Configuring Off-host Backups

Dell PowerVault DL Backup to Disk Appliance and Dell EqualLogic PS Series SANs





Configuring Off-host Backups

Current Situation

Microsoft Exchange Server and SQL Server are mission-critical components in today's business environment. IT administrators need to ensure that access to data and email communications for employees, customers, and partners is maintained 24 hours a day, 7 days a week. The greater reliance on all forms of electronic communication raises the potential of quickly escalating into a business disaster when any event causes mission-critical email and database data to become unavailable.

The PowerVault DL Backup-to-Disk Appliance powered by Symantec Backup Exec coupled with the Backup Exec Advanced Disk-based Backup Option (ADBO) used in conjunction with the snapshotting capabilities of Dell EqualLogic Storage Arrays are combined to create a comprehensive solution for customers that want quick recovery and off-host backup support for Microsoft Exchange Server 2003 and 2007 and Microsoft SQL Server 2000, 2005, and 2008. This solution eliminates backup windows, reduces the performance load on application servers, and quickly brings applications back online after data corruption issues. This solution leverages the Volume Shadow Copy Service (VSS) capabilities built into Microsoft Exchange Server 2003 and 2007, Microsoft SQL Server, and Microsoft Windows Server[®] 2003 and 2008 and the hardware snapshot capabilities of Dell EqualLogic Storage Arrays.





Off-host backup minimizes the impact to the LAN by moving backup data across the SAN during the backup process. An off-host backup is performed on the following manner:

- The PowerVault DL Backup to Disk Appliance powered by Symantec Backup Exec in conjunction with Backup Exec Remote Agent installed on the protected server (Exchange in this example) prepare the remote server for protection
- 2) The EqualLogic Storage Array creates a snapshot of the protected server's data residing on the array.
- 3) The snapshot is mounted directly to the PowerVault DL Backup to Disk Appliance and the backup data flows directly across the SAN instead of the LAN.





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Solution Components

PowerVault DL Backup to Disk Appliance powered by Symantec Backup Exec

Dell has simplified the backup process by offering the only integrated hardware, software and services solution powered by Symantec Backup Exec. The PowerVault DL Backup to Disk Appliance comes factory installed with Symantec Backup Exec software and a unique wizard driven set up and management utility. The backup software comes with integrated automated dynamic disk provisioning that configures and sets up the disks for immediate use. Set it up, configure storage, add more disks – it only takes a few clicks.

Advanced Disk-based Backup Option (ADBO)

Enables faster backups and restores through advanced disk-based backup and recovery, including Synthetic and Off-Host backups to perform zero impact backups. Synthetic backups reduce backup windows and network bandwidth requirements and do not impact the original client. New true image restore functionality automatically restores data sets sequentially, simplifying restores. The Off-Host backup feature enables better backup performance and frees the remote computer by processing the backup operation of the remote computer on a Backup Exec media server instead of on the remote computer or host computer.

Advanced Open File Option

The Symantec Backup Exec for Windows Servers Advanced Open File Option (AOFO) uses advanced open file and image technologies designed to alleviate issues that are sometimes encountered during backup operations, such as protecting open files and managing shortened backup windows.

Agent for Windows Systems

The Remote Agent is a system service that runs on remote Windows servers and workstations. The Remote Agent provides faster backup processing by locally performing tasks that in typical backup technologies that require extensive network interaction. The Remote Agent processes backup data into a continuous stream that the media server then processes as a single task. This method provides better data transfer rates over traditional technologies, which require multiple requests and acknowledgments between the media server and the remote server.





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Agent for Microsoft Exchange Server

Backup Exec Agent for Exchange provides continuous data protection for Exchange Server and revolutionizes data protection and recovery by eliminating the daily backup window for Exchange backup jobs while still allowing recovery of individual messages, folders and mailboxes – in seconds with patent-pending Granular Recovery Technology. Additionally, administrators do no need to run a mailbox (or MAPI) backup, which significantly reduces the number of backups, time and cost required to protect Exchange. With Granular Recovery Technology, the Exchange Agent can granularly recover from a single full backup, eliminating the need for multiple Exchange backups. Backup Exec Agent for Exchange provide fast, flexible technology that protects vital Exchange Server 2000, 2003, and 2007 data while the application is still online.

Agent for Microsoft SQL Server

Efficiently eliminate the daily backup window for SQL servers and enable recovery of database transactions that have been made right up to the time of the hardware or software failure. Additionally, flexible recovery options allow IT administrators to restore SQL databases to destinations other than where they originated, directing a copy of the actual data streams being sent to media by a SQL database to a local directory for later use. The SQL Server 2005 snapshots are integrated into the Backup Exec catalog for a consolidated look at all data copies available for recovery in seconds. This agent provides SQL Server 7.0, SQL Server 2000, SQL Server 2005 and 2008 administrators with granular protection on 32- and 64-bit systems down to the individual database or file group.

Dell EqualLogic Host Integration Tools

The Dell EqualLogic Host Integration Tools integrated Windows systems with PS Series storage arrays. This allows fast provisioning of Windows Systems on a PS Series SAN. The Host Integration Tools includes Auto-Snapshot Manager VSS provider and VSS requests that enables you to implement Microsoft Volume Shadow Copy Service (VSS) backup operations.





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Note: Before continuing with the installation and setup of the DL Backup to Disk Appliance and EqualLogic storage for off- host backups, refer to the Best Practices and Troubleshooting section located at the end of the document.

Dell EqualLogic iSCSI Storage Arrays

Dell EqualLogic storage solutions deliver the benefits of consolidated network storage in a self-managing iSCSI storage area network that is affordable and easy to use, regardless of scale. By eliminating complex tasks and enabling fast and flexible storage provisioning, these solutions dramatically reduce the cost of storage acquisition and ongoing operations.

The process for configuring the DL Backup to Disk Appliance powered by Symantec Backup Exec for off-host backups includes:

- 1. Installing the Dell EqualLogic Host Integration Tools on the PowerVault DL Backup to Disk Appliance
- 2. Configuring the PowerVault DL Backup to Disk Appliance for access to the iSCSI array, and snapshots that are being protected.
- 3. Installing the Backup Exec options on the media server and the remote server that is being protected using off-host backups.
- 4. Configuring and running off-host backup jobs.
- 5. Configuring and running restores of data that has been backed up using the off-host backup methodology





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Installing the Dell EqualLogic Host Integration Tools on the Backup Exec Media Server

This process assumes that the Dell EqualLogic array has already been setup and configured. The Backup Exec media server will be added to an existing installation.

1. Start the installation of the Dell EqualLogic Host Integration Tools on the Backup Exec Media Server using the installation executable.



- 2. Click **Next** to begin the installation.
- 3. Accept the terms of the license agreement and click **Next** to continue.
- 4. Select the Typical installation and click **Next** to continue. You may be prompted to start and enable the iSCSI Initiator service to allow iSCSI traffic. Select **Yes** to enable the iSCSI initiator if prompted.
- 5. Click **Install** to complete the installation. You may be prompted to enable the Microsoft Multipath I/O if it is not automatically enabled. Select **Yes** to enable the Microsoft Multipath I/O.





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Click **Finish** to complete the installation process.

NOTE: The remote setup wizard can be used to configure the Backup Exec media server for access to the array by selecting **Launch Remote Setup Wizard.** If the remote setup wizard is not used, the following steps will need to be performed for configuring access to the array.

Using the Remote Setup Wizard to Configure the Media Server for access to the array

1. Select **Configure this computer to access a PS series SAN** and click **Next** to continue.

😑 Remote Setup Wizar	rd	×
	Welcome to the Remote Setup Wizard	
Dell	This wizard enables you to initialize one or more PS Series arrays and create or expand a PS Series group (SAN). You can also configure this computer to access a PS Series SAN or use EqualLogic MPIO.	
EQUALLOGIC	Note: The computer must be connected to the same Ethernet segment as the array, and Layer 2 multicasting must not be blocked between the server and array.	
	O Initialize a PS Series array	
	Configure this computer to access a PS Series SAN	
1 En	C Configure MPIO settings for this computer	
	< <u>B</u> ack <u>N</u> ext > Cancel	_

2. Click Add Group and specify the Group Name, IP Address, and CHAP credentials. Click Save.





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Re	emote Setup Wizard	X
	Add or Modify Group Info	X
		access the SAN
1	Group name: DLGRP	
Dél	Group IP address: 10 , 65 , 21 , 185	allow this computer to access a PS Series to Microsoft services, such as Virtual Disk opy Service (VSS).
DGIC	CHAP credentials for VDS/VSS access to group	iter:
AL A	User name: symc	<u>A</u> dd Group
EQU	Password: **********	Modify Group
	☑ Use CHAP credentials for iSCSI discovery	
-	More Information	hager for SANs upon exit to create a volume
Ŀ	Save Cancel	
	< <u>B</u> ack	Next > Finish

NOTE: Ensure the Chap credentials have first been setup correctly in the Group Administrator web management Page.

3. Click Finish to complete the process.

Manually Configure the Media Server for access the array

Windows 2008

- 1. Click on Start -> Administrative Tools -> iSCSI Initiator. The iSCSI Initiator properties dialogue box appears.
- 2. Click on the General tab and note the iSCSI initiator name





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General Discovery Targets iSCSI devices are disk, tapes, CDs, and other storage devices on another computer on your network that you can connect to. Your computer is called an initiator because it initiates the connection the iSCSI device, which is called a target. Initiator Name iqn. 1991-05.com.microsoft:djdp67dz To rename the initiator, dick Change. Change To use mutual CHAP authentication for verifying Secret
SCSI devices are disk, tapes, CDs, and other storage devices on another computer on your network that you can connect to. Your computer is called an initiator because it initiates the connection the iSCSI device, which is called a target. Initiator Name iqn. 1991-05.com.microsoft:djdp67dz To rename the initiator, click Change. Change
Your computer is called an initiator because it initiates the connection the iSCSI device, which is called a target. Initiator Name iqn. 1991-05.com.microsoft:djdp67dz To rename the initiator, click Change. Change
Initiator Name iqn. 1991-05.com.microsoft:djdp67dz To rename the initiator, click Change. Change. To use mutual CHAP authentication for verifying
Initiator Name iqn. 1991-05.com.microsoft:djdp67dz To rename the initiator, dick Change. Change. To use mutual CHAP authentication for verifying
To rename the initiator, click Change. Change.
Largels, set up a Char secret.
To set up IPsec tunnel mode addresses,Set up
What is iSCSI ?

3. Click on the **Discovery** tab and specify the IP Address of the PS Series Group





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General	s	Volumes and Devices Discovery	RADIL Targets
arget portals	in.	1-	
Address	Port	Adapter	IP addres
10.65.21.185	3260	Default	Default
Add Deeted	1	Demoire 1	Defeat
SNS servers	·		Refresh
Name			
Add		Remove	Refresh

4. Click on **Targets** tab and click **Refresh.** If not already done so, this will populate the iSCSI targets that the media server is able to access.





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Favorite Targets	Volumes and Devices	RADIUS
General	Discovery	Targets
o access storage device og on. o see information about lick Details.	s for a target, select the targe sessions, connections, and de	t and then click vices for <mark>a</mark> target
argets: Name ion.2001-05.com.equal	ogic:0-8a0906-8d928a902-e2a	Status
iqn.2001-05.com.equal	ogic:0-8a0906-c1e28a902-e98	000 Inactive
iqn.2001-05.com.equal	ogic:0-8a0906-c4328a902-786	000 Inactive
4		
▲ Details	Log on	Refresh

5. Click **Advanced** in the Log On to Target dialog box. Set the **CHAP logon information** check box and specify the CHAP user name and secret. The username must match an access control record for the volume.





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Using the Dell EqualLogic Group Administrator Web Management page to configure access to the Dell EqualLogic Array

- 1. Launch the Group Manager Applet or open a web browser interface to the Group IP Address.
- 2. The username and password to the Group will need to be specified for access.
- 3. Click on the Group Configuration in the left hand web navigation pane
- 4. Click on the iSCSI tab in the right hand web pane.

avorites 🛛 👍 🏉 Suggested S	ites 👻 🙋 Web Slice Gallery 🔹				
IDM Group Manager					Page 🔹 Safety 👻 Tools 👻
EqualLogic			Accour	nt: grpadmin Logged in 6/18/	09 2:09:47 PM 🛛 🙀 Logo
Group IDM	🔗 Group Configuration	n		_	
Events (105 new)	Summary	General Administration No	tifications iSCSI SN	MP VDS/VSS Defaults	Advanced
Storage Pools	General Settings		iSCSI Auth	entication	
Volumes OFHT1 OFHT2 OFHT2 OFHT2 Volume Collections	Group name: IDM IP address: 10.1.1.6 Administration Access Web access: enabled Telnet access: enabled SSH access: enabled	SCSI initiator authentication	on for iSCSI initiators P accounts first I <mark>P RADIUS settings</mark>	Target authentication User name: symc Password: symcoffhost1	Modify
Replication Partners	E-mail Notifications E-mail alerts: disabled E-mail Home: disabled Event Logs Syslog: disabled iSCSI Authentication RADIUS: disabled Local CHAP: enabled	iSNS servers, in order of prefe	iscsi Di rence	ISCSI discovery filter	nosts from discovering te filter is enabled, a host t only if the host has the or the target.
	SNMP Settings SNMP access: disabled SNMP traps: disabled		Local CHAF	P Accounts	
	VDS/VSS	Local CHAP user 🔺	Password	Status	Add
	Access: restricted	🔓 symc	symcoffhost	1 enabled	Modify Delete
Tools 👔	1 outstanding alarm	(1 new)		sted sites Protected Mode: Off	 ≪a • € 100%

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5. Click on the Modify Link on Target chap account and set the user name and password and then click OK.



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IDM Group Manager - Windows → → ▼ Http://10.1.1.6/ → Favorites ☆ 2000 Suggested Site	Internet Explorer		×	≥ + ×	b Bing		_1t
IDM Group Manager					• 🔊 • 🖃	🖶 👻 Page 🕶 🗧	Safety + Tools + (
Group Monitoring	Volume OFHT1	Status Access Sna	pshots Replication	Account: grpad	Imin Logge	connections	7 PM 🛛 🖗 Logout
Events (105 new) Storage Pools	👩 Volume OFHT 1 🔺		Acc	ess Control	List		
Er man internibers Er ☐ Volumes Er ☐ OFHT1 - 100 6/19/09 9:59:19 AM	Volume Modify volume settings ♦ Clone volume	iSCSI access to the vo Access type: read-writ	lume: restricted te, shared				
Corrections Control Contro Control Control Control Control	 Set volume coffline Set access type Delete volume Snapshots Modify snapshot settings Create snapshot now Restore volume Delete snapshots Schedules Create schedule Replication Configure replication 	Applies to A volume & snapshots volume & snapshots volume & snapshots volume & snapshots Select access control reco	CHAP us symc * *	details	IP address * 10.1.1.12 10.1.1.14 10.1.1.11	iSCSI initiator	C Add Modify Delete
Tools 👔	🛕 1 outstanding alarm	(1 new)					s 1

- 6. Click on the plus sign to expand Volumes
- 7. Click on the specific volume for Off-host backup in the left hand web navigation pane.





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8. For each volume that will be utilized as part of the off-host backup, verify that the Backup Exec media server has access to the snapshots. Click on the Access tab and verify the access list. The access list can be specified according to CHAP credentials, IP address, and iSCSI initiator.

Authenticate usi	ng CHAP user name:
Limit access by I	IP address (asterisks allowed):
Limit access to i	SCSI initiator name:
pply to	
▼ volume	🔽 snapshots

9. Ensure an entry is listed for CHAP and by IP address for each host that will be performing Off-host backups.





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Installing and Configuring the Backup Exec Agents and Options for Off-host Backup

NOTE: The following assumes Backup Exec has been installed on a server.

- 1. From the Backup Exec Ul, Select Tools -> Install Options and License Keys on this Media Server
- 2. The Backup Exec License Wizard appears. Enter the license keys for:
 - Advanced Disk-based Backup Option
 - Agent for Windows Systems (if applicable)
 - Exchange Agent (if applicable)
 - SQL Agent (if applicable)

NOTE: A remote agent is required for each remote system that is being protected.

3. Verify that the licensed options will be installed on the media server and click Next.

	To select more options, or to clear the options that you do not want to	install, click the checl	k boxes in the list.	
License Keys	Features		Feature Description	on:
Local Options Settings Install Finish	Tape Device Drivers Online Documentation Enable Robotic Library Support Create Clone CD Copy Server Configurations Managed Media Server Advanced Open File Option Intelligent Disaster Recovery Active Directory Recovery Agent Advanced Disk-based Backup Option Agent for DB2 on Windows Servers Agent for Enterprise Vault Agent for Lotus Domino		Fully protects act and verifies all of automatically.	tive databases your SQL data
Support Web Site	Agent for Dictors of the Exchange Server Agent for Microsoft Exchange Server Agent for Microsoft SQL Server Agent for Microsoft Virtual Servers Agent for Oracle on Windows or Linux Servers Agent for SAP Applications Agent for VMware Virtual Infrastructure Central Admin Server Option Desktop and Laptop Option NDMP Option Remote Media Agent for Linux Servers SAN Shared Storage Option		Required: 93 Available: 21	9 MB 4166 MB
<u>View ReadMe</u>	Storage Provisioning Option	-		
symantec.		<u>B</u> ack	<u>N</u> ext	Cance

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- 4. A summary of the agents and options to be installed is presented. Click **Install** to continue.
- 5. Once the installation has completed, click **Finish** to continue.
- 6. Next, remote agents need to be installed on the systems that are being protected. Select **Tools -> Install Agents and Media Servers on other Servers.** The installation wizard appears. Click **Next** to continue.
- 7. Right click on Windows Remote Agents and select **Add Remote Computer**. Browse through either *Active Directory Domains or Microsoft Windows Network* to browse and find the remote computers to install the agents on. Make sure to select all of the systems that will be protected by Backup Exec.
- 8. Enter the Username, Password, and Domain information that has administrative rights on the target system and can be used to install the agent. Click **Ok** to continue.
- 9. Select the *Remote Agent for Windows Systems* and *Advanced Open File Option* and click **Finish** to continue.

Creating Backup Jobs

Now that the remote agents have been installed, Backup jobs can be created and run to protect the remote systems using an off-host backup.

- 1. Select the **Backup Tab** and select **New Backup Job**. The Backup Job properties screen will appear.
- Select the remote system and data that is to be protected. If you are protecting a file server, select the files, folders, or volumes. If you are protecting a Microsoft Exchange Database, select the Information Store. If you are protecting a SQL Server, select the SQL instance.





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- Next, select the destination for the backup. Select Device and Media and then select the destination from the **Device** drop down.
- 4. Select **General** to name the backup job and specify additional options.
- 5. Select Advanced Disk-based Backup and select the option Use offhost backup to move backup processing from remote computer to media server. Under snapshot provider, select Hardware – Use technology provided by the hardware manufacturer.





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Source	Advanced Disk-based Backup
Selections	☑ Use offhost backup to move backup processing from remote computer to media server
Resource Order	
Resource Credentials	Snapshot provider: Hardware - Use technology provided by hardware manufacturer
Priority and Availability Selection List Notification	The fact of the second s
Destination	Job disposition
Device and Media	If any of the selected resources do not support offhost backup:
Settings	Continue the backup job (offhost backup is not used)
General	C Fail the backup job (further selections are not backed up after failure occurs)
Advanced	
Network and Security	
Advanced Open File	Process logical volumes for offhost backup one at a time
Advanced Disk-based Backup	
Microsoft SQL	
Microsoft Exchange	
Microsoft SharePoint	
Microsoft Active Directory	
Lotus Domino Oracle	
DB2	
NetWare SMS	
Linux, Unix, and Macintosh	
NDMP	
Enterprise Vault	
VMware Virtual Infrastructure	
Notification	
Frequency	
Schedule	
20192-2022-026026	

Perform this step if this is a backup of Microsoft Exchange. If this is not a backup of Microsoft Exchange, skip to step 8. Select Microsoft Exchange and verify that the option Use Backup Exec Granular Recovery Technology (GRT) to enable the restore of individual mailboxes, mail messages, and public folders from Information Store backups. Continue to Step 8.





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Comments?

Selections Selections Resource Drder Resource Credentials Priority and Availability Selection List Notification Destination Device and Media Settings General Advanced Resource Credentials Ore Deackup that creates browsable backup tasks and Advanced Resource Credentials Ore Pre/Post Commands Advanced Open File Advanced Open File Advanced Open File Advanced Open File Advanced Disk-based Backup Microsoft SQL Wicrosoft SQL VSS) snapshot provider VSS) snapshot provider VSS) snapshot provider VSS) snapshot provider Resource Credentials If Exchange 2007 backup if consistency check fails If Exchange 2007 backup if not available, try the active copy (recommended) Resource Vitual Infrastructure Microsoft Vitual Server Notification Constitute Vitual Infrastructure Microsoft Vitual Server Notification Common Vitual	ource	nine over Einenenge
Resource Order Backup method: Resource Credentials Full - Database & Logs (flush committed logs) Priority and Availability Continuously back up transaction logs with Backup Exec Continuous Protection Server Device and Media Image: Continuously back up transaction logs with Backup Exec Continuous Protection Server Device and Media Image: Continuously back up transaction logs with Backup Exec Continuous Protection Server Meters are covery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Witcrosoft Exchange Microsoft Exchange Microsoft Exchange Microsoft Exchange Microsoft Exchange Device and Netware SMS	Selections	Information Store Backups
Resource Credentials Priority and Availability Selection Lists Device and Media Settings General Advanced Network and Security Pre/Post Commands Advanced Dper File Advanced Dper File Advanced Disk-based Backup Microsoft Sul- Microsoft SharePoint Microsoft SharePoint Drive S MS Linux, Unix, and Macintosh NDMP Enterprise Vault Vimare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Vimare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Vimare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Vimare Site Site Schedule	Resource Order	Backup method:
Priority and Availability Selection List Notification Device and Media Settings General Advanced Network and Security Pre/Post Commands Advanced Open File Advanced Disk-based Backup Microsoft SQL Microsoft SQL Microsoft SQL Microsoft Soft Exchange Dracle DR2 NetWare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Vitual Infrastructure Microsoft Vitual Server Notification File Pre/Post Pre/Post Commands Advanced Disk-based Backup Microsoft SQL Microsoft SQL Dracle DR2 NetWare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Vitual Server Notification File Pre/Post Microsoft Vitual Server Notification File Pre/Post Pre	Resource Credentials	Full - Database & Loas (flush committed loas)
Selection List Notification Destination Destination Destination Destination Destination Destination Destination Destination General Advanced Network and Security Pre/Post Commands Advanced Open File Advanced Disk-based Backup Microsoft SQL Destination DB2 NetWare SMS Linux, Unix, and Maintosh NDMP Enterprise Vault VMware Virtual Infrastructure Microsoft Virtual Server Notification requency Schedule	Priority and Availability	1
Destination Device and Media cettings General Advanced Network and Security Pre/Post Commands Advanced Open File Advanced Disk-based Backup Microsoft SQL Microsoft SAtrepoint Microsoft SharePoint Microsoft SAtrepoint Data Data Data Data Dreverse SMS Linux, Unix, and Macintosh NDMP Enterprise Vault VMixer Virtual Infrastructure Microsoft Virtual Server Notification receptor Calcel DB2 Schedule	Selection List Notification	Continuously back up transaction logs with Backup Exec Continuous Protection Server
Device and Media Settings General Advanced Network and Security Pre/Post Commands Advanced Open File Advanced Disk-based Backup Microsoft SQL Microsoft SQL Microsoft SQL Microsoft SActive Directory Lotus Domino Oracle DB2 NetWare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault VMware Virtual Infrastructure Microsoft Virtual Server Notification requency Schedule Microsoft Virtual Server M	estination	
ieitings Intractes togs every General Advanced Advanced Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Vetwork and Security Image: Security Pre/Post Commands Image: Security Advanced Disk-based Backup Image: Security Microsoft SQL Image: Security Microsoft SharePoint Image: Security Network and Macintosh Continue with backup if consistency check fails If Exchange 2007 backup source is LCR or CCR: Back up from the passive copy and if not available, try the active copy (recommended) NMMP Enterprise Vault Image: Security VMicrosoft Vitual Infrastructure Image: Security Image: Security Notification Image: Security Image: Security Image: Security NetWare SMS Image: Security Image: Security Image: Security Image: Security Notification Image: Security Image: Security Image: Security Image: Security Schedule Image: Security Image: Security Image: Security Image: Security NetWare SMS Image: Security Image: Security Image:	Device and Media	Make a recovery point that creates browsable backup sets and 8 🚊 Hours
General Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Advanced Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Per/Post Commands Without recovery points, individual mail messages and folders can only be recovered from the last full backup. Microsoft SQL Image: Security points, individual mail messages, and public folders from Information Store backups (Exchange 2000 and later only: incremental backups supported with policy-based jobs only) Microsoft SQL Image: Security points, individual mail messages, and public folders from Information Store backups (Exchange 2000 and later only: incremental backups supported with policy-based jobs only) Microsoft SarePoint Image: Security points, individual mail messages (SS) Microsoft SharePoint Image: Security points, individual mail messages (SS) Microsoft SarePoint Image: Security points, individual mail messages (SS) Microsoft Active Directory If Exchange 2007 backup if consistency check fails If Exchange 2007 backup source is LCR or CCR: Image: Security points, individual mail messages (SC) Netware SMS Image: Security points, and Macintosh Image: Security points, individual mail messages (SC) Notification Image: Security points, individual mail messages (SC) Image: Security points, indinge: Security points, individual mail messages (SC) <td>ettings</td> <td>turicates idgs every</td>	ettings	turicates idgs every
Advanced Impose price Network and Security Impose Backup Exec Granular Recovery Technology (GRT) to enable the restore of individual mailboxes, mail messages, and public folders from Information Store backups (Exchange 2000 and later only: incremental backups supported with policy-based jobs only) Microsoft SQL Guide Me Microsoft SQL Impose Price Microsoft SharePoint Microsoft Active Directory Lots Domino Dracle DB2 If Exchange 2007 backup source is LCR or CCR: Back up from the passive copy and if not available, try the active copy (recommended) Impose passive copy and if not available, try the active copy (recommended) DMP Enterprise Vault VMware Virtual Infrastructure Microsoft Virtual Server Notification Notification Trequency Schedule Impose passive copy and if not available in the active copy (recommended)	General	Without recovery points, individual mail messages and folders can only be recovered from the last
Network and Security I Use Backup Exec Granular Recovery Technology (GRT) to enable the restore of individual mailboxes, mail messages, and public folders from Information Store backups (Exchange 2000 and later only; incremental backups supported with policy-based iobs only) Guide Me Microsoft SQL Microsoft SqL Microsoft SqL Microsoft SarePoint Microsoft Active Directory Lots Domino Oracle DB2 NetWare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault VMware Virtual Infrastructure Microsoft Virtual Server Kottosoft Virtual Server Schedule	Advanced	
Pre/Post Commands Advanced Open File Advanced Disk-based Backup: Microsoft SQL Microsoft SharePoint Microsoft SharePoint Microsoft Active Directory Lotus Domino Oracle DB2 NetWare SMS Linux, Unix, and Macintosh NDMP Enterprise Vault Virtual Infrastructure Microsoft Virtual Server Notification requency Schedule	Network and Security	I Use Backup Exec Granular Recovery Technology (GRT) to enable the restore of individual mailboxes, mail recovery and public (addee from lefernation Store backup) (Euclidean 2000 and later university)
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- 7. Perform this step if this is a backup of Microsoft SQL. If this is not a backup of Microsoft SQL, skip to **Step 8**. Select **Microsoft SQL** and specify the backup options for the SQL backup. Continue to **Step 8**.
- 8. Click on **Schedule** and specify the scheduling options for the backup. Click **Run Now** to submit the backup job for processing. The backup job status can be monitored from the **Job Status** tab.

Restoring Data

Backup Job Properties

1. Select the **Restore Tab** and select **New Restore Job**. The Restore Job properties screen will appear.





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iource	Selections Selection list					
Selections	Bestore 00003	_	Load selections	s from existing list	V	Include subdirectories
Resource Uredentials			Eodd oblocklone	nom onloting not		Show file details
	Search Catalogs.		Include.	/Exclude		Deview even
File Redirection Microsoft SQL Redirection	Beginning backup date: 2/11/	2009 💌	Ending backup date:	3/13/2009 💌		Freview pane
Microsoft Exchange Redirection	View by Resource View b	y Media Vie	w Selection Details			
Microsoft SharePoint Redirection	All Resources			Name 🔺		Comment
Dracle Redirection	E E DL2000-OH			E DI 2000-OH		Comment
DB2 Redirection						
Enterprise Vault Redirection	±− □ 🖓 3/10	/2009 1:01:0	4 PM (Full)			
/Mware Redirection	± 🗍 🧑 3/10	/2009 12:43:	04 PM (Full)			
Microsoft Virtual Server Redirection	± 🗍 📆 3/10)/2009 5:14:3	4 AM (Offhost Full)			
ettings						
General						
Advanced						
Network and Security						
Pre/Post Commands						
Microsoft SQL						
Microsoft Exchange						
Microsoft SharePoint						
Microsoft Active Directory						
Lotus Domino						<u>P</u>
Oracle	All Resources					
DB2 -						
Enterprise Vault	General					
NetWare SMS	Name: All Resources					
Linux, Unix, and Macintosh						
NDMP						

- 2. Select the data that is to be restored. If you are restoring data to a file server, individual files and folders or complete volumes can be restored. If you are restoring data to an Exchange server, individual items can be restored such as mailboxes, messages, and public folders and the entire Information Store can be restored. If you are restoring data to a SQL server, select the SQL database for restoration.
- 3. Select General to name the backup job and specify additional options.
- Perform this step if this is a restore of Microsoft Exchange Data. If this is not a restore of Microsoft Exchange data, skip to Step 6. Select Microsoft Exchange to verify the restore options for the Exchange data. Continue to Step 6.





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Source	Microsoft Exchange
Selections	Automatically recreate user accounts and mailboxes
Resource Credentials Device	Note: To set the password assigned to recreated user accounts, click the Tools menu, then click Options, and then under Job Defaults, click Exchange.
Destination File Redirection	When restoring individual mail messages and folders, restore over existing messages and folders
Microsoft SQL Redirection	Exchange v5.5
Microsoft Exchange Redirection	No loss restore (do not delete existing transaction logs)
Microsoft SharePoint Redirection	✓ Restore public folder
Oracle Redirection DB2 Redirection	Guide Me
Enterprise Vault Redirection	Exchange 2000 and later
VMware Redirection	C Log recovery options when restoring the Information Store
Microsoft Virtual Server Redirection	© Bestore all transaction logs: do not delete existing transaction logs (no loss restore)
Settings	Testore and insector rogs, as not delete existing transaction rogs (in ross restore)
General	C For continuous protection jobs only, restore all transaction logs until 3/13/2009 1:04:09 AM
Advanced	
Network and Security	 Purge existing data and restore only the databases and transaction logs from the backup sets
Pre/Post Commands	Path on Exchange Server for temporary storage of log and patch files
Microsoft SQL	
Microsoft Exchange	U.VIEMP.
Microsoft SharePoint	Dismount database before restore
Microsoft Active Directory	Commit after restore completes
Lotus Domino Oracle	Guide Me
DB2	
Enterorise Vault	
NetWare SMS	
Linux Unix and Macintosh	
NDMP	
VMware Virtual Infrastructure 🚬 🗾	

5. Perform this step if this is a restore of Microsoft SQL. If this is not a restore of Microsoft SQL, skip to **Step 6**. Select **Microsoft SQL** to verify the restore options for the SQL data. Continue to **Step 6**.





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	- Microsoft SQI
Source	
Selections	Recovery completion state
Resource Lredentials	Eleave the database ready to use; additional transaction logs or differential backups cannot be restored
	C Leave the database popperational: additional transaction logs or differential backups can be restored
File Dedirection	
Microsoft SQL Bedirection	C Leave the database in fead-only mode
Microsoft Exchange Redirection	Take existing destination database offline
Microsoft SharePoint Redirection	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
Oracle Redirection	
DB2 Redirection	
Enterprise Vault Redirection	Continue restoring if an error occurs during the restore (SQL 2005 or later)
VMware Redirection	F Run verify only; do not restore data
Microsoft Virtual Server Redirection	Consistency check after restore:
Settings	Full check, including indexes
General	
Advanced	Log recovery options
Network and Security	Recover the entire log
Missee Commands	C Point in time log restore: 3/13/2009 - 1:04:09 AM
Microsoft Exchange	C. Perture leaves to some discussions
Microsoft SharePoint	Hestore log up to named transaction.
Microsoft Active Directory	Include the named transaction.
Lotus Domino	Ecund after 3/13/2009 💌 1:04:09 AM 🚔
Oracle	
DB2	Charle Calculations 1
Enterprise Vault	
NetWare SMS	
Linux, Unix, and Macintosh	
NDMP	
VMware Virtual Infrastructure	
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6. Click on **Schedule** and specify the scheduling options for the restore. Click **Run Now** to submit the restore job for processing. The restore job status can be monitored from the **Job Status** tab.

Conclusion

Creating snapshots for off-host backup requires minimal overhead and does not interfere with normal system operations. As a result, administrators can schedule snapshots frequently, minimizing potential data loss during a disaster. Off-host backups are a particularly good solution for organizations with stringent high availability requirements and large amounts of data.





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Best Practices and Troubleshooting

- The off-hosts clients must be using Windows Server 2008 to perform off-hosts backups with the DL Backup to Disk Appliance.
- The Backup Exec Hardware Compatibility List contains the list of the supported software and hardware certified with this solution. (<u>http://support.Veritas.com/menu_ddProduct_BEWNT_view_CL.htm</u>). Check the HCL to verify that all components are certified and supported.
- When performing backups of SQL or Exchange databases, all volumes must be able to be snapped concurrently or else the backup operation will fail.
- For off-host backup to work, all volumes must reside on disks that are shared between the remote computer and the Backup Exec media server. It is the backup administrator's responsibility to confirm this. If the volumes are not shared, the import operation will fail, and you may need to clean up the snapshots and resynchronize the volumes manually.
- The provider used for snapshot must be installed on both the media server as well as on the remote computer. If the provider is not installed on the media server, the import operation will fail, and you may need to clean up the snapshots and resynchronize the volumes manually.
- All volumes selected for backup must be transportable to the media server. If Microsoft SQL or Exchange, or other database applications are selected for backup, make sure that the databases and log files reside on transportable volumes.
- In addition to being transportable, all volumes selected for backup must be snappable by the same provider.
 It is the backup administrator's responsibility to ensure that all volumes in a backup job are supported by the same VSS provider.
- Log files created by the provider or by its supporting application during normal snapshot operation should not reside on any of the volumes being snapped. This prevents VSS from flushing the write buffers, and the snapshot will time-out. Change the log path to another volume.
- Make sure that the provider service is running and make sure that the Microsoft Windows "Volume Shadow Copy" service has not been disabled.
- Make sure that the machine-level credentials used for the job are the same on both the media server and the remote computer. Incorrect credentials will cause snapshots or the backup to fail.
- If a backup job is configured in a CASO environment, you must target the job to media servers on which the selected VSS provider is installed rather than allowing the job to be delegated by the central administration server. Otherwise, the job could be delegated to a media server that does not have off-host capability.





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