

DELL™ PowerVault™ DL Backup-to-Disk Appliance Powered by Symantec™ Backup Exec™

Configuring the Dell™ AX4-5 Fiber Channel Array as a Backup Target

A Dell Technical White Paper

by

Dell Engineering

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Executive Summary

IT managers are concerned that traditional backup methods aren't keeping up with the needs of the business. Existing backup and recovery operations often fail due to media management issues and human error associated with legacy tape backup methods. As data continues to explode within corporate environments, IT is having trouble meeting backup windows with standard tape-based solutions. Advancements in technology and price reductions have made it possible to use disk-to-disk based backup and recovery methods to improve the speed and reliability of backup and restore operations. The Dell™ PowerVault™ DL Backup to Disk Appliance - Powered by Symantec™ Backup Exec™ offers one of the industry's only fully integrated backup-to-disk solution with software factory installed. Dell and Symantec have co-developed this offering to give you easier management capabilities of the backup-to-disk environment. It's an ideal way for any IT department to achieve faster, more reliable backups and restores.

In addition, Dell's storage product portfolio includes the Dell | EMC AX arrays which combined with the DL Backup to Disk Appliance provides a complete backup solution. Combining the DL Backup to Disk Appliance and Dell EMC Arrays -- finally, creates a backup to disk that delivers a simple solution which provides an excellent return on investment.

Introduction

This document explains how to configure a Dell™ AX4-5F Fiber Channel Array as a backup target for the DL Backup to Disk Appliance functioning as a Symantec™ Backup Exec Media Server.

NOTE: If the LUN(s) of one or more protected servers and the DL Backup to Disk Appliance reside on the same physical Dell AX4-5F array, ensure the DL Backup to Disk Appliance backup target LUN(s) reside in a separate RAID group from the protected servers.

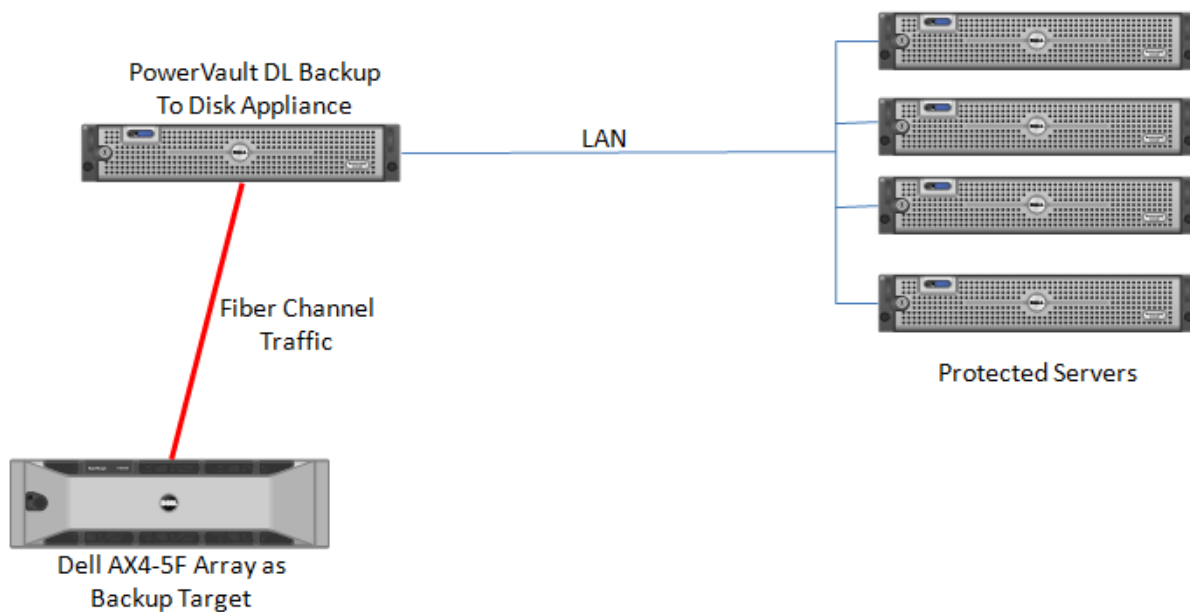


Figure 1: Dell AX4-5F Array as a Backup Target

Prerequisites

This paper assumes the following:

- The DL Backup to Disk Appliance is configured and fully operational.
- A supported Fiber Channel Host Bus Adapter has been installed in the DL backup to Disk Appliance and is attached to the SAN
- The Dell AX4-5F Array LUN(s) which will be used by the DL Backup to disk Appliance have been created.
- The AX4-5F SAN Administrator has configured zoning exposing the LUN(s) to the DL Backup to Disk Appliance.
- The Symantec Backup Exec HotFix 348518 is already installed

The following table lists the minimum software versions required to support a Dell AX4-5F Array as a backup target. The QLogic resources are available from the QLogic Driver Downloads site at driverdownloads.qlogic.com. The EMC resources are available by logging into the EMC PowerLink site at powerlink.emc.com

Hardware Component	Software Component	Version
Dell™ PowerVault™ DL Backup to Disk Appliance	Microsoft® Windows® Server 2008 Standard x64 Edition	Service Pack 2 or later
	Symantec™ Backup Exec	2010 or later (including Hotfix 348518)
Dell AX4-5F Array	Flare Operating Environment	02.23.050.5.707 or later
	Navisphere Server utility	6.29.0.6.1 or later
	PowerPath	5.3 SP1 or later
QLogic QLE2462 FC HBA	Driver	9.1.8.25 or later

Warning: The storage provisioning and monitoring features of the DL Backup to Disk Appliance can fail when connecting a Dell AX4-5F Array as a backup target if these prerequisites are not met.

Technical Resources

The following table lists additional documentation available for reference.

Vendor	Document or Resource Title	Location
Symantec	Symantec Backup Exec 2010 Administrator's Guide	backupexec.com/compatibility/
Dell	Dell PowerVault DL Backup to Disk Appliance Powered by Symantec Backup Exec User Guide	support.dell.com/manuals
EMC	AX4-5 FC Supported Configurations Overview	powerlink.emc.com
EMC	CLARiiON DC-Powered AX4-5 Series Enclosures Installation and Operation Guide	powerlink.emc.com

Configuration and Settings

The process for adding a Dell AX4-5F Array as a backup target includes the following:

- Installing EMC software on the DL Backup to Disk Appliance
- Exposing the Dell AX4-5F LUNs to the DL Backup to Disk Appliance
- Presenting the Dell AX4-5F LUNs to Symantec Backup Exec

Installing EMC software on the DL Backup to Disk Appliance

This section explains the steps required to install the EMC software on the DL Backup to Disk Appliance. It assumes that the appropriate zoning has been configured to enable the Fiber Channel Host Bus Adapter (HBA) on the DL Backup to Disk Appliance to communicate with the Dell AX4-5F Array. These steps may require assistance from your SAN Administrator.

1. Install the Navisphere Server Utility. In the “Choose Install Options” step, do not select the Microsoft iSCSI Initiator.
2. Navigate to Start -> All Programs -> EMC -> Navisphere -> Navisphere Server Utility.
3. Select the “Register this server with all connected storage systems” option and click Next.
4. You should see the Storage Systems that the DL Backup to Disk Appliance is connected to (See Figure 2). Click Next, then Finish. If no Storage Systems are detected, recheck the zoning configuration and contact your SAN Administrator.
5. Install the EMC PowerPath software on the DL Backup to Disk Appliance. Reboot the system once the install is complete.

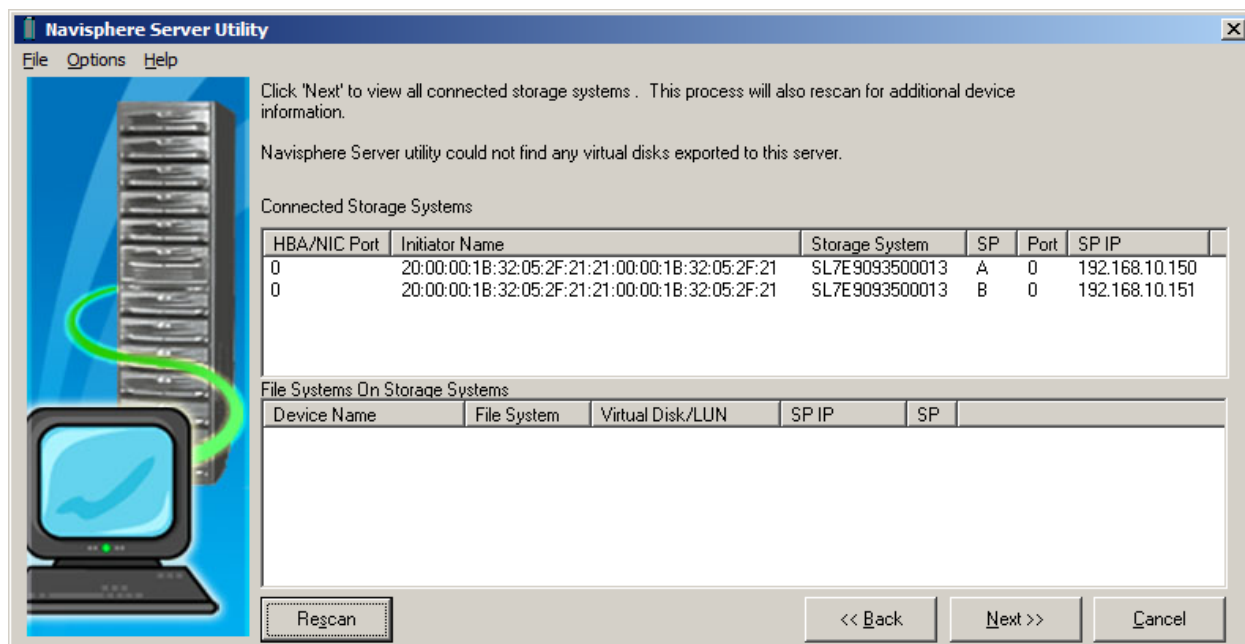


Figure 2: Detecting connected Storage Systems from the Navisphere Server Utility

Exposing the Dell AX4-5F LUNs to the DL Backup to Disk Appliance

This section explains the configuration steps required on the Dell AX4-5F Array to expose the LUNs to the DL Backup to Disk appliance. This process assumes that the EMC Navisphere Express or Navisphere Manager is installed on the Dell AX4-5F Array and that the desired Disk Pool(s)/RAID Group(s) and Virtual Disk(s)/LUN(s) have already been created. These steps may require assistance from your SAN Administrator.

Using Navisphere Express

1. Launch a Web Browser. Navigate to the Management port of the Dell AX4-5F Array and login to EMC Navisphere Express.

- Click on **Manage -> Connections**. Ensure that the DL Backup to Disk Appliance is listed in the list of connected servers. (See Figure 3)

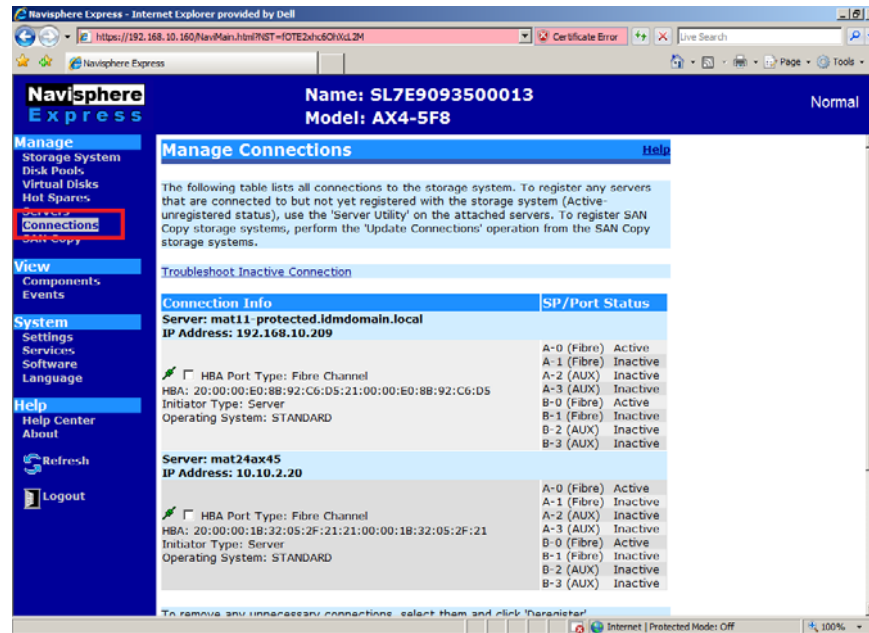


Figure 3: List of connected servers in Navisphere Express

- Click on **Manage -> Virtual Disks**. The list of available Virtual Disks is displayed. Click on the Virtual Disk that you want to assign to the DL Backup to Disk Appliance.
- Click on the "Assign Server" button. Select the DL Backup to Disk Appliance from the list of servers, then click **Apply**. (See Figure 4)

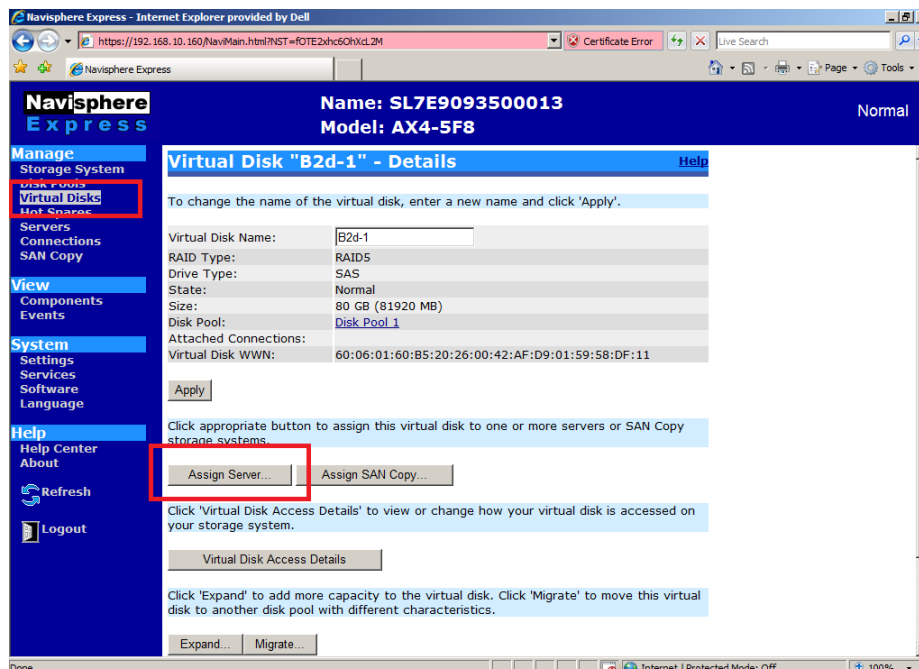


Figure 4: Assigning a Virtual Disk to a Server

Using Navisphere Manager

1. Launch a Web Browser. Navigate to the Management port of the Dell AX4-5F Array and login to the EMC Navisphere Manager.
2. Expand the Dell AX4-5F Array. Right click on “Storage Groups” and select “Create Storage Group”.
3. Enter a name for the Storage Group and click OK.
4. Right Click on the newly created Storage Group and select “Connect Hosts”.
5. Select the DL Backup to Disk Appliance from the list of Available Hosts. (See Figure 5). Move it to the “Hosts to be Connected” list and click OK.

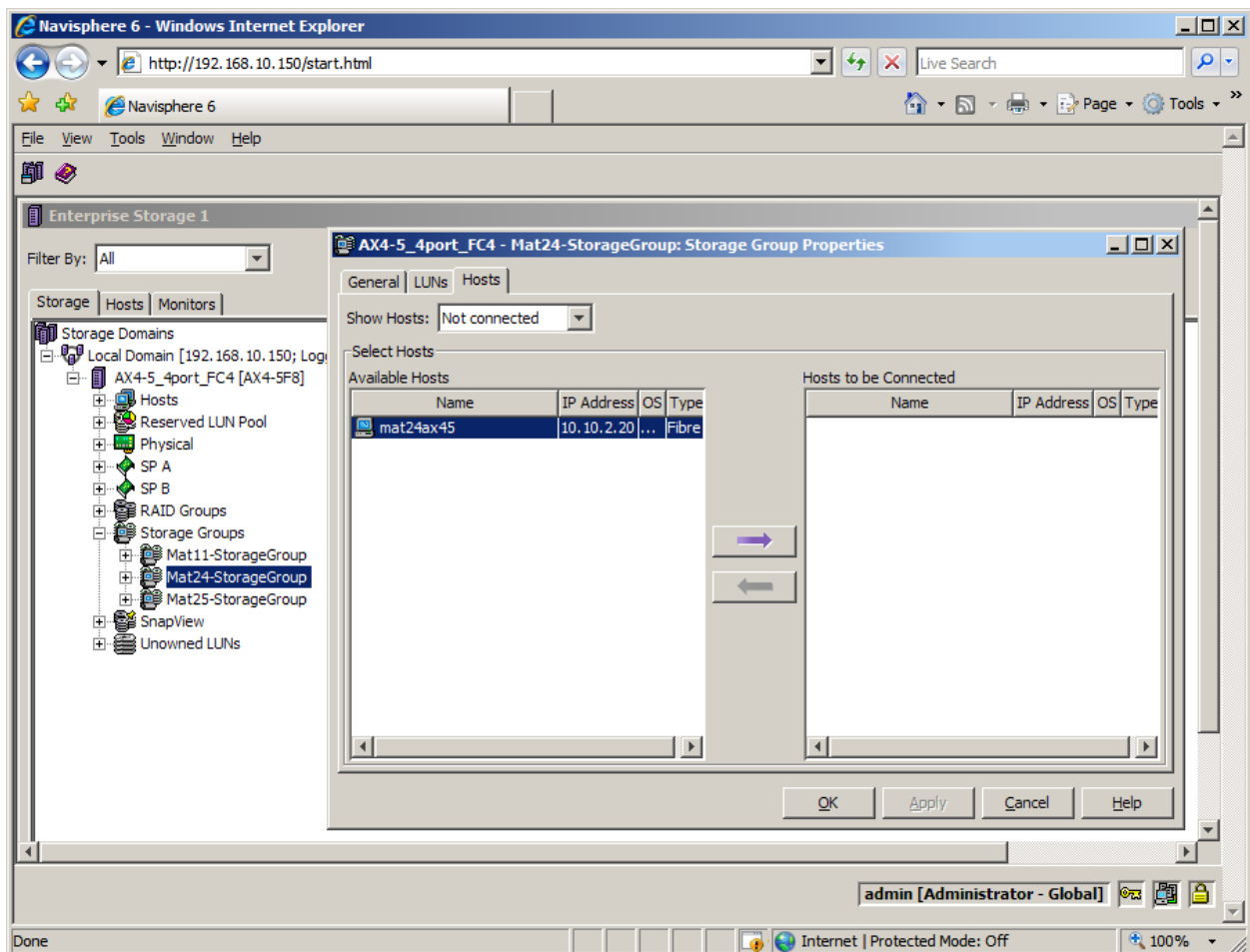


Figure 5: Connecting the Host to a Storage Group

6. Right click the Storage Group and select “Select LUNs”.
7. Select the desired LUNs from the list of Available LUNs and click OK. (See Figure 6)

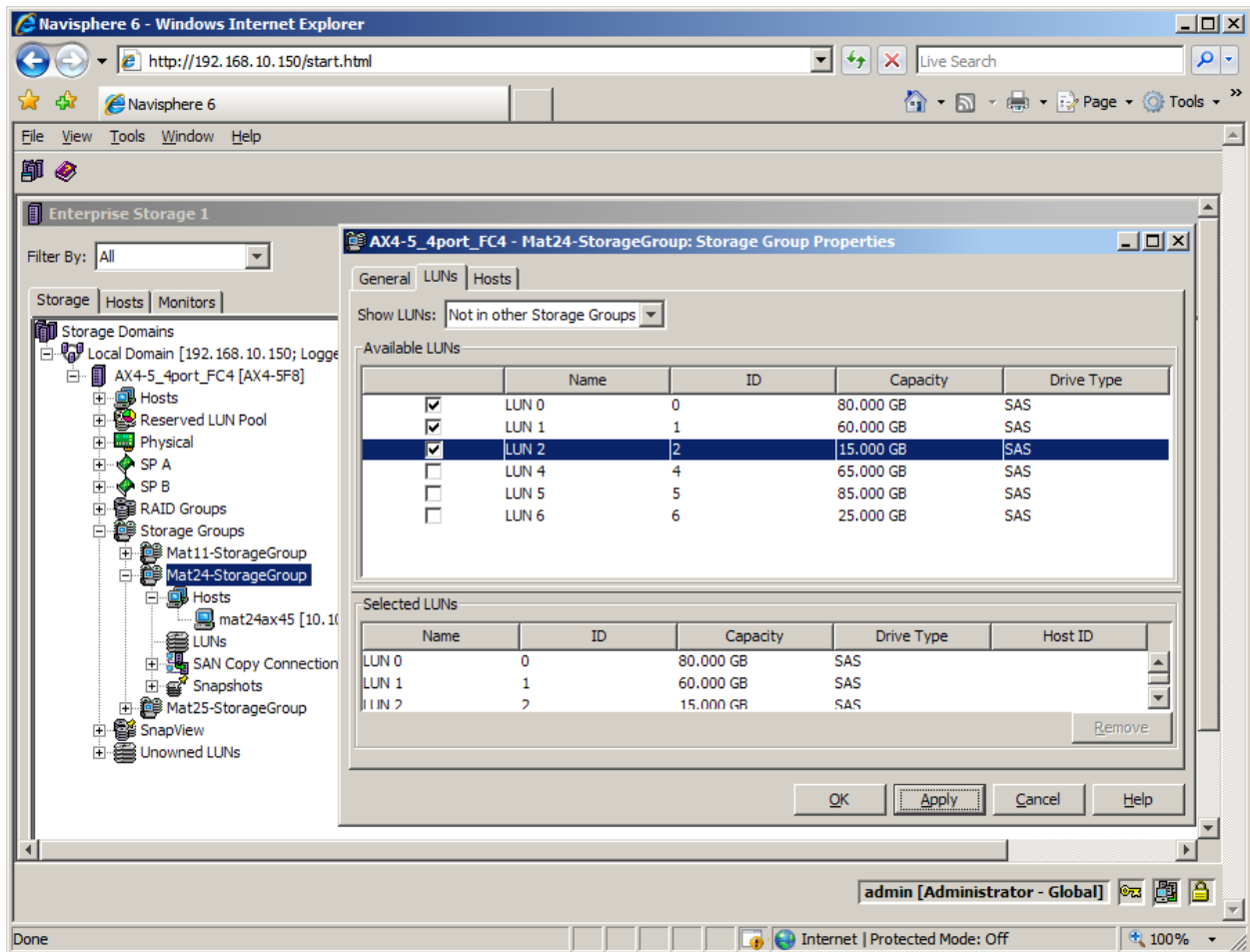


Figure 6: Adding LUNs to the Storage Group

Presenting the Dell AX4-5F LUNs to Symantec Backup Exec

This section explains the configuration steps required on the DL Backup to Disk Appliance to present the LUNs on the Dell AX4-5F Array to Symantec Backup Exec

1. Once the DL Backup to Disk Appliance has rebooted after the install of EMC PowerPath, click **Start -> Administrative Tools -> Server Manager -> Storage -> Disk Management**. The LUNs are listed as available disks.
2. Initialize the required disks as a GPT. (GPT disks use the GUID partition table and allows for volume sizes of greater than the 2TB limitation of MBR disks).
3. Create a **Simple Volume** on the disk.
4. Assign a drive letter to the volume.
5. Quick Format the volume.
6. Repeat this process for each LUN the DL Backup to Disk Appliance will use as a backup target
7. The volumes will now be available for creating Backup-to-Disk folders and Deduplication folders in Backup Exec 2010. This can be accomplished by using the **Configure Devices Assistant** wizard in the Devices tab. For more information refer to the "About the Configure Devices Assistant" section in the Symantec Backup Exec 2010 Administrator's Guide.

Known Issues

Issue: The storage space available on the Dell AX4-5F LUNs will not contribute to the “Available Disk Storage” numbers in the PowerVault DL Backup to Disk Appliance Console.

Description: The PowerVault DL Backup to Disk Appliance Console reports available space of direct attached storage only.

Solution: Use the EMC Navisphere Manager/Express Web interface to view the available space of SAN attached storage.

Issue: Deduplication Storage Folder (DSF) goes offline and cannot be used again

Description: If the connection between the media server and the Dell AX4-5F array fails, the DSF goes offline and cannot be used again.

Solution: Using LiveUpdate to install HotFix 348518 (or its successor) prevents the DSF from falling into this state. However, if the hotfix is not installed and the DSF is in an offline state, call Dell Tech Support to resolve this issue. Once the issue is resolved, ensure that LiveUpdate is used to install HotFix 348518 (or its successor) on the DL Backup to Disk Appliance.

Conclusions

The need to recover data will continue to be a focus of IT departments. Files are lost, viruses take down infrastructures, disk drives fail and natural disasters happen. Data may be lost or damaged for good as a result. In order to be prepared, Dell provides a simple and complete storage solution with the PowerVault DL Backup to Disk Appliance - Powered by Symantec Backup Exec and the Dell AX4-5F Fiber Channel Array.