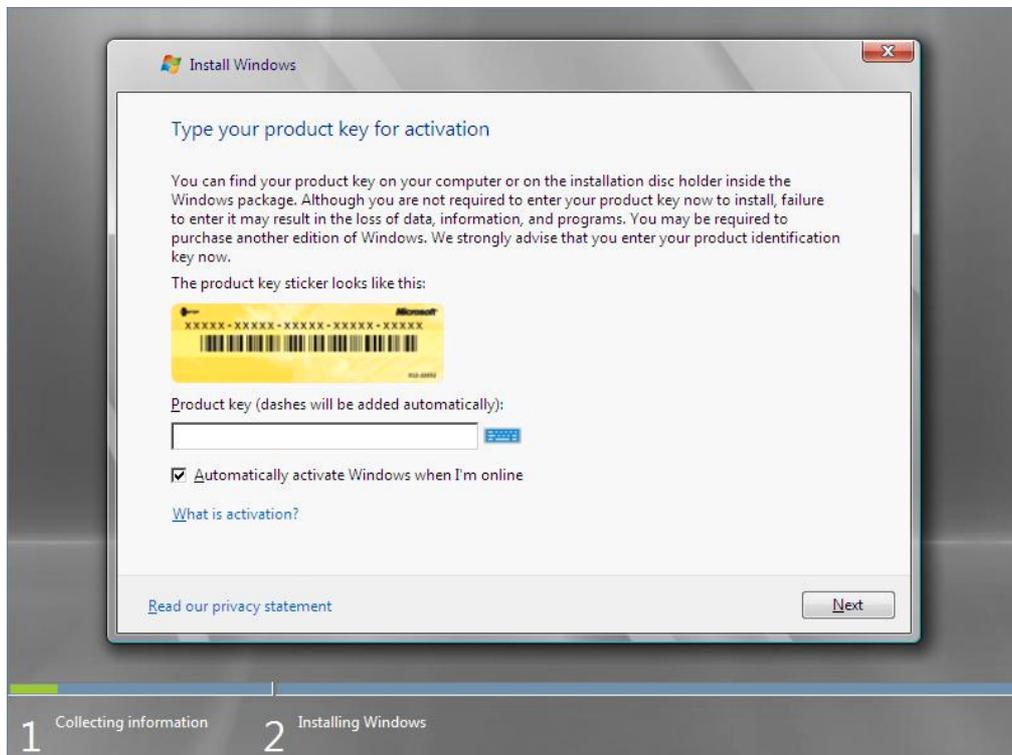


5. Click the **Install now** button. 

The installation starts.



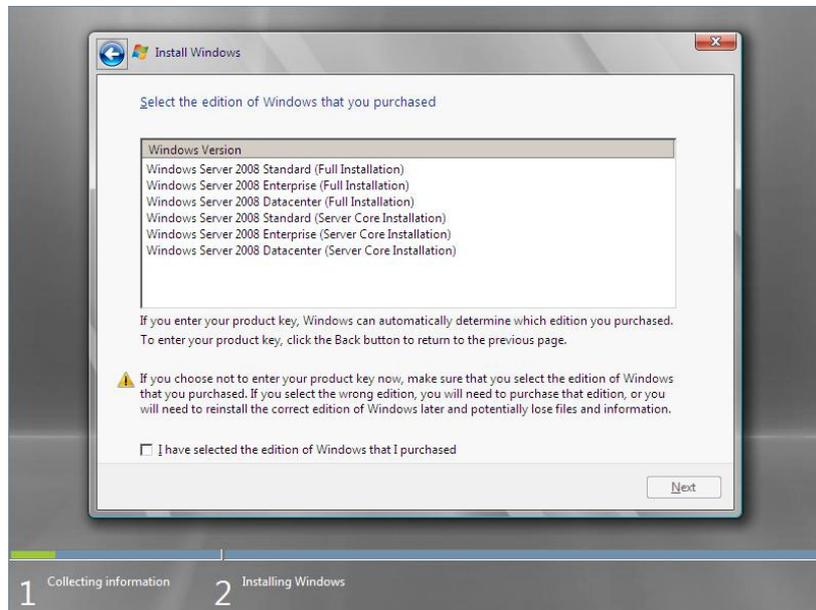
6. Enter your product key, and then click **Next**.



7. Select the edition of the Windows operating system that you purchased.

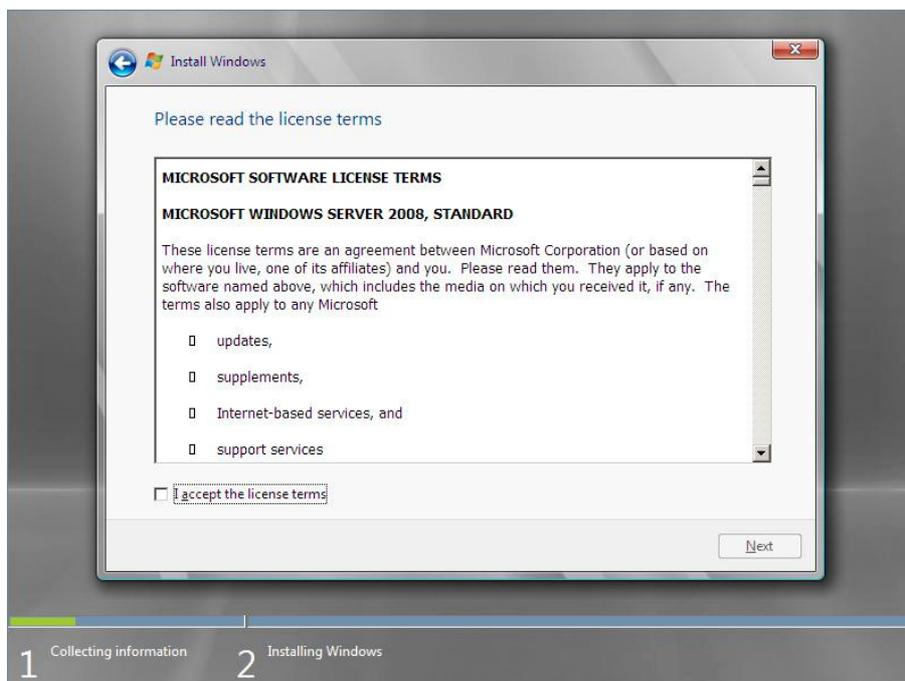
Select **I have selected the edition of Windows that I purchased**, and then click **Next**.

You will see only possible editions that have been determined by Windows based on the key you entered in step 6.



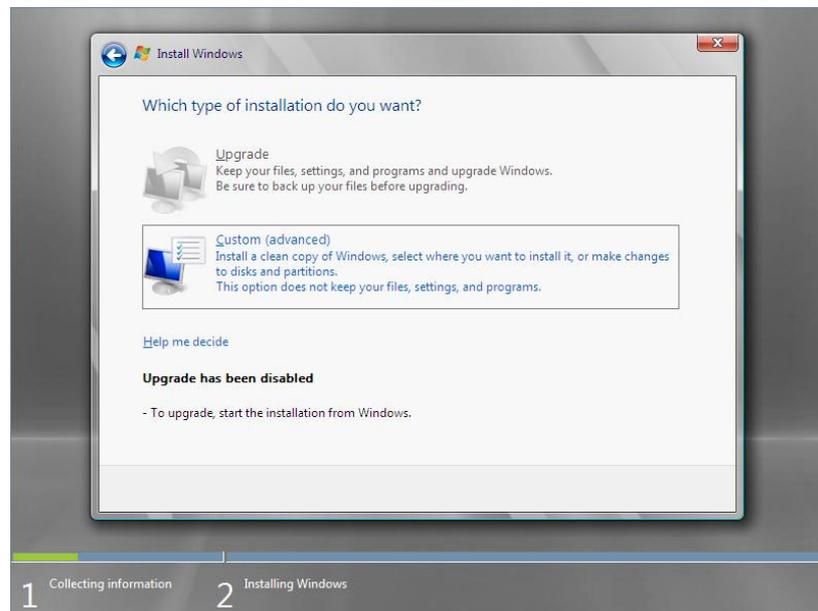
NOTE: The Windows versions listed on the screen vary depending on the Windows Server 2008 DVD-ROM you are using.

8. Read the license terms carefully. If you agree, select **I accept the license terms**, and then click **Next**.



9. Select the type of installation you want.

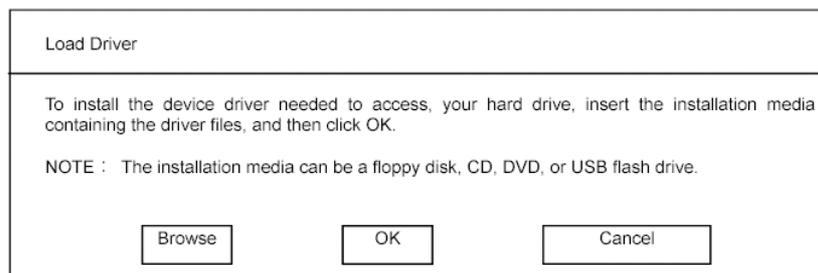
Custom (advanced) is selected below.



10. You will be asked, "**Where do you want to install Windows?**" If you are using any of the following devices, go to step 11. If not, go to step 12.

- Equivalent of N8103-116 Internal RAID Controller
- N8103-116
- N8103-117
- N8103-118

11. Select **Load Driver**, and then click **Browse**.



The folder reference dialog box appears. Select a path to the folder in your removable media (CD-R and USB memory stick) containing the Driver Set, and then click **OK**.

- Windows Server 2008 x64 Editions: \winnt\oemfd\ws2008x64\fd1
- Windows Server 2008 : \winnt\oemfd\ws2008\fd1

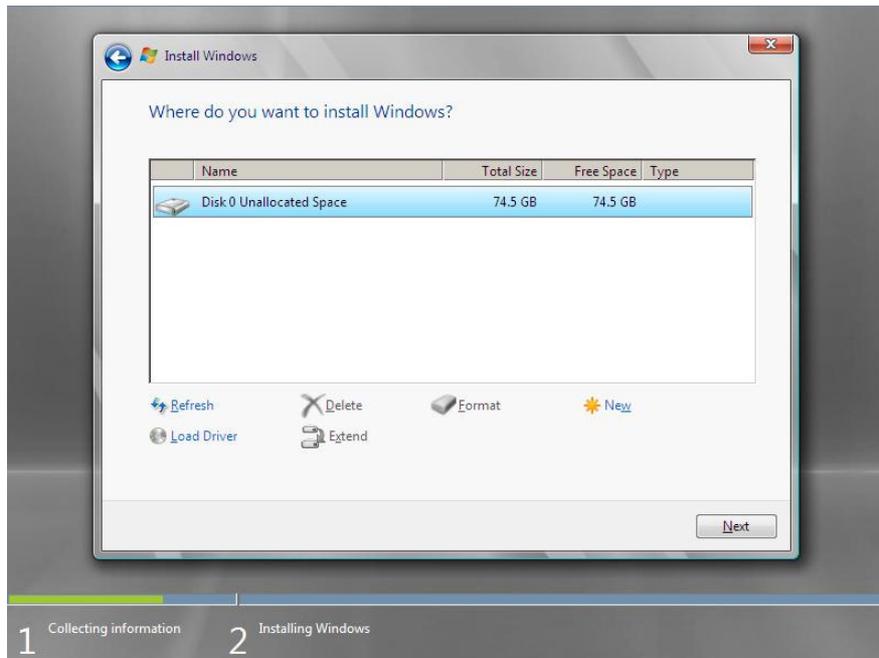
After you select the path, a list of drivers is displayed. Select the following driver, and then click **OK**.

LSI Logic MegaRAID SAS 8708EM2 RAID Controller

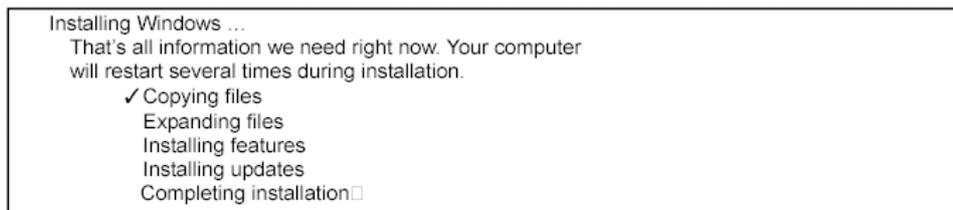
12. Select the disk where a partition will be created, and then click **Drive Option**.

IMPORTANT: If the partition has already been created, go to step 15.

13. Click **New**, enter a partition size, and then click **Apply**.
14. Select the partition created in step 13, and then click **Format**.
15. Select the partition created, and then click **Next**.



When the following message appears, the installation starts automatically.



16. Log on to the system. The steps vary depending on the edition you selected in step 7.

If you have selected a full installation

1. After a full installation of Windows Server 2008 is completed, the following dialog box will prompt you to set or change the password before you log on. Click **OK**.



2. Change the password, and then the **Next** button. 

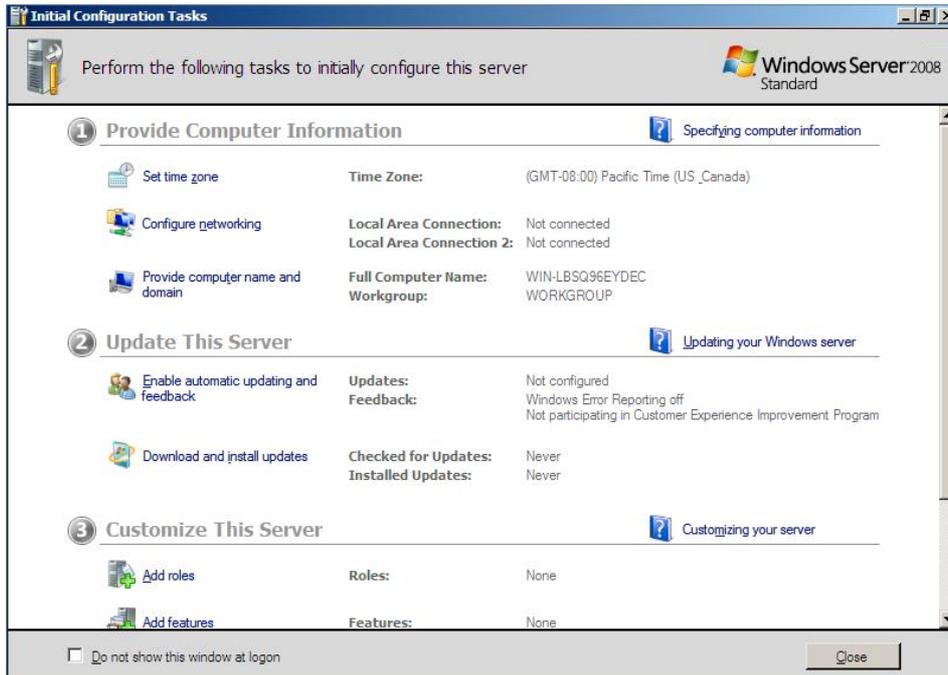


NOTE: The Windows Server 2008 password must combine uppercase, lowercase, and numbers.

3. When the following message appears, click **OK** to log on.



4. In the **Initial Configuration Tasks** window, enter user information.



If you have selected a Server Core installation

1. After a Server Core installation of Windows Server 2008 is completed, press **Ctrl + Alt + Del**.



2. Select **Other User**.



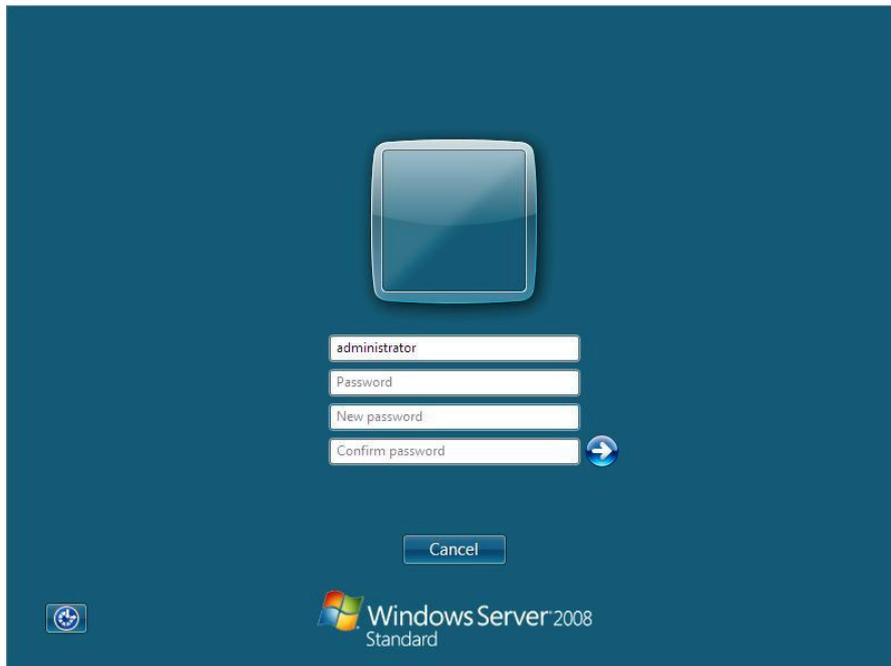
3. Log on to the system as an administrator.



4. Before you log on, you will be prompted to change the password. Click **OK**.



5. Change the password, and then click the **Next** button. 

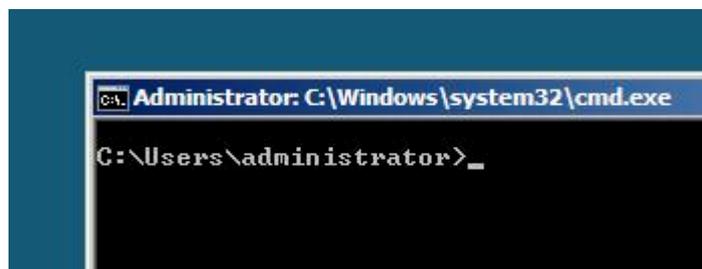


NOTE: The Windows Server 2008 password must combine uppercase, lowercase, and numbers.

6. When the following message appears, click **OK**.



7. At a command prompt, enter user information.



NOTE: For more detailed procedure, see the "Microsoft Windows Server 2008 Step-By-Step Guide".

- 17.** See Chapter 5, "Updating Your System".
- 18.** See Chapter 6, "Installing Drivers and Configuring Drivers Settings".
- 19.** See Chapter 7, "Configuring Fault Recovery Settings".

The installation is completed.

5. Updating the System

After installing Windows Server 2008, you must update your system by following the steps in this chapter.

If you have not yet downloaded the Driver Set, see *Downloading a Driver Set* in Chapter 2, "Before You Start". (page 2).

IMPORTANT: You should update your system if you have:

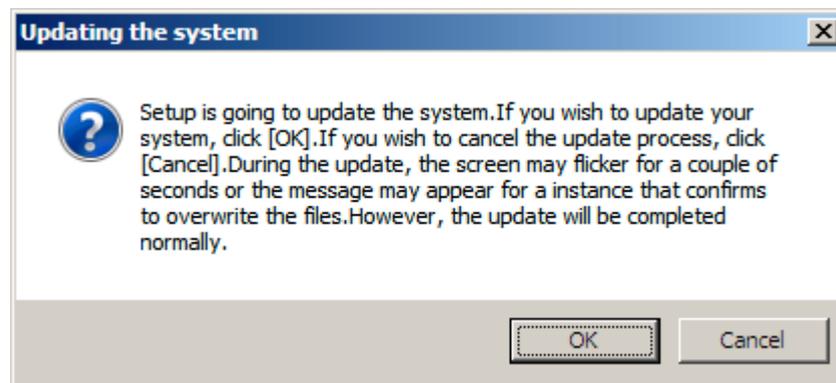
- Changed the system configuration
(Added or removed optional built-in devices: If you are prompted to restart the system after the system configuration has been changed, click **No**, and update the system.)
 - Recovered the system by using a recovery process
 - Restored the system by using a backup tool
-

1. Log on to the system using an administrator account.

Insert your removable media containing the Driver Set into your drive.

2. Run `\winnt\bin\oschk\oschk.bat`.

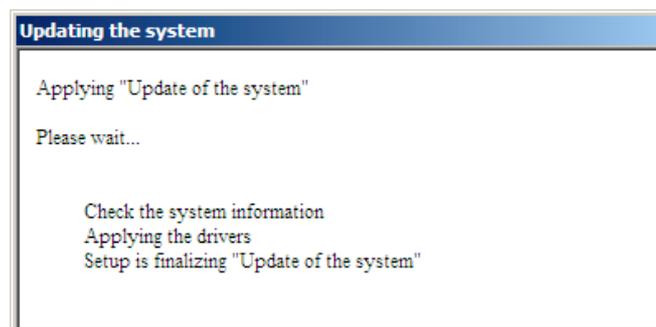
The following box appears.



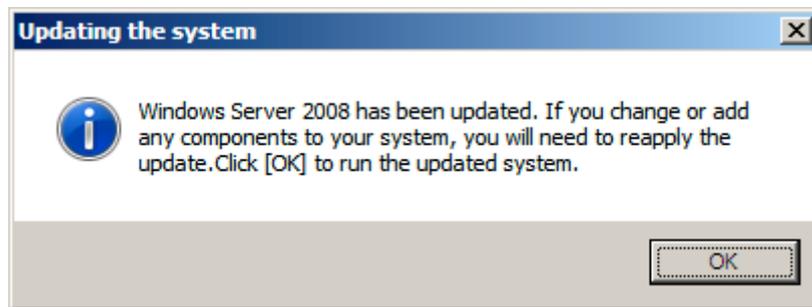
3. Read the message, and then click **OK**

The update starts.

NOTE: The following box appears during the update if you have deployed a full installation of Windows Server 2008. Wait until the update completes.



4. When the following message appears, click **OK** to restart the system.



The system has been updated.

6. Installing Drivers and Configuring Driver Settings

This chapter provides the procedures for installing the drivers for the optional boards supported by the NEC Express5800 servers.

For other options that are not described in this chapter, see the User's Guide attached to these drivers.

LAN Driver and PROSet

The LAN driver and PROSet have been installed automatically while your system was being updated in the previous section.

NOTE: To change the LAN driver and PROSet settings, log on to the system from a local console using an administrator account. Remotely changing the settings by using the operating system's remote desktop feature is not supported.

Using N8104-125 Adapter after System Update

To use the N8104-125 Adapter after updating your system, you must first uninstall the LAN driver and PROSet, and then update your system with the N8104-125 Adapter connected.

For a server running a full installation

1. Remove a team of network adapters.

Before you remove, note down the current settings (e.g. IP addresses) of the standard and optional adapters teamed for network redundancy. Configure the settings after reinstalling the LAN driver and PROSet.

To remove the team, see "Adapter Fault Tolerance (AFT)/Adaptive Load Balancing (ALB)" in page 23.

2. In **Control Panel**, click **Uninstall Program**.
3. Double-click **Intel(R) Network Connections 12.4.38.0**.
Intel(R) Network Connections (Remove Options) appears.
4. In **Remove Options**, click **Remove**.
Intel(R) Network Connections - Remove Software appears.
5. Select **Yes**.
The uninstallation starts automatically.
6. When **InstallShield Wizard Completed** appears. Click **Finish**.
Restart the system.

For a server running a Server Core installation

1. Note down the current settings (e.g. IP addresses) of the standard and optional adapters teamed for network redundancy before uninstalling LAN driver. Configure the settings after reinstalling the LAN driver.
2. At a command prompt, run DxSetup.EXE in your removable medium containing the Driver Set.
 - Windows Server 2008 64-bit (x64) Editions:
`\winnt\ws2008x64\dl5\APPS\PROSETDX\Vistax64\DxSetup.EXE`
 - Windows Server 2008 32-bit (x86) Editions:
`\winnt\ws2008\dl5\APPS\PROSETDX\Vista32\DxSetup.EXE`
3. In **Intel(R) Network Connections - InstallShield Wizard**, click **Next**.
4. Select **Remove**, and click **Next**.
5. Click **Remove**.
Uninstallation starts automatically.
6. When **InstallShield Wizard Completed** appears, click **Finish**.
Restart the system.

Optional Network Boards

The following optional network boards are available for the NEC Express5800/110Ri-1, 120Ei, 120Lj, 120Rh-1, and 120Rj-2.

To use the N8104-125 Adapter, see "Using N8104-125 Adapter after System Update" in the previous page.

The drivers for other network boards are automatically installed by Windows Plug-and-Play. You do not need to install them manually.

- For NEC Express5800/110Ri-1:
[N8104-109/115/122/125]
- For NEC Express5800/120Lj, 120Ei:
[N8104-112/119/120/121/125]
- For NEC Express5800/120Rh-1, 120Rj-2:
[N8104-119/120/121/122/125]

Adapter Fault Tolerance (AFT)/ Adaptive Load Balancing (ALB)

Adapter Fault Tolerance (AFT) provides network adapter redundancy by creating a team of adapters. If any adapter fails, another in the team automatically takes over.

Adaptive Load Balancing (ALB) improves the overall network throughput by equally balancing data traffic among a team of adapters.

You can configure AFT and ALB using the standard and optional network adapters.

<Creating a Team>

1. Open **Control Panel**. Under **System and Maintenance**, click **Open Device Manager** to start **Device Manager**.
2. Open **Network adapters**, and then double-click **Intel(R)~**.
3. Select the **Teaming** tab, select **Team with other adapters**, and then click **New Team...**
4. Type a team name, and click **Next**.
5. Confirm the adapters to include in the team, and then click **Next**.
6. Select **Adapter Fault Tolerance** or **Adaptive Load Balancing** as a team mode, and then click **Next**.
7. Click **Finish**.
8. In **Device Manager**, double-click a teamed adapter to see its property. Select the **Settings** tab, and then click **Modify Team...**
9. To set an adapter to primary, select the adapter, and then click **Set Primary**.

To set an adapter to secondary, select the adapter, and then click **Set Secondary**.

After both the primary and the secondary adapters are selected, click **OK** to close the screen.

To confirm the team settings:

Open the team property, and select the **Settings** tab. The setting for each adapter is shown in **Adapters in team**.

10. In the **Settings** tab, click **Test Switch...** When the switch test screen appears, click **Run Test**.

When **No problems ~** appears, the test is completed.

Restart the system.

<Removing a Team>

1. Open **Control Panel**. Under **System and Maintenance**, click **Open Device Manager** to start **Device Manager**.
2. Open **Network adapters**, and then double-click a teamed adapter.
3. Select the **Settings** tab, and then click **Remove Team**.
4. When the **Team Settings** pop-up box appears, click **Yes**.
5. Under **Device Manager**, go to **Network adapters**. Make sure that no adapter is teamed.

Restart the system.

IMPORTANT:

- Adapter Fault Tolerance (AFT) and Adaptive Load Balancing (ALB) are not available when ServerCore is in use.
 - Be sure to configure AFT and ALB after you boot the system following the driver installation.
 - To use AFT, it is recommended that the network adapters be connected to the same L2 switching hub. You may use different switching hubs, but cascade them over the same network.
 - To configure ALB, connect the network adapters only to the L2 switching hub.
 - To replace a motherboard or an optional network card, you must first remove the team and create it again after the replacement.
-

Network Driver

Changing a link speed

Follow the steps below to set a link speed and duplex mode. To set an IP address, make sure that the Internet Protocol Version (TCP/IP) box is checked.

1. Open **Control Panel**. Under **System and Maintenance**, click **Open Device Manager** to start **Device Manager**.
2. Open **Network adapters**, and then double-click **Intel(R)~**.
3. Click **Link Speed**, and then set the same values for **Speed and Duplex** as those for the switching hubs.
4. In the **Property** dialog box, click **OK**.

IMPORTANT: To use Onboard LAN: Intel(R) PRO/1000 PL Network Connection on the NEC Express5800/110Ri-1, follow the steps below:

1. Open **Control Panel**, and click **Open Device Manager** under **System and Maintenance** to start **Device Manager**.
 2. Open **Network adapters**, and open the property of **Intel(R) PRO/1000 PL Network Connection**.
 3. Select **Advanced**, change **Receive Side Scaling** to "**Disabled**", and click **OK**.
 4. Restart the system.
-

SCSI Controller N8103-75/95/107

If you use the SCSI Controller N8103-75/-95/-107, you do not need to install the driver manually. It is automatically installed by Windows Plug-and-Play.

Fibre Channel Controller N8190-127/131

If you use the Fibre Channel Controller N8190-127/-131, you do not need to install the driver manually. It is automatically installed by Windows Plug-and-Play.

Graphics Accelerator

The driver for the standard graphics accelerator has been installed automatically while your system was being updated from the Driver Set.

NOTE: The graphics accelerator driver is supported only on a server running a full installation. Use VGA on a server running a Server Core installation.

To reinstall the driver alone, perform the steps below:

1. Go to **Start**, select **Programs**, select **Accessories**, and click **Windows Explorer**.
Insert your removable media into your drive.
2. Double-click the **SETUP.EXE** icon in the `\winnt\ws2008\video` directory.
* For the Windows Server 2008 64-bit (x64) Edition, double-click the **SETUP.EXE** icon in the `\winnt\ws2008x64\video` directory.
3. Follow the messages to proceed with the reinstallation.
If the message "**Digital Signature could not be found**". appears, click **OK** to continue the installation.
4. The installation is completed.
Restart the system.

7. Fault Recovery Settings

This chapter provides the procedures for configuring fault recovery settings.

Memory Dump (Debug Information)

Follow the steps below to configure the memory dump setting.

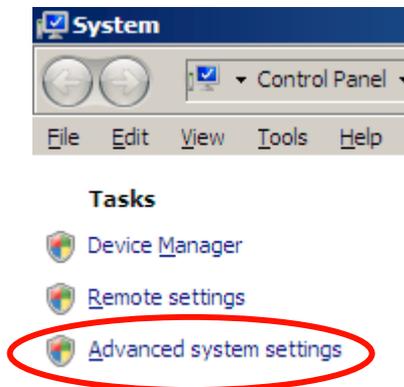
IMPORTANT: Memory dump

- Only technically qualified personnel should capture memory dump files. Customers can only configure the memory dump setting.
 - If you try to restart the system to save memory dump files in the event of failure after the procedure in this section has been performed, the message indicating the lack of virtual memory may be displayed. You may ignore this message and proceed to restart the system or, you may fail to save memory dump file
-

1. Go to **Start**, select **Control Panel**, and click **System**.

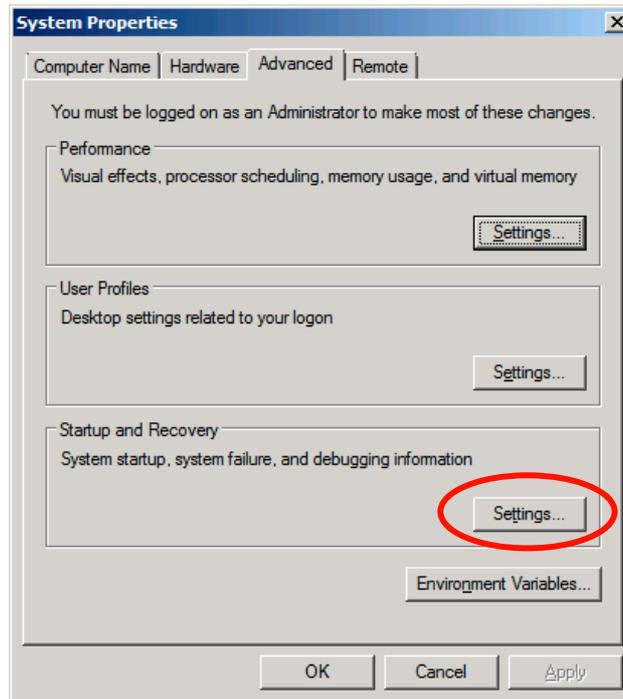
The **System** dialog box appears.

2. Click **Advanced system Settings**.



The **System Properties** dialog box appears.

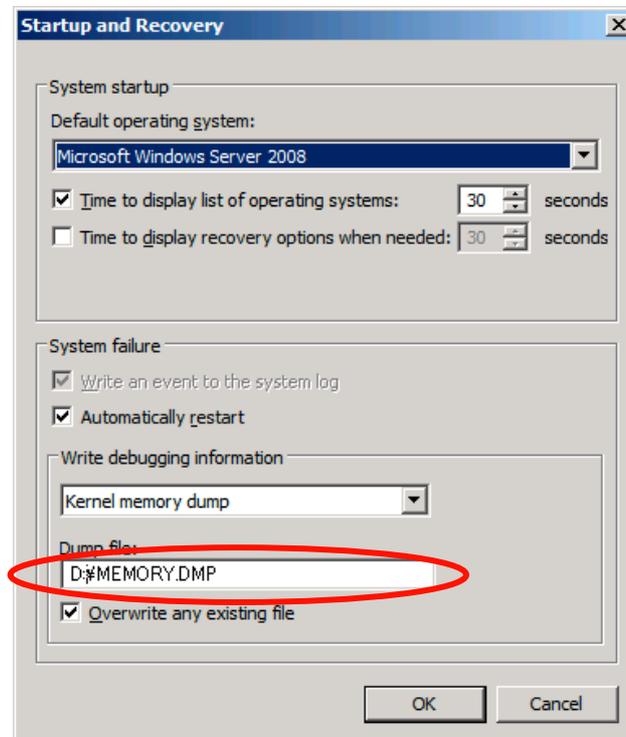
3. In **Startup and Recovery**, click **Settings....**



4. In the "**Dump file**" box, enter the location to save debug information.

Example: If you name the debug information MEMORY.DMP and save it in the D drive:

D: \MEMORY.DMP

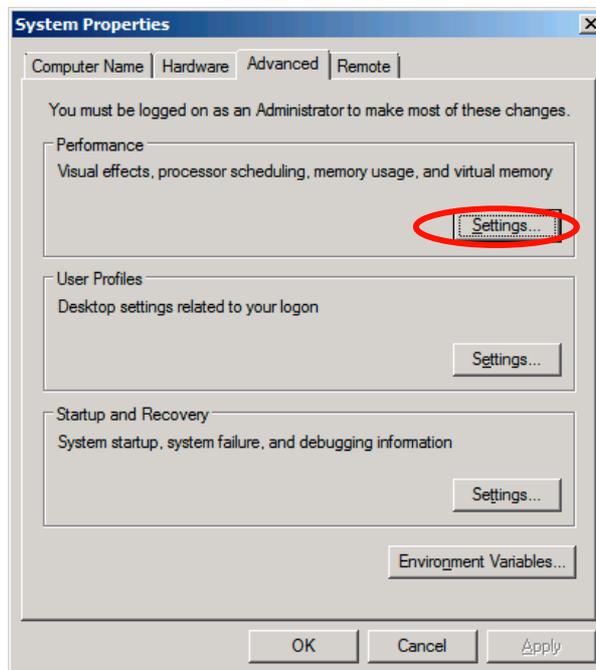


IMPORTANT:

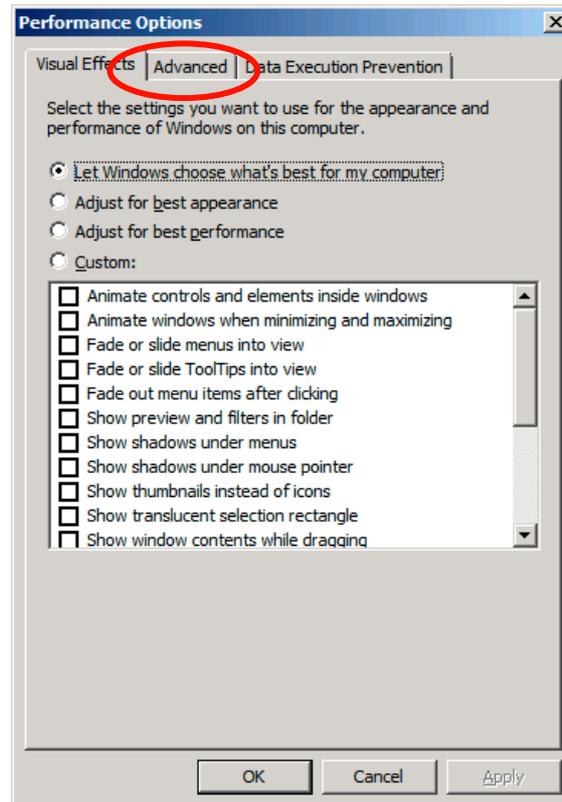
- It is recommended that you select **Complete Memory Dump** in the **Write debugging information** box. When the installed memory exceeds 2GB, **Complete Memory Dump** is not displayed in the box. In this case, select **Kernel Memory Dump**.
- Select a drive with a size of the installed memory + 300 MB.
- When the installed memory exceeds 2GB as a result of adding memory, change **Write debugging information** to **Kernel Memory Dump** before you add memory. After you add memory, the memory dump size may change. Make sure that the drive to save the memory dump still has enough space.

5. In the **Performance** box, click **Settings...**

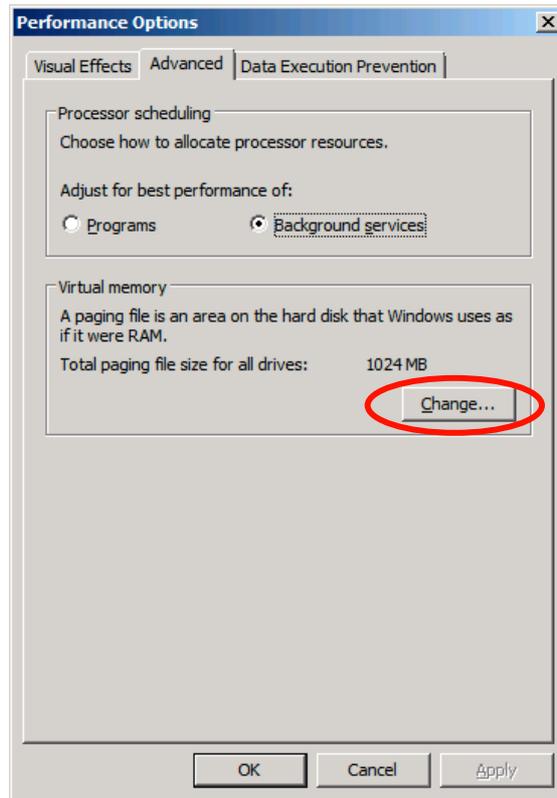
The **Performance Options** window appears.



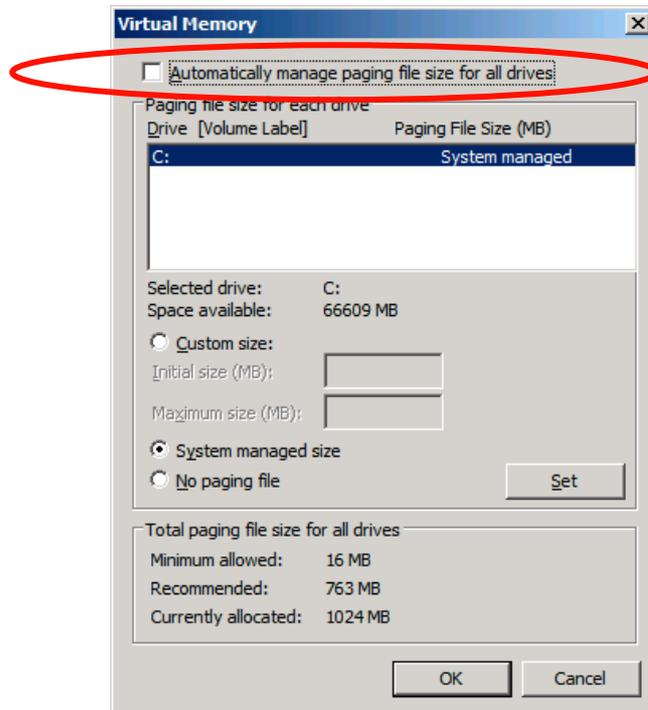
6. In the **Performance Options** window, select **Advanced**.



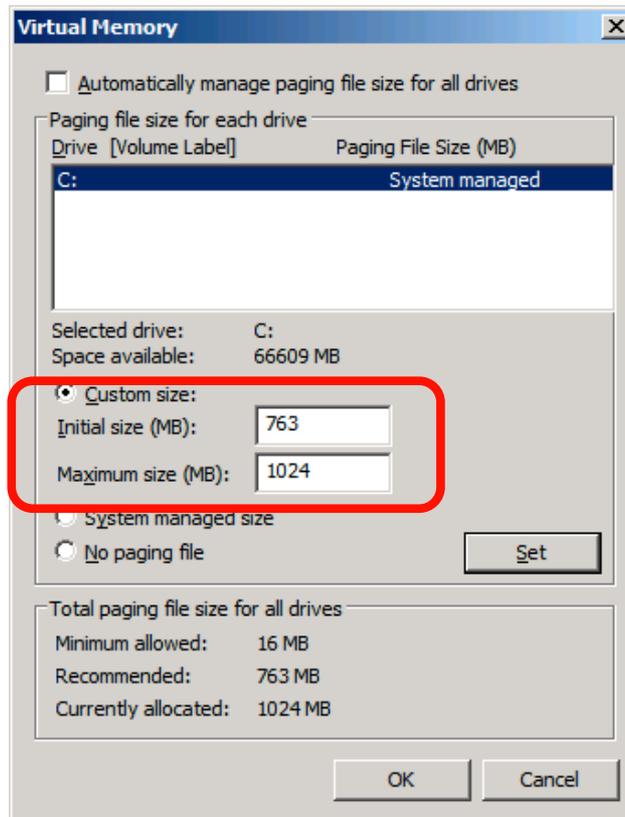
7. In the **Virtual memory** box, click **Change...**



8. Uncheck the **Automatically manage paging file size for all drives** box, and check **Custom size**.



9. In the **Paging file size for each drive** box, change **Initial size** to the **Recommended size** shown in the **Total paging file size for all drives** box, and click **OK**.



IMPORTANT:

- The above paging file size is recommended for collecting debug information (memory dump). The boot volume requires the initial paging file size that is large enough to save dump files, or the lack of virtual memory may result in a failure to collect debug information. Ensure that your system has a sufficient paging file size.
 - For the **Recommended** file size, see "**System Partition Size**" in "3. Important Instructions".
 - If you add memory, change the installed memory size in the paging file setting.
-

10. Click **OK**.

When prompted, restart the system.

User Mode Process Dump

The user mode process dump provides application error information.

In the event of an application error, perform the steps below to obtain the user mode process dump without closing the pop-up error message.

1. Right-click an empty space on the taskbar, and click **Task Manager** or press **Ctrl + Shift + Esc** to start **Task Manager**.
2. Select **Processes**.
3. Right-click the name of the process whose dump is to be acquired, and click **Create Dump File**.
4. The user mode process dump will be created in the following folder:

C:\Users*(user-name)*\AppData\Local\Temp

For more details about obtaining the user mode process dump from the above folder, go to:

<http://support.microsoft.com/kb/949180/en-us>

NOTE: On Windows Server 2008, Dr. Watson has been changed to "Reports and Solutions of Problems", and thus crash dump files are no longer generated by Dr. Watson. To obtain similar information, perform the steps above.

Network Monitor Setup

Microsoft Network Monitor allows you to examine and troubleshoot network failures.

NOTE: Windows Server 2008 does not provide Network Monitor. To use Network Monitor on Windows Server 2008, install Network Monitor by following the steps below.

1. Download Microsoft Network Monitor at: <http://support.microsoft.com/kb/933741/en-us>
2. Run the downloaded file to start the installer.

Follow the instructions on the screen to install Network Monitor.

NOTE: If a Security Alert appears, click **Run**. Select **Complete** as a setup format.

3. Network Monitor has been installed.

NOTE: To remove Network Monitor, go to **Programs and Features**.

Network Trace Capture

1. In the **Start** menu, start **Microsoft Network Monitor**.
2. In **Start Page**, select **Create a new capture tab...** or select **New** in the **File** menu, and click **Capture...**

A new tab for capturing a network trace is created.

3. In the **Select Networks** window, select a network whose trace is captured.
4. In the **Capture** menu, click **Start** to start capturing a network trace.
5. In the **Capture** menu, click **Stop** to stop capturing a network trace.
6. In the **File** menu, select **Save As...**

The **Save As** window appears. Select **All captured frames** from **Frame selection**, and enter the names of a folder and a file.

NOTE: The default folder name is:
C:\Users\<<User name>\Documents\Network Monitor 3\Captures

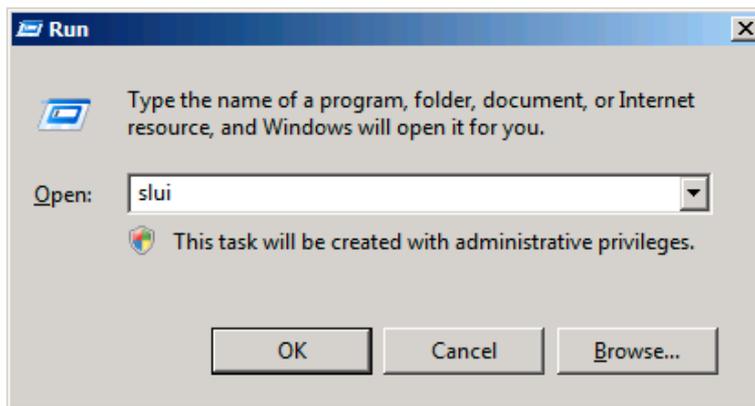
7. Click **Save** to create the file in the folder selected in step 6.

8. Activating Windows

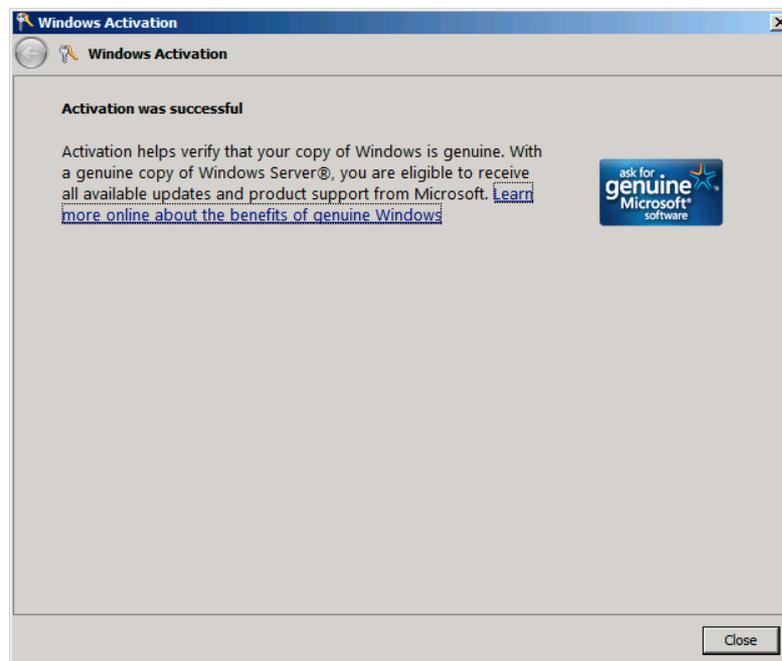
To continue using the Windows features, you must activate Windows on your system. Make sure that you have already activated Windows. If not, follow the procedure below to activate.

For a server running a full installation

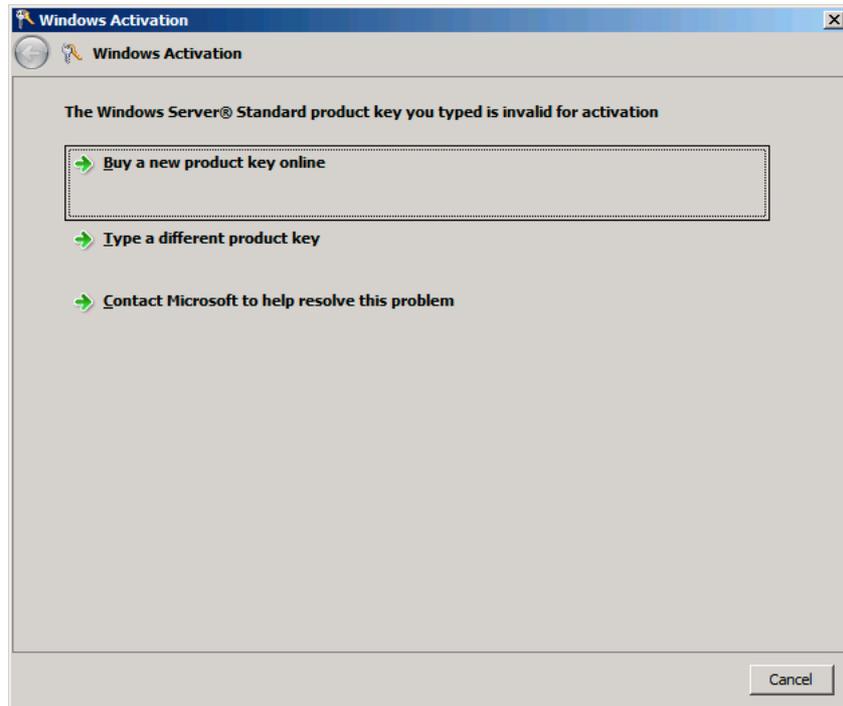
1. Go to the **Start** menu, and in the **Run** dialog box, type **slui**, and press **Enter**.



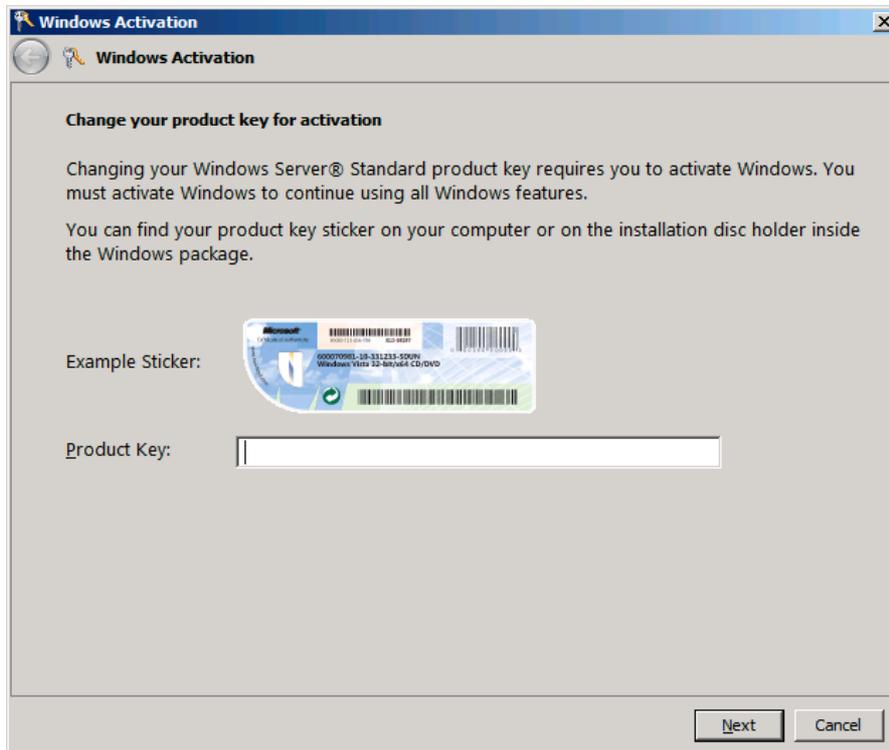
IMPORTANT: If the following message appears, Windows has already been activated on your system. Click **Close** to exit.



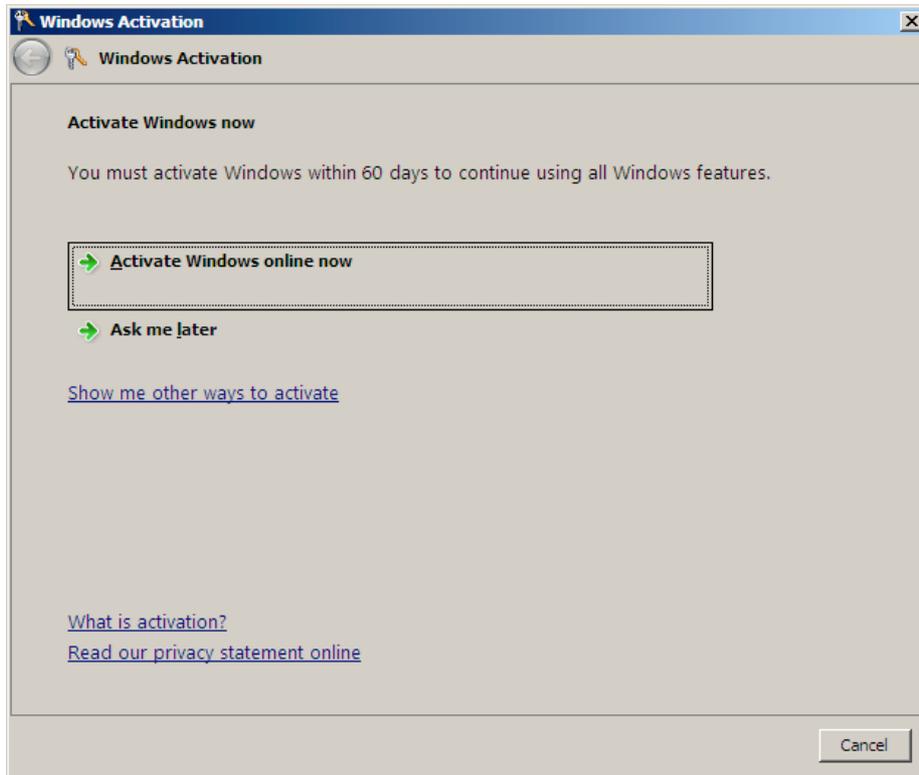
- In the following screen, click **Type a different product key**.



- Type the product key shown on your COA label, and click **Next**.



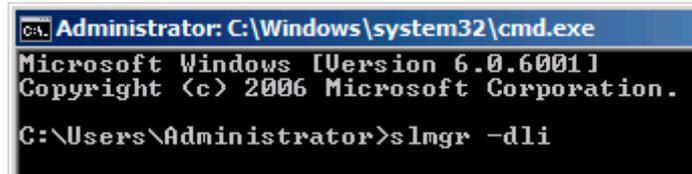
4. Activate Windows.



The Windows activation is completed.

For a server running a Server Core installation

1. At a command prompt, type **slmgr -dli**, and press **Enter**.



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

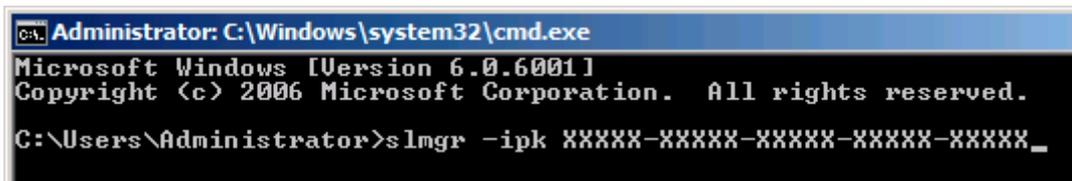
C:\Users\Administrator>slmgr -dli
```

IMPORTANT: If the following message appears, Windows has already been activated on your system. Click  to exit.



2. Type **slmgr -ipk <PID>**, and press **Enter**.

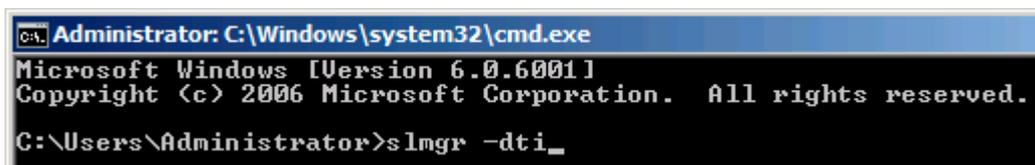
*PID is your product key on the COA label.



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

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

3. Type **slmgr -dti** to obtain an installation ID for Windows activation, and press **Enter**.

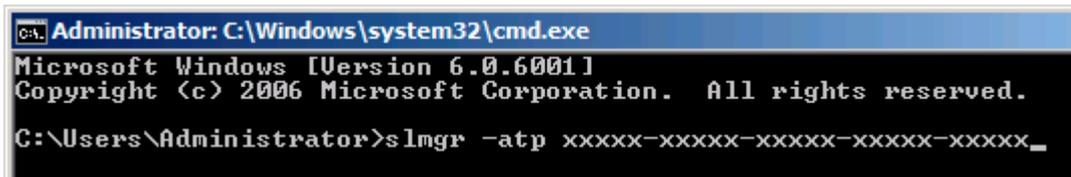


```
C:\Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.0.6001]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.

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

4. See `%systemroot%\system32\slui\phone.inf` for the phone number of the Microsoft customer service.
5. Call the above number, inform your installation ID gained in step 3, and receive a confirmation ID.
6. At a command prompt, type `slmgr -atp <CID>`, and press **Enter**.

*CID is your confirmation ID that you received from the call center.



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

C:\Users\Administrator>slmgr -atp xxxxx-xxxxx-xxxxx-xxxxx-xxxxx_
```

The Windows activation is completed.

9. Troubleshooting

This chapter provides instructions to troubleshoot system problems that you might encounter when using Windows Server 2008. If you are experiencing the same problem as listed in this chapter, perform the resolution first before you contact your sales agent. If your system still does not operate normally, provide your sales agent with the error messages on the screen.

This chapter only lists the events that might occur in Windows Server 2008. For other events, see your User's Guides.

The following system events are logged when Windows Server 2008 is installed.

Event ID: 134

Source: Microsoft-Windows-Time-Service

Level: Warning

Description: NtpClient was unable to set a manual peer to use as a time source because of DNS resolution error on 'time.windows.com,0x9'. NtpClient will try again in 15 minutes and double the reattempt interval thereafter.
The error was: No such host is known. (0x80072AF9)

Event ID: 263

Source: PlugPlayManager

Level: Warning

Description: The service 'ShellHWDetection' may not have unregistered for device event notifications before it was stopped.

Event ID: 7000

Source: Service Control Manager

Level: Error

Description: The Parallel port driver service failed to start due to the following error:
The service cannot be started, either because it is disabled or because it has no enabled devices associated with it.

Event ID: 15016

Source: Microsoft-Windows-Http

Level: Error

Description: Unable to initialize the security package Kerberos for server side authentication. The data field contains the error number.

Resolution: These events do not affect system operation. Ignore these messages.

The following application events are logged when Windows Server 2008 is installed.

Event ID: 63

Source: Microsoft-Windows-WMI

Level: Warning

Description: A provider, Ncs2, has been registered in the Windows Management Instrumentation namespace Root\cimv2 to use the LocalSystem account. This account is privileged and the provider may cause a security violation if it does not correctly impersonate user requests.

A provider, IntelEthernetDiag, has been registered in the Windows Management Instrumentation namespace Root\CIMv2 to use the LocalSystem account. This account is privileged and the provider may cause a security violation if it does not correctly impersonate user requests.

A provider, WmiPerfClass, has been registered in the Windows Management Instrumentation namespace root\cimv2 to use the LocalSystem account. This account is privileged and the provider may cause a security violation if it does not correctly impersonate user requests.

Resolution: These events do not affect system operation. Ignore these messages.

The following errors or warnings are logged when I start the system.

Event ID: 11

Source: IANSMiniport

Level: Warning

Description: Adapter link down: Intel(R) ~

Event ID: 13

Source: IANSMiniport

Level: Warning

Description: Intel(R) ~ has been deactivated from the team.

Event ID: 16

Source: IANSMiniport

Level: Warning

Description: [Team Name]: The last adapter has lost link. Team network connection has been lost.

Resolution: If you have created a team of network adapters, the above events may be logged when you start the system. These events do not affect the LAN driver operation. Ignore these messages.

The following system event is logged when Windows Server 2008 is installed.

Event ID: 10

Source: VDS Dynamic Provider

Description: The provider failed while storing notifications from the driver.
The Virtual Disk Service should be restarted. hr=80042505

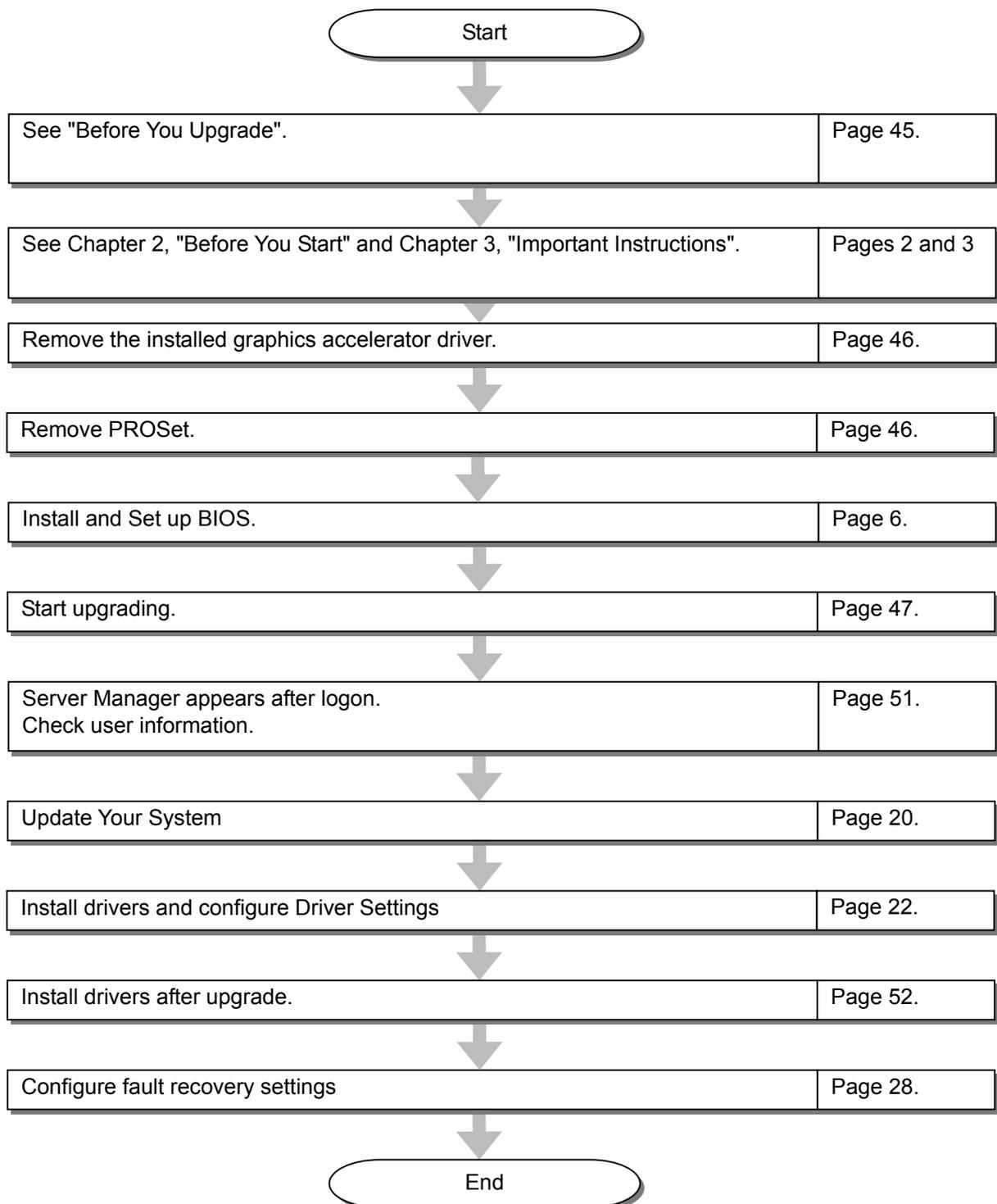
Resolution: Go to the Microsoft website: <http://support.microsoft.com/kb/948275/en-us/>

10. Upgrading to Windows Server 2008

This chapter describes guidelines for upgrading Windows Server 2003 to Windows Server 2008.

Overview

The Windows Server 2008 upgrade flow is shown below. Be sure to remove the installed graphics accelerator driver before you upgrade.



Before You Upgrade

Important Instructions

- Windows Server 2003 requires Service Pack 1 or later.
- Upgrading from Windows Server 2003 to Windows Server 2008 is not recommended.
- Windows Server 2008 supports the following upgrade paths:
 - For Windows Server 2003 Standard x64 Edition:
 - Windows Server 2008 Standard 64-bit (x64) Edition
 - Windows Server 2008 Standard without Hyper-V 64-bit (x64) Edition
 - Windows Server 2008 Enterprise 64-bit (x64) Edition
 - Windows Server 2008 Enterprise without Hyper-V 64-bit (x64) Edition
 - For Windows Server 2003 Enterprise x64 Edition:
 - Windows Server 2008 Enterprise 64-bit(x64)Edition
 - Windows Server 2008 Enterprise without Hyper-V 64-bit(x64)Edition
 - For Windows Server 2003 Standard Edition:
 - Windows Server 2008 Standard 32-bit(x86)Edition
 - Windows Server 2008 Standard without Hyper-V 32-bit(x86)Edition
 - Windows Server 2008 Enterprise 32-bit(x86)Edition
 - Windows Server 2008 Enterprise without Hyper-V 32-bit(x86)Edition
 - For Windows Server 2003 Enterprise Edition:
 - Windows Server 2008 Enterprise 32-bit(x86)Edition
 - Windows Server 2008 Enterprise without Hyper-V 32-bit(x86)Edition
- To use Windows Server 2008, you must first perform a backup of necessary user information by following the instructions in Chapter 4, "Installing Windows Server 2008".
- Upgrading between different architectures i.e. upgrading from Windows Server 2008 32-bit (x86) Edition to Windows Server 2008 64-bit (x64) Edition and vice versa is not supported.
- Upgrading from Windows Server 2008 without Hyper-V to Windows Server 2008 and vice versa is not supported.
- Upgrading from a full installation of Windows Server 2008 to a Server Core installation is not supported.

Graphic Accelerator Driver

To upgrade from Windows Server 2003 to Windows Server 2008 on a server in use, you must first uninstall the graphics accelerator driver.

To uninstall the driver:

1. Navigate to **Control Panel**, and click **Add or Remove Programs**.
2. Select **Matrox Graphics Software (remove only)** from the program list, and click **Change/Remove**.
3. Follow the messages on the screen to uninstall the driver.
4. After the uninstallation, restart the system.

PROSet

To upgrade from Windows Server 2003 to Windows Server 2008 on a server with PROSet installed, you must first uninstall PROSet.

To uninstall PROSet:

1. Remove a team of the network adapters.

Before you remove, note down the current settings (e.g. IP addresses) of the standard and optional adapters teamed for network redundancy. You can configure the team settings after upgrading

To remove the team, see "Adapter Fault Tolerance (AFT)/Adaptive Load Balancing (ALB)" in page 25.

2. Navigate to **Control Panel**, and click **Add or Remove Programs**.
3. Select **Intel (R) PRO Network Connections xx.xx.xx.xx** from the program list, and click **Change/Remove**.

*xx.xx.xx.xx is a version of PROSet and varies depending on servers.

4. Follow the messages on the screen to uninstall PROSet.
5. After the uninstallation, restart the system.

Upgrading Windows

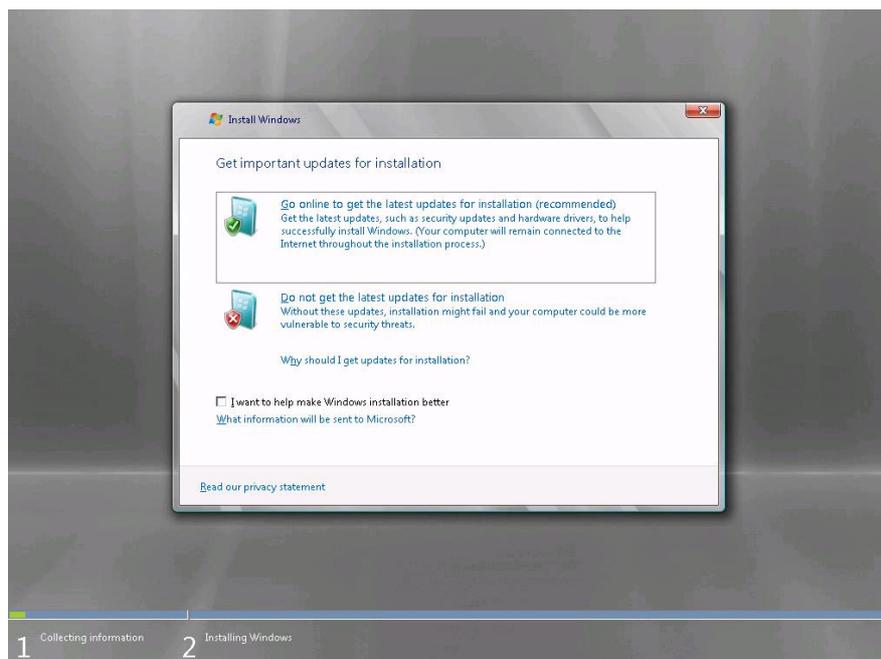
This section provides the procedure for upgrading from Windows Server 2003 32-bit (x86) to Windows Server 2008 32-bit (x86) Edition.

IMPORTANT: Before you upgrade, you must first uninstall the graphics accelerator driver.

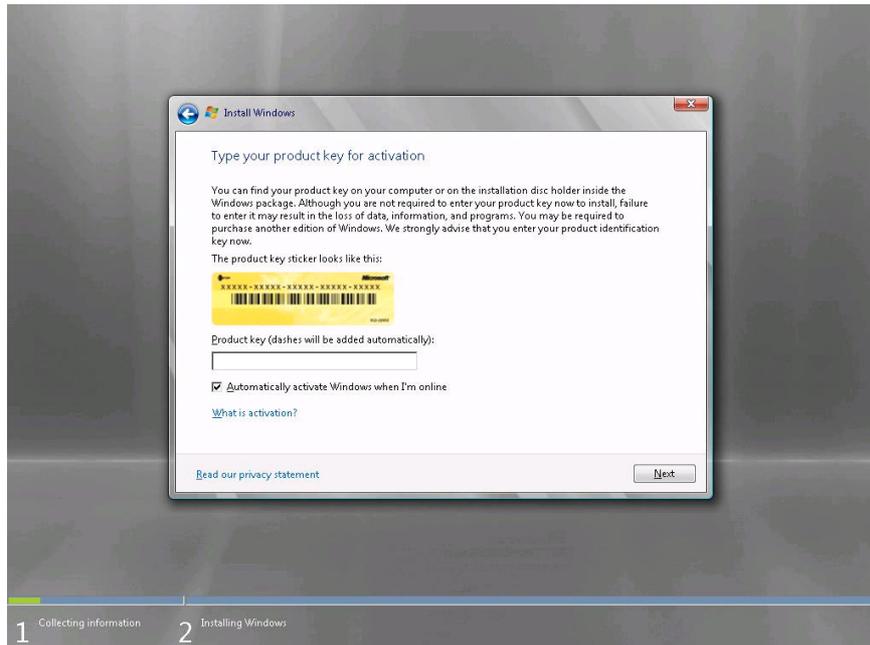
1. When Windows Server 2003 is running, insert the Windows Server 2008 DVD-ROM into the optical disk drive.
2. In the following screen, click **Install now** .



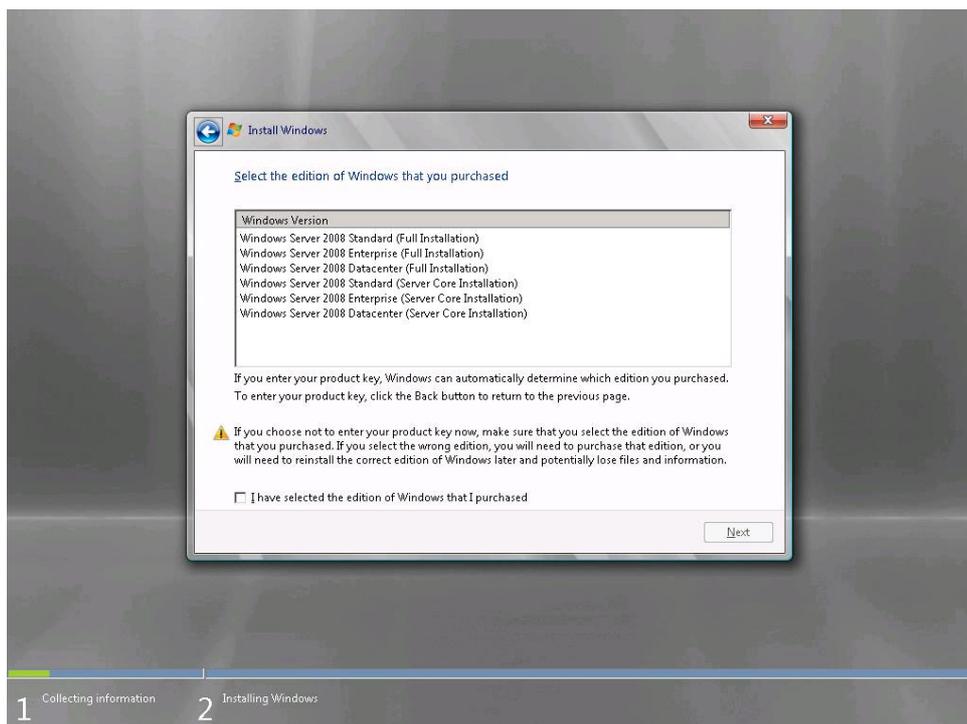
3. In the following screen, select one of the options for capturing the update program.



4. Enter your product key, and click **Next**.

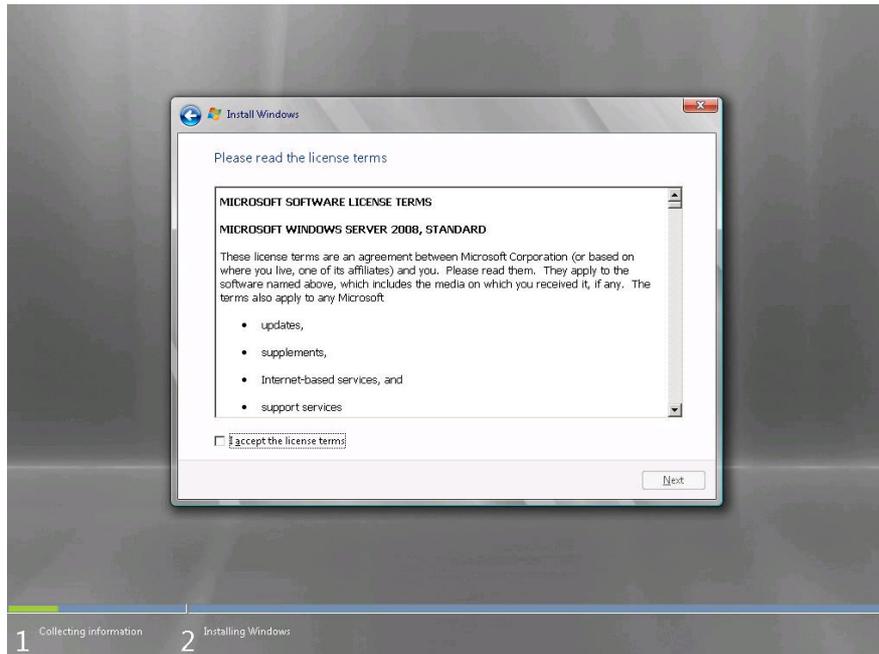


5. Select the Windows edition you install, and click **Next**.

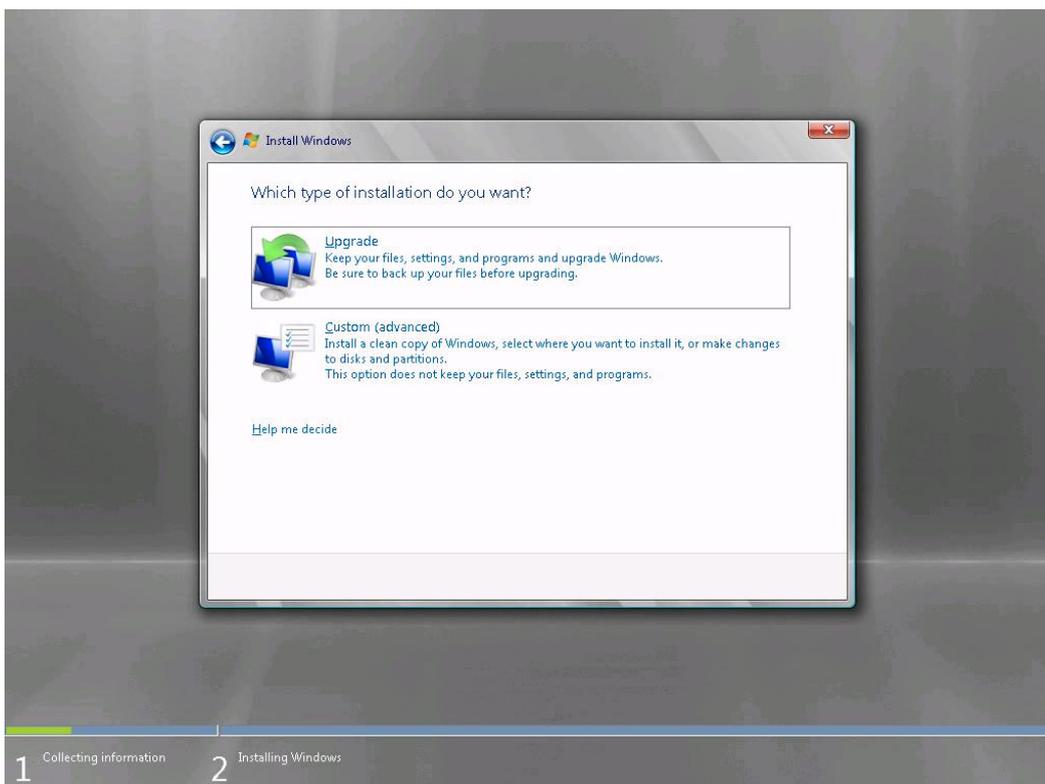


IMPORTANT: Select the same edition of Windows Server 2008. For more details, see "Before You Upgrade" in page 49.

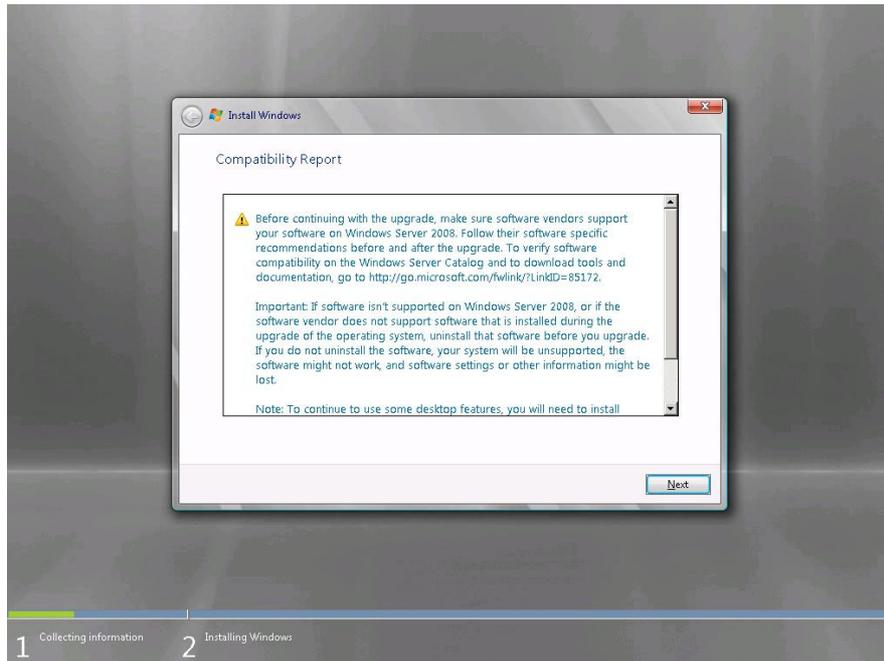
6. Read the license terms carefully. If you agree, check **I accept the license terms**, and click **Next**.



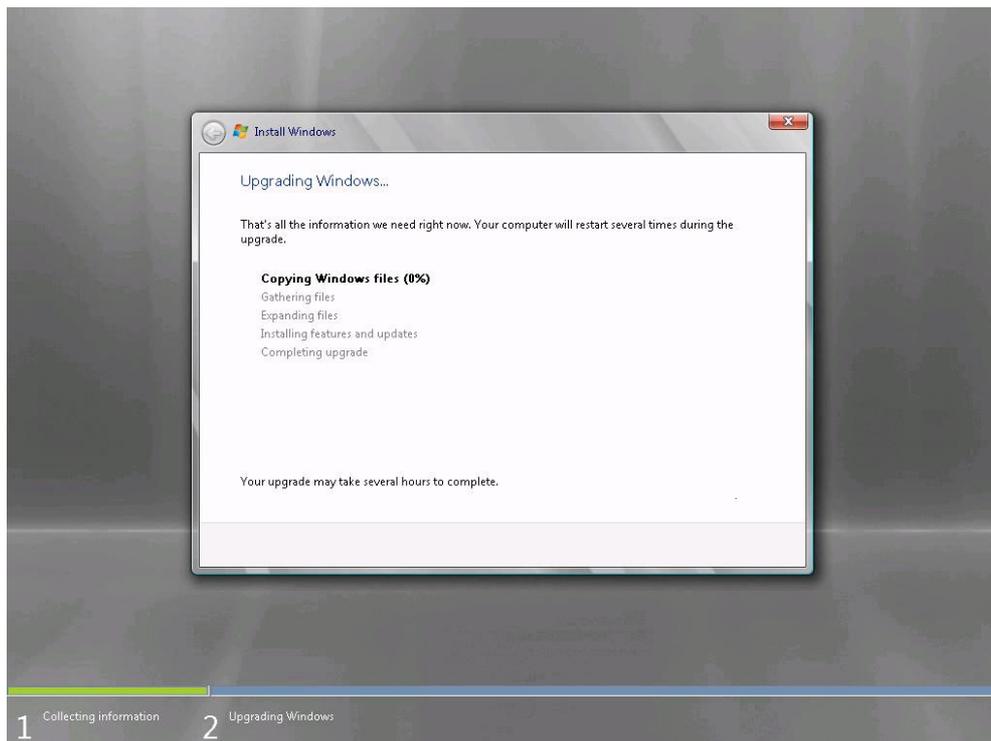
7. Select **Upgrade**.



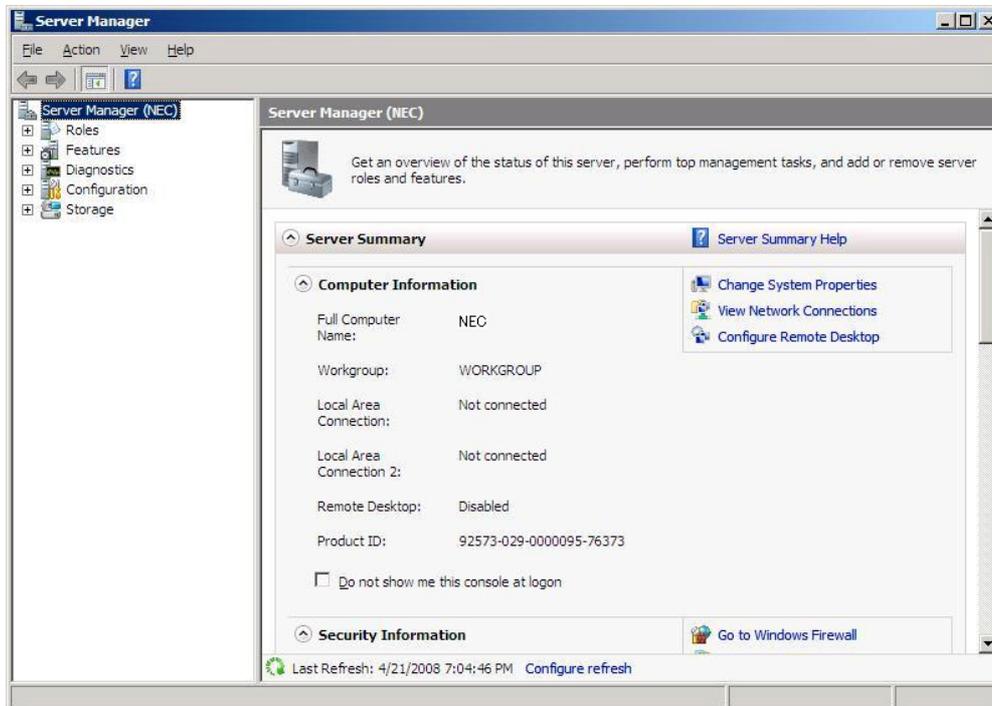
8. Read the content, and click **Next**.



9. The following screen appears.



10. After the setup, log on to the system.
11. If you have set a password in Windows Server 2003, enter the same password, and click .
12. After logon, in the **Server Manager** screen, confirm your user settings.



13. Update your system. See Chapter 5, "Updating Your System".
14. Install the drivers. See Chapter 6, "Driver Installation and Detailed Settings".
15. If you have upgraded to Windows Server 2008, follow the instructions in "Installing Drivers after Upgrade" in page 57.
16. Follow the instructions in Chapter 7, "Setup for Fault Management".

The upgrade is complete.

Installing Drivers after Upgrade

This section provides the procedures for installing the driver(s) for optional controller(s) after the upgrade.

IMPORTANT: You may need to install multiple drivers, depending on your environment.

Installing a driver for the RAID Controller [N8103-116/-117/-118] (equivalent of N8103-116)

1. Start **Server Manager**.
2. Go to **Diagnostics - Device Manager**. Under **Storage Controllers**, right-click **LSI Logic MegaRAID SAS 8708EM2 RAID Controller**, and select **Update Driver Software**.
3. In the **Update Driver Software** screen, select **Browse my computer for driver software**.
4. In the **Browse for driver software on your computer** screen, select **Let me pick from a list of device drivers on my computer**, and click **Next**.
5. When prompted to **select the device driver you want to install for this hardware**", click **Have Disk**.
6. In the **Install From Disk** screen, select one of the following paths i.e. a path to the folder storing the driver (e.g. your storage media storing the Driver Set) from the **Copy manufacture's files from:** area, and click **OK**.
 - For Windows Server 2008 64-bit (x64) Edition:
 \winnt\oemfd\ws2008x64\fd1
 - For Windows Server 2008 32-bit (x86) Edition:
 \winnt\oemfd\ws2008\fd1
7. When prompted to **select the device driver you want to install for this hardware**, click **Next**.
The driver installation starts.
8. After the driver installation is completed, the message "**Windows has successfully updated your driver software**" is displayed. Click **Close**.
9. When the message "**Do you want to restart your computer now?**" appears, select **Yes**.
The system restarts.

The driver update is completed.

Installing a driver for the ATA/ATAPI Controller

An ATA/ATAPI controller driver must be installed on all NEC Express5800 series servers, except for the 120Lj.

IMPORTANT: The installation procedures vary by server model.

For the NEC Express5800/110Ri-1:

1. Start **Server Manager**.
2. Go to **Diagnostics - Device Manager**. Under IDE ATA/ATAPI Controllers, right-click **Intel(R) ICH9 SATA AHCI Controller**, and select **Update Driver Software**.
3. In the **Update Driver Software** screen, select **Browse my computer for driver software**.
4. In the **Browse for driver software on your computer** screen, select **Let me pick from a list of device drivers on my computer**, and click **Next**.
5. When prompted to **select the device driver you want to install for this hardware**", select **Standard AHCI 1.0 Serial ATA Controller**, and click **Next**.

The driver installation starts.

6. After the driver installation is completed, the message "**Windows has successfully updated your driver software**" is displayed. Click **Close**
7. When the message "**Do you want to restart your computer now?**" appears, select **Yes**.

The system restarts

NOTE: Restart your system when prompted by a pop-up window.

The driver update is completed.

For the NEC Express5800/120Ei, 120Gd, 120Rh-1, or 120Rj-2

1. Start **Server Manager**.
2. Go to **Diagnostics - Device Manager**. Under IDE ATA/ATAPI Controllers, right-click **Intel(R) 631xESB/632xESB SATA AHCI Controller**, and select **Update Driver Software**.
3. In the **Update Driver Software** screen, select **Browse my computer for driver software**.
4. In the **Browse for driver software on your computer** screen, select **Let me pick from a list of device drivers on my computer**, and click **Next**.
5. When prompted to **select the device driver you want to install for this hardware**", select **Standard AHCI 1.0 Serial ATA Controller**, and click **Next**.

The driver installation starts.

6. After the driver installation is completed, the message "**Windows has successfully updated your driver software**" is displayed. Click **Close**
7. When the message "**Do you want to restart your computer now?**" appears, select **Yes**.

The system restarts

NOTE: Restart your system when prompted by a pop-up window.

The driver update is completed.

Installing a driver for the SCSI controller [N8103-107]

If you are using or adding the SCSI controller N8103-107, perform the steps below to install the driver:

1. Start Server Manager.
2. Go to **Diagnostics - Device Manager**. Under **Storage Controllers**, right-click **Adaptec SCSI Card 29320LPE - Ultra320 SCSI**, and select **Update Driver Software**.
3. In the **Update Driver Software** screen, select **Browse my computer for driver software**.
4. In the **Browse for driver software on your computer** screen, select **Let me pick from a list of device drivers on my computer**, and click **Next**.
5. When prompted to **select the device driver you want to install for this hardware**", select **Adaptec SCSI Card 29320LPE - Ultra320 SCSI**, and click **Next**.

The driver installation starts.

6. After the driver installation is completed, the message "**Windows has successfully updated your driver software**" is displayed. Click **Close**.
7. When the message "**Do you want to restart your computer now?**" appears, select **Yes**.

The system restarts.

NOTE: Restart your system when prompted by a pop-up window.

The driver update is completed.

Installing a driver for the SCSI Controller [N8103-75]

If you are using or adding the SCSI controller N8103-75, perform the steps below to install the driver:

1. Start **Server Manager**.
2. Go to **Diagnostics - Device Manager**. Under **Storage Controllers**, right-click **Adaptec SCSI Card 29320LPE - Ultra320 SCSI**, and select **Update Driver Software**.
3. In the **Update Driver Software** screen, select **Browse my computer for driver software**.
4. In the **Browse for driver software on your computer** screen, select **Let me pick from a list of device drivers on my computer**, and click **Next**.
5. When prompted to **select the device driver you want to install for this hardware**", select:

For Windows Server 2008 64-bit (x64) Edition:

Adaptec SCSI Card 29320ALP - Ultra320 SCSI Version: 7.2.0.0 [01/25/2007]

For Windows Server 2008 32-bit (x86) Edition:

Adaptec SCSI Card 29320ALP - Ultra320 SCSI Version: 7.2.0.0 [01/25/2007]

Then click **Next**.

The driver installation starts.

6. After the driver installation is completed, the message "**Windows has successfully updated your driver software**" is displayed. Click **Close**.
7. When the message "**Do you want to restart your computer now?**" appears, select **Yes**.

The system restarts.

NOTE: Restart your system when prompted by a pop-up window.

The driver update is completed.

Using a SCSI Controller [N8103-95]

When you use the SCSI Controller [N8103-95], the driver is automatically installed. You do not need to install it manually.

Adding Fibre Channel controller N8190-127/131

When you use the Fibre Channel Controller [N8190-127/-131], the driver is automatically installed. You do not need to install it manually.