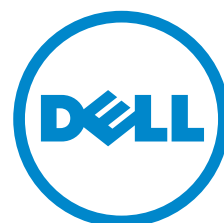


Centralized Management

Dell PowerVault DL Backup to
Disk Appliance
Powered by Symantec



Executive Summary

The PowerVault DL Backup to Disk Appliance– Powered by Symantec Backup Exec offers the industry's only fully integrated backup-to-disk solution with software factory installed. Dell and Symantec have codeveloped 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, the appliance offers simplified centralized management that delivers a robust and scalable solution for managing multiple Backup Exec media servers. This functionality lets IT administrators maximize a Backup Exec software investment by providing centrally managed operations, load balancing features, fault tolerance, monitoring, and reporting for many Backup Exec media servers and PowerVault DL Backup-to-Disk Appliances, whether in a Windows data center or distributed throughout the network.

Small, medium, and large organizations or enterprises face an explosive growth of data that must be protected and backed up. This challenge is made more difficult by the movement from standalone Windows server backup to backup over the LAN and by the need to manage multiple backup servers centrally and efficiently with constrained IT resources. The trend toward LANbased backup is driven largely by two factors. First, valuable data resides on servers inside and outside the data center, so it must be backed up from multiple sources. Second, the limitations of traditional stand-alone Windows server backup architecture add to the complexity of day-to-day management. As a result of these limitations, IT or backup administrators are faced with:

- Time-consuming administration of multiple stand-alone backup servers
- Consistent backup failures



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- Inability to proactively monitor all active jobs on multiple media servers
- Inefficient usage of storage resources
- Lack of central reporting of the entire storage environment
- Insufficient system information and lack of timely alerts

Remote offices and distributed networks offer a different set of challenges to those companies unable or unwilling to consolidate their data protection and storage management in a central location. The development and setup of backup jobs requires an immense amount of time when many backup servers are deployed in the environment. This effort is magnified when backup servers are remotely distributed from the main enterprise area. Proactive monitoring of media server activities and the ability to report on backup, restore, and a highly distributed backup environment storage management activities are essential to an organization's ability to effectively manage a highly distributed storage network.

Product highlights

The Central Admin Server Option (CASO) creates a one-to-many relationship between a central administration server (CAS) and the managed media servers. This dramatically reduces administration time, while increasing the resiliency and visibility of Backup Exec software in a Windows environment.



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Feature	Description	Benefits
Centralized administration	<p>Provides a single console (one Window Pane) for managing the entire Backup Exec environment</p> <p>Creates and delegates jobs to multiple Backup Exec Media Servers</p> <p>Defines Device and Media Sets for all Backup Exec Servers</p>	<p>Provides a single point of administration and control, unifying independent Backup Exec servers Dramatically cuts the time and effort required to make changes</p> <p>Reduces duplication of effort</p>
Operational Resiliency	<p>Automatically load balances jobs across media servers</p> <p>Provides job failover from one Backup Exec server to another</p> <p>Centralizes or replicates catalogs for restores</p>	<p>Increases efficiency and usage of Backup resources Removes single point of failure</p> <p>Eliminates manual connectionrestores</p>
Proactive insight (reporting and monitoring)	<p>Monitors, in real time, all job activity dispatched by the CAS</p> <p>Provides holistic reporting for the entire environment</p> <p>Centrally defines notification and alert settings</p>	<p>Improves reaction time and reduces the time to resolve issues</p> <p>Easily identifies trends across the entire Backup Exec environment</p> <p>Helps ensure accurate and consistent notification of alerts across the network</p>



Centralized Management

How it works

Conceptual overview

The Backup Exec Central Admin Server Option transforms your stand-alone Backup Exec media server–based environment into a centrally managed data protection solution. In the CASOenabled environment, the central administration server provides a single point of management and administration for the Backup Exec environment. The CAS is where you make decisions on what data and servers are to be protected in your environment. Unlike single server–oriented Windows backup solutions, CASO uses a state-of-the-art architecture built on the following concepts:

Architecture

The Backup Exec Central Admin Server Option unifies multiple, independent Backup Exec servers to provide one central point of administration and control. In a CASOenabled Backup Exec environment, a group of standard stand-alone Backup Exec media servers are managed and monitored from a Backup Exec media server where the CASO software has been installed. This media server, known as the central administration server, becomes the single point of administration for a CASO-based Backup Exec data protection environment, and it is where all Backup Exec related administration tasks occur (see Figure 1).

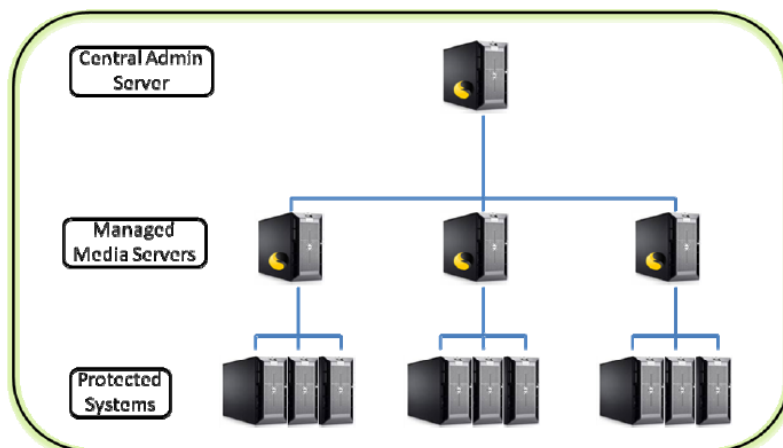


Figure: Central Administration Deployment



Centralized Management

How it works

Conceptual overview

Central Administration Server (CAS)

A Backup Exec media server including the PowerVault DL Appliance can be configured as a CAS,

where it is used for central administration tasks such as:

Creating backup jobs by creating policies and selection lists from a centralized location

Centralizing job delegation and load balancing

Managing notification and alerts

Job monitoring and reporting

Job history and job logs

Centralized restore jobs

Managed Media Servers (MMS)

Backup Exec media servers, with one or more backup storage devices attached fall under the management of the CAS. They are responsible for the actual processing of backup and restore jobs. In Backup Exec, managed media servers can operate in persistent or non-persistent network connections. A CAS can also be targeted as a managed media server to process jobs.

Features and benefits of CASO

Administration

Centralized console

Implementing this type of architecture gives you the flexibility to manage the Backup Exec for Windows Servers environment from a simple, centralized, and convenient console. Using CASO means you can now remotely administer individual Backup Exec media servers from a centralized console.



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After configuring a CASO environment, you create policy and selection lists at the CAS. Jobs created from these policies and selection lists can use the CASO job delegation feature, which automatically delegates Backup Exec jobs among the various storage devices connected to the managed media servers in the CASO environment.

Jobs are automatically created and submitted to the CAS's job queue after a policy is applied to a selection list. Queued jobs are processed in priority order. Depending on job parameters and system configuration, the CAS then delegates jobs to available storage devices in a selected device pool.

Features and benefits of Caso (cont.)

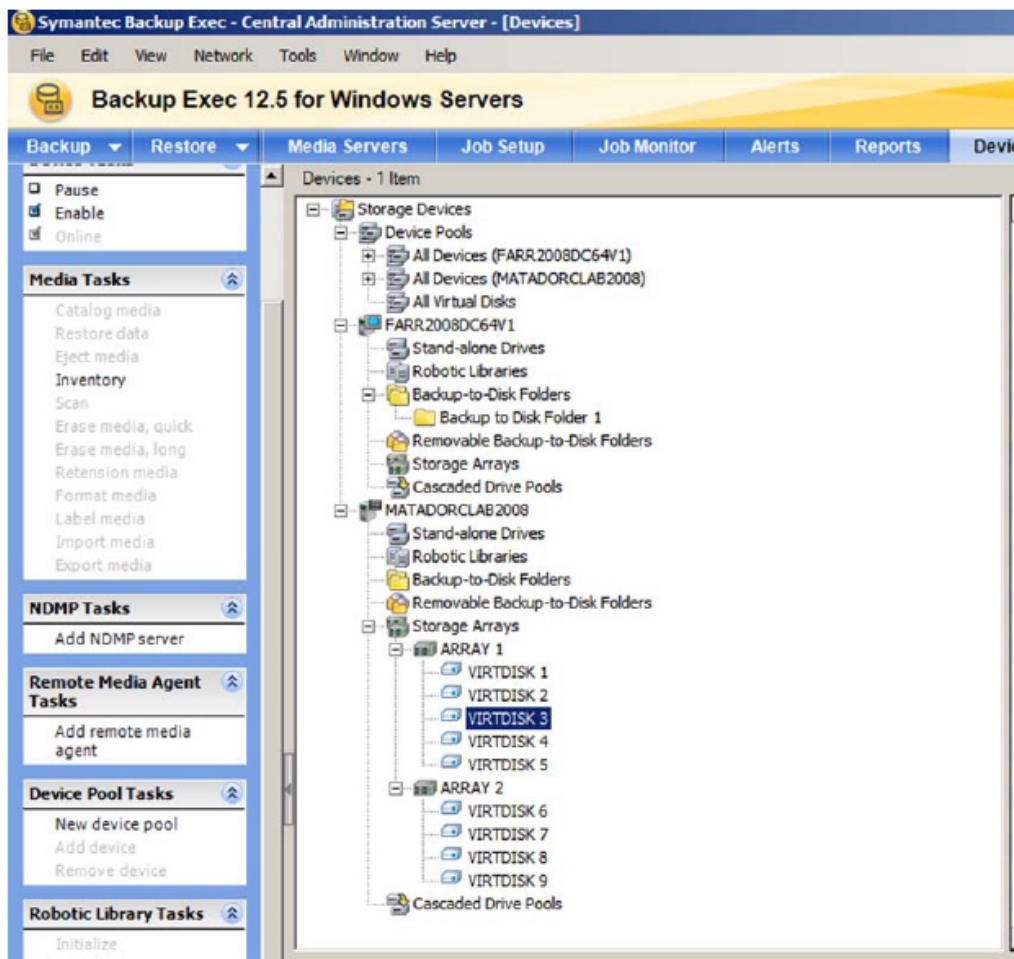


Figure: Centralized Console



Prior version support

CASO maintains N-1 backward compatibility with existing Backup Exec and PowerVault DL Backup-to-Disk deployments in the environment. The Central Admin Server must be running the latest version of Backup Exec and can manage media servers running the prior version (N-1) of Backup Exec. For the Central Admin Server to manage (N-1) versions of Backup Exec, all N-1 versions of Backup Exec must be associated with the Central Admin Server before the Central Admin Server is updated to the latest version (N) of Backup Exec.

Reliability

Disconnected managed media server

To reduce network traffic, or if there is no persistent network connection with the CAS, managed media servers can be configured to operate independently from the CAS while maintaining a level of centralization. This is ideal for remote branch offices where network connectivity may be intermittent. Disconnected managed media servers can receive copied jobs from the CAS and be monitored and reported by the CAS.

Centralized job delegation

Job delegation is the automatic load balancing of jobs among the various storage devices attached to the Backup Exec managed media servers. These storage devices, when logically grouped in device pools, process jobs delegated from the CAS as they become available. For example, if a drive pool contains two storage devices and one is busy processing a job, the CAS automatically delegates another job to the idle storage device.



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The advantage of job delegation is realized when a policy is targeted to a device pool that spans multiple Backup Exec managed media servers. When multiple managed media servers and their devices are available to the CAS for job delegation, the efficiency of Backup Exec for Windows Servers is greatly improved because job processing does not have to wait for a specific device or managed media server to become available

Centralized job failover

If the job ends in an error or if a managed media server communications are down, the CAS determines what to do with the job by invoking enabled default or user-defined error-handling. For example, if communications are lost with a managed media server, jobs lost will automatically be deployed to another managed media server.

Centralized catalog storage

In the CASO environment, you can choose the catalog location. With Backup Exec, there are three possible catalog locations:

- **Distributed**—Image files, which are small files that contain information about the backup set, are distributed to the CAS from every managed media server. History files, which contain detailed information about the backup set, remain on the managed media server. A distributed catalog provides increased performance, centralized restore capability, and decreased network traffic.
- **Centralized**—All catalog files and information for the managed media server are kept on the CAS. A centralized catalog is ideal for complete central control of the catalogs and if the network can handle the extra bandwidth required.
- **Replicated**—All catalog files are replicated from the managed media server to the CAS. Both the managed media server and the CAS store the catalog produced by the managed media server. Replicated catalogs provide high availability by keeping the complete catalog structure in two separate locations.



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Flexible catalog location allows the CAS to initiate restore operations from the CAS, rather than having to manually run restore operations at each managed media server, and takes into account bandwidth considerations.

Centralized restore

Using CASO, you can run restore operations from the CAS, letting you restore complete resources or individual files to their original locations. You can also redirect these restore items to different locations on your network.

After selections are made, restore jobs are created and submitted to the CAS job queue for job delegation among the managed media servers in the media server pool.

Insight

Centralized reports

Centralized reports are available and can be viewed at the CAS for all locally monitored and delegated jobs that use the CASO job delegation feature.

Centralized job logs and history details

Job logs and the job history for each job can be automatically copied from the managed media servers to the CAS, giving you access to the information from either the CAS or the managed media servers. In prior versions, the amount of data that could be transferred between a managed media server and CAS has been significantly increased, and the rate of transfer of job logs to the CAS has been fine-tuned.

Centralized alerts

Using CASO, alerts generated at the managed media server are sent to the CAS, where they are displayed. Alerts can also be configured to send to an email recipient or an SNMP management framework.



Deploying CASO in remote branch offices

As an organization's business becomes distributed using the remote office model, so does their valuable data. The data at these remote locations is changing constantly and must be protected daily. The organization's IT management needs a backup and restore solution that will protect the data at these remote sites with the same high degree of reliability they have achieved in the data center.

For example, the data center employs server-knowledgeable and application-literate administrator's onsite. When backup software, tape libraries, or media must be installed or maintained, an administrator can quickly do the job. However, this expertise is usually not available at the branch office or retail store hundreds of miles away. Furthermore, employees at the remote site are usually not trained to create, maintain, and monitor backup jobs or investigate or troubleshoot issues associated with backup job failure.

The solution must be scalable, executing the deployment of the software, allowing monitoring, and management of hundreds of remote backup servers from a single console. Because an organization's many remote sites may be "cookie cutter" images of themselves, the solution should have features that minimize an administrator's repetitive deployment and management tasks. The deployment of CASO in remote branch offices allows IT administrators to:

- Complete backup server deployment
- Deploy and set up backup jobs
- Centrally monitor backup jobs and servers
- Get alert and notification
- Investigate remote problems
- Deploy managed media servers that can operate with intermittent network connections

Since IT administrators can manage distributed backup servers from a single data center console, they don't need to travel to any remote sites, which significantly improves IT staff productivity.



Deploying your PowerVault DL Backup to Disk Appliance central administration environments

The PowerVault DL Appliance can be deployed in Central Administration Environments. The three primary modes for deploying an appliance in these environments include:

- Existing Central Administration Environment – Backup Exec is already deployed in an organizations environment with an existing Central Administration Server.
- Deploying your appliance as a Central Administration Server – The PowerVault DL Appliance can be deployed as a Central Administration Server for managing other PowerVault DL Backup-to-Disk appliances and Backup Exec media servers.
- Remote Office Deployment – Your appliance can be deployed in a remote office and centrally monitored from the main office by a Backup Exec Central Administration Server or a PowerVault DL Appliance deployed as a Central Administration Server.

Deployment in an existing central administration environment

Your PowerVault DL Appliance can be deployed in an existing Backup Exec Central Administration Environment. Before deploying your appliance in this environment, the Backup Exec Central Administration Server must be running the equivalent version number for Backup Exec as the version of Backup Exec running on your appliance. For example, appliances running Backup Exec 12.5 for Windows Servers require that the Central Administration Server running Backup Exec 12.5 before the appliance can be managed by the Central Administration Server. Once associated with a Central Admin Server, your appliance can be managed and monitored like a Backup Exec managed media serve with all the benefits previously mentioned in this article.



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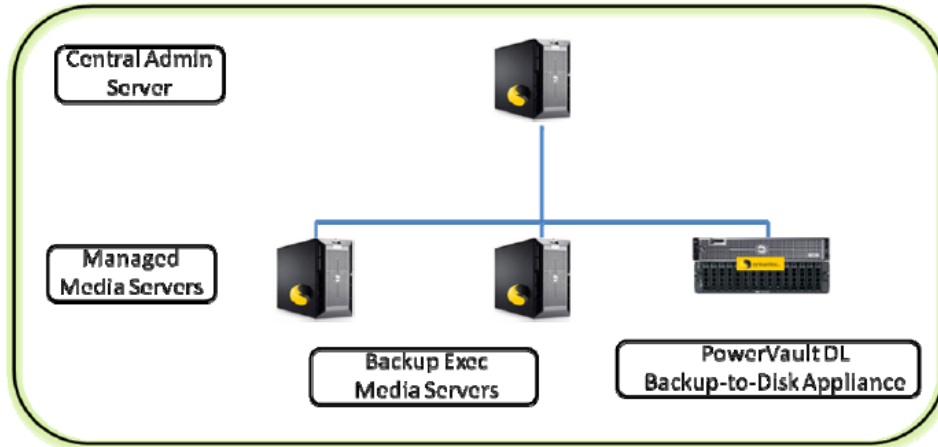


Figure: Deployment in an existing Central Admin Environment

Designating your PowerVault DL Appliance a central administration server

Your PowerVault DL Appliance can be deployed as a Central Administration Server in your backup environment. Deploying your appliance as a Central Admin Server provides the appliance with the ability to manage and monitor other appliances in your environment as well as Backup Exec media servers. Once deployed as a Central Admin Server, your appliance can be manage and monitor other media servers with all of the benefits previously mentioned in this article.

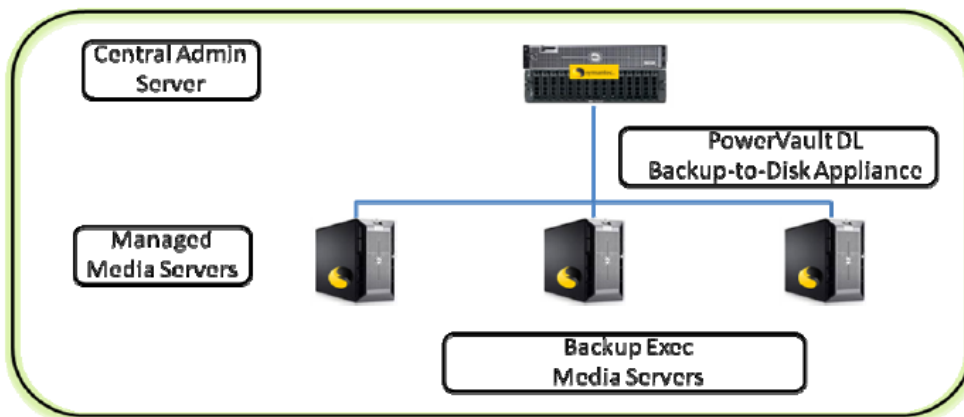


Figure: Setting your appliance as the Central Admin Server



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Remote office deployment

Your PowerVault DL Appliance can be deployed in a remote office and centrally monitored and managed from a Central Admin Server in the main office. When deploying your appliance in this environment, it may be necessary to set your appliance as a Disconnected Media Server if a slow or non-persistent network connection is present between the Central Admin Server and the appliance. Setting the appliance as Disconnected Media Server allows the appliance to operate independently from the Central Admin Server while maintaining a level of centralization. In this configuration, the appliance can receive copied jobs from the CAS and be monitored and reported by the CAS.

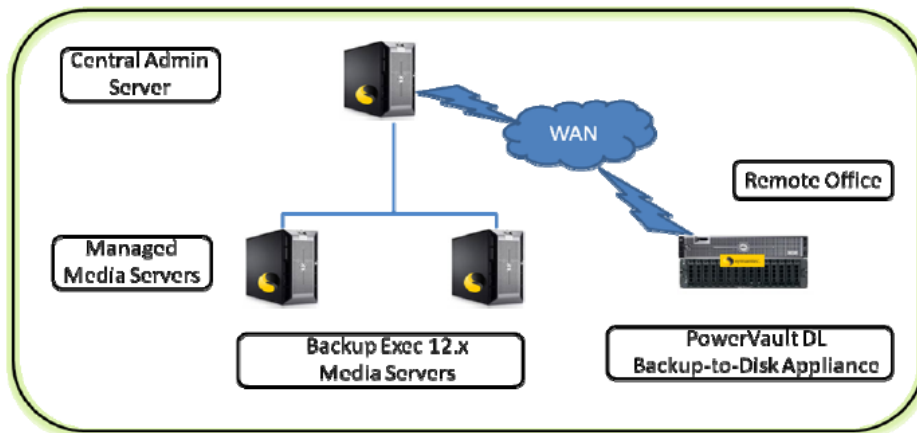


Figure: Remote Office Deployment



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Summary

In an era of continuing data growth, organizations need simple, centralized, and scalable management. The PowerVault DL Backup to Disk Appliance – Powered by Symantec Backup Exec with the Central Admin Server Option gives Windows based organizations a flexible, powerful solution to manage backups and restores across a distributed organization whether the servers are in one campus or distributed among many remote offices. CAS can help organizations manage the explosive growth of data and avoid the pitfalls of Windows single server-based backup, all the while simplifying and reducing backup administration of the environment.

