

# Dell™ PowerVault™ NX1950 Systems

## Solution Upgrade Guide

**Model EMU01**

# Notes and Notices



**NOTE:** A NOTE indicates important information that helps you make better use of your computer.



**NOTICE:** A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

---

**Information in this document is subject to change without notice.**

**© 2007–2008 Dell Inc. All rights reserved.**

Reproduction in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: *Dell*, the *DELL* logo, and *PowerVault* are trademarks of Dell Inc.; *Microsoft* and *Windows* are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. *EMC* and *PowerPath* are registered trademarks of EMC Corporation.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

Model EMU01

February 2008

Rev. A01

# Contents

1	Introduction . . . . .	5
	<b>Terms Used in This Document . . . . .</b>	<b>5</b>
2	Upgrading the Storage on Your Dell™ PowerVault™ NX1950 Integrated Solution . . . . .	7
	<b>Using the Dell PowerVault MD1000 Storage     Enclosure to Expand the Storage on the     PowerVault NX1950 Integrated Solution . . . . .</b>	<b>7</b>
	<b>Adding SATA II Support to Your     Dell PowerVault NX1950 Integrated Solution . . . . .</b>	<b>7</b>
3	Upgrading Your Dell PowerVault NX1950 Integrated and Gateway Solutions to Enable iSCSI Active/Active Target . . . . .	9
	<b>Planning . . . . .</b>	<b>10</b>
	<b>Uninstalling the Current Target . . . . .</b>	<b>10</b>

<b>Creating a New Target</b> . . . . .	<b>12</b>
Creating a New Target in a Clustered Environment . . . . .	12
Creating a Target in a Non-Clustered Environment . . . . .	14
<b>Unsupported Configurations</b> . . . . .	<b>15</b>

<b>4 Upgrading Your Dell™ PowerVault™ NX1950 Gateway Solution With the Latest Solution Stack</b> . . . . .	<b>17</b>
--	-----------

# Introduction

This document provides information about the various upgrade operations you can perform on your Dell™ PowerVault™ NX1950 storage solution. The following upgrade options are discussed in this document:

- "Using the Dell PowerVault MD1000 Storage Enclosure to Expand the Storage on the PowerVault NX1950 Integrated Solution" on page 7.
- "Adding SATA II Support to Your Dell PowerVault NX1950 Integrated Solution" on page 7.
- "Upgrading Your Dell PowerVault NX1950 Integrated and Gateway Solutions to Enable iSCSI Active/Active Target" on page 9.
- "Upgrading Your Dell™ PowerVault™ NX1950 Gateway Solution With the Latest Solution Stack" on page 17.

## Terms Used in This Document

PowerVault NX1950 Integrated Solution/Integrated Solution—is the configuration of PowerVault NX1950 storage system(s) with Dell PowerVault MD3000 storage array.

PowerVault NX1950 Gateway Solution/Gateway Solution—is the configuration of PowerVault NX1950 storage system(s) with Dell | EMC storage array.


For more information, see the *Installation Guide* that shipped with your system.



**NOTE:** Ensure that your system is running Microsoft® Windows® Unified Data Storage Server 2003 SP2 which is a pre-requisite for the Active/Active iSCSI Target configuration.



# Upgrading the Storage on Your Dell™ PowerVault™ NX1950 Integrated Solution

 **NOTE:** The Dell™ PowerVault™ NX1950 Integrated solution refers to the configuration of PowerVault NX1950 system(s) and PowerVault MD3000 storage array. For more information about this configuration, see the *Dell PowerVault NX1950 Systems Installation Guide* that shipped with your system.

## Using the Dell PowerVault MD1000 Storage Enclosure to Expand the Storage on the PowerVault NX1950 Integrated Solution

To expand the storage space on your PowerVault MD3000 storage array using the PowerVault MD1000 storage enclosure, see the "Attaching MD1000 Expansion Enclosure" section in the *Dell PowerVault MD3000 RAID Enclosure Hardware Owner's Manual* located on the Dell Support website at [support.dell.com](http://support.dell.com).

## Adding SATA II Support to Your Dell PowerVault NX1950 Integrated Solution

To add SATA II support to your PowerVault NX1950 Integrated Solution, see the "Adding SATA II Support Drives to Your Enclosure" section in the *Dell PowerVault MD3000 RAID Enclosure Hardware Owner's Manual* located on the Dell Support website at [support.dell.com](http://support.dell.com).





# Upgrading Your Dell PowerVault NX1950 Integrated and Gateway Solutions to Enable iSCSI Active/Active Target

You can use the Microsoft® internet Small Computer System Interface (iSCSI) Active/Active Target 3.1, to configure Active/Active Targets on your Dell™ PowerVault™ NX1950 Integrated and Gateway solutions. To upgrade the iSCSI Active/Active Target 3.1:

- 1 Perform the steps in "Planning" on page 10.
- 2 Perform the steps in "Uninstalling the Current Target" on page 10.
- 3 Perform the steps in "Creating a New Target" on page 12.
- 4 Creating a highly available iSCSI instance. For more information about creating a highly available iSCSI instance, see the *Dell PowerVault NX1950 Systems Deployment Guide* located on the Dell Support website at [support.dell.com](http://support.dell.com).



**NOTE:** The upgrade procedures in this section are applicable to systems running in a cluster configured with iSCSI Targets and .vhd files in the current active node. You can also perform these upgrade procedures to upgrade the iSCSI Target on a stand-alone system.



**NOTE:** The term *3.0 Target* refers to your current configuration of PowerVault NX1950 solution with iSCSI Active/Passive Target 3.0. The term *3.1 Target* refers to the PowerVault NX1950 configuration with Active/Active Target using iSCSI Active/Active Target 3.1.

# Planning

If you are retaining the Target names in the new configuration, it is recommended to record the Target names, location of .vhd files, and the Target association of the .vhd files as displayed in Table 3-1 below.

**Table 3-1. Target-Virtual Disk Matrix**

Host 1	VHD File Name
Target 1	File 1: File 2: File 3:
Target 2	
.	
.	
Target X	File 1:

## Uninstalling the Current Target

To uninstall the current 3.0 Target that is configured in a clustered environment:

- 1 Close all applications.
- 2 Disconnect all Initiators from Target(s). Perform this step from the Initiator. From the client systems, disconnect all Initiators from the Target(s).
- 3 Open a Cluadmin interface and delete the previously created **Generic Service** from the cluster group.
- 4 Navigate to **Add or Remove programs** and uninstall the Microsoft iSCSI Target from the passive node(s). Reboot each cluster node of the PowerVault NX1950 storage solution.

- 5 Repeat step 1 to step 4 on the other node(s) and reboot.



**NOTE:** The **Dell Software Initialization Wizard** and **Microsoft Management Console** are displayed when you restart the PowerVault NX1950 storage solution. You must close the **Microsoft Management Console** before installing the new Target.

- 6 Download the iSCSI 3.1 Software Target from the Dell Support website at [support.dell.com](http://support.dell.com) and install on all cluster nodes one at a time.

To uninstall the current 3.0 Target that is configured in a non-clustered environment:

- 1 Close all applications.
- 2 From the Initiator, disconnect all Initiators from the Target(s).
- 3 Navigate to **Add or Remove Programs** and uninstall the Microsoft iSCSI Target from the passive node(s) and allow for complete reboot.
- 4 Reboot the PowerVault NX1950 storage solution.



**NOTE:** The **Dell Software Initialization Wizard** and **Microsoft Management Console** appear when you restart the PowerVault NX1950 storage solution. You must close the **Microsoft Management Console** before installing the new Target.



**NOTE:** Ensure that your system is running Microsoft Windows Unified Data Storage Server 2003 SP2 which is a pre-requisite for the Active/Active Target configuration.

- 5 Download and save the 3.1 Target from the Dell Support website at [support.dell.com](http://support.dell.com) on the PowerVault NX1950 storage system.
- 6 Install the 3.1 Target on the PowerVault NX1950 storage system.



**NOTE:** After the 3.1 Target is successfully installed, you may be prompted to create highly available iSCSI instance. Close the window and perform the steps in "Creating a Target in a Non-Clustered Environment" on page 14 to create a new Target.

# Creating a New Target

## Creating a New Target in a Clustered Environment

Perform the following steps to re-create the Targets and re-assign the .vhd files:

- 1** Create a highly available iSCSI instance:
  - a** In the **Microsoft Management Console**, right-click the **Microsoft iSCSI Software Target** icon and click **Create HA instance for iSCSI**.
  - b** Type the desired name in the **Resource Group Name** field and click **Add**. Enter the remaining required fields:
    - IP Address
    - Subnet mask
    - Network Interface
  - c** Click **OK** and click **OK** again.
  - d** The highly available iSCSI instance is created successfully.
- 2** Perform the following steps to configure the iSCSI Initiator to discover the Target:
  - a** In the **Discovery** tab of the iSCSI Initiator, add the IP address of the newly created highly available iSCSI instance. Click **Advanced** and configure the following properties:
    - **Local Adapter—Microsoft iSCSI Initiator**
    - **Source IP**—IP address of the client for iSCSI traffic
  - b** If you are using iSNS server, go to the **Microsoft Management Console**→ right-click **Microsoft iSCSI Software Target**→ **Properties**→ **iSNS** tab and add the iSNS IP address.
  - c** In the **Discovery** tab, go to **Initiator** and add iSNS IP address.
- 3** To configure the Target:
  - a** In the **Microsoft Management Console**, right-click on the **Microsoft iSCSI Software Target** icon and click **Create iSCSI Target**.
  - b** Enter the Target name, Target description, and click **Next**.
  - c** Browse for the desired IQN identifier or click **Advanced**→ **Add**→ **IP address** and enter the IP address of the Initiator. Click **Next**.

- d Select the desired highly available iSCSI instance from the drop-down menu and click **Next**.
  - e Click **Finish**. The Target is successfully created.
- 4** Move the volume to the desired highly available iSCSI instance:
- a Launch the Cluadmin interface and locate the volume that the devices (.vhd files) are located on. The volume may be located in **Cluster Groups**.
  - b Select the volume, right-click, and select **Change Groups**.
  - c Select one of the newly-created highly available iSCSI instances where you want to move the volume.
  - d A dialog box appears to confirm if you are changing groups. Click **Yes** and click **Yes** again.
- 5** Import devices by performing the following:
- a Right-click the **Devices** icon in the **Microsoft Management Console** and select **Import Virtual Disk**. Click **Next**.
  - b Browse to the volume the .vhd files are located on. Select the .vhd file, click **OK**.
  - c Click **Next** and then click **Finish**.
  - d Repeat step b and step c to import all .vhd files.
- 6** Create Virtual Disk-Target Associations by performing the following:
- a Right-click the Target and select **Add existing virtual disk**.
  - b Select the virtual disk you want to add and click **OK**.
  - c The virtual disk is associated to the Target and is ready for use.
- However, the storage disks are not ready for use. To resume usage of the storage disks from the Initiator:
- a Go to the Host or the Initiator and log on to the Targets that you created.
  - b Go to disk management and verify that the disk is accessible and is displayed as **Healthy**. If the disk is not active, right-click on the volumes and click **Reactivate**.

## Creating a Target in a Non-Clustered Environment

Perform the following steps to re-create the Targets and re-assign the .vhd files in a non-clustered environment:

- 1** Perform the following steps to configure the iSCSI Initiator to discover the Target:
  - a** In the **Discovery** tab of the iSCSI Initiator, add the IP address of the newly created highly available iSCSI instance. Click **Advanced** and configure the following properties:
    - **Local Adapter**—Microsoft iSCSI Initiator
    - **Source IP**—IP address of the client for iSCSI traffic
  - b** If you are using iSNS server, right-click on **iSCSI Target** icon in **Microsoft Management Console**→ **Properties**→ **iSNS** tab and add iSNS IP address.
  - c** Go to Initiator and add iSNS IP address in the **Discovery** tab.
- 2** To configure the Target, perform the following:
  - a** Right-click the **Target** icon in the **Microsoft Management Console** and click **Create iSCSI Target**.
  - b** Enter the Target name, Target description, and click **Next**.
  - c** Browse for desired IQN identifier or click **Advanced**→ **Add**→ **IP address** and enter the IP address of the Initiator. Click **Next**.
  - d** Select the desired Target from the drop-down menu and click **Next**.
  - e** Click **Finish**. The Target is successfully created.

- 3** Import devices by performing the following:
  - a** Right-click the **Devices** icon in the **Microsoft Management Console** and select **Import Virtual Disk**. Click **Next**.
  - b** Browse to the volume the **.vhd** files are located on. Select the **.vhd** file, click **OK**.
  - c** Click **Next** and then click **Finish**.
  - d** Repeat step **b** and step **c** to import all **.vhd** files.
- 4** Create Virtual Disk-Target Associations by performing the following:
  - a** Right-click the **Target** and select **Add existing virtual disk**.
  - b** Select the virtual disk that you want to configure and click **OK**.

The virtual disk is associated to the **Target** and ready for use.

However, the storage disks are not ready for use. To resume usage of the disks from the **Initiator**:

- a** Go to the **Host** or **Initiator** and log on to the **Targets** that you created.
- b** Go to disk management and verify that the disk is accessible and is displayed as **Healthy**. If the disk is not active, right-click on the volumes and click **Reactivate**.

## Unsupported Configurations

Using the 3.0 and 3.1 **Targets** together in the same cluster configuration is not supported.





# Upgrading Your Dell™ PowerVault™ NX1950 Gateway Solution With the Latest Solution Stack

To upgrade your Dell™ PowerVault™ NX1950 Gateway solution with the latest solution stack, perform the following steps:

- 1 For the supported solution stack versions, revision numbers, and location of all the components, see the *Dell PowerVault NX1950 Systems Support Matrix* located on the Dell Support website at [support.dell.com](http://support.dell.com).
- 2 Unassign any Logical Unit Numbers(LUNs) as some data may still be on the LUNs and storage array.
- 3 On your Gateway solution, uninstall the existing EMC® solution stack in the following order:
  - a Virtual Disk Service (VDS)/Volume Shadow-Copy Service (VSS)
  - b NaviCLI
  - c NaviAgent
  - d Navi Init wizard
  - e EMC PowerPath® 4.x.x
- 4 Restart your system.



**NOTE:** You can also upgrade the Microsoft® Windows® Unified Data Storage Server 2003 operating system from Standard to Enterprise Edition (optional). For more information, see the *Dell PowerVault NX1950 Systems Upgrading Your Operating System Guide* that is shipped along with your upgrade kit.

- 5** Install the new EMC solution stack in the following order:
  - a** EMC PowerPath 5.x.x
  - b** NaviCLI
  - c** NaviAgent
  - d** Navi Init wizard
  - e** VDS/VSS
  - f** Reinstall the Dell Storage Initialization Wizard
- 6** Restart your system.
- 7** Re-assign the LUNs to the servers or cluster.