



Dell™ PowerVault™ Systems — Updating the Enclosure Management Module Firmware

This information describes how to update the firmware on the primary and secondary enclosure management module (EMM) in your Dell PowerVault 22xS storage system. The procedure varies depending on whether you are using the Dell OpenManage™ Array Manager application in a Microsoft® Windows® environment or you are using a Red Hat Linux environment. In either situation, you must download the updated firmware from support.dell.com.



NOTE: To complete the update of your storage system EMM firmware, you must update both EMMs in a storage system with redundant enclosure management.



NOTE: After the EMM firmware update is complete, you should ensure that all other firmware and software is compatible with the new EMM firmware by comparing the various firmware and software levels on your systems with the information in the "*Dell OpenManage Server Administrator Compatibility Guide*," which is available on support.dell.com. If any firmware or software is at the incorrect revision, download the correct revision from support.dell.com and install it.

Updating Firmware in Cluster Servers

When updating firmware in a clustered server, shut down the other systems in the cluster first. When restarted, the other systems in the cluster should be able to recognize the firmware updates.

However, if you have updated firmware on a clustered server without first shutting down the other systems in the cluster, the other systems might not be able to recognize the firmware update until you restart the disk management service on those other systems. For example, if you update firmware on server A, and server B cannot recognize the firmware update, then restart the disk management service on server B.

Updating the EMM in a Dell OpenManage Array Manager Environment

Use the **Download Firmware** command to download firmware to the storage system. When you use this command, the firmware is downloaded to both of the EMM modules in the storage system, ensuring that the firmware on both modules is at the same level.

The **Download Firmware** command can only be used if the firmware update has been downloaded to the system. If the firmware is not available on your system, you can download it from support.dell.com.

If the storage system is attached to a clustered server, it is recommended that you shut down other systems in the cluster before downloading the firmware. For more information about clustered systems, see "Updating Firmware in Cluster Servers."

 **NOTE:** The Download Firmware function is only available on the PowerVault 220S and PowerVault 221S storage systems.

 **NOTE:** When using the joined-bus/cluster mode or the split-bus mode, consider the following information.

- In joined-bus/cluster mode, firmware is downloaded to and updated on both EMMs automatically (assuming that the second EMM is installed) by failing over and then failing back. In split-bus mode, however, updating firmware on one EMM does not automatically update the other EMM. Therefore, to update both EMMs in split-bus mode, you must download the firmware from the server attached to each EMM directly to that EMM.
- In split-bus mode, Array Manager reports the correct firmware version for the EMM to which it is connected, but may report an older version on the other EMM after a firmware update. This information can be corrected by restarting the PowerVault 22xS.
- When using Array Manager 3.1.1 (or earlier) in clustering mode, the firmware can only be updated on the primary EMM (the left one when viewing the storage system from the back). Therefore, to update the firmware in both EMMs, you must download the firmware to each EMM individually.
- If the PowerVault 22xS storage system is equipped with an EMM and a SCSI terminator card operating in joined-bus mode, an error message is displayed when the firmware is updated through Array Manager 3.1.1 (or earlier). In this configuration, the message is an invalid error message. One method of determining whether the firmware update was successful is that the fans will return to normal speed when the download and update are complete. To verify that the firmware update was successful, stop and restart the Disk Management Service, and then view the firmware version under the storage system properties.

To download the firmware to the storage system and complete the update, perform the following steps:

- 1 Right-click the storage system object in the tree view.
- 2 Select **Download Firmware** to display the **Firmware Download** dialog box.
- 3 Enter the path to the firmware in the **Open** field.

You can also use the **Browse** button to locate the firmware update file.

- 4 After the correct path to the firmware is displayed in the **Open** field, click **Download Firmware**.

A message appears indicating that the update is successful.

Updating the EMM in a Red Hat Linux Environment

Use the **PV22XS** command to download the firmware to the storage system and to perform the update. When you use this command, the firmware is downloaded to both of the EMM modules in the storage system and both EMMs are updated. This ensures that the firmware on both modules is at the same level.

The **PV22XS** command can only be used if the firmware update has been downloaded to the system. If the firmware is not available on your system, you can download it from support.dell.com.

If the storage system is attached to a clustered server, it is recommended that you shut down other systems in the cluster before downloading the firmware. For more information about clustered systems, see "Updating Firmware in Cluster Servers."



NOTE: The download firmware function is only available on the PowerVault 220S and PowerVault 221S storage systems.



NOTE: When using the joined-bus/cluster mode or the split-bus mode, consider the following information.

- In joined-bus/cluster mode, firmware is downloaded to and updated on both EMMs automatically (assuming that the second EMM is installed) by failing over and then failing back. In split-bus mode, however, updating firmware on one EMM does not automatically update the other EMM. Therefore, to update both EMMs in split-bus mode, you must download the firmware from the server attached to each EMM directly to that EMM.
- In split-bus mode, the PowerVault 22xS storage system reports the correct firmware version for the EMM to which it is connected, but may report an older version on the other EMM after a firmware update. This information can be corrected by restarting the storage system.

To download the firmware to the storage system and complete the update, perform the following steps:

- 1 Open a command prompt window.
- 2 Type `PV22XS -x <filename> -d <generic filedescriptor>` on the command line.

Where *<filename>* is the full path name to the location of the firmware binary image and *<generic filedescriptor>* is the device to be updated, for example, `/dev/sg8`.

In addition, you can use any of the following additional command options:

- **PV22XS** — Displays descriptions of options used for downloading and updating firmware.

- **PV22XS -h** or **--help** — Displays descriptions of options used for downloading and updating firmware.
- **PV22XS -i** or **--inven** — Displays inventory information for all identified EMMs.

For example:

```
Inventory Information for Unit Number [1]
PV22XS filedescriptor: [/dev/sg8]
PV22XS Number of EMMs: [2]
PV22XS Busmode: [Joined Bus Mode]
PV22XS Firmware Revision: [E.11]
PV22XS Serial Number: [<xxxxxxx>]
```

- **PV22XS -v** or **--version** — Displays the version number.
- **PV22XS -x <filename> -d <generic filedescriptor>** — Downloads to and updates the firmware for a specific EMM.
- **PV22XS -x <filename> -d <generic filedescriptor> -f** or **--force** — Ignores any errors and forces an update to the EMM. Use this command option only if the update generates errors that you cannot correct.

A message appears indicating that the update is successful.

Locating Storage Devices

If the **PV22XS** command does not locate all of the PowerVault 22xS storage systems, you can try to locate them using the operating system by typing `cat /proc/scsi/scsi` on the command line. If additional storage systems are located, you will need to troubleshoot the systems and network to determine why the **PV22XS** command is not locating them.

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