

NovaScale  
T850 E1, T860 E1,  
R440 E1, R460 E1  
and R480 E1  
Windows 2008  
Entreprise/Standard  
Installation Guide





# NOVASCALÉ

## NovaScale T850 E1, T860 E1, R440 E1, R460 E1 and R480 E1

### Windows 2008 Enterprise/Standard Installation Guide

#### Hardware

2008

BULL CEDOC  
357 AVENUE PATTON  
B.P.20845  
49008 ANGERS CEDEX 01  
FRANCE

REFERENCE  
86 A1 44FA 02

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## Introduction

This document provides step-by-step guidance for installing Microsoft® Windows Server® 2008 Standard Edition and Microsoft® Windows Server® 2008 Enterprise Edition ("Microsoft® Windows Server® 2008") on the BULL NovaScale T850 E1, T860 E1, R440 E1, R460 E1 and R480 E1 servers.

Before you install Microsoft® Windows Server® 2008, read this document carefully.

### Microsoft® 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

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#### **Caution**

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

---

### Text Conventions

The following conventions are used throughout this manual.

---

#### **Warning**

Warnings alert you to situations that could result in serious personal injury or loss of life.

---


---

#### **Caution**

Cautions indicate situations that can damage the system hardware or software.

---

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 **Note:** give important information about the material being described.

---

---

# Overview

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

1. See [“Before You Start” on page 9](#) and [“Important Instructions” on page 10](#).
2. See [“BIOS Update” on page 14](#).
3. [“Installing Microsoft® Windows Server® 2008” on page 18](#).
  - [“If you have selected a full installation” on page 20](#): After login, initial configuration tasks appear. Enter user information.
  - [“If you have selected a Server Core installation” on page 21](#): After login, enter user information when prompted to do so.
4. [“Installing Drivers and Configuring Driver Settings” on page 24](#).
5. Configuring [“Fault Recovery Settings” on page 30](#).

The installation is complete.



---

# Before You Start


Before installing Microsoft® Windows Server® 2008, make sure of your hardware configuration, including the RAID configuration according to the User's Guide or the other manuals of the server stored in ExpressBuilder.

## Prerequisites for Installing Microsoft® Windows Server® 2008

To install Microsoft® Windows Server® 2008, you need the following:

- Microsoft® Windows Server® 2008 Standard /Microsoft® Windows Server® 2008 Enterprise Installation Guide (this manual).
- The Microsoft® Windows Server® 2008 installation medium ("Microsoft® Windows Server® 2008 DVD-ROM")
  - The User's Guide  
(Start the ExpressBuilder disc, and open → **Read Document** on the menu.)
  - The User's Guide, available on the ExpressBuilder.

---

 **Notes:** to access the User's guide, proceed as follows:

- Insert the ExpressBuilder disc, click **Run autorun\_menu.exe**
  - Click **Read documents**,
  - In the **Documents for each model section**, click the requested model.
-

---

# Important Instructions

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

## Windows Activation


### Understanding Activation and Registration

Activation is mandatory and completely anonymous. It ensures that the product is not installed on more than the limited number of computers allowed in the software's end user license agreement.

If you are prompted to activate Microsoft® Windows Server® 2008, please do so by entering the physical product key that can be found on your Certificate of Authenticity (COA) label.

Registration is optional, and it ensures that you receive product support, product update information, and other benefits. Personal information (for example, «contact» information such as an email address) is required if you decide to register.

---

 **Note:** To use the on-line registration process, an active Internet connection must be available.

---

For more details, see [“Activating Windows”, page 35](#).

---

### Caution

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

## Supported Optional Boards

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

### **BULL NovaScale T850 E1**

- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1) and equivalent
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1/5/6)
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (256 MB, RAID 0/1/5/6)
- Adaptec SCSI Card 29320ALP
- Adaptec SCSI Card 29160LP
- Adaptec SCSI card 29320LPE

### **BULL NovaScale T860 E1**

- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1) and equivalent
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1/5/6)
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (256 MB, RAID 0/1/5/6)
- Adaptec SCSI Card 29320ALP
- Adaptec SCSI Card 29160LP
- Adaptec SCSI card 29320LPE
- Emulex LightPulse® LPe1150 Fibre Channel controller
- Emulex LightPulse® LPe11002 Fibre Channel controller (2ch)

### **BULL NovaScale R440 E1**

- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1) or equivalent
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1/5/6)
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (256 MB, RAID 0/1/5/6)
- Adaptec SCSI Card 29320ALP
- Adaptec SCSI Card 29160LP
- Adaptec SCSI card 29320LPE
- Emulex LightPulse® LPe1150 Fibre Channel controller
- Emulex LightPulse® LPe11002 Fibre Channel controller (2ch)

### **BULL NovaScale R460 E1**

- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (128 MB, RAID 0/1) and equivalent
- LSI Logic MegaRAID SAS 8708EM2 RAID Controller (256 MB, RAID 0/1/5/6)
- Adaptec SCSI Card 29320ALP

- Adaptec SCSI Card 29160LP
- Adaptec SCSI card 29320LPE
- Emulex LightPulse® LPe1150 Fibre Channel controller
- Emulex LightPulse® LPe11002 Fibre Channel controller (2ch)

### **BULL NovaScale R480 E1**

- LSI Logic MegaRAID SAS PCI Express ROMB, on the mother board
- LSI Logic MegaRAID SAS 8480E RAID Controller
- Emulex LightPulse® LPe1150
- Emulex LightPulse® LPe11002
- Intel® Pro/1000 PT Server Adapter

## Updating Your System

After Microsoft® Windows Server® 2008 has been installed, you need to update your system using the Driver Set. To update your system, see [“Updating the System”](#), [page 22](#).

## Reinstalling an Operating System in a Dynamic Disk

A basic disk that has been upgraded to a dynamic disk may contain an additional partition 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**.


## Installing on the Mirrored Volume

When re-installing the OS to a hard disk drive which has been upgraded to Dynamic Disk, only the simple dynamic volume is available for installation.

To install the OS on a volume that is mirrored using Disk Management, proceed as follows:

1. Invalidate the mirroring.
2. Reset to the basic disk before the installation.
3. Validate the mirroring again after the installation.

---

 **Note:** You can create, invalidate, or delete the mirror volume by using Disk Management in Computer Management.

---

## Magneto-Optical 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.

## Additional Peripheral Devices (such as RDX)

Some peripheral devices need to be removed or disabled before starting setup. Refer to the instruction manual delivered with the peripheral device for pertinent information, and proceed accordingly.

## BIOS Update

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

To check if your system needs the BIOS update, go to:

<http://support.bull.com>

For the update procedure, refer to the Readme.txt available on the above website.

## RAID Configuration

To use the hard disk drives in RAID configuration, configure the RAID system before installing Microsoft® Windows Server® 2008.

To use the RAID controller (LSI MegaRAID SAS PCI EXPRESS ROMB) embedded on the motherboard, refer to "RAID System Configuration" in the User's Guide of the server.

To use the optional RAID controller, refer to the manual delivered with the controller.

## System Partition Size

Use the following formula to calculate the total partition size required for Microsoft® Windows Server® 2008:

### *Microsoft® 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

---

### **Caution**

- The above paging file size is recommended to collect debug information (memory dump). The initial size of the paging file 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 the mounted memory size and the Write debugging information (type of memory dump), the maximum size of the dump file is the mounted 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 the 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 to a sufficient size to install the OS and paging file.
2. See [“Fault Recovery Settings”, page 30](#) to write the debug information of the dump file into another disk.

If there is not enough disk space to write the debug information, add another disk for Dump file.

### Microsoft® 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

---

#### Caution

- The above paging file size is recommended to collect debug information (memory dump). The initial size of the paging file 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 "[Fault Recovery Settings](#)", [page 30](#) to write the debug information of the dump file into another disk.


If there is not 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 Microsoft® Windows Server® 2008, create the two partitions:
  - System partition for a loader
  - Boot partition for the operating system

---

 **Note:** For more information, see the documentation in Microsoft TechNet: Windows BitLocker Drive Encryption Step-by-Step Guide.

---



- Be sure to keep the recovery password secure. Do not keep it around a server running BitLocker.

---

 **Caution**

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
- 

- Microsoft® Windows Server® 2008 is not installed in the partition encrypted by BitLocker.

## NEC ESMPRO

When Microsoft® Windows Server® 2003 is upgraded to Microsoft® 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 Microsoft® Windows Server® 2008, see the NEC ESMPRO support information.

# Installing Microsoft® Windows Server® 2008

This chapter provides the steps to install Microsoft® Windows Server® 2008.

1. Turn on your system.

---

## Caution

To install Microsoft® Windows Server® 2008, you may need to update BIOS. To check if your system needs a BIOS update, go to: <http://support.bull.com>

---

2. Insert the Microsoft® 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 turn it on again.

---

## Caution

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


---

The DVD-ROM starts.

4. Select the *Language to install*, the *Time and currency format*, and the *Keyboard or input method* from the drop-down lists, and click **Next**.
5. When prompted to read the *Licence agreement*, take and read the document delivered with your computer, and click **Yes**.
6. Click the **Install now** button.  
The installation starts.
7. If prompted to do so, enter your product key, and click **Next**.
8. Click on the edition of the Windows operating system that you want to install, and check *I have selected the edition of Windows that I purchased*. Click **Next**.  
The list is dynamically generated based on the Product Key.

9. Read the license terms carefully. If you agree, check *I accept the license terms*, and click **Next**.
10. Click **Custom (Advanced)**. The Upgrade installation is not available at this time.
11. The "Where do you want to install Windows?" screen is displayed.  
If you are using the LSI Logic MegaRAID SAS 8708EM2 RAID Controller, go to step 12. If not, go to step 13.
12. Insert the ExpressBuilder disc, click **Load Driver**, **Browse** the disc to display the following paths, and click **OK**.
  - Microsoft® Windows Server® 2008 64-bits (x64) Editions:  
\\00x\W2K8\DRIVERS\DRIVERSET\winnt\oemfd\ws2008x64\fd1
  - Microsoft® Windows Server® 2008 32-bits (x86):  
\\00x\W2K8\DRIVERS\DRIVERSET\winnt\oemfd\ws2008\fd1


---

 **Note:** in \\00x\, x is a variable.

---

13. Select the disk where the installation partition will be created, and click **Drive options (advanced)**.


---

 **Note:** If the partition is already created, go to step 16.

---

14. Click **New**, enter a partition size, and click **Apply**.
15. Select the partition created in step 14, and click **Format**.
16. Select the partition created, and click **Next**.  
The installation starts automatically.


---

 **Note:** Please wait until the installation is complete, do not shutdown or press any key on your system. The system may automatically reboot several times during the process.


---

17. When prompted to do so, log on to the system. The steps vary depending on the edition you selected in step 8.

**If you have selected a full installation**

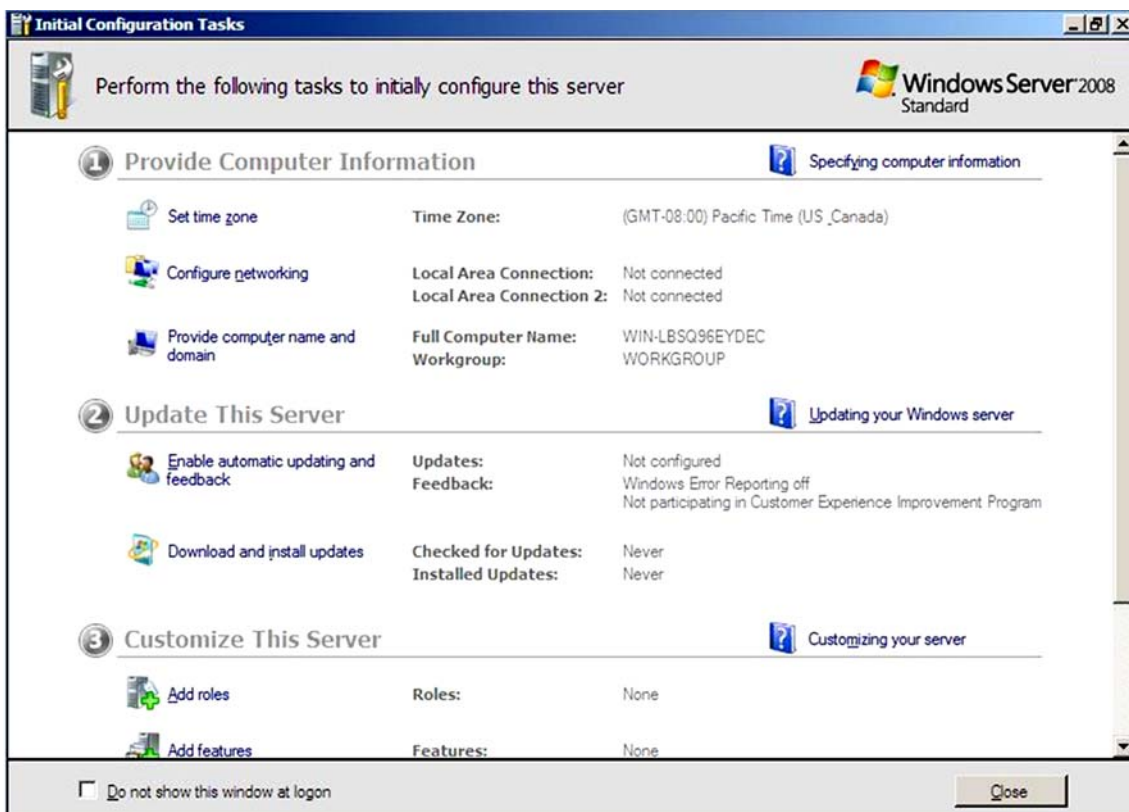
- a. You will be prompted to set or change the password before you log on. Click **OK**.
- b. Change the password, and click .

---



 **Note:** your password must be composed of 10 characters, containing lower cases, upper cases and one complex character.

---


- c. Once the password has been changed, click **OK** to log on.
- d. In the **Initial Configuration Tasks** window, enter the relevant user information.



**If you have selected a Server Core installation**

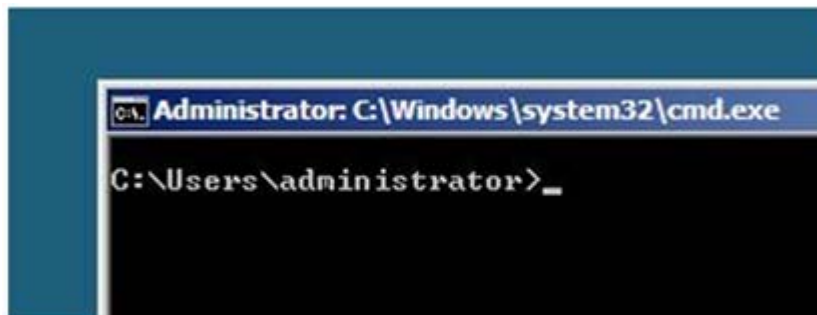
- a. Once the Server Core installation of Microsoft® Windows Server® 2008 is complete, press **Ctrl + Alt + Del** to log on.
- b. Click **Other User**.
- c. In place of *User name*, enter *Administrator*.
- d. Keep the word *Password* as it is. Do not change it at this step.
- e. Click .
- f. When prompted to change the password, click **OK**.
- g. Keep the word *Password*, and in place of *New password*, enter your new password, enter it again in *Confirm Password*, and click .

---


 **Note:** your password must be composed of 10 characters, containing lower cases, upper cases and one complex character.

---

- h. Once the password has been changed, click **OK**.
- i. At the command prompt, enter user information.



---

 **Note:** For more information, refer to the Microsoft® Windows Server® 2008 Help.

---

18. See [“Installing Drivers and Configuring Driver Settings”, page 24.](#)
19. See [“Fault Recovery Settings”, page 30.](#)

The installation is complete.

# Updating the System

After installing Microsoft® Windows Server® 2008, we recommend you to update your system by following the steps in this chapter.

---


## Caution

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
- 

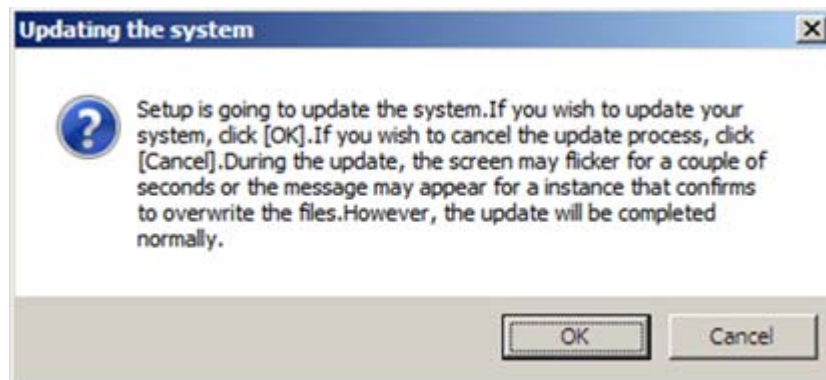
1. Log on to the system using an administrator account and insert the ExpressBuilder disc into your drive.
2. Depending on your Windows 2008 installation:
  - **Full installation:**  
Run  
`\00x\W2K8\drivers\driverset\winnt\bin\oschk\oschk.bat`", and click **OK**.
  - **Server Core installation:**
    1. Enter the following command from the command prompt:  
`cd 'Optical disc drive letter':\00x\W2K8\DRIVERS\DRIVER-SET\winnt\bin\oschk.`
    2. Enter the following command and click **Enter**: `oschk.bat`.

---

 **Note:** in \00x\, x is a variable.


---

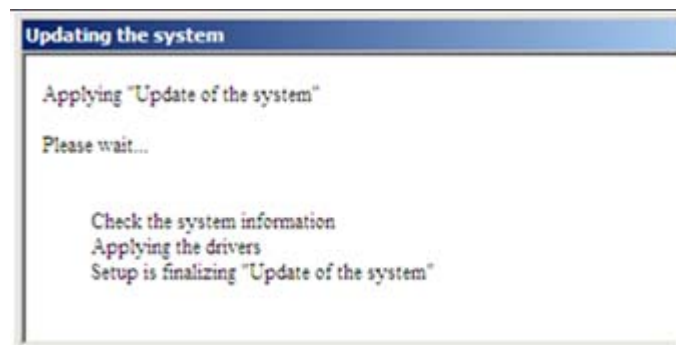
- The following box appears.



- 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 Microsoft® Windows Server® 2008. Wait until the update completes.



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



The system has been updated.

- Restart your computer.


# Installing Drivers and Configuring Driver Settings

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

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

## LAN Driver and PROSet

---

 **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 the Intel® Pro/1000 PT Server Adapter after a System Update

To use the Intel® Pro/1000 PT Server Adapter after updating your system, you must first uninstall the LAN driver and PROSet, and update your system while the Intel® Pro/1000 PT Server 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 \(ALB\) ”, page 26](#).
2. In **Control Panel**, click **Uninstall Program**.
3. Double-click **Intel(R) Network Connections 12.4.38.0**.  
**Intel(R) Network Connections (RemoveOptions)** appears.
4. In **Remove Options**, click **Remove**.  
**Intel(R) Network Connections - Remove Software** appears.
5. Select **Yes**.  
The removal starts automatically.
6. When **InstallShield Wizard complete** 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 available on the ExpressBuilder at the following path:
  - Microsoft® Windows Server® 2008 64-bit (x64) Editions:  
\\00x\W2K8\drivers\driverset\winnt\ws2008x64\dl5\apps\prosetdx\vistax64\DxSetup.exe
  - Microsoft® Windows Server® 2008 32-bit (x86) Editions:  
\\00x\W2K8\drivers\driverset\winnt\ws2008x64\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**.  
Removal 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 BULL NovaScale/T850 E1, T860 E1, R440 E1, R460 E1 and R480 E1.

- Intel® Pro/1000 PT Server Adapter, see [\*“Using the Intel® Pro/1000 PT Server Adapter after a System Update”\*, page 24](#).
- For BULL NovaScale/T860 E1, T850 E1:  
[Intel® Pro/1000 MF Server Adapter/ Intel® Pro/1000 MT Server Adapter/ Intel® Pro/1000 GT Server Adapter/ Intel® Pro/1000 PT Server Adapter]
- For BULL NovaScale/R440 E1, R460 E1:  
[Intel® Pro/1000 MT Server Adapter/ Intel® Pro/1000 GT Server Adapter/ Intel® Pro/1000 PT Server Adapter/ Intel® Pro/1000 PT Server Adapter]

## 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.

---

### Caution

- Adapter Fault Tolerance (AFT) and Adaptive Load Balancing (ALB) are not available when Server Core is in use.
  - Be sure to configure AFT and ALB after you boot the system following the driver installation.
- 

### Creating a Team

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

---

### **Caution**

- 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, we recommend you to connect the network adapters 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 double-click **Intel(R)~**.
3. Click **Link Speed**, and set the same values for **Speed and Duplex** as those for the switching hubs.
4. In the **Property** dialog box, click **OK**.

## SCSI Controller

*Adaptec SCSI Card 29320ALP*

*Adaptec SCSI Card 29160LP*

*Adaptec SCSI card 29320LPE*

You do not need to install the driver manually, it is automatically installed by Windows Plug-and-Play.

## Disk Array Controller

*LSI Logic MegaRAID SAS 8480E*

You do not need to install the driver manually, it is automatically installed by Windows Plug-and-Play.

## Fibre Channel Controller

*Emulex LightPulse® LPe1150*


*Emulex LightPulse® LPe11002*

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 is installed automatically during the system update.

---

 **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 only the driver, perform the steps below:

1. Go to **Start**, select **Programs**, select **Accessories**, and click **Windows Explorer**.

Insert your Driver Set into your drive.

2. Double-click the **SETUP.EXE** icon in the following directory:

\00x\W2K8\drivers\driverset\winnt\ws2008\video

For the Microsoft® Windows Server® 2008 64-bit (x64) Edition, double-click the **SETUP.EXE** icon in the following directory:

\00x\W2K8\drivers\driverset\winnt\ws2008x64\video

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 complete.

Restart the system.

# Fault Recovery Settings

This chapter provides the procedures for configuring fault recovery settings.

## Memory Dump (Debug Information)

This section describes the procedures for collecting memory dump (debug information) in the server.

---

### Caution

The maintenance service representative is in charge of collecting memory dump. Customers need only to specify the memory dump.

If any problem occurs after specifying the memory dump according to the process below, a message informing you that the system is short of virtual memory may appear. In this case, do not restart the system. If you restart the system, the memory dump may not be stored correctly.

---

Follow the steps below to configure the memory dump setting.

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. On the *Advanced* tab, in the *Startup and Recovery* section, click **Settings...**

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

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

**D: \MEMORY.DMP**

---

### Caution

- Windows Server 2008 64-bit (x64) Edition
  - We recommend you to 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.

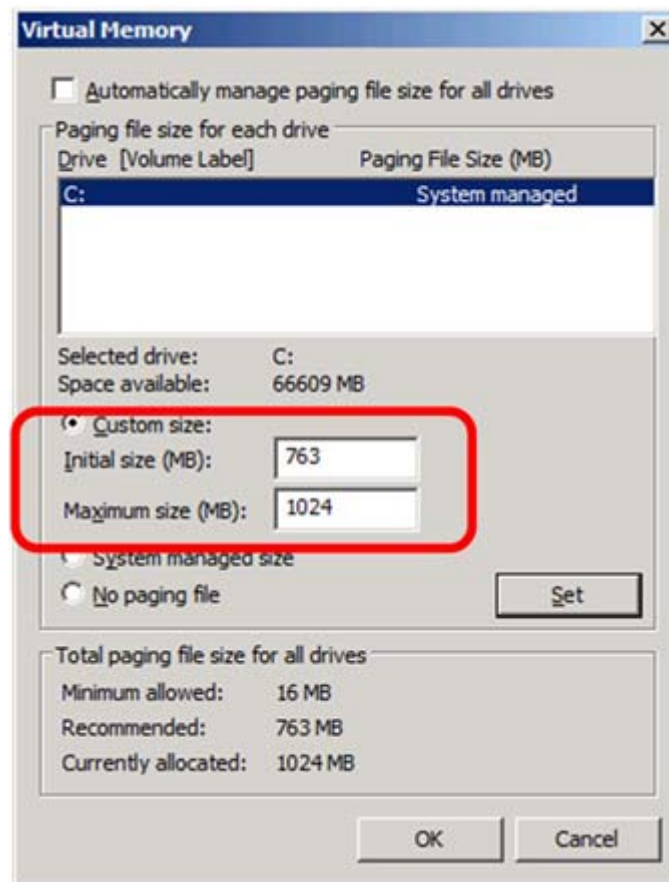
- Select a drive with a size of the installed memory + 300 MB.
- When the installed memory exceeds 2GB due to added memory, change the Write debugging information to **Kernel Memory Dump** before you add memory. After you add memory, the memory dump size may change. Make sure that the drive to save the memory dump still has enough space.

■ Windows Server 2008 32-bit (x86) Edition

- We recommend you to specify "Complete Memory Dump" to write the debug information. If the mounted memory size is larger than 2GB, "Complete Memory Dump" cannot be specified; in this case, specify "Kernel Memory Dump" instead.
  - Select a drive with a size of the installed memory + 300MB". In case of the memory capacity is more than 2GB, select a free area of "2048+300MB" or more).
  - When the installed memory exceeds 2GB due to the added memory, change the 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. On the *Advanced* tab, in the *Performance* section, click **Settings....**
6. On the *Performance Options* window, click the **Advanced** tab.
7. In the *Virtual memory* section, 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* section, change *Initial size* to the *Recommended size* shown in the *Total paging file size for all drives* section, and click **OK**.



### Caution

- 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”, page 14](#).
- If you add memory, change the installed memory size in the paging file setting.

10. Click **OK**.

When prompted to do so, 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


---

 **Note:** If the folder does not appear, run **Explorer** and select **Tools - Folder Options...** - View, and check to Show hidden files and folders.

---

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 Microsoft® 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:** Microsoft® Windows Server® 2008 does not provide Network Monitor. To use Network Monitor on Microsoft® 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 on-screen instructions to install Network Monitor.


---

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

---

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.

# 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 click **OK**.
2. Follow the on-screen instructions.

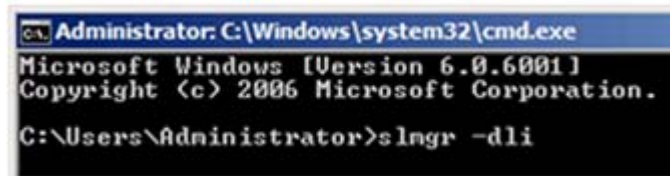
---

 **Notes:**

- *Windows may have been factory-activated. In this case, stop the process when prompted to do so.*
  - *The Product Key can be found on the Certificate of Authenticity (COA) label.*
-

## For a server running a Server Core installation

1. At a command prompt, type **slmgr -dli**, and click **OK**.



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

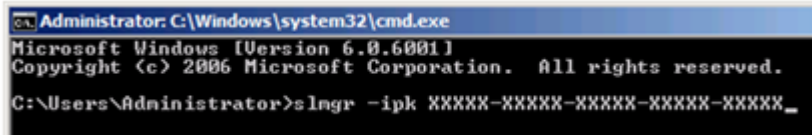
C:\Users\Administrator>slmgr -dli
```

---

### Notes:

- Windows may have been factory-activated. In this case, stop the process when prompted to do so.
  - The Product Key can be found on the Certificate of Authenticity (COA) label.
- 

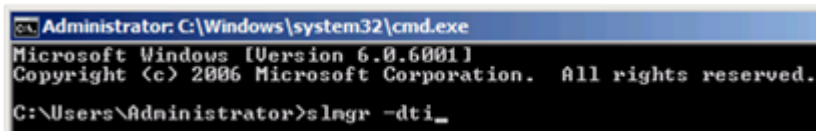
2. Type **slmgr -ipk <PID>**, and click **OK**.  
\*PID is your product key on the COA label.



```
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_
```

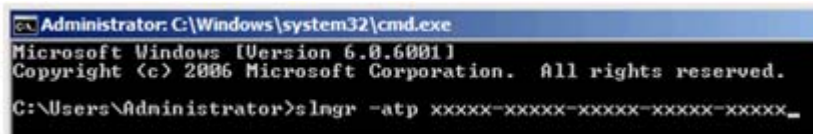
3. Type **slmgr -dti** to obtain an installation ID for Windows activation, and click **OK**.



```
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 click **OK**.  
\*CID is the confirmation ID that you received from the call center.



```
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 complete.

---

# Troubleshooting

This chapter provides instructions to troubleshoot system problems that you might encounter when using Microsoft® 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 Microsoft® Windows Server® 2008. For other events, see your User's Guides.

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

<b>Event ID:</b>	<b>134</b>
<b>Source:</b>	<b>Microsoft-Windows-Time-Service</b>
<b>Level:</b>	<b>Warning</b>
<b>Description:</b>	<b>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.</b> <b>The error was: No such host is known. (0x80072AF9)</b>
<b>Event ID:</b>	<b>63</b>
<b>Source:</b>	<b>PlugPlayManager</b>
<b>Level:</b>	<b>Warning</b>
<b>Description:</b>	<b>The service 'ShellHWDetection' may not have unregistered for device event notifications before it was stopped.</b>
<b>Event ID:</b>	<b>7000</b>
<b>Source:</b>	<b>Service Control Manager</b>
<b>Level:</b>	<b>Error</b>
<b>Description:</b>	<b>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.</b>

<b>Event ID:</b>	<b>15016</b>
<b>Source:</b>	<b>Microsoft-Windows-Http</b>
<b>Level:</b>	<b>Error</b>
<b>Description:</b>	<b>Unable to initialize the security package Kerberos for server sideauthentication. The data field contains the error number.</b>
<b>Resolution:</b>	<b>These events do not affect system operation. Ignore these messages.</b>

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

<b>Event ID:</b>	<b>63</b>
<b>Source:</b>	<b>Microsoft-Windows-WMI</b>
<b>Level:</b>	<b>Warning</b>
<b>Description:</b>	<p><b>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.</b></p> <p><b>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.</b></p> <p><b>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.</b></p>
<b>Resolution:</b>	<b>These events do not affect system operation. Ignore these messages.</b>

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

<b>Event ID:</b>	<b>11</b>
<b>Source:</b>	<b>IANSMiniport</b>
<b>Level:</b>	<b>Warning</b>
<b>Description:</b>	<b>Adapter link down: Intel(R) ~</b>
<b>Event ID:</b>	<b>13</b>
<b>Source:</b>	<b>IANSMiniport</b>

<b>Level:</b>	Warning
<b>Description:</b>	Intel(R) ~ has been deactivated from the team.
<b>Event ID:</b>	16
<b>Source:</b>	IANSMiniport
<b>Level:</b>	Warning
<b>Description:</b>	[Team Name]: The last adapter has lost link. Team network connection has been lost.
<b>Resolution:</b>	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 Microsoft® Windows Server® 2008 is installed.

<b>Event ID:</b>	10
<b>Source:</b>	VDS Dynamic Provider
<b>Description:</b>	The provider failed while storing notifications from the driver. The Virtual Disk Service should be restarted. hr=80042505
<b>Resolution:</b>	Go to the Microsoft website: <a href="http://support.microsoft.com/kb/948275/en-us/">http://support.microsoft.com/kb/948275/en-us/</a>

The memory mirroring or online spare memory feature is enabled in the BULL NovaScale R480 E1, and the available memory capacity has been changed. However, the memory information shown in **System** and **System Information** on Microsoft® Windows Server® 2008 do not change.

The Memory (RAM) shows the total capacity of mounted memory when you select **Start - Control Panel - System**.

Similarly, the Installed Physical Memory (RAM) shows the total capacity of mounted memory when you select **Start - All Program - Accessories - System Tools - System Information**.

To know the physical memory currently available on the system, select **Windows Task Manager - Performance - Physical Memory(MB) - Total**.

# Upgrading to Microsoft® Windows Server® 2008


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

## Overview

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

1. [“Before You Upgrade” on page 41.](#)
2. See [“Important Instructions” on page 41.](#)
3. See [“Before You Start” on page 9](#) and [“Important Instructions” on page 10.](#)
4. Remove the installed [“Graphic Accelerator Driver” on page 42.](#)
5. Remove [“PROSet” on page 42.](#)
6. Install and setup [“BIOS Update” on page 14.](#)
7. Start [“Upgrading Windows” on page 43.](#)
8. [“On the Server Manager screen, confirm your user settings.” on page 43.](#)
9. See [“Installing Drivers and Configuring Driver Settings” on page 24.](#)
10. See [“Installing Drivers after the Upgrade” on page 45.](#)
11. Configure [“Fault Recovery Settings” on page 30.](#)

---

 **Notes:** the instructions below are given with a **Start menu** configuration. To check your configuration proceed as follows:

- Right click on the task bar ,and click **Properties**
  - In the Start Menu tab, check **Start Menu**, and click **OK**.
-



# Before You Upgrade

## Important Instructions

- Microsoft® Windows Server® 2003 requires Service Pack 1 or later.
- Upgrading from Microsoft® Windows Server® 2003 to Microsoft® Windows Server® 2008 is not recommended.
- Microsoft® Windows Server® 2008 supports the following upgrade paths:
  - For Microsoft® Windows Server® 2003 Standard x64 Edition:
    - Microsoft® Windows Server® 2008 Standard 64-bit (x64) Edition
    - Microsoft® Windows Server® 2008 Enterprise 64-bit (x64) Edition
  - For Microsoft® Windows Server® 2003 Enterprise x64 Edition:
    - Microsoft® Windows Server® 2008 Enterprise 64-bit(x64)Edition
  - For Microsoft® Windows Server® 2003 Standard Edition:
    - Microsoft® Windows Server® 2008 Standard 32-bit(x86)Edition
    - Microsoft® Windows Server® 2008 Enterprise 32-bit(x86)Edition
  - For Microsoft® Windows Server® 2003 Enterprise Edition:
    - Microsoft® Windows Server® 2008 Enterprise 32-bit(x86)Edition
- To use Microsoft® Windows Server® 2008, you must first perform a backup of necessary user information by following the instructions in [“Installing Microsoft® Windows Server® 2008” on page 18](#).
- Upgrading between different architectures i.e. upgrading from Microsoft® Windows Server® 2008 32-bit (x86) Edition to Microsoft® Windows Server® 2008 64-bit (x64) Edition and vice versa is not supported.
- Upgrading from a full installation of Microsoft® Windows Server® 2008 to a Server Core installation is not supported.
- The system partition must have sufficient capacity available to install the system. See “System Partition Size” on page 14.

## Graphic Accelerator Driver

To upgrade from Microsoft® Windows Server® 2003 to Microsoft® 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 in *Programs* click **uninstall a Program**.
2. Select *Matrox Graphics Software (remove only)* from the program list, and click **Uninstall/Change**.
3. Follow the on-screen messages to uninstall the driver.
4. Restart the system.

## PROSet

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

To uninstall PROSet:

1. Remove the network adapters team.  
First note down the current settings (e.g. IP addresses) of the standard and optional adapters teamed for network redundancy. You will have to reconfigure the team settings after the upgrade.  
To remove the team, see [“Adapter Fault Tolerance \(AFT\)/ Adaptive Load Balancing \(ALB\)” on page 26](#).
2. Navigate to *Control Panel*, in *Programs* click **Uninstall a program**.
3. Select *Intel (R) PRO Network Connections xx.xx.xx.xx* from the program list, and click **Uninstall/Change**.  
\*xx.xx.xx.xx is a version of PROSet and varies depending on servers.
4. Click **Remove**, click **Yes**, then click **Finish**.
5. Follow the on-screen messages to uninstall PROSet.
6. Restart the system.

## Upgrading Windows


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

---

### Caution

Before you upgrade, you must first uninstall the graphics accelerator driver and PROSet.

---


1. When Microsoft® Windows Server® 2003 is running, insert the Microsoft® Windows Server® 2008 DVD-ROM into the optical disk drive.
2. Click  when prompted to *Install now*.
3. Choose to download the latest update program, or proceed with the one on the Microsoft® Windows Server® 2008 DVD-ROM.
4. Enter your product key, and click **Next**.
5. Select the Windows edition you wish to install, and click **Next**.

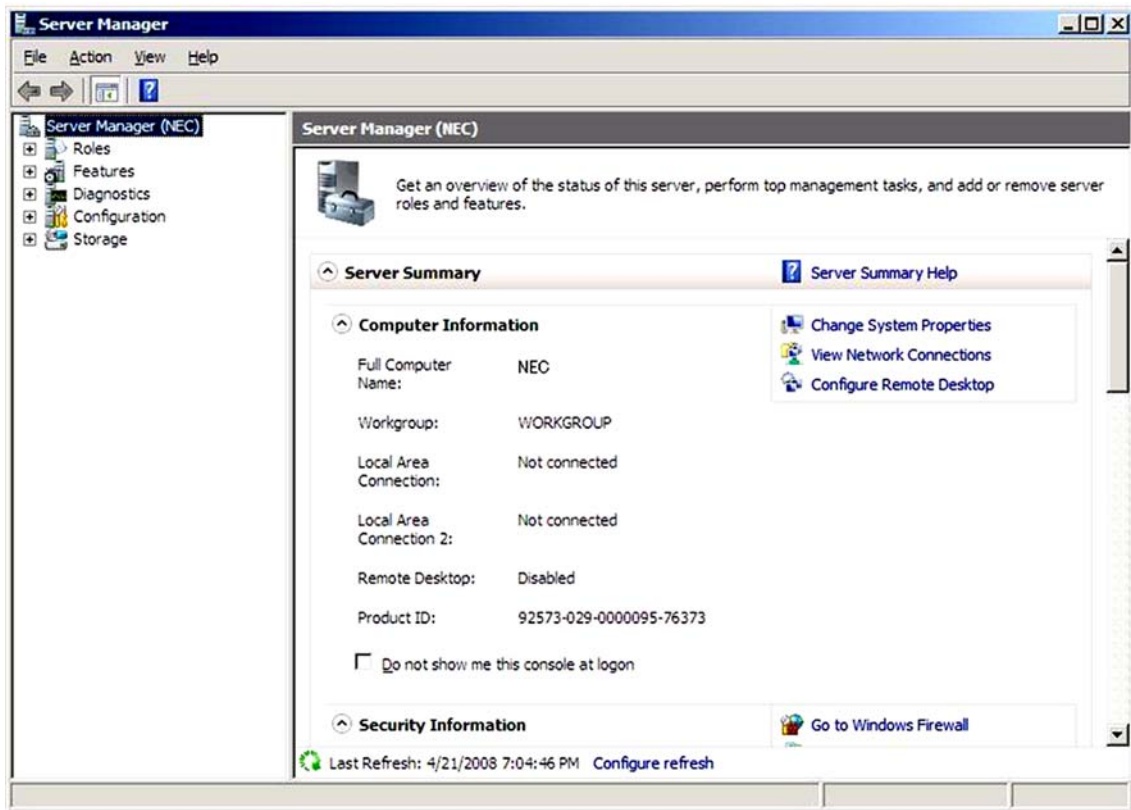
---

### Caution


Select the same edition as your previous Microsoft® Windows Server® 2003. For more details, see [“Before You Upgrade”, page 41](#).

---

6. Read the license terms carefully. If you agree, check **I accept the license terms**, and click **Next**.
7. Select the **Upgrade** type of installation.
8. Read the Compatibility Report, and click **Next**.
9. The upgrade process starts.
10. When prompted to do so, log on to the system.  
If you had set a password in Microsoft® Windows Server® 2003, enter the same password, and click .
11. On the *Server Manager* screen, confirm your user settings.



---

 **Note:** If the message **Ask me again later** appears. Click **Cancel**.

---

12. Install the drivers. See [“Installing Drivers and Configuring Driver Settings”](#), page 24.
  13. Follow the instructions in [“Installing Drivers after the Upgrade”](#) on page 45.
  14. Follow the instructions in [“Fault Recovery Settings”](#) on page 30.
- The upgrade is complete.

## Installing Drivers after the Upgrade

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

---

### Caution

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

---

### Installing a driver for the RAID Controller

*LSI Logic MegaRAID SAS 8708EM2 RAID Controller*

*LSI Logic MegaRAID SAS PCI EXPRESS ROMB (on the mother board)*

1. *Start > Administrative Tools > Server Manager.*
2. *Diagnostics > Device Manager.*
  - Under *Storage Controllers*, right-click **LSI Logic MegaRAID SAS 8708EM2 RAID Controller**, and click **Update Driver Software**.
  - For BULL NovaScale R480 E1, Under *Storage Controllers*, right-click **LSI Logic MegaRAID SAS PCI Express ROMB**, and click **Update Driver Software**.
3. Click *Browse my computer for driver software*.
4. Click *Let me pick from a list of device drivers on my computer*, and click **Next**.
5. Click **Have Disk...**
6. Select the path to the folder in which the driver is stored (e.g. your storage media storing the Driver Set) and click **Open**.
  - Microsoft® Windows Server® 2008 64-bits (x64) Editions:  
\\00x\W2K8\drivers\driverset\winnt\oemfd\ws2008x64\fd1
  - Microsoft® Windows Server® 2008 32-bits (x86):  
\\00x\W2K8\drivers\driverset\winnt\oemfd\ws2008\fd1
7. On the *Install From Disk* screen, click **OK**.
8. Back to the *Select the device driver you want to install for this hardware* screen, click **Next**.

The driver installation starts.
9. Click **Close**, and restart the computer if prompted to do so.

The driver update is complete.

## Installing a driver for the ATA/ATAPI Controller

An ATA/ATAPI controller driver must be installed on all BULL NovaScale series servers, except for the T860 E1 and R480 E1.

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### Caution

The installation procedures vary by server model.

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*For the BULL NovaScale/T850 E1, BULL NovaScale R440 E1, or R460 E1*


1. *Start > Administrative Tools > Server Manager.*
2. *Diagnostics > Device Manager.*  
Under *IDE ATA/ATAPI Controllers*, right-click *Intel(R) 631xESB/632xESB SATA AHCI Controller*, and click **Update Driver Software**.
3. Click *Browse my computer for driver software*.
4. Click *Let me pick from a list of device drivers on my computer*, and click **Next**.
5. 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 complete, 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

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

---

The driver update is complete.

## Installing a driver for the SCSI controller

*Adaptec SCSI card 29320LPE / 29320ALP*

1. *Start > Administrative Tools > Server Manager.*
2. *Diagnostics > Device Manager.*  
Under *Storage Controllers*, right-click the card to update and click **Update Driver Software**.
3. Click **Browse my computer for driver software**.
4. Click **Let me pick from a list of device drivers on my computer**, and click **Next**.

5. Click **Have Disk...**
6. Select the path to the folder in which the driver is stored (e.g. your storage media storing the Driver Set) and click **Open**.
7. On the *Install From Disk* screen, click **OK**.
8. Back to the *Select the device driver you want to install for this hardware* screen, click **Next**.  
The driver installation starts.
9. Click **Close**, and restart the computer if prompted to do so.

The driver update is complete.

### ***Installing a SCSI Controller***

#### *Adaptec SCSI Card 29160LP*

You do not need to install the driver manually, it is automatically installed by Windows Plug-and-Play.

### ***Installing a Fibre Channel controller***

#### *Emulex LightPulse® LPe1150 , Emulex LightPulse® LPe11002*

You do not need to install the driver manually, it is automatically installed by Windows Plug-and-Play.

## Vos remarques sur ce document

**Titre :** NovaScale T850 E1, T860 E1, R440 E1, R460 E1 and R480 E1 Windows 2008 Entreprise/Standard Installation Guide

**Référence :** 86 A1 44FA 02

**Date:** October 2008

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### AMELIORATIONS SUGGEREES

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