Dell™ CERC and PERC RAID Controllers Operating System Driver Installation Guide

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Overview

Dell™ CERC and PERC RAID Controllers Operating System Driver Installation Guide

● Obtaining Drivers

The Dell™ Cost-Effective RAID Controller (CERC) and the Dell PowerEdge Expandable RAID Controller (PERC) require software drivers to operate with the following operating systems:

- Microsoft® Windows®
- Red Hat Linux
- Novell® NetWare®

NOTE: Be sure to use the latest updates provided by the operating system manufacturer.

The drivers support:

- 40 logical drives per RAID controller
- The ability to detect newly configured logical drives in Disk Administrator without rebooting the system
- The ability to delete the last logical drive created using the configuration utilities (See the RAID controller's user's guide for more information.)
- The ability to use the remaining capacity of an array using Dell OpenManage™ Array Manager (if provided).

NOTE: Your RAID controller may or may not support all of the operating systems covered in this document.

Obtaining Drivers

NOTE: See the readme file that comes with the driver for any updated information.

You can create a driver diskette for each supported operating system from the *Dell Systems Management*® CD or *Server Support* CD. However, to make sure you have the latest version of the drivers, download the updated drivers from the Dell Support web site at support.dell.com.

Installing the Windows Driver
Dell™ CERC and PERC RAID Controllers Operating System Driver Installation Guide

This chapter contains the procedures for installing the drivers for the Windows® 2000 Server and Windows 2003 operating systems. It also contains procedures for upgrading from PERC 3 controllers and installing PERC 4 drivers in Windows NT, 2000, and Windows 2003 systems that have PERC 3 controllers.

The Windows driver file is available on the *Dell™ OpenManage™ Systems Management*® CD, *Server Support* CD, and the Microsoft operating system CD.

There are three methods for installing the driver:

l   During operating system installation

Use this method if you are performing a new installation of the operating system and want to include the drivers.

l   After adding a new RAID controller

Use this method if the operating system is already installed, you have installed a RAID controller, and you want to add the device drivers.

l   Updating existing drivers

Use this method if the operating system and RAID controller are already installed, and you want to update to the latest drivers.

Installing a Driver During Operating System Installation

Perform the following steps to install the driver while you are installing the operating system.

1. Power down the system.

2. Insert the RAID controller if it is not already installed.

   See the user's guide for your board for hardware installation instructions.

3. Boot the system.

   During bootup, the BIOS banner should display. If it does not, power down and read the "Troubleshooting" section in the other documentation for your RAID controller.

   NOTE: For the procedures needed to configure logical drives, refer to your *RAID controller documentation.*

4. Configure logical drives.

NOTE: If this controller is not your primary controller, you can skip to Step 5 and configure the logical drives using Dell OpenManage™ Array Manager (if provided).

5. Insert the *Dell OpenManage Systems Management* CD or *Server Support* CD in the CD drive and restart the server.

6. Select the language that you want to use.

7. Read and accept the software license agreement to continue.

8. Select **Click here for Server Setup** on the **Systems Management** main page.

9. Follow the instructions on the screen to complete setting up the operating system.

   Systems Management detects the devices on your system and then automatically installs drivers for all of those devices, including your RAID controller.

10. When prompted, insert the operating system CD and follow the instructions on the screen to complete the installation.

   Refer to the operating system documentation for more information.

Installing a Driver for a New RAID Controller

Perform the following steps to configure the driver when you add the RAID controller to a system that already has Windows installed.

1. Power down the system.

2. Install the RAID controller.

   See the user's guide for your board for hardware installation instructions.

3. Boot the system.

4. When the controller is added to a server and the operating system detects the controller, click **Cancel** on **All Detected Devices** and reboot.

5. Install the drivers for the new hardware.

   The **Found New Hardware Wizard** screen displays the detected hardware device.

6. Click **Next**.

   The screen used to locate the device driver for the hardware device displays.

7. Select **Search for a suitable driver for my device** and click **Next**.

   The **Locate Driver Files** screen displays.

8. Insert the diskette with the appropriate driver.

9. Select **Floppy disk drives** and click **Next**.

   The Wizard detects the device driver on the diskette, and the **Completing the upgrade device driver** wizard displays the name of the controller.

10. Click **Finish** to complete the installation.

Updating an Existing Driver

Creating a Driver Diskette

1. Depending on how you obtain your driver, do one of the following:

   a. To obtain the driver from the *Dell OpenManage Systems Management* CD or *Support* CD, insert the CD into your systems CD drive, and insert a diskette into the diskette drive.

b. To obtain the drivers from Dell Support, go to support.dell.com and download the latest drivers for your controller to a diskette, then skip to step 7.

2. Click **Copy Drivers**.

3. Select a server from the **Select Server** drop-down menu, and then select the operating system under **Select Drivers/Utilities Set**.

4. Click **Continue**.

5. On the **Utilities and Drivers** page, scroll to the box for the operating system on the server and click the driver for your type of RAID controller.

6. Follow the instructions on the screen and unzip the file to the diskette.

7. Insert the diskette into the diskette drive of the system for which you want to update drivers.

Updating the Driver

1. Press **Start**—> **Settings**—> **Control Panel**—> **System**.

   The **System Properties** screen displays.

   NOTE: In Windows 2003, press **Start**—> **Control Panel**—> **System**.

2. Click the **Hardware** tab.

3. Click the **Device Manager**.

   The **Device Manager** screen displays.

4. Click **SCSI and RAID Controllers**.

5. Double-click the RAID controller for which you want to update the driver.

6. Click the **Driver** tab and click **Update Driver**.

   The screen for the **Upgrade Device Driver Wizard** displays. The Wizard helps you update the driver for the hardware device.

7. Follow the steps in the Wizard to search the diskette for the driver.

8. Select the **INF** file from the diskette.

   NOTE: In Windows 2003, select the name of the driver, not the INF file.

9. Click **Next** and continue the installation steps in the Wizard.

Installing PERC 4/DC or PERC 4/SC Controllers in Windows NT 4.0 Systems With PERC 3/SC, 3/DCL, or PERC 3/DC

The PERC 4/DC driver for Windows NT 4.0 is compatible with PERC 3/DC, PERC 3/DCL, and PERC 3/SC controllers. However, to ensure proper system operation, you must uninstall the existing PERC driver and install the PERC 4 driver before you install a PERC 4/DC controller.

The PERC 4/DC driver runs all of the PERC 3/DC, PERC 3/DCL and PERC 3/SC controllers in the system. To remove the PERC 3 driver and install the PERC 4/DC or PERC 4/SC driver and controller(s), perform the following steps:

1. Log on as an administrator.

2. From the Windows **Start** menu, point to Settings, then click **Control Panel**.

   The **Control Panel** window opens.

3. Double-click **SCSI Adapters**.

   The **SCSI Adapters** window opens.

4. Click the **Drivers** tab.

A list of all currently installed SCSI adapter drivers displays on the tab.

5. Select the PERC Adapters driver and click **Remove**.

The **Remove Driver** window appears.

6. Click **Yes** to complete the removal.

The **Drivers** tab displays a list of all currently installed SCSI adapter drivers. The PERC 3/DC, PERC 3/DCL, and PERC 3/SC driver is no longer listed.

⚠ **CAUTION: Do not shut down or restart the system before installing the PERC 4/DC or 4/SC driver.**

7. Click **Add**.

The **Install Driver** window appears.

8. Insert the driver diskette that came with your PERC 4/DC or 4/SC controller into your system's diskette drive.

📝 **NOTE:** You can also create a diskette with the latest version of the driver by accessing support.dell.com and downloading the latest version available online.

9. Click **Have Disk....**

The **Install from Disk** window appears.

10. Click **OK**.

A list of drivers available on the diskette appears.

11. Select **CERC ATA100/4CH; PERC 2/3/4 Windows NT 4 Driver** and click **OK**.

The **System Setting Change** window appears.

12. Click **Yes** to restart the system.

13. Install the PERC 4/DC or 4/SC controller(s) in the system.

For instructions, see Upgrading PERC 3/DC,3/DCL and 3/SC Controllers found later in this document.

Updating the Device Drivers Running Windows NT 4.0

To remove the PERC 3/SC, PERC 3/DC and PERC 3/DCL drivers and install the PERC 4/SC or PERC 4/DC drivers to a system running the Microsoft Windows NT 4.0 operating system, perform the following steps:

📝 **NOTE:** You must be logged on as Administrator to perform these steps.

1. From the **Start** menu, click **Settings**, then click **Control Panel**.

2. In the **Control Panel**, double-click **SCSI Adapters**.

3. Click the **Drivers** tab.

A list of all currently installed SCSI drivers appears.

4. Select the **PERC 3/QC, PERC 3/DC, PERC 3/DCL or PERC 3/SC device driver** and click **Remove**.

A **Remove Driver** dialog box appears.

5. Click **Yes** to complete the removal.

The **Drivers** tab displays a list of all currently installed SCSI drivers. The PERC 2 or PERC 3 driver are no longer listed.

⚠ CAUTION: **Do not shut down or restart the system before installing the PERC 4/DC or PERC 4/SC driver.**

6. Click **Add**.

The **Install Driver** dialog box appears.

7. Locate the driver diskette for Windows NT 4.0 provided with your PERC 4/DC, PERC 4/SC controller kit and insert it in the system diskette drive.

📝 NOTE: You can also create a diskette with the latest version of the driver by accessing support.dell.com and downloading the latest version available online.

8. Click **Have Disk....**

The **Install from Disk** dialog box appears.

9. Click **OK**.

A list of drivers available on the diskette appears.

10. Select **CERC ATA100/4ch**; **PERC 2/3/4 Windows NT 4 Driver** and click **OK**.

The **System Setting Change** dialog box appears.

11. Click **Yes** to restart the system.

12. Shut down and turn off the system as well as all peripherals attached to the system.

Installing PERC 4/DC or PERC 4/SC Controllers in Windows 2000 and Windows 2003 Systems with PERC 3/SC, 3/DCL, or PERC 3/DC

The PERC 4/DC or 4/SC driver for Windows 2000 and Windows 2003 is compatible with PERC 3/SC, 3/DCL or PERC 3/DC controllers. Perform the following steps to:

- install PERC 4/DC or 4/SC controllers in Windows 2000 or Windows 2003 systems
- remove the PERC 3/DC, 3/DCL, 3/SC drivers
- install the PERC 4/DC or 4/SC drivers to a system running the Microsoft Windows 2000 or Windows 2003 operating system

  📝 NOTE: You must be logged on as `Administrator` to perform these steps.

1. From the desktop, right-click the **My Computer** icon.

2. Left-click **Manage**.

3. Click **Device Manage**.

4. Double-click **SCSI and RAID Controller**.

A list of all currently installed SCSI drivers appears.

5. Double-click the appropriate RAID controller (such as **PERC 3/DC RAID Controller**).

6. Select the **Driver** tab.

7. Select **Update Driver**.

The **Update Device Driver Wizard** appears.

8. Click **Next**.

9. Click **Display a list of known drivers for this device so I can choose a specific driver**.

10. Click **Next**.

The **Select a Device Driver Wizard** appears.

11. Locate the driver diskette for Windows 2000 or Windows 2003 provided with your PERC 4/DC or PERC 4/SC controller kit and insert it in the system diskette drive.

   📝 **NOTE:** You can also create a diskette with the latest version of the driver by accessing support.dell.com and downloading the latest version available online.

12. Click **Have Disk**.

The **Install from Disk** dialog box appears.

13. Click **OK**.

A list of PERC 4/DC and 4/SC drivers available on the diskette appears.

14. Click **Next**.

15. Select the appropriate driver for Windows 2000 or Windows 2003.

A driver warning dialog box appears.

16. Click **Yes** to continue.

The **Start Device Driver Installation** dialog box appears.

17. Shut down and power off the system.

18. Install the PERC 4/DC or 4/SC controller(s) and connect the internal SCSI cables.

19. Power on the system.

During system start-up, your system displays a message that indicates the presence of the new PERC 4/DC or PERC 4/SC controller(s).

20. Log on as an administrator.

Windows 2000 or Windows 2003 starts, displays a message that new hardware has been detected, and starts the Found New Hardware Wizard.

21. Click **Cancel** as many times as necessary to exit the wizard and return to the Windows desktop.

22. Repeat step 4.

The Found New Hardware Wizard starts.

23. Click **Next**.

The **Install Hardware Device Drivers** window appears.

24. Select the **Search for a suitable driver for my device (recommended)** option, if not already selected, and click **Next**.

The **Locate Driver Files** dialog box appears. Make sure that only the **Floppy disk drives** option is selected.

25. Insert the driver diskette that came with your PERC 4/DC controller into your system's diskette drive and click **Next**.

The **Driver Files Search Results** window appears, displaying the driver found on the diskette that matches the device you are installing.

26. Click **Next**.

When Windows has finished installing the driver, the **Completing the Found New Hardware Wizard** window appears.

27. Click **Finish**.

The Found New Hardware Wizard appears, indicating that Windows 2000 or Windows 2003 found a device labeled **SCSI Controller**.

28. Repeat steps 9 through 13 to install the correct driver for the SCSI controller.

    NOTE: If you are adding a PERC 4/DC controller, perform step 24 once to install one driver for the device labeled **SCSI Controller**.

    When you have installed all of the necessary drivers, the **Completing the Found New Hardware Wizard** window appears.

29. Click **Finish**.

    The **Completing the Upgrade Device Driver Wizard** window appears.

30. Click **Finish**.

    The **Dell PERC 4/DC or PERC 4/SC RAID Controller Properties** window appears.

31. Click **Close**.

32. Restart your system.

Migrating from a PERC 3/DC, 3/DCL, 3/SC to PERC 4/DC or PERC 4/SC

This section updates your peripheral documentation, lists features of the PERC 4/DC and PERC 4/SC controller and provides procedures for upgrading from PERC 3/DC, 3/DCL or 3/SC controllers.

Upgrading PERC 3/DC,3/DCL and 3/SC Controllers

Upgrading PERC 3/SC, 3/DC and 3/DCL is direct and easy. Make sure you back up the entire system, including operating system and user data files.

Upgrade Tasks

Upgrading to PERC 4/DC or 4/SC controllers involves the following tasks:

- l update the device driver (use the procedure appropriate for your operating system).
- l remove the PERC 3/SC, 3/DC, 3/DCL controller and install the PERC 4/DC or PERC 4/SC controller.
- l set the desired write-back or write-through policy using the PERC BIOS Configure Utility

Updating the Device Drivers Running Windows 2000 or Windows 2003

To remove the PERC 3/DC, 3/DCL, 3/SC drivers and install the PERC 4/DC or 4/SC drivers to a system running the Microsoft Windows 2000 or Windows 2003 operating system, perform the following steps:

NOTE: You must be logged on as Administrator to perform these steps:

1. From the desktop, right-click the **My Computer** icon.

2. Left-click **Manage**.

3. Click **Device Manage**.

4. Double-click **SCSI and RAID Controller**.

   A list of all currently installed SCSI drivers appears.

5. Double-click the appropriate RAID controller (such as **PERC 3/DC RAID Controller**).

6. Select the **Driver** tab.

7. Select **Update Driver**.

   The **Update Device Driver Wizard** appears.

8. Click **Next**.

9. Click **Display a list of known drivers for this device so I can choose a specific driver**.

10. Click **Next**.

    The Select a **Device Driver Wizard** appears.

11. Locate the driver diskette for Windows 2000 or Windows 2003 provided with your PERC 4/DC or PERC 4/SC controller kit and insert it in the system diskette drive.

12. Click **Have Disk**.

    The **Install from Disk** dialog box appears.

13. Click **OK**.

    A list of PERC 4/DC and 4/SC drivers available on the diskette appears.

14. Click **Next.**

15. Select the appropriate driver for Windows 2000 or Windows 2003.

    A driver warning dialog box appears.

16. Click **Yes** to continue.

    The **Start Device Driver Installation** dialog box appears.

17. Click **Next**.

    The **Completing the Upgrade Device Driver** appears.

18. Click **Finish**.

19. Click **Close**.

20. Shut down and turn off the system as well as all peripherals attached to the system.

21. Skip to the following procedure, Removing the PERC 3/DC, 3/DCL, or 3/SC Controller and Installing the PERC 4/DC or PERC 4/SC Controller.

Removing the PERC 3/DC, 3/DCL, or 3/SC Controller and Installing the PERC 4/DC or PERC 4/SC Controller

The following procedure applies to both Windows NT, Windows 2000, and Windows 2003. To remove the PERC 3/DC, 3/DCL, or 3/SC controller, perform the following steps:

⚠ **CAUTION: See the safety instructions in your System Information booklet before working inside your system.**

1. Shut down and turn off the system as well as all peripherals attached to the system.

2. Remove the system cover.

   See the system *Installation and Troubleshooting Guide* for detailed instructions.

3. Label the SCSI connectors that connect to the 3/DC, 3/DCL and 3/SC controller connectors.

⚠ **CAUTION: If the SCSI connectors are not properly identified with their channel identification, the PERC 4 firmware may be unable to convert to the correct logical drive configuration (performed in the next procedure.)**

4. Disconnect the connectors attached to the PERC 3/DC, 3/DCL and 3/SC controller and remove the controller from the system.

   See the system's *Installation and Troubleshooting Guide* for instructions.

5. Install the PERC 4/DC or 4/SC controller and install the SCSI cables you removed in step 4.

   See the documentation provided with the controller kit.

6. Close or replace the system cabinet cover.

7. Reconnect the system and peripherals to their power sources.

8. Boot the system.

   The configuration data on the hard drive is used automatically if there is configuration mismatch (assuming the new controller has no configuration).

9. Microsoft detects the new hardware and prompts you for the new driver diskette that contains the driver for PERC 4/DC or PERC 4/SC.

   📝 **NOTE:** If you have configured a RAID 5 system with more than four physical drives, the disk activity LED blinks after the BIOS configuration is complete. This is an indication of normal background consistency checking being performed by the PERC 4 controllers. Consistency checking could take hours to complete, depending on the size of the logical drives. The server is usable, although I/O response may be slow. Performance should be back to normal after consistency checking.

Changing the Write Policy

If your new PERC 4/DC controllers have different battery backup settings than the previous controllers, you must change the write policy of the logical drive to obtain additional performance improvements or avoid data corruption in the event of power loss.

For example, PERC 3/SC and PERC 3/DCL controllers do not include a battery backup unit, while the PERC 4/DC and PERC 3/DC do have a battery backup unit.

If you are upgrading from a PERC 3/SC to a PERC 4/DC, you should change the write policy from Write-Through to Write-Back for additional performance improvements.

If you are upgrading a PERC 3/DCL to a PERC 4/DC with the same battery backup settings, you do not need to change the write policy.

To change the write policy settings, perform the following steps:

1. From the **PERC BIOS Configure Utility, select Object —> Logical Drive** menu.

2. Select the logical drive and press <Enter>.

3. Select **View/Update Parameters** and press <Enter>.

4. Select **Write Policy** and press <Enter>.

5. Select **WrBack** or **WrThru** according to the battery unit setting.

   If the new adapter does not include the battery backup unit, select **WrThru**. Otherwise, select **WrBack**.

6. Press <Esc> as many times as necessary to return to the **Logical Drive Menu**.

7. Repeat steps 2 through 6 for each logical drive.

Installing Red Hat Linux Driver
Dell™ CERC and PERC RAID Controllers Operating System Driver Installation Guide

● Installing the Red Hat Linux Driver

Use the procedures in this section to install the Red Hat Linux driver for Red Hat Linux 8.1, 9.0, AS 2.1, 3.0, and ES 2.1, 3.0. The driver is updated frequently. To make sure you have the current version of the driver, you can download the updated Red Hat Linux driver from Dell Support at **support.dell.com**.

For information about installing a standard Linux driver, see Installing the Red Hat Linux Driver.

> **NOTE:** On a Linux 8.0 system, when you run Cerc Manager (v. 5.23) from a Gnome-terminal in XWindows, the <F10> key cannot be used to create a logical drive. Instead, you can use the alternate keys <Shift><0>. (This is not an issue if Xterm is used to call cercmgr). The following is a list of alternate keys you can use in case of problems with keys <F1> through <F6>, and <F10>:
>
>   n   <Shift><1> for <F1>
>
>   n   <Shift><2> for <F2>
>
>   n   <Shift><3> for <F3>
>
>   n   <Shift><4> for <F4>
>
>   n   <Shift><5> for <F5>
>
>   n   <Shift><6> for <F6>
>
>   n   <Shift><0> for <F10>

Installing the Red Hat Linux Driver

To install a Red Hat Linux driver more recent than the one on the Red Hat CD, you must use a driver diskette when you are installing the operating system. See Installing the Driver for information on this procedure. You must download the files before you begin the operating system installation.

For more detailed installation instructions for Red Hat Linux 9.0 or later, see the operating system installation guide on the Dell Support site at **support.dell.com**.

Creating a Driver Diskette

Before beginning the installation, download the driver appropriate for your version of Red Hat Linux from **support.dell.com** to your temporary directory. This file includes two RPMs and five driver disk files. From a Red Hat Linux system, enter the following commands to separate the individual driver files from the tar archive file:

```
mount /dev/fd0 /mnt/floppy
```

```
tar xvzf -C /mnt/floppy /tmp/filename.tar.gz
```

> **NOTE:** You can also create a driver diskette using the *Dell OpenManage Systems Management* CD or *Server Support* CD. See Creating a Driver Diskette in the Installing the Windows Driver section for more information.

Installing the Driver

Perform the following steps to install Red Hat Linux 9.0 or later and the appropriate RAID drivers.

1. Boot normally from the Red Hat Linux installation CD.

2. At the command prompt, type:

```
expert noprobe dd
```

3. When the install prompts for a driver diskette, insert the diskette and press <Enter>.

See Creating a Driver Diskette for information about creating a driver diskette.

4. Complete the installation as directed by the installation program.

Installing the Driver Using an Update RPM

Perform the following steps to install Red Hat Linux 9.0 or later and the appropriate RAID driver using an update RPM:

1. Boot normally from the Red Hat Linux installation CD.

2. Install the RPM file `rpm -ivh megaraid-<version>.rpm`.

3. Reboot the system.

Installing the Novell NetWare Driver
Dell™ CERC and PERC RAID Controllers Operating System Driver Installation Guide

- Installing a Driver for a New Controller
- Modifying the PCI Slot Numbers for the Controllers
- Performing a Standard Mode Installation of NetWare 5.1SBE, 6.0, and 6.5
- Updating an Existing Driver for NetWare 5.1 or 6.0
- Updating an Existing Driver for NetWare 6.5
- Installing the PERC 3/DC and PERC 3/QC Device Driver for NetWare 5.1, 6.0, and 6.5

You can use the following methods to install the Novell NetWare drivers:

l   During operating system installation

Use this method if you are performing a new installation of Novell NetWare using Dell Systems Management and want to include the drivers. See Installing a Driver During Operating System Installation in Installing the Windows Driver for more information.

> **NOTE:** For information about installing drivers if you use the NetWare CD to install your operating system, see your Novell documentation.

l   After adding a new RAID controller

Use this method if Novell NetWare is already installed and you want to add the device drivers after installing the RAID controller.

l   Performing a Standard Mode Installation of NetWare 5.1SBE

With standard mode installation, you accept the defaults for the components to be installed.

l   Updating existing drivers

Use this method if Novell NetWare and the RAID controller are already installed, and you want to update to the latest drivers for the controller.

Installing a Driver for a New Controller

Perform the following steps to add a NetWare 5.1, 6.0, 6.5, or later driver to an existing installation.

1.   At the root prompt, perform the following steps:

   a.   For NetWare 5.1 and 6.0, type:

      nwconfig

      and press <Enter>.

      The **Installation Options** screen displays.

   b.   For NetWare 6.5, type:

      hdetect

      and press **Continue** on the first menu to go to the storage drivers, then follow the instructions for updating the driver. For NetWare 6.5, you can press <F3> to autodetect drivers.

2.   Select **Configure Disk** and **Storage Device Options**, then press <Enter>.

3.   Select one of the options that display:

   l   Discover and load an additional driver.

If you select the option **Discover and load an additional driver**, the system detects the extra unit. Perform <u>step 4</u> to complete the procedure.

4. At the prompt to select a driver from the list, press <Insert> to insert the driver, which completes the procedure.

   If you select the option **Select an additional driver**, perform steps 5 - 8.

5. After you select **Select an additional driver**, the **Select a Driver** screen displays.

6. Press <Insert> and read the instructions that display.

7. Put the driver diskette in the diskette drive and press <Enter>.

8. The system then detects a driver and installs it.

Modifying the PCI Slot Numbers for the Controllers

Perform the following steps to modify the PCI slot numbers for the controller:

1. At the command prompt, type:

   ```
   C:\NWSERVER>
   ```

   and press <Enter>.

2. Type

   ```
   server -nss
   ```

   (Not load Storage Service /modules.NLM)

3. At : Prompt (System Console), type:

   ```
   load pedge3.ham
   ```

   and press <Enter>.

   The following supported slot options display:

   - No Selection
   - PCI Slot_2.1 (HIN 202)
   - PCI EMBEDDED (HIN 10017)

   NOTE: Write down the number after "HIN". In step 3, the number is 10017.

4. Under choice, type:

   ```
   0
   ```

   This is for no selection.

5. At the command prompt (System Console), type

   ```
   Edit Startup.ncf
   ```

A list of CDM drivers displays.

6. Select `LOAD PEDGE3.HAM SLOT=XXXX`.

7. Before you exit the list of CDM drivers, press <Alt> <V> to save the update.

8. Press <Alt> <X> to exit to C:\NWSERVER.

9. At the C:\NWSERVER prompt, type the following for the operating system to boot:

```
server
```

The operating system boots.

Performing a Standard Mode Installation of NetWare 5.1SBE, 6.0, and 6.5

Standard mode means that you accept the defaults for the components to be installed. Perform the following steps for a standard mode installation on NetWare 5.1SBE, 6.0, and 6.5:

1. At **Server Settings,** select **Continue** and press <Enter> to accept the default.

2. At **Regional Settings,** select **Continue** and press <Enter> to accept the default.

3. At **Mouse type** and **Video mode** select **Continue** and press <Enter> to accept the default.

   The system will take several minutes to load files. It will find the device drivers that support the adapter.

4. Insert the driver diskette in the floppy (A:/) drive.

5. For device types and driver names, select **Modify** and press <Enter>.

6. Highlight **Storage Adapters** and press <Enter>.

7. At the option **Add, Edit or Delete Storage Drivers**, press <Insert> to add a driver.

8. At the option **Select a Driver for each Storage Adapter**, press <Insert> to add an unlisted driver.

   The system scans the path for the A:/ drive. The driver diskette is already in the A:/ drive. The option **Return to Driver Summary** displays.

9. Select **Return to Driver Summary** and press <Enter>.

10. Select **Continue** and press <Enter>.

    NOTE: You must load a driver for each controller. For example, if you have four adapters, the driver is listed four times.

Updating an Existing Driver for NetWare 5.1 or 6.0

Perform the following steps to update an existing driver for NetWare 5.1 or 6.0:

1. Create a driver diskette.

   See Creating a Driver Diskette in the Installing the Windows Driver section for information. (The procedure for creating a driver diskette is the same for all operating systems.)

2. Once the NetWare server is up, type the following:

```
nwconfig
```

3. Press <Enter> to access the NetWare Configuration Utility.

4. On the **Configuration Options** screen, select **Driver Options** and press <Enter>.

5. Under the **Driver Options**, select **Configure Disk and Storage Options**, then press <Enter>.

6. Under the **Additional Driver Actions** menu, press the down arrow key to select the **Additional Driver** option, then press <Enter>.

7. Press <Insert> to install an unlisted driver.

8. Press <Insert> again if using a diskette; otherwise, press <F3> to specify a different location.

9. Insert the driver diskette into the diskette drive and press <Enter>.

   The file **pedge3.ham** displays under the option **Select a Driver to Install**.

10. Highlight **pedge3.ham** and press <Enter>.

11. Select **Yes** to copy **pedge3.ham** files to **C:\NWSERVER**.

12. Select **No** to save the existing file messages to **C:\NWSERVER**.

13. Under **pedge3 Parameters**, perform the following steps to provide the slot number.

14. Press <Alt><Esc> to access **System Console**.

15. On the **System Console**, type:

    ```
    load pedge3
    ```

16. Press <Enter>.

    The following supported slot options display:

    l   No Selection

    l   PCI Slot_2.1 (HIN 203)

17. Write down the number after "HIN".

    In the example in step 16, it is 203.

18. Under **Choice**, type:

    ```
    0
    ```

    for the option **No Selection**.

19. Unload pedge3.ham.

20. Press <Alt><Esc> until you exit the System Console and return to the **pedge3 Parameters** screen in the NetWare Configuration Utility.

21. Under **Slot Number**, enter the slot number you obtained from System Console and press <Enter>.

22. Press <F10> to save the **pedge3** parameters.

23. Under **Driver pedge3 Parameters Actions**, select **Save Parameters and Load Driver**, and press <Enter>.

24. Select **No** when asked to load additional drivers.

    pedge3 will be listed on the **Selected Disk Driver** screen.

25. Exit the NetWare Installation Utility.

26. Power down and reboot your server.

Updating an Existing Driver for NetWare 6.5

Perform the following steps to update an existing driver for NetWare 6.5:

1. Create a driver diskette.

   See Creating a Driver Diskette in the Installing the Windows Driver section for information.

2. Once NetWare begins to boot, the following message displays: `Press ESC to abort OS boot.`

3. Press <Esc>.

4. At the command prompt, type:

   ```
   C:\NWSERVER>
   ```

   and press <Enter>.

5. At C:\NWSERVER>, insert a driver diskette into the floppy drive.

6. Type:

   ```
   cd A:\
   ```

   and press <Enter>.

7. At the A:\ prompt, type:

   ```
   copy A:\*.* C:\NWSERVER\DRIVERS
   ```

   and wait for the copy action to complete.

8. Change the directory and type:

   ```
   cd C:
   ```

   The path displays as "C:\NWSERVER".

9. At C:\NWSERVER prompt, type:

   ```
   server
   ```

   The operating system starts to boot.

10. To verify the driver version, at System Console (1) type:

    ```
    modules Pedge3*
    ```

    The driver version displays.

Installing the PERC 3/DC and PERC 3/QC Device Driver for NetWare 5.1, 6.0, and 6.5

ALERT: If you are manually installing Netware 5.1, 6.0, and 6.5 with PERC 3/DC or PERC 3/QC, you need to modify the device driver that the system loads automatically for storage adapters. Do this before you install the PERC 3 device driver. Perform the following steps to modify the driver.

After you select the mouse and keyboard type, Netware installation automatically detects and reports the devices installed in your system.

1. Select **Storage adapters** and press <Enter> to modify the device driver.

   One or more **QL12160.HAM** drivers load for **QLogic QL12160**.

If PERC 2/SC and PERC 2/DC are also installed in the system, the **MEGA4_XX.HAM** driver loads for **AMI MegaRAID i960Rx Adapter**.

You **MUST** remove all of these drivers before you install the PERC 3 driver.

2. Select each driver listed above and press <Delete> to delete them.

3. Press <Insert> to install the **PEDGE3.HAM** driver for PERC 3/DC or PERC 3/QC adapters.

   NOTE: PEDGE3.HAM is the common driver for PERC 2/SC and PERC 2/DC adapters. You **MUST** use the same driver for PERC 2/SC and PERC 2/DC adapters if they co-exist with PERC 3/DC or PERC 3/QC adapters.

Follow the instructions to finish driver installation, then select **Device Drive summary** and continue NetWare installation.