



## CHAPTER 9

# Upgrading Your Dell PowerVault Fibre Channel Software and Firmware

This chapter provides instructions for updating the storage area network (SAN) software and firmware in existing equipment or in a pre-existing SAN. If you are installing a new device, you should verify that the new device has the latest firmware and software installed. The instructions for updating the following software and firmware are provided in this chapter:

- Software on Windows NT and Windows 2000 systems
- Software on NetWare systems
- PowerVault 650F, 651F, and 630F drive firmware
- PowerVault 650F, 651F, and 630F licensed internal code (LIC)
- PowerVault 660F firmware
- PowerVault 660F and 224F drive firmware
- PowerVault 50F, 51F, and 56F switch firmware
- PowerVault 35F bridge firmware
- PowerVault 120T and 130T firmware
- PowerVault 530F software and firmware



*NOTES: If you are installing a new SAN, skip this chapter and go to Chapter 10, "Installing and Configuring Hardware Devices in a Windows SAN."*

*If you are adding components to a pre-existing SAN, see the component's readme on the Dell PowerVault Fibre Channel Utilities CD Version 4.0 or the Dell PowerVault Fibre Channel Update CD Version 4.0 to determine which SAN components need to be updated.*

*Before starting an upgrade, always check the **File Library** on the Dell Web site at <http://support.dell.com> for the latest drivers and BIOS revisions for your servers and SAN components.*

**NOTICES: To prevent loss of data during an upgrade, back up all data on the storage systems to tape media or media that can be taken off line.**

**Before beginning any upgrade or installation, stop all SAN input/output (I/O) activity. If you are upgrading a Microsoft cluster server, you must stop the cluster service on both servers in the cluster.**

You should update the following components, as required, in the following sequence:

1. Microsoft Windows NT or Windows 2000 servers firmware and software, if applicable:
  - QLogic Fibre Channel host bus adapter (HBA) nonvolatile random-access memory (NVRAM) and BIOS firmware
  - QLogic Fibre Channel HBA software driver
  - QLogic Fibre Channel Configuration Utility
  - Dell OpenManage Application Transparent Failover (ATF)  
*NOTE: You must uninstall QLDirect before you can update Dell OpenManage ATF.*
  - QLogic QLDirect
  - Dell OpenManage Storage Consolidation
  - Dell OpenManage Hardware Instrumentation Package (HIP)
  - Dell OpenManage Array Manager
  - Dell OpenManage Data Managed Node Data Agent
  - Dell OpenManage Data Supervisor or Dell OpenManage Data Administrator
2. Novell NetWare servers, if applicable
  - QLogic Fibre Channel HBA NVRAM and BIOS firmware
  - QLogic Fibre Channel HBA software driver
  - QLogic Fibre Channel Configuration Utility
  - Dell OpenManage Data Managed Node for NetWare
  - Dell OpenManage ATF for NetWare
3. Dell PowerVault 650F/651F/630F hard-disk drive firmware
4. Dell PowerVault 650F and 651F LIC
5. Dell PowerVault 660F storage system firmware and 660F and 224F drive firmware
6. Dell PowerVault 50F/51F/56F firmware
7. Dell PowerVault 35F firmware
8. Dell PowerVault 120T/130T firmware
9. Dell PowerVault 530F SAN appliance software and firmware





## Preparing the SAN for an Upgrade

*NOTE: Perform this procedure when all users have closed their application programs and have logged off the system.*

Before running all SAN upgrades, you must perform the following steps:

1. Prepare the SAN for an upgrade by backing up all data on the SAN storage systems to tape media or media that can be taken off line. Do not simply back up your data by copying it from one SAN storage device to another. Ensure that both the backup job and the backup operator have the authority to back up all of the data. You should use the verify feature of your backup software to verify that the files and directories counts are correct as reported by the backup job. You may want to make a second copy of your data for off-site storage.
2. Close all application programs, including all Dell OpenManage programs, and stop all Dell OpenManage services including:
  - Dell OpenManage Data Event Monitor
  - Dell OpenManage Data Agent
  - Simple Network Management Protocol (SNMP)



*NOTE: When you stop SNMP, you may see indicators advising that other services need to be stopped. Stop all other services of which you are advised.*

3. If you are running Microsoft Cluster Server (MSCS) clusters, stop the cluster services on both cluster servers.
4. Ensure that all hard-disk drive I/O activity on the SAN has stopped.

## Upgrading Software on Windows NT and Windows 2000

The following sections describe how to install the software upgrade from the latest version of the *Dell PowerVault Fibre Channel Utilities CD* or *Dell PowerVault Fibre Channel CD* onto Windows NT or Windows 2000 systems.

### **Before You Install the Software Upgrade on Windows NT or Windows 2000**

**NOTICES: To save your Storage Consolidation configuration, you must *not* uninstall Storage Consolidation before executing the installation of the new version of the software. Performing an uninstall will result in the loss of the Storage Consolidation configuration for the server.**

**Perform this procedure when all users have closed their application programs and have logged off the system you will be updating.**

Before you run the software upgrade from the latest *Dell PowerVault Fibre Channel Utilities CD* or *Dell PowerVault Fibre Channel Update CD*, you must perform the following steps:

1. Back up your configuration data in the registry so that it is available after you complete this process. Otherwise, it will be lost.
2. Uninstall the QLogic Fibre Channel Configuration Utility. For instructions, see Chapter 11, “Installing, Configuring, and Removing Microsoft Windows SAN Software Components.”
3. Uninstall the Dell PowerVault 5xF download utility.
  - a. Click **Start**—> **Settings**—> **Control Panel**.
  - b. Double-click **Add/Remove Programs**.
  - c. Highlight **Dell PowerVault 5xF Utilities**.
  - d. Click **Add/Remove**, and follow the instructions on the screen.
4. Uninstall all of the following software components.
  - a. Click **Start**—> **Programs**—> **Dell OpenManage**—> **PowerVault Manager**—> **Data Managed Node**—> **Data Managed Node Uninstall**.
  - b. Click **Start**—> **Programs**—> **Dell OpenManage**—> **PowerVault Manager**—> **Data Supervisor**—> **Data Management Station Uninstall**.
  - c. Click **Start**—> **Programs**—> **Dell OpenManage**—> **PowerVault Manager**—> **Data Administrator**—> **Data Administrator Uninstall**, if applicable.
  - d. Click **Start**—> **Programs**—> **Dell OpenManage**—> **PowerVault Manager**—> **Data Analyzer**—> **Data Analyzer Uninstall**, if applicable.
  - e. Click **Start**—> **Programs**—> **Dell OpenManage**—> **PowerVault Manager**—> **Power Tool**—> **Data Detective Uninstall**, if applicable.
  - f. Click **Start**—> **Settings**—> **Control Panel**, double-click **Add/Remove Programs**, select **QLDirect**, click **Add/Remove**, if applicable, and follow the instructions on the screen.
  - g. Click **Start**—> **Settings**—> **Control Panel**, double-click **Add/Remove Programs**, select **Dell OpenManage ATF**, click **Add/Remove**, and follow the instructions on the screen.
  - h. Click **Start**—> **Settings**—> **Control Panel**, double-click **Add/Remove Programs**, select **Dell OpenManage Array Manager**, click **Add/Remove**, and follow the instructions on the screen.



*NOTE: If you see error messages during any of the uninstall procedures, record the error message and perform the failed task manually after you reboot the system in step 5. For example, if the uninstall shield reports that files or directories have not been deleted, open Windows Explorer and delete them after rebooting the server.*

5. Reboot the system.

You can now perform the software upgrade as described in the following section.

## ***Installing the Software Upgrade on Windows NT or Windows 2000 Systems***

This procedure explains how to update or install the software needed for a SAN on Windows NT or Windows 2000 systems.

1. Verify that Windows NT Server 4.0 and the required Service Pack (as described in the Release Notes on the *Dell PowerVault Fibre Channel Utilities CD*) or Windows 2000 Server is installed on the system.
2. Verify that Dell OpenManage Data Supervisor, Data Administrator, Dell OpenManage ATF, and all other Dell OpenManage Manager products *except* Dell OpenManage Storage Consolidation are *completely removed* from the system by checking that none of these products appear in the **Start—> Programs** menu.
3. Set the screen resolution to 1024 x 768 pixels.
4. Verify that Transmission Control Protocol/Internet Protocol (TCP/IP) is installed on the server.
5. Verify that SNMP is installed on your server.
6. Update the QLogic HBA NVRAM, BIOS and drivers and the QLogic Fibre Channel Configuration Utility. For instructions about updating your NVRAM, BIOS and drivers, see Chapter 10, "Installing and Configuring Hardware Devices in a Windows SAN." For instructions for installing and configuring the QLogic Fibre Channel Configuration Utility, see Chapter 11, "Installing, Configuring, and Removing Microsoft Windows SAN Software Components," and Chapter 12, "Installing, Configuring, and Uninstalling Components in a Novell NetWare SAN."
7. Update the Dell OpenManage Storage Consolidation software from the *Dell PowerVault Fibre Channel Update CD Version 4.0*.

If you already have an earlier version of Storage Consolidation installed on the servers connected to the SAN, you have the option of performing an upgrade installation. This gives you the benefit of being able to update the Storage Consolidation software without losing the assignment configuration of the virtual disks on the SAN.

An upgrade installation is similar to a regular installation except that during the installation, you will be asked if you want to do an upgrade installation. Answering yes will allow the installation software to proceed with the installation. For instructions, see "Dell OpenManage Storage Consolidation" in Chapter 11, or refer to the *Storage Consolidation User's Guide*.

**NOTICE: To save your Storage Consolidation configuration, you must *not* uninstall Storage Consolidation before executing the installation of the new version of the software. Performing an uninstall will result in the loss of the Storage Consolidation configuration for the server.**

8. If applicable, install the optional Dell OpenManage Hardware Instrumentation Package (HIP) or HP OpenView Network Node Manager Special Edition (NMM SE). See Chapter 16, "Configuring SAN Management Applications" for installation instructions.
9. Install Dell OpenManage ATF, if needed.
10. Install QLogic QLDirect, if needed.
11. Update the following Dell OpenManage software in the following order:
  - a. Dell OpenManage Data Managed Node
  - b. Dell OpenManage Data Supervisor or Dell OpenManage Data Administrator  
  
For instructions, see Chapter 11, "Installing, Configuring, and Removing Microsoft Windows SAN Software Components," but use the *Dell PowerVault Fibre Channel Update CD Version 4.0* instead of the *Dell PowerVault Fibre Channel Utilities CD Version 4.0* listed in Chapter 11 for the Dell OpenManage Data Supervisor and Data Administrator software.
  - c. Dell OpenManage Array Manager
12. Install and configure the remaining Dell OpenManage data management software. For instructions, see Chapter 11, "Installing, Configuring, and Removing Microsoft Windows SAN Software Components."  
  
The remaining Dell OpenManage data management products include Dell OpenManage Data Analyzer and Dell OpenManage Data Detective. See the documentation provided with the application programs for complete installation instructions.
13. Install the PowerVault 5xF download utility from the *Dell PowerVault Fibre Channel Utilities CD* or *Dell PowerVault Fibre Channel Update CD*.
14. Reboot the system.

The software upgrade on Windows NT or Windows 2000 is completed.

## **Updating Software on NetWare Systems**

The following sections explain how to update or install the software needed for a SAN on NetWare systems.

### **Updating the QLogic HBA NVRAM, BIOS, and Drivers in NetWare**

The drivers for the Novell NetWare operating system are located on the *Dell PowerVault Fibre Channel Utilities CD Version 4.0*. They are also located in the **<drive letter>\netware** directory of driver and firmware diskette 1 that you made from this CD.

To update the NVRAM and the BIOS, perform the same steps as in “Configuring the HBA” in Chapter 10.

To update the HBA drivers in NetWare, perform the following steps:

1. Insert the *Dell PowerVault Fibre Channel Utilities CD Version 4.0* into the server's CD-ROM drive, or insert driver and firmware diskette 1 that you made from the CD into the server's diskette drive.
2. Start the appropriate NetWare installation program.
  - For NetWare 4.2, type `load install` at the server console prompt.
  - For NetWare 5.1, type `load nwconfig` at the server console prompt.
3. Select **Driver Options**.
4. Select **Configure disk and storage device drivers**.
5. Select **Deselect a selected driver**.



*NOTE: Unloading the selected driver unmounts all LUNs.*

6. Select **QL2100.HAM** or **QL2200.HAM**, depending on which adapter you have.
7. At the prompt `Do you want to unload driver <driver_version>?`, select **Yes**.
8. Go back to **Configure disk and storage device drivers**.
9. Select **Select an additional driver**.
10. Press <Insert> to select **Install an unlisted driver**.
11. If the driver and firmware diskette is in drive A, press <Enter>. If the driver and firmware diskette is not in drive A, press <F3> to enter the correct path to the firmware and driver diskette.
12. Select **QL2100.HAM** or **QL2200.HAM**, depending on which adapter you have.
13. At the prompt `Do you want to copy driver QL2100.HAM?`, select **Yes**.
14. At the prompt `Specify server boot path`, type the path to the file **server.exe**, or press <Enter> to accept the default path of **c:\nwserver**.
15. At the prompt `Save Existing File c:\nwserver\ql2x00.ham`, select **No**.
16. At the prompt `Save Existing File c:\nwserver\ql2x00.ddi`, select **No**.
17. Select **Modify driver parameters**.
18. Type the proper value for **Slot Number** and press <Enter>.



NOTE: To obtain the slot number, perform the following steps:

- a. Press <Alt><Esc> until you get a console prompt.
  - b. Type `load ql2200` or `load ql2100`, and press <Enter> to display the available slots. Make a note of the displayed slot numbers.
  - c. In NetWare 4.2, press <Esc> until the console prompt appears. In NetWare 5.1, press <0> to return to the console prompt.
19. Leave the **Scan all Luns** option at the default value of **Yes**, and press <F10> to save the configuration.
  20. Select **Save parameters and load driver**.
  21. If you have a second adapter, select **Yes** at the prompt `Do you want to select an additional Disk driver?`, and then repeat steps 10 through 18 for the second adapter.
  22. At the prompt `Do you want to select an additional Disk driver?`, select **No**.
  23. Select **Return to previous menu** twice.
  24. Select **Exit** to exit the installation program.

The installation procedure makes all necessary additions and changes to the **startup.ncf** file and sets the values appropriately, so you do not need to adjust any driver settings.

25. Mount the volumes according to the configuration you had prior to step 6.

If the **Mount** commands are in the **autoexec.ncf** file, you can reinitialize the **autoexec.ncf** file to mount the appropriate volumes.

**NOTICES: For volumes to be accessed by a NetWare server, you must mount them on the server. You can mount them by issuing the *Mount* command; however, most administrators place it in the *autoexec.ncf* file. After NetWare installation, the *Mount all* command is placed in the *autoexec.ncf* file by default. The administrator must remove this command and replace it with a series of *Mount* commands explicitly mounting the volumes on the SAN that should be available to the server. For instructions, see Chapter 12, "Installing, Configuring, and Uninstalling Components in a Novell NetWare SAN."**

**If you are using Novell Storage Services (NSS) volumes in your SAN, you must edit each system's *autoexec.ncf* file. In this file, find the command *load nss.nlm* and change it to *LOAD NSS /AutoDeactivateVolume=all /MailboxSize=16000 /ClosedFileCacheSize=100000 /CacheBalance=60*. This command prevents the NSS manager from mounting all NSS volumes attached to the SAN.**

The driver upgrade on Novell NetWare is completed.

## **QLogic Fiber Channel Configuration Utility**

For instructions, see “QLogic Fibre Channel Configuration Utility” in Chapter 12.

## **Dell OpenManage Data Managed Node for NetWare**

For instructions, see “Installing, Configuring, and Uninstalling Data Managed Node for NetWare” in Chapter 12,

## **Dell OpenManage ATF for NetWare**

For instructions, see “Dell OpenManage Application Transparent Failover for NetWare” in Chapter 12.

# **Updating Dell PowerVault 650F/651F/630F Drive Firmware**

The following sections describe how to install the latest version of your hard-disk drive firmware on your storage systems.

## **Before Updating the Dell PowerVault 650F/651F/630F Systems Drive Firmware**

Before you update the firmware on the hard-disk drives in your Dell PowerVault 650F, 651F, or 630F systems, perform the following steps:

1. Make sure that Dell OpenManage Data Agent, Dell OpenManage Data Supervisor (or Data Administrator), and Dell OpenManage Data Detective are installed and configured on your server.



*NOTE: You must run the drive firmware update procedure from the server that is running Data Managed Node and that is assigned the lowest numbered LUN (LUN0) on each 650F/651F system.*

2. If you are running MSCS clusters, stop the cluster services on both cluster servers. Otherwise, skip to step 3.
3. Click **Start—> Programs—> Dell OpenManage Manager—> PowerTool**, and click **Data Detective**.
4. Make sure that the local host machine name is listed in the **Set/Get Host and Device** window and click **Set**.
5. In the **Data Detective** window, click **Script** and then click **Get Hard Drive Info**.
6. When the window appears that lists the drive information, including the firmware revision, determine which firmware revisions are on your drives and make a note of them.

7. Obtain the updated drive firmware from the *Dell PowerVault Fibre Channel Utilities* CD or from the **File Library** at <http://support.dell.com>.
8. Copy the drive firmware file onto your C drive.
9. Close all application programs that access the hard-disk drives on which you plan to update the firmware. However, you do not need to close Dell OpenManage Data Administrator.

**NOTICE: You must disable the cache on your storage processors before you update the drive firmware.**

10. Disable and deconfigure both the read cache and write cache before installing a new version of the Flare and PROM code. To deconfigure means to set all memory partition sizes for array caching to 0.

The firmware can now be downloaded to the hard-disk drive. See the following section for details.

### **Updating the Dell PowerVault 650F/651F/630F Drive Firmware on Windows NT or Windows 2000**

To update the firmware on the hard-disk drives in your Dell PowerVault 650F, 651F, or 630F system running Windows NT or Windows 2000, perform the following steps:

1. Click **Start**—> **Programs**—> **Dell OpenManage Manager**—> **PowerTool**, and click **Data Detective**.
2. Make sure that the local host machine name is listed in the **Set/Get Host and Device** window and click **Set**.
3. In the **Data Detective** window, click **Script** and then click **Get Hard Drive Info**.

A window appears that lists the drive information, including the firmware revision.

**NOTICE: You must disable the cache on your storage processors before you update the drive firmware. See the previous section for more details.**

4. In the **Data Detective** window, click **Download**, and then click **Disk Firmware Download**.
5. In the **Download Disk Firmware** window, type the path to the drive firmware file and click **Download**.
6. Click **OK** when the download is complete.



*NOTE: A firmware file is created for a specific drive model; other drive models are not updated. You do not need to remove the other drive models if your system has a mixture of hard-disk drives.*

7. Enable the read cache and write cache on the storage processors in the **Data Supervisor** or **Data Administrator** window.

## Updating the Dell PowerVault 650F/651F/630F Drive Firmware on NetWare

Use the Dell OpenManage Command Line Interface (CLI) to update the hard-disk drive firmware in your Dell PowerVault 650F, 651F, or 630F systems when running Novell NetWare on the server.

The syntax for the CLI command is

```
load sys:[OpenManage Directory]\omcli -d <device name>  
firmware <volume:\path\filename> -r -d <e_d> <e_d> ...
```

where <volume:\path\filename> specifies the full pathname of the new firmware image on the server and where the variables are as follows:

- `-d <device name>` — The name of the device being managed by the Dell OpenManage Data Managed Node for NetWare. <device name> is case sensitive.
- `-d disks` — Downloads the hard-disk drive vendor firmware to the specified disks; `disks` specifies the physical hard-disk drives for the firmware download in any order. For a storage system with Fibre Channel hard-disk drives, `disks` has the format of <e\_d>, where `e` is the enclosure number in hexadecimal and `d` is the disk number in the enclosure.
- `-r` — Specifies that the storage system will perform a hard reboot after the firmware is downloaded. The default is no reboot.

**NOTICES: You must enter the full pathname of the firmware file or the command might not be completed successfully.**

**Observe the following conditions when downloading hard-disk drive firmware on PowerVault 650F and 651F storage systems:**

- **Disable the read cache and write cache.**
- **Pause all host-generated I/O requests to the storage system.**
- **If RAID 3 memory is assigned, it must be set to 2 megabytes (MB). If you set the RAID 3 memory to 0 MB, all RAID 3 LUNs will go to the ready state.**

The following is an example of a CLI command to update drive firmware:

```
load sys:\dell\om\omcli -d V596-A2-D0:0 firmware  
sys:\system\sw36de22.fdf -r -d 0_0 0_1 0_2 ...
```

## Updating Dell PowerVault 650F and 651F Licensed Internal Code

The licensed internal code (LIC) (sometimes referred to as Flare) update may also include a programmable read-only memory (PROM) update for the storage processors. When you install the LIC update, the storage processor tries to copy the LIC to reserved areas outside operating system control on several disk modules called

database disks. Having multiple copies of the LIC offers higher availability if a disk module fails. The database disk modules have disk IDs of 00, 01, and 02.

A storage processor with version 1.03 PROM code does not recognize Flare 5.11.xx as valid. As a result, a storage processor with version 1.03 PROM code is not a compatible replacement for an existing storage processor that has been upgraded to Flare 5.11.xx.

When you install the LIC, at least two database disk modules should be operating and online. If possible, all disk modules should be online. A disk module is online when it is fully powered up with no errors and the disk module's state in the disk information window is normal. If you try to power up the array without two of the database disk modules in place, the procedure fails.

Dell recommends that you run the LIC update procedure from the server that is running Data Managed Node and that is assigned LUN0 for each PowerVault 650F and 651F.



*NOTE: The following procedure assumes that the new version of the LIC is loaded onto the server connected to the storage system. If the LIC update includes new PROM code, the PROM code is automatically loaded with the LIC.*

Before updating the LIC, perform the following actions:

- Stop all I/O requests to the storage system.
- If you are running MSCS clusters, stop the cluster services on both cluster servers.
- Disable and deconfigure both the read cache and write cache before installing a new version of Flare and PROM code. To deconfigure means to set all memory partition sizes for array caching to 0.
- When you load the storage processor controller firmware update on your array system, make sure that PROM code has also been updated on all storage processors in the array. The PROM code is flashed on each storage processor only if the **Automatic Reboot** option box is checked in the firmware download window.
- The LIC file must be on the C drive of the server connected to the array in the **Array List**.



*NOTE: According to the Microsoft online knowledge base, Article ID Q149984, you cannot download firmware from a network-mounted drive because of issues related to permissions and ownership of network mounts.*

## **Updating the LIC on a 650F and 651F in a Windows Environment**

To update the LIC and PROM code, perform the following steps:

1. Open Data Administrator or Data Supervisor. For details, see "Running Data Supervisor" in the *Dell OpenManage Data Supervisor, Event Monitor, and Integrator Installation and Operation Guide*.

2. In the **Array Configuration** window, click **Array**, and then click **Firmware Download**.

The **Firmware Download** window displays the name of the storage system on which the LIC will be updated.

3. In the **Enter Full Path Name of File** field, type the complete path of the LIC update file that you want to download.
4. From the **Select Host** drop-down menu, click the name of the server where the LIC file is located.
5. Set the storage processors to reboot automatically after the LIC update by checking **Automatic Reboot**.

The new LIC update does not take effect until the storage processors are rebooted. The storage processors reboot automatically after the LIC download is complete if **Automatic Reboot** is enabled. When you reboot the storage system's storage processor, you may have to restart the Dell OpenManage Data Managed Node Data Agent on the storage system's server.

If the LIC update also includes a more recent PROM version than what is in the storage processors, you must check **Automatic Reboot**; the storage processors update their PROM the first time you load a new LIC update only. If you do not put a check mark in the **Automatic Reboot** check box, the storage processors do not download the PROM update, which may be required by the LIC update.

6. Click **OK**.
7. In the LIC license agreement window, click **Yes** to accept the agreement and start downloading the LIC update.
8. When you see that the download has been completed successfully, click **OK**.
9. Reconfigure the array caching. For details, see "Configuring an Array" in the *Dell OpenManage Data Supervisor, Event Monitor, and Integrator Installation and Operation Guide*.



*NOTE: The size of the new LIC update may cause memory sizing constraints that prevent you from reconfiguring the array cache. If this happens, reconfigure the memory partitions after the storage processors are rebooted (either manually or automatically).*

10. If you did not enable **Automatic Reboot**, reboot the storage processors. You can reboot the storage processors in the array either by shutting down the array and then powering it up again or by using the **rebootSP Data CLI** command. If you use the command, you may have to stop and restart the Dell OpenManage Data Managed Node Data Agent on the server after the storage processors reboot. For details on the **rebootSP** command, see the *Dell OpenManage Data CLI for NT Installation and Operation Guide*.



*NOTE: If the new version of the LIC detects that the cache was not deconfigured before the update, the 949h Illegal UpRev Configuration message is logged for each logical unit number (LUN) in the system, no LUNs are assigned,*

and you must downgrade to the previous version of the LIC. After you have downgraded to the previous LIC version, you can deconfigure the cache and then upgrade the LIC.

## **Updating the LIC on a 650F and 651F in a NetWare Environment**

When downloading the LIC from a computer with a Novell NetWare operating system, you can use the Dell OpenManage Command Line Interface (CLI) to download firmware by typing the command:

```
load sys:\[OpenManage Directory]\omcli -d <device_name>  
firmware <flare file_name> -r
```

where [OpenManage Directory] is the path to the Dell OpenManage application, <device\_name> is the name of the device being managed by the Data Managed Node Data Agent for NetWare, and <flare file\_name> is the firmware binary filename.

For more information, see your *Dell OpenManage Data CLI for Windows NT Installation and Operations Guide*.

You may also use Dell OpenManage Data Administrator to install the LIC update on a NetWare server from a remote Windows NT or Windows 2000 management station. To perform the update, perform the following procedure:

1. Copy the Flare to a local mounted volume on the NetWare server that has version 4.1.4 of Dell OpenManage Data Managed Node installed.
2. In the Data Administrator **Firmware Download** window, type `volume_name:\path\flare_file_name`.
3. Follow the instructions on the screen to complete the LIC update.

For more information, see the *Dell OpenManage Data Supervisor, Event Monitor, and Integrator Installation and Operation* and the *Dell OpenManage Data Administrator Installation and Operation Guide*.

## **Updating the Dell PowerVault 660F Firmware**

This section provides brief instructions for updating the PowerVault 660F storage system's firmware.

Check the Release Notes on the *Dell PowerVault Fibre Channel Utilities CD* or the *Dell PowerVault Storage Area Network (SAN) Revision Compatibility Guide* at <http://support.dell.com> to determine if a firmware upgrade is required for the PowerVault 660F. For additional information about the firmware on your 660F storage system, see the *Dell PowerVault 660F and 224F Installation and Troubleshooting Guide* and the *Dell PowerVault Array Manager User's Guide*.

## Updating the Dell PowerVault 660F RAID Controller Firmware on Windows NT or Windows 2000

Use the download firmware function in Dell OpenManage Array Manager to update the RAID controller firmware as new versions become available.

1. In Array Manager, right-click a RAID controller.
2. Click **Download Firmware**.  
  
The **Download Firmware** dialog box appears. The dialog box provides a standard browser for locating the appropriate firmware image file.
3. Click **Browse** to locate the file and enter the path and filename.  
  
Information about the selected file is displayed.
4. Verify that the selected file is correct.  
  
If the correct image file is not selected, the command is not executed.
5. Click **Apply** to begin the download process, click **Cancel** to discontinue the operation, or click **Help** for more information.



*NOTE: If operating a dual-active controller system, the firmware in both controllers will be updated simultaneously.*

For additional RAID controller firmware installation instructions, see the readme file included in the firmware download from the **File Library** at <http://support.dell.com>.

## Updating the Dell PowerVault 660F and 224F Drive Firmware on Windows NT or Windows 2000

To install hard-disk drive firmware on the 660F and 224F storage systems, you must prepare the system using Array Manager, ensure that you have the Flash-it! utility installed, and download and install the firmware update. For additional information, see the documentation that came with your firmware update.

### *Before You Begin the Firmware Upgrade*

Before you start upgrading the firmware, you must prepare the RAID controller by performing the following steps:

1. Make a note of which disk drives are hot spares. You will need this information after installing the firmware upgrade.
2. Using Array Manager, disable Enclosure Management.
  - a. Click **Admin**, point to **Controller Options**, click **Advanced Options**, and ensure that the **Enclosure Management** option is not checked.
  - b. Click **OK** to cause a reset to occur, which disables polling of SCSI Enclosure Services (SES) devices.

3. Using Array Manager, take your hot spares offline, see your *Dell OpenManage Array Manager User's Guide*.
4. If a reset does not occur, power cycle the RAID controller.

### *Installing Flash-It! Software*

Flash-It! is an application that upgrades the internal programming (firmware) of your disk drives. This section explains how to install the Flash-It! software on your system.



*NOTE: You must be logged in as an administrator to install Flash-It!. If you are not logged in as an administrator, shut down your current session and log in as an administrator.*

To install Flash-It!, perform the following steps:

1. Insert the *Dell PowerVault Fibre Channel Utilities CD* into the CD-ROM drive.

A window appears displaying the contents of the CD.

2. Click **PowerVault 660F/224F Fibre Channel Storage**.
3. Double-click **Flash-It!**.

The Flash-It! setup wizard appears.

4. Click **Next** to continue the installation.

The **Readme** document appears in the **Setup Wizard** window.

5. Read the information in the **Readme** document, and click **Next**.
6. Click **Next** to accept the default destination directory and continue.
7. Click **Next** to accept the default program folder.
8. Confirm that the installation options are correct, and click **Next**.
9. Select **Finish** to restart your system.

The installation process is complete.



*NOTE: For information on upgrading the firmware on the PowerVault 660F Fibre Channel disks, see the documentation included on the Dell PowerVault Fibre Channel Utilities CD.*

### *Updating the Drive Firmware*

1. At <http://support.dell.com>, open the **File Library**, locate the firmware update file for your hard-disk drive, and download it to your local hard-disk drive.
2. Select the **Selected Devices** page.
3. On the **Selected Devices** page, click **Rescan** to rescan all SCSI adapters on the storage system and rebuild the **Device List Tree**.

4. Select a device or multiple devices on the **Device List Tree**, and then click **Firmware**.
5. Select the **Firmware Upgrade** page.

**NOTICE: Do not power down the server, storage system, or drive during the upgrade process. If drive power is lost during the drive firmware update, the drive will be destroyed.**

6. Use the **Browse** button to select the downloaded firmware file on your local hard-disk drive, and then click **Upgrade Now** to install the new firmware on the hard-disk drive.

A progress bar and messages provide status of the upgrade process.

7. Enable Enclosure Management using Dell OpenManage Array Manager by clicking **Admin —> Controller Options**, and checking the **Enable Enclosure Management** check box.
8. Mark your hot spare drives on-line, and make them hot spares again.

### *Uninstalling the Flash-It! Utility*

1. Run the shortcut **LogonApp.exe Uninstall** located in the Flash-It! program folder.



*NOTE: If you have installed the Flash-It! utility in a non-default directory, you must edit the **Uninstall** shortcut so that it references the correct path.*

2. Click **Start**, point to **Settings**, and click **Control Panel**.
3. Select **Add/Remove Programs**
4. Select the Flash-It! utility.
5. Click **Remove** and follow the instructions on the screen.

## **Upgrading the Dell PowerVault 5xF Firmware**

**NOTICE: Before installing a firmware upgrade, stop all I/O to the 5xF switch. If you are running MSCS clusters, stop the cluster service on all cluster servers connected to the switch.**

Check the Release Notes on the *Dell PowerVault Fibre Channel Utilities CD* to determine the firmware revision requirements for the PowerVault 5xF.



*NOTE: You can check the firmware version for the Dell PowerVault 5xF switches by using the **version** command from the Telnet session or by using the Dell PowerVault Switch Manager.*

For instructions on installing the firmware, see your *Dell PowerVault 5xF Fibre Channel Switch Installation and Troubleshooting Guide* or *Dell PowerVault Switch Manager User's Guide*, or click **Start**—> **Programs**—> **Dell OpenManage PowerVault Manager**—> **PowerVault 50F & 51F Utilities**—> **Readme**.

## Upgrading the Dell PowerVault 35F Firmware

Check the Release Notes on the *Dell PowerVault Fibre Channel Utilities CD* to determine the firmware revision requirements for the PowerVault 35F.



*NOTE: You can check the firmware version by checking the PowerVault 35F's reboot messages through the serial interface.*

For instructions on installing the firmware, see the readme file on the PowerVault 35F page of the *Dell PowerVault Fibre Channel Utilities CD*.

## Upgrading the Dell PowerVault 120T/130T Firmware

For instructions on installing the firmware, see the Release Notes on the *Dell PowerVault Fibre Channel Utilities CD*, or see the *Dell PowerVault 120T/130T Drive Firmware Update Document*.

## Upgrading the Dell PowerVault 530F Software and Firmware

This section provides brief instructions regarding the PowerVault 530F SAN appliance software and firmware upgrades.



*NOTE: Check the Release Notes on the Dell PowerVault Fibre Channel Utilities CD or the Dell PowerVault Storage Area Network (SAN) Revision Compatibility Guide to determine whether a software or firmware upgrade is required for the PowerVault 530F.*

### Upgrading PowerVault 530F Software

Software upgrades on a PowerVault 530F SAN appliance require a complete installation of the software image. For additional information about installing the software, see the *Dell PowerVault 530F SAN Appliance Administrator's Guide*.

### Upgrading PowerVault 530F Firmware

For the firmware installation instructions, see the readme file included in the firmware download from the **File Library** at <http://support.dell.com>.