Quick Start Guide - SnapProtect

TABLE OF CONTENTS

INSTALL COMMSERVE, MEDIAAGENT AND FILE SYSTEM IDATAAGENT

OPEN COMMCELL CONSOLE

CONFIGURE A STORAGE DEVICE

CONFIGURE A STORAGE POLICY

SETUP CLIENTS

CLIENTS

VIRTUAL SERVER (VMWARE)

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

EXCHANGE DATABASE

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

ORACLE (UNIX)

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

MICROSOFT SQL SERVER

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

NAS

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

VIRTUAL SERVER (MICROSOFT HYPER-V)

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

SAP FOR ORACLE (UNIX)

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

DB2 (UNIX)

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

UNIX FILE SYSTEM

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

WINDOWS FILE SYSTEM

Deployment Configuration Storage Array Configuration Backup Vault/Mirror Copy Movement to Media Restore

Getting Started

Initial deployment and successful run of SnapProtect backup may take around 4 weeks due to the various environment dependencies. The following parameters are known to affect the deployment and initial run and hence need a thorough evaluation:

- Firmware versions on the array
- Device types
- Mode of access
- Security configuration
- Operating Systems interacting with the storage array
- Application layout on the storage array LUNs

INSTALL COMMSERVE[™] MEDIAAGENT AND FILE SYSTEM IDATAAGENT

The first step in setting up a CommCellTM is to install the CommServe, MediaAgent and File System *i*DataAgent.

- CommServe™ communicates with all clients and MediaAgents and coordinates all operations such as backups, restores, copies, media management, etc. within a CommCell.
- MediaAgent manages the transmission of data between clients and backup media.
- File System iDataAgent performs the backup and restore of the clients data

The following sections describe how to install all the above components in a computer.

- 1. Verify that the computer in which you wish to install satisfies the following System Requirements:
 - System Requirements CommServe
 - System Requirements MediaAgent
 - System Requirements Microsoft Windows File System iDataAgent
 - Run Setup.exe from the Software Installation Disc.
- 3. Select the required language.

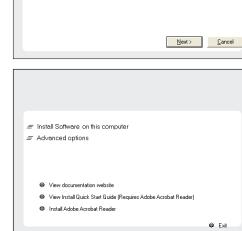
Click Next.

2.

4.	Select the o	ption to	install	software	on thi	s computer.

NOTES

• The options that appear on this screen depend on the computer in which the software is being installed.



Select the language you will use during installation

5. Click Next.

RELATED TOPICS

License Requirements Review the licenses required for the SnapProtect feature.

< Previous

Next >

- 6. Click OK.
- 7. Select I accept the terms in the license agreement. Click Next.

- 8. Select the following component(s) to install:
 - Expand **CommServe Modules** and click **CommServe**.
 - Expand CommNet and clear CommNet Server.
 - Expand CommCell Console and clear CommNet Browser.
 - Expand MediaAgent Modules and click MediaAgent.

9. Click **YES** to install Microsoft .NET Framework package.

NOTES

- This prompt is displayed only when Microsoft .NET Framework is not installed.
- Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable package.
- **10.** Specify the SQL Server System Administrator password.

Click Next.

NOTES

• This is the password for the administrator's account created by SQL during the installation.

Installer	
Welcome The Install setup proc	er will guide you through the ess for Software
TL	
	is program will install Software on your computer. s strongly recommended that you exit all Windows programs before running this
Se	tup program. sk Cancel to quit Setup and then close any programs you have running. Click
Ne	xt to continue with Setup.
Un res	ARNING: This program is protected by copyright law and international treaties. authorized reproduction or distribution of this program, or any portion of it, may ult in severe civil and criminal penalties, and will be prosecuted to the maximum ert possible under the law.
Installer	Next > Cancel
	It is strongly recommended that any and all virus scanning software be disabled immediately before continuing with this Software installation. Failure to do so may result in file-locking by the virus scanner and subsequent failure for setup to install its own files. Click DK once you have disabled them and setup will continue.
Installer	
Please rea	greement d the following License Agreement. Press DOWN key to view the entire agreement.
⊂ Laco ⊂ Laco	utding Microsoft@SQL_Server ¹⁰⁴ 2008 Express Edition, SQL_Server ¹⁰⁴ 2008 Express Edition and Windows Pre-Installation Environment) Eval tions I isomo Assument ept the terms in the license agreement. not accept the terms in the license agreement. taler
	< Back Next > Cancel
Installer Select Pla Select the	atforms platforms you want to configure.
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V (Setup will now install Microsoft .NET Framework for the selected platforms. Dick 'Yes' to continue. Choosing 'No' will exit the Setup. In such a case, you may resum
Ş	Setup later at any time.

- **11.** Click **Yes** to set up a dedicated instance of Microsoft SQL Server for the CommServe Server.
- **12.** Verify the Installation Path for the Database Engine.

Click **Browse** to change the default location.

Click Next.

NOTES

- This is the location where you want to setup the Microsoft SQL Server System databases.
- If you plan to perform VSS enabled backups on the CommServe computer, it is recommended that the CommServe database is not installed on the system drive. VSS restores could cause system state restore issues.
- The install program installs the database instance.

13. Verify MSSQL Database Installation Path.

Click Browse to change the default location.

Click Next.

NOTES

- This is the location where you want to install Microsoft SQL Server.
- This step may take several minutes to complete.
- 14. If this message is displayed, click **Reboot Now** to continue. The install program will automatically resume from the point of failure after the reboot.
 - If the install program does not automatically resume after the reboot:
 - Click the Start button on the Windows task bar, and then click Run.
 - Browse to the installation disc drive, select **Setup.exe**, click **Open**, then click **OK**.

NOTES

• Click the **Skip Reboot** option if it is displayed and continue with the installation. You can reboot at a later time if the option is displayed.

Please provide a password for SQL user 'sa' SQL user 'sa' Enter Password:
Setup will now install a dedicated instance of the Database Engine. This process may take some time. Elick Yes' to continue. This is an essential teys for the successful installation of the software. Choosing No' will exit the Setup. In such a case, you may resume Setup later at any time.
Yes No
Installer Database Engine Installation Path Please provide the location to install the database engine.
Click Next to accept the default location, or click Browse to choose an alternate location.
Database Engine Installation Path
Drive List Space Required / Recommended C: 11953 MB 200 MB / 200 MB
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nstaller X
Choose the folder to install the MSSQL Database.
Click Next to accept the default location, or click Browse to choose an alternate location.
MSSQL Database Installation Path CNProgram Files/MSSDL2008 Browse
Drive List Space Required / Recommended C: 11953 MB 200 MB / 200 MB
< <u>Back</u> <u>Next></u> <u>Cancel</u>
Installer 🛛 🔀
Setup detected that a reboot is required before continuing this installation. Would you like Setup to reboot your computer now?
<u>R</u> eboot Now E <u>x</u> it Setup

SQL User Password Provide a password for SQL user 'sa'

15. Click Next.

NOTES

• The CommServe Client Name and CommServe Host Name are automatically

populated.

Note down the CommServe Client Name.

This is needed later to launch the CommCell Console.

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CommServe								
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16. Click Next.

NOTES:

- If Windows Firewall is enabled on the computer, this option is selected by default and must be enabled to proceed with the installation.
- If you wish to configure other firewalls, select Add programs to the Windows Firewall Exclusion List.

After the installation, make sure to Configure Windows Firewall to Allow CommCell Communication.

17. Click Next.

18. Verify the default location for software installation.

Click **Browse** to change the default location.

Click Next.

NOTES

- Do not install the software to a mapped network drive.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

19. Verify the location of the database.

Click **Browse** to change the default location.

Click Next.

NOTES

- Do not specify a mapped network drive.
- Ensure that the drive has at least 1GB of free space.
- The directory file path selected should not be located on a FAT drive. A FAT drive

cannot be supported as the location for this database because it does not allow a temporary sparse file to be generated when creating the database snapshot, which is required for data verification.

20. Select the Create a New Database option and click Next to continue. NOTES

• This screen may look different from the example shown.

21. Enter the network or local path where Disaster Recovery Backup files should be stored.

Click Next.

NOTES

- If you selected Use Network Path, you must enter the Network share username and the Network share password.
 - $\circ~$ The Network share username is the domain\username of the user that has administrative rights to the Disaster Recovery Backup destination path.
 - $\circ\;$ The Network share password is the password of the network share username.

22. Enter the CommCell Username and CommCell Password. Click Next.

Make note of the **CommServe Username** and **CommCell Password**.

This is needed later to launch the CommCell Console.

Installer 🔀
Database Path
Location for database files
Database Path
C:\Program Files\MSSQL2008\MSSQL1 Browse
Controliteur liesvalebelezooonnebeleit
Drive List Space Required / Recommended
C: 10016 MB 200 MB / 1024 MB
Installer
<back next=""> Cancel</back>
Installer 🛛 🔀
CommServe Database
Please select a database to install
Cours Course Databases On View
CommServe Database Option
C Create a New Database
 Use an Existing Database (if present from an earlier install)
Apply a new license (Choose this option if you are restoring to a
different CommServe.)
Name and Location of Database Dump File
Select the dump file of the same version as that of the current installation. Perform the license update procedure after the installation.
C:\Upgraded_commserv_int1touch_FULL.dmp Browse
Documentation Website
Next > Cancel
Installer 🛛 🔀
Server Disaster Recovery Path
Path for disaster recovery backup files
Select Use Local Path or Use Network Path and click Browse to choose a location. The Network path should be a UNC path
Nework pair should be a bind pair
Use Network Path
C Use Local Path
Server Disaster Recovery Path
Biowse
3
Drive List Space Required / Recommended
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Installer Administrator Account The Administrator Account information can be used to log in to the ConniCel Console. Username: Enter Password:

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23. Click Next.

24. Verify the location where the update files from the FTP site should be stored.Click Browse to change the default location.Click Next.

25. Click Next.

NOTES

• Schedule Install of Automatic Updates allows automatic installation of the necessary software updates on the computer on a single or weekly basis. If you do not select this option, you can schedule these updates later from the CommCell Console.

26. Click **Yes** to configure the CommCell Console for web administration.

NOTES

- The Internet Information Server (IIS) must be installed on this computer in order to configure for web administration.
- Configuring this computer for web administration allows you to:
 - $\circ\;$ Access the CommCell Console and Books Online from a remote computer using a Web browser.
 - $\circ~$ View CommCell reports via a Web browser.
 - Access Books Online by clicking the Help button (the icon with a ?) in the CommCell Console.
- 27. Select **Yes** to stop Removable Storage Services on the MediaAgent.

NOTES

• This prompt will not appear if Removable Storage Services are already disabled on the computer.

Click Next.

Installer	×
Software Cache Setu Options require Software (
Please select 'Setup Soft software to remote machi	tware Cache' to make CommServe capable of pushing ines.
🔽 Setup Software Cacl	he
	nload of Automatic Updates
	<back next=""> Cancel</back>
	CEREN TEWN
Installer	
Software Cache Path	
Path to store software pa FTP site	
Path to store software p	ackages and updates from FTP site
C:\Program Files\Softw	areCache Browse
User Name:	Password:
Drive List	Space Required / Recommended
C: 8527 MB	5000 MB / 5000 MB
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nstaller	X
Schedule Install of Au	utomatic Updates
Choose when you want to downloaded updates.	schedule all'histali di tre
Schedule Install of	Automatic Updates
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Weekly	 Monday Tuesday
	C Wednesday C Thursday
	C Friday C Saturday
Installer	⊂ Sunday
	< Back Next > Cancel
Installer	
😲 Do you w	ant to configure CommCell Console for web administration?
	<u>Yes</u> <u>N</u> o

28. Click **OK**.

29. Click Next.

NOTES

• The install program now starts copying the software to the computer. This step may take several minutes to complete.

30. Click Next.

31. Click Finish.

Tenzardia Tenzardia Tenzardia Removable Storage service must be stopped and diabled. This is requested to const. Description: Tenzing and diable the Removable Storage service? Description: Tenzing and diable the Removable Storage the mage the file and diable. Description: Tenzing and diable the Removable Storage the pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description: Tenzing and diable the Removable Storage file pergent file. Description:	Installer	
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	O No, I am using Removable Storage Manager (RSM)	
Installer Summary of mala detections		
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Getting Started

< Previous) Next >

OPEN COMMCELL CONSOLE

CommCell Console is the graphical user interface that helps you to run backups and restores. In addition the CommCell Console also provides a number of other features to help you control and manage the data.

- Click the Start button on the Windows task bar and then click All Programs. Select bull from the Programs menu and then select Calypso. Click CommCell Console GUI.
- 2. Enter the **User Name** and **Password** that you entered in step 22 during the installation.

Enter the **CommCell** name that you entered in step 15 during the installation. Click **OK** to continue.

- If you have not activated the license yet, you will receive a reminder prompt. Click **OK** to continue.
- 4. The CommCell Console will be displayed.

	_
If the EZ Operations Wizard is not displayed double-click the icon in the toolbar to	- É
display EZ Operations Wizard.	2

Connect to CommCell	
Enter your CommCell user name and password	
User Name:	
Password:	
Passworu:	
CommCell:	
OK Cancel	
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Reminder License must be activated by Nov 10, 2010. To activate license, send an e-mail to <u>Customer Support</u> .	
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Getting Started

CONFIGURE A STORAGE DEVICE

It is necessary to configure the storage devices (Tape or Disc devices) controlled by the MediaAgent. Device configuration allows the MediaAgent to communicate with the specific device.

You may have one or more storage devices available for protecting data. The following sections describe how to configure the following:

- **Option 1**: Configuring a Disc Device
- Option 2: Configuring a Tape Device

Depending on the type of storage device attached to your MediaAgent, you can configure one or both of these devices.

Refer to the Configuration section in the Media Management web if you have other types of devices.

OPTION 1: CONFIGURING A DISC DEVICE

1. Click the Backup Target button on EZ Operations Wizard.

Click the Backup Target button on EZ Operations Wizard.	EZ Operations Wizard	
		Select an operation to perform
	Backup	Restore Reports
	Backup Target	Device Status
	Launch:	
	Expert View	Job Controller Event Wewer
If the EZ Operations Wizard is not displayed double-click the icon in the toolbar.		
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Click Disc Library (For backup to disc) and click Next.	Backup Target Steps	×
	1. Select Configuration Type 2. Device Configuration	Device Configuration Options O biok Library(Por backup to disk)
		O Tape or Optical devices
		< Back Next > Finish Cancel Help
Click Use Local Disk.	Backup Target Steps	
 Type the name of the folder in which the disc library must be located in the Enter backup destination folder box or click the Browse button to select the folder. 	Select Configuration Type Z. Disk Library Configuration 3. Dedualization Policy Creation	Use Local Disk Use Network Share Enter backup destination folder: CrigBackup Browste
• Click Next.	4. Enter Retention Parameters 5. Summary	If the backup destination folder is on a network share, enter the user account information.
If you click the Use Network Share option you will be prompted for the credentials (user name and password) to access the share.		Network share user account:
	J	<back next=""> Finds Cancel Hep</back>
• Click and select the Enable Deduplication option - this will save disc space for	Backup Target Steps	X
storage.Type the name of the folder in which the deduplication database must be located in	1. Select Configuration Type 2. Disk Library Configuration 3. Deduplication Policy Creation	V Enable Deduplication MediaAgent Nome: black_3_cn
the Deduplication Store location box or click the Browse button to select the folder.	4. Enter Retention Parameters. 5. Summary	Dedupkration Store Location C1(Bockup Browse
Click Next.		
		< Back Next> Phish Cancel Help

- Click Use Local Disk.
 - Type the name of the folder in which the disc library must be located in backup destination folder box or click the Browse button to select
 - Click Next.

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- Click and select the Enable Deduplication option this will save disc storage.
 - Type the name of the folder in which the deduplication database must the Deduplication Store location box or click the Browse button to folder.
 - Click Next.

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6. Click Finish.

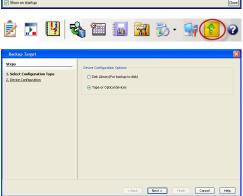
OPTION 2: CONFIGURING A TAPE DEVICE

1. Click the Backup Target button on EZ Operations Wizard.

Select an operation to perform	
	
Restore	Reports
Device Status	Install Software
Job Controller	Event Viewer
	Restore

If the **EZ Operations Wizard** is not displayed double-click the icon in the toolbar.

2. Select Tape or Optical devices. Click Next.



Steps	Select the library that you would like to configure.
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Click and select the library you wish to configure.
 Click Next.

4. Click Next.

5. Click Finish.

6. Click OK.

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	Steps
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Success Success	fully configured tape library
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Retain backups for 15 ± days

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Getting Started

< Previous) Next >

CREATE THE STORAGE POLICY

A Storage Policy is automatically created when you configure a device.

A storage policy acts as a channel through which data is transferred to the storage device. As the name indicates, a storage policy allows you to establish a comprehensive set of storage parameters - such as data retention, streams, deduplication, etc., for the data channeled through the storage policy.

If needed, you can create a new storage policy. During the creation of a Storage Policy, a new disk library is created to store metadata backup for SnapProtect operations. If there are existing disk libraries, you may select one.

USING DISK LIBRARY

1.

Use the following steps to create a storage policy using disk library:

- From the CommCell Browser, navigate to Policies.
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

3. Specify the name of the **Storage Policy** in the **Storage Policy Name** box and then click **Next**.

 In the Library list, select the disk library to which the primary copy should be associated and then click Next.

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	What will this storage policy be used for?
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5. In the MediaAgent list, select a MediaAgent and then click Next.

6. Click Next.

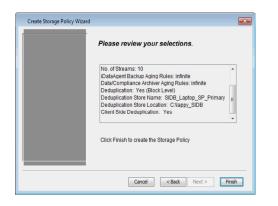
7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

Create Storage Policy Wizard	×
	Please select a MediaAgent for this copy
	MediaAgent: happy01
	Press Next to continue
	Tess Nex to continue
	Cancel <back next=""> Finish</back>
-	
Create Storage Policy Wizard	
r	Please enter the streams and retention
	criteria for this policy
	Number of Device Streams:
	Choose the Primary Copy's Aging Rules:
	iDataAgent Backup data
	V Infinite/ 15 - Days 2 - Cycles
	Data Archive/Compliance Archiver
	V Infinite/ 365 - Days
	Cancel <back next=""> Finish</back>
Create Storage Policy Wizard	E
	Do you want to enable Deduplication for the
	primary copy?
	Deduplication
	Yes
	Enable Client Side Deduplication
	© No
	Press Next to continue
	Cancel < Back Next > Finish
Create Starrow Dollar Mr.	
Create Storage Policy Wizard	•••
	Please specify the location to store the
	Deduplication Store
	Name: DB_Laptop_SP_Primary
	Deduplication Store Location:
	MediaAgent Name happy01 -
	Location: C:\appy_SIDB Browse
	Press Next to continue
	Cancel < Back Next > Finish
	CONC. COOL INCAL / MIST

9. Review the details and click **Finish** to create the Storage Policy.

The new Storage Policy creates the $\mbox{Primary Classic Copy},$ which will be used for data movement to tape, disk or cloud.



USING TAPE LIBRARY

Use the following steps to create a storage policy using tape library:

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

3. Specify the name of the **Storage Policy** in the **Storage Policy Name** box and then click **Next**.

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P	lease enter the storage policy name
2	torage Policy Name: Sp_02(tape)
E	Incremental Storage Policy
Pr	ess Next to continue
	Cancel < Back Next > Finish

4. In the **Library** list, select the tape library to which the primary copy should be associated and then click **Next**.

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1	Create Storage Policy Wizard	
		Please select a library to be the default library for this primary copy
		Lbray: [Virtualub 2
		Press Next to continue
		Cancel <back next=""> Finish</back>
	Create Storage Policy Wizard	
 In the MediaAgent list, select a MediaAgent. From the Drive Pool list, select a default drive pool and then click Next. 		What are the default MediaAgent and drive poc primary copy?
		MediaAgent: testpilotdocs
		Press Next to continue
		Cancel < Back Next > Finish
	-	
From the Scratch Pool list, select the default scratch pool and then click Next .	Create Storage Policy Wizard	
		Which scratch pool will you use for the primary
		Scratch Pool: Default Scratch
		Press Next to continue
		Cancel < Back Next > Finish
Click Next.	Create Storage Policy Wizard	
		Please enter the streams and retention criteria for this policy
		Number of Device Streams:
		Choose the Primary Copy's Aging Rules:
		DataAgent Backup data Infinite/ 15 15 - Days 2 Cycles
		Infinite/ 15 Days 2 Cycles Data Archive/Compliance Archiver
		✓ Infinite/ 365 - Days
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By default Hardware Compression is enabled, click Next to continue.	Create Storage Policy Wizard	
		Would you like to enable hardware compressic storage policy copy?
		Igridware Compression
		Press Next to continue
		Cancel < Back Next > Finish

9. Review the details and click **Finish** to create the Storage Policy.

Quick Start Guide - SnapProtect

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Getting Started

CHOOSE THE CLIENT TYPE

SUPPORTED AGENTS - CHOOSE THE AGENT TO CONFIGURE

VMWARE

EXCHANGE DATABASE

ORACLE

MICROSOFT SQL SERVER

NAS

HYPER-V

SAP FOR ORACLE

DB2

UNIX FILE SYSTEM

WINDOWS FILE SYSTEM

Previous Next >

< Previous)

Next >

Page 19 of 520

Getting Started - VMware Deployment

WHERE TO INSTALL

Install the software directly on the proxy computer that can communicate with the ESX Server. It is not recommended to install the software in a clustered environment.

BEFORE YOU BEGIN

Download Software Packages Download the latest software package to perform the install.

Previous

Next 🕨

SnapProtect Support - Platforms

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE VIRTUAL SERVER IDATAAGENT (VMWARE)

Use the following procedure to directly install the software from the installation package or a network drive.

- 1. Run **Setup.exe** from the Software Installation Package.
- 2. Select the required language. Click **Next**.

3.	Select the option to	Install Calvoso	on this 64-bit computer

Your screen may look different from the example shown.

4. Select I accept the terms in the license agreement. Click Next.

Select the language you will use during installation.		
English (United States)		
<u>Nest ></u>		
≓ Install Software on this computer ≓ Advanced options		
 View documentation website View Install Quick Start Guide (Requires Adobe Acrobat Reader) Install Adobe Acrobat Reader 		
⊕ Ex≹		
Installer		
License Agreement Please read the following License Agreement. Press the PAGE DOWN key to view the entire agreement.		
End User License and Limited Warranty Agreement		
(including Microsoft® SQL Server [™] 2008 Enterprise Edition, SQL Server [™] 2008 Exprese Edition and Windows Pre-Installation Environment)		
I accept the terms in the license agreement.		
C I do not accept the terms in the license agreement.		
Installer 		

- Expand Client Modules | Backup & Recovery | File System, and select Virtual Server Agent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Click Next.

5.

- 6. Click **YES** to install Microsoft .NET Framework package.
 - This prompt is displayed only when Microsoft .NET Framework is not installed.
 - Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable packages.
- 7. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

8.	Enter the fully qualified domain name of the CommServe Host Name .
	Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

9. Click Next.

10.	Select Add programs to the Windows Firewall Exclusion List, to add CommCell
	programs and services to the Windows Firewall Exclusion List.

Select Platforms Select the platforms y				
, and provention y	ou want to configure.			
	ierve Modules Cell Console ggent Modules Jes J & Recovery It Indexing and Search ased Search & Browse Management JousDataReplicator		platform na description reasons wh disabled. Disk Spac (Req/Recc Installatic 01 Temporal 01	of the platform and y it may be ce ommended)
Install Agents for Re	store Only < B	ack	Next >	Cancel
	ow install Microsoft .NET Fra o continue. Choosing "No" w at any time. Yes			
Installer				
Firewall Configura				
Configure firewall serv	ices			
	etween this machine and the	CommServe, con	figure firewall	services below.
Configure firewall				
Please specify how connection from her CommServe are blo	Windows Firewall is limiting r re to a CommServe's tunnel p cked, and setup should inste	etwork traffic. Wh port, whether all co ad expect Comm	nether it is pos onnections to derve to conn	ssible to open ward lect back to this
machine, or whethe	r there is a Proxy in between			
	n open connection to Comms open connection toward this			
	achable only through a proxy			
Installer				
		N	ext >	Cancel
				_
nstaller CommServe Nam	e			×
	ve computer name and host			
CommServe	Client Name	_		
	Host Name	e: for example:		
CommServe (Enter a vali	d fully-rualified IP host nam	a, tor onampio.		
(Enter a vali	d, fully-qualified, IP host nam .mycompany.com)			
(Enter a vali mycomputer	d, fully-qualified, IP host nam :mycompany.com) #.mycompany.com			
(Enter a vali mycomputer	.mycompany.com)	_		
(Enter a vali mycomputer	.mycompany.com)			
(Enter a vali mycomputer myccompute	.mycompany.com)			
(Enter a vali mycomputer	.mycompany.com)	ackN	ext >	Cancel
(Enter a vali mycomputer myccompute	mycompany.com	ack N	lext >	Cancel
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Installer Communication In	rmycompany.com rmycompany.com c B	ack N	ext≻	
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Installer Communication In	Interface Name e communication paths. Select a client name Select a client name Select a client name Select a client name	that this computer	▼ will use to	
Installer Communication In	Interface Name e communication paths. Select a client name Select a client name Select a client name Select a client name	that this computer ImServe	▼ will use to	

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

11. Click Next.

Click $\ensuremath{\textbf{Browse}}$ to change the default location.

Click Next.

- Do not install the software to a mapped network drive.
- Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

13. Select a Client Group from the list.

Click Next.

This screen will be displayed if Client Groups are configured in the CommCell Console.

Installer		X
Windows Firewall	Exclusion List	
	municate through Windows	
Windows Firewal	is ON	
Add programs	to the Windows Firewall Exclusion List	
If you plan on usi exclusion list.	ng Windows Firewall, it is recommended to add the software programs	to the
Installer		
	<back next=""> Ca</back>	ncel
		X
	tall Latest Update Packs he latest service pack and post e provider webste.	
	nd latest update pack(s) internet connectivity at this time. This process may take some time aad speed.	
Installer	< Back Next> Car	ncel
Installer Destination Folder		X
Destination Folde	r folder to install the program files.	X
Destination Folde Select the destination		
Destination Folde Select the destination	folder to install the program files. t the default location, or click Browse to choose an alternate location.	
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14. Click Next.

15. Select Yes to stop Removable Storage Services on the MediaAgent. Click Next.

This prompt will not appear if Removable Storage Services are already disabled on the computer.

16. Click Next.

17. Select a Storage Policy. Click Next.

18. Click Next.

Installer	🗵
Schedule Install of Au	
Choose when you want to downloaded updates.	schedule an Install of the
Schedule Install of	Automatic Updates
C Once	
	Time: 08:31:12 PM
Weekly	Monday C Tuesday
	C Wednesday C Thursday
	C Friday C Saturday
	C Sunday
Installer —	
	< Back Next > Cancel
Installer	
Removable Storage	Service ervice must be stopped and
disabled	
The Removable Storag	e service must be stopped and disabled. This is required for correct
functioning of the Medi	Agent.
Do you want to stop an	d disable the Removable Storage service?
Yes, stop and disab	le the Removable Storage Service
O No, I am using Rem	ovable Storage Manager (RSM)
Installer —	
	< Back Next > Cancel
Installer	
Select Global Filter O	ptions
	ptions
Select Global Filter O Select the Global Filter Op	ptions ons for the Agent.
Select Global Filter O Select the Global Filter Op	ptions ions for the Agent. ability to set exclusions within a CommCell to filter out data from data
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19. Click Next.

20. Click Finish.

Installer		
Summary Summary of install selections		
Setup has enough information to start copying the program files. If ye install settings, click Next to begin copying files.	ou are satisfied with the	
The following software will be installed : + MediaAgent + Windows File Swstem iDataAgent + Virtual Server Agent	·····	
Destination Path = C-VProgram Files\ CommServe Host = mycomputer.mycompany.com Interface Name = audi.mycompany.com Client = audi Job Results Path = C-VProgram Files\JobResults Global Filmes = Use Cell level policy	E	
	×	
Installer Kack Next	> Cancel	
nstaller Seksalale Deminder	×	
Schedule Reminder Job schedule creation reminder		
Please note: You still need to create a Job Schedule for each iDataAgent that h	nas been installed on	
this client computer. Job Schedules are required to allow the iDataAgents to perform au	itomated backup	
and restore operations. Job Schedule creation can be accomplished through the CommCe	Il Consolo	
administration interface.		
Installer	Next >	
	A	
nstaller Completion Report		
Setup complete		
	*	
Software installation completed successfully. Visit the website below to download latest Updates and Service Packs.	1	
Click Finish to complete Setup.		
	-	
Installer Technical Support Website	Enish	
	Previous N	lex

Getting Started - VMware Configuration

< Previous) Next >

CONFIGURATION

1.

Once the Virtual Server iDataAgent has been installed, configure an Instance, a Backup Set and a Subclient to facilitate backups. The following sections provide the necessary steps required to create and configure these components for a first SnapProtect backup of a Virtual Center.

- From the CommCell Browser, navigate to Client Computers | < Client>.
 - Right-click the client and select **Properties**.

Image: Secure interface of the secure interface	CommVet	
Image: Section	Clent Computer Groups Clent Computer 3	
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Indext Backward Indext Backward	3 (00) Pit 10/2 P	Laptop Backup Agent to protect data on laptops and desktops used in remote offices and outside of a domain
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		Browse
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Retry Frequency (seconds) 90 - Retry Coalt 40 - Retry Coalt 40 - CommCell Browser 0 CommCell Browser 0	Enable SnapProtect	
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IDE Ele System Z DE Hes System DE Hes System DE Hes System Z DE Hes System DE Hes	💿 📴 apple 🔒	
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- Click on the **Advanced** tab.
 - Select the **Enable SnapProtect** option to enable SnapProtect backup for the
 - client.
 - Click OK.

- From the CommCell Browser, navigate to *Client* | **Virtual Server**.
 - Right-click the Virtual Server agent and click All Tasks | Create New Instance.

4. • Enter the **Instance Name**.

• Select VMware from Vendor Type menu.

5.	•	Click	Virtual	Center.
	•	CIICK	• II cuui	center.

 $\ensuremath{\mathsf{ESX}}$ Server instances are not supported for SnapProtect operations.

- Click Configure Password.
- Enter the username and password associated with the Virtual Center.

6. Click **OK** to save the instance.

- 7. From the CommCell Browser, right-click the **Default Backup Set.**
 - Click Properties.

8.		Select Automatically add new VMs that do not qualify for membership in any of the subclients.
----	--	---

Virtual Serve	
General	
Client Name:	xen-vm2_cn
iDataAgent:	Virtual Server
	VII CUAI DEI VET
Instance Name:	
Vendor Type:	
vendor type:	× .
	OK Cancel Help
Virtual Sena	er Instance Properties
General	
Client Name:	newyork64_2
iDataAgent:	Virtual Server
Instance Nam	ne: sogo24
line in T	
Vendor Type: VMWare	VMWare 👻
vCent	ter
	st name
so	go24.domain.company.com
Us	er Account vsauser Change
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C ESX S	Configure ESX Servers
	Configure Eox bervers
Regis	ter vCenter plugin
	OK Cancel Help
Virtual Serve	r Instance Property
Virtual Serve	r Instance Property
General	
General Client Name:	xen-vm2_cn
General Client Name: iDataAgent:	
General Client Name:	xen-vm2_cn
General Client Name: iDataAgent: Instance Name:	xen-vm2_cn Virtual Server
General Client Name: iDataAgent:	xen-vm2_cn
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Client Name: DataAgent: Instance Name: Vendor Type: Vendor Type: CommCell Brow CommCell Brow CommNet Client Com	xen-vm2_cn Virtual Server Virtual Server Vi
General Client Name: IbataAgent: Instance Name: Vendor Type: Vendor Type: CommCell Brow CommCell Brow C	xen-vm2_cn Virtual Server Virtual Server Vi
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Client Name: DataAgent: Instance Name: Vendor Type: Vendor Type:	xen-vm2_cn Virtual Server Virtual Server OK Cancel Help Veser R Subclient Name Subclient Name System ual Server System Ual Server 1
Client Name: DataAgent: Instance Name: Vendor Type: Vendor Type: CommCell Brow CommCell Brow Client Com Com Client Com Client Com Com Client Com Com Client Com Com Client Com Com Client Com Client Client Client Client Client Client	xen-vm2_cn Virtual Server Virtual Server OK Cancel Help OK Cancel Help Viser Q apple > Clent Comput Subclient Name Tel default Subclient Name Tel default System Uters J Tasks 2
Client Name: DataAgent: Instance Name: Vendor Type: Vendor Type: CommCell Brow Client Com Com Client Com Client Client Com Client Client Clie	xen-vm2_cn Virtual Server Virtual Server OK Cancel Help Ver Ver Subclient Name Computed Server System System User 1 System User 1 System
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Client Name: DataAgent: Instance Name: Vendor Type: Vendor Type: CommCell Brow Sopole Client Com Com Client Com Com Client Com Com Client Com Com Client Com Client Client Cli	xen-vm2_cn Virtual Server Virtual Server OK Cancel Help Vser OK Cancel Help vser OK Cancel Help Subclent Name Client Comput Subclent Name Client Client Client Client Client Client Client Client Client Client Clie
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- Click OK.
 - Selecting this option is not recommended. If selected, ensure that all the virtual machines are residing on the same storage device.

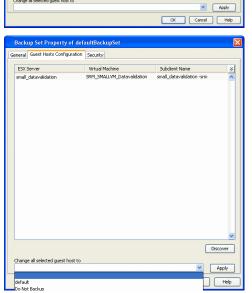
9. Click **Discover** on the **Guest Hosts Configuration** tab.

The discovery process might take several minutes to complete.

10. • Select a virtual machine to back up from the **Virtual Machine** column.

Ensure the virtual machine selected is not a VM template. Virtual machine templates are not supported for backup.

- Select the default subclient from the **Subclient** column for the virtual machine you want to back up.
- Click Apply.
- Click OK.



Backup Set Property of defaultBackupSet

Guest Hosts Configuration Security

snap-vm-90_2

Virtual Server

Votomatically add new VMs that do not qualify for membership in any of the subclients to default subclient

Automatic Switch between VCBMounter and vStorage method depending on the Virtual machine and ESX version

OK Cancel Help

Subclient Name

×

Discover

VMware Consolidated Backup method. VMware vStorage API method for Backup

Virtual Machin

Backup Set Property of defaultBackupSe eneral Guest Hosts Configuration Security

Instance Name: Instance0001

Backup Set Name defaultBackupSet

Make this the Default backup set
Rule based discovery

Client Name:

iDataAgent:

vcbmounter

○ vStorage

ESX Server

Change all selected guest host to

- **11.** From the CommCell Browser, navigate to the default subclient.
 - Click Properties.

12. Ensure **Disk-Level** from Backup Types is selected.

		(~	
🛕 CommCell Browser	ф.	📅 defaultBacku	pSet × \	What's new? ×
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- 👘 defaultBackupSet			hedules	
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		There are no jobs currer	ntly running.	
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Subclient Properties of d	efault			
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	Filters	Heavy control	Pre/Post Proc	
Client Name: m	ustang			
Billing Department: N	ot Define	d/Not Defined		
iDataAgent: Vi	rtual Ser	ver		
Backup Set: de	efaultBa	:kupSet		
Subclient name:	efault			
9	crook			
Number of Data Readers:	1 🗧			
Note: This is a default subclient.				
Backup Type				
(Disk Level				
Volume Level				
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Use Proxy				~
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Subclient Properties of d	efault			
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Gener	al Filters	1	Pre/Post Process	
Security	Storage Device	Activity Control	Encryption	Content
Data Storag Storage Pol	e Policy Data Transfer Oplicy:	N/A	Date	Paths
		0	K Cancel	Help

- 13. • Click the **Storage Device** tab.
 - In the **Storage Policy** box, select the storage policy name.

- 14. • Click the SnapProtect Operations tab.
 - Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
 - Select the storage array from the Available Snap Engine drop-down list.
 - Click Use Separate Proxy for Snap to Tape if you want to perform SnapProtect operations in a different Virtual Server client computer.

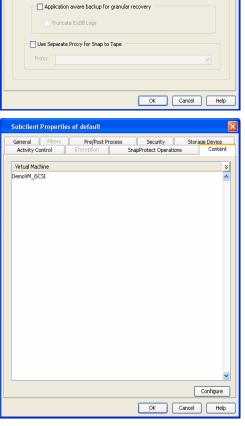
Select the client computer from the **Proxy** list.

• Selecting a proxy from the **Use Proxy** option in the

General tab is not applicable for SnapProtect operations.

- When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.
- Ensure that the selected proxy ESX Server is not part of any Clustered Storage Group/Initiator group.

- **15.** Click the **Content** tab.
 - Click Configure if you need to configure an additional virtual machine for the
 - subclient.Click **OK**.



Subclient Properties of default

Activity Control

SnapProtect

Available Snap Engines

Proxy ESX Server

Host

General Filters Pre/Post Process

Security

Select ESX server for snap mount

SnapProtect Operations

Please select a Snap Engine

Virtual Center / ESX Server kdvcenter.testlab.commvault.com

172.19.100.60

Storage Device

Enter Array Credentials

Conten

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SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

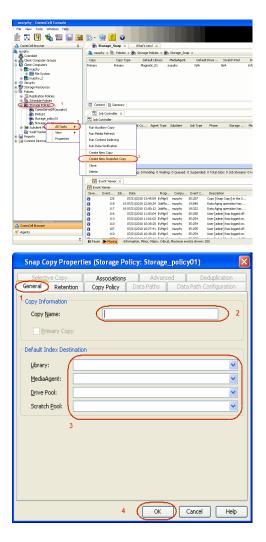
Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy.**

2.

1.

- Enter the copy name in the Copy Name field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.



CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

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i File View Tools Windows Help									
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🛆 CommCell Browser 🛛 🗛	/ 🚡 झ	orage_Snap ×	What's new?	×					
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Storage Resources Polyies									
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Schedule Policies	The second	nt 👔 Summary							
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- Click the **Snapshot** tab.
 - Select Enable Backup Copy option to enable movement of snapshots to media.
 - Click OK.

Quick Start Guide - SnapProtect

-	al Copy Precedence Associated Subclient Snapshot Security Advanced	
	nable Backup Copy 2 1	
	Snapshots Created On and After Mon 07/19/2010	
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	All Backups	
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Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS
3PAR
DELL COMPELLENT
DELL EQUALLOGIC
EMC CELERRA
EMC CLARIION, VNX
EMC SYMMETRIX
FUJITSU ETERNUS DX
HITACHI DATA SYSTEMS
HP EVA
IBM SVC
IBM XIV
LSI
ΝΕΤΑΡΡ
NETAPP WITH SNAPVAULT/SNAPMIRROR
NIMBLE

Previous Next >>

Previous Next >

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		Dele	e
172.19.66.69	10881	system	HDS			

What's new?

💅 Alerts

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List Sn

OK Cancel Help

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemen	t 🔀
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN		8 Byte WWN
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1	User Name		
4	Password		
	Confirm Password		
5	Device Group		
6	Use devices only	r from this device group	
	Description		
	ОК	Cancel Help	
		< Previous	Next)

SnapProtect[™] Backup - Dell Compellent

< Previous) Next >

PRE-REQUISTIES

- Dell Compellent requires the Data Instant Replay license.
- Ensure that all members in the Compellent array are running firmware version Storage Center 5.5.14 and above for 5.x and 6.2.2 and above for 6.x.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- **3.** Select **Dell Compellent** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name and Control Host fields.

The Management IP address is also referred as the Storage Center IP address.

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Control Host Na	ame User Nar	ne Snap Vendor	Description	× Add
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	0279 admin	IBM XIV		Delete
	40003340 admin	EMC CLARIION		Delete
172.19.66.69 108		HDS		List Snaps
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What's new? ×

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For reference purposes, the screenshot on the right shows the Storage Center Management Console of the Dell Compellent storage device displaying the Management IP address. 4.

- DELL C ent 🔍 Vev 📫 Refresh 🕯 1.6 rties - Storage Cent , Ce of Storege Date P nim Cate Dok Sparry 245 ary C Type: 19.54 GB 2,000 1,750 1,500 1,250 41.19 Array Management Snap Vendor Dell Compellent Name Control Host User Name 4 Password Confirm Password Device Group 5 Use devices only from this device group Description OK Cancel Help Previous Next >
- Enter the user access information of the application administrator in the **Username** and **Password** fields.
- In the **Device Group** field, type none as this array does not use device groups for snapshot operations.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

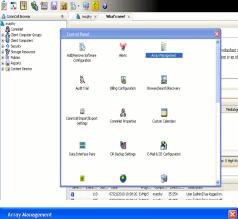
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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Control Host	Name	User Name	Snap Vendor	Description	*	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	_
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	
172 10 71 26	Mb11963/C	admin	TRM VTV		×	

2. Click Add.

3. • Select **Dell Equallogic** from the **Snap Vendor** list.

• Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
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Array Managemer Snap Vendor Name Control Host User Name Password Confirm Password Device Group G Use devices only	nt	
Array Managemer Snap Vendor Name Control Host User Name Password Confirm Password Device Group G Use devices only	nt	

For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

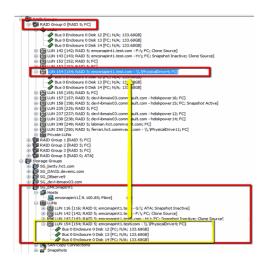
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

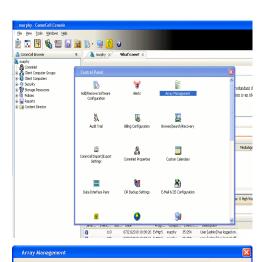
2. Click Add.

- **3.** Select **EMC CLARiiON** from the **Snap Vendor** list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.



Control Host	Name	User Name	Snap Vendor	Description	*	Add
idk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
72.19.66.22		grpadmin	Dell Equalogic			Edit
72.19.125.226	6000279	admin	IBM XIV			
72.19.66.91	APM0003340	admin	EMC CLARIION			Delete
72.19.66.69	10881	system	HDS		~	List Snaps
72 19 71 26	MN11963C	admin	TRM VTV		×	List bridge
				ОК	Cancel	Help
Annase Ma						

Array managi	ement
1 Snap Vendor	
2 Name	
Control Host	
User Name	
Password	
Confirm Passwe	ord
Device Group	
Use device	s only from this device group
-Description-	
C	OK Cancel Help
Storage Management	Enterprise Storage 1
Filler Fi	iter By: All 💌 Filter For: 💌
Allocate	Storage Hosts Monitors
Asign	Cool Demain [172,19,66,91; Logged In] Cool Demain [172,19,66,91; Logged In] Image: Cool Demain [172,196,91; Logged In] <

Quick Start Guide - SnapProtect

Array Manageme	nt 🔀	
Snap Vendor		
Name		
Control Host		
User Name		
3 Password		
Confirm Password		
Device Group		
Use devices on	y from this device group	
Description		
ОК	Cancel Help	
	< Previous	Next >

SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

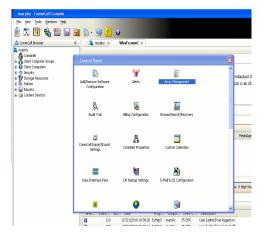
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

fidk.hct.commvault.com 5001438002 172.19.66.22	hct\administr grpadmin	Dell Equalogic	Description	*	Add Edit	
172.19.66.91 APM0003340	admin admin	EMC CLARIION			Delete	
172.19.66.69 10881 172.19.71.26 MM1963C	system admin	HDS TRM YTV		~	List Snaps	
			ОК	Cance	Help	
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Array Manageme	nt				L	
1 Snap Vendor	EMC S	ymmetrix			~	
2 Name						
Control Host						
User Name						
Password						
Confirm Password						
Device Group						
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Description						
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File Control Administration Help	rts 🔳 Command	History Replication	C Refrest	Mew B+Expo	rt Logout No A	
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Array Manageme Snap Vendor	nt					
Array Manageme Snap Vendor Name	nt	nject in the tree.				
Array Manageme Snap Vendor Name Control Host	nt	nject in the tree.				
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SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

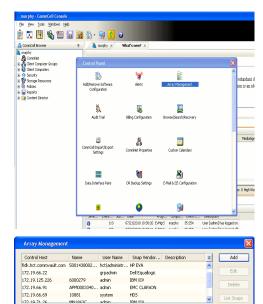
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	serial numb	er for the
HDS storage device.					

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc. •
- Click **OK** to save the information.

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A	rray Managemer	nt			×
2	5nap Vendor	HDS		*	
r	Name]
3	Control Host				\supset
1	Jser Name				\sum
4 F	Password				
6	Confirm Password				ノ
5 (Device Group				
6 🤇	Use devices only	from this	s device group		
	Description				
	ОК	Car	ncel Help]	
				Previo	us)

Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

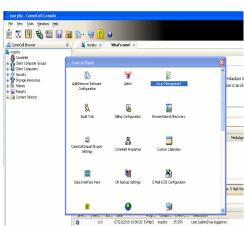
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN11963C	admin	TRM VIV		~	List bridps

Array Managemer	ıt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

VIA Storage Network Control Disks Control Disks Control Disk Groups Conta Replication Hardware Array Management	Save changes System options General Status Summary Identification Name: EVA440 Node WWN: 50014388-0250-EB70 UUID: 6005-06b40002-0000
Snap Vendor HP EV	A
3 Control Host	
4 Design Construction	
5 Device Group 6 Use devices only from t	his device group
ОКС	ancel Help
	<pre></pre>

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

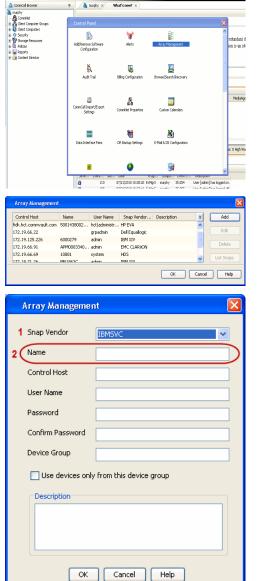
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. • From the CommCell Console, navigate to Tools | Control Panel.
 - Click Array Management.

2. Click Add.

- 3. • Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the Name field.



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What's new? >

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The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- 4. Enter the Management IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

1011 5147	tem Storage SAN Volume Controller	Webser	18 months of the A	land	Logout Help II	a M	
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14		Io_grp0	Info Manage				
	Jonation	nodel •	General				
-		ibmnode2	Name 10	ibmcluster1 00000200634	07856		
		io_grp1	Location	Local			
1694			Capacity				
		io_grp2	Total MDisk Capacity	7.5 TB			
			Space in MDisk Groups				
14			Space Allocated to Volumes	3.9 TB 3.7 TB			
D.		lo_grp3	Total Free Space Total Volume Capacity				
9			Total Volume Copy Capacity	4.8 TB			
SP		10000	Total Used Capacity				
	.bm	luster1 (6.1.0.7)	Total Overallocation	64%			
						/	
Con	inectivity 🔲	52%		111 Running	Tasks		
_						_	
	Array Managemen						
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	Snap Vendor						
	snap vendor	IBMSVC			~		
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3 (Control Host					2	
Ξ,							
	User Name						
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4	Password						
1	Confirm Password					1	
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5	Device Group						
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6	🚺 🗌 Use devices only	from this de	vice group)			
	<u> </u>						
	Description						
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	OK	Cancel	Help				
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

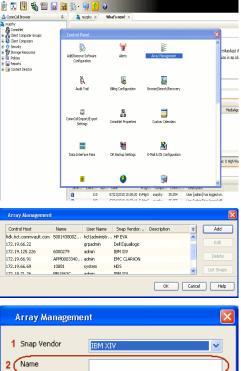
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Array Managemer	п 🔼
1 Snap Vendor	IBM XIV
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The ${\bf System \ ID}\ ({\bf S}/{\bf N})$ is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
 X

 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
1	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

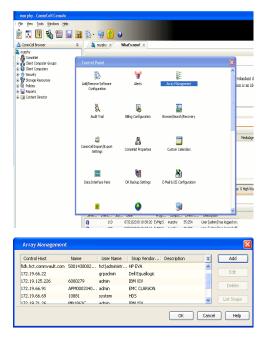
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

Array Management	3
1 Snap Vendor	
Name)
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only from this device group	
Description	
OK Cancel Help	
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The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

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PREREQUISITES

LICENSES

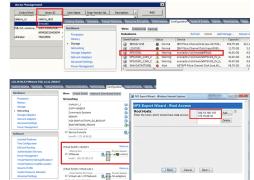
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

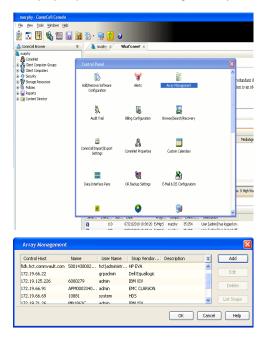
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
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Password		
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - $\circ~$ Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the Storage Policy in the Storage Policy Name box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

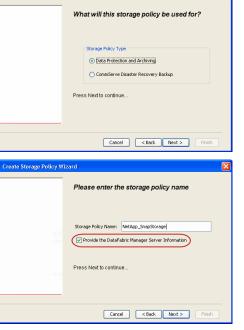
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• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

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- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

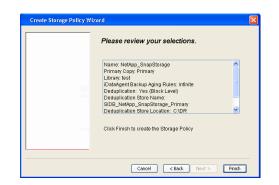
9.	٠	Provide the DataFabric Manager server information.
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- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

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	Data Archive/Compliance Archiver
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	Select hwinapp02
	Host Name: venus Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

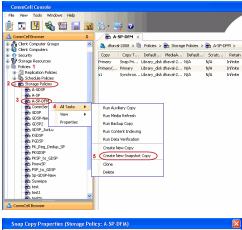


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
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Primary-Vault-Mirror	Vault	Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the dro	pp-down list.	
Select the Resource Pools available from the select t	ne list.	2
Click OK .		Provisioning Policy:
The secondary snapshot copy is created.		Available Selected: Scottmold Add >> Intal_scass.coleminer_score_I/S Add >> Intal_secondeminer_score_I/S Add >> Intal_secondeminer_score_I/S Add >> Intal_secondeminer_score_I/S Add >>> Intal_secondeminer_score_I/S Add >>> Intal_secondeminer_score_I/S Add Al>>> Intal_secondeminer_score_I/S Add Al>>> Resource Food Info Name: scottmoid Total Scer.25 21 TB Available Scer.96 1.49 GB More and a scer.95 1.49 GB Indid der_in_text Normal 2.32 TB 961.49 GB

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

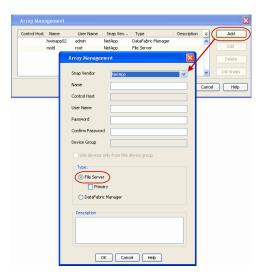
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

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Page 63	of 520

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File Wew Tools Windows Help



SEE ALSO

Import Wizard Tool

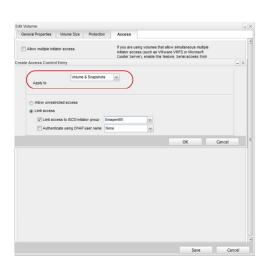
Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Nimble

PREREQUISITES

- From the Nimble storage array console, ensure that the Access Control Entry for the client initiator group is set to Volume and Snapshots.
- In case you are using a proxy computer for SnapProtect operations, add the initiator group for the proxy computer and set the Access Control Entry to Snapshots Only.
- Ensure that a temporary LUN is allocated to all ESX Servers that are used for snapshot operations.



< Previous

Next >

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- **3.** Select **Nimble** from the **Snap Vendor** list.
 - Specify the Data IP Address of the array in the Name field.

If you have more than one Data IP Address configured, you will need to add the array information for each of the configured Data IP addresses.

• Enter the Management IP Address of the array in the **Control Host** field.

For reference purposes, the screenshot on the right shows the Data IP Address and
Management IP for the Nimble storage device.

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- Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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Getting Started - VMware Backup

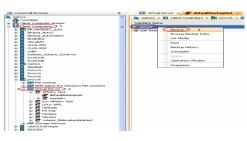
< Previous Next >

PERFORM A BACKUP

After configuring your Instance, Backup Set and Subclient, you are ready to perform your first backup.

The following section provides step-by-step instructions for running your first full backup of a single virtual machine immediately.

- 1. From the CommCell Console, navigate to Client Computers | Virtual Server.
 - Right-click the **Subclient** and click **Backup**.



- 2.
- Select **Full** as backup type and **Immediate** to run the job immediately.
 - Click OK.

- 3. You can track the progress of the job from the **Job Controller** window of the CommCell console.
- Once job is complete, view the details of job from the Backup History.
 Right-click the Subclient and select Backup History.
- 5. Click OK.

- 6. You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job
 - Details of the job
 - Events of the job
 - Log files of the job
 - Media associated with the job

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Getting Started - Vault/Mirror Copy

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INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- Al Task nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event xCopy Opti General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> • Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

Previous Next >

Getting Started - VMware Snap Movement to Media

< Previous Next >

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Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

INLINE BACKUP COPY

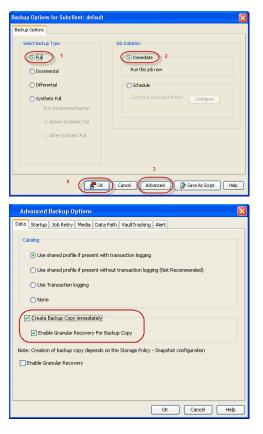
Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

- From the CommCell Console, navigate to Client Computers | <Client> |
 <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup**.
 - Select **Full** as backup type.
 - Click Advanced.

• Select Create Backup Copy immediately to create a backup copy.

Enable Granular Recovery for Backup Copy is automatically selected. This option allows you to view the file/folder level details of the backup copy.

- If you want to view the file/folder level details of the snapshot copy, select **Enable** Granular Recovery.
- Click OK.



OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Backup Copy.

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- Select **Start new media** to copy the data to a different tape or optical media.
 - Select **Mark media full on Success** to mark the media that is used for this operation after the snapshot copy operation has successfully completed.

Quick Start Guide - SnapProtect

• Click OK.

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Getting Started - VMware Restore



PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections describe the steps involved in restoring a virtual machine to a different Virtual Center/ESX Server.

- From the CommCell Console, navigate to **Policies** | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.

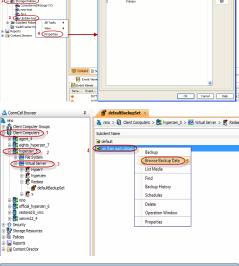
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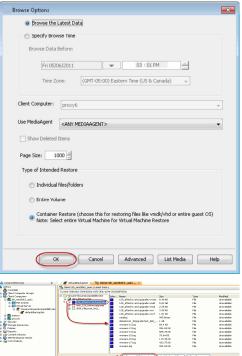
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- From the CommCell Console, navigate to *Client* | **Virtual Server**.
 - Right-click the subclient that contains the data you want to restore and click All Tasks | Browse Backup Data.

- Select the MediaAgent that was used during the storage policy creation from the Use MediaAgent drop-down list. This MediaAgent should be the one you installed along with the Virtual Server agent.
 - Click OK.

- Select the virtual machine under the backup set. Its entire contents will be automatically selected in the right pane.
 - Click Recover All Selected.





5. Select the **Destination ESX Server** to which the virtual machine will be restored.

6. Select the **Datastore** to which the disk will be restored.

If the selected datastore does not meet the minimum requirements needed to restore the virtual machine, you can repeat this step until an acceptable datastore is found.

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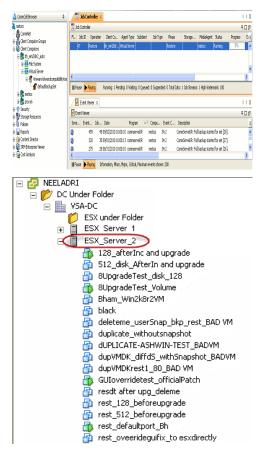
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7. • Enter the **VM Name** for the virtual machine.

Ensure that you provide a fully qualified name for the virtual machine. Entering an IP address will cause the restore operation to fail.

• Click OK.

8. You can monitor the progress of the restore job in the **Job Controller** window of the CommCell Console.



9. Once the virtual machine is restored, it is automatically mounted to the virtual center/ESX Server you selected.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

< Previous Next >>

Deployment - Microsoft Exchange Database Agent

Choose the appropriate installation procedure as described in the tables below.

EXCHANGE SERVER 2010

SERVER SETUP	INSTALLATION PROCEDURE
64-bit Exchange Server	Install the 64-bit Exchange Database Agent on Exchange Server 2010 or 2007

EXCHANGE SERVER 2007

SERVER SETUP	INSTALLATION PROCEDURE
64-bit Exchange Server	Install the 64-bit Exchange Database Agent on Exchange Server 2010 or 2007
64-bit Exchange Server - Cluster	Install the 64-bit Exchange Database Agent on Exchange Server 2010 or 2007 - Clustered Environment

EXCHANGE SERVER 2003

SERVER SETUP	INSTALLATION PROCEDURE
Exchange Server	Install the Exchange Database Agent on Exchange Server 2003
Exchange Server - Cluster	Install the Exchange Database Agent on Exchange Server 2003 - Clustered Environment

Getting Started - Install the 64-bit Exchange Database Agent on Exchange Server 2010 or 2007

< Previous Next >

Follow the steps given below to install Exchange Database iDataAgent on one of the following:

- 64-bit Exchange Server 2010
- 64-bit Exchange Server 2007

WHERE TO INSTALL

The Exchange Database *i*DataAgent can be installed directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.

INSTALL THE EXCHANGE DATABASE /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

1. Log on to the computer using an account with the following privileges:

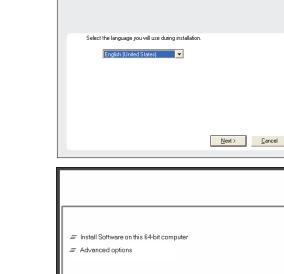
Select the option to Install Calypso on this 64-bit computer.

Your screen may look different from the example shown.

- Administrator of the local computer
- Administrator of the Exchange Server
- 2. Run Setup.exe from the Software Installation Package.
- 3. Select the required language.

Click Next.

4.



BEFORE YOU BEGIN

Download Software Packages

SnapProtect Support - Platforms

Download the latest software package to perform the install.

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

View Install Quick Start Guide (Requires Adobe Acrobal Reader)
 Install Adobe Acrobal Reader

⊜ Exit

5. Select I accept the terms in the license agreement. Click Next.

- 6. • Expand Client Modules | Backup & Recovery | Exchange, and select Exchange Database iDataAgent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

7. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

8.	Enter the fully qualified domain name of the $\ensuremath{\textbf{CommServe Host Name}}.$
	Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;"

Configure firewall services	
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C CommServe can open connection toward this machine	
C CommServe is reachable only through a proxy	
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CommServe Client Name	
(Enter a valid, fully-qualified, IP host name; for example: mycomputer.mycompany.com) mycomputer.mycompany.com	
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License Agreement

Installer

nstaller Select Platforms

Please read the following License Agreement. Press the PAGE DOWN key to view the entire agreement.

• Laccept the terms in the license agreement. C I do not accept the terms in the license agreement

Select the platforms you want to configure.

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Firewall Configuration Configure firewall services

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End User License and Limited Warranty Agreement Software Release 9.0.0 (including Microsoft® SQL Server™ 2008 Enterprise Edition, SQL Server™ 2008 Express Edition and Windows Pre-Installation Environment) Fud Hoan I lanuas Aannas

> < Back

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If there is a firewall between this machine and the CommServe, configure firewall services below.

.....

Next >

Move the pointer over a platform name to see a description of the platform reasons why it may be disabled.

Temporary on C: drive: 0 MB/ 0 MB Special Registry Keys In Use

Cancel

X

Disk Space (Req/Recommended) Installation Folder: 0 MB/ 0 MB

^

Cancel

9. Click Next.

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 Select Add programs to the Windows Firewall Exclusion List, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

11. Click Next.

It is recommended to select the Download latest update pack(s) option to automatically install the available updates during installation.

12. Verify the default location for software installation.

Click **Browse** to change the default location.

Click Next.

- Do not install the software to a mapped network drive.
- Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

13. Select a Client Group from the list.

Click Next.

This screen will be displayed if Client Groups are configured in the CommCell Console.

15. Select Yes to stop Removable Storage Services on the MediaAgent. Click Next.

This prompt will not appear if Removable Storage Services are already disabled on the computer. $% \left({{{\mathbf{F}}_{\mathbf{r}}}_{\mathbf{r}}} \right)$

16. Click Next.

17. Select a Storage Policy. Click Next.

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- **19.** Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
 - Differential Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
 - **Incremental** Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.

- **19.** Enter the user credentials to access the Exchange Server to perform the backup operation.
 - The User Account must have Exchange Administrator privileges.
 - The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange Server resides in.

- 21. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is disabled:
 - From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
 - Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Se	elect a storage po acked up.		efault si	ubclient to be			
	Configure for	Lapton or De	skton	Backup			
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< Back

Please verify that Grcular Logging is disabled before performing any database

0K.

Next>

Cancel

Installer

Installer

i

23. Click Finish.

chedule Reminder Job schedule creation reminder	
Please note:	
You still need to create a Job Schedule for each iDataAgent that has been installed on this client computer.	n
Job Schedules are required to allow the iDataAgents to perform automated backup and restore operations.	
Job Schedule creation can be accomplished through the CommCell Console administration interface.	
Installer	
ompletion Report Setup complete	
ioftware installation completed successfully.	*
Visit the website below to download latest Updates and Service Packs.	
Click Finish to complete Setup.	
Click Finish to complete Setup.	
Click Finish to complete Setup.	z
Installer	7
	~
Installer	

Getting Started - Install the 64-bit Exchange Database Agent on Exchange Server 2007 - Clustered Environment

Previous Next >

Follow the steps given below to install the 64-bit Exchange Database iDataAgent on Exchange Server 2007 in a clustered environment.

WHERE TO INSTALL

The Exchange Database *i*DataAgent can be installed directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.

BEFORE YOU BEGIN

Download Software Packages Download the latest software package to perform the install.

SnapProtect Support - Platforms Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE EXCHANGE DATABASE /DATAAGENT

- 1. Log on to the computer using an account with the following privileges:
 - Administrator of the local computer
 - Administrator of the Exchange Server
- 2. Run **Setup.exe** from the Software Installation Package.
- 3. Select the required language.

Click Next.

Select the language you will use during installation.
English (United State:)
Next> Cancel
 View Install Quick: Start Guide (Requires Adobe Acrobat Reader) Install Adobe Acrobat Reader
₽ Exit
Installer Welcome The Installer will guide you through the setup process for Software
This program will install Software on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program. Click Cancel to quit Setup and then close any programs you have running. Click
Next to continue with Setup. WARNING: This program is protected by copyright law and international treates. Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extern possible under the law.
Installer Cancel

- Select the option to Install Calypso on this 64-bit computer. NOTES:
 - Your screen may look different from the example shown.

5. Click Next.

7. Select I accept the terms in the license agreement. Click Next.

8. Select Configure a Virtual Server. Click Next.

 Select the disk group in which the virtual server resides. Click Next.

- 10. Expand Client Modules | Backup & Recovery | Exchange, and select Exchange Database *i*DataAgent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

Installer
It is strongly recommended that any and all virus scanning software be disabled immediately before continuing with this Software installation. Failure to do so may result in
* file-locking by the virus scanner and subsequent failure for setup to install its own files.
Click DK once you have disabled them and setup will continue.
OK
Installer 🛛 🛛 🗙
License Agreement Please read the following License Agreement. Press
the PAGE DOWN key to view the entire agreement.
A
End User License and Limited Warranty Agreement
Software Release 9.0.0
(including Microsoft® SQL Server™ 2008 Enterprise Edition, SQL Server™ 2008 Express Edition and Windows Pre-Installation Environment)
I accept the terms in the license agreement.
C I do not accept the terms in the license agreement.
Installer < Back Next > Cancel
Installer
Cluster Type Selection
Configure the Physical Node or a Virtual Server
Configuration Options
C Configure the Physical node
C Configure a ⊻irtual server
< <u>B</u> ack <u>C</u> ancel
Installer 🛛
Virtual Server Selection
Select the virtual server you would like to configure
Choose from the following list of disk groups configured on this cluster.
2003Cluster//MS
< <u>Back</u> <u>N</u> ext> <u>C</u> ancel
Installer 🛛 🛛
Select Platforms Select the platforms you want to configure.
Cu Move the pointer over a
□ Common Technology Engine
CommCell Console disabled.
Client Modules Decrement Decrement Decrement Decrement Decrement Decrement Disk Space Disk Space
Web Based Search & Browse Installation Folder:
Ch. Supporting Modules
Tools
Installer Special Registry Keys In Use

Install Agents for Restore Only

Cancel

Cancel

11. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click Next.

12. Enter the fully qualified domain name of the CommServe Host Name. Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

13. Click Next.

14. Select Add programs to the Windows Firewall Exclusion List, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

	 appendix to the second s
	is machine can open connection to CommServe on tunnel port
	mmServe can open connection toward this machine
	mmServe is reachable only through a proxy
	Installer
	Next > Cancel
nstaller	×
	Serve Name the CommServe computer name and host
	CommServe Client Name
	CommServe Host Name
	(Enter a valid, fully-qualified, IP host name; for example: mycomputer.mycompany.com)
	mycomputer.mycompany.com
	Installer
	<back next=""> Cancel</back>
nstaller	X
	inication Interface Name
Setup w	vill configure the communication paths.
	Select a client name
	audi_cn
	Select an interface name that this computer will use to communicate with the CommServe
	audi.mycompany.com
	IP Address(es) for the selected host.
	Installer
	< Back Next > Cancel
octallor	X
nstaller Mindow	vs Firewall Exclusion List
	ograms to communicate through Windows
Win	ndows Firewall is ON
	Add programs to the Windows Firewall Exclusion List
lfere	
exc	ou plan on using Windows Firewall, it is recommended to add the software programs to the Jusion list.
excl	ou plan on using Windows Firewall, it is recommended to add the software programs to the Jusion list.
	ou plan on using Windows Firewall, it is recommended to add the software programs to the Ausion list.

If there is a firewall between this machine and the CommServe, configure firewall services below.

Installer Firewall Configuration Configure firewall services

Configure firewall services

15. Click Next.

16.

17.

18.

	Installer
	Download and Install Latest Update Packs Download and Install the latest service pack and post pack from the software provider website.
	Download latest update pack(s) Make sure you have internet connectivity at this time. This process may take some time depending on download speed.
	Installer Cancel
Verify the default location for software installation.	Installer
Click Browse to change the default location.	Destination Folder Select the destination folder to install the program files.
 Click Next. Do not install the software to a mapped network drive. Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations. Do not use the following characters when specifying the destination path: /:*?"<>> # It is recommended that you use alphanumeric characters only. 	Click Next to accept the default location, or click Browse to choose an alternate location. Destination Folder Image: Space Required / Recommended 1394 MB / 1670 MB Installer < Back
Select a Client Group from the list.	
	Installer Client Group Selection
Click Next.	Select a client group for the client.
This screen will be displayed if Client Groups are configured in the CommCell Console.	The Client Group is a logical grouping of client machines which have the same associations at various levels like Schedule Policy, Activity Control, Security and Reports.
	Client group: Nore Selected client_group Installer < Back. Next > Cancel
Click Next.	Installer Schedule Install of Automatic Updates Choose when you want to schedule an install of the downloaded updates.
	✓ Schedule Install of Automatic Updates C Dnce ✓ Time: Ø: 31:12 PM

19. Select a Storage Policy. Click Next.

X

X

- 20. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
 - Differential Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
 - **Incremental** Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.

- **21.** Enter the user credentials to access the Exchange Server to perform the backup operation.
 - The User Account must have Exchange Administrator privileges.
 - The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange Server resides in.

- 23. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging i disabled:
 - From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
 - Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Storage Policy Se	lection
Select a storage polic; backed up.	y for the default subclient to be
Configure for La	ptop or Desktop Backup
Select a storag	e policy from the pull-down list.
	Unassigned
Installer	
	< Back Next > Cancel
Installer	
Exchange Backup Please select a defau	
C Differential	Backs up changes in the Information Stope and Directory Service since the last
	Full backup. Does not purge the transaction logs.
Incrementation	
	Full backup or Incremental backup. The committed Iransaction logs are then
	purged.
Installer	
	< Back Next > Cancel
	X
	r account information
Enter Administrato Enter Administrator acc	r account information
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Enter Administrator acc A C C C C C C C C C C C C C	r account information Secount Name: Secount Password: Secount Password: Secount Password: Secount Password:
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Enter Administrator acc A C A C C C C C C C C C C C C C	r account information sount information coount Name: coount Password: comain: EXCH EXCH Conse information to start copying the program files. If you are satisfied with the satisfied begin copying lifes.
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Enter Administrator acc A A A C C C C C C C C C C C C C	r account Information count Information count Name: cocount Name: cocount Password:

Installer

abled	Installer
ogging is	Please verify that Grcular Logging is disabled before performing any databa backup operations.
t the	OK

< Back

Next>

Cancel

Installer

Click OK.

- 24. To install the software on the remaining nodes of the cluster, click **Yes**. To complete the install for this node only, click **No**.
- 25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

Once you complete your selections, click **Next**.

- The list of **Preferred Nodes** displays all the nodes found in the cluster; from this list you should only select cluster nodes configured to host this cluster group server.
- Do not select nodes that already have multiple instances installed.

Yes No
Installer Cluster Node Selection Select cluster nodes to configure
Selected Nodes Vinclustes2

Would you like to install the software on remaining nodes on the cluster?

?

 Specify User Name and Password for the Domain Administrator account Information to perform the remote install on the cluster nodes you selected in the previous step.

Click Next.

27.	The progress of the remote install for the cluster nodes is displayed; the install can be
	interrupted if necessary.

Click **Stop** to prevent installation to any nodes after the current ones complete.

Click **Advanced Settings** to specify any of the following:

- Maximum number of nodes on which Setup can run simultaneously.
- Time allocated for Setup to begin executing on each node, after which the install attempt will fail.
- Time allocated for Setup to complete on each node, after which the install attempt will fail.

If, during the remote install of a cluster node, setup fails to complete or is interrupted, you must perform a local install on that node. When you do, the install begins from where it left off, or from the beginning if necessary. For procedures, see Manually Installing the Software on a Passive Node.

nstaller	

Domain administrator account information

Please provide domain admir

LAB \Administrator

Domain Account Information

		te install at any time. Ins ue installation, but their			
	Client Name real2	Client Status	Start Time	End Time	Result Description
	Installed successfu			o install:	
	Failed to install: Elapsed time: (O)sec		ogress:	0 Max 1 🚽
	Installer Advanced Settin	igs			[Stop]
insi	aller				
	Time to wai	simultaneous remote m t for Setup to start on · Setup to complete on	each remote n	achine: 2	machines minutes minutes

< <u>B</u>ack

Cancel

28. Read the summary for remote installation to verify that all selected nodes were installed successfully.

Click Next.

- If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
- The message displayed on your screen will reflect the status of the selected nodes, and may look different from the example.

30. Click Finish.

nstaller 🛛 🕅
Results Remote install results
Summary of remote install
The following software (Version) were selected to be installed: + CommCell
REAL2: Install succeeded.
staller
Schedule Reminder Job schedule creation reminder
Please note:
riesse note: You still need to create a Job Schedule for each iDataAgent that has been installed on this client computer.
Job Schedules are required to allow the iDataAgents to perform automated backup and restore operations.
Job Schedule creation can be accomplished through the CommCell Console administration interface.
Installer
nstaller 🛛 🕅
Completion Report Setup complete
Software installation completed successfully
Software installation completed successfully. Visit the website below to download latest Updates and Service Packs.
Click Finish to complete Setup.
×
Installer Technical Support Website Einish
Previous

Getting Started - Install the Exchange Database Agent on Exchange Server 2003

< Previous Next >

Follow the steps given below to install the Exchange Database iDataAgent on Exchange Server 2003.

WHERE TO INSTALL

The Exchange Database *i*DataAgent can be installed directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.

INSTALL THE EXCHANGE DATABASE /DATAAGENT

- 1. Log on to the computer using an account with the following privileges:
 - Administrator of the local computer
 - Administrator of the Exchange Server
- 2. Run **Setup.exe** from the Software Installation Package.
- 3. Select the required language.

Click Next.

	Select the language you will use during installation. (English (United States)
	Next > Cancel
1	
	 View documentation website View Install Quick Start Guide (Requires Adobe Acrobal Reader) Install Adobe Acrobal Reader Exat
	Installer Welcome The Installer will guide you through the setup process for Software
	This program will install Software on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program. Elick Cancels to quil Satup and then close any programs you have running. Elick
	Next to continue with Setup. WARNING: This program is protected by copyright law and international treaties. Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.
	Installer Cancel

BEFORE YOU BEGIN

Download Software Packages

SnapProtect Support - Platforms

Download the latest software package to perform the install.

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

4. Select the option to install software on this computer.

The options that appear on this screen depend on the computer in which the software is being installed.

5. Click Next.

6. Click OK.

7. Select I accept the terms in the license agreement. Click Next.

- **10.** Expand **Client Modules | Backup & Recovery | Exchange,** and select **Exchange Database** *i***DataAgent**.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

11. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

12.	Enter the fully	qualified	domain	name	of the	CommServe	Host Name.
-----	-----------------	-----------	--------	------	--------	-----------	------------

Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

(j)	
	It is strongly recommended that any and all virus scanning software be disabled
	It is strongly recommended that any and all visus scanning software be disabled immediately before continuing with this Software installation. Failure to do so may result in file-locking by the visus scanner and subsequent failure for softup to install its own files.
	Click DK once you have disabled them and setup will continue.
	OK
lastellas	
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UIE FAUL	2 DOWN KEY to view the entire agreement.
	E III - I' - III - I III - I - I
	End User License and Limited Warranty Agreement
	Software Release 9.0.0
(incl	luding Microsoft@ SQL Server™ 2008 Enterprise Edition, SQL Server™ 2008 Express Edition and Windows Pre-Installation Environment)
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€ Iac	ccept the terms in the license agreement.
	o not accept the terms in the license agreement.
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	Cancel
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	Common Technology Engine
+	CommServe Modules description of the platform ar reasons why it may be
+	Communicationsole disabled.
	Client Modules Disk Space Disk Space
	Content Indexing and Search Web Based Search & Browse Installation Folder:
+	Archive Management OMB/ 0 MB Omb/ 0 MB
+	SRM Temporary on C: drive:
	Ca Supporting Modules Tools OMB/0MB
Ir	nstaller Special Registry Keys In Use
∏ Install A	Agents for Restore Only < Back Next > Cancel
🔲 Install A	Agents for Restore Only CBack Next> Cancel
Installer	
<mark>Installer</mark> Firewall	Configuration
Installer Firewall	
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13. Click Next.

Select Add programs to the Windows Firewall Exclusion List, to add CommCell programs and services to the Windows Firewall Exclusion List. Click Next. This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list. It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

15. Click Next.

14.

16. Verify the default location for software installation.

Click **Browse** to change the default location.

Click Next.

- Do not install the software to a mapped network drive.
- Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

17. Select a Client Group from the list.

Click Next.

This screen will be displayed if Client Groups are configured in the CommCell Console.

Installer				
Installer				
Communication In				
Setup will configure th	e communication pa	aths.		
	Select a client na	me		
	audi_cn		•	
	Select an interfac	e name that this o	computer will use to	
	communicate with	n the CommServe		
	audi.mycompany	.com	-	
	IP Address(es) fo	r the selected hos	at.	
Installer				
		< Back	Next >	Cancel
	-			
Installer				
Windows Firewall				
Allow programs to con Firewall	nmunicate through V	√indows		
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If you plan on usi exclusion list.	ng Windows Firewai	II, it is recommerio	ed to add the software	e programs to the
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19. Select a Storage Policy. Click Next.

- 20. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
 - Differential Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
 - **Incremental** Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.

Installer	×				
Client Group Selection					
Select a client group for the c	lient.				
The Client Gr	oup is a logical grouping of client machines				
Schedule Po	oup is a logical grouping of client machines he same associations at various levels like licy, Activity Control, Security and Reports.				
Client g	aroup:				
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	<back next=""> Cancel</back>				
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21. Enter the user credentials to access the Exchange Server to perform the backup operation.

- The User Account must have Exchange Administrator privileges.
- The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange Server resides in.

- 23. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is disabled:
 - From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
 - Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Click **OK**.

24. Click Next.

		×
Enter Administra	ator account information	
Enter Administrator	r account information	
	Account Name:	
	Account Password:	
	Domain:	
	EXCH	
	Next> Cance	el
Installer		×
Summary		
Summary of install s	selections	
Cable has seen	ugh information to start copying the program files. If you are satisfied with th	_
install settings, o	click. Next to begin copying files.	8
The following so	oftware will be installed :	^
+ MediaAger		
	File Svstem iDataAgent • Database iDataAgent	
+ VSS Provid	der	
Destination Path CommServe Ho	th = C:\Program Files\ ost = mycomputer.mycompany.com	
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Please ve	erify that Circular Logging is disabled before performing any database	
	operations.	
	OK	

nstaller	
Schedule Reminder Job schedule creation reminder	
Please note: You still need to create a Job Schedule for each DataAgent that has been installed on this client computer. Job Schedules are required to allow the DataAgents to perform automated backup and restore operations can be accomplished through the CommCell Console administration interface.	_
nstaller Completion Report Setup complete	
Software installation completed successfully. Visit the website below to download latest Updates and Service Packs. Dick Finish to complete Setup.	1
Installer Technical Support Website Enrich	

Quick Start Guide - SnapProtect

Previous Next >

Getting Started - Install the Exchange Database Agent on Exchange Server 2003 - Clustered Environment

Previous Next >

Follow the steps given below to install the Exchange Database iDataAgent on Exchange Server 2003 in a clustered environment.

WHERE TO INSTALL

The Exchange Database *i*DataAgent can be installed directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.

BEFORE YOU BEGIN

Download Software Packages Download the latest software package to perform the install.

SnapProtect Support - Platforms Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE EXCHANGE DATABASE /DATAAGENT

- 1. Log on to the computer using an account with the following privileges:
 - Administrator of the local computer
 - Administrator of the Exchange Server
- 2. Run **Setup.exe** from the Software Installation Package.
- 3. Select the required language.

Click Next.

Select the language you will use during initialiation.						
		Select the lang	juage you will use	during installatio	on.	
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4. Select the option to install software on this computer.

The options that appear on this screen depend on the computer in which the software is being installed.

5. Click Next.

7. Select I accept the terms in the license agreement. Click Next.

8. Select Configure a Virtual Server. Click Next.

 Select the disk group in which the virtual server resides. Click Next.

- 10. Expand Client Modules | Backup & Recovery | Exchange, and select Exchange Database *i*DataAgent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

Installer
It is strongly recommended that any and all virus scanning software be disabled immediately before continuing with this Software installation. Failure to do so may result in
* file-locking by the virus scanner and subsequent failure for setup to install its own files.
Click DK once you have disabled them and setup will continue.
OK
Installer 🛛 🛛 🗙
License Agreement Please read the following License Agreement. Press
the PAGE DOWN key to view the entire agreement.
A
End User License and Limited Warranty Agreement
Software Release 9.0.0
(including Microsoft® SQL Server™ 2008 Enterprise Edition, SQL Server™ 2008 Express Edition and Windows Pre-Installation Environment)
I accept the terms in the license agreement.
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Installer < Back Next > Cancel
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Cluster Type Selection
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Installer 🛛
Virtual Server Selection
Select the virtual server you would like to configure
Choose from the following list of disk groups configured on this cluster.
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< <u>Back</u> <u>N</u> ext> <u>C</u> ancel
Installer 🛛 🛛
Select Platforms Select the platforms you want to configure.
Cu Move the pointer over a
□ Common Technology Engine
CommCell Console disabled.
Client Modules Decrement Decrement Decrement Decrement Decrement Decrement Disk Space Disk Space
Web Based Search & Browse Installation Folder:
Ch. Supporting Modules
Tools
Installer Special Registry Keys In Use

Install Agents for Restore Only

Cancel

Cancel

11. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click Next.

12. Enter the fully qualified domain name of the CommServe Host Name. Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

13. Click Next.

14. Select Add programs to the Windows Firewall Exclusion List, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

Please sper connection CommServe machine, or	cily how Windows Firewall is finding network traffic. Whether it is possible to open from here to a CommServe's turnel port, whether all connections toward are blocked, and setup should instead expect CommServe to connect back to this r whether there is a Proxy in between.
	chine can open connection to CommServe on tunnel port
	rve can open connection toward this machine
	erve is reachable only through a proxy
Instal	
	Next > Cancel
nstaller	
CommServe Specify the C name	e Name ommServe computer name and host
Con	nmServe Client Name
, Con	mCaulo Host Name
(Ent myc	nmServe Host Name ter a valid, fully-qualified, IP host name; for example: computer.mycompany.com)
my	computer.mycompany.com
Instal	
	< Back Next> Cancel
nstaller	
	stion Interface Name Ifigure the communication paths.
	Select a client name
	audi cn
	Select an interface name that this computer will use to communicate with the CommServe
	audi.mycompany.com
	IP Address(es) for the selected host.
	IP Address(es) for the selected host.
Instal	
matai	<back next=""> Cancel</back>
nstaller	×
	irewall Exclusion List ns to communicate through Windows
Allow program Firewall	
Firewall	: Firewall is ON
Firewall Windows	
Firewall Windows	: Frewall is DN programs to the Windows Frewall Exclusion List an on using Windows Frewall, it is recommended to add the software programs to the
Firewall Windows V Add p	: Frewall is DN programs to the Windows Firewall Exclusion List an on using Windows Firewall, it is recommended to add the software programs to the

If there is a firewall between this machine and the CommServe, configure firewall services below.

Installer Firewall Configuration Configure firewall services

Configure firewall services

15. Click Next.

16.

17.

18.

Download and Install Latest Update Packs Download and Install the latest service pack and post pack from the software provider website.
Download latest update pack(s) Make sure you have internet connectivity at this time. This process may take some time depending on download speed.
Installer Cancel
Installer
Destination Folder Select the destination folder to install the program files.
Click Next to accept the default location, or click Browse to choose an alternate location. Destination Folder Image: Click Destination Folder Drive List Click Destination Folder Drive List Drive List Space Required / Recommended 1334 MB / 1670 MB Installer < Back
Installer
Client Group Selection Select a client group for the client.
The Elient Group is a logical grouping of client machines which have the same associations at various levels like Schedule Policy, Activity Control, Security and Reports. Client group:
Installer Cancel
Installer Schedule Install of Automatic Updates Choose when you want to schedule an install of the downloaded updates.
✓ Schedule Install of Automatic Updates ○ Once ☞ Weekly ☞ Monday ○ Tuesday ○ Friday ○ Sunday Installer

19. Select a Storage Policy. Click Next.

X

X

- 20. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
 - Differential Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
 - **Incremental** Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.

- **21.** Enter the user credentials to access the Exchange Server to perform the backup operation.
 - The User Account must have Exchange Administrator privileges.
 - The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange Server resides in.

- 23. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is disabled:
 - From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
 - Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

m displays a rer a any database t e System Manag aAgent is being i Circular Logging lar Logging has

nstaller	×			
Storage Policy Selection				
Select a storage poli backed up.	icy for the default subclient to be			
раскед ир.				
Configure for L	.aptop or Desktop Backup			
Splace a star	age policy from the pull-down list.			
Select a stora	ge policy from the pair-down list.			
	Unassigned 🔽			
La stallas				
Installer	<back next=""> Cancel</back>			
nstaller				
Exchange Backu Please select a defa				
C Differentia	al Backs up changes in the Information			
 Direientia 	Store and Directory Service since the last Full backup. Does not purge the			
	transaction logs.			
Increment	tal Backs up changes in the Information Store and Directory Service since the last			
	Full backup or incremental backup. The committed transaction logs are then			
	purged.			
Installer				
matand	< Back Next> Cancel			
	×			
nter Administrat	or account information			
ELL ALL STATE	1 M M M M M M M M M M M M M M M M M M M			
Enter Administrator ad	ccount information			
Enter Administrator ad	ccount information			
	Account Name:			
	Account Name:			
	Account Name:			
	Account Name: Account Password			
	Account Name: Account Password Domain:			
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nstaller Summay of install sel install seitings, cli install seitings, cli installer Destination Path CommServe Hote Destination Path CommServe Hote Destination Destinati	Account Name: Account Password: Account Password: Domain: EXCH Domain: EXCH ExcH ExcH Cancel Concerned Con			
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- 24. To install the software on the remaining nodes of the cluster, click **Yes**. To complete the install for this node only, click **No**.
- 25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

Once you complete your selections, click **Next**.

- The list of **Preferred Nodes** displays all the nodes found in the cluster; from this list you should only select cluster nodes configured to host this cluster group server.
- Do not select nodes that already have multiple instances installed.

Yes No
Installer Cluster Node Selection Select cluster nodes to configure
Selected Nodes Vinclustes2

Would you like to install the software on remaining nodes on the cluster?

 Specify User Name and Password for the Domain Administrator account Information to perform the remote install on the cluster nodes you selected in the previous step.

Click Next.

27.	The progress of the remote install for the cluster nodes is displayed; the install can be
	interrupted if necessary.

Click **Stop** to prevent installation to any nodes after the current ones complete.

Click **Advanced Settings** to specify any of the following:

- Maximum number of nodes on which Setup can run simultaneously.
- Time allocated for Setup to begin executing on each node, after which the install attempt will fail.
- Time allocated for Setup to complete on each node, after which the install attempt will fail.

If, during the remote install of a cluster node, setup fails to complete or is interrupted, you must perform a local install on that node. When you do, the install begins from where it left off, or from the beginning if necessary. For procedures, see Manually Installing the Software on a Passive Node.

nsta	ller	

Domain administrator account information

Please provide domain admir

LAB \Administrator

Domain Account Information

?

	e install at any time. Ins ue installation, but their			
Client Name real2	Client Status	Start Time	End Time	Result Description
Installed successfu	dly:	Left t	o install:	▶ 1
	0) sec		ogress:	0 Max: 1 ≟ left: 10 min 0 sec
Installer Advanced Settin	gs			Stop
Installer				
Time to wai	simultaneous remote m t for Setup to start on Setup to complete on	each remote m	achine: 2	- minutes

< <u>B</u>ack

Cancel

28. Read the summary for remote installation to verify that all selected nodes were installed successfully.

Click Next.

- If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
- The message displayed on your screen will reflect the status of the selected nodes, and may look different from the example.

30. Click Finish.

nstaller 🛛 🕅
Results Remote install results
Summary of remote install
The following software (Version) were selected to be installed: + CommCell
REAL2: Install succeeded.
staller
Schedule Reminder Job schedule creation reminder
Please note:
riesse note: You still need to create a Job Schedule for each iDataAgent that has been installed on this client computer.
Job Schedules are required to allow the iDataAgents to perform automated backup and restore operations.
Job Schedule creation can be accomplished through the CommCell Console administration interface.
Installer
nstaller
Completion Report Setup complete
Software installation completed successfully
Software installation completed successfully. Visit the website below to download latest Updates and Service Packs.
Click Finish to complete Setup.
×
Installer Technical Support Website Einish
Previous

Getting Started - Microsoft Exchange Database Configuration

< Previous Next >

PRE-REQUISITES

- When using a proxy configuration, installation of the Exchange management tools on the proxy is required. Also, ensure that the version of the management tools is the same as the version of the Exchange server.
- When performing Integrity Check on Exchange 2010 DAG subclients, it is required to use a proxy. You can use one of the following as the proxy:
 - o DAG member server
 - o Separate computer with connectivity to the Exchange Server and with the ability to mount the snapshots
- Prior to performing a SnapProtect backup, ensure that all the available hotfixes for Virtual Disk Service (VDS) and VSS are applied.
- When performing SnapProtect backup for a Windows Cluster, a proxy server must be used for performing backup and restore operations.
- SnapProtect backup on Windows supports basic disks.

CONFIGURATION

1.

3.

Once installed, the Microsoft Exchange Database iDataAgent requires some additional configuration before running your first SnapProtect backup. Follow the steps given below to complete the configuration for this Agent.

- From the CommCell Browser, navigate to Client Computers | < Client>.
 - Right-click the client and select **Properties**.

	What's new? ×	
CommNet		
Client Computer Groups	What's new?	
2 Clent Computers 1	Laptop Backup	
⊕ tog t All Tasks >	Laptop Backup Age	at to protect data on laptops and desktops used in remote offices and outside of a domain
B C murr Ven +	network. Backups o	an be performed seamlessly using automatic schedules based on network connectivity or
Storage Properties	Show on startup	
Policies	Job Controller 🗙	
Reports Content Director	Job Controller	
		Client Co Agent Type Subclient Job Type Phase Storage MediaAgent
	There are no jobs currently	
	Il Pause Playing	Running: 0 Pending: 0 Waking: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 High Water
		Konning: o Henoing: o Walong: o Queues: o Suspenses: o Total Joos: o Joo Streams: o High Wales
	Event Viewer 🗙	
	Event Wewer	
	Seve Event Job.	Date Progr Compu Event C Description
		18 07/21/2010 12:00:29 JobMa murphy 19:840 Data Aging operation has 18 07/21/2010 12:00:12 JobMa murphy 19:322 Data Aging operation has
🛕 CommCell Browser	 117 116 	18 07/21/2010 12:00:12 3obMa numphy 19:322 Data Aging operation has 07/21/2010 11:03:04 EvMgr5 numphy 35:255 User [admin] has logged off.
🖻 Agents	113	07/21/2010 11:02:02 EvMorS murphy 35:254 User [admin] has logged on.
*	a 110	07/21/2010 10:38:20 FullorS mumbur 35:254 Liser [admin] has borned on
	II Pause Playing	Information, Minor, Major, Critical, Maximum events shown: 200
1 object(s)		nurphy admin
Client Computer Properties		X
		a la sus esta la ella
General Versi Content Indexing Se	on Secu earch Server URLs	rity Activity Control Groups Registry Key Settings Client Side Deducings
	Network Throtting	Policies Job Configuration Encryption (Advanced)
r newar configuration	Network milotang	Policies Sob configuration Encryption
		· · · · · · · · · · · · · · · · · · ·
Enter Alternate Cache Partition I	ior QSnap, Please en	sure that the volume specified is an NTFS volume.
Path to Exchange mining tool		
CDR Log File Location		
control of the cocolor		
		Browse
2		
Enable SnapProtect		
I Enable ShapProtect		
		-
Proxy for Exchange	-]
🗆 🔽 Enable retry on network e	rrors	
Data 5		
Retry Frequency (seconds)	30 -	
Retry Count	40 ÷	
	10	
		OK Cancel Help

- Click on the **Advanced** tab.
 - Select the Enable SnapProtect option to enable SnapProtect backup for the client.
 - Click OK.

- From the CommCell Browser, navigate to *Client>* | **Exchange Database**.
- Right-click the subclient in the right pane and click **Properties**.

- 4. Click the **Storage Device** tab.
 - In the **Storage Policy** box, select the storage policy name.

🔓 CommCell Browser 🛛 🛛 🖗	DA Exchange Database ×	
testna4	🚴 testna4 > 👔 Client Computers > 🚉 hwina	pp01 > DA Exchange Database >
Clent Computer Groups	Subclient Name	Storage Policy
172.16.64.31	default	Not Assigned
⊕ avocado ⊕ 6% cvdv005589_2	Backup	
E 00 File System	List Media	
- of defaultBackupSet ⊕ of the wal-2003	Backup History	
⊕ ga dhava-2003 ⊕ 🚦 hfiler1	Schedules	
🖲 🚦 hfler2	Operation Window	
æ 🚦 hfiler3 æ 📴 hfiler4	3 Properties	
🕀 🧧 hfiler5		
E hfler6		
1 Texthange Database	Content 🖪 Summary	
OA File System	🔂 Job Controller 🗙	
Of SQL Server Kdhyperva	🔝 Job Controller	
🕀 🔂 miler64		Agent Type Subclient Job Type Phase
🗄 🔂 netappvsa 🖻 📆 sg-64	909 Auxiliary Copy	Auxiliary C
E - 04 File System	950 Auxiliary Copy	Audiary C
defaultBackupSet	1041 Auxiliary Copy	Audiary C
Subclient Properties	of default	×
cont la contrata		
aonoral i concornes		5napProtect Operations
Storage Device	Activity Control	Encryption
(a		
Data Storage Policy D	ata Transfer Option	
Storage Policy:		
RR_Sp1-PMV	•	Data Paths
Incremental Storage P	olicy: N//	
unurennen tar storage e	ancys (a)	- II
		Data Paths
		Data Facilio
Create Storage R	olicy	
		I
	ОК	Cancel Help

• Click the **SnapProtect Operations** tab.

5.

- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select the storage array from the **Available Snap Engine** drop-down list.
- From the **Use Proxy** list, select the MediaAgent where SnapProtect and backup copy operations will be performed.

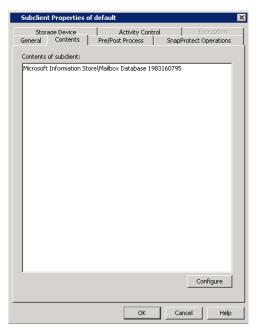
When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.

• Click Use Separate Proxy for Snap to Tape if you want to perform backup copy operations in a different MediaAgent.

Select the MediaAgent from the **Proxy** list.

Subclient Properties of snap
Storage Device Activity Control Encryptice StM Ontros General Contents Pre/Post Process SapProtect Operations
2 SnapProtect 3 Available Snap Engines Please select a Snap Engine
Enter Array Credentials
Use Proxy
Use Separate Proxy for Snap to Tape Proxy
Use source if proxy is unreachable
OK Cancel Help

- 6. Click the **Content** tab.
 - Click **Configure** to add or modify the content for the subclient.
 - Click OK.



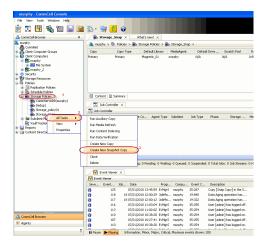
SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Create New Snapshot Copy.



- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

2.

Next 🕨

Selective Copy General Retention	Associations Copy Policy	Advance Data Paths	d Dedup Data Path Confi	lication guration
Copy Information				_
Copy <u>N</u> ame:				
Primary Copy				
Default Index Destinatio	n			
Library:				~
MediaAgent:				~
Drive Pool:				*
Scratch Pool:				*
3				_

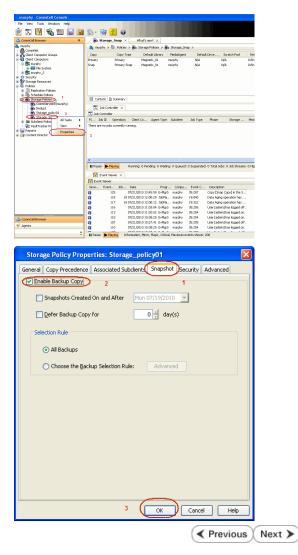
CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

1.

- Click the **Snapshot** tab.
- Select **Enable Backup Copy** option to enable movement of snapshots to media.
- Click OK.



Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY
3PAR	DATA REPLICATOR
DELL COMPELLENT	
DELL EQUALLOGIC	
EMC CLARIION, VNX	
EMC SYMMETRIX	
FUJITSU ETERNUS DX	
HITACHI DATA SYSTEMS	
HP EVA	
ІВМ SVC	
ІВМ ХІV	
LSI	
ΝΕΤΑΡΡ	
NETAPP WITH SNAPVAULT/SNAPMIRROR	
NIMBLE	

Previous Next >>)

Page 106 of 520

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



3.

		iface Pairs I	CR Backup Settings	E-Mail & IDS Configuration	
			٥	Sil	6 :0
Array Managemen	0		7/21/2010 10:38:20 EvM		User (admin) has logged on.
Control Host	Name	User Name	Snap Vendor	Description	× Add
fidk.hct.commvault.com	5001438002	hct\administr	. HP EVA		^
172.19.66.22		grpadmin	Del Equalogic		Edit
172.19.125.226	6000279	admin	IBM XIV		
172.19.66.91	APM0003340	admin	EMC CLARIION		Delete
172.19.66.69	10881	system	HDS		

What's new?

💅 Alerts

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4

List Sn

OK Cancel Help

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172 19 71 26

13

Audit Trai

- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemer	ıt 💽
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

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SnapProtect[™] Backup - Dell Compellent

< Previous) Next >

PRE-REQUISTIES

- Dell Compellent requires the Data Instant Replay license.
- Ensure that all members in the Compellent array are running firmware version Storage Center 5.5.14 and above for 5.x and 6.2.2 and above for 6.x.

SETUP THE ARRAY INFORMATION

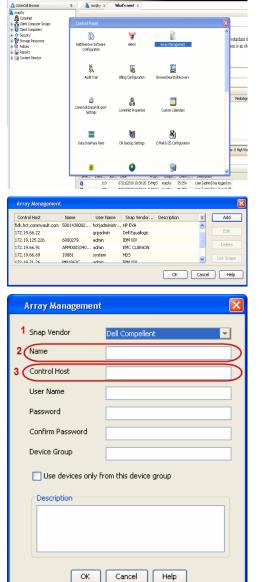
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- **3.** Select **Dell Compellent** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name and Control Host fields.

The Management IP address is also referred as the Storage Center IP address.



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For reference purposes, the screenshot on the right shows the Storage Center Management Console of the Dell Compellent storage device displaying the Management IP address. 4.

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- Enter the user access information of the application administrator in the **Username** and **Password** fields.
- In the **Device Group** field, type none as this array does not use device groups for snapshot operations.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

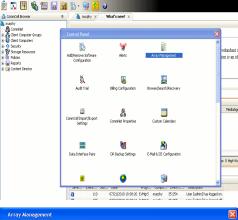
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - o Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
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172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snat
172 19 71 26	MN1963C	admin	TRM VTV		×	

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🛛 🔀	
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For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

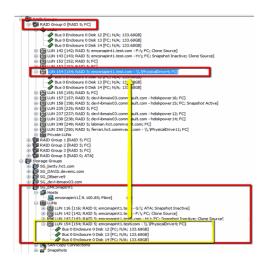
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- Select EMC CLARIION from the Snap Vendor list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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Quick Start Guide - SnapProtect

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SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

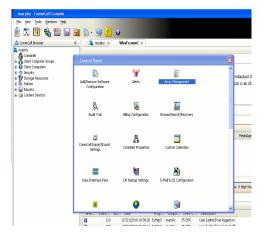
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

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SnapProtect[™] Backup - Fujitsu ETERNUS DX

< Previous Next >

PRE-REQUISITES

- Local Copy license for Snap and Clone.
- Thin Provisioning license.
- Ensure that all members in the Fujitsu array are running firmware version V10L22-1000 or higher.
- Enable SMI-S on the storage array.
- Create a Host Affinity group for the proxy computer.
- If using SnapOPC, ensure to create a SDV and SDPV volumes.

CONFIGURE DESTINATION VOLUMES

- Source and destination volumes should be pre-paired before performing any snapshot operation. For EC snapshots (clone), pre-paired sessions should be in active state.
- To pre-pair source and destination volumes, install the ETERNUS SF Express Manager software version 14.2A or higher.
- Forbid Advanced Copy and Encrypted volumes are not supported.
- Depending on the type of snapshot being used, review the following for the creation of destination volumes:

FOR SNAP SNAPSHOTS

If pre-paired sessions are not available, SnapOPC snapshots use any available SDV volumes as their destination volumes. If you need to create a new SDV volume, ensure that the SDV volume is of equal size to the source volume.

FOR CLONE SNAPSHOTS

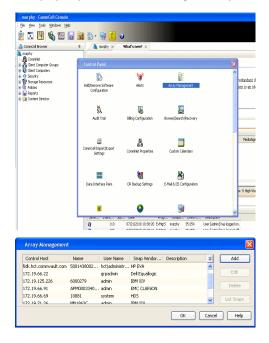
If pre-paired sessions are not available, destination volumes are automatically created for clone snapshots. If a non-existing device group is specified during array configuration in the CommCell Console, a destination volume is created based on the source volume type. However, if a valid device group is specified, the following destination volumes are created depending on the device group type:

- $\circ\,$ A Thin Provisioning volume is created if the device group is a Thin Provisioning pool.
- $\,\circ\,$ A standalone volume is created if the device group is a RAID group.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- **3.** Select **Fujitsu ETERNUS** from the **Snap Vendor** list.
 - Specify the CM IP Address of the array in the Name field.

For reference purposes,	the sc	reenshot	on the	e right	shows	the	CM	IΡ	Address	for	the
Fujitsu storage device.											

4.

- Enter the CM IP Address of the array in the **Control Host** field.
 - Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the RAID group or Thin Provisioning group created on the array to be used for clone operations. Device groups are not applicable for Snap snapshots.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the device group specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

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Fujitsu ETERNUS

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SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

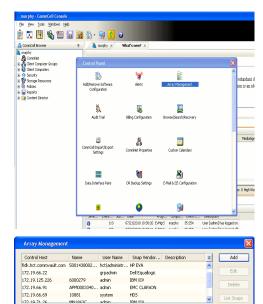
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	e serial	number	for	the
HDS storage device.							

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the $\ensuremath{\textbf{Description}}$ field to enter a description about the entity. This description • can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

Pechanismus Pechan	Nicocode DKC Nicocode SVP Configured Capacity Actual Capacity Free Space Total Cada	172.19.66. 50-59-82-60/50 50-69-70/10 9.24 TB	NASMasagement	
Array Manageme	nt			
Snap Vendor	HDS		*	
Name				
3 Control Host				
User Name			\equiv	
4 Password				
Confirm Password)	
5 Device Group				
6 🗍 Use devices only	y from this	s device group	(
Description				
ОК	Car	ncel Help		
		(•	Previous	Nex

Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

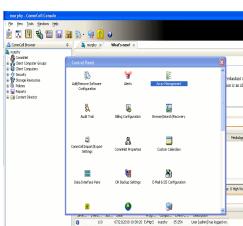
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN11963C	admin	TRM VIV		~	List bridps

Array Managemer	nt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

 EVA Storage Network EVA440 Virtual Disks Hoots Disk Groups Data Replication Hardware 	Save changes System options General Status Summary Identification Identification Name: EVA440 Node WWN: 500114380-025D-EB70 UUID: 6005-08b40002-0000
Array Management Snap Vendor HP EV Name Control Host	
4 Password Confirm Password 5 Device Group	
6 Use devices only from t	his device group
	ancel Help

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

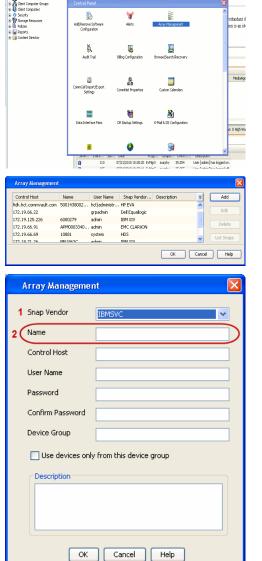
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the **Name** field.



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What's new? >

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The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- 4. Enter the Management IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

18M Syst	tem Storage SAN Volume Controller	Welcome	mariner (6 mars roline)	Land	Logent Help IBM.	
	ibmcluster1 > Home > System Status					
						1
14		io_grp0	Info Manage			
	0	node1 •	Name	ibmcluster1		
		io_grp1	1D	00000200634	OCES6	
		In Stabu	Location	Local		
- H			Capacity			
		io_grp2	Total MDisk Capacity Space in MDisk Groups			
			Space Allocated to Volumes	3.9 TB		
		io_grp3	Total Free Space	3.7 TB		
			Total Volume Capacity			
Sep.			Total Volume Copy Capacity	4.8 TB		
		juster1 (6.1.0.7)	Total Used Capacity Total Overallocation	64%		
Con	meetivity 🔲 🗍	52%		111 Running	Tasks 🗌	
	A					
	Array Managemen	IC				
	Snap Vendor					
	Shap venuor	IBMSVC			×	
	Name					
3 (Control Host					
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	User Name					
4	Password					
1	Confirm Password					
· ·	Commini assword					
5	Davidea Consum	[
9	Device Group					
6	🌔 🔄 Use devices only	from this de	vice group)		
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	Description					
	boschpaon					
				_		
	OK	Cancel	Help			
				0		
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

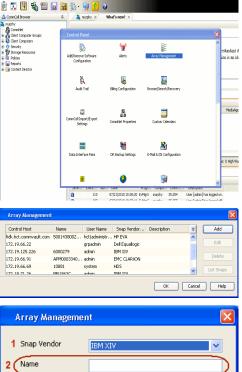
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Array Managemer	it 🛛 📉 🔀
1 Snap Vendor	
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description]
ОК	Cancel Help

The **System ID** (S/N) is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
 X

 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	nt 🔀
	Snap Vendor Name	
3	Control Host	
1	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	r from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous) Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

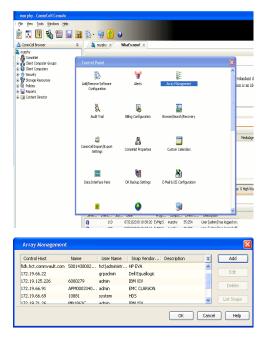
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

1 Snap Vendor	
	LSI
Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help
as _lsi - Storage Subsystem Profile	
🗄 Summary 📕 Controllers 🖶 Arrays 🔒 L	Logical Drives 월 Drives 근 Drive Channels 왕호 Enclosures ① Mappings 팬세
Controller enclosure audible alarm:	Enabled -
WSRAM configured for batteries: Start cache flushing at (in percentage stop cache flushing at (in percentage sache block size (in KB):	Yes pe): 80 e): 80 4
Media scan frequency (in days): Failover alert delay (in minutes):	w Dismbled S
Feature enable identifier: Feature pack: Feature pack submodel ID:	303035313420303037393120487745&7 Generic 130
require pack submodel ID:	
	Ler (ID): 60080E500017FA8000000004E7F45A4
Storage Subsystem world-wide identifi	z
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Array Managemen Array Managemen Snap Vendor	540 AL
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Array Managemen Snap Vendor Name Control Host User Name	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	3 569 A (000 996 It
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10

The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

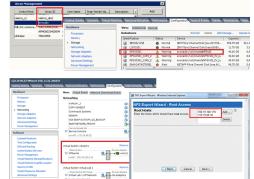
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

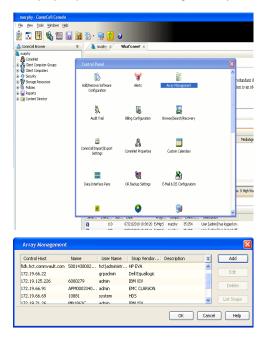
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NetApp	
Name	MetApp	
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
ОК	Cancel Help	
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

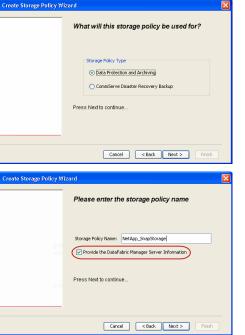
4.

3.

 In the Library list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

I-SP-DFN

iDSP_JunLu GDSP

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Windows Hein

New Storage Policy 3 New Global Deduplication

Subclient As

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A-SP A-SP A-SP-DFM CommSer...

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Type Global Dedupli. Standard Standard

Disaster Ri Global Ded Global Ded Global Ded

Slobal Dedupli

lobal Ded

Global De Standard

Standard Standard

Standard Standard No. of Streams No. of

Create Storage Policy Wi	zard	
	Please select a library to be the default library for this primary copy	
<u>11</u>	Library: Test	
de re	Press Next to continue	
	Cancel < Back Next > Frish	

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

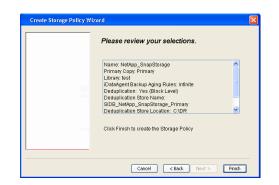
9.	٠	Provide the D	DataFabric	Manager	server	information.
----	---	---------------	------------	---------	--------	--------------

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	ard 🛛
	Please select a MediaAgent for this copy
	MediaAgent: ethaval-2008
	Press Next to continue
	Cancel Cancel Next > Finish
Create Storage Policy Wiz	zard
	Please enter the streams and retention criteria for this policy
	Number of Device Streams:
	Choose the Primary Copy's Aging Rules:
	V Infinite/ 15 Days 2 Gydes
	Data Archive/Compliance Archiver
	Cancel <back next=""> Finish</back>
Create Storage Policy Wiz	eard 🔀
	Do you want to enable Deduplication for the primary copy?
	Deduplication O Yes
	Enable Client Side Deduplication
	No Press Next to continue
899	
	Cancel < Back Next > Finish
Create Storage Policy Wiz	eard 🔀
	Please specify the location to store the Deduplication Store
	Name: SIDB_NetApp_SnapStor Deduplication Store Location:
	MediaAgent Name dhaval-2008
	Location: Browse Press Next to continue
Mercel	
	Cancel <back next=""> Finish</back>
Create Storage Policy Wiz	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

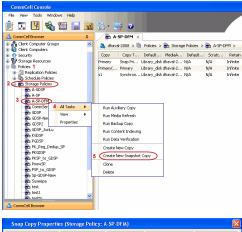


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click **Specify Source for Auxiliary Copy** and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thursdoor (Copy Source for Auxiliary Copy: Inimary Source Copy Source for Auxiliary Copy: Inimary Copy Source for Auxiliary Copy: Inimary Copy Convert Copy Copy Convert Copy Copy
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_SpaceStatus:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

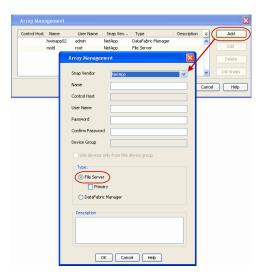
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page 139 of 520	

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Comm/Cell Console File Vew Tools Windows Help



SEE ALSO

Import Wizard Tool

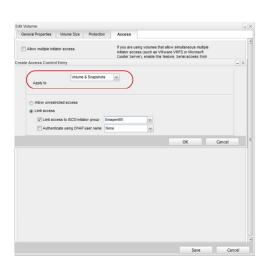
Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Nimble

PREREQUISITES

- From the Nimble storage array console, ensure that the Access Control Entry for the client initiator group is set to Volume and Snapshots.
- In case you are using a proxy computer for SnapProtect operations, add the initiator group for the proxy computer and set the **Access Control Entry** to **Snapshots Only**.
- Ensure that a temporary LUN is allocated to all ESX Servers that are used for snapshot operations.



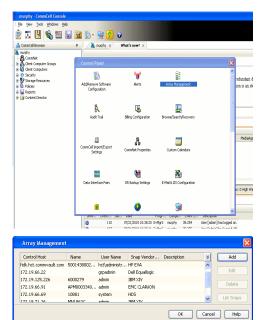
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Next >

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- **3.** Select **Nimble** from the **Snap Vendor** list.
 - Specify the Data IP Address of the array in the Name field.

If you have more than one Data IP Address configured, you will need to add the array information for each of the configured Data IP addresses.

• Enter the Management IP Address of the array in the **Control Host** field.

For reference purposes, the screenshot on the right shows the Data IP Address and
Management IP for the Nimble storage device.

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- Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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SnapProtect[™] Backup - Data Replicator

< Previous Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to <*Client*> | <*Agent*>.
 - Right-click the subclient and click Properties.
- Click the SnapProtect Operations tab.
 - Ensure Data Replicator is selected from the Available Snap Engine drop-down

Quick Start Guide - SnapProtect

list. • Click **OK**.

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Getting Started - Exchange Database iDataAgent Backup

Previous Next >

PERFORM A BACKUP

2.

- 1. Ensure that Circular Logging has been disabled on the Exchange Server.
 - From the CommCell Console, navigate to Client Computers | <Client> | Exchange Database.
 - Right-click the default subclient and click Backup.
- Select Full as backup type and Immediate to run the job immediately.
 - Click OK.

- 4. You can track the progress of the job from the **Job Controller** window of the CommCell console.
- Once job is complete, view the details of job from the Backup History. Right-click the Subclient and select Backup History.
- 6. Click OK.

- **7.** Right-click the job to:
 - View job details, such as the number of mailboxes backed up.
 - View media associated with the job.
 - View events associated with the job.
 - Resubmit the job.
 - View messages that were backed up.
 - Send the log file that is associated with the job.

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Quick Start Guide - SnapProtect

Previous Next >

Getting Started - Vault/Mirror Copy

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SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily
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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

< Previous Next >

Getting Started - Snap Movement to Media

< Previous Next >

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BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

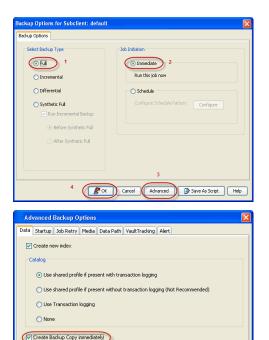
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select **Full** as backup type.
 - Click Advanced.



ation of backup copy depends on the Storage Policy - Snapshot configuration

(OK

Cancel Help

- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.

OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Quick Start Guide - SnapProtect

2. Click **OK**.

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Getting Started - Microsoft Exchange Database Restore



PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring a single database to a different client computer.

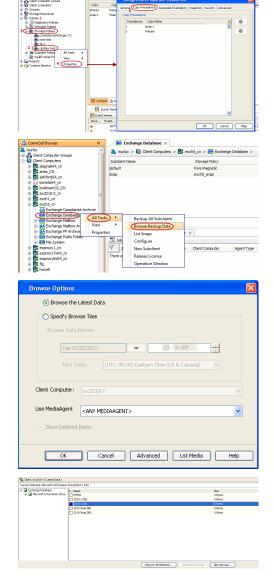
- From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.

1.

- From the CommCell Console, navigate to Client Computers | <Client> | Exchange Database.
 - Right-click the Agent and then click **All Tasks | Browse Backup Data**.
- 3. Select a Windows MediaAgent from the Use MediaAgent drop-down list.
 - Click OK.

4.

- Select the Microsoft Information Store in the left pane. Select a database in the right pane.
 - Click Recover All Selected.



5. • Select the name of the client computer from the **Destination Client** list.

This client should not be the same client on which the database originally resided.

- Click ... under **Out of Place** Location column.
- Select a folder on the destination client and click **OK**.
- Click OK.

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- 6. You can monitor the progress of the restore job in the **Job Controller**.
- 7. The database is restored to the directory and client that was specified.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

Previous Next >>

Getting Started Deployment On a UNIX Computer - Oracle *i*DataAgent

WHERE TO INSTALL

Install the software directly on the Unix computer that you wish to protect and has the application data.

RELATED TOPICS

Download Software Packages Download the latest software package to perform the install.

Previous

Next >

SnapProtect Support - Platforms

Verify that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE ORACLE /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

- 1. Logon to the client computer as **root**.
- If you are installing the software from CD, run the following command to mount the CD:

mount -t iso9660 udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package:

./cvpkgadd

- The product banner and other information is displayed.
- Press Enter.

3.

- 4. Read the license agreement. Type y and press Enter.
- 5. Press Enter.

6. Press Enter.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

2) Advance options

3) Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

1) Install on a physical machine

2) Install on a virtual machine

3) Exit

Your choice: [1]

7. If you have only one network interface, press **Enter** to accept the default network interface name and continue.

If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown.

8. Press Enter.

We found one network interface available on your machine. We will associate it with the physical machine being installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI.

Please check the interface name below, and make connections if necessary:

Physical Machine Host Name: [angel.company.com]

Please specify the client name for this machine.

9. Type the number associated with the Oracle *i*DataAgent, Unix File System *i*DataAgent, and MediaAgent.

Press Enter.

A confirmation screen will mark your choice with an "X".
 Type d for Done, and press Enter.

11. Press Enter.

- 12. Type the appropriate number to install the latest software scripts and press Enter.
 - Select Download from the software provider website to download the latest software scripts. Make sure you have internet access.
 - Select **Use the one in the installation media** to install the software scripts from the package or share from which the installation is currently being performed.
 - Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.

13. Press Enter.

14.

Press **Enter** to accept the default path.

- If you want to specify a different path, type the path and then press **Enter**.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.

In order to make sure that the client computer has ${\tt read/write}$ access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

- **15.** Press **Enter** to accept the default location.
 - Enter a path to modify the default location and press Enter.
 - All the modules installed on the computer will store the log files in this directory.
- 16. Type Yes and press Enter.

It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe. Physical Machine Client name: [angel]

Physical Machine Client name: [angel]

Install Calypso on physical machine 172.19.99.62 Please select the Calypso module(s) that you would like to install.

[] 1) MediaAgent [1301] [CVGxMA]

[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[] 3) Oracle iDataAgent [1204] [CVGxOrIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:3

Install Calypso on physical machine 172.19.99.62 Please select the Calypso module(s) that you would like to install.

[X] 1) MediaAgent [1301] [CVGxMA]

[X] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[X] 3) Oracle iDataAgent [1204] [CVGxOrIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d

Do you want to use the agents for restore only without consuming licenses? [no]

Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.

If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

1) Download from the software provider website.

2) Use the one in the installation media

3) Use the copy I already have by entering its unix path

Your choice: [1] 2

Keep Your Install Up to Date - Latest Service Pack

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 176 MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

Installation Directory: [/opt]

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make 17. Type the Group name and then press Enter.

18. This prompt is relevant only when you install on Solaris. Press Enter to accept the default value for Number of Streams.

> You can type the Number of Streams that you plan to run at the same time and then press Enter.

19. Press Enter if you do not want the changes to be updated automatically.

- If you want the changes to be made automatically, type **Yes** and then press Enter.
- You will come across this prompt when you install the software on the earlier versions of Solaris.

20. Press Enter.

> You will see this prompt if you have accepted the default no and pressed Enter in the Press <ENTER> to continue. above step.

21. Press Enter.

> You will see this prompt if you have accepted the default no and pressed Enter in step 19.

22. Type a network TCP port number for the Communications Service (CVD) and press Enter.

Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press Enter.

23. If you do not wish to configure the firewall services, press Enter.

> If this computer is separated from the CommServe by firewall(s), type Yes and then press Enter.

such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "oinstall" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.

If you're planning to backup Oracle DB you should use "oinstall" group.

Would you like to assign a specific group to Software? [ves]

Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "oinstall" group here.

Group name: oinstall

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "oinstall".

Number of Streams

IMPORTANT : Please read install document "Configure Kernel Parameters - Unix/Macintosh" from "Books Online" before start configuring kernel parameters. Please enter total number of streams that you plan to run at the same time. We need to make sure that you have enough semaphores and shared memory segments configured in /etc/system

Number of streams [10]

We now need to modify the /etc/system configuration file on this computer. It is done to make sure that there will be enough shared memory and semaphores available for Calypso programs. Please review the changes below and answer "yes" if you want us to apply them to the /etc/system file. Otherwise, the installation will proceed, the changes will be saved to some other file, and you will have to apply them manually.

set shmsys:shminfo_shmmni=8570 (was 7930)
set shmsys:shminfo_shmseg=8420 (was 7780)
set semsys:seminfo_semmni=8570 (was 9680)
set semsys:seminfo_semmni=8570 (was 7930)
set semsys:seminfo_semmsl=8570 (was 7930) Do you want us to apply these changes now? [no]

Changes saved into /etc/system.gal.1744

Although a 'no' answer can be selected to this question during install, the user should make sure the min requirements (below) for shared memory are met, otherwise the backups may fail (the message in logs is 'could not start the pipeline').

set shmsys:shminfo_shmmax=4199304 set shmsys:shminfo_shmmin=1
set semsys:shminfo_shmmni=640
set semsys:shminfo_shmseg=640
set semsys:seminfo_semmns=640 set semsys:seminfo_semmni=640 set semsys:seminfo_semmsl=640 set maxusers=256 Press <ENTER> to continue.

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.

Please enter the port numbers.

Port Number for CVD : [8400]

Port Number for EvMgrC: [8402]

Is there a firewall between this client and the CommServe? [no]

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation. Please specify hostname of the CommServe below. Make sure 24. Type the fully qualified CommServe host name and press Enter. the hostname is fully qualified, resolvable by the name Ensure that the CommServe is accessible before typing the name; services configured on this machine. otherwise the installation will fail. CommServe Host Name: mycommserve.company.com Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain 25. Press Enter. directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters. 1) Use Cell level policy 2) Always use Global filters 3) Do not use Global filters Please select how to set the Global Filters for the default subclient? [1] Type the number associated with the Client Group and press **Enter**. Client Group(s) is currently configured on CommServe 26. cs.company.com. Please choose the group(s) that you want NOTES to add this client client.company.com to. • This screen will be displayed only if Client Groups are configured for the CommCell. [] 1) Unix [] 2) DR [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 1</pre> A confirmation screen will mark your choice with an "X". Client Group(s) is currently configured on CommServe 27. cs.company.com. Please choose the group(s) that you want Type **d** for done with the selection, and press **Enter** to continue. to add this client client.company.com to. [X] 1) Unix [] 2) DR [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,g,d,>,<,?" here: d Please select one storage policy for this IDA from the 28. Enter the number associated with the storage policy you want use and press **Enter**. list below: 1) SP_StandAloneLibrary2_2 2) SP_Library3_3 3) SP_MagLibrary4_4 Storage Policy: [1] Certain Calypso packages can be associated with a virtual 29. Type 3 to the Exit option and press Enter. IP, or in other words, installed on a "virtual machine" The installation is now complete. belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server. Currently you have Calypso installed on physical node stone.company.com. Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster. 1) Add another package to stone.company.com 2) Install Calypso on a virtual machine

3) Exit

Your choice: [1] 3



Getting Started - Oracle Configuration

< Previous) Next >

CONFIGURATION

1.

The following sections provide the necessary steps required to create and configure the components for a first SnapProtect backup of an Oracle database.

- From the CommCell Browser, navigate to Client Computers | < Client >.
 - Right-click the client and select **Properties**.

- Click on the **Advanced** tab.
 - Select the **Enable SnapProtect** option to enable SnapProtect backup for the client.
 - Click OK.

- From the CommCell Browser, navigate to Client Computers | <Client>.
 - Right-click Oracle and then click Properties.
- **4.** Select the **Enable Instance Discovery** checkbox.
 - Click OK.

If the instances are discovered automatically, go to step 7.

If the instances are not discovered automatically, follow the step given below to manually discover the instances.

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Oracle Properties	ity Control		
Clent Name: sdr2k8 DataAgent: Oracle Instaled date: Monday, May Control Instance Discovery Description	6, 2011		
		OK Cancel Help	

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Enable SnapProtect

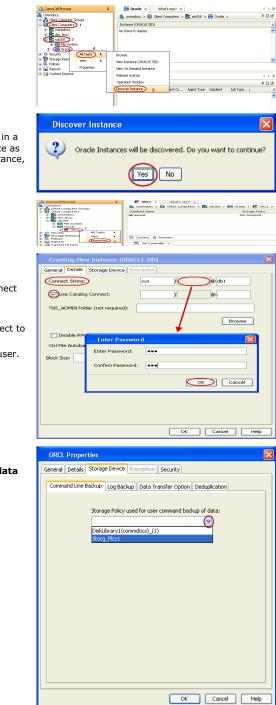
PL... Job ID Operation Client Co... Agent Type Subclient Job Type Phase Storage ... MediaAgen

Running: 0 Pending: 0 Waiting: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Stream

Firewall Configuration Network Throttling Polic ing Registry Key Settings Client Side Deduplicat

Browse

- From the CommCell Browser, navigate to Client Computers | <Client>.
 - Right-click **Oracle**, point to **All Tasks** and then click **Discover Instance**.



¥

Click Yes. 6.

If your Oracle database uses an ASM instance and the instance is in a different Oracle Home, you may have to manually add the instance as the discovery operation may not find it. When configuring the instance, verify the database status shows as STARTED.

- 7. • From the CommCell Browser, navigate to Client Computers | <Client>|Oracle.
 - Right-click the **<Instance>** and then click **Properties**.
- Skip this step if you are not using a proxy computer. 8.
 - Click the **Details** tab.
 - In the Use Catalog Connect field, type the user name to connect to the Recovery Catalog database.
 - Click the grayed box in Use Catalog Connect.
 - In the **Password** field, type the password for the user to connect to . the Recovery Catalog database.
 - In the Confirm Password box, re-type the password for the user.
 - Click OK.
- 9. • Click the Storage Device tab.
 - In the Storage Policy used for user command backup of data box, select a storage policy name.

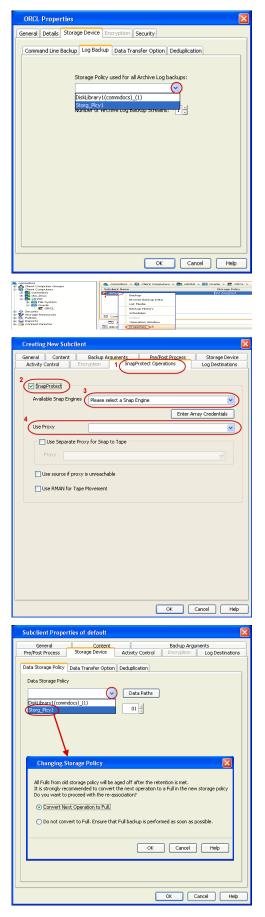
- **10.** Click the **Logs Backup** tab.
 - In the Storage Policy used for all Archive Log backups box, select a storage policy name.
 - Click OK.

- 11. From the CommCell Browser, navigate to Client Computers | <Client> | Oracle | <Instance>.
 - Right-click the default subclient and then click Properties.
- **12.** Click the **SnapProtect Operations** tab.
 - Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
 - Select the storage array from the **Available Snap Engine** dropdown list.
 - From the Use Proxy list, select the MediaAgent where backup copy operations will be performed.
 - When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.
 - For clustered environments, ensure the proxy you want to select is not part of a cluster setup.

13. • Click the **Storage Device** tab.

- In the **Data Storage Policy** list, select a Storage Policy name.
- Click **OK** to convert the next backup as a full backup.
- Click OK.

Click Next \blacktriangleright to continue. If you do not have Storage Policy created, follow the step given below to create a storage policy.



- **14.** Create a Storage Policy:
 - 1. Click Create Storage Policy.
 - 2. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - Select the Storage Policy type as Data Protection and Archiving and click Next.
 - Enter the name in the Storage Policy Name box and click Next.
 - From the Library list, click the name of a disk library to which the primary copy should be associated and then click Next.
 Ensure that you select a library attached to a MediaAgent operating in the current release.
 - From the MediaAgent list, click the name of a MediaAgent that will be used to create the primary copy and then click Next.
 - For the device streams and the retention criteria information, click **Next** to accept default values.
 - Select **Yes** to enable deduplication for the primary copy.
 - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.
 - Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
 - Review the details and click **Finish** to create the Storage Policy.

SKIP THIS SECTION IF NOT USING SOLARIS.

Click Next > to Continue.

1.

ENABLE SNAPPROTECT BACKUPS ON SOLARIS ZONE

Follow the steps given below to enable SnapProtect backups on each of the non-global zone clients containing the application data.

- From the CommCell Console, navigate to Client Computers | < Client >.
- Right-click the client and select **Properties**.

- 2. Click Advanced tab.
 - Select the Global Zone host name from the drop-down list.
 - Click OK.
 - We support disks on a global zone mounted using loopback File System on a non global zone.
 - This option need not be enabled if you are using a NFS share. This is because when using NFS mount paths, the operations are limited to the non-global zone and does not use the global zone.

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🛞 🗛 Client Computer Groups	What's new?
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⊕ DA I All Tasks ▶	Laptop Backup Agent to protect data on laptops and desktops used in remote offices and outside of a domain
B C murr Yen	network. Backups can be performed seamlessly using automatic schedules based on network connectivity or
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Policies Reports	Job Controller ×
Content Director	Abb Controller
	FL Job ID Operation Client Co Agent Type Subclient Job Type Phase Storage MediaAgent
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🖻 Agents	113 07/21/2010 11:02:02 EVMgrS murphy 35:254 User [admin] has logged on. 110 07/21/2010 10:39:30 EvMorS murphy 35:254 User [admin] has logged on.
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 Repeat the above steps on all the non-global zone clients containing the application data.

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy**.

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🛆 CommCell Browser 🛛 🖓	Storage_Snap × What's new? ×
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	Info 07/21/2010 11:03:04 EvMgr5 murphy 35:255 User [admin] has logged off. Info 07/21/2010 11:02:02 EvMgr5 murphy 35:254 User [admin] has logged on.
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- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the <storage policy> and click Properties.

Next >

i File Yew Tools Windows Help 😥 🌄 🛂 🔩 🔛 📠 🖼 🎲 - 🔐 🚺 🥝 Police-Copy Type Primary Primary Snap ent Default Drive ... Scratch Pool Ret N/A N/A Infin N/A N/A Infin Defauk Library Mediało Magnetic_01 murphy Magnetic_01 murphy 🖽 Content 🖪 Summary 3ab Controller × 🔽 Job Controller FL., Job ID Operation Client Co... Agent Type Subclient Job Type Phase Storage... Med II Pause Playing Running: 0 Pending: 0 Waiting: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 Hig 😥 Event V 😥 Event Vene Job. Description
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 User [admin] has logged on. 125 118 117 116 113 110 107 Storage Policy Properties: Storage_policy01 General Copy Precedence Associated Subclient Snapshot Security Advanced Enable Backup Copy 2 Snapshots Created On and After Mon 07/19/2010 Defer Backup Copy for 0 day(s) Selection Rule All Backups Choose the Backup Selection Rule: Advanced 3 (ок Cancel Help < Previous Next >

- Click the **Snapshot** tab.
 - Select Enable Backup Copy option to enable movement of snapshots to media.
 - Click OK.

Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY	
3PAR	DATA REPLICATOR	
DELL COMPELLENT		
DELL EQUALLOGIC		
EMC CLARIION, VNX		
EMC SYMMETRIX		
FUJITSU ETERNUS DX		
HITACHI DATA SYSTEMS		
HP EVA		
IBM SVC		
IBM XIV		
LSI		
ΝΕΤΑΡΡ		
NETAPP WITH SNAPVAULT/SNAPMIRROR		

Previous Next >>

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		Del	ete
172.19.66.69	10881	system	HDS			

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemen	t 🔀
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN		8 Byte WWN
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1	User Name		
4	Password		
	Confirm Password		
5	Device Group		
6	Use devices only	r from this device group	
	Description		
	ОК	Cancel Help	
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SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

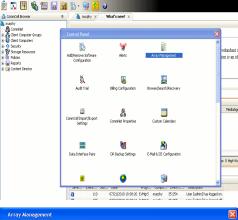
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - o Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			Delete
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snap
172 19 71 26	MN1963C	admin	TRM VIV		×	LISC DITOP

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🛛 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
ОК	Cancel Help	
EQUALLOGIC	Account: gradan - Logged in 4789	
Group autia Group Configuration Group Adding Summary General Settings Group neares autin Possess : 172:19.662	General Administration Notifications ISCSI SNMP VDS/VSS Defaults Advanced	
Produces: 172:19.60.2 Administration Access Web access: enabled Tehristocom: emailed SSH access: emailed	Conception Passing Lucition	
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Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group 6 Use devices only	Data and Yee The and Yee	

For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

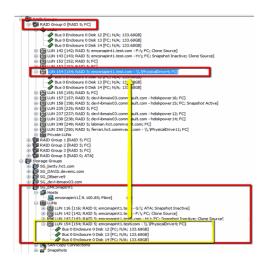
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- Select EMC CLARIION from the Snap Vendor list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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172 19 71 26	MN1963C	admin	TRM VIV		~	List bridge

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Quick Start Guide - SnapProtect

Array Manageme	nt 🛛 🔀	3
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Confirm Password)
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Use devices only	y from this device group	
Description		
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	< Previous	Next >

SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

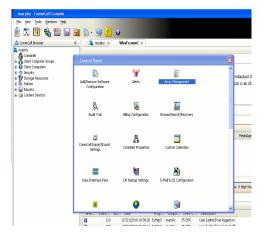
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

172.19.125.226 6000279 a 172.19.66.91 APM0003340 a		Edit
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172.19.66.69 10881 s	100 LIDE	list Snaps
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2 Name		\supset
Control Host		
User Name		
Password		
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Device Group		
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Description		
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SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

 $\circ~$ COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

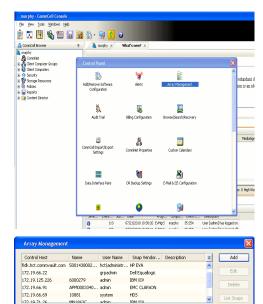
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	serial numb	er for the
HDS storage device.					

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the $\ensuremath{\textbf{Description}}$ field to enter a description about the entity. This description • can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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Snap Vendor	HDS		*	
Name				
3 Control Host				
User Name			\equiv	
4 Password				
Confirm Password)	
5 Device Group				
6 🗍 Use devices only	y from this	s device group	(
Description				
ОК	Car	ncel Help		
		(•	Previous	Nex

Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous) Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

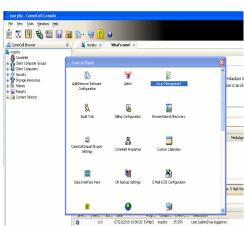
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN11963C	admin	TRM VIV		~	List bridps

Array Managemer	ıt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

EVA Storage Network EVA30 Constraints EVA30 Constraints EVA30 Constraints Con	Save changes System options General Status Summary Marrie: EVA440 Node WWW: 6001-4380-0250-EB70 UUID: 6005-08140002-0000
Array Management Snap Vendor HP EV Name	
3 Control Host	
4 Password Confirm Password	
5 Device Group	nis device group
Description	
ок с	ancel Help
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SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

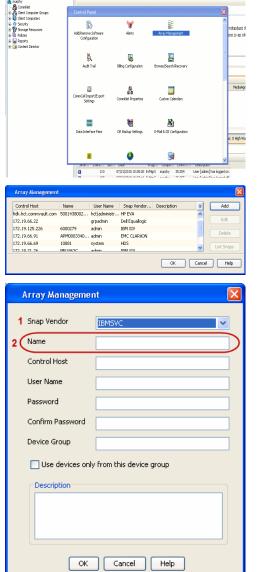
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the **Name** field.



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What's new? >

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The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- Enter the Management IP address or host name of the array in the Control Host field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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呐		io_grp0	Info Manage				
	lo internet	node1	General				
		ibmnode2	Name 1D	ibmcluster1 00000200634	Incess		
		io_grp1	Location	Local	0/02598		
1994			Capacity				
		io_grp2	Total MDisk Capacity	7.5 TB			
			Space in MDisk Groups				
			Space Allocated to Volumes	3.9 TB			
D.		io_grp3	Total Free Space Total Volume Capacity	3.7 TB 4.8 TB			
9			Total Volume Copy Capacity	4.8 TB			
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

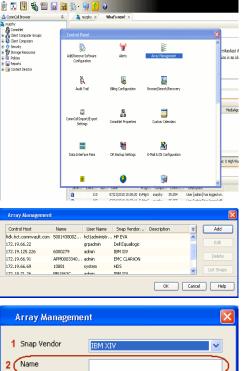
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Array Managemer	it 🛛 🔀
1 Snap Vendor	IBM XIV
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	r from this device group
Description	
ОК	Cancel Help

The ${\bf System \ ID}\ ({\bf S}/{\bf N})$ is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
 X

 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
1	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous) Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

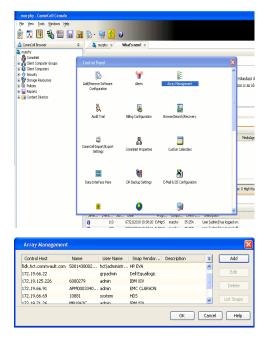
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

1 Snap Vendor	
 Shap verider 	L5I 🗸
Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help
_nas_lsi - Storage Subsystem Profile	
🗈 Summary 🖉 Controllers 📭 Arrays 👘 L	ogical Drives 🔋 Drives 🔁 Drive Channels 👔 Enclosures 🚺 Mappings 🔠 Al
Controller enclosure audible alarm:	Enabled
NVSRAM configured for batteries: Start cache flushing at (in percentage Stop cache flushing at (in percentage Cache block size (in KB):	Yes ye]: 80 4
Media scan frequency (in days): Failover alert delay (in minutes):	Dismbled 5
Feature enable identifier: Feature pack: Feature pack submodel ID:	3030353134203030373931204 87F45A7 Generic 130
Storage Subsystem world-wide identifi	er (ID): 60080E500017FA8000000004E7F45A4
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dt E	Sage As Open type
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Array Managemer Snap Vendor Name	ıt 🔀
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Array Managemen Snap Vendor Name 3 Control Host User Name	ıt 🔀
Array Managemen Snap Vendor Name Control Host User Name Password	ıt 🔀
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	ıt 🔀
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Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group 6 Use devices only	rt 💌
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group 6 Use devices only	rt 💌

The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

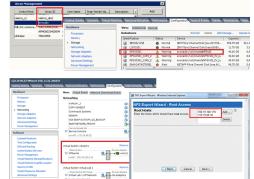
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

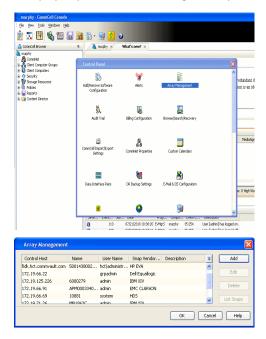
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

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Password		
Confirm Password		
Device Group		
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Description		
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

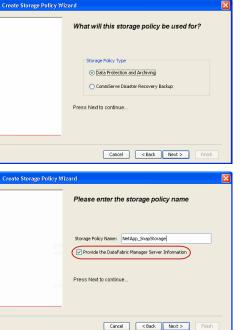
4.

3.

• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



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Create Storage Policy Wiz	ard 🛛 🔀
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	Cancel CBack Next > Finish

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

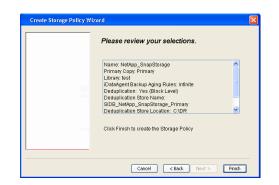
9.	٠	Provide the DataFabric Manager server information.
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- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wizard	Ì
Please select a MediaAgent for this copy	
MediaAgent: dhaval-2008	
Press Next to continue	
Cancel Cancel Next > Frish	
Please enter the streams and retention	
criteria for this policy Number of Device Streams:	
Choose the Primary Copy's Aging Rules:	L
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Cancel < Back Next > Frish	
Create Storage Policy Wizard	
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Enable Client Side Deduplication No	L
Press Next to continue	L
Cancel Cancel Next > Frich	
Create Storage Policy Wizard 🛛 🔀	
Please specify the location to store the Deduplication Store	
Name: SIDB_HetApp_SnapStor	
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Create Storage Policy Wizard	
Please select/add the new DataFabric Manager information?	
DataFabric Manager:	
Select hwinapp02	
Host Name: verus Jose Name: ddmin	
Password:	

10. Click Finish.

Cancel < Back Next > Finish

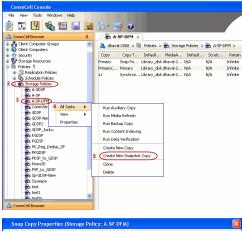


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thursdoor (Copy Source for Auxiliary Copy: Inimary Source Copy Source for Auxiliary Copy: Inimary Copy Source for Auxiliary Copy: Inimary Copy Convert Copy Copy Convert Copy Copy
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_SpaceStatus:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

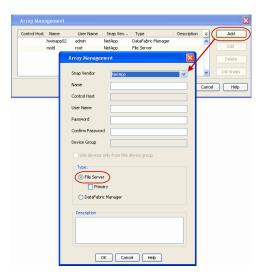
Page	191	of 520

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SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Data Replicator

< Previous) Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to **<Client>** | **<Agent>**.
 - Right-click the subclient and click **Properties**.
- Click the SnapProtect Operations tab.
 - Ensure **Data Replicator** is selected from the **Available Snap Engine** drop-down list.
 - Click OK.

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Getting Started Backup - Oracle iDataAgent

Previous Next >

- From the CommCell Browser, navigate to Client Computers | <Client> | Oracle | <Instance>.
 - Right-click the default subclient and click Backup.
- 2. Click Full as backup type and then click Immediate.
 - Click OK.

1.

- 3. You can track the progress of the job from the **Job Controller** window of the CommCell console.
- 4. Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.
- 5. Click OK.

- 6. Right-click the job to:
 - Browse the database that was backed up.
 - View RMAN Logs.
 - Resubmit the job.
 - View job details.
 - View media associated with the job.
 - View events associated with the job.
 - View or send the log file that is associated with the job.

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Getting Started - Vault/Mirror Copy

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Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> • Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

Previous Next >

Getting Started - Snap Movement to Media

< Previous Next 🕨

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Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

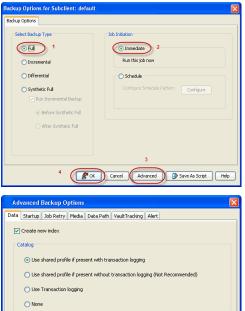
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

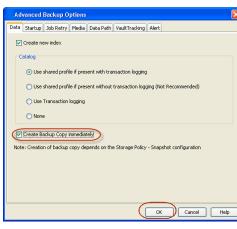
Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- 1. • From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup**.
 - Select Full as backup type.
 - Click Advanced.



- 2. • Select Create Backup Copy immediately to create a backup copy.
 - Click OK.



OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the <storage policy> and click All Tasks | Run Backup Copy.

Quick Start Guide - SnapProtect

2. Click **OK**.

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Getting Started - Oracle Restore



PERFORM A RESTORE

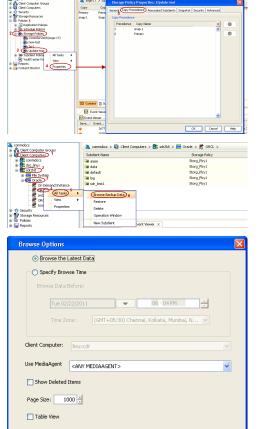
As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring a database.

- From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.
 - From the CommCell Browser, navigate to Client Computers | <Client> | Oracle.
 - Right-click the *<Instance>*, point to **All Tasks**, and then click **Browse Backup Data**.
- 3. Click OK.

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- In the right pane of the Browse window, click the <*Instance*> and select all the entities.
 - Click Recover All Selected.
 - Select the Use Snap Restore checkbox.
 - If you are restoring from a backup copy, clear the checkbox.
 - Click Advanced.

Verify that the Status of the database is displayed as STARTED; if necessary click the **Refresh** button to refresh the status.

• Click the **Options** tab.

- In the **Reset Logs** box, select **None**.
- Select the Switch Database mode for Restore checkbox.
- Click OK.

7. Click OK.

7. You can monitor the progress of the restore job in the **Job Controller**.

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- Once the database is restored, verify that the restored database and log files are available in the original location.

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CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

< Previous (Next >

Getting Started - Microsoft SQL Server Deployment



WHERE TO INSTALL

Install the software on a computer on which SQL Server resides.

BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

SnapProtect Support - Platforms

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE MICROSOFT SQL SERVER /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

- 1. Log on to the client computer as Administrator or as a member of the Administrator group on that computer.
- 2. Run Setup.exe from the Software Installation Package.

If you are installing on Windows Server Core editions, navigate to Software Installation Package through command line, and then run **Setup.exe**.

3. Select the required language.

Click Next.

	Select the language you will use during installation. English (United States)
	Next> Cancel
h	
	 View documentation website View Install Quick Start Guide (Requires Adobe Acrobat Reader) Install Adobe Acrobat Reader Exit
	Installer
	License Agreement Please read the following License Agreement. Press the PAGE DOWN key to view the entire agreement.
	End User License and Limited Warranty Agreement
	Software Release 9.0.0 (including Microsoft® SQL Server™ 2008 Enterprise Edition, SQL Server™
	2008 Express Edition and Windows Pre-Installation Environment
	I accept the terms in the license agreement.
	C I do not accept the terms in the license agreement.
	Installer
	<back next=""> Cancel</back>

4. Select the option to install software on this computer.

The options that appear on this screen depend on the computer in which the software is being installed.

5. Select I accept the terms in the license agreement. Click Next.

6. • Expand Client Modules | Backup & Recovery | Database and select SQL Server *i*DataAgent.

- Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
- Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
- Click Next.

7. If this computer and the CommServe is separated by a firewall, select the **Configure firewall services** option and then click **Next**.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click Next.

8.	Enter the fully qualified domain name of the $\ensuremath{\textbf{CommServe Host Name}}.$
	Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

9. Click Next.

nstaller	×
Select Platforms Select the platforms ye	ou want to configure.
ocicer the platoints y	e ven to compare.
	erve Modules description of the pattorn and reactor will in ay be disabled. gent Modules disabled. Jest Modules disabled. Jest Space Disk
Install Agents for Re	store Only < Back Next > Cancel
nstaller	X
Firewall Configura Configure firewall serv	ation
If there is a firewall be	tween this machine and the CommServe, configure firewall services below.
Configure firewall	
C CommServe can	Windows Frewall is limiting network traffic. Whether it is possible to open e to a CommServe's turnel port, whether all connections toward cked, and setup should instead expect CommServe to connect back to this there is a Prov in between. I open connection to CommServe on turnel port open connection toward this machine schable only through a proxy
Installer	
	Next > Cancel
Installer CommServe Name Specify the CommServen name	e e computer name and host
CommServe Name Specify the CommServe name CommServe (Enter a vail	e computer name and host Client Name
CommServe Namu Specify the CommSer name CommServe [Enters a vali mycomputer	e computer name and host Client Name Host Name (Julig-qualified, IP host name; for example:
CommServe Namu Specify the CommServe CommServe CommServe CommServe (Enter a vali mycomputer (Inter a vali mycomputer Installer	e computer name and host Client Name Host Name 5. fully-qualified, IP host name; for example: mycompany.com)
CommServe Namu Specify the CommServe CommServe CommServe CommServe CommServe (Enter a sval mycomputer (Installer	e re computer name and host Client Name Host Name (A) (A) qualified. (P host name; for example: mycompany.com rmycompany.com (Back Next > Cancel
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10. Select Add programs to the Windows Firewall Exclusion List, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

11. Click Next.	
-----------------	--

It is recommended to select the **Download latest update pack(s)** option to automatically install the available updates during installation.

12. Verify the default location for software installation.

Click $\ensuremath{\textbf{Browse}}$ to change the default location.

Click Next.

- Do not install the software to a mapped network drive.
- Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

13. Select a Client Group from the list.

Click Next.

This screen will be displayed if Client Groups are configured in the CommCell Console.

Installer
Windows Firewall Exclusion List
Allow programs to communicate through Windows Firewall
Windows Firewall is ON
I Add programs to the Windows Firewall Exclusion List
If you plan on using Windows Firewall, it is recommended to add the software programs to the exclusion list.
Installer Cancel
Installer
Download and Install Latest Update Packs Download and Install the latest service pack and post pack from the software provider website.
Download latest update pack(s) Make sure you have internet connectivity at this time. This process may take some time depending on download speed.
Installer Kasck Next> Cancel
Installer S
Installer Destination Folder Select the destination folder to install the program files.
Destination Folder
Destination Folder Select the destination folder to install the program files. Click Next to accept the default location, or click Browse to choose an alternate location.
Destination Folder Select the destination folder to install the program files. Elick Next to accept the default location, or click Browse to choose an alternate location. Destination Folder
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Destination Folder Select the destination folder to install the program files. Click Next to accept the default location, or click Browse to choose an alternate location. Destination Folder Destination Folder Browse Drive List Space Required / Recommended 1394 MB / 1670 MB Installer Ket
Destination Folder Select the destination folder to install the program files. Click Next to accept the default location, or click Browse to choose an alternate location. Destination Folder Destination Folder Destination Folder Drive List Drive List Installer
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14. Click Next.

15. Select Yes to stop Removable Storage Services on the MediaAgent. Click Next.

This prompt will not appear if Removable Storage Services are already disabled on the computer. $% \left({{{\left({{{{\bf{n}}}} \right)}_{i}}}_{i}} \right)$

16. Click Next.

17. Select a Storage Policy. Click Next.

18. Click Next.

When **Auto Discover Instances** is enabled, new instances are automatically discovered every 24 hours.

Installer	
Schedule Install of A Choose when you want to downloaded updates.	
🔽 Schedule Install of	Automatic Updates
C Once	
	Time: 08:31:12 PM
Weekly	Monday C Tuesday
	C Wednesday C Thursday
	C Friday C Saturday
	C Sunday
Installer —	< Back Next > Cancel
Installer Removable Storage The Removable Storage disabled	Service service must be stopped and
The Removable Stora functioning of the Med	e service must be stopped and disabled. This is required for correct aAgent.
	- nd disable the Removable Storage service?
 Yes, stop and disa 	le the Removable Storage Service
C No, I am using Rer	novable Storage Manager (RSM)
Installer –	
	< Back Next > Cancel
Installer	×
Installer Select Global Filter (Select the Global Filter Op	
Select Global Filter (Select the Global Filter Op Global Filters provides the	
Select Global Filter (Select the Global Filter Op Global Filters provides the protection operations on	tions for the Agent. • ability to set exclusions within a CommCell to filter out data from data all agents of a certain type.
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19. Click Next.

20. Click Next.

21. Click Finish.

aller			X
Auto Discovery Option			
ct auto discovery option for SQL			
Auto discover instances			
Auto discover instances			
Installer			
Thistalion	< Back	Next >	Cancel
		- Hom >	
ler			
mary			
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Setup has enough information to sta install settings, click Next to begin c	rt copying the prog opying files.	ram files. If you are sa	atisfied with the
The following software will be installe	ed :		^
+ MediaAgent + Windows File Sustem iDa			
+ SQL Server iDataAgent + VSS Provider	na igoin		
Destination Path = C:\Program Files CommServe Host = mycomputer.my	company.com		
Interface Name = audi.mycompany. Client =audi	com		T
Job Results Path = C:\Program File:	sVobResults		~
<			>
Installer	< Back	Next>	Cancel
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Getting Started - Microsoft SQL Server Configuration

< Previous Next >

PRE-REQUISITES

- Prior to performing a SnapProtect backup, ensure that all the available hotfixes for Virtual Disk Service (VDS) and VSS are applied.
- When performing SnapProtect backup for a Windows Cluster, a proxy server must be used for performing backup and restore operations.
- SnapProtect backup on Windows supports basic disks.

CONFIGURATION

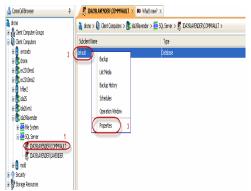
1.

Once the SQL Server *i*DataAgent has been installed, a SQL Server instance is automatically created. The following section provides the necessary steps required to associate a database to the subclient to perform your first SnapProtect backup.

- From the CommCell Browser, navigate to Client Computers | < Client>.
 - Right-click the client and select Properties.

- Click on the **Advanced** tab.
 - Select the Enable SnapProtect option to enable SnapProtect backup for the client.
 - Click OK.

aptop Backup Laptop Backt network, Bac Job Controller 🔍 Job Controller FL...] Job ID Operation Client Co.... Agent Type Subclient Job Type Phase Storage II Pause Pla Eveni nurphy nurphy Groups Firewall Configuration Network Throttling Poli ontent Indexing Registry Key Settings Client Side Deduplicat Job Conf Browse Enable SnapProtect Enable retry or Retry Frequency (s 30 ÷ Retry Count 40 ÷ OK Cancel Help



- From the CommCell Browser, navigate to <*Client*> | SQL Server.
 - Right-click the default subclient and click **Properties**.

- 4. Click the **Storage Device** tab.
 - In the **Storage Policy** box, select the storage policy name.

General Content Backup Rules Pre/Post Process	
Storage Device Activity Control Encryption Security SQL Se	ätings
1 Data Storage Policy Log Storage Policy Data Transfer Option Deduplication	
Storage Policy:	hs
Incremental Storage Policy: N/A	
Create Storage Policy	
Number of streams for data backup: $1 \frac{1}{2}$	
OK Cancel	Help

• Click the **SnapProtect Operations** tab.

5.

6.

- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select the storage array from the Available Snap Engine drop-down list.
- From the **Use Proxy** list, select the MediaAgent where SnapProtect and backup copy operations will be performed.
 - When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.
- Click **Use Separate Proxy for Snap to Tape** if you want to perform backup copy operations in a different MediaAgent.

Select the MediaAgent from the **Proxy** list.

- Select the Content tab.
 - Click **Configure** to discover and associate databases to the subclient.

General Content Backup Rules Pre/Post Process Storage Device Activity Control Encryption 1 SnapProtect Operations Security SQL Settings
2 V SnapProtect (Applicable only to Full and Differential jobs) Available Snap Engines (Please select a Snap Engine) 3
Enter Array Credentials
4 Use Proxy
Use Separate Proxy for Snap to Tape
Use source if proxy is unreachable
OK Cancel Help
Subclient Properties of default
Pre/Post Process Storage Device Activity Control Encryption Security SQL Settings General Content Backup Rules
Database List:
Total: 0 database(s).

Click Discover.

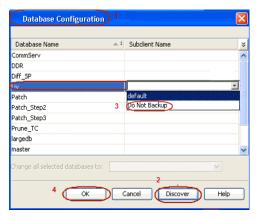
- Select a database to be backed up from the Database Name column.
- Databases that you want to exclude from backups can be assigned to **Do Not Backup** subclient. This data will never be backed up without manually initiating a backup.

You can select a range of databases and use **Change all selected databases to** drop-down list to assign a single subclient to all the databases.

Cancel He

OK

- Click OK.
- Click OK from the Subclient Properties window.



SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy.**

File Wew Tools Windows Help	
😥 🔽 🛄 🗞 🕮 🜆 🖼 A ConneCel Browser 🔹 🕫	B Storage_Seap × What's new? ×
a northy	B Storage_shap × mails new × a numbry > Policies > Storage Policies > Storage_Shap >
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2. • Enter the copy name in the **Copy Name** field.

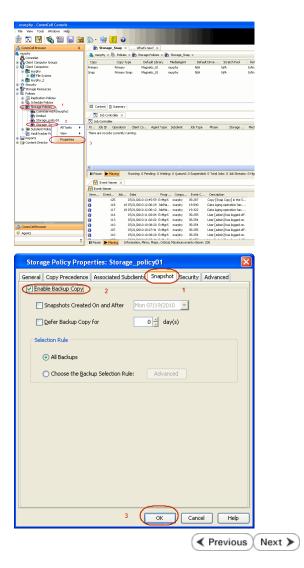
- Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
- Click OK.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

Next 🕨

- 1. From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**



- Click the **Snapshot** tab.
 - Select Enable Backup Copy option to enable movement of snapshots to media.
 - Click OK.

Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY	
3PAR	DATA REPLICATOR	
DELL COMPELLENT		
DELL EQUALLOGIC		
EMC CLARIION, VNX		
EMC SYMMETRIX		
FUJITSU ETERNUS DX		
HITACHI DATA SYSTEMS		
HP EVA		
IBM SVC		
IBM XIV		
LSI		
NETAPP		
NETAPP WITH SNAPVAULT/SNAPMIRROR		
NIMBLE		

Previous Next >>

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		Dele	te
172.19.66.69	10881	system	HDS			

What's new?

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemen	t 🔀
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
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Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

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	16 Byte WWN		8 Byte WWN
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(User Name		
4	Password		
	Confirm Password		
5	Device Group		
6 (from this device group	
	Description		
	ОК	Cancel Help	
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SnapProtect[™] Backup - Dell Compellent

< Previous (Next >

PRE-REQUISTIES

- Dell Compellent requires the Data Instant Replay license.
- Ensure that all members in the Compellent array are running firmware version Storage Center 5.5.14 and above for 5.x and 6.2.2 and above for 6.x.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select **Dell Compellent** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name and Control Host fields.

The Management IP address is also referred as the Storage Center IP address.

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What's new? >

For reference purposes, the screenshot on the right shows the Storage Center Management Console of the Dell Compellent storage device displaying the Management IP address. 4.

- DELL C ent 🔍 Vev 📫 Refresh 🕯 1.6 rties - Storage Cent , Ce of Storege Date P nim Cate Dok Sparry 245 ary C Type: 19.54 GB 2,000 1,750 1,500 1,250 Array Management Snap Vendor Dell Compellent Name Control Host User Name 4 Password Confirm Password Device Group 5 Use devices only from this device group Description OK Cancel Help Previous Next >
- Enter the user access information of the application administrator in the **Username** and **Password** fields.
- In the **Device Group** field, type none as this array does not use device groups for snapshot operations.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

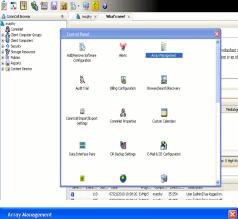
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			Delete
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snap
172 10 71 26	Mh11963C	admin	TRM VTV		×	LISC DITOP

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices on	ly from this device group	
Description		
ОК	Cancel Help	
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Group E V Group Config:	uration 🖶 🚯 🖉	
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For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

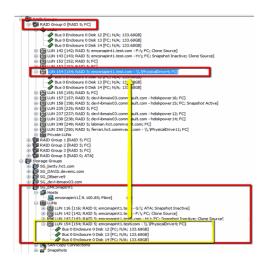
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- Select EMC CLARIION from the Snap Vendor list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN1963C	admin	TRM YTV		×	List bridge
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Quick Start Guide - SnapProtect

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SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

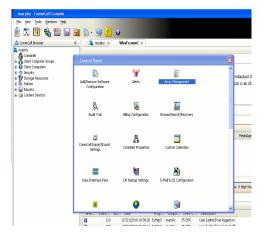
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

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1 Snap Vendor	EMC S	ymmetrix			~	
2 Name						
Control Host						
User Name						
Password						
Confirm Password						
Device Group						
Use devices only	y from th	nis device g	iroup			
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SnapProtect[™] Backup - Fujitsu ETERNUS DX

< Previous Next >

PRE-REQUISITES

- Local Copy license for Snap and Clone.
- Thin Provisioning license.
- Ensure that all members in the Fujitsu array are running firmware version V10L22-1000 or higher.
- Enable SMI-S on the storage array.
- Create a Host Affinity group for the proxy computer.
- If using SnapOPC, ensure to create a SDV and SDPV volumes.

CONFIGURE DESTINATION VOLUMES

- Source and destination volumes should be pre-paired before performing any snapshot operation. For EC snapshots (clone), pre-paired sessions should be in active state.
- To pre-pair source and destination volumes, install the ETERNUS SF Express Manager software version 14.2A or higher.
- Forbid Advanced Copy and Encrypted volumes are not supported.
- Depending on the type of snapshot being used, review the following for the creation of destination volumes:

FOR SNAP SNAPSHOTS

If pre-paired sessions are not available, SnapOPC snapshots use any available SDV volumes as their destination volumes. If you need to create a new SDV volume, ensure that the SDV volume is of equal size to the source volume.

FOR CLONE SNAPSHOTS

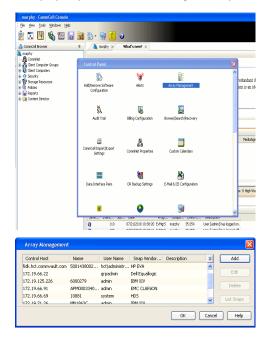
If pre-paired sessions are not available, destination volumes are automatically created for clone snapshots. If a non-existing device group is specified during array configuration in the CommCell Console, a destination volume is created based on the source volume type. However, if a valid device group is specified, the following destination volumes are created depending on the device group type:

- $\circ\,$ A Thin Provisioning volume is created if the device group is a Thin Provisioning pool.
- $\,\circ\,$ A standalone volume is created if the device group is a RAID group.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- Select Fujitsu ETERNUS from the Snap Vendor list.
 - Specify the CM IP Address of the array in the Name field.

For reference purposes,	the screenshot	on the righ	t shows t	he CM IP	Address f	or the
Fujitsu storage device.						

4.

- Enter the CM IP Address of the array in the **Control Host** field.
 - Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the RAID group or Thin Provisioning group created on the array to be used for clone operations. Device groups are not applicable for Snap snapshots.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the device group specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

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4 Pass	sword			
Con	firm Password			
5 Dev	ice Group			
6 🗐	Use devices only	from this device group	$\mathbf{>}$	
De	escription			
	ОК	Cancel He	lp	
			< Pr	revious

×

•

Array Management

Fujitsu ETERNUS

Use devices only from this device group

OK Cancel Help

1 Snap Vendor

Control Host User Name Password Confirm Password Device Group

Description

2 Name

SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

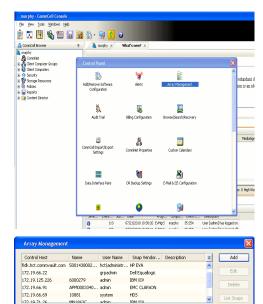
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	serial numb	er for the
HDS storage device.					

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc. •
- Click **OK** to save the information.

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Snap Vendor	HDS		v	
Name				
3 Control Host				
User Name			$ \longrightarrow $	
4 Password				
Confirm Password			J	
5 Device Group				
6 (Use devices only	/ from thi	s device group		
Description				
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Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

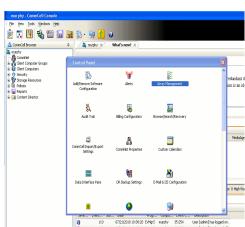
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
idk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
72.19.66.22		grpadmin	Dell Equalogic			Edit
72.19.125.226	6000279	admin	IBM XIV			
72.19.66.91	APM0003340	admin	EMC CLARIION			Delete
72.19.66.69	10881	system	HDS			List Snaps
172 19 71 26	Mb11963C	admin	TRM YTV		~	List phaps

Array Managemer	nt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

중 EVA Storage Network 중 EVA440 대 이 Virtual Disks 대 Hots 이 Disk Groups 대 Dak Replication 대 Hardware	Save changes System options General Status Summary Identrication Name: Node WVM1: 5001-4380-025D-E870 UUID: 6005-08b40002-0000
Array Management	
Snap Vendor	
	······································
Name	
3 Control Host	
User Name	
4 Password	
Confirm Password	
5 Device Group	
6 🗍 Use devices only from	this device group
Description	
ОК	Cancel Help
	<pre>Previous Next ></pre>

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

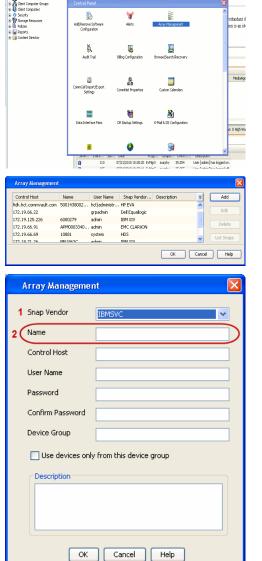
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the **Name** field.



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What's new? >

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Next 🕨

The ${\bf ID}$ is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- Enter the Management IP address or host name of the array in the Control Host field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

18M Syst	em Storage SAN Volume Controller	Wekome	superuser (6 users online)	Legal	Logout Melp IBh	к. [—]
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150			Capacity			
-01		lo_grp2	Total MDisk Capacity			
			Space in MDisk Groups			
H			Space Allocated to Volumes Total Free Space	3.9 TB 3.7 TB		
0		io_grp3	Total Volume Capacity			
Sec.			Total Volume Copy Capacity	4.8 TB		
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

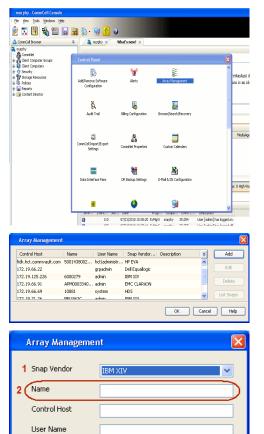
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Password Confirm Password Device Group

Description

Use devices only from this device group

OK

Cancel

Help

The System ID	(S/N)	is the	serial	number	for	the	IBM	XIV	storage	device.	See	the
screenshot on th	e right	for ref	ferenc	e.								

4.

 System Configuration
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 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

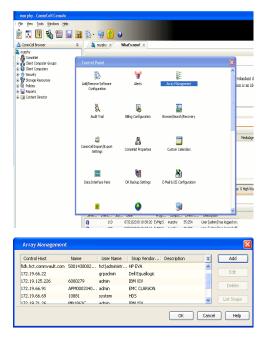
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

Array Management	3
1 Snap Vendor	
Name)
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only from this device group	
Description	
OK Cancel Help	
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Array Management	
Snap Vendor	
Name	
Control Host)
User Name	
Password	
Confirm Password	/
5 Device Group	
Use devices only from this device group	
Description	
OK Cancel Help	
Previous	

The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

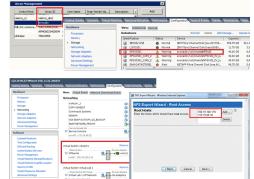
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

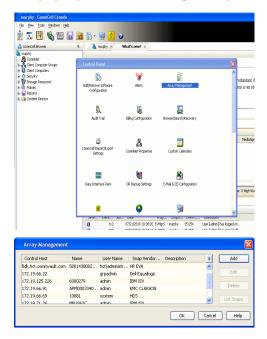
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

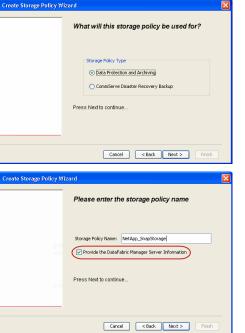
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• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



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	Please select a library to be the default library for this primary copy
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- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

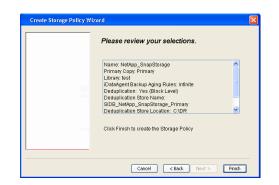
9. Provide the DataFabric Manager server infor	formation.
--	------------

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard X
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2003 💙
	Press Next to continue
	Cancel < Back Next > Finish
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	Number of Device Streams:
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	Data Archive/Compliance Archiver
	Cancel < Back Next > Finish
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	Do you want to enable Deduplication for the
	primary copy?
	• Yes
	Enable Client Side Deduplication No
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	eard 🔀
	Please specify the location to store the
	Deduplication Store
	Name: SIDB_NetApp_SnapStor Deduplication Store Location:
	MediaAgent Name dhaval-2008 💌 Location: Browse
	Press Next to continue
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	Cancel < Back Next > Finish
Create Storage Policy Wiz	
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin Password:

10. Click Finish.

Cancel < Back Next > Finish

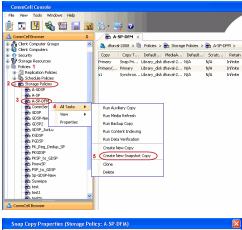


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thursdoor (Copy Source for Auxiliary Copy: Inimary Source Copy Source for Auxiliary Copy: Inimary Copy Source for Auxiliary Copy: Inimary Copy Convert Copy Copy Convert Copy Copy
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_SpaceStatus:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

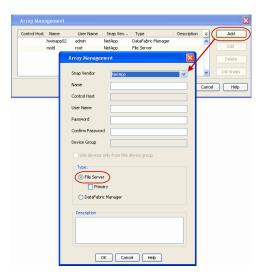
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page	243	of 520

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SEE ALSO

Import Wizard Tool

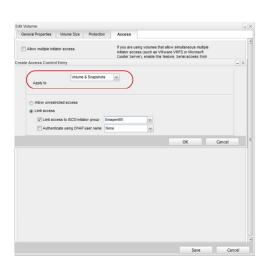
Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Nimble

PREREQUISITES

- From the Nimble storage array console, ensure that the Access Control Entry for the client initiator group is set to Volume and Snapshots.
- In case you are using a proxy computer for SnapProtect operations, add the initiator group for the proxy computer and set the **Access Control Entry** to **Snapshots Only**.
- Ensure that a temporary LUN is allocated to all ESX Servers that are used for snapshot operations.



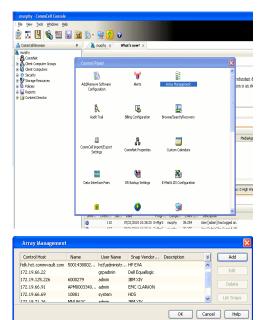
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Next >

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- **3.** Select **Nimble** from the **Snap Vendor** list.
 - Specify the Data IP Address of the array in the Name field.

If you have more than one Data IP Address configured, you will need to add the array information for each of the configured Data IP addresses.

• Enter the Management IP Address of the array in the **Control Host** field.

For reference purposes, the screenshot on the right shows the Data IP Address and
Management IP for the Nimble storage device.

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- Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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Array Managemen	x X
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Control Host	
User Name	
Password	
Confirm Password	
Device Group	
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SnapProtect[™] Backup - Data Replicator

< Previous Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to <*Client*> | <*Agent*>.
 - Right-click the subclient and click Properties.
- Click the SnapProtect Operations tab.
 - Ensure Data Replicator is selected from the Available Snap Engine drop-down

Quick Start Guide - SnapProtect

list. • Click **OK**.

SnapProtect			_
Available Snap Engines	Data Replicator	~	
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Getting Started Backup - SQL Server iDataAgent

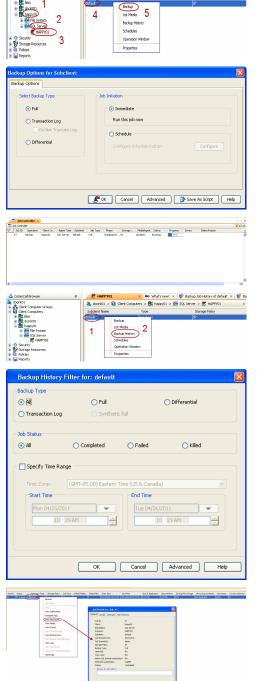
- From the CommCell Browser, navigate to Client Computers | <Client> | SQL Server | <Instance>.
 - Right-click the default subclient and click Backup.
- 2. Click Full as backup type and then click Immediate.
 - Click OK.

- **3.** You can track the progress of the job from the **Job Controller** window of the CommCell console.
- 4. Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.
- 5. Click OK.

- 6. Right-click the job to:
 - Browse the databases that were backed up.
 - View items that failed, if any, during the job.
 - Resubmit the job.
 - View job details.
 - View media associated with the job.
 - View events associated with the job.
 - View backup items (you can view the database files that were backed up e.g., .mdf, .ldf).
 - View or send the log file that is associated with the job.



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Storage Policy

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Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

< Previous Next >

Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

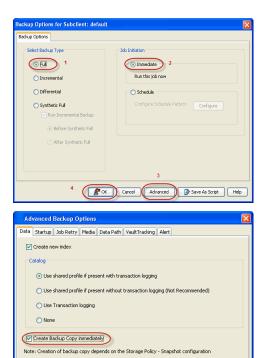
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.

OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Cancel Help

(OK

Quick Start Guide - SnapProtect

2. Click **OK**.

Copy Copy Type	Default Library	NediaAgent	Default Drive Pool	
Des Pris Primary SNAP-COPY-SNAP Primary Snap	SNAP-191-90-MAG1 SNAP-191-90-MAG1		M'A M'A	N/A N/A
Policies		110 11 10 Ju		161
ins in the second se				
21				
1 GR(vnixen) 2				
All Teeks Run Azeiliary Copy New Run Media Refresh				
Rui Peud Reifesti				
Run Content Indexing	3			
eer Run Data Verification				
Create New Copy				
Clove				
Delete				
0 E 0110				
ip Copy For SNAP				
opy Options Job Initiation				
		_		
a Storage Policy SNAP	~			
Jobs to Run :				
No of Simultaneous Jobs to run	1			
Allow Maximum				
Allow Maximum				
a				
Charle Manual Andre				
Start New Media				
Mark Media Full On Success				
I Mark Media Full On Success				
K Cancel Advanced	1 🚱	Save As S	cript	Help

Getting Started - Microsoft SQL Server Restore

Previous Next >

PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring a database to a different location on the same destination server.

- From the CommCell Console, navigate to **Policies** | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.

You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.

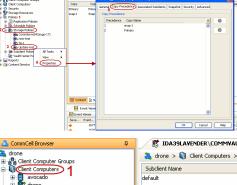
• Click OK.

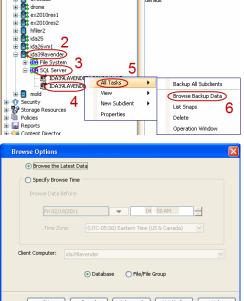
1.

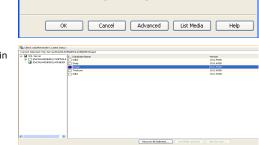
- From the CommCell Browser, navigate to Client Computers | <Client> | SQL Server.
 - Right-click the instance and then click **All Tasks | Browse Backup Data**.



- Click the instance node in the left pane. Select the database you want to restore in the right pane.
 - Click Recover All Selected.







5. Click Advanced.

6. • Click the **Options** tab.

- Rename the database name under the **Database** column.
- Change the path of the database and log files under the **Physical Path** column.
- Click OK.

	estore Options				
anced Genera	al Startup Pre/Pos	t Copy Precedence Data Path Encryption Alert	Options		
atabase	File Name	Physical Path		Size	×
ар	Snap	G:\Databases\Snap01.mdf		3 MB	^
ар	Snap_log	G:\Databases\Snap_log.ldf		2 MB	
					~

SQL Restore Options
General Job Initiation
General

Restore Types

Restore Time and Time zone

Recovery Types and UndoPath

Keep Change Data Capture

Restore Options

 Destination Server:
 IDA39LAVENDER/LAVENDER

 Source Server:
 IDA39LAVENDER/LAVENDER

 Database Name:
 Snap

 Database State:
 Normal

 O babase Restore
 Step Restore
 Recover Only

 Pork-ri-time
 Transaction Log Marks
 Partial Restore

 Latest Backup Data
 Apply Log backups only
 Skip Full Backup

~

~

Restore Time: Friday, February 18, 2011 4:49:43 PM FULL

Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Recovery O Norecovery O Stand by

Unconditionally overwrite existing database or files
 Leave Database in DBO use only state



- Select a Windows MediaAgent from the **Use MediaAgent** drop-down list.
- Click OK.

7.

Advanced Bestare Options

Advanced General Statup Prepost Copy Precedence DMA PMh [Provption] Alert Options

(See Medagent WWWEGKARDED)

Use bitrary CANY LEBARYS
Use Draw Pool

CANY CENE POOL

Use Proxy

CC Cancel Melo

8. Click OK.

General			
Destination Server:	IDA39LAVENDER \LAVENDER	~	
Source Server: Database Name: Database State:	IDA39LAVENDER\LAVENDER Snap Normal		
Restore Types			
📀 Database Rest	ore 🔿 Step Restore	O Recover Only	
🔲 Point-in-time	Transaction Log Marks	Partial Restore	
Latest Backup	Data Apply Log backups only	Skip Full Backup	
Restore Time and Tim	e zone		
Restore Time:	Friday, February 18, 2011 4:49:43 PM	IFULL	
Time Zone: (UTC-05:00) Eastern Time (US & Canada)			
Recovery Types and I	JndoPath		
	JndoPath Norecovery Stand by	Browse	
Recovery			
Recovery Undo File Path: Restore Options			
Recovery Undo File Path: Restore Options Unconditionally	Norecovery Stand by		
Recovery Undo File Path: Restore Options Unconditionally	Norecovery Stand by Overwrite existing database or files oin DBO use only state		
Recovery Undo File Path: Restore Options Unconditionally Leave Databas	Norecovery Stand by Overwrite existing database or Files in DBO use only state atlon Settings		
Recovery Undo File Path: Restore Options Unconditionally Leave Databas Preserve Replin	Norecovery Stand by Overwrite existing database or Files in DBO use only state atlon Settings		

9. You can monitor the progress of the restore job in the **Job Controller**.

10. The database and the log files are restored to the location specified in step 6.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

< Previous Next >

Getting Started - NAS Configuration

Previous Next >

PRE-REQUISITES

- Prior to performing a SnapProtect backup, ensure that all the available hotfixes for Virtual Disk Service (VDS) and VSS are applied.
- When performing SnapProtect backup for a Windows Cluster, a proxy server must be used for performing backup and restore operations.
- SnapProtect backup on Windows supports basic disks.

CONFIGURATION

The software for the NAS iDataAgent is installed automatically as part of the MediaAgent installation. However, the client is not automatically created in the CommCell Console.

Follow the steps given below to create and configure the NAS client for a first SnapProtect backup. If the data you want to backup resides on a vFiler, configure the vFiler as the NAS client.

From the CommCell Browser, right-click the Client Computers node and click New 1. Client.

- 2. • Select NAS Client from the drop-down list.
 - Click OK.
- з.

• Provide the File Server details to add the NDMP Server.

For any ONTAP version, do not provide the host name or IP address of the management port (e.g., eOM). Use the host name or IP address of a data port (e.g., eOA, eOB).

- Click Detect.
- Click OK.

A new client is created and listed under the Client Computers node. The default subclient is created automatically.

> Any NAS storage device that will be used for backing up secondary storage data (Vault, Mirror or backup copy) must be configured as a NAS Client in the CommCell with the same name that is used by the DFM server to communicate to the secondary NAS file server.

From the CommCell Browser, right-click the NAS client just created and select 4. Properties.

begasus	👌 pegasus > 🚺 Cle	nt Computers >		
Client Computer Groups	Client Name	OS Version	Platform	Product Version
B hiler1 2 New Client	hfler1	Data ONTAP 7.3.5RC1		9.0.0(BUILD91)
	🚉 pegasus	Windows Server (R) 200	Win32	9.0.0(BUILD91)
i i i mnu2 kojar Ukr j Storty V Storty i St	Contert D Summar	Windows Y		9.0.0(800091)
		Running: 0 Pending: 0 W	aiting: 0 Queued: 0 Susper	ded: 0 Total Jobs: 0 Job Stre
Add New Clie Select Client: OK	NASIO	lient Incel	Help	
Add NDMP Server				X
NDMP Server Hostname:	hfiler1			
NDMP Login:	root			
NDMP Password:	****			
Change Password				
Vendor:				
Firmware Revision:				
Listen Port:	100	00 -		

Detect

OK

Cancel

Client Computers ×

Laptop Backup Laptop Back network. Ba on startup 🗔 Job Controller > 💫 Job Controller FL... Job ID Operation Client Co... Agent Type Subclient Job Type Phase Storage ... MediaAgent II Pause Playing Running: 0 Pending: 0 Walting: 0 Cusued: 0 Sue ded: O Total Jobs: O Job Streams: O High Water Event ' JobMa EvMgr: nurphy nurphy **Client Computer Prop** х General Security Activity Control Groups Content Indexing Client Side Deduplication Network Throttling Job Configuration Encryption Enable SnapProtect OK Cancel Help 4 ⊳ 8 💣 defe iset × 🐛 pegesus > 👔 Clerit Computers > 🔒 Hiller1 > 🚾 NetApp NAS NDMP > 💣 defaultBackupSet > Browse Badup Data List Media Find Backup Histor

🗄 Content 🔮 Summary

Job ID Operation Clerit Con... Agent Type Subclerit Job Type Phase Storage P... Ner

II Pause Playing Running: Pending: Walting: Queued: Suspended: Tota

- Click on the Advanced tab.
 - Select the Enable SnapProtect option to enable SnapProtect backup for the
 - client. • Click **OK**.

- From the CommCell Browser, right-click the subclient.
 - Click Properties.

- 7. Click the **Storage Device** tab.
 - In the **Storage Policy** box, select the storage policy name.

Subclient Properties of default	×
General Content Filters Pre/Post Proce Storage Device Encryption SnapPro	ss Security tect Operations
Data Storage Policy Data Transfer Option	
Storage Policy:	
NetApp_SnapStorage	Data Paths
Incremental Storage Policy: N/A	
	Data Paths
Create Storage Policy	
ОК Са	ncel Help
Subclient Properties of default	×
Constant I contact I clinate I publication	and Company 1

8. • Click the SnapProtect Operations tab.

- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select NetApp from the Available Snap Engine drop-down list.

Subclient Properties of default
General Content Filters Pre/Post Process Security Storage Device Encryption 1 Storage Protect Operations
2 SnapProtect 3
Available Snap Engines
Enter Array Credentials
OK Cancel Help

9. • Click the **Content** tab.

• Click **Browse** and specify the content for the subclient.

It is recommended that you add full volume as the sublcient content and not a sub directory or a qtree.

• Click OK.

The subclient content must contain data that resides on the storage device volume; do not include local drives as subclient content. If you added a vFiler as a client, do not include the root volume.

Subclient Properties of test	2
Storage Device Encryption SnapProte General Content Filters Pre/Post Process	ct Operations ; Security
Contents of subclient:	
/vol/duncan_vol2	Delete
	Browse
Backup Content Path:	Add
/	
Case Sensitive	
OK Can	el Help

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

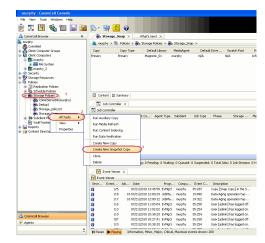
1.

CREATE A SNAPSHOT COPY

Next 🕨

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy.**



- **2.** Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

Selective Copy General Retention	Associations Copy Policy	Advance Data Paths	d Dedupli Data Path Config	
Copy Information				_
Copy <u>N</u> ame:) :
Primary Copy				
Default Index Destina	tion			
Library:				~
MediaAgent:				*
Drive Pool:				*
Scratch Pool:				*
3				

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

2	
~ .	

1.

- Click the **Snapshot** tab.
- Select Enable Backup Copy option to enable movement of snapshots to media.

• Click OK.

ile view Tools Windows Help	
2 🖸 🖳 🗞 🕮 🔝 🗃	
CommCell Browser Q murphy	Borage_Snap × What's new? × Barage Storage_Snap > Barage Storage_Snap >
CommNet Client Computer Groups Client Computers	Copy Copy Type Default Library Media/gent Default Drive Scretch Pool Ret
Clerk Computers	Primary Primary Nagnetic_01 murphy N/A N/A Infin Snap Primary Snap Nagnetic_01 murphy N/A N/A Infin
R nurphy R M File System R M rurphy_2	snap Primary Snap Magnetic_01 marphy N/A N/A Infin
Security	
9 Security 9 Storage Resources 1 Policies	
Replication Policies Schedule Policies	
CommServeDR(murphy)	Content @ Summary
eta ConniServeDR(murphy) eta Dedupi eta Storage policy01 2	Job Controller ×
- M Subclent Police Al Tasks	FL., Job ID Operation Client Co Agent Type Subclient Job Type Phase Storage Med
Reports Properties	There are no jobs currently running.
Content Director	3
	Russe Playing Running: 0 Pending: 0 Wating: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 Hig
	Event Verwer X
	Event Wewer
	Serve Event Job Date Progr Comput Event C Description 125 07/21/2010 13:45:59 EvMgr.S murphy 35:287 Copy [Snap Copy] in the S
	118 18 07/21/2010 12:00:29 326Mail murphy 19:040 Data Aging operation has 117 18 07/21/2010 12:00:12 366Mail murphy 19:322 Data Aging operation has
	116 07/21/2010 11:03:04 EvMgrS murphy 35:255 User [admin] has logged off.
nriCel Browser	113 07/21/2010 11:02:02 EvMgrS murphy 35:254 User [admin] has logged on. 110 07/21/2010 10:38:20 EvMgrS murphy 35:254 User [admin] has logged on.
13	107 07/21/2010 10:27*41 EvMgr S murphy 35:255 User [admin] has logged off. 110 07/21/2010 10:38:20 EvMgr S murphy 35:254 User [admin] has logged off.
:	II Pause Baying Information, Minor, Najor, Critical, Maximum events shown: 200
Storage Policy Pro	perties: Storage_policy01
eneral Copy Precedenc	e Associated Subclients Snapshot Security Advanced
🗹 Enable Backup Copy	2 1
Snapshots Creat	ed On and After Mon 07/19/2010 👻
Defer Backup Co	py for 0 🚽 day(s)
Selection Rule	
All Dealers	
 All Backups 	
Choose the B	ackup Selection Rule: Advanced
Choose the Be	Mavailed
	3 OK Cancel Help
	Previous)

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

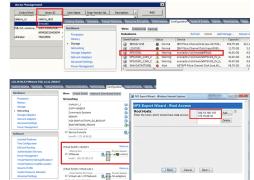
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

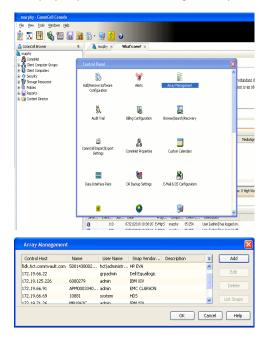
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NetApp	
Name	MetApp	
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
ОК	Cancel Help	
	(🗸 🛙	Previous

SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

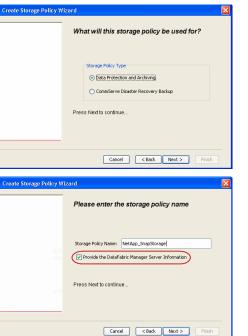
4.

3.

• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

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New Storage Policy 3 New Global Deduplication

Subclient As

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 Image Policies
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A-SP A-SP A-SP-DFM CommSer...

PGDSP
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Type Global Dedupli. Standard Standard

Disaster Ri Global Ded Global Ded Global Ded

Slobal Dedupli

obal Ded

Global De Standard

Standard Standard

Standard Standard No. of Streams No. of

Create Storage Policy Wiz	eard	×
	Please select a library to be the default library for this primary copy	
22	Library: test	
LEVE	Press Next to continue	
	Cancel <back next=""> Finish</back>	

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

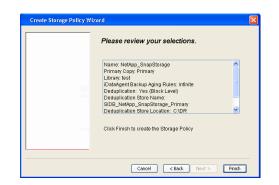
9.	٠	Provide the DataFabric Manager server information.
----	---	--

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard 🔀
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2008
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wi	
	Please enter the streams and retention criteria for this policy
	Number of Device Streams:
	DataAgent Backup data ✓ Infinite/ 15 ± Days 2 ± Cycles
	Retain by Jobs 24
	Data Archive/Compliance Archiver
	Cancel < Back Next > Finish
Create Storage Policy Wiz	
	Do you want to enable Deduplication for the primary copy?
	Deduplication ③ Yes
	Enable Client Side Deduplication
	No Press Next to continue
	Press Nex to Commuce
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🛛 🔀
	Please specify the location to store the Deduplication Store
	Name: SIDB_NetApp_SnapStor
	Deduplication Store Location: MediaAgent Name dhaval-2008
	Location: Browse
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wi	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin Password:

10. Click Finish.

Cancel < Back Next > Finish

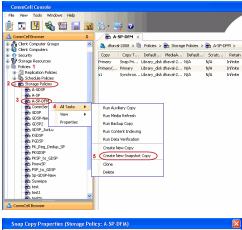


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

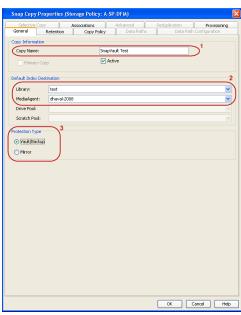
After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.



- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thursdoor (Copy Source for Auxiliary Copy: Inimary Source Copy Source for Auxiliary Copy: Inimary Copy Source for Auxiliary Copy: Inimary Copy Convert Copy Copy Convert Copy Copy
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_SpaceStatus:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

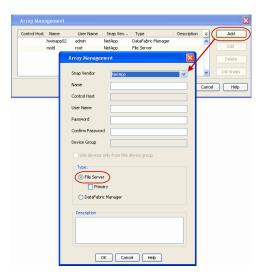
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page 269 of 520)

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CommCett Console
File View Tools Windows Help



SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

Getting Started - NAS iDataAgent Backup

- From the CommCell Console, navigate to <*Client*> | <*File Server*> NAS NDMP | defaultBackupSet.
 - Right-click the Subclient and click Backup.

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OK Cancel Advanced Help

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• Select **Full** as backup type.

If you are backing up vFiler data and the physical file server (where the vFiler resides) has not been specified in Array Management, click **Advanced**. From the **Advanced Backup Options** dialog box, click the **Skip Catalog phase for SnapProtect** option as indexing is not supported for vFiler backups.

- Click OK.
- **3.** You can track the progress of the job from the **Job Controller** window.
- Once job is complete, view the details of job from the Job History.
 Right-click the client computer, click View | Job History.

5. Click OK.

- 6. Right-click the job to:
 - Browse the NAS data that was backed up.
 - Resubmit the job.
 - View the job details.
 - View media associated with the job.
 - View events associated with the job.

- View backup items (displays the NAS data that was backed up).
- View or send the log file associated with the job.



Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

Previous Next >

Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

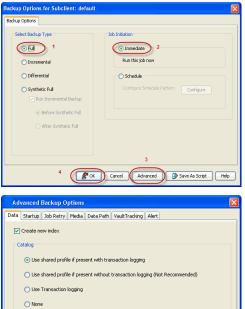
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

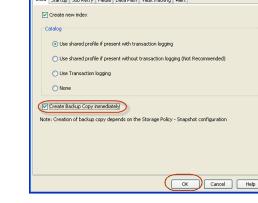
Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.



OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Quick Start Guide - SnapProtect

2. Click **OK**.

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Getting Started - NAS Restore

PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

🛕 ConniCell Browser

The following sections explain the steps for restoring the data of a volume to a different location in the file server. If you are restoring from a vFiler backup, click the **Previous** button above to follow the steps to create a backup copy, and restore your vFiler data from the backup copy.

- From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - Select the backup copy and set the copy precedence as 1.
 - Click OK.

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- From the CommCell Console, navigate to *Client* | *File Server* NAS NDMP.
 - Right-click the backup set and click **All Tasks** | **Browse Backup Data**.

3. Click OK.

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- Expand the backup set node in the left pane. Select the volume containing the data you want to restore.
 - Click Recover All Selected.
- Clear the Restore ACLS and Use Direct Access Restore checkboxes. Selecting these options are not applicable when restoring data from a snapshot.
 - Clear the **Restore to same folder** checkbox.
 - Specify the destination path by clicking Browse.
 - Click **Preserve** or **Remove** source paths to specify whether the restore operation will keep or remove the specified number of levels from the beginning or end of the source path.
 - Click OK.

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6. You can track the progress of the job from the **Job Controller** window.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

Previous Next >>

Getting Started - Microsoft Hyper-V Deployment



WHERE TO INSTALL

Install the software directly on the Hyper-V Server.

BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

SnapProtect Support - Platforms

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE VIRTUAL SERVER /DATAAGENT (HYPER-V)

The Virtual Server *i*DataAgent is used to protect Hyper-V virtual machine data. Use the following procedure to directly install the software from the installation package or a network drive.

- 1. Run **Setup.exe** from the Software Installation Package.
- 2. Select the required language.

Click Next.

3.	Select the	option to	Install	Calypso	on this	64-bit	computer.
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Your screen may look different from the example shown.

4. Select I accept the terms in the license agreement. Click Next.

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- 5. Expand Client Modules | Backup & Recovery | File System, and select Virtual Server Agent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

- 6. Click **YES** to install Microsoft .NET Framework package.
 - This prompt is displayed only when Microsoft .NET Framework is not installed.
 - Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable packages.
- 7. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

8.	Enter the fully qualified domain name of the CommServe Host Name .
	Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

9. Click Next.

10.	Select Add programs to the Windows Firewall Exclusion List, to add CommCell
	programs and services to the Windows Firewall Exclusion List.

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ewall Configu			
onfigure firewall ser	vices		
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Configure firewa	I services		
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machine, or wheth	er there is a Proxy in between.		
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Installer Select Platforms

Select the platforms you want to configure.

Click Next.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.

11. Click Next.

12.	Verify th	ne default	location	for	software	installation
12.	Verify th	ne default	location	for	software	installation

Click $\ensuremath{\textbf{Browse}}$ to change the default location.

Click Next.

- Do not install the software to a mapped network drive.
- Do not install the software on a system drive or mount point that will be used as content for SnapProtect backup operations.
- Do not use the following characters when specifying the destination path:

/:*?"<>|#

It is recommended that you use alphanumeric characters only.

13. Select a Client Group from the list.

Click Next.

This screen will be displayed if Client Groups are configured in the CommCell Console.

Installer	······
	all Exclusion List
Allow programs to c Firewall	communicate through Windows
Windows Firew	vall is ON
🔽 Add program	ims to the Windows Firewall Exclusion List
lf uou plan on u	using Windows Firewall, it is recommended to add the software programs to the
exclusion list.	
Installer	< Back Next > Cancel
Installer	
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14. Click Next.

15. Select Yes to stop Removable Storage Services on the MediaAgent. Click Next.

This prompt will not appear if Removable Storage Services are already disabled on the computer.

16. Click Next.

17. Select a Storage Policy. Click Next.

18. Click Next.

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functioning of the Med	ge service must be stopped and disabled. This is required for correct iaAgent.						
Do you want to stop a	nd disable the Removable Storage service?						
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19. Click Next.

20. Click Finish.

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initial estimagi, click. Next to begin copying files. The following will be initialed : Windows File Sustem Datagent: Windows File Sustem Datagent: Job Schedule creation reminder
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(Previous)

Getting Started - Microsoft Hyper-V Configuration

< Previous Next >

CONFIGURATION

1.

Once the Virtual Server iDataAgent has been installed, configure an Instance, a Backup Set and a Subclient to facilitate backups. The following sections provide the necessary steps required to create and configure these components for a first SnapProtect backup of a single virtual machine.

- From the CommCell Browser, navigate to Client Computers | < Client >.
 - Right-click the client and select **Properties**.

what's non Laptop Backup Laptop Backup network. Back 👿 Job Controller 🗙 🕄 Job Controller FL... Job ID: Operation Client Co.... Agent Type: Subclient : Job Type : Phase : Storage Med II Pause Playing Event Vi nurphy nurphy nurphy 19:322 35:255 35:254 General Version Security Activity Control Groups Firewall Configuration Network Throtting Policie Job Configuration Encryption Advanced Content Indexing Registry Key Settings Client Side Deduplicatio CDR Log File Lo Browse Enable SnapProtect Enable retry on net Retry Frequency (seconds) 30 ÷ Retry Count 40 🗄 OK Cancel Help iDA Virtual Server What's new? X 🚴 hyperzen > 🚺 Client Computers > 🕅 perfhypervr2 > 📴 Virtual Serve Client Computer Groups Instance Name R All R Hyperv2 R mshpv1 R Snapables ■ ■ akhib78vm1
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Content Summary

envm12_4

- Click on the **Advanced** tab.
 - Select the **Enable SnapProtect** option to enable SnapProtect backup for the
 - client.
 - Click OK.

- From the CommCell Browser, navigate to *Client* | **Virtual Server**.
 - Right-click the Virtual Server agent and click All Tasks | Create New Instance.

4. • Enter the Instance Name.

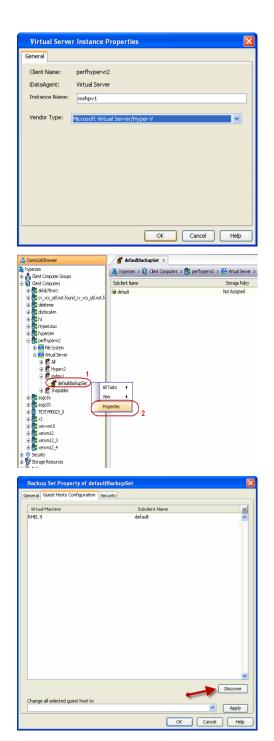
- Select Microsoft Virtual Server/Hyper-V from Vendor Type menu.
- Click OK.

- 5.
- From the CommCell Browser, right-click the Default Backup Set.
 - Click Properties.

Click Discover, on the Guest Hosts Configuration tab.
 Discovery process might take several minutes to complete.

- Select the default subclient from Change all selected guest hosts to list.
 - Click Apply.
 - Click OK.

7.



- 8.
- From the CommCell Browser, navigate to the default subclient.
- Click **Properties**.

9. Ensure **Disk-Level** from **Backup Type** is selected.

Backup Set Property of de	efaultBackupS	et		X
General Guest Hosts Configuratio	n Security			
Vetual Macline RHEL 9		Sakder Name defauk		× ×
Change all selected guest host to default				Discover Apply
		0	K Cancel	Help
CommCell Browser	💣 defaulti	BackupSet ×		
en ent Computer Groups ent Computers 1		Glent Computers >	🖹 perfhypervr2 >	DA Virtual Server > Storage Policy Not Assigned
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Subclient Properties o	f default			×
Activity Control General Filters Client Name: Billing Department: IDataAgent: Backup Set: Subclient name: Number of Data Readers: Note: This is a default subclie Backup Type ① Disk Level ② Disk Level ③ File Level ⑦ Description	Pre/Post Prc Pre/Post Prc Prc Post Prc Post Post Prc Post Post Prc Post Post Prc Post Post Prc Post Post Post Post Post Post Post Post Post Post Post Post Post Post Post Post Post Post Post	ot Defined	y Storay	Content le Device
		ОК	Cancel	Help

- Click the **Storage Device** tab.
 - In the **Storage Policy** box, select the storage policy name.

11.

12.

		Subclient Properties of default
		Activity Control Encryption SnapProtect Operations Content General Filters Pre/Post Process Security Storage Device
		General Filters Pre/Post Process Security Storage Device Data Storage Policy Data Transfer Option Deduplication
		Storage Policy: Dedupe Data Paths Data Paths
		Incremental Storage Policy: N/A Data Paths
		Create Storage Policy
		OK Cancel Help
	Click the SnapProtect Operations tab.	Subclient Properties of default
	Click SnapProtect option to enable SnapProtect backup for the selected subclient.	General Filters Pre/Post Process Security Storage Device
	Select the storage array from the Available Snap Engine drop-down list.	Activity Control Encryption 1 SnapProtect Operations Content
	From the Use Proxy list, select the MediaAgent where SnapProtect and backup	SnapProtect 3
-	copy operations will be performed.	Available Snap Engines
	When performing SnapProtect backup using proxy,	4 Enter Array Credentials
	ensure that the operating system of the proxy server is	Use Proxy
	either same or higher version than the client computer.	Use Separate Proxy for Snap to Tape
•	Click Use Separate Proxy for Snap to Tape if you want to perform backup copy	Proxy hyperzen
	operations in a different MediaAgent.	
	Select the MediaAgent from the Proxy list.	
		OK Cancel Help
•	Click the Content tab.	Subclient Properties of default
•	Click Configure if you need to configure an additional virtual machine for the	General Filters Pre/Post Process Security Storage Device
	subclient.	Activity Control Encryption SnapProtect Operations Content
٠	Click OK .	Virtual Machine ×
		4gb
		Configure
		OK Cancel Help

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

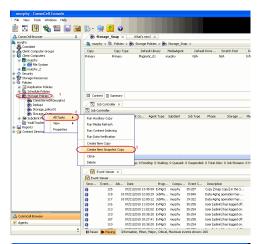
Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Create New Snapshot Copy.

- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

2.

1.



Snap Copy Propert	ies (Storage Policy: Storage_policy01) 🛛 🛛 🔀
Selective Copy General Retention	Associations Advanced Deduplication Copy Policy Data Paths Data Path Configuration
1 Copy Information Copy <u>N</u> ame:	2
Primary Copy	
Default Index Destinatio	n
Library:	
MediaAgent:	~
Drive Pool:	~
Scratch <u>P</u> ool:	
3	/
	4 OK Cancel Help

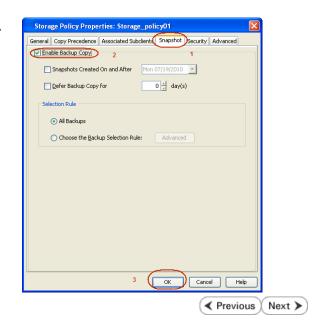
CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

murphy - CommCell Console										
i File View Tools Windows Help										
🖻 🖪 🖪 🗞 🖼 🖬	5 · 5	ig 👩 (0							
🛆 CommCell Browser 🛛 🤤	/ 🔂 झ	orage_Snap	× W	at's new?	×					
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	0	118	18 07/21/20	10 12:00:29	JobMa	marphy	19:840	Data Aging d	peration has	
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	0	116 113		10 11:03:04			35:255 35:254		has logged off. has logged on.	
	8	113		10 11:02:02 10 10:38:20			35:254		has logged on. has logged on.	
🛆 ConniCel Browser	ä	107		10 10:27:41			35:255		has looged off.	
🛒 Agents	ă	110	07/21/20	10 10:38:20	EvMgrS		35:254	User [admin]	has logged on.	
	II Dave	P. Handara								

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.



Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS

NETAPP

NETAPP WITH SNAPVAULT/SNAPMIRROR

(Previous) Next >>

Next >

< Previous

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

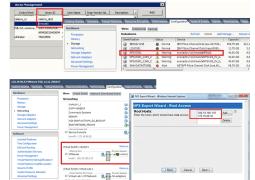
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NetApp	
Name	MetApp	
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
ОК	Cancel Help	
	(🗸 🛙	Previous

SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

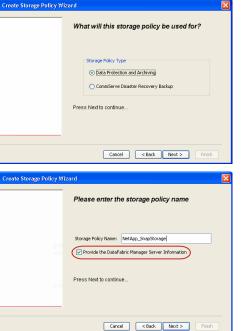
4.

3.

 In the Library list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



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New Storage Policy 3 New Global Deduplication

Subclient As

 Image: Storage Policies
 X

 Image: Storage Policies
 X

 Image: Storage Policies
 Image: Storage Policies

A-SP A-SP A-SP-DFM CommSer...

PGDSP
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Type Global Dedupli. Standard Standard

Disaster Ri Global Ded Global Ded Global Ded

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lobal Ded

Global De Standard

Standard Standard

Standard Standard No. of Streams No. of

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

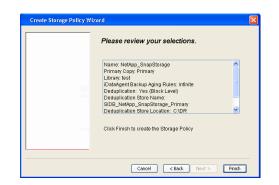
9. Provide the DataFabric Manager server infor	formation.
--	------------

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	ard 🛛
	Please select a MediaAgent for this copy
	MediaAgent: ethaval-2008
	Press Next to continue
	Cancel Cancel Next > Finish
Create Storage Policy Wiz	zard
	Please enter the streams and retention criteria for this policy
	Number of Device Streams:
	Choose the Primary Copy's Aging Rules:
	V Infinite/ 15 Days 2 Gydes
	Data Archive/Compliance Archiver
	Cancel <back next=""> Finish</back>
Create Storage Policy Wiz	eard 🔀
	Do you want to enable Deduplication for the primary copy?
	Deduplication O Yes
	Enable Client Side Deduplication
	No Press Next to continue
899	
	Cancel < Back Next > Finish
Create Storage Policy Wiz	eard 🔀
	Please specify the location to store the Deduplication Store
	Name: SIDB_NetApp_SnapStor Deduplication Store Location:
	MediaAgent Name dhaval-2008
	Location: Browse Press Next to continue
Mercel	
	Cancel <back next=""> Finish</back>
Create Storage Policy Wiz	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

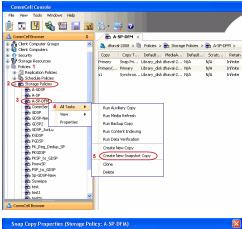


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

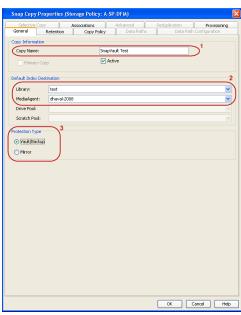
After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.



3. • Click the **Copy Policy** tab.

 Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	✓ Backup Selection ✓ All Backups
Primary-Mirror-Mirror	Mirror	Backups On and After: Thu 04/07/2011
		Source Copy
		Specify Source for Auxiliary Copy: Primary
		OK Cancel Help
Click the Provisioning tab.		Snap Copy Properties (Storage Policy: A-SP-DFM)
Click Refresh to display the DFM entities.		General Retention Copy Policy Data Paths Data Path Configuration Selective Copy Associations Advanced Deduplication Provisioning
Select the Provisioning Policy from the di	ron-down list	DataFabric Manager Name: hwinapp02
	•	Refresh DataFabric Manager Entities:
Select the Resource Pools available from	the list.	Provisioning Policy:
Click OK .		
The secondary snapshot copy is created.		Resource Pools Available: Selected:
		scott-mold
		shal_cascademirrir_target_hf1 shal_cascademirror_source_hf3 Add >
		shal_primarymirror1_hf2 shal_primaryvaut_hf6 <
		shal_secondarymirror_hf6 shal_secondaryvaul_hf5 Add All >>
		<< Remove All
		Resource Pool Info
		Resource Pool Info Nome: scott-mold Space Status: Normal
		Name: scatt-mold Space Status: ● Normal Total Ster.2.52 TB Available Ster.961.49 GB Filer Aggregate Space Status Total Ster.2 Available Ster. ¥
		Name: scott-mold Space Status: Normal Total Space Status: Available Space Status: Availabl
		Name: scatt-mold Space Status: Normal Total Ster.2.52 TB Available Ster.961.49 GB Filer Aggregate Space Status: Total Ster.2.52 Total Ster. Available Ster. V
		Name: sostit-mold Space Status: Nammal Total See: 2.52 TB Available See: 9.64 PM Filer Aggregate Space Status: Total See: 4
		Name: scatt-mold Space Status: Normal Total Ster.2.52 TB Available Ster.961.49 GB Filer Aggregate Space Status: Total Ster.2.52 Total Ster. Available Ster. V

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

CommCel Browser
Copy Copy Type Default Ubrary MediaAgent Default Drive P :
Hert Hert Hindy Hin
E III File System
e g venus2
🗄 😵 Storage Resources
- Hi Polices
Content Summary Summary
Experience in the second
Your Tachar Poinces Yee Yee Your Detroit Centrol Centrol , Mythin Yye Stop Backup Miler Netdop NA (Net _volume (*ul Catalog Catalog
E Content Director
xt
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Event Wever X
Event Viewer
Severity Event ID Job ID Date Program Computer
302 22 12/22/2010 11:16:651 JobManager pegasus 301 22 12/22/2010 10:56:41 JobManager pegasus
· · · · ·
Storage Policy Properties: NetApp_SnapStorage
General Copy Precedence Associated Subclients Snapshot Security Advanced
Enable Backup Copy
Snapshots Created On and After Wed 12/22/2010 👻
,
Defer Backup Copy for 0 day(s)
-Selection Rule
Selection Rule
 All Backups
C Choose the Backup Selection Rule: Advanced
Source Snap Copy
Specify Source for Backup Copy:
OK Cancel Help
Storage Policy Properties
General Copy Precedence Associated Subclients Snapshot Security Advanced
Enable Backup Copy
I and buckup copy
Snapshots Created On and After Thu 01/06/2011
Defer Backup Copy for 0 🗧 day(s)
Selection Rule
All Backups
C Choose the Backup Selection Rule: Advanced
Source Snap Copy
Specify Source for Backup Copy:
Primary(Snap)
vault from primary
OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

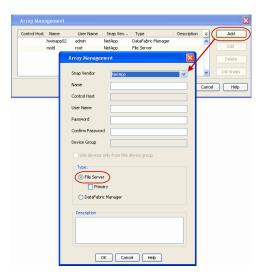
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page 298 of 520

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CommCett Console
File View Tools Windows Help



SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

Getting Started - Microsoft Hyper-V Backup

PERFORM A BACKUP

2.

After configuring the Instance, BackupSet, and Subclient you are ready to perform your first backup.

The following section provides step-by-step instructions for running your first full backup of a single virtual machine immediately.

- 1. From the CommCell Console, navigate to Client Computers | Virtual Server
 - Right-click the **Subclient** and click **Backup**.

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- Select Full as backup type and Immediate to run the job immediately.
 Click OK.

- **3.** You can track the progress of the job from the **Job Controller** window of the CommCell console.
- Once job is complete, view the details of job from the Backup History. Right-click the Subclient and select Backup History.
- 5. Click OK.

- 6. You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job



- Details of the job
- Events of the job
- Log files of the job
- Media associated with the job



Previous Next >

Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> • Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

is > 🖶

- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

< Previous Next >

Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

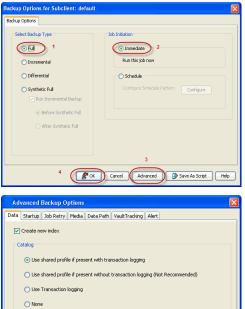
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

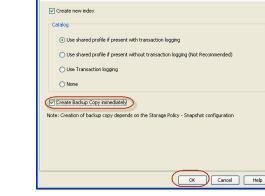
Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.



OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Quick Start Guide - SnapProtect

2. Click **OK**.

Groups 5 Copy Copy Type		NediaAgent	Default Drive Pool	
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Getting Started - Microsoft Hyper-V Restore



PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections describe the steps involved in restoring a virtual machine.

- From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.

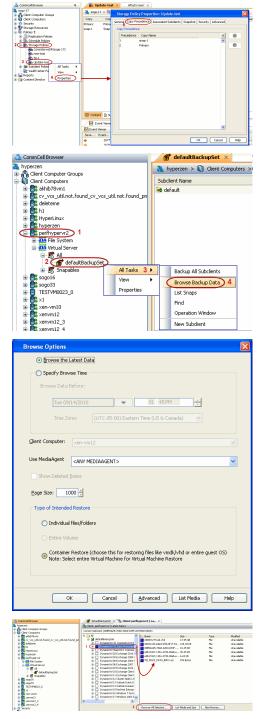
1.

- From the CommCell Console, navigate to *Client* | **Virtual Server**.
 - Right-click the backup set that contains the data you want to restore and click All Tasks | Browse Backup Data.



4.

- Select the virtual machine under the backup set. Its entire contents will be automatically selected in the right pane.
 - Click Recover All Selected.



5. • Click Browse to locate the desired Destination Path in the currently selected

Destination Client.

• Enter the VM Name for the virtual machine.

Ensure that you provide a fully qualified name for the virtual machine. Entering an IP address will cause the restore operation to fail.

Restore Options for All Selected Items General Job Initiation Restore as Virtual Machines 🚫 Virtual Hard Disk file Destination client perfhypervr2 ~ Specify destination path C:\temp Browse 1 (] Virtual Machine Restore Options 2 (VM Name) vm_testrestore Power ON Virtual Machine After Restore 🗗 OK 🛛 Cancel Advanced 📴 Save As Script Help

> Job Retry Browse Options ESX Browse Copy Precedence Data Path

Alert

Paths/Filters General

Use MediaAd

Use Library

Use Drive

Use Proxy

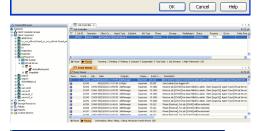
Use Drive Pool

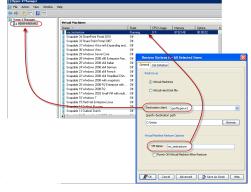
Startup

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- 6. Hyper-V Live migration cluster restores require the use of a proxy to mount the snapshots. If you have a Hyper-V cluster, do the following:
 - Click Advanced.
 - Select the Data Path tab.
 - Select a proxy from the **Use Proxy** dropdown to mount the snapshot.
 - Click OK.
 - Click **OK** from the **Restore Options** dialog box.
- 7. You can monitor the progress of the restore job in the **Job Controller** window of the CommCell Console.
- Once the virtual machine is restored, it is automatically mounted to the Hyper-V Server of the specified client computer.





CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.



Page 306 of 520

Getting Started - SAP for Oracle *i*DataAgent Deployment in a Non-Global Zone

Previous Next >

WHERE TO INSTALL

Install the software on each of the non-global zones where you have application data.

It is recommended to install the software on the global zone to protect non-changing or static data on non-global zones. If the data is dynamic or contains application data, install the software on the non-global zone.

INSTALL THE SAP FOR ORACLE /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

1. Logon to the client computer as **root** or as a sudo user.

If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.

2. Mount the installation disc on the non-global zone.

mkdir <Non-Global Zone root location>/<Non-Global Zone local directory>

mount -F lofs <Global zone software Install Disc mount point> <Non-Global Zone root location>/<Non-Global Zone local directory>

Connect to Non-Global Zone terminal

3. Run the following command from the Software Installation Package:

./cvpkgadd

- 4. The product banner and other information is displayed.
 - Press **Enter**.
- 5. Read the license agreement. Type y and press Enter.
- 6. Press Enter.

7. Press Enter.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

2) Advance options

BEFORE YOU BEGIN

Download Software Packages

SnapProtect Support - Platforms

Download the latest software package to perform the install.

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

3) Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

- 1) Install on a physical machine
- 2) Install on a virtual machine
- 3) Exit
- Your choice: [1]

8. If you have only one network interface, press **Enter** to accept the default network interface name and continue.

If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which

We found one network interface available on your machine. We will associate it with the physical machine being installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI. the software is installed and may be different from the example shown.

- 9. Press Enter.
- **10.** Type the number associated with the **SAP for Oracle** *i***DataAgent**, **Unix File System** *i***DataAgent**, and the **MediaAgent**.

A confirmation screen will mark your choice with an "X".
 Type d for Done, and press Enter.

12. Press Enter.

13. Type the appropriate number to install the latest software scripts and press Enter.

- Select **Download from the software provider website** to download the latest software scripts. Make sure you have internet access.
- Select **Use the one in the installation media** to install the software scripts from the package or share from which the installation is currently being performed.
- Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.
- 14. Press Enter.

15.

- Press Enter to accept the default path.
 - If you want to specify a different path, type the path and then press Enter.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.

Please check the interface name below, and make connections if necessary:

Physical Machine Host Name: [angel.company.com]

Please specify the client name for this machine.

It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe.

Physical Machine Client name: [angel]

Please select the Calypso module(s) that you would like to install.

] 1) UNIX File System iDataAgent [1101] [CVGxIDA] 2) MediaAgent [1301] [CVGxMA] ProxyHost iDataAgent [1102] [CVGxProxyIDA] 3)] 4) Documentum iDataAgent [1126] [CVGxDctmIDA]] 5) Oracle iDataAgent [1204] [CVGxOrIDA] 3) Oracle ibacangent [1105] [COGNOTBA]
6) SAP for Oracle [1205] [CVGNOTSAP]
7) SAP for MaxDB [1206] [CVGNSAPMAXDB]
8) Informix iDataAgent [1201] [CVGNIFIDA
9) Sybase iDataAgent [1202] [CVGNYbIDA] 10) DB2 iDataAgent [1207] [CVGxDB2] 11) MySQL iDataAgent [1208] [CVGxMySQL]
12) PostGres iDataAgent [1209] [CVGxPostGres] 13) Lotus Notes Database iDataAgent [1051] [CVGxLndbIDA] [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 1 2 6</pre> Please select the Calypso module(s) that you would like to install. [X] 1) UNIX File System iDataAgent [1101] [CVGxIDA] [X] 2) MediaAgent [1301] [CVGxMA] 3) ProxyHost iDataAgent [1102] [CVGxProxyIDA]] 4) Documentum iDataAgent [1126] [CVGxDctmIDA]] 5) Oracle iDataAgent [1204] [CVGxOrIDA] [] J) SAP for Oracle [1205] [CVGxOrSAP] [] 7) SAP for MaxDB [1205] [CVGxSAPMAXDB] [] 8) Informix iDataAgent [1201] [CVGxIfIDA] [] 9) Sybase iDataAgent [1202] [CVGxSybIDA] [] 10) DB2 iDataAgent [1207] [CVGxDB2] [] 11) MySQL iDataAgent [1208] [CVGxMySQL] [] 12) PostGres iDataAgent [1209] [CVGxPostGres] 13) Lotus Notes Database iDataAgent [1051] [CVGxLndbIDA] [a=all n=none r=reverse q=quit d=done >=next <=previous ? helpl Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d Do you want to use the agents for restore only without consuming licenses? [no] Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack. If you choose to download it from the website now, please make sure you have internet connectivity at this ti This process may take some time depending on the internet connectivity.

1) Download from the software provider website.

2) Use the one in the installation media

3) Use the copy I already have by entering its unix path

Your choice: [1] 2

Keep Your Install Up to Date - Latest Service Pack

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 176 MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

In order to make sure that the client computer has ${\tt read/write}$ access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

16. Press Enter to accept the default location.

- Enter a path to modify the default location and press Enter.
- All the modules installed on the computer will store the log files in this directory.

17. Type Yes and press Enter.

18. Type the Group name and then press Enter.

19. This prompt is relevant only when you install on Solaris. Press Enter to accept the default value for Number of Streams.

> You can type the Number of Streams that you plan to run at the same time and then press Enter.

20. Press **Enter** if you do not want the changes to be updated automatically.

- If you want the changes to be made automatically, type Yes and then press Enter.
- You will come across this prompt when you install the software on the earlier versions of Solaris.

21. Press Enter.

You will see this prompt if you have accepted the default no and pressed Enter in the Press <ENTER> to continue. above step.

22. Press Enter.

You will see this message if you have accepted the default answer and pressed Enter in step 20.

Installation Directory: [/opt]

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you onter "urr(log" the log will actually be placed into enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "dba" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.

If you're planning to backup Oracle DB you should use "dba" group.

Would you like to assign a specific group to Software? [yes]

Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "oinstall" group here.

Group name: oinstall

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "oinstall".

Number of Streams

IMPORTANT : Please read install document "Configure Kernel Parameters - Unix/Macintosh" from "Books Online" before you start configuring kernel parameters. Please enter the total number of streams that you plan to run at the same time. We need to make sure that you have enough semaphores and shared memory segments configured in /etc/system.

Number of streams [10]

We now need to modify the /etc/system configuration file on this computer. It is done to make sure that there will be enough shared memory and semaphores available for Calypso programs. Please review the changes below and answer "yes" if you want us to apply them to the /etc/system file. Otherwise, the installation will proceed, the changes will be saved to some other file, and you will have to apply them manually.

set shmsys:shminfo_shmmni=8570 (was 7930)
set shmsys:shminfo_shmseg=8420 (was 7780) set semsys:seminfo_semmns=10320 (was 9680) set semsys:seminfo_semmni=8570 (was 7930) set semsys:seminfo_semmsl=8570 (was 7930) Do you want us to apply these changes now? [no]

Changes saved into /etc/system.gal.1744

Although a 'no' answer can be selected to this question during install, the user should make sure the min requirements (below) for shared memory are met, otherwise the backups may fail (the message in logs is 'could not start the pipeline').

set shmsys:shminfo_shmmax=4199304 set shmsys:shminfo_shmmin=1
set semsys:shminfo_shmmni=640
set semsys:shminfo_shmseg=640
set semsys:seminfo_semmns=640

		set semsys:seminfo_semmni=640 set semsys:seminfo_semms1=640 set maxusers=256 Press <enter> to continue.</enter>
23.	Type a network TCP port number for the Communications Service (CVD) and press Enter .	Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.
	Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press Enter .	The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.
		Please enter the port numbers.
		Port Number for CVD : [8400]
		Port Number for EvMgrC: [8402]
24.	If you do not wish to configure the firewall services, press Enter .	Is there a firewall between this client and the CommServe? [no]
	If this computer is separated from the CommServe by firewall(s), type Yes and then press Enter .	
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
25.	Type the fully qualified CommServe host name and press Enter .	Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name
	Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.	services configured on this machine. CommServe Host Name: mycommserve.company.com
26.	Press Enter .	Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters.
		1) Use Cell level policy
		2) Always use Global filters
		3) Do not use Global filters
		Please select how to set the Global Filters for the default subclient? [1]
27.	Type the appropriate number to select the Client Group and press Enter .	Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want
	This screen will be displayed only if Client Groups are configured for the	to add this client client.company.com to.
	CommCell	[] 1) Unix
		[] 2) DR
		[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
		Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 1
28.	A confirmation screen will mark your choice with an "X". Type d for Done , and press Enter .	Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.
		[X] 1) Unix
		[] 2) DR
		<pre>[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]</pre>
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d</pre>
29.	Enter the number associated with the storage policy you want use and press Enter .	Please select one storage policy for this IDA from the list below:
		 SP_StandAloneLibrary2_2
		2) SP_Library3_3
		3) SP_MagLibrary4_4
		Storage Policy: [1]
30.	Type the path of the SAPEXE directory and then press Enter .	Please specify the location of SAPEXE directory. SAPEXE:
31.	Type 3 to the Exit option and press Enter . The installation is now complete.	Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail- over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server. Currently you have Calypso installed on physical node

angel.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

1) Add another package to angel.company.com

2) Install Calypso on a virtual machine

3) Exit

Your choice: [3]



Getting Started - SAP for Oracle Configuration

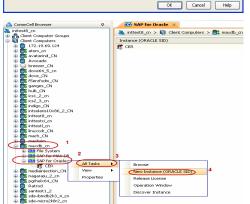
< Previous) Next >

CONFIGURATION

Once the SAP for Oracle *i*DataAgent has been installed, configure an Instance to facilitate backups. Each instance references an Oracle database. Also it is recommended to create separate subclients for data and log backups. The following sections provide the necessary steps required to create and configure these components for a first SnapProtect backup of an Oracle database.

- 1. From the CommCell Browser, navigate to **Client Computers** | *<Client>*.
 - Right-click the client and select **Properties**.

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- Click on the **Advanced** tab.
 - Select the **Enable SnapProtect** option to enable SnapProtect backup for the client.
 - Click OK.

- From the CommCell Browser, navigate to *Client>* | SAP for Oracle.
 - Right-click SAP for Oracle and click All Tasks | New Instance (ORACLE SID).

Enter the Instance Name.

4.

• Enter the user name in **User Account** to access the Oracle application on a Unix client.

Use <code><SID_name>adm</code>, in order to perform backup and restore operations from CommCell Console for the associated instance.

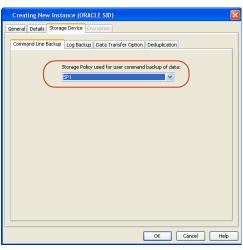
Make sure that the user has administrator privileges to access the Oracle application.

- Browse or enter the path to the Oracle application files in Oracle Home.
- Browse or enter the path to the Oracle data and control files in SAP DATA PATH.
- Select a **Storage Policy** from the drop down list.

- 5. Click **Details** tab and add the following information:
 - Enter the target database connect string in **Connect String**.
 - Browse or enter the path to the SAP EXE folder in SAP EXE Folder (Required).

creating new instance	(ORACLE SID) 🛛 🔀
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Client Name: su	nsign
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SAP DATA PATH: 4	latabase/oracle10g/SAPDB/CER Browse
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- 6. Click Storage Device tab.
 - Select a **Storage Policy used for user command backup of data** from the drop down list.



- 7.
 - Click Log Backup tab.
 - Select a **Storage Policy used for all Archive Log backups** from the drop down list.
 - Click OK.

- 8. • From the CommCell Browser, navigate to <Client> | SAP for Oracle.
 - Right-click the <Instance> and click All Tasks | New Subclient.

In the **Subclient Name** field, type a name. 9.

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10.

- Click the SnapProtect Operations tab.
- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select the storage array from the Available Snap Engine drop-down list.
- From the Use Proxy list, select the MediaAgent where SnapProtect and backup copy operations will be performed.

When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer. • Click Use Separate Proxy for Snap to Tape if you want to perform backup copy operations in a different MediaAgent.

Select the MediaAgent from the **Proxy** list.

Creating New Subclient
General Content Pre/Post Process Storage Device Activity Control Encryption 1 SnapProtect Operations
2 V SnapProtect 3
Available Snap Engines
4 Enter Array Credentials
Use Proxy
Use Separate Proxy for Snap to Tape Proxy
Use source if proxy is unreachable
OK Cancel Help

11. Click the **Content** tab and clear the check box for **Backup Archive Log**.

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Items in bold are not included in any Online Subset subclient.					
	Sackup Archive Log Archive Log Archive Log Second Copy				
	OK Cancel Help				

- Click the **Storage Device** tab.
 - Select a **Data Storage Policy** from the drop down list.
 - Click OK.

13.

Creating New Subclient	×
General Content Pre/Post Process Storage Device Activity Control Encryption	_
OK Cancel Help	
Concerditionse Concerdi	
Creating New Subclient	×
General Content Pre/Post Process Storage Device Activity Control Encryption Client Name: IInuxsap_CN Billing Department: IDetaAgent: SAP for Oracle Instance (ORACLE SID): TRD Subclient name: SC1 Description	
OK Cancel Help	

From the CommCell Browser, navigate to *Client>* | SAP for Oracle.
Right-click the *Instance>* and click All Tasks | New Subclient.

14. In the **Subclient Name** field, type a name.

15. Click the **Content** tab and clear the check box for **Data**.

• Click the **Storage Device** tab.

- Select a **Data Storage Policy** from the drop down list.
- Click OK.

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SKIP THIS SECTION IF NOT USING SOLARIS.

Click Next > to Continue.

ENABLE SNAPPROTECT BACKUPS ON SOLARIS ZONE

Follow the steps given below to enable SnapProtect backups on each of the non-global zone clients containing the application data.

- 1. From the CommCell Console, navigate to **Client Computers** | *<Client>*.
 - Right-click the client and select **Properties**.

• Click Advanced tab.

- Select the Global Zone host name from the drop-down list.
- Click OK.
 - We support disks on a global zone mounted using loopback File System on a non global zone.
 - This option need not be enabled if you are using a NFS share. This is because when using NFS mount paths, the operations are limited to the non-global zone and does not use the global zone.

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 Repeat the above steps on all the non-global zone clients containing the application data.

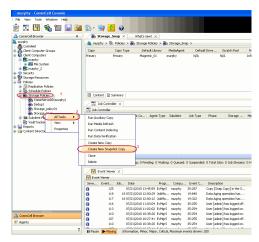
SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Create New Snapshot Copy.



- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

2.

Next >

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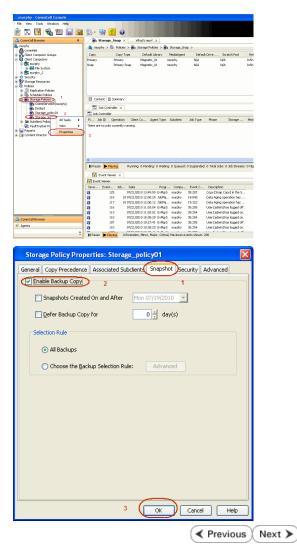
CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

1.

- Click the **Snapshot** tab.
- Select **Enable Backup Copy** option to enable movement of snapshots to media.
- Click OK.



Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY	
3PAR	DATA REPLICATOR	
DELL COMPELLENT		
DELL EQUALLOGIC		
EMC CLARIION, VNX		
EMC SYMMETRIX		
FUJITSU ETERNUS DX		
HITACHI DATA SYSTEMS		
HP EVA		
IBM SVC		
IBM XIV		
LSI		
ΝΕΤΑΡΡ		
NETAPP WITH SNAPVAULT/SNAPMIRROR		

Previous Next >>

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



3.

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Management	K
1 Snap Vendor	
2 Name)
Control Host	
User Name	
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Confirm Password	
Device Group	
Use devices only from this device group	
Description	
OK Cancel Help	

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN		Byte WWN
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5 Devi	ce Group		
6 🗍	Use devices only	from this device group	
De	escription		
	ОК	Cancel Help	
		< Previous	Next >

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

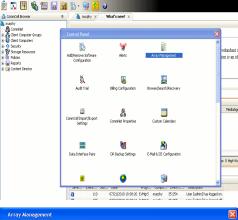
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			Delete
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snap
172 19 71 26	MN1963C	admin	TRM VTV		×	LISC DI IQU

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices onl	ly from this device group	
Description		
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E Group E V Group Configu Group austin Summary	uration 🛞 🚯 🤹	
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For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the **Username** and **Password** fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

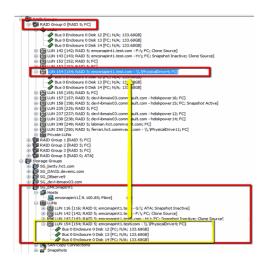
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- **3.** Select **EMC CLARiiON** from the **Snap Vendor** list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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172.19.66.69	10881	system	HDS		~	List Snaps
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Quick Start Guide - SnapProtect

Array Manageme	nt 🔀	
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Description		
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SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

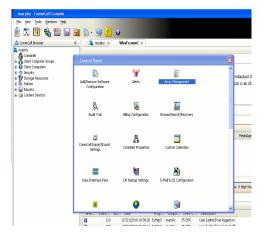
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the Symm ID of the array in the Name field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the Device Group field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

To understand how the software selects the target devices during SnapProtect operations, click here.

Control Host Name fidk.hct.commvault.com 5001438002 H	User Name Snap Vendor Description ¥ Add	
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172.19.71.26 MMIR637 -	OK Cancel Help	-
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Array Managemer	nt 🛛 🔀	
1 Snap Vendor	EMC Symmetrix	
2 Name		
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
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User Name		
3 Password		
Confirm Password		
4 Device Group		
Use devices only	/ from this device group	
Description		
ОК	Cancel Help	

SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

 $\circ~$ COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

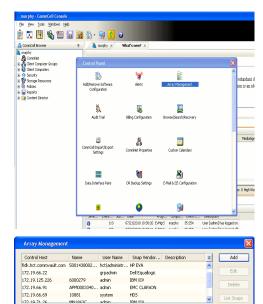
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	e serial	number	for	the
HDS storage device.							

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc. •
- Click **OK** to save the information.

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r	Name]
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4 F	Password]
6	Confirm Password				ノ
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	Description				
	ОК		ncel Help	J	
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Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

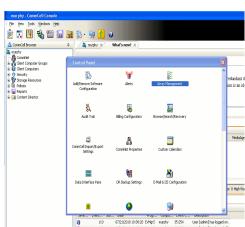
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
idk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
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72.19.125.226	6000279	admin	IBM XIV			
72.19.66.91	APM0003340	admin	EMC CLARIION			Delete
72.19.66.69	10881	system	HDS			List Snaps
172 19 71 26	Mb11963C	admin	TRM YTV		~	List phaps

Array Managemer	nt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

CVA Storage Network CVIrtual Disks C	Save changes System options General Status Summary Identification Identification Name: EVA440 Node WWN: 50014380-025D-EB70 UUID: 6005-08646002-0000
Snap Vendor HP EV	
Control Host User Name Password Confirm Password	
5 Device Group 6 Use devices only from t	his device group
OK C	ancel Help

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the **Name** field.

💅 Alerts 13 B is an it Audit Tr 5 4 8 1 8) High W **1** • Ø 07/21/2010 10:38:20 6 0 Control Host fidk.hct.commva 172.19.66.22 Snap Vendor. HP EVA Dell Equallogic Add ¥ hct\admin grpadmin 172.19.125.226 admin IBM XIV EMC CLARIKON 172.19.66.91 APM0003340.. admin 172.19.66.69 10881 HDS system 172 10 71 24 OK Cancel Help Array Management 1 Snap Vendor IBM2 2 Name Control Host User Name Password Confirm Password Device Group Use devices only from this device group Description

Help

OK

Cancel

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What's new? >

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The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- 4. Enter the Management IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

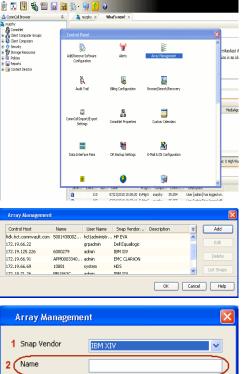
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



🔹 Array Managemer	nt 🛛 🔀	9
1 Snap Vendor	IBM XIV	
2 Name		
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	r from this device group	
Description		
ОК	Cancel Help	

The ${\bf System \ ID}\ ({\bf S}/{\bf N})$ is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
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 General
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 Parameters
 System Ucsino
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 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
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 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	r from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

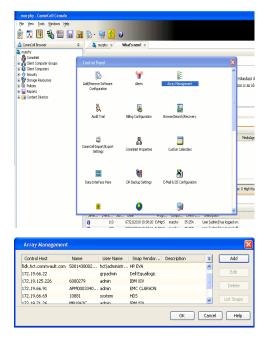
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

1 Snap Vendor	
	LSI
Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
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as _lsi - Storage Subsystem Profile	
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Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10

The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

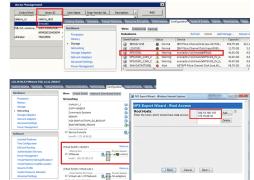
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

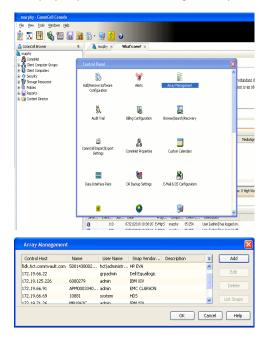
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt		
Snap Vendor	NetApp	~	
Name	MetApp		
Control Host			
User Name			
Password			
Confirm Password			
Device Group			
Use devices only	y from this device group		
Description			
Description			
ОК	Cancel Help		
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

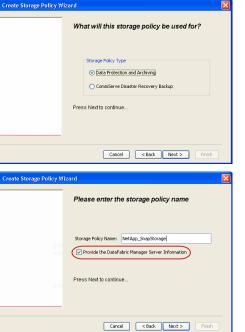
4.

3.

 In the Library list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



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 Image: Storage Policies

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- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

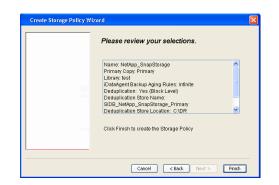
9. Provide the DataFabric Manager server in	nformation.
---	-------------

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2008
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	
Create Storage Policy Wiz	Please enter the streams and retention
	criteria for this policy
	Number of Device Streams: III 🚊 Choose the Primary Copy's Aging Rules:
	□DataAgent Backup data □ Infinite/ 15 - Days 2 - Cycles
	Retain by Jobs 24
	Data Archive/Compliance Archiver
	✓ Infinite/ 365 ± Days
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🛛 🕅
	Do you want to enable Deduplication for the
	primary copy?
	Deduplication O Yes
	Enable Client Side Deduplication
	○ No
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🔀
	Please specify the location to store the
	Deduplication Store
	Name: SIDB_NetApp_SnapStor Deduplication Store Location:
	MediaAgent Name dhaval-2008
	Location: Browse
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

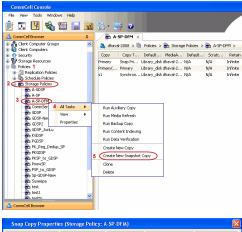


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thursdoor (Copy Source for Auxiliary Copy: Inimary Source Copy Source for Auxiliary Copy: Inimary Copy Source for Auxiliary Copy: Inimary Copy Convert Copy Copy Convert Copy Copy
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_JArget_JH1 Add All >> Indlgonosofeminit"_SpaceStatus:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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Conversion and a second a second seco
Constant Computer Groups Constant Defeat them. Matching Indextants
Hiller1 Primary(Classic) Primary DistLibrary1 pegasus N/A N/ Primary(Stasic) Snap Primary DistLibrary1 pegasus N/A N/ Primary(Stag) Snap Primary DistLibrary1 pegasus N/A N/
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Content Summary Summary
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302 22 12/22/2010 11:16:51 JobManager pegasus
301 22 12/22/2010 10:56:41 JobManager pegasus
Storage Policy Properties: NetApp_SnapStorage
General Copy Precedence Associated Subclients Snapshot Security Advanced
Enable Backup Copy
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C Choose the Backup Selection Rule: Advanced
Source Snap Copy
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OK Cancel Help
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Storage Policy Properties
General Copy Precedence Associated Subclients Snapshot Security Advanced
Enable Backup Copy
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,,
Selection Rule
All Backups
C Choose the Backup Selection Rule: Advanced
Source Snap Copy
Specify Source for Backup Copy:
Primary(Snap)
vault from primary
OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page	349	of 520

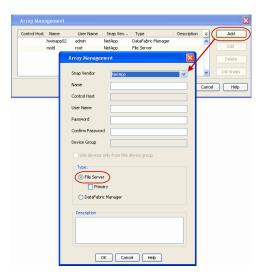
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GDSP-New				
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PSDSP	ConniCell Import/Export Settings	CommNet Properties	Custom Calendars	
PK_Reg_Dedup_SP				
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CommCell Browser	۲			×
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Control Host Name	e User Name	Snap Ven Type	Description	× Add
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Device	Group
Us	edevices only from this device group
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	Primary
0	DataFabric Manager
Desc	iption
_	

Cancel

Help

OK



SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Data Replicator

< Previous) Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to **<Client>** | **<Agent>**.
 - Right-click the subclient and click **Properties**.
- Click the SnapProtect Operations tab.
 - Ensure **Data Replicator** is selected from the **Available Snap Engine** drop-down list.
 - Click OK.

	Pre/Post Process Storage Device
Activity Control	Encryption SnapProtect Operations
✓ SnapProtect	
Available Snap Engines	Data Replicator
	Enter Array Credentials
Use Proxy	✓
Use Separate Pro	oxy for Snap to Tape
Proxy	
🔲 Use Journaling	
Use snapshot on th	ne source to replicate data
Minimum size of file for u	using hash comparisons: 256 🛓 KB
Block size to use for has	shing: 64 📩 KB

Getting Started - SAP for Oracle Backup

Previous Next >

After configuring your instance, and subclient, you are ready to perform your first backup.

PERFORM A BACKUP

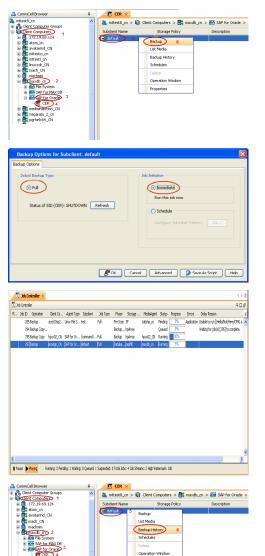
The following section provides step-by-step instructions for running your first full backup:

- From the CommCell Console, navigate to Client Computers | <Client> | SAP for Oracle | <Instance>
 - Right-click the **Subclient** and click **Backup**.
- 2. Select Full as backup type and Immediate to run the job immediately.
 - Click OK.

3. You can track the progress of the job from the **Job Controller** window of the CommCell console.

If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically. Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

4. Once job is complete, view the details of job from the **Backup History**. Right-click the **Subclient** and select **Backup History**.



5. Click OK.

Backup Type 💿 All 🔘 Full O Differential O Incremental 🔿 Synthetic full Job Status 💿 All Completed O Failed 🚫 Killed 🔄 Specify Time Range Start Time End Time --÷ ÷ OK Cancel Advanced Help 🖉 CER 🗙 👘 What's new? 🗙 😰 Event Viewer 🗙 🧐 Backup Job History of ghb 🗙
 3xb ID
 Operation Type
 Storage Policy
 3xb Type
 Failed Folders
 Failed Files
 Start Time
 End Time

 468
 Backup
 Full
 0
 0
 2010/10/29 21:23:58
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 2010 Browse Find Wew BR Tools Log Resubmit Job... View Job Details View Media View Events

> View Logs View Stub file list View Data Verific Send Logs

> > < Previous Next >

- **6.** You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job
 - Details of the job
 - Events of the job
 - Log files of the job
 - Media associated with the job

Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event xCopy Opti General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

is > 🖶

- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- Enter the schedule name and select the appropriate scheduling options.
 Click **OK**.
 - Click **OK**.

3.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

Previous Next >

Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

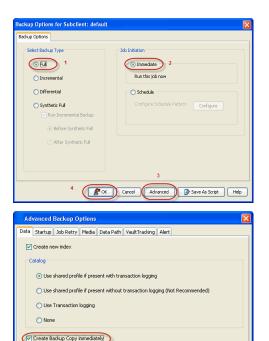
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



ation of backup copy depends on the Storage Policy - Snapshot configuration

(OK

Cancel Help

- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.

OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Quick Start Guide - SnapProtect

2. Click **OK**.

Groups 5 Copy Copy Type		NediaAgent	Default Drive Pool	
Ces Pri Primary SNAP-COPY-SNAP Primary Sna	5NAP-101-90 MAG1 0 5NAP-101-90 MAG1		M'A M'A	N/A N/A
Polcies		110 11 10 Ju		161
ing and a second s				
21				
1				
All Tasks Run Auxiliary Copy				
All Teeks Run Azvillary Copy Wew Run Media Refresh				
Properties Run Backup Copy				
Run Content Indexing	3			
Run Data Verification				
Create New Copy				
Clone				
Delete				
- 1				
Come For Child				
ip Copy For SNAP				×
opy Options Job Initiation				
a Storage Policy SNAP	~			
f Jobs to Run :				
No of Simultaneous Jobs to r	un 1 👘			
y no or bimultaneous Jobs to r	un I 🔤			
Allow Maximum				
Start New Media				
Mark Media Full On Success				
		_		
K Cancel Advance	ed 🔼	Save As S	cript	Help
Mavancon Mavanc	~~	JULC HS J		

Getting Started - SAP for Oracle Restore



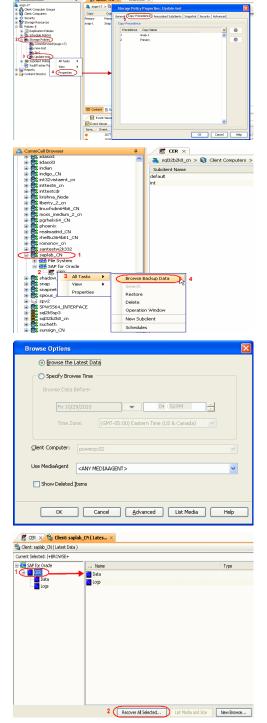
It is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following section comprehends the steps involved in restoring your entire database.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.
- From the CommCell Console, navigate to *Client* | **SAP for Oracle**.
 - Right-click the instance that contains the data you want to restore and click All Tasks | Browse Backup Data.

3. Click OK.

- Select the instance node in the left pane. The data and logs will be automatically selected in the right pane.
 - Click Recover All Selected.



< Previous

Next >

5. • Choose the Number of streams to use for restore.

- Select the following options to restore the database.
 - Restore Archive Log
 - Restore Data
 - Recover
- Verify that the Status of the database is displayed as MOUNTED; if necessary click **Refresh** to get the latest status.
- Click OK.

	racle Restore Options
Destinat	tion Client: saplab_CN Number of streams to use for restore: 1
3	Restore Control File V Restore Archive Log Restore Data V Restored us: MOUNTED Refresh
Scri	pt Preview Cancel Advanced PSave As Script Help
Warnir	ng 🔀
♪	Database must be MOUNTED in order to perform entire database restore. Please keep the database in MOUNT mode and then press OK.
	OK Cancel

If the database is not mounted, a warning dialog appears to remind you to set the database in $\ensuremath{\mathsf{MOUNT}}$ mode.

To mount the database, enter the following commands in the machine hosting the database:

[root]# export ORACLE_SID=<instance name>

[root]# sqlplus "/ as sysdba"

[root]# shutdown immediate;

[root]# startup mount;

Once the database is mounted, click $\ensuremath{\text{OK.}}$

6. You can monitor the progress of the restore job in the **Job Controller**.

Controller										
										906
Operation	Client Computer	Agent Type	–1 Subclient	Job Type	Phase	Storage	NediaAgent	Status	Progress	Error
Backup	orasolaris	DB2 on Unix	default	Rull	Deta Backup	ja_data	201954	Running	85%	
Backup	rdlab04	Oracle Database	34064-backup5PFile	Ful	Detabase B.,	ying_ora			10%	Applic
Restore	capiab_CN	SAP for Orade			Restore		peus/4	Running	485	
	Beckup	Backup rdlab04	Backup rdiab04 Oracle Database	Backup rdiab04 Oracle Database 34064-backup5PFile	Backup rdiab04 Oracle Database 34064-backupSPFile Full	Backup rdiab04 Oracle Database 34064-backupSPRie Full Database B.	Backup rdab04 Oracle Database 34064-backupSPFile Full Database B ying_ora	Beckup rdiel04 Orecle Database 34064-backupSPRie Full Database Bying_one zeux04	Backup rdieb04 Oracle Database 34064-backup/SPFile Full Database B ying_one zeuzi/4 Pending	Backup roleb04 Onecle Database 34064-backupSPRIe Full Database B ying_one zeuzó4 Pending 10%

7. The database is restored to the directory where it resides.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.



Getting Started - DB2 iDataAgent Deployment

Use the following steps to install the DB2 iDataAgent on a Unix computer.

WHERE TO INSTALL

Install the software directly on the Unix computer that you wish to protect and has the application data.

RELATED TOPICS

Download Software Packages Download the latest software package to perform the install.

SnapProtect Support - Platforms

Verify that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE DB2 /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

1. Logon to the client computer as root.

 If you are installing the software from CD, run the following command to mount the CD:

mount -t iso9660 udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package:

./cvpkgadd

- The product banner and other information is displayed. Press Enter.
- 4. Read the license agreement. Type **y** and press **Enter**.
- 5. Press Enter.

6. Press Enter.

7.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

- 2) Advance options
- Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

1) Install on a physical machine

2) Install on a virtual machine

3) Exit

Your choice: [1]

If you have only one network interface, press Enter to accept the default network interface name and continue. We will asso installed, a connect to t

If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown. We found one network interface available on your machine. We will associate it with the physical machine being installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI.

Please check the interface name below, and make connections if necessary:



- Press Enter. 8.
- 9. Type the number associated with the DB2 iDataAgent, Media Agent, and Unix File Install Calypso on physical machine 172.19.99.62 System iDataAgent.

10. A confirmation screen will mark your choice with an "X". Type d for Done, and press Enter.

11. Press Enter.

12. Type the appropriate number to install the latest software scripts and press **Enter**.

- Select Download from the software provider website to download the latest software scripts. Make sure you have internet access.
- Select Use the one in the installation media to install the software scripts from the package or share from which the installation is currently being performed.
- Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.
- 13. Press Enter.

14. Press Enter to accept the default path.

- If you want to specify a different path, type the path and then press Enter.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press Enter.

In order to make sure that the client computer has <code>read/write</code> access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

- 15. Press Enter to accept the default location.
 - Enter a path to modify the default location and press Enter.
 - All the modules installed on the computer will store the log files in this directory.

Physical Machine Host Name: [angel.company.com]

Please specify the client name for this machine.

It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe. Physical Machine Client name: [angel]

Please select the Calypso module(s) that you would like to install.

[] 1) MediaAgent [1301] [CVGxMA]

[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[] 3) DB2 iDataAgent [1207] [CVGxDB2]

[a=all n=none r=reverse g=guit d=done >=next <=previous ? =help]

Enter number(s)/one of "a,n,r,g,d,>,<,?" here:3

Install Calypso on physical machine 172.19.99.62

Please select the Calypso module(s) that you would like to install.

[X] 1) MediaAgent [1301] [CVGxMA]

[X] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[X] 3) DB2 iDataAgent [1207] [CVGxDB2]

[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d</pre>

Do you want to use the agents for restore only without consuming licenses? [no]

Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.

If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

1) Download from the software provider website.

2) Use the one in the installation media

3) Use the copy I already have by entering its unix path

Your choice: [1] 2

Keep Your Install Up to Date - Latest Service Pack

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 176MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

Installation Directory: [/opt]

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

- Most of Software processes run with root privileges, but 16. Type **Yes** and press **Enter**. some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "dba" group. We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later. If you're planning to backup Oracle DB you should use "dba" group. Would you like to assign a specific group to Software? [yes] 17. Type the Group name and then press Enter. Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run. In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here. Group name: mydb2 REMINDER If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "dba". 18. This prompt is relevant only when you install on Solaris. Number of Streams IMPORTANT : Please read install document "Configure Kernel Parameters - Unix/Macintosh" from "Books Online" before you start configuring kernel parameters. Please enter the Press **Enter** to accept the default value for **Number of Streams**. total number of streams that you plan to run at the same time. We need to make sure that you have enough semaphores You can type the Number of Streams that you plan to run at the same and shared memory segments configured in /etc/system. time and then press Enter. Number of streams [10] We now need to modify the /etc/system configuration file 19. Press Enter if you do not want the changes to be updated automatically. on this computer. It is done to make sure that there will NOTES: be enough shared memory and semaphores available for Calypso programs. Please review the changes below and answer "yes" if you want us to apply them to the /etc/system file. Otherwise, the installation will proceed, the changes will be saved to some other file, and • If you want the changes to be made automatically, type Yes and then press Enter. · You will come across this prompt when you install the software on the earlier you will have to apply them manually. versions of Solaris. set shmsys:shminfo_shmmni=8570 (was 7930) set shmsys:shminfo_shmseg=8420 (was 7780) set semsys:seminfo_semmns=10320 (was 9680) set semsys:seminfo_semmni=8570 (was 7930)
 set semsys:seminfo_semmsl=8570 (was 7930) Do you want us to apply these changes now? [no] 20. Press Enter. Changes saved into /etc/system.gal.1744 You will see this prompt if you have accepted the default no and pressed Enter in the Press <ENTER> to continue. above step. Although a 'no' answer can be selected to this question during install, the user should make sure the min 21. Press Enter. requirements (below) for shared memory are met, otherwise the backups may fail (the message in logs is 'could not You will see this prompt if you have accepted the default no and pressed Enter in step 19. start the pipeline'). set shmsys:shminfo_shmmax=4199304 set shmsys:shminio_shmmin=1 set semsys:shminfo_shmmin=1 set semsys:shminfo_shmseg=640 set semsys:seminfo_semnn=640 set semsys:seminfo_semnn=640 set semsys:seminfo_semmsl=640 set maxusers=256 Press <ENTER> to continue. Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances 22. Type a network TCP port number for the Communications Service (CVD) and press Enter. running on the same machine. Type a network TCP port number for the Client Event Manager Service (EvMgrC) and The port numbers selected must be from the reserved port press Enter. number range and have not been registered by another application on this machine. Please enter the port numbers. Port Number for CVD : [8400] Port Number for EvMgrC: [8402]
- **23.** If you do not wish to configure the firewall services, press **Enter**.

Is there a firewall between this client and the $\ensuremath{\texttt{CommServe}}\xspace$

		[no]
	If this computer is separated from the CommServe by firewall(s), type	[10]
	Yes and then press Enter.	
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
24.	Type the fully qualified CommServe host name and press Enter .	Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name
	Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.	services configured on this machine.
		CommServe Host Name: mycommserve.company.com
25.	Type the number associated with the Client Group and press Enter . NOTES	Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.
	• This screen will be displayed only if Client Groups are configured for the CommCell.	[] 1) Unix
		[] 2) DR
		[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 1</pre>
26.	A confirmation screen will mark your choice with an "X". Type d for done with the selection, and press Enter to continue.	Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.
		[X] 1) Unix
		[]2) DR
		<pre>[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]</pre>
		<pre>Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d</pre>
27.	Enter the number associated with the storage policy you want use and press Enter .	Please select one storage policy for this IDA from the list below:
		 SP_StandAloneLibrary2_2
		2) SP_Library3_3
		3) SP_MagLibrary4_4 Storage Policy: [1]
28.	Type the path for storing the DB2 archive files and then press Enter	Please enter path to the DB2 Archive Directory.
	NOTE	DB2 Archive Directory: /BU_area/db2/log
	• If the path that you enter does not exist, you will be asked if you want to create this path. In such a case, accept the yes default and then press Enter.	
29.	Type the path to the DB2 Audit Error Directory and then press Enter.	Please enter path to the DB2 Audit Error Directory.
	NOTE	DB2 Logs Directory: /BU_area/db2/log1
	• If the path that you enter does not exist, you will be asked if you want to create this path. In such a case, accept the yes default and then press Enter .	
30.	Type the path for storing the DB2 Retrieve files and then press Enter .	Please enter path to the DB2 Retrieve Directory.
	NOTES	DB2 Retrieve Directory: /BU_area/db2/ret
	 If the path that you enter does not exist, you will be asked if you want to create this path. In such a case, accept the yes and then press Enter. 	
31.	If you want to integrate the software with DB2 now, accept yes and press Enter . If you want to do this later, type No and press Enter .	In order to complete integration of Calypso with DB2, we need to create links to some Calypso binaries in each of the DB2 instance directories. We can either do it now, or if you prefer, you can run /space/opt/calypso /iDataAgent/Db2_install.sh script later yourself.
		Would you like us to integrate Calypso with DB2 now? [yes]
32.	Specify the DB2 Instance User name that was selected when the DB2 instance was installed. This is the first bit of information required to integrate the product with the appropriate DB2 server.	To integrate Calypso with a DB2 server we need to create a set of links under lib subdirectory of the DB2 installation directory.
	Type this name or accept the default and then press Enter .	Please specify the DB2 Instance User Name that was selected when DB2 Instance was installed.
_		DB2 Instance User Name: [db2inst1]
33.	Press Enter.	Calypso links will be created in /BU_area/db2as/sqllib/lib.
		Press <enter> to continue</enter>
34.	Press Enter .	Would you like to configure another DB2 instance?
		Configure? [no]
35.	Type 3 to the Exit option and press Enter .	Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine"

The installation is now complete.

belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

Currently you have Calypso installed on physical node stone.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

1) Add another package to stone.company.com

2) Install Calypso on a virtual machine

3) Exit

Your choice: [1] 3



Getting Started - DB2 Configuration

< Previous) Next >

CONFIGURATION

1.

з.

4.

Once the DB2 *i*DataAgent is installed, configure an Instance and a Backup Set to facilitate backups. Each Backup Set references a DB2 database. Also it is recommended to create separate subclients for data backups and archive log backups.

The following sections provide the necessary steps required to create and configure these components for a first SnapProtect backup of the DB2 database.

- From the CommCell Browser, navigate to Client Computers | < Client >.
- Right-click the client and select **Properties**.

🛆 CommCell Browser 🛛 🕈	What's new? ×
CommNet	÷
Clent Conputer Groups	What's new?
2 The murphine All Tasks	Laptop Backup Laptop Backup Laptop Backup Agent to protect data on laptops and desktops used in remote offices and outside of a domain
B-DAT All Tasks	Laptop backup Agent to protect data on apopp and destrops used in remote ornees and outside of a domain network. Backups can be performed reamlessly using automatic schedules based on network connectivity or
	V Show on startup
Storage Properties Storage Properties Storage	
	Z Job Controller X
🖲 🙀 Content Director	Sob Controller
	Fl.,. Job ID Operation Client Co Agent Type Subclient Job Type Phase Storage MediaAgent There are no jobs currently running.
	inere are no joos currently running.
	K
	II Pause Flaging Running: 0 Pending: 0 Waiting: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 High Water
	Event Viewer ×
	Event Wewer
	Seve Event Job Date Progr Compu Event C Description
	Seve Seve Sob Date Progr Frequencies Evertion
🛕 CommCell Browser	116 07/21/2010 11:00:04 EvMgr5 murphy 35:255 User [admin] has logged off.
🖻 Agents	
:	In 0121/2010 1126202 Every5 murthy 35:254 User (annumbred in the Second on 10 0002) 100 1013 201 101455, murthy 35:254 User (annumbred in the Second on 11 Pause Preyno Information, Minor, Major, Critical, Maximum events shown: 200
1 object(s)	nuphy admin
1.000000	and the second s
Client Computer Prope	rties 🔀
Conseral Version Security	Activity Control Course Result Configuration Network Throttles Delition
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Retry Frequency (second	s) 30 [
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- Click on the **Advanced** tab.
 - Select the Enable SnapProtect option to enable SnapProtect backup for the
 - client.

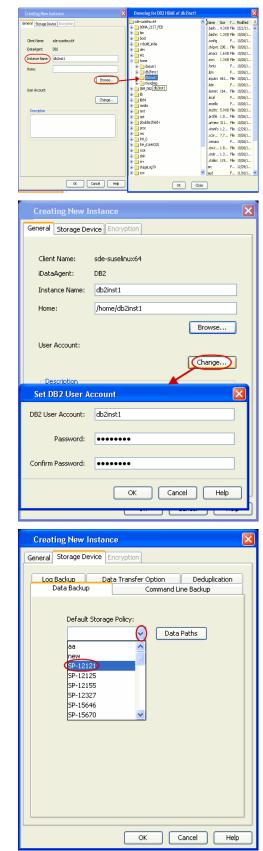
 Click **OK**.

- From the CommCell Browser, navigate to Client Computers | <Client>.
 - Right-click DB2 and click All Tasks | New Instance.

- In the Instance Name field, type a name.
 - In the Home field, click Browse and select the path to the DB2 application files.

- Click Change.
 - In the **User Account** field, type the user name to access the DB2 application.
 - In the **Password** field, type the password for the user.
 - In the **Confirm Password** field, re-type the password for the user.
 - Click OK.

- Click the **Storage Device** tab.
 - In the **Default Storage Policy** box, select a storage policy name for data backups.



- 7. Click the **Command Line Backup** tab.
 - In the Storage Policy for Command Line Backup box, select a storage policy name.

- Click the Logs Backup tab.
 - In the Storage Policy for All Log Files box, select a storage po backups.
 - Click OK.

8.

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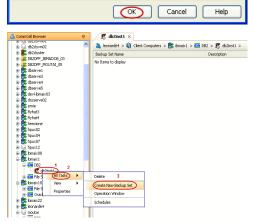
Creating New Instance General Storage Device Encryption

Deduplication

Cancel Help

X

- 9. • From the CommCell Browser, navigate to Client Computers | <Client> | DB2.
 - Right-click the <Instance> and click All Tasks | Create New Backup Set.



- 10. • Under Available DB Names, click the database name, and then click the arrow button to move the database name to the Selection box.
 - Click OK.

• From the CommCell Browser, navigate to the **<Instance>**. • Right-click the *Backup Set* and click **All Tasks** | **New Subclient**.

12. In the **Subclient Name** field, type a name.

13.

11.

- Click the SnapProtect Operations tab.
- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select the storage array from the **Available Snap Engine** drop-down list.
- From the Use Proxy list, select the MediaAgent where backup copy operation will be performed.

When performing IntelliSnap backup copy using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.

Creating New Backup Set
Choose the New Backup Names
Available DB Names: Selection:
REPDB <
Storage Policy for All Log Files: DB2DPFData
OK Cancel Help
ConniCel Browser
satistip 🔗 🦓 Glenk Computer Groups
🗑 🕞 172.16.66.105 🛛 🙀 default new
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Br dmw2k3b32 Properties Delete
Ganga
Creating New Subclient
Pre/Post Process Storage Device Activity Control Encryption Security General Content Backup Arguments
Client Computer: db2v97exp64
iDataAgent: DB2
Instance: db2inst1 Backup Set: SAMPLE
Subclient for data backup
Description
Cancel Help
default Properties
General Content Backup Arguments Pro/Post Process Storage Device Activity Control Encryption 1 (SnapProtect Operations) Security
2
Available Snap Engines
Enter Array Credentials
Use Proxy
Use Separate Proxy for Snap to Tape
Proxy
Use source if proxy is unreachable
OK Cancel Help

- **14.** Click the **Storage Device** tab.
 - In the **Data Storage Policy** list, select the same storage policy used for data backups in **Step 6**.

The subclient should use the same storage policy set for data backups at the instance level in order to prevent job failure.

• Click OK.

15. Click **OK**.

16.

•	From th	e CommCell	Browser.	navigate	to the •	<instance>.</instance>

• Right-click the <Backup Set> and click All Tasks | New Subclient.

17. In the **Subclient Name** field, type a name.

Creating New Subcli	ent		×	
General	Content	1	Backup Arguments	
Pre/Post Process	Storage Device	Activity Contr		
Data Storage Policy Data	a Transfer Option	Deduplication		
Storage Policy:				
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Incremental Storage Polic			N/A	
			Data Paths	
Create Storage Poli	ry]			
	<u> </u>			
Number of Data Backup	Streams:		1 *	
		\bigcirc	Cancel Help	
Backup Schedule			X	
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o you want to create a			y backup schedule.	
 Associate to schedu 	le policy Svs	tem Created (A	II Agent Types) 🗸 🗸	
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🔘 Schedule				
🔾 Do Not Schedule				
Do Not Schedule				
		OK	Cancel Help	
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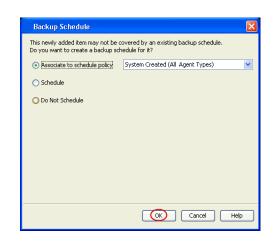
18. • Click the **Content** tab.

• Clear the **Backup Data** checkbox.

- **19.** Click the **Backup Arguments** tab.
 - Click the **Back up Log Files** checkbox.
 - Click OK.

20. Click **OK**.

Creating New Subclient
Pre/Post Process Storage Device Activity Control Encryption Security
General Content Backup Arguments
Client Computer: db2v97exp64 iDataAgent: DB2
iDataAgent: DB2 Instance: db2inst1
Backup Set: SAMPLE
Subclient name: subclient for log backup
Description
OK Cancel Help
Constitue New Public A
Creating New Subclient
Pre/Post Process Storage Device Activity Control Encryption Security General Content Backup Arguments
Backup Data
Refresh
Entire Database
O Database Subset
SAMPLE
IBMDB2SAMPLEXML
SYSCATSPACE
TEMPSPACE1
Items in bold are not included in any Online Subset subclient.
OK Cancel Help
Creating New Subclient
Pre/Post Process Storage Device Activity Control Encryption Security General Content Backup Arguments
Online Backup Offline Backup
Number of Buffers: 2
Buffer Size: 1024
Parallelism: 0 ×
Use Db2 Compression
If you select "Offline Baokup" all running DB2 applications before baokup will be terminated.
Back up Log Files
Delete Log Files After
Cancel Help
Cancer Help



SKIP THIS SECTION IF NOT USING SOLARIS.

Click Next > to Continue.

ENABLE SNAPPROTECT BACKUPS ON SOLARIS ZONE

Next >

Follow the steps given below to enable SnapProtect backups on each of the non-global zone clients containing the application data.

- 1. From the CommCell Console, navigate to **Client Computers** | *<Client>*.
 - Right-click the client and select Properties.

à _				
CommNet	What's new?			
G Clent Computers 1	Laptop Backup			
2 Al Tasks	Laptop Backup Agent to protect data on laptops and desktops used in remote offices and outside of a domain			
B C murr Ven +	network. Backups can be performed reamlessly using automatic schedules bared on network connectivity or			
· Storage	Show on startup			
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🗄 🙀 Content Director	🔁 Job Controller			
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*	III 07/21/2010 10:38:20 FullorS mumbu 35:256 Liser Ladmin bas instead on			
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Client Computer Proper	ties 🛛 🛛 🕹			
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CDR Log File Location				
Browse				
Enable SnapProtect				
Enable retry on network				
Enable retry of network	errors			
Retry Frequency (seconds	30 -			
Retry Count	40 -			
2				
Global zone host name) 			
	OK Cancel Help			

- Click Advanced tab.
 - Select the **Global Zone host name** from the drop-down list.
 - Click OK.
 - We support disks on a global zone mounted using loopback File System on a non global zone.
 - This option need not be enabled if you are using a NFS share. This is because when using NFS mount paths, the operations are limited to the non-global zone and does not use the global zone.

 Repeat the above steps on all the non-global zone clients containing the application data.

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

(Next >)

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Create New Snapshot Copy.

- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

2.

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A ConniCel Browser P	Storage_Snap × What's new? ×
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<u>۲</u>	Create New Snapshot Copy
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4	
	Event Wewer ×
	Event Viewer Seve Event Job Date Progr Compu Event C Description
	125 07/21/2010 13:45:59 Ev/Agr5 murphy 35:287 Copy [Snap Copy] in the 5
	110 18 07/21/2010 12:00:29 JobMa murphy 19:040 Data Aging operation has
	Inf 18 07/21/2010 12:00:12 JobPla murphy 19:322 Data Aging operation has Inf 07/21/2010 11:03:04 EvMgr5 murphy 35:255 User (admin) has logged off.
	113 07/21/2010 11:02:02 EvMgr5 murphy 35:254 User [admin] has logged on.
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🛒 Agents	 107 07/21/2010 10:27:41 EVMgrS murphy 35:255 User [admin] has logged off. 110 07/21/2010 10:38:20 EVMgrS murphy 35:254 User [admin] has logged on.
	II Pause Flaying Information, Minor, Major, Critical, Maximum events shown: 200
Snap Copy Propert	ies (Storage Policy: Storage_policy01)
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Selective Copy	Associations Advanced Deduplication
General Retention	Copy Policy Data Paths Data Path Configuration
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Copy Information	
Copy Name:	
aspy Gamer	
Dimensi Caras	
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CDefault Index Destination	n
Library:	~
MediaAgent:	× 1
Drive Pool:	▼
Scratch Pool:	
Scratch Pool:	Y
Scratch Pool:)
)
)
)
	4 OK Cancel Help

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

murphy - CommCell Console						
File View Tools Windows Help						
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🛆 CommCell Browser 🛛 🤤	🖉 🔂 🔂 💦	hap × What's new? >				
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- Click the **Snapshot** tab.
 - Select Enable Backup Copy option to enable movement of snapshots to media.
 - Click OK.

Quick Start Guide - SnapProtect

Enable Backup Copy 2 1 Snapshots Created On and After Mon 07/19/2010 Defer Backup Copy for 0 day(a)	
Defer Backup Copy for 0 🚽 day(s)	
C Selection Rule	
 All Backups 	
Choose the Backup Selection Rule: Advanced	
Crosse the Backeth Selection Kulle:	
3 OK Cancel	Help

Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS
3PAR
DELL COMPELLENT
DELL EQUALLOGIC
EMC CLARIION, VNX
EMC SYMMETRIX
FUJITSU ETERNUS DX
HITACHI DATA SYSTEMS
НР ЕVA
IBM SVC
IBM XIV
LSI
ΝΕΤΑΡΡ
NETAPP WITH SNAPVAULT/SNAPMIRROR

Previous Next >>

Previous)

Next >

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



3.

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		2	٥	<u></u>	~
Array Managemen	0	110	07/21/2010 10:38:20 Ev	MgrS nurphy 35:254	User (adnin) has logged on.
Control Host	Name	User Name	Snap Vendor	. Description	× Add
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172.19.66.22		grpadmin	Dell Equalogic		Edit
172.19.125.226	6000279	admin	IBM XIV		
172.19.66.91	APM0003340	admin	EMC CLARIION		Delete

What's new?

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OK Cancel Help

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemer	ıt 💽
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN		8 Byte WWN
Provisioning	👔 Provisioning : Indexs : Spar-I.commwailt.com : Virtual Valumes	Provisioning	Provisioning : Indexs : Sper-Ecommonalt.com : Virtual Volumes
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(User Name		
4	Password		
	Confirm Password		
5	Device Group		
6 (from this device group	
	Description		
	ОК	Cancel Help	
		< Previous	Next)

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

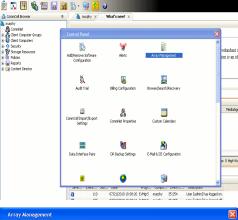
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	
172 19 71 26	MN1963C	admin	TRM YTV		×	

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
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Array Managemer Snap Vendor Name Control Host User Name Password Confirm Password Device Group G Use devices only	nt	

For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the **Username** and **Password** fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

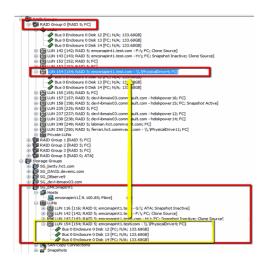
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- Select EMC CLARIION from the Snap Vendor list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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172.19.66.91	APM0003340	admin	EMC CLARIION			Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 10 71 26	Mb11963/C	admin	TRM VIV		<u>×</u>	List bridge
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Quick Start Guide - SnapProtect

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Confirm Password)
Device Group		
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Description		
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	< Previous	Next >

SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

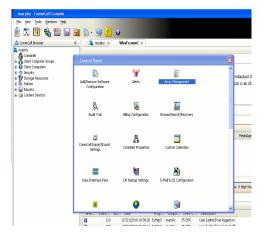
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the Symm ID of the array in the Name field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the Device Group field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

To understand how the software selects the target devices during SnapProtect operations, click here.

Control Host Name fidk.hct.commvault.com 5001438002 H	User Name Snap Vendor Description ¥ Add	
172.19.66.22 (172.19.125.226 6000279 a	rpadmin Dell Equalogic Idmin IBM XIV	
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1 Snap Vendor	EMC Symmetrix	
2 Name		
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Snap Vendor	EMC Symmetrix	
Name		
Control Host		
User Name		
3 Password		
Confirm Password		
4 Device Group		
Use devices only	/ from this device group	
Description		
ОК	Cancel Help	

SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

 $\circ~$ COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

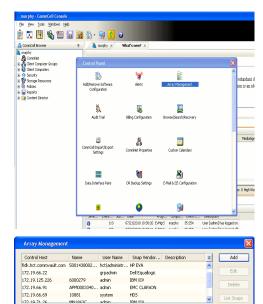
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	serial numb	er for the
HDS storage device.					

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the $\ensuremath{\textbf{Description}}$ field to enter a description about the entity. This description • can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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A	rray Managemer	it			×
9	5nap Vendor	HDS		*	
M	lame				
3	Control Host			_	D
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4 ⊧	Password				
	Confirm Password				J
5 0	Device Group				
6 🤇	Use devices only	from this	s device group		
	Description				
	ОК	Car	ncel Help]	
				Previo	us)

Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

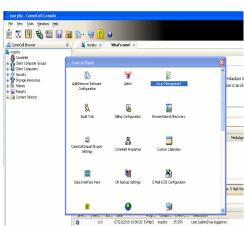
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN11963C	admin	TRM VTV		~	List bridps

Array Managemer	ıt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	r from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

Contemporary Management	Save changes System options General Status Summary Identification Identification Name: EVA440 Node WWN: 5001-4380-025D-EB70 UUID: 6005-08b40002-0000
Snap Vendor HP EV	
Control Host User Name Password Confirm Password	
5 Device Group 6 Use devices only from the Description	his device group
	ancel Help

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

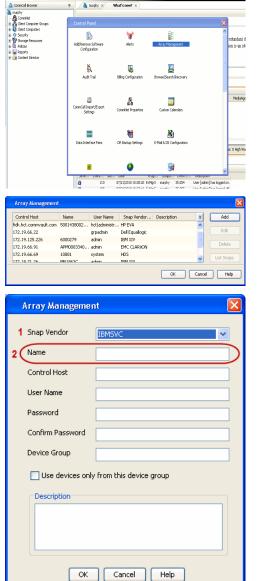
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. • From the CommCell Console, navigate to Tools | Control Panel.
 - Click Array Management.

Click Add. 2.

- 3. • Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the Name field.



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What's new? >

< Previous

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The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- Enter the Management IP address or host name of the array in the Control Host field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

18M Syst	tem Storage SAN Volume Controller	Welcome,	superuser (6 users online)	Legal	Logout Help	IBM.	
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m		lo_grp0	General				
	Jonation of the second s	ibmnode2	Name ID	ibmcluster1 0000020063/			
19 49 A		io_grp1	Location	Local	OCESS J		
Her.			Cepecity				
		lo_grp2	Total MDisk Capacity				
			Space in MDisk Groups Space Allocated to Volumes	7.5 TB 3.9 TB			
11		io_grp3	Total Free Space	3.7 TB			
			Total Volume Capacity Total Volume Copy	4.8 TB			
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

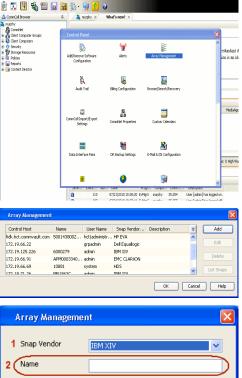
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Array Managemer	nt	×
1 Snap Vendor	IBM XIV	
2 Name)
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	r from this device group	
Description		
ОК	Cancel Help	

The **System ID** (S/N) is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
 X

 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - o LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

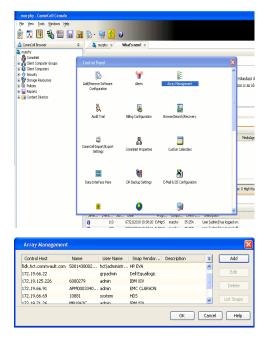
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

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rom this device group
Cancel Help
II Drives 🔒 Drives 🔁 Drive Channels 🔐 Enclosures 🚺 Mappings 🔠 세
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(ID): 60080E500017FA800000000487F45A4
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The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

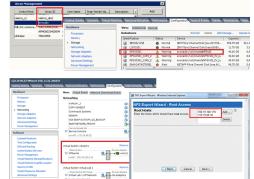
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

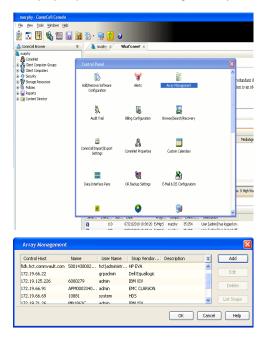
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NebAcc	
	NetApp	×
Name		
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
	Construction and a second	
Use devices oni	y from this device group	
Description		
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

4.

3.

• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

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Create Storage Policy Wiz	zard	×
	Please select a library to be the default library for this primary copy	
Ner-Pi source	Library: test	
	Press Next to continue	
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- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

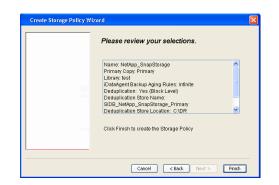
9. Provide the DataFabric Manager server in	nformation.
---	-------------

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2008
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	
Create Storage Policy Wiz	Please enter the streams and retention
	criteria for this policy
	Number of Device Streams: III 🚊 Choose the Primary Copy's Aging Rules:
	□DataAgent Backup data □ Infinite/ 15 - Days 2 - Cycles
	Retain by Jobs 24
	Data Archive/Compliance Archiver
	✓ Infinite/ 365 ± Days
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🛛 🕅
	Do you want to enable Deduplication for the
	primary copy?
	Deduplication O Yes
	Enable Client Side Deduplication
	○ No
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🔀
	Please specify the location to store the
	Deduplication Store
	Name: SIDB_NetApp_SnapStor Deduplication Store Location:
	MediaAgent Name dhaval-2008
	Location: Browse
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

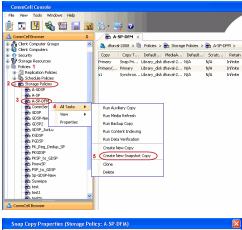


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

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Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning
Primary-Vault	Primary	General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault-Mirror	Vault	Backup Selection
Primary-Mirror-Mirror	Mirror	V Al Backups
		Backups On and After: Thu 04/07/2011
		Source Copy
		Source copy Specify Source for Auxiliary Copy: Primary
		OK Cancel Help
Click the Provisioning tab.		Snap Copy Properties (Storage Policy; A-SP-DFM)
-		General Retention Copy Policy Data Paths Data Path Configuration
Click Refresh to display the DFM e	entities.	Selective Copy Associations Advanced Deduptication Provisioning
Select the Provisioning Policy from	om the drop-down list.	DataFabric Manager Name: hwinapp02
Select the Resource Pools availa	hle from the list	Refresh DataFabric Manager Entities:
Click OK .		Provisioning Policy:
		3 Resource Pools
The secondary snapshot copy is cr	eated.	Available: Selected:
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		shall_cascademirror_source_hf3 Add >
		shaijprimarymiror1_hf2 shaijprimaryvaul_hf6 < Remove
		shali_secondarymiror_hf6 shali_secondaryvault_hf5 Add All >>
		<< Remove All
		Resource Pool Info
		Name: scott-mold Space Status: Normal
		Total Size:2.52 TB Available Size:961.49 GB
		Filer Aggregate Space Status Total Size Available Size 🛛
		mold dev_n_test Normal 2.52 TB 961.49 GB

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel He

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Storage Policy Properties: NetApp_SnapStorage
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,
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Source Snap Copy
Specify Source for Backup Copy:
Primary(Snap)
vault from primary
OK Cancel Help

• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

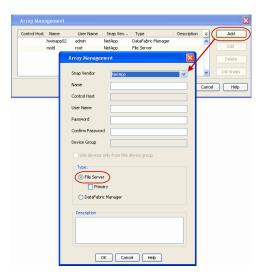
The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page 402	of 520

CommCell Console I File Wew Tools Windows Help	
🛆 CommCell Browser 🛛 🗘 🌦 🗛	9 ∂ SP-DFM × 4 b Ⅲ
Control Panel	4-2000 > 🐚 Policies > 👰 Storage Policies > 👰 A-SP-DFM > 🕴 🖓 🖬
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SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

Getting Started - DB2 Backup

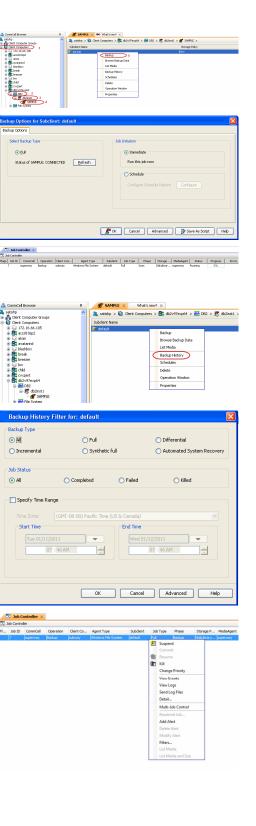
PERFORM A BACKUP

Once the storage policy is configured, you are ready to perform your first backup.

The following section provides step-by-step instructions for performing your first backup:

- 1. From the CommCell Browser, navigate to Client Computers | <Client> | DB2 | <Instance>
 - Right-click the subclient and click **Backup**.
- Select Full as backup type and Immediate to run the job immediately.
 - Click OK.
- **3.** You can track the progress of the job from the **Job Controller**.
- 4. Once job is complete, view the details of job from the **Backup History**. Right-click the **Subclient** and select **Backup History**.
- 5. Click OK.

- 6. You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job
 - Details of the job
 - Events of the job
 - Log files of the job
 - Media associated with the job



< Previous

Next >

Quick Start Guide - SnapProtect

Previous Next >>

Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

CommCell Browser

🕫 NetApp_SnapStorage 🗙

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.

Posen P	Auchine Standard: Auchine Standard:
	328 25 12/23/2010 07:01:05 Job Manager prepasus 19:1053 327 25 12/23/2010 07:00:19 CWassing& prepasus 32:373 326 25 12/23/2010 07:00:10 Job Manager prepasus 32:519
AuxCopy Options	×
General Job Initiation	
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All Copies	
C Select A Cop	у
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Cancel	Advanced 🦻 Save As Script Help
Schedule Details Schedule Name Cone Time Daily Cweekly Monthly C Yearly	t Time 8:00 AM 4
	OK Cancel Help Options>>

- 2. • Select the desired options and click the Job Initiation tab.
 - Select Schedule to configure the schedule pattern and click Configure.

- 3. • Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

Next > Previous

Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

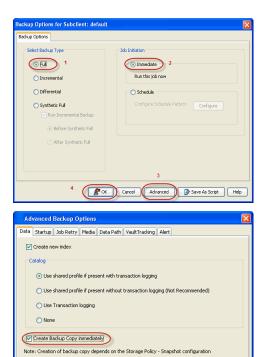
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.

OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

Cancel Help

(OK

Quick Start Guide - SnapProtect

2. Click OK.

Copy Copy Type	Default Library SNAP-VM-90-MAG1	NedaAgent	Default Drive Pool	Scratch Pool
Pri Primary SNAP-COPY-SNAP Primary Snap			N/A.	N/A
M Policies				
alcies				
452				
11 1971 -				
eDR(visien) 2				
All Tasks Run Auxiliary Copy				
Wew Run Media Refresh				
Properties Run Backup Copy				
Run Content Indexing Run Data Verification				
Create New Copy Clone				
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Getting Started - DB2 Restore



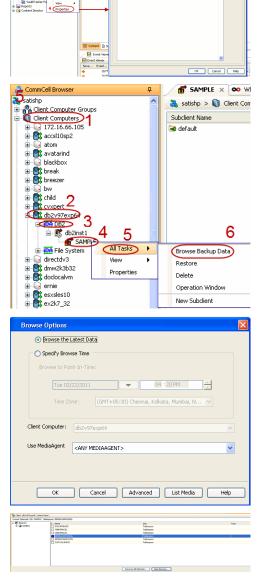
PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring the entire database to a different computer.

- **1.** From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.
- From the CommCell Browser, navigate to **Client Computers | <***Client***> | DB2**.
 - Right-click the backup set and then click All Tasks | Browse Backup Data.

3. Click OK.



- 4. Select the entire database in the left pane.
 - Click Recover All Selected.
- Select the Use Snap Restore checkbox to restore the database to a different computer.
 - Select the **Destination Computer** in which to restore the entire database.

Ensure that the source and destination computers have the same directory structure and user/group IDs of the DB2 instance you are restoring. Quick Start Guide - SnapProtect

• Click OK.

1 Use Snap Restore	\mathcal{O}
 Entire Database 	O Database Subset O History Files
The latest Database V	iew:
SySCATSPACE SYSTOUSPA TEMPSPACE USERSPACE USERSTB19 USERSTB21 USERSTB22 Refresh	
Destination Computer:	ibmaix22
Destination Instance:	db2inst3
Target Database Name:	SVCDB1
Target Database Path:	Browse
	Cancel Advanced 🚱 Save As Script Help

6. You can monitor the progress of the restore job in the **Job Controller**.

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

Previous Next >

Getting Started - Unix File System Deployment

Use the following steps to install the File System iDataAgent on a Linux computer.

WHERE TO INSTALL

Install the software directly on the Linux computer that you wish to protect.

BEFORE YOU BEGIN

Download Software Packages Download the latest software package to perform the install.

SnapProtect Support - Platforms

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE UNIX FILE SYSTEM /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

1. Logon to the client computer as **root** or as a sudo user.

If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.

 If you are installing the software from CD, run the following command to mount the CD:

mount -t iso9660 udf /dev/cdrom /mnt/cdrom

Run the following command from the Software Installation Package:

./cvpkgadd

3. The product banner and other information is displayed.

Press Enter.

- 4. Read the license agreement. Type y and press Enter.
- 5. Press Enter.

6. Press Enter.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

1) Install data protection agents on this computer

- 2) Advance options
- 3) Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "failover" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

- 1) Install on a physical machine
- 2) Install on a virtual machine
- 3) Exit
- Your choice: [1]

Work We found one network interface available on your machine. We will associate it with the physical machine being installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI.

Please check the interface name below, and make connections if necessary:

Physical Machine Host Name: [angel.company.com]

7. If you have only one network interface, press **Enter** to accept the default network interface name and continue.

If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown.



- 8. Press Enter.
- 9. Type the number associated with the Unix File System iDataAgent and MediaAgent.
 Press Enter.
- A confirmation screen will mark your choice with an "X".
 Type d for Done, and press Enter.

11. Press Enter.

12. Type the appropriate number to install the latest software scripts and press **Enter**.

- Select **Download from the software provider website** to download the latest software scripts. Make sure you have internet access.
- Select **Use the one in the installation media** to install the software scripts from the package or share from which the installation is currently being performed.
- Select Use the copy I already have by entering its unix path, to specify the path if you have the software script in an alternate location.
- 13. Press Enter.

14.

Press Enter to accept the default path.

- If you want to specify a different path, type the path and then press **Enter**.
- If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.

In order to make sure that the client computer has ${\tt read/write}$ access to NFS shared drive, review the steps described in Installing Software Binaries to an NFS Shared Drive.

Do not use the following characters when specifying the path:

!@#\$%^&*():/?\

- **15.** Press **Enter** to accept the default location.
 - Enter a path to modify the default location and press Enter.
 - All the modules installed on the computer will store the log files in this directory.

16. Press Enter.

Please specify the client name for this machine.

It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe.

Physical Machine Client name: [angel]

Install Calypso on physical machine angel

Please select the Calypso module(s) that you would like to install.

[] 1) MediaAgent [1301] [CVGxMA]

[] 2) UNIX File System iDataAgent [1101] [CVGxIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:2</pre>

Install Calypso on physical machine 172.19.99.62

Please select the Calypso module(s) that you would like to install.

[X] 1) UNIX File System iDataAgent [1101] [CVGxIDA]

[X] 2) MediaAgent [1301] [CVGxMA]

[] 3) ProxyHost iDataAgent [1102] [CVGxProxyIDA]

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here:d</pre>

Do you want to use the agents for restore only without consuming licenses? [no]

Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.

If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

1) Download from the software provider website.

2) Use the one in the installation media

3) Use the copy I already have by entering its unix path

Your choice: [1] 2

Keep Your Install Up to Date - Latest Service Pack

Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.

If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.

Do you want to download the latest service pack now? [no]

Please specify where you want us to install Calypso binaries.

It must be a local directory and there should be at least 176MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".

Installation Directory: [/opt]

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

Log Directory: [/var/log]

Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be written to by both kinds of processes we can either make 17. Type the Group name and then press Enter.

18. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.

Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press ${\mbox{\bf Enter}}.$

19. If you do not wish to configure the firewall services, press **Enter**.

If this computer is separated from the CommServe by firewall(s), type $\ensuremath{\text{Yes}}$ and then press $\ensuremath{\text{Enter}}.$

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

20. Type the fully qualified CommServe host name and press Enter.

Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.

21. Press Enter.

22. Type the appropriate number to select the **Client Group** and press **Enter**.

This screen will be displayed only if Client Groups are configured for the CommCell

A confirmation screen will mark your choice with an "X".
 Type d for Done, and press Enter.

such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "dba" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.

If you're planning to backup Oracle DB you should use "dba" group.

Would you like to assign a specific group to Software? [yes]

Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here.

Group name: sky1

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "sky1".

Press <ENTER> to continue ...

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.

Please enter the port numbers.

Port Number for CVD : [8400]

Port Number for EvMgrC: [8402]

Is there a firewall between this client and the CommServe? [no]

Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name services configured on this machine.

CommServe Host Name: mycommserve.company.com

Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters.

1) Use Cell level policy

2) Always use Global filters

3) Do not use Global filters

Please select how to set the Global Filters for the default subclient? [1]

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.

[] 1) Unix

[]2) DR

[a=all n=none r=reverse q=quit d=done >=next <=previous ?
=help]</pre>

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 1

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.

[X] 1) Unix

[] 2) DR

[a=all n=none r=reverse q=quit d=done >=next <=previous ?

Type **3** and press **Enter**.

The installation is now complete.

25.

=help]

list below:

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: d

Please select one storage policy for this IDA from the

24. Enter the number associated with the storage policy you want use and press **Enter**.

1) SP_StandAloneLibrary2_2

2) SP_Library3_3

SP_MagLibrary4_4

Storage Policy: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

Currently you have Calypso installed on physical node angel.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

1) Add another package to angel.company.com

2) Install Calypso on a virtual machine

< Previous Next >

3) Exit Your choice: [3]

Getting Started - Unix File System Configuration

< Previous (Next >

CONFIGURATION

1.

Once installed, the Linux File System *i*DataAgent requires some additional configuration before running your first SnapProtect backup. Follow the steps given below to complete the configuration for this Agent.

- From the CommCell Browser, navigate to **Client Computers** | <*Client*>.
 - Right-click the client and select **Properties**.

- Click on the **Advanced** tab.
 - Select the **Enable SnapProtect** option to enable SnapProtect backup for the
 - client.
 - Click OK.

🛆 ConmCel Browser 🛛 🗧	What's new?	× ×
CommVet Clent Computer Groups Clent Computer 1	What's new?	
2 Int Computer 1 2 Int margine All Tasks	Laptop Backup	gent to protect data on laptops and desktops used in remote offices and outside of a domain
	network Backup	s can be performed seamlessly using automatic schedules based on network connectivity or
Security Properties	Show on startup	
Reports Content Director	Job Controller	×
	FL Job ID Opera	tion Client Co Agent Type Subclient Job Type Phase Storage MediaAgent
	There are no jobs curre	nby running.
	<	
	II Pause Playing	Running: 0 Pending: 0 Walting: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 High Water
	Event Viewer	×
	Seve Event 3	bb., Date Prog., Conput., Event C.,. Description 18/07/21/2010/12:00:29 JobMa murphy 19:990 Data Aging operation has
🛕 ConniCel Browser	3 117	18/07/21/2010 12:00:29 JobMa murphy 19:840 Data Aging operation has 18/07/21/2010 12:00:12 JobMa murphy 19:322 Data Aging operation has
Gonnice browser Agents	116 113	07/21/2010 11:03:04 EvMgrS murphy 35:255 User [admin] has logged off. 07/21/2010 11:02:02 EvMgrS murphy 35:254 User [admin] has logged on.
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		OK Cancel Help
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Client Computer Groups		Subclient Name Storage Policy Description
		Backup
🗄 🧕 docint01		Browse Backup Data
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E Crod 2 Control 2 C	eD 4	Erase Data
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⊕		Backup History
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🕀 🐻 Reports		Delete Operation Window
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🔔 CommCell Browser		
S Agents		
	»	Contract D Summer
	•	Content D Summary

- From the CommCell Browser, navigate to *Client>* | File System.
 - Right click the default subclient and click Properties.

4. • Click the Storage Device tab.

• In the **Storage Policy** box, select the storage policy name.

Subclient Properties of default
Activity Control Encryption Open Files Failure Actions General Content Filters Pre/Post Process Security Storage Device
Data Storage Policy Data Transfer Option Deduplication
Storage Policy:
Incremental Storage Policy: N/A
Data Paths
Create Storage Policy
OK Cancel Help
Subclient Properties of default
Subclient Properties of default

- 5. Click the SnapProtect Operations tab.
 - Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
 - Select the storage array from the **Available Snap Engine** drop-down list.
 - From the **Use Proxy** list, select the MediaAgent where SnapProtect and backup copy operations will be performed.
 - When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.
 - Click **Use Separate Proxy for Snap to Tape** if you want to perform backup copy operations in a different MediaAgent.

Select the MediaAgent from the **Proxy** list.

Subclient Properties of default				×
General Content Filters	Pre/Post Process	SRM Options		ge Device
2				
3	ct a Snap Engine			_
4		Enter	Array Creder	itials
Use Proxy				J
Use Separate Proxy for Snap to	Таре			
Proxy				×
Use source if proxy is unreachable	3			
	[ОК	Cancel	Help

- Click the Content tab.
 - Click **Browse** and specify the content for the subclient.
 - Click OK.

6.

The subclient content must contain data that resides on the storage device volume; do not include local drives as subclient content.

The root folder (/) or a folder belonging to the root volume should not be added as subclient content.

Subclient Properties of default			
Storage Device Activity Control Eng General Content Filters	Pre/Post Proc		erations Security
Contents of subclient:*			
/mnt/f2	Dele	te	
	Brow	se	
	Add Pa	aths	
E cashi tash parki garan			
Enable Apple Double Support			
Expand symbolic links of subclient content	Discover		
*Subcliep	t content in italics	: uses regular e	voressions
Sabalon		, asos rogalar o	
	ОК	Cancel	Help

SKIP THIS SECTION IF NOT USING SOLARIS.

Click Next > to Continue.

ENABLE SNAPPROTECT BACKUPS ON SOLARIS ZONE

Follow the steps given below to enable SnapProtect backups on each of the non-global zone clients containing the application data.

- 1. From the CommCell Console, navigate to **Client Computers** | *<Client>*.
 - Right-click the client and select **Properties**.

2		
∠.		

- Click Advanced tab.
- Select the **Global Zone host name** from the drop-down list.
 - Click OK.
 - We support disks on a global zone mounted using loopback File System on a non global zone.
 - This option need not be enabled if you are using a NFS share. This is because when using NFS mount paths, the operations are limited to the non-global zone and does not use the global zone.

🛕 CommCell Browser 🛛 🤤	What's new? ×
Committee	What's new?
Clent Conputer Groups Clent Computer 1	Laptop Backup
2 marphan a tool a All Tasks →	Laptop Backup Agent to protect data on laptops and desktops used in remote offices and outside of a domain
B C murg View	network. Backups can be performed seamlessly using automatic schedules based on network connectivity or
Security Properties	Show on startup
🖲 🔓 Reports	Diab Controller X
Content Director	📃 Job Controller
	FL Job ID Operation Client Co Agent Type Subclient Job Type Phase Storage MediaAgent There are no jobs currently running.
	The second pass carrier of the may
	Il Pause Playing Running: O Pending: O Wating: O Queued: O Suspended: O Total Jobs: O Job Streams: O High Wate
	Event Wewer X
	Seve Event Job Date Progr Compu Event C Description
	118 18 07/21/2010 12:00:29 JobMa nurphy 19:840 Data Aging operation has
🛕 CommCell Browser	 117 18 07(21)2010 12:00:12 JobMa murphy 19:322 Data Aging operation has 116 07(21)2010 11:00:04 EVMpr5 murphy 35:255 User [admin] has logged off.
🖻 Agents	11.3 07/21/2010 11:02:02 EvMgr5 murphy 35:254 User [admin] has logged on.
2	110 072212200 10:38:20. FullowS. neurobs 35:254 User Edmini has loconed on If Pause Playing Information, Mnor, Major, Critical, Maximum events shown: 200
1 object(s)	nuphy admin
Client Computer Proper	ties 🕅
General Version Security	Activity Control Groups Firewall Configuration Network Throttling Policies
Job Configuration Encryption	Advanced Content Indexing Registry Key Settings Client Side Deduplication
CDR Log File Location	
CDR Log File Location	
	Browse
Enable SnapProtect	
🗆 🗹 Enable retry on network e	mors
Retry Frequency (seconds	30 +
Retry Count	
Retry Counc	40 -
2	
Global zone host name	⊻)
	OK Cancel Help
	OK Cancel Help

3. Repeat the above steps on all the non-global zone clients containing the application

Next 🕨

data.

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

CREATE A SNAPSHOT COPY

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- 1. From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy.**

murphy - CommCell Console	
File Vew Tools Windows Help	B. C. A. A.
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a number	🙇 murphy > 🐚 Policies > 👼 Storage Policies > 💑 Storage_Shap >
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B murphy_2 Security Security Storage Resources	
Policies Policies Policies Policies	
Schedule Policies	Content 🗋 Summary
CommServeDR(murphy)	Job Controller X
Sorage_policy01 Sorage_online All Tasks	Xob Controller Run Austilery Copy K.Co Agent Type Subclient Job Type Phase Storage Me
VaultTracker View >	Run Azonary Copy Run Media Refresh
General Properties General Director	Run Content Indexing Run Data Verflication
	Create New Copy
<	Create New Snapshot Copy
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F Agents	International Interna International Internationali
:	II Pause Flaying Information, Minor, Major, Critical, Maximum events shoen: 200
Snap Copy Propert	ies (Storage Policy: Storage_policy01) 🛛 🛛 🔀
Selective Copy	Associations Advanced Deduplication
General Retention	Copy Policy Data Paths Data Path Configuration
Copy Information	
Copy <u>N</u> ame:	
Primary Copy	
Default Index Destination	
Der ault muex Descinatio	
Library:	✓
MediaAgent:	
Drive Pool:	×
Scratch Pool:	▼
3	
	4 (OK) Cancel Help

- Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

Next >

i File Yew Tools Windows Help D 🔽 🔛 🛂 📽 🔛 📠 🖼 🕉 - 🔐 🚺 🤡 Police-Copy Type Primary Primary Snap ent Default Drive ... Scratch Pool Ret N/A N/A Infin N/A N/A Infin Defauk Library Mediało Magnetic_01 murphy Magnetic_01 murphy 🖽 Content 🖪 Summary 3ab Controller × 🔽 Job Controller FL., Job ID Operation Client Co... Agent Type Subclient Job Type Phase Storage... Med II Pause Playing Running: 0 Pending: 0 Waiting: 0 Queued: 0 Suspended: 0 Total Jobs: 0 Job Streams: 0 Hig 😥 Event V 😥 Event Vene
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 07212/03010-0300-02400-024000
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 Job. Description
 Copy [Snap Copy] In the S.,
 Data Aging operation has .,
 Data Aging operation has ..
 Data Aging operation has ..
 User [admin] has logged on.
 User [admin] has logged on. 125 118 117 116 113 110 107 Storage Policy Properties: Storage_policy01 General Copy Precedence Associated Subclient Snapshot Security Advanced Enable Backup Copy 2 Snapshots Created On and After Mon 07/19/2010 Defer Backup Copy for 0 day(s) Selection Rule All Backups Choose the Backup Selection Rule: Advanced 3 (ок Cancel Help < Previous Next >

- Click the **Snapshot** tab.
 - Select Enable Backup Copy option to enable movement of snapshots to media.
 - Click OK.

Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY	
3PAR	DATA REPLICATOR	
DELL COMPELLENT		
DELL EQUALLOGIC		
EMC CLARIION, VNX		
EMC SYMMETRIX		
FUJITSU ETERNUS DX		
HITACHI DATA SYSTEMS		
HP EVA		
IBM SVC		
IBM XIV		
LSI		
ΝΕΤΑΡΡ		
NETAPP WITH SNAPVAULT/SNAPMIRROR		

Previous Next >>

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



3.

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		8	0	<u></u>	*	-
Array Management	0			gr5 nurphy 35:254	User (admin) has logged o	
Control Host	Name	User Name	Snap Vendor	Description	× Ad	d
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172.19.66.22		grpadmin	Dell Equalogic		Edi	t .
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		Dele	te.
172.19.66.69	10881	system	HDS			

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- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

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1 Snap Vendor	3PAR 💌
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Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
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Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN	8 Byte WWN
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5	Device Group		
6	Use devices only	r from this device group	
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SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

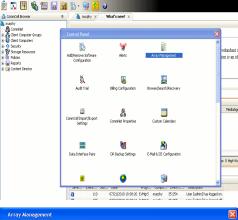
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



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Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
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172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snat
172 10 71 26	Mb11963/C	admin	TRM YTV		×	

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
3 Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
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For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

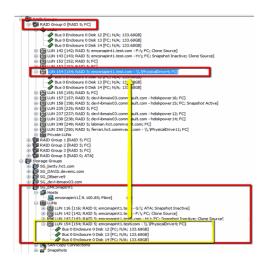
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- Select EMC CLARIION from the Snap Vendor list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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172.19.66.91	APM0003340	admin	EMC CLARIION			Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MNURARC	admin	TRM YTV		×	List bridge
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Quick Start Guide - SnapProtect

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SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

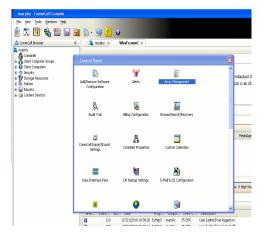
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the Username and Password fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

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SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

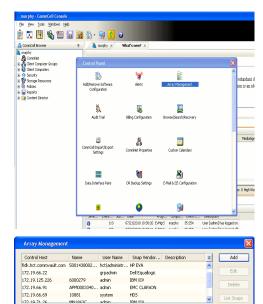
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	e serial ı	number	for	the
HDS storage device.							

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the $\ensuremath{\textbf{Description}}$ field to enter a description about the entity. This description • can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

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Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous) Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

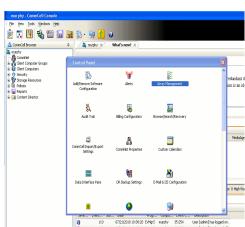
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
idk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
72.19.66.22		grpadmin	Dell Equalogic			Edit
72.19.125.226	6000279	admin	IBM XIV			
72.19.66.91	APM0003340	admin	EMC CLARIION			Delete
72.19.66.69	10881	system	HDS			List Snaps
172 19 71 26	Mb11963C	admin	TRM YTV		~	List phaps

Array Managemer	ıt 📔	×
1 Snap Vendor	HP EVA	
2 Name)
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	r from this device group	
Description		
ОК	Cancel Help	

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

VIA Storage Network Control Disks Control Disks Control Disk Groups Conta Replication Hardware Array Management	Save changes System options General Status Summary Identification Name: EVA440 Node WWN: 50014388-0250-EB70 UUID: 6005-06b40002-0000
Snap Vendor HP EV	A
3 Control Host	
4 Design Construction	
5 Device Group 6 Use devices only from t	his device group
ОКС	ancel Help
	<pre></pre>

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

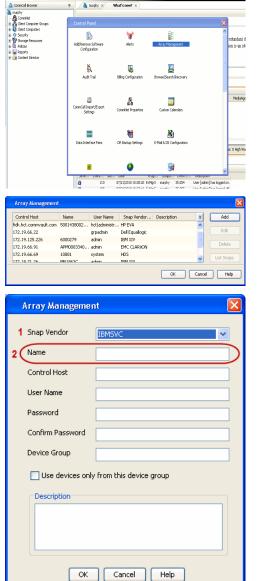
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. • From the CommCell Console, navigate to Tools | Control Panel.
 - Click Array Management.

Click Add. 2.

- 3. • Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the Name field.



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What's new? >

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Next 🕨

The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- Enter the Management IP address or host name of the array in the Control Host field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

18M Syst	em Storage SAN Volume Controller	Wekome	superuser (6 users online)	Legal	Logout Melp IB)	к. [—]
	ibmcluster1 > Home > System Status					
al.h			Info Manage			
m		io_grp0 mode1	General			
	10	ibmnode2	Name	ibmcluster1		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		io_grp1	Location	00000200634 Local	UDCESH J	
150			Cepecity			
-01		lo_grp2	Total MDisk Capacity			
			Space in MDisk Groups			
H			Space Allocated to Volumes Total Free Space	3.9 TB 3.7 TB		
0		io_grp3	Total Volume Capacity			
Sec.			Total Volume Copy Capacity	4.8 TB		
Sep.		fuster1 (6.1.0.7)	Total Used Capacity Total Overallocation	3.6 TB 64%		
		fuster116.1.0.7]				
Con	nectivity 🔲 🕕	52%		111 Running	Taska	
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	Snap Vendor	IBMSVC				
	Shap vendor	TRIMPAC			\sim	
	Name					
	Name					
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3 (Control Host)
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1	User Name					
.						
4	Password					
1	Confirm Password					
5	Device Group					
6	Use devices only	from this de	vice group)		
	Description					
	ОК	Cancel	Help			
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				(<	Previous) Next >
				0		<u></u>

SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

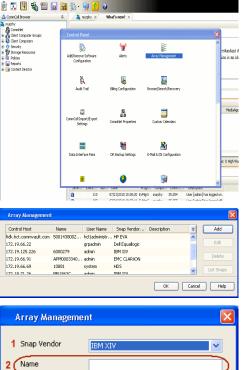
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



Array Managemer	III 🔼
1 Snap Vendor	IBM XIV
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	/ from this device group
Description	
ОК	Cancel Help

The **System ID** (S/N) is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
 ×

 General
 System Name
 Introduction

 Parameters
 System Version
 10.22

 SNMP
 Machine Type
 14/2810

 IP/Hostname 1
 172.19.155.226

 IP/Hostname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
1	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

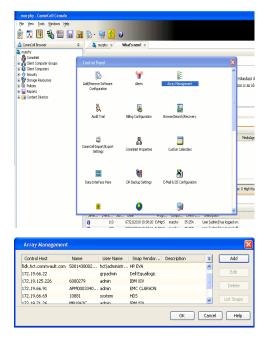
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

1 Snap Vendor	
	LSI
Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help
as _lsi - Storage Subsystem Profile	
🗄 Summary 📕 Controllers 🖶 Arrays 🔒 L	Logical Drives 월 Drives 근 Drive Channels 왕호 Enclosures ① Mappings 팬세
Controller enclosure audible alarm:	Enabled -
WSRAM configured for batteries: Start cache flushing at (in percentage stop cache flushing at (in percentage sache block size (in KB):	Yes pe): 80 e): 80 4
Media scan frequency (in days): Failover alert delay (in minutes):	w Dismbled S
Feature enable identifier: Feature pack: Feature pack submodel ID:	303035313420303037393120487745&7 Generic 130
require pack submodel ID:	
	Ler (ID): 60080E500017FA8000000004E7F45A4
Storage Subsystem world-wide identifi	z
Storage Subsystem world-wide identifi	540 AL
tereje hörpres weid-vide identif	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor	540 AL
Array Managemen Snap Vendor Name	3 569 A (000 996 It
Array Managemen Snap Vendor Name Control Host	3 569 A (000 996 It
Array Managemen Snap Vendor Name Control Host User Name	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password	3 569 A (000 996 It
Array Managemen Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	3 569 A (000 996 It
Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10
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Array Managemen Snap Vendor Name Control Host User Name Password Confirm Password 5 Device Group	1 10 10 10 10 10 10 10 10 10 10 10 10 10

The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

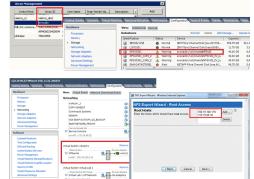
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

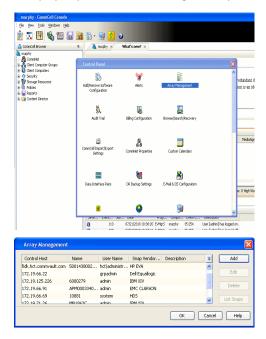
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NetApp	
Name	MetApp	
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
Use devices only	y from this device group	
Description		
ОК	Cancel Help	
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the **Storage Policy** in the **Storage Policy Name** box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

4.

3.

• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

-SP-DFN

iDSP_JunLu GDSP

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GDSE

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New Storage Policy 3 New Global Deduplication

Subclient As

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 Image Policies
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A-SP A-SP A-SP-DFM CommSer...

PGDSP
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Type Global Dedupli. Standard Standard

Disaster Ri Global Ded Global Ded Global Ded

Slobal Dedupli

obal Ded

Global De Standard Global De

Standard Standard

Standard Standard No. of Streams No. of

Create Storage Policy Wi	zard 🛛 🔀
	Please select a library to be the default library for this primary copy
22	Library: lest
LENG	Press Next to continue
	Cancel <back next=""> Finish</back>

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

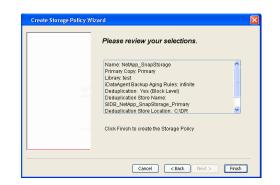
9.	٠	Provide the DataFabric Manager server information.
----	---	--

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard 🔀
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2008
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wi	
	Please enter the streams and retention criteria for this policy
	Number of Device Streams:
	DataAgent Backup data ✓ Infinite/ 15 ± Days 2 ± Cycles
	Retain by Jobs 24
	Data Archive/Compliance Archiver
	Cancel < Back Next > Finish
Create Storage Policy Wiz	
	Do you want to enable Deduplication for the primary copy?
	Deduplication ③ Yes
	Enable Client Side Deduplication
	No Press Next to continue
	Press Nex to Commuce
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard 🛛 🔀
	Please specify the location to store the Deduplication Store
	Name: SIDB_NetApp_SnapStor
	Deduplication Store Location: MediaAgent Name dhaval-2008
	Location: Browse
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wi	zard
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin Password:

10. Click Finish.

Cancel < Back Next > Finish

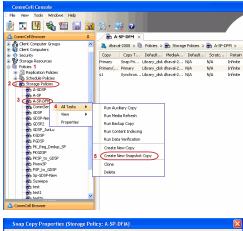


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click **Specify Source for Auxiliary Copy** and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

Primary-Mirror	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the d Select the Resource Pools available from	rop-down list.	Advanced Bockape on a After: thurdelion/2011 Source Copy Source for Auxilary Copy: Inimary Source for Auxilary Copy: Inimary Copy Source for Auxilary Copy: Inimary Copy Cancel Heb Source Copy Source Copy Source Copy Concel Heb Source Copy Source Copy Source Copy Source Copy Concel Heb Source Copy Source Sourc
Click OK .		3 Resource Pools
The secondary snapshot copy is created.		Available Selected: Inclsocideminit"_Jarget_JH1 Add >> Indlgoocodeminit"_JArget_JH1 Add All >> Indlgoocodeminit"_JArget_JH1 Indlgoocodeminit"_JArget_JH1 Indlgoocodeminit Space Status:

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

🛆 CommCel Browser 🕴 👘 NetApp_SnapStorage ×
3 DRUNG IS
Copy Copy Type Default Library MediaAgent Default Drive P
Image: Heler1 Primary(Classic) Primary(Classic)
m defaultBackupSet SnapVault Node1 Snap Vault DiskLibrary1 pegasus N(A N
E 00 File System
Storage Resources
Policies
A Schedule Policies Content D Summary
Context () Anney
VaultTracker Policies Vous 100 ID Operation Client Com Agent Type Subclient Job Type Pt
B Reports B Content Director
4
II Pause Playing Running: 0 Pending: 1 Waiting: 0 Queued: 0 Suspended: 0 Tota
Event Viewer ×
Severity Event ID Job ID Date Program Comput
302 22 12/22/2010 11:16:51 JobManager pegasus 301 22 12/22/2010 10:56:41 JobManager pegasus
Storage Policy Properties: NetApp_SnapStorage
General Copy Precedence Associated Subclients Snapshot Security Advanced
Enable Backup Copy
Snapshots Created On and After Wed 12/22/2010 💌
Defer Backup Copy for 0 day(s)
-Selection Rule
All Backups
Choose the Backup Selection Rule: Advanced
C Choose the Backup Selection Rule: Advanced
Source Snap Copy
Source Snap Copy Specify Source for Backup Copy:
Specify Source for Backup Copy:
Cancel Help
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties X
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties Security Advanced
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties X
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties Security Advanced
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties Security Advanced
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties Security Advanced
Specify Source for Backup Copy: OK Cancel Help Storage Policy Properties General Copy Precedence Associated Subclients Snapshots Created On and After Thu 01/06/2011
Specify Source for Backup Copy:
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• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

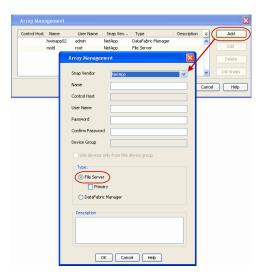
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

4.

Page 449	of 520

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CommCell Console File Wew Tools Windows Help



SEE ALSO

Import Wizard Tool

Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Data Replicator

< Previous) Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to **<Client>** | **<Agent>**.
 - Right-click the subclient and click **Properties**.
- Click the SnapProtect Operations tab.
 - Ensure **Data Replicator** is selected from the **Available Snap Engine** drop-down list.
 - Click OK.

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Getting Started - Linux File System Backup

PERFORM A BACKUP

Once the storage policy is configured, you are ready to perform your first backup.

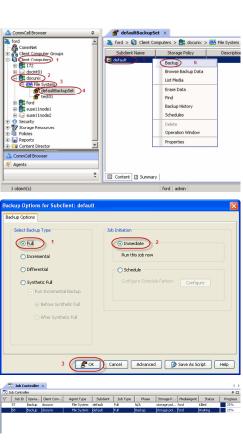
The following section provides step-by-step instructions for performing your first backup:

- 1. From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet.
 - Right-click the default subclient and click **Backup**.

- Click **Full** as backup type and then click **Immediate**.
 - Click OK.

2.

- **3.** You can track the progress of the job from the **Job Controller** window of the CommCell console.
- 4. Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.





5. Click **OK**.

Previous Next >

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- 6. You can view the following details about the job by right-clicking the job:
 - Items that failed during the job
 - Items that succeeded during the job
 - Details of the job
 - Events of the job
 - Log files of the job
 - Media associated with the job

Getting Started - Vault/Mirror Copy

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event xCopy Opti General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- 2. • Select the desired options and click the Job Initiation tab.
 - Select Schedule to configure the schedule pattern and click Configure.

- 3. • Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.

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Getting Started - Snap Movement to Media

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SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

Click Next > to Continue.

BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

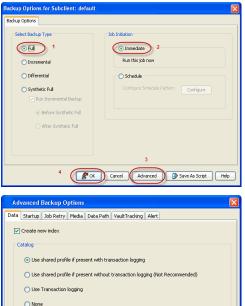
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

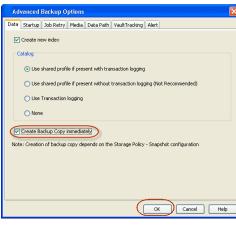
Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- 1. • From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup**.
 - Select Full as backup type.
 - Click Advanced.



- 2. • Select Create Backup Copy immediately to create a backup copy.
 - Click OK.



OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the <storage policy> and click All Tasks | Run Backup Copy.

Quick Start Guide - SnapProtect

2. Click **OK**.

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Getting Started - Unix File System Restore



PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring the backup data.

- From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the <storage policy> and click Properties.
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.
 - You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.
 - Click OK.

1.

- From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet.
 - Right-click the default subclient and then click Browse Backup Data.
- 3. Click OK.

- 4. Expand the **defaultBackupSet** and navigate to **etc** folder.
 - Select the **etc** folder.
 - Click Recover All Selected.

If you attempt to restore a running executable file, the application may crash and core dump.

• Clear the Overwrite Files and Restore to same folder options.

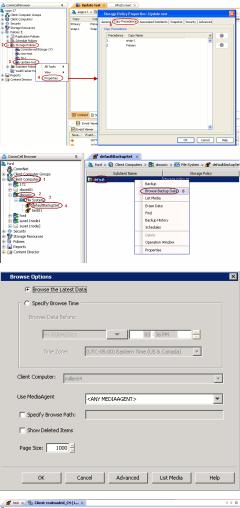
• Specify the destination path by clicking **Browse** button.

This will ensure that the existing files are not overwritten.

• Click OK.

5.

Restored data retains its original permissions. The ACLs are restored after the permissions are restored. Do not restore ACLs to any directory that has the "sticky bit" on.



Current Selected: /etc					
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8-14 200	services	353.55 KB	File	2/23/06 6:39 PM	-
🕀 🔽 acpi	prelink.cache	291.3 KB	File	2/3/11 4:04 AM	
🕀 🔽 ais	Muttre	90.62 KB	File	5/29/07 5:40 PM	
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6. You can monitor the progress of the restore job in the **Job Controller**.

7. Once the File System is restored, verify that the restored files/folders are available in [parc02] # 1s /.metacity the restore destination etc

CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.

< Previous Next >

Getting Started - Windows File System Deployment



WHERE TO INSTALL

Install the software on a client computer that you want to protect.

BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

SnapProtect Support - Platforms

Make sure that the computer in which you wish to install the software satisfies the minimum requirements.

INSTALL THE WINDOWS FILE SYSTEM /DATAAGENT

Use the following procedure to directly install the software from the installation package or a network drive.

- 1. Run Setup.exe from the Software Installation Package.
- 2. Select the required language. Click Next.

3.	Select the	e option	to	install	software	on	this	computer.

The options that appear on this screen depend on the computer in which the software is being installed.

4. Select I accept the terms in the license agreement. Click Next.

Select the language you will use during installation. English (United States)
Next > Cancel
Install Software on this computer
Advanced options View documentation website View install Quick Start Guide (Requires Adobe Acrobat Reader)
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License Agreement Please read the following License Agreement. Press the PAGE DOWN key to view the entite agreement.
End User License and Limited Warranty Agreement
Software Release 9.0.0 (including Microsoft⊕ SQL Server™ 2008 Enterprise Edition, SQL Server™ 2008 Express Edition and Windows Pre-Installation Environment)
Fud Honey I inners American
Event Leaves Assessment I accept the terms in the license agreement. I do not accept the terms in the license agreement. Installer

- Expand Client Modules | Backup & Recovery | File System and select Windows File System iDataAgent.
 - Expand Common Technology Engine | MediaAgent Modules, and select MediaAgent.
 - Expand Client Modules | ContinuousDataReplicator, and select VSS Provider.
 - Click Next.

5.

- 6. Click **YES** to install Microsoft .NET Framework package.
 - This prompt is displayed only when Microsoft .NET Framework is not installed.
 - Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable packages.
- 7. If this computer and the CommServe is separated by a firewall, select the **Configure** firewall services option and then click Next.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

8.	Enter the fully qualified domain name of the CommServe Host Name .
	Click Next.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

\|`~!@#\$%^&*()+=<>/?,[]{}:;'"

9. Click Next.

10.	Select Add programs to the Windows Firewall Exclusion List, to add CommCell
	programs and services to the Windows Firewall Exclusion List.

Select Platforms Select the platforms y	ou want to configu	ıre.			
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Click Next.

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NOTES

Click Next.

11.

• It is recommended to select the Download latest update automatically install the available updates during installation

12. Verify the default location for software installation.

Click **Browse** to change the default location.

Click Next.

- Do not install the software to a mapped network dr
- Do not install the software on a system drive or mo be used as content for SnapProtect backup operation
- Do not use the following characters when specifying path:

Select a Client Group from the list. 13.

Click Next.

14. Click Next. 15. Select Yes to stop Removable Storage Services on the MediaAgent. Click Next.

This prompt will not appear if Removable Storage Services are already disabled on the computer.

16. Click Next.

17. Select a Storage Policy. Click Next.

18. Click Next.

Installer	
Schedule Install of A	
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🔽 Schedule Install of	Automatic Updates
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	C Friday C Saturday
	C Sunday
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	< Back Next > Cancel
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functioning of the Med	ge service must be stopped and disabled. This is required for correct iaAgent.
Do you want to stop a	nd disable the Removable Storage service?
 Yes, stop and disa 	ble the Removable Storage Service
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	< Back Next > Cancel
Installer	
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19. Click Next.

20. Click Finish.

Installer	
Summary Summary of install selections	
Setup has enough information to start copying the program files. If you are satis install settings, click Next to begin copying files.	fied with the
The following software will be installed :	Cancel
Installer	
Schedule Reminder Job schedule creation reminder	
Please note: You still need to create a Job Schedule for each DataAgent that has been in this client computer. Job Schedules are required to allow the DataAgents to perform automated bu and restrice operations: Job Schedule creation can be accomplished through the CommCell Console administration interface.	
Installer	Next>
Lastallas	
Installer Completion Report Setup complete	
Software installation completed successfully. Visit the website below to download latest Updates and Service Packs. Click Finish to complete Setup.	4 ¥
Installer Technical Support Website	Einish
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Getting Started - Windows File System Configuration

< Previous Next >

PRE-REQUISITES

- Prior to performing a SnapProtect backup, ensure that all the available hotfixes for Virtual Disk Service (VDS) and VSS are applied.
- When performing SnapProtect backup for a Windows Cluster, a proxy server must be used for performing backup and restore operations.
- SnapProtect backup on Windows supports basic disks.

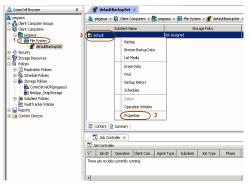
CONFIGURATION

1.

Once installed, the Windows File System *i*DataAgent requires some additional configuration before running your first SnapProtect backup. Follow the steps given below to complete the configuration for this Agent.

- From the CommCell Browser, navigate to Client Computers | < Client>.
 - Right-click the client and select **Properties**.

- Click on the **Advanced** tab.
 - Select the Enable SnapProtect option to enable SnapProtect backup for the client.
 - Click OK.



- 3. From the CommCell Console, navigate to <*Client*> | File System.
 - Right-click the subclient and click Properties.

4. • Click the **Storage Device** tab.

• In the **Storage Policy** box, select the storage policy name.



Click the SnapProtect Operations tab.

- Click **SnapProtect** option to enable SnapProtect backup for the selected subclient.
- Select the storage array from the **Available Snap Engine** drop-down list.
- From the **Use Proxy** list, select the MediaAgent where SnapProtect and backup copy operations will be performed.

When performing SnapProtect backup using proxy, ensure that the operating system of the proxy server is either same or higher version than the client computer.

• Click Use Separate Proxy for Snap to Tape if you want to perform backup copy operations in a different MediaAgent.

Select the MediaAgent from the Proxy list.

Subclient Properties of default	×
General Content Filters Dre/Bost Process Sec Activity Control Encryption	urity Storage Device Open Files Failure Actions
2 V EnapProtect Available Snap Engine 3 Please select a Snap Engine	
4	ter Array Credentials
Use Proxy	
Use Separate Proxy for Snap to Tape	
Proxy	· ·
Use source if proxy is unreachable	
ОК	Cancel Help

- Click the **Content** tab.
 - Click Browse and specify the content for the subclient.
 - Click OK.

The subclient content must contain data that resides on the storage device volume; do not include local drives or UNC paths as subclient content.

Activity Control Encryption: SnapProtect Operations Open Files Failure Actions Centents of subclent:	Subclient Properties of default	×
Contents of subclent: //ol/dimem_yrol2 		
	General Content Filters Pre/Post Proce	ss Security Storage Device
Beckup System State	Contents of subclient:	
Add Paths As User Backup System State	/vol/duncan_vol2	Delete
Add Paths As User Backup System State		Browse
As User		
Beckup System State		Autraus
Beckup System State		he lieer.
		H5 0501
OK Geneel Help	Backup System State	
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OK Cancel Help		
		OK Cancel Help

SKIP THIS SECTION IF YOU ALREADY CREATED A SNAPSHOT COPY.

Click Next > to Continue.

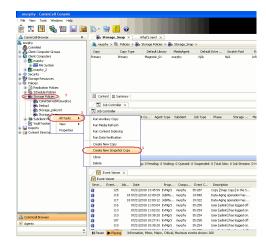
1.

CREATE A SNAPSHOT COPY

Next 🕨

Create a snapshot copy for the Storage Policy. The following section provides step-by-step instructions for creating a Snapshot Copy.

- From the CommCell Console, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Create New Snapshot Copy.**



- **2.** Enter the copy name in the **Copy Name** field.
 - Select the Library, MediaAgent, master Drive Pool and Scratch Pool from the lists (not applicable for disk libraries).
 - Click OK.

Selective Copy	ies (Storage Policy: Storage_policy01) Associations Advanced Deduplication
1	Copy Policy Data Paths Data Path Configuration
Copy Information Copy Name:	2
Primary Copy	
Default Index Destinatio	n
Library:	~
MediaAgent:	
Drive Pool:	
Scratch Pool:	
3	
	4 OK Cancel Help

CONFIGURE BACKUP COPY

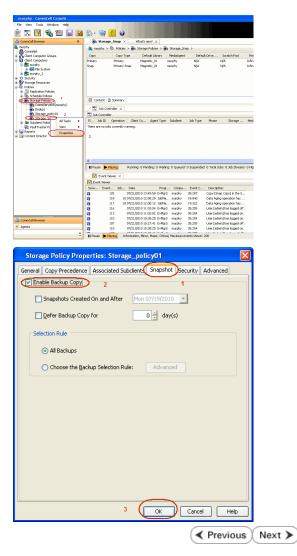
Follow the steps given below to configure Backup Copy for moving snapshots to media.

- From the CommCell Browser, navigate to **Policies | Storage Policies**.
 - Right-click the **<storage policy>** and click **Properties.**

7)		
4		=	

1.

- Click the **Snapshot** tab.
- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.



Storage Array Configuration

CHOOSE THE STORAGE ARRAY

HARDWARE STORAGE ARRAYS	SOFTWARE STORAGE ARRAY	
3PAR	DATA REPLICATOR	
DELL COMPELLENT		
DELL EQUALLOGIC		
EMC CLARIION, VNX		
EMC SYMMETRIX		
FUJITSU ETERNUS DX		
HITACHI DATA SYSTEMS		
HP EVA		
IBM SVC		
IBM XIV		
LSI		
NETAPP		
NETAPP WITH SNAPVAULT/SNAPMIRROR		
NIMBLE		

Previous Next >>

SnapProtect[™] Backup - 3PAR

< Previous Next >

PRE-REQUISITES

- 3PAR Snap and 3PAR Clone licenses.
- Thin Provisioning (4096G) and Virtual Copy licenses.
- Ensure that all members in the 3PAR array are running firmware version 2.3.1 (MU4) or higher.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



3.

	Data Inte	rface Pairs D	R Backup Settings	E-Meil & IIS Configuration		is: 0 H
		2	0	<u></u>	,	
Array Management		107 0	NIN DATA TANKAT PLA	ar aasta rente	1000 Fr. dana Mara I	
Control Host	Name	User Name	Snap Vendor	Description	× A	bb
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172.19.66.22		grpadmin	Dell Equalogic		E	ik –
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		Del	ete
172.19.66.69	10881	system	HDS			

What's new?

💅 Alerts

5

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4

List Sn

OK Cancel Help

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172 19 71 26

13

Audit Trai

- Select **3PAR** from the **Snap Vendor** list.
 - Specify the 16-digit number obtained from the device ID of a 3PAR volume in the **Name** field.

Array Managemer	ıt 💽
1 Snap Vendor	3PAR 💌
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

Follow the steps given below to calculate the array name for the 3PAR storage device:

- 1. From the 3PAR Management console, click the **Provisioning** tab and navigate to the **Virtual Volumes** node. Click any volume in the **Provisioning** window
- 2. From the Virtual Volume Details section, click the Summary tab and write

down the **WWN** number. This is the device ID of the selected volume.

3. From the **Virtual Volume Details** section, click the **Summary** tab and write down the **WWN** number.

This is the device ID of the selected volume.

This WWN may be 8-Byte number (having 16 Hex digits) or 16 Byte number (having 32 Hex digits).

- 4. Use the following formula to calculate the array name:
 - For 8 Byte WWN (16 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

where $\mathtt{DevID.substr}\left(4,3\right)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr(12,4)}$ is the next 4 digits after the twelfth digit from the WWN number

For example: if the WWN number is 50002AC0012B0B95 (see screenshot given below for 8 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + 00 + DevID.substr(12,4)

DevID.substr(4,3) is 2AC and DevID.substr(12,4) is 0B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

• For 16 Byte WWN (32 Hex digit WWN)

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

where ${\tt DevID.substr}\,(4,3)$ is the next 3 digits after the fourth digit from the WWN number

where ${\tt DevID.substr}\,(26,\,6)$ is the next 6 digits after the twenty sixth digit from the WWN number

For example: if the WWN number is 60002AC50000000000052200000B95 (see screenshot given below for 16 Byte WWN), using the following formula:

2FF7000 + DevID.substr(4,3) + DevID.substr(26,6)

DevID.substr(4,3) is 2AC and DevID.substr(26,6) is 000B95

After adding all the values, the resulting array name is 2FF70002AC000B95.

- Enter the IP address of the array in the **Control Host** field.
 - Enter the access information of a local 3PAR Management user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the CPG group created on the array to be used for snapshot operations.

If you do not specify a CPG group, the default CPG group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK to save the information.

4.

	16 Byte WWN		8 Byte WWN
Provisioning	1 Provisioning : InSens : Span-I commonal com : Virtual Volumes	Provisioning	👔 🕽 Provisioning : InSense : Spar-I zommysalt.com : Virtual Valumes
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SnapProtect[™] Backup - Dell Compellent

< Previous) Next >

PRE-REQUISTIES

- Dell Compellent requires the Data Instant Replay license.
- Ensure that all members in the Compellent array are running firmware version Storage Center 5.5.14 and above for 5.x and 6.2.2 and above for 6.x.

SETUP THE ARRAY INFORMATION

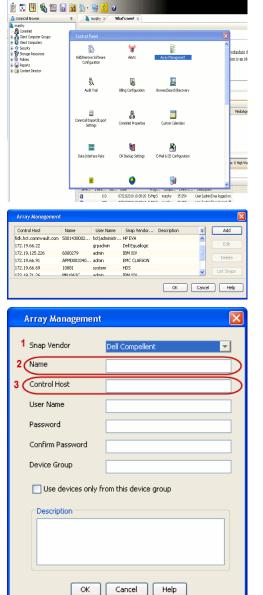
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- **3.** Select **Dell Compellent** from the **Snap Vendor** list.
 - Specify the Management IP address in the Name and Control Host fields.

The Management IP address is also referred as the Storage Center IP address.



For reference purposes, the screenshot on the right shows the Storage Center Management Console of the Dell Compellent storage device displaying the Management IP address. 4.

- DELL C ent 🔍 Vev 📫 Refresh 🕯 1.6 rties - Storage Cent , Ce of Storege Date P nim Cate Dok Sparry 245 ary C Type: 19.54 GB 2,000 1,750 1,500 1,250 Array Management Snap Vendor Dell Compellent Name Control Host User Name 4 Password Confirm Password Device Group 5 Use devices only from this device group Description OK Cancel Help Previous Next >
- Enter the user access information of the application administrator in the **Username** and **Password** fields.
- In the **Device Group** field, type none as this array does not use device groups for snapshot operations.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

SnapProtect[™] Backup - Dell EqualLogic

PRE-REQUISTIES

WINDOWS

Microsoft iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

UNIX

iSCSI Initiator to be configured on the client and proxy computers to access the Dell EqualLogic disk array.

FIRMWARE VERSION

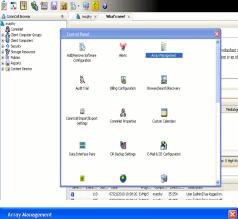
- Ensure that all members in the EqualLogic array are running firmware version 4.2.0 or higher.
- After upgrading the firmware, do either of the following:
 - o Create a new group administration account in the firmware, and set the desired permissions for this account.
 - If you plan to use the existing administration accounts from version prior to 4.2.0, reset the password for these accounts. The password can be the same as the original.

If you do not reset the password, snapshot creation will fail.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next 🕨

Control Host	Name	User Name	Snap Vendor	Description	×	Add
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172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snat
172 10 71 26	Mb11963/C	admin	TRM YTV		×	

- 2. Click Add.
- **3.** Select **Dell Equallogic** from the **Snap Vendor** list.
 - Specify the Management IP address in the **Name** field.

No entry is required in the **Name** field if there is no Management IP address configured.

• Specify the Group IP address in the **Control Host** field.

Array Manageme	nt 🔀	
1 Snap Vendor	Dell Equallogic 🗸 🗸	
2 Name		
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For reference purposes, the screenshot on the right shows the Management IP address and Group IP address for the Dell Equallogic storage device.

- Enter the user access information of the Group Administrator user in the Username and Password fields.
 - For Dell EqualLogic Clone, specify the name of the Storage Pool where you wish to create the clones in the **Device Group** field.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the storage pool specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

4.

SnapProtect[™] Backup - EMC Clariion, VNX

Previous Next >

PRE-REQUISITES

LICENSES

- Clariion SnapView and AccessLogix licenses for Snap and Clone.
- SYMAPI Feature: BASE/Symmetrix license required to discover Clariion storage systems.

You can use the following command to check the licenses on the host computer:

C:\SYMAPI\Config> type symapi_licenses.dat

ARRAY SOFTWARE

• EMC Solutions Enabler (6.5.1 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and NaviAgent installed on the client and proxy computers.
- If AccessLogix is not enabled, go to the Navisphere GUI, right-click EMC Clariton Storage System and click Properties. From the Data Access tab, select Enable AccessLogix.
- Clariion storage system should have run successfully through the Navisphere Storage-System Initialization Utility prior to running any Navisphere functionality.
- Ensure enough reserved volumes are configured for SnapView/Snap to work properly.

For EMC VNX:

• EMC Solutions Enabler (7.2 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

- Navisphere CLI and Navisphere/Unisphere Host Agent installed on the client and proxy computers.
- VNX storage system should have run successfully through the Unisphere Storage-System Initialization Utility prior to running any Unisphere functionality.

SETUP THE EMC CLARIION

Perform the following steps to provide the required storage for SnapProtect operations:

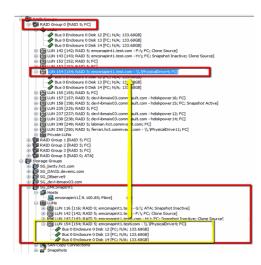
- 1. Create a RAID group
- 2. Bind the LUN
- 3. Create a Storage Group
- 4. Register the client computer (covered by installing NaviAgent)
- 5. Map the LUNs to the client computer where the NaviAgent resides
- 6. Reserved/Clone volumes target properly for SnapView

For example, as shown in the image on the right, the **Clariion ID** of **APM00033400899** has the following configuration:

- a RAID Group 0 provisioned as a RAID-5 group (Fiber Channel drives)
- LUNs are mapped to Storage Group SG_EMCSnapInt1 with LUN ID of #154 present to client computer emcsnapint1.

The example shows the serial number of LUN 154:

- RAID Group: RAID Group 0, containing 3 physical disks
- Storage Group: currently visible to a single client computer
- LUN is shown as a Fiber Channel device
- The devices under LUN 154 reside on RAID Group 0 which has RAID-5 configuration.



AUTHENTICATE CALYPSO USER INFORMATION FOR THE NAVIAGENT

Follow the steps below to specify the authorization information for EMC Solutions Enabler and Navishphere CLI to ensure administrator access to the Navisphere server.

1. To set the authorize information, run the symcfg authorization command for both the storage processors. For example:

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPA IP> -username admin -password password

/opt/emc/SYMCLI/V6.5.3/bin# ./symcfg authorization add -host <clariion SPB IP> -username admin -password password

2. Run the following command to ensure that the Clariion database is successfully loaded.

symcfg discover -clariion -file AsstDiscoFile

where AsstDiscoFile is the fully qualified path of a user-created file containing the host name or IP address of each targeted Clariion array. This file should contain one array per line.

3. Create a Navisphere user account on the storage system. For example:

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPA IP> -Scope 0 -User admin -Password password

/opt/Navisphere/bin# ./naviseccli -AddUserSecurity -Address <clariion SPB IP> -Scope 0 -User admin -Password password

- 4. Restart the NaviAgent service.
- 5. Run snapview command from the command line to ensure that the setup is ready.

On Unix computers, you might need to add the Calypso user to the agent.config file.

Before running any commands ensure that the EMC commands are verified against EMC documentation for a particular product and version.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

1.

2. Click Add.

- **3.** Select **EMC CLARiiON** from the **Snap Vendor** list for both Clariion and VNX arrays.
 - Specify the serial number of the array in the Name field.

For reference purposes, the screenshot on the right shows the serial number for the EMC Clariion storage device.

- Enter the access information of a Navisphere user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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Quick Start Guide - SnapProtect

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SnapProtect[™] Backup - EMC Symmetrix

< Previous Next >

PRE-REQUISITES

• EMC Solutions Enabler (6.4 or higher) installed on the client and proxy computers.

Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.

• SYMAPI Feature: BASE /Symmetrix licenses for Snap, Mirror and Clone.

You can use the following command to check the licenses on the host computer:

```
C:\SYMAPI\Config> type symapi_licenses.dat
```

By default, all functionality is already enabled in the EMC Symmetrix hardware layer. However, a Hardware Configuration File (IMPL) must be enabled before
using the array. Contact an EMC Representative to ensure TimeFinder and SRDF functionalities have been configured.

SETUP THE EMC SYMMETRIX

For SnapProtect to function appropriately, LUN Masking records/views must be visible from the host where the backup will take place:

- For DMX, the Masking and Mapping record for vcmdb must be accessible on the host executing the backup.
- For VMAX, the Masking view must be created for the host executing the backup.

CONFIGURE SYMMETRIX GATEKEEPERS

Gatekeepers need to be defined on all MediaAgents in order to allow the Symmetrix API to communicate with the array. Use the following command on each MediaAgent computer:

symgate define -sid <Symmetrix array ID> dev <Symmetrix device name>

where <Symmetrix device name> is a numbered and un-formatted Symmetrix device (e.g., 00C) which has the MPIO policy set as FAILOVER in the MPIO properties of the gatekeeper device.

LOAD THE SYMMETRIX DATABASE

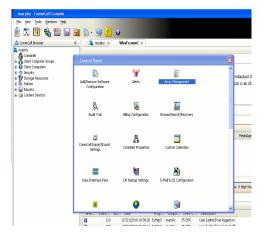
If you have the SYMCLI software installed, it is recommended that you test your local Symmetrix environment by running the following command to ensure that the Symmetrix database is successfully loaded:

symcfg discover

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- з.
- Select EMC Symmetrix from the Snap Vendor list.
- Specify the **Symm ID** of the array in the **Name** field.

For reference purposes, the screenshot on the right shows the Symmetrix array ID (Symm ID) for the EMC Symmetrix storage device.

4.

- If Symcfg Authorization is enabled on the Symmetrix Management Console, enter the access information for the Symmetrix Management Console in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the device group created on the client and proxy computer. The use of Group Name Service (GNS) is supported.

If you do not specify a device group, the default device group will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

To understand how the software selects the target devices during $\ensuremath{\mathsf{SnapProtect}}$ operations, click here.

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SnapProtect[™] Backup - Fujitsu ETERNUS DX

< Previous Next >

PRE-REQUISITES

- Local Copy license for Snap and Clone.
- Thin Provisioning license.
- Ensure that all members in the Fujitsu array are running firmware version V10L22-1000 or higher.
- Enable SMI-S on the storage array.
- Create a Host Affinity group for the proxy computer.
- If using SnapOPC, ensure to create a SDV and SDPV volumes.

CONFIGURE DESTINATION VOLUMES

- Source and destination volumes should be pre-paired before performing any snapshot operation. For EC snapshots (clone), pre-paired sessions should be in active state.
- To pre-pair source and destination volumes, install the ETERNUS SF Express Manager software version 14.2A or higher.
- Forbid Advanced Copy and Encrypted volumes are not supported.
- Depending on the type of snapshot being used, review the following for the creation of destination volumes:

FOR SNAP SNAPSHOTS

If pre-paired sessions are not available, SnapOPC snapshots use any available SDV volumes as their destination volumes. If you need to create a new SDV volume, ensure that the SDV volume is of equal size to the source volume.

FOR CLONE SNAPSHOTS

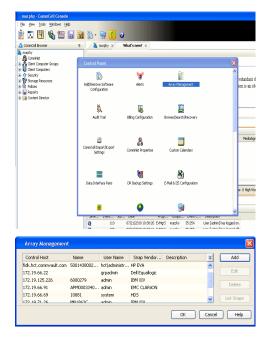
If pre-paired sessions are not available, destination volumes are automatically created for clone snapshots. If a non-existing device group is specified during array configuration in the CommCell Console, a destination volume is created based on the source volume type. However, if a valid device group is specified, the following destination volumes are created depending on the device group type:

- $\circ\,$ A Thin Provisioning volume is created if the device group is a Thin Provisioning pool.
- $\,\circ\,$ A standalone volume is created if the device group is a RAID group.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

- Select Fujitsu ETERNUS from the Snap Vendor list.
 - Specify the CM IP Address of the array in the Name field.

For reference purposes,	the sc	reenshot	on the	e right	shows	the	CM	IΡ	Address	for	the
Fujitsu storage device.											

4.

- Enter the CM IP Address of the array in the **Control Host** field.
 - Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the RAID group or Thin Provisioning group created on the array to be used for clone operations. Device groups are not applicable for Snap snapshots.
 - Select the **Use devices only from this device group** option to use only the snapshot devices available in the device group specified above.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

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Array Management
Snap Vendor Fujitsu ETERNUS 🔹
3 Control Host
User Name
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5 Device Group
6 Use devices only from this device group
Description
OK Cancel Help
Previous

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Array Management

Fujitsu ETERNUS

Use devices only from this device group

OK Cancel Help

1 Snap Vendor

Control Host User Name Password Confirm Password Device Group

Description

2 Name

SnapProtect[™] Backup - Hitachi Data Systems

PRE-REQUISITES

- Device Manager Server (7.1.1 or higher) installed on any computer.
- RAID Manager (01-25-03/05 or higher) installed on the client and proxy computers.
- Device Manager Agent installed on the client and proxy computers and configured to the Device Manager Server.

The hostname of the proxy computer and the client computer should be visible on the Device Manager Server.

- Appropriate licenses for Shadow Image and COW snapshot.
- For VSP, USP, USP-V and AMS 2000 series, create the following to allow COW operations:

 $\circ~$ COW pools

 $\,\circ\,$ V-VOLs (COW snapshots) that matches the exact block size of P-VOLs devices.

• For HUS, ensure that the source and target devices have the same **Provisioning Attribute** selected. For e.g., if the source is **Full Capacity Mode** then the target device should also be labeled as **Full Capacity Mode**.

ADDITIONAL REQUIREMENTS FOR VMWARE

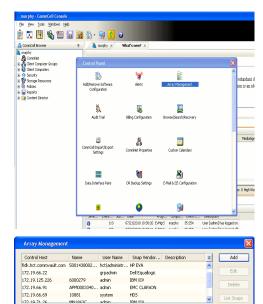
When performing SnapProtect operations on VMware using HDS as the storage array, ensure the following:

- HDS LUNs are exposed to the Virtual Server iDataAgent client and ESX server.
- All HDS pre-requisites are installed and configured on the Virtual Server iDataAgent client computer.
- The Virtual Server client computer is the physical server.
- The Virtual Machine HotAdd feature is not supported.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



< Previous

Next >

2. Click Add.

- **3.** Select **HDS** from the **Snap Vendor** list.
 - Specify the serial number of the array in the Name field.

OK Cancel Help

For reference purposes,	the screenshot	on the right	shows the	e serial	number	for	the
HDS storage device.							

4.

- Enter the IP address or host name of the Device Manager Server in the Control Host field.
 - Enter the user access information in the Username and Password fields.
 - In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. The device group should have the following naming convention:

<COW_POOL_ID>-<LABEL> **Or** <LABEL>-<COW_POOL_ID>

where ${\scriptstyle < \textsc{COW_POOL_ID} >}$ (for COW job) should be a number. This parameter is required.

<LABEL> (for SI job) should not contain special characters, such as hyphens, and should not start with a number. This parameter is optional.

- Select the Use devices only from this device group option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc. •
- Click **OK** to save the information.

Alers Reports Settings Ausbhoard Drift Prift Prift Prift Prift Prift Prift Prift Prift Prift Prift		Genial Number IP Address Nicoscode DKC Nicoscode SVP Configured Capacity Actual Capacity Free Space Total Cache Last Refrashed	172.15.66. 50-59-80-50/00 50-59-79/00 9.34 TB 5.32 TB	NASMissio	parcont
A	rray Managemer	nt			×
2	5nap Vendor	HDS		*	
r	Name]
3	Control Host				\supset
1	Jser Name				\sum
4 F	Password				
6	Confirm Password				ノ
5 (Device Group				
6 🤇	Use devices only	from this	s device group		
	Description				
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				Previo	us)

Array Management

HDS

Use devices only from this device group

OK

Cancel

Help

NAS/Management

1 Snap Vendor

Description

2 Name Control Host User Name Password Confirm Password Device Group

SnapProtect[™] Backup - HP StorageWorks EVA

< Previous Next >

SETUP THE HP SMI-S EVA

HP-EVA requires Snapshot and Clone licenses for the HP Business Copy EVA feature.

The following steps provide the necessary instructions to setup the HP EVA:

- 1. Download the HP SMI-S EVA and the HP Command View EVA software on a supported server from the HP web site.
- 2. Run the Discoverer tool located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\EVAProvider\bin folder to discover the HP-EVA arrays.
- 3. Use the CLIRefreshTool.bat tool to sync with the SMIS server after using the Command View GUI to perform any active management operations (like adding new host group or LUN). This tool is located in the C:\Program Files\Hewlett-Packard\mpxManager\SMI-S\CXWSCimom\bin folder.

SETUP THE ARRAY INFORMATION

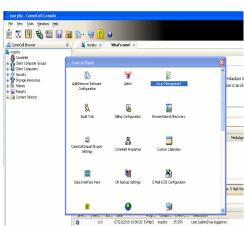
Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



з.

- Select HP EVA from the Snap Vendor list.
 - Specify the World Wide Name of the array node in the Name field.



Control Host	Name	User Name	Snap Vendor	Description	×	Add
fidk.hct.commvault.com	5001438002	hct\administr	HP EVA		^	
172.19.66.22		grpadmin	Dell Equalogic			Edit
172.19.125.226	6000279	admin	IBM XIV			
172.19.66.91	APM0003340	admin	EMC CLARIION		_	Delete
172.19.66.69	10881	system	HDS		~	List Snaps
172 19 71 26	MN11963C	admin	TRM VIV		~	List bridps

Array Managemer	ıt 🔀
1 Snap Vendor	HP EVA
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The World Wide Name (WWN) is the serial number for the HP EVA storage device. See the screenshot on the right for a WWN example.

The array name must be specified without the dashes used in the WWN e.g., $\tt 50014380025DEB70.$

- 4.
- Enter the name of the management server of the array in the **Control Host** field.

Ensure that you provide the host name and not the fully qualified domain name or TCP/IP address of the host.

- Enter the user access information in the Username and Password fields.
- In the **Device Group** field, specify the name of the hardware disk group created on the array to be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

EVA Storage Network Wirtual Disks Disk Groups Data Replication Hardware	Save changes System options General Status Summary Identification Identification Name: EVA440 Node WWN: 500114380-025D-EB70 UUID: 6005-08b40002-0000
Array Management Snap Vendor HP EV Name Control Host	
4 Viser Name Password Confirm Password 5 Device Group	
6 Use devices only from t	his device group
	ancel Help

SnapProtect[™] Backup - IBM SAN Volume Controller (SVC)

PRE-REQUISITES

- IBM SVC requires the FlashCopy license.
- Ensure that all members in the IBM SVC array are running firmware version 6.1.0.7 or higher.
- Ensure that proxy computers are configured and have access to the storage device by adding a host group with ports and a temporary LUN.

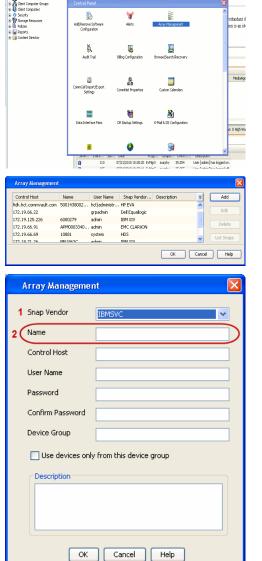
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBMSVC from the Snap Vendor list.
 - Specify the 16-digit ID of the storage device in the **Name** field.



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What's new? >

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Next 🕨

The **ID** is the device identification number for the IBM SVC storage device. See the screenshot on the right for reference.

- 4. Enter the Management IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the local application administrator in the **Username** and **Password** fields.
 - In the **Device Group** field, specify the name of the physical storage pools created on the array to be used for snapshot (flash copy) operations.

If you do not specify a device group, the default storage pool will be used for snapshot operations.

- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

18M Syst	em Storage SAN Volume Controller	Welcome,	superuser (6 users online)	Logal	Logout Help IBM	
	ibmcluster1 > Home > System Status					
14		io_grp0	Info Manage			
	Journal of Contract of Contrac	node1	General			
-	Journal of the second se	ibmnode2	Name ID	ibmcluster1 0000020063/		
		lo_grp1	Location	Local	47.259	
19 49 A			Capacity			
-		io_grp2	Total MDisk Capacity			
			Space in MDisk Groups Space Allocated to Volumes	7.5 TB 3.9 TB		
н			Volumes Total Free Space	3.9 TB 3.7 TB		
0		io_grp3	Total Volume Capacity			
Sep.			Total Volume Copy Capacity	4.8 TB		
N.		fuster1 (6.1.0.7)	Total Used Capacity Total Overallocation	3.6 TB 64%		
Con	nectivity 🔲 🕕	52%		111 Running	Taska 🔲	
	Array Managemen	nt –			<u> </u>	
	Cara Usadan					
	Snap Vendor	IBMSVC			~	
	Name					
3 (Control Host					
	User Name					
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4	Password					
1	Confirm Password)	
· ·	Commenterassword					
5	Device Group					
6	🔲 Use devices only	from this de	vice aroup			
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	Description					
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	OK	Cancel	Help			
				_		
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SnapProtect[™] Backup - IBM XIV

< Previous) Next >

PRE-REQUISITES

- 1. IBM XCLI (2.3 or higher) installed on the client and proxy computers. On Unix computers, XCLI version 2.4.4 should be installed.
- 2. Set the location of XCLI in the environment and system variable path.
- 3. If XCLI is installed on a client or proxy, the client or proxy should be rebooted after appending XCLI location to the system variable path. You can use the XCLI_BINARY_LOCATION registry key to skip rebooting the computer.

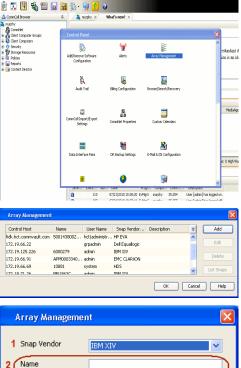
SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

- 3. Select IBM XIV from the Snap Vendor list.
 - Specify the 7-digit serial number for the array in the **Name** field.



1 Snap Vendor	IBM XIV
2 Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	from this device group
Description	
ОК	Cancel Help

The **System ID** (S/N) is the serial number for the IBM XIV storage device. See the screenshot on the right for reference.

4.

 System Configuration
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 General
 System Name
 Inscribertif

 Parameters
 System Ucsino
 10.22

 StMP
 Machine Model / Machine Type
 Atl / 2810

 IP/Heatname 1
 172.19.125.226

 IP/Heatname 3
 IP/Heatname 3

	Array Managemer	it 🔀
	Snap Vendor Name	
3	Control Host	
1	User Name	
4	Password	
1	Confirm Password	
	Device Group	
	Use devices only	from this device group
	Description	
	ОК	Cancel Help
		< Previous Next >

- Enter the IP address or host name of the array in the **Control Host** field.
 - Enter the user access information of the application administrator in the **Username** and **Password** fields.
 - Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
 - Click **OK** to save the information.

SnapProtect[™] Backup - LSI

< Previous (Next >

PREREQUISITES

- Ensure that the LSI Storage Management Initiative Specification (SMIS) server has access to the LSI array through TCP/IP network to perform SnapProtect
 operations.
- Ensure that the client has access to:
 - SMIS server through TCP/IP network.
 - $\circ~$ LSI array through iSCSI or Fiber Channel network.
- Ensure that proxy computers are configured and have access to the storage device by adding a temporary LUN to the "host" using the Storage Management Console.

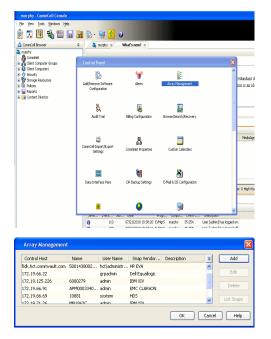
ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using SAN transport mode, ensure that the Client and the ESX Server reside in the same host group configured in the LSI array, as one volume cannot be mapped to multiple host groups.

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



2. Click Add.

з.

- Select LSI from the Snap Vendor list.
 - Specify the serial number for the array in the Name field.

Array Manageme	nt 🔀
1 Snap Vendor	LSI
Name	
Control Host	
User Name	
Password	
Confirm Password	
Device Group	
Use devices only	/ from this device group
Description	
ОК	Cancel Help
nas_lsi - Storage Subsystem Profile	
🗈 Summary 📕 Controllers 🔀 Arrays 📾	Logical Drives 🔒 Drives Channels 🔉 Enclosures 🚺 Mappings 昭 세
Controller enclosure audible alarm:	Enabled 2
NVSRAM configured for batteries: Start cache flushing at (in percenta Stop cache flushing at (in percentag Cache block size (in KB):	Yes gej: 00 e): 00 4
Media scan frequency (in days): Failover alert delay (in minutes):	Disabled S
Feature enable identifier: Feature pack: Feature pack submodel ID:	303035313420303037393120 487745A7 Genetic 130
	ier (ID): 60080E500017FA8000000004E7F45A4
dt 🛛 🔄 🗄	Sage As Qose Hab
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User Name)
Password	
Confirm Password	/
5 Device Group	
5 Device Group	
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The **Storage Subsystem world-wide identifier (ID)** is the serial number for the LSI storage device.

Use the SANtricity Storage Manager software to obtain the array name by clicking **Storage Subsystem Profile** from the **Summary** tab. See the screenshot on the right for reference.

- Specify the name of the device manager server where the array was configured in the **Control Host** field.
- Enter the user access information using the LSI SMIS server credentials of a local user in the **Username** and **Password** fields.
- In the **Device Group** field, specify the name of the hardware device group created on the array to be used for snapshot operations. If you do not have a device group created on the array, specify None.
 - If you specify None in the **Device Group** field but do have a device group created on the array, the default device group will be used for snapshot operations.
- Select the **Use devices only from this device group** option to use only the snapshots devices available in the device group specified above.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

SnapProtect[™] Backup - NetApp

< Previous) Next >

PREREQUISITES

LICENSES

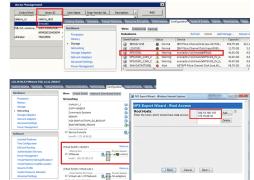
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- FCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ADDITIONAL REQUIREMENTS FOR VMWARE

When performing SnapProtect operations on VMware using NFS file-based protocol, ensure the following:

The NetApp storage device name specified in Array Management matches that on the ESX Server.

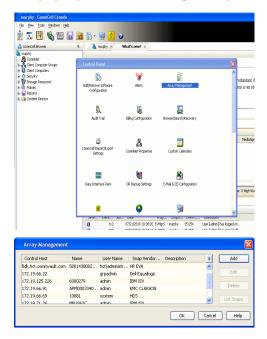
The VMkernel IP address of all ESX servers that are used for mount operations should be added to the root Access of the NFS share on the source storage device. This needs to be done because the list of all root hosts able to access the snaps are inherited and replicated from the source storage device.



SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- 1. From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- 3. Select NetApp from the Snap Vendor list.
 - Specify the name of the file server in the **Name** field.
 - You can provide the host name, fully qualified domain

name or TCP/IP address of the file server.

- If the file server has more than one host name due to multiple domains, provide one of the host names based on the network you want to use for administrative purposes.
- Enter the user access information with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

Array Manageme	nt	
Snap Vendor	NebAcc	
	NetApp	×
Name		
Control Host		
User Name		
Password		
Confirm Password		
Device Group		
	Constitution and a state of the second	
Use devices oni	y from this device group	
Description		
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SnapProtect[™] Backup - NetApp SnapVault/SnapMirror

< Previous Next >

OVERVIEW

SnapVault allows a secondary NetApp filer to store SnapProtect snapshots. Multiple primary NetApp file servers can backup data to this secondary filer. Typically, only the changed blocks are transferred, except for the first time where the complete contents of the source need to be transferred to establish a baseline. After the initial transfer, snapshots of data on the destination volume are taken and can be independently maintained for recovery purposes.

SnapMirror is a replication solution that can be used for disaster recovery purposes, where the complete contents of a volume or qtree is mirrored to a destination volume or qtree.

PREREQUISITES

LICENSES

- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.
- SnapRestore license for Revert operations (LUNs and NFS shares).
- FlexClone license for backup and restore operations of NFS shares.
- iSCSI Initiator must be configured on the client and proxy computers to access the storage device.

For the Virtual Server Agent, the iSCSI Initiator is required when the agent is configured on a separate physical server and uses iSCSI datastores. The iSCSI Initiator is not required if the agent is using NFS datastores.

- FFCP, ISCSI, CIFS, NFS licenses for features such as Fiber Channel Protocol, iSCSI protocol, CIFS file sharing, and NFS File Sharing. Use the appropriate
 license for the specific data types.
- Protection Manager, Operations Manager, and Provisioning Manager licenses for DataFabric Manager 4.0.2 or later.
- SnapMirror Primary and Secondary Licenses for disaster recovery operations.
- SnapVault Primary and Secondary License for backup and recovery operations.
- HTTP/HTTPS licenses on the NetApp file server to allow communication.

ARRAY SOFTWARE

- DataFabric Manager (DFM) A server running NetApp DataFabric® Manager server software. DataFabric Manager 4.0.2 or later is required.
- SnapMirror NetApp replication technology used for disaster recovery.
- SnapVault NetApp replication technology used for backup and recovery.

SETTING UP SNAPVAULT

Before using SnapVault and SnapMirror, ensure the following conditions are met:

- 1. On your source file server, use the license command to check that the **sv_ontap_pri** and **sv_ontap_sec** licenses are available for the primary and secondary file servers respectively.
- 2. Enable SnapVault on the primary and secondary file servers as shown below:

options snapvault.enable on

- 3. On the primary file server, set the access permissions for the secondary file servers to transfer data from the primary as shown in the example below: options snapvault.access host=secondary_filer1, secondary_filer2
- 4. On the secondary file server, set the access permissions for the primary file servers to restore data from the secondary as shown in the example below: options snapvault.access host=primary filer1, primary filer2

INSTALLING DATAFABRIC MANAGER

- The Data Fabric Manager (DFM) server must be installed. For more information, see Setup the DataFabric Manager Server.
- The following must be configured:
 - Discover storage devices
 - $\,\circ\,$ Add Resource Pools to be used for the Vault/Mirror storage provisioning

CONFIGURATION

Once you have the environment setup for using SnapVault and SnapMirror, you need to configure the following before performing a SnapVault or SnapMirror operation.

CREATE STORAGE POLICY

Use the following steps to create a storage policy.

- 1. From the CommCell Browser, navigate to **Policies.**
 - Right-click the Storage Policies node and click New Storage Policy.

2. Click Next.

- Specify the name of the Storage Policy in the Storage Policy Name box.
 - Select Provide the DataFabric Manager Server Information.
 - Click Next.

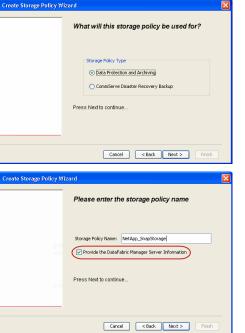
4.

3.

• In the **Library** list, select the default library to which the Primary Copy should be associated.

It is recommended that the selected disk library uses a LUN from the File server.

• Click Next.



Tools

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Create Storage Policy Wi	zard 🛛 🛛 🔀
	Please select a library to be the default library for this primary copy
22	Library:
La cal	Press Next to continue
	Cancel < Back Next > Finish

- 5. Select a MediaAgent from the **MediaAgent** list.
 - Click Next.

6. Click Next.

7. Click Next.

- 8. Verify Name and MediaAgent Name.
 - Click **Browse** to specify location for **Deduplication Store**.
 - Click Next.

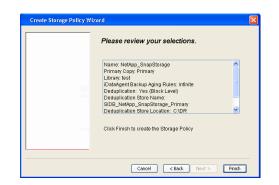
9.	٠	Provide the DataFabric Manager server information.
----	---	--

- If a DataFabric Manager server exists, click **Select** to choose from the dropdown list.
- $\circ~$ If you want to add a new DataFabric Manager Server, click Add.
- Click Next.

Create Storage Policy Wiz	zard
	Please select a MediaAgent for this copy
	MediaAgent: dhaval-2008
	Press Next to continue
	Cancel < Back Next > Finish
с	
Create Storage Policy Wiz	Please enter the streams and retention
	criteria for this policy
	Number of Device Streams: 0 + Choose the Primary Copy's Aging Rules:
	iDataAgent Backup data ✓ Infinite/ 15 + Days 2 + Cycles
	Infinite/ IS Deys 2 Cycles Retain by Jobs 24
	Data Archive/Compliance Archiver
	V Infinite/ 365 + Days
	Cancel < Back Next > Finish
Create Storage Policy Wiz	zard
create storage Policy wiz	
	Do you want to enable Deduplication for the primary copy?
	Deduplication
	Yes Enable Client Side Deduplication
	○ No
	Press Next to continue
	Cancel < Back Next > Finish
Create Storage Policy Wiz	xard X
Create Storage Policy Wiz	
	Please specify the location to store the Deduplication Store
	Name: SIDB_NetApp_SnapStor
	Deduplication Store Location: MediaAgent Name dhaval-2008
	Location: Browse
	Press Next to continue
	Cancel < Back Next > Finish
Granta Stanson Delle - W	
Create Storage Policy Wiz	
	Please select/add the new DataFabric Manager information?
	DataFabric Manager:
	Select hwinapp02
	Host Name: venus
	Add User Name: admin
	Password:

10. Click Finish.

Cancel < Back Next > Finish

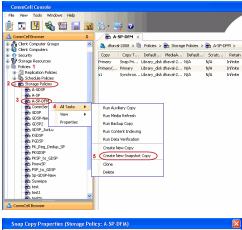


- **11.** The new Storage Policy creates the following:
 - Primary Snap Copy, used for local snapshot storage
 - Primary Classic Copy, used for optional data movement to tape, disk or cloud.

CREATE A SECONDARY SNAPSHOT COPY

After the Storage Policy is created along with the Primary Snap Copy, the Secondary Snap Copy must be created on the new Storage Policy.

- 1. From the CommCell Browser, navigate to **Policies** | **Storage Policies**.
 - Right-click the storage policy and click All Tasks | Create New Snapshot Copy.



- Enter the Copy Name.
 - Select the Library and MediaAgent from the drop-down list.
 - Click Vault/Backup or Mirror protection type based on your needs.

It is recommended that the selected disk library uses a CIFS or NFS share or a LUN on the File server.

Provisioning ciations A Copy Policy Y Ass Retention Copy No SnapVault Test Active Default Inde Library: test dhaval-20 MediaAgent ~ Scratch Pool: Vault/Backup O Mirror OK Cancel Help

- **3.** Click the **Copy Policy** tab.
 - Depending on the topology you want to set up, click Specify Source for Auxiliary Copy and select the source copy.

Copies can be created for the topologies listed in the following table:

TOPOLOGY

SOURCE COPY

4.

	Primary	Snap Copy Properties (Storage Policy: A-SP-DFM)
Primary-Mirror-Vault	Mirror	Selective Copy Associations Advanced Deduplication Provisioning General Retention Copy Policy Data Paths Data Path Configuration
Primary-Vault	Primary	
Primary-Vault-Mirror	Vault	 Backup Selection Al Backups
Primary-Mirror-Mirror	Mirror	
Primary-Mirror-Mirror Click the Provisioning tab. Click Refresh to display the DFM entities. Select the Provisioning Policy from the dro	pp-down list.	
Select the Resource Pools available from the	ne list.	Provisioning Policy:
Click OK .		
The secondary snapshot copy is created.		Resource Bookminn's Jarget, Jrf1 Add >> Ind_acasoleminn's Jarget, Jrf1 Index Ind_acasoleminn's Jarget, Jrf1 Index Index Add >> Index Add All>>> Index Space Status: Information Resource Book Isrlo Index Name: south and generation of the south and

- If you are using a Primary-Mirror-Vault (P-M-V) or Primary-Vault (P-V) topology on 5. ONTAP version higher than 7.3.5 (except ONTAP 8.0 and 8.0.1), perform the following steps:
 - Connect to the storage device associated with the source copy of your topology. You can use SSH or Telnet network protocols to access the storage device.
 - From the command prompt, type the following:
 - options snapvault.snapshot_for_dr_backup named_snapshot_only
 - Close the command prompt window.

It is recommended that you perform this operation on all nodes in the $\ensuremath{\mathsf{P-M-V}}$ topology.

CONFIGURE BACKUP COPY

Follow the steps given below to configure Backup Copy for moving snapshots to media.

- 1. • From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**

OK Cancel

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Copy Convitient Default Library Mechadorent Default Drive D
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Image: Primary Classic Primary Classic Primary Classic NA NJ □ mit Net-App NAS NDMP Primary Classic Snap Primary Cold Library1 pegasus NA NJ □ mit Net-App NAS NDMP Primary Classic Snap Primary Classic Snap Primary Classic NA NJ
for defaultBackupSet SnapYout: Node1 Snap Yout: DiskLibrary1 pegasus N/A N/I
🗇 🚾 File System
🕀 😵 Storage Resources
E-44 Policies
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Content Director
II Pause Playing Running: 0 Pending: 1 Waiting: 0 Queued: 0 Suspended: 0 Total
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Sevenity Event ID Job ID Date Program Compute 302 22 12/22/2010 11:16:51 JobManager pegasus
302 22 12/22/2010 11:16:51 JobManager peqasus 301 22 12/22/2010 10:56:41 JobManager peqasus
Storage Policy Properties: NetApp_SnapStorage
General Copy Precedence Associated Subclients Snapshot Security Advanced
F Enable Backup Copy
Snapshots Created On and After Wed 12/22/2010 V
Defer Backup Copy for 0 - day(s)
Selection Rule
All Backups
C Choose the Backup Selection Rule: Advanced
Source Snap Copy
Specify Source for Backup Copy:
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• Click the **Snapshot** tab.

- Select Enable Backup Copy option to enable movement of snapshots to media.
- Click OK.

3. • Select Specify Source for Backup Copy.

• From the drop-down list, select the source copy to be used for performing the backup copy operation.

SETUP THE ARRAY INFORMATION

The following steps describe the instructions to set up the primary and secondary arrays.

- From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.

2. Click Add.

3. • Select **NetApp** from the **Snap Vendor** list.

• Specify the name of the primary file server in the **Name** field.

The name of primary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address. However, if you plan to create a Vaut/Mirror copy, ensure the IP address of the primary file server resolves to the primary IP of the network interface and not to an alias.

You can provide the host name, fully qualified domain name or TCP/IP address of the file server.

- Enter the user access information in the **Username** and **Password** fields.
- Select File Server, then click Primary for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

- Click **Add** again to enter the information for the secondary array.
 - Specify the name of the secondary file server in the **Name** field.

The name of secondary file server may be different in the DataFabric Manager, CommServe, MediaAgent and other entities, but it should resolve to the same IP address.

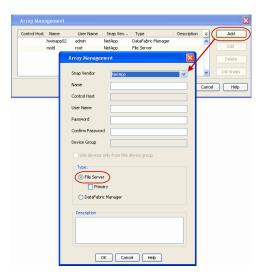
- Enter the user access information in the Username and Password fields.
- Select File Server for the array type.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click OK.

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Page 501	of 520

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Comm/Cell Console File Vew Tools Windows Help



SEE ALSO

Import Wizard Tool

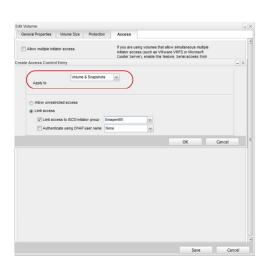
Provides the steps to import the configuration details of the DataFabric Manager server into the Simpana software.

Previous Next >

SnapProtect[™] Backup - Nimble

PREREQUISITES

- From the Nimble storage array console, ensure that the Access Control Entry for the client initiator group is set to Volume and Snapshots.
- In case you are using a proxy computer for SnapProtect operations, add the initiator group for the proxy computer and set the **Access Control Entry** to **Snapshots Only**.
- Ensure that a temporary LUN is allocated to all ESX Servers that are used for snapshot operations.



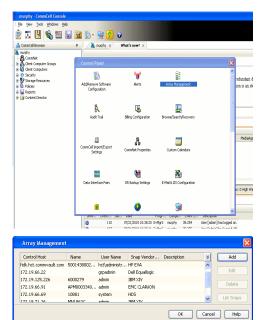
< Previous

Next >

SETUP THE ARRAY INFORMATION

Provide the identification information for the array to ensure access. The following section provides step-by-step instructions for setting the array information.

- **1.** From the CommCell Console, navigate to **Tools | Control Panel**.
 - Click Array Management.



- 2. Click Add.
- **3.** Select **Nimble** from the **Snap Vendor** list.
 - Specify the Data IP Address of the array in the **Name** field.

If you have more than one Data IP Address configured, you will need to add the array information for each of the configured Data IP addresses.

• Enter the Management IP Address of the array in the **Control Host** field.

For reference purposes, the screenshot on the right shows the Data IP Address and
Management IP for the Nimble storage device.

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- Enter the access information of a user with administrative privileges in the **Username** and **Password** fields.
- Use the **Description** field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.
- Click **OK** to save the information.

4.

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SnapProtect[™] Backup - Data Replicator

< Previous Next >

PRE-REQUISITES

INSTALLATION

• The use of Data Replicator with the SnapProtect backup requires MediaAgent, File System *i*DataAgent, and ContinuousDataReplicator on the source, destination, and proxy computers.

The use of a proxy server to perform SnapProtect operations is supported when a hardware storage array is used for performing the SnapProtect backup.

• The operating system of the MediaAgent to be used for SnapProtect backup must be either the same or higher version than the source computer.

STORAGE POLICY REQUIREMENTS

The Primary Snap Copy to be used for creating the snapshot copy must be a disk library.

If the Storage Policy or the disk library being used by the subclient is updated, the subclient should be recreated.

SETUP THE ARRAY

- From the CommCell Console, navigate to **<Client>** | **<Agent>**.
 - Right-click the subclient and click Properties.
- Click the SnapProtect Operations tab.
 - Ensure Data Replicator is selected from the Available Snap Engine drop-down

Quick Start Guide - SnapProtect

list. • Click **OK**.

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Getting Started - Windows File System Backup

PERFORM A BACKUP

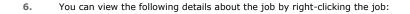
Once the storage policy is configured, you are ready to perform your first backup.

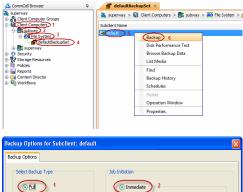
The following section provides step-by-step instructions for performing your first backup:

- From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaultBackupSet.
 - Right-click the default subclient and click **Backup**.
- 2. Click Full as backup type and then click Immediate.
 - Click OK.

- **3.** You can track the progress of the job from the **Job Controller** window of the CommCell console.
- 4. Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.

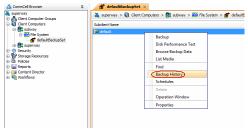
5. Click OK.

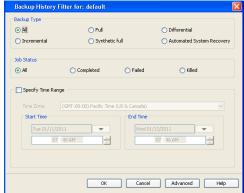




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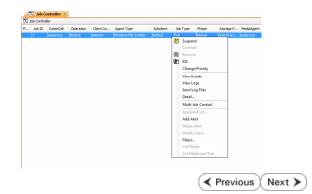






Previous Next >

- Items that failed during the job
- Items that succeeded during the job
- Details of the job
- Events of the job
- Log files of the job
- Media associated with the job



Getting Started - Vault/Mirror Copy

< Previous) Next >

SKIP THIS PAGE IF YOU ARE NOT USING NETAPP WITH SNAPVAULT/SNAPMIRROR.

Click Next > to Continue.

INITIATE VAULT/MIRROR COPY

Follow the steps to initiate a Vault/Mirror copy.

- From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the <storage policy> and click All Tasks | Run Auxiliary Copy.
- nt Type Subclient Job Type Phase Stor Run Data Verificatio / Event ID Job ID 000 10 Event General Job Initiation Select a Storage Policy NetApp_SnapStorage -Select Source MediaAgent <ANY MEDIAAGENT> -Copy Selection All Copies -C Select A Copy Number Of Readers 1 + C Number Of Streams Allow Maximum Start New Media 🦳 Mark Media Full On Success 🔲 Use Most Recent Full Backup For Auxcopy Wait For All Parallel Copy Resources 🗗 ок Cancel Advanced 孕 Save As Script Help chedule Deta Schedule Name C One Time Start Time 8:00 AM Daily C Weekly C Monthly C Yearly Cancel OK Help Options>>

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- Select the desired options and click the **Job Initiation** tab.
 - Select **Schedule** to configure the schedule pattern and click **Configure**.

- **3.** Enter the schedule name and select the appropriate scheduling options.
 - Click OK.

The SnapProtect software will call any available DataFabric Manager APIs at the start of the Auxiliary Copy job to detect if the topology still maps the configuration.

Once the Vault/Mirror copy of the snapshot is created, you cannot re-copy the same snapshot to the Vault/Mirror destination.



Getting Started - Snap Movement to Media

< Previous Next >

SKIP THIS PAGE IF YOU ARE NOT USING A TAPE DEVICE.

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BACKUP COPY OPERATIONS

A backup copy operation provides the capability to copy snapshots of the data to any media. It is useful for creating additional standby copies of data and can be performed during the SnapProtect backup or at a later time.

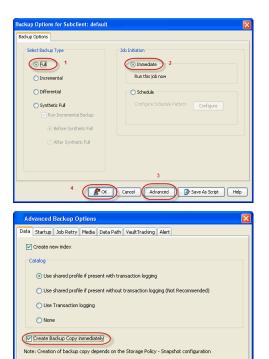
Once a backup copy is performed and the snapshot is copied to media, the same snapshot cannot be re-copied again.

INLINE BACKUP COPY

Backup copy operations performed during the SnapProtect backup job are known as inline backup copy. You can perform inline backup copy operations for primary snapshot copies and not for secondary snapshot copies. If a previously selected snapshot has not been copied to media, the current SnapProtect job will complete without creating the backup copy and you will need to create an offline backup copy for the current backup.

Depending on the Agent you are using, your screens may look different than the examples shown in the steps below.

- From the CommCell Console, navigate to Client Computers | <Client> | <Agent> | defaultBackupSet.
 - Right click the default subclient and click **Backup.**
 - Select Full as backup type.
 - Click Advanced.



- Select Create Backup Copy immediately to create a backup copy.
 - Click OK.

OFFLINE BACKUP COPY

Backup copy operations performed independent of the SnapProtect backup job are known as offline backup copy.

- 1. From the CommCell Console, navigate to **Policies** | **Storage Policies**.
 - Right-click the **<storage policy>** and click **All Tasks** | **Run Backup Copy**.

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Quick Start Guide - SnapProtect

2. Click **OK**.

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Getting Started - Windows File System Restore

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Backup Disk Performance Test

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PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process.

The following sections explain the steps for restoring the backup data from copies.

- From the CommCell Console, navigate to Policies | Storage Policies.
 - Right-click the **<storage policy>** and click **Properties.**
 - Click the Copy Precedence tab.
 - By default, the snapshot copy is set to 1 and is used for the operation.

You can also use a different copy for performing the operation. For the copy that you want to use, set the copy precedence as 1.

• Click OK.

1.

- From the CommCell Browser, navigate to Client Computers | <Client> | File System | defaulBackupSet.
 - Right-click the default subclient and then click **Browse Backup Data**.
- 3. Click OK.

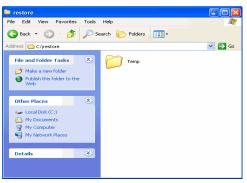
- 4. Expand the **defaultBackupSet** and navigate to **Documents and Settings** folder.
 - Select the Documents and Settings folder.
 - Click Recover All Selected.



- Clear the **Overwrite Files** and **Restore to same folder** options.
 - Specify the destination path by clicking **Browse** button. This will ensure that the existing files are not overwritten.
 - Click OK.

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- 6. You can monitor the progress of the restore job in the **Job Controller** window of the CommCell Console.
- **7.** Once the File System is restored, verify that the restored files/folders are available in the restore destination.



CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the Advanced sections of this documentation.

If you want to configure another client, go back to Setup Clients.



SnapProtect[™] Backup - Support

TABLE OF CONTENTS

Initial SnapProtect Setup License Requirements Supported Storage Arrays Backup Types Platforms Supported Volume Managers Multipath I/O Support

INITIAL SNAPPROTECT SETUP

Initial deployment and successful run of SnapProtect backup may take around 4 weeks due to the various environment dependencies. The following parameters are known to affect the deployment and initial run and hence need a thorough evaluation:

- Firmware versions on the array
- Device types
- Mode of access
- Security configuration
- Operating Systems interacting with the storage array
- Application layout on the storage array LUNs

LICENSE REQUIREMENTS

- The SnapProtect feature requires the **Snap Protect Enabler** license.
- The NetApp SnapVault/SnapMirror feature requires the NetApp Snap Management license.

SUPPORTED STORAGE ARRAYS

The SnapProtect backup is designed to work in conjunction with the following storage arrays, which provide snapshot functionality for data protection operations:

		SUPP	PORTED HARDWARE ARR	AYS		
VENDOR	SNAPSHOT	VERSION/FIRMWARE	REQUIRED LICENSING	REQUIRED SOFTWARE	PROTOCOL	NOTES/CAVEATS
DELL COMPELLENT	Snapshot	Storage Center 5.5.14 and above for 5.x and 6.2.2 and above for 6.x	Snapshot Replay licensing	None	Fibre Channel FCoE (Fibre Channel over Ethernet)* iSCSI	Supported on Windows, Linux and VMware. No HyperV Compellent Live Volume feature is not supported.
DELL EQUALLOGIC	Snapshot Clone	4.2.0	Included	None	iSCSI	On Red Hat Linux computers using version 5.0, only 32- bit is supported. No HyperV, or UNIX. Boot from SAN volumes is not supported.
EMC CLARIION	SnapView Snap SnapView Clone	CX500 / CX700 CX3-10 thru CX3-80 CX4-120 thru CX4-960	SnapView Snapshot/Clone Solutions Enabler Licensing	Solutions Enabler 6.5.1 or higher on Client and Proxy Navisphere CLI on Client and Proxy NaviAgent on Client and Proxy	Fibre Channel FCoE (Fibre Channel over Ethernet)*	No HyperV Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap

				1		operations.
						Not supported on HP- UX
EMC VNX	SnapView Snap SnapView Clone	VNX 5100, 5300, 5500, 5700, 7500	SnapView Snapshot/Clone Solutions Enabler Licensing	Solutions Enabler 7.1 or higher on Client and Proxy Unisphere CLI on	Fibre Channel FCoE (Fibre Channel over Ethernet)*	No HyperV VMware with NFS datastores are not supported.
	clone			Client and Proxy	iSCSI	ISCSI PowerPath LUNs
				on Client and Proxy		Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.
						For configuring a VNX array, refer to the step-by-step instructions provided for EMC Clariion. Not supported on HP-
						UX
EMC CELERRA	SnapSure Snap	DART 5.5 or Newer	SnapSure Snap License	Solutions Enabler 6.5.1 or higher on	NFS	Supported on VMware 4.x.
			Solutions Enabler Licensing	Client and Proxy		No HyperV
				Navisphere CLI on Client and Proxy		Not supported on HP- UX
	TimeFinder	DMX3 or Newer	TimeFinder Snap, Mirror,	Solutions Enabler 6.4 or higher on Client and		No HyperV
EMC SYMMETRIX	Snap TimeFinder Mirror		Clone Licenses Solutions Enabler Licensing	Proxy	FCoE (Fibre Channel over Ethernet)*	Remote SymApi Server is not supported.
						Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.
ΕΜС VMAX	TimeFinder Snap, Mirror	VMAX	TimeFinder Snap, Mirror, Clone Licenses	Solutions Enabler 7.2 or higher on Client and Proxy	Fibre Channel	No HyperV
	and Clone		Solutions Enabler Licensing		Channel over Ethernet)*	Client Components (SYMCLI) are required only during the initial one-time configuration. Base Components (with SYMAPI) are necessary and required for all snap operations.
FUJITSU ETERNUS		Fujitsu ETERNUS DX V10L22-1000 or higher	Local Copy	None	iSCSI	No HyperV
DX	EC Clone	ETERNUS DX S2 series - 80, 90, 410, 440, 8100, 8700	Thin Provisioning		Fibre Channel FCoE (Fibre Channel over Ethernet)*	Revert is not supported.
HITACHI DATA	Copy-on-Write	AMS 100, 200, & 500	Licenses for Copy-on-Write (COW) snapshot and Shadow	Device Manager 7.1.1 (or higher) Agent	Fibre Channel	No HyperV
SYSTEMS AMS	Shadow Image AMS 1000, 2100, 2300, & 2500		Image	Installed on Client and Proxy Device Manager Server 7.1.1 (or higher) installed on	FCoE (Fibre Channel over Ethernet)*	The Virtual Server iDataAgent must be installed on a physical server and not on a virtual machine.
				any computer RAID Manager (01-25- 03/05 or higher) installed on Client and		The Virtual Machine HotAdd feature is not supported. The Virtual Server

				Proxy		iDataAgent supports SnapProtect Backups when Hitachi Dynamic Link Manager (HDLM) plugin for VMWare is used for multipathing on the VMWare ESX Server.
	Copy-on-Write	HDS USP, USPv, VSP	Licenses for Copy-on-Write		Fibre Channel	No HyperV
HITACHI DATA SYSTEMS USP/VSP	Shadow Image			(or higher) Agent installed on Client and Proxy	FCoE (Fibre Channel over	COW support for USP volumes.
				Device Manager Server 7.1.1 (or higher) installed on any computer	Ethernet)*	COW and SI support for VSP volumes. Dynamic Provisioned volumes (DP-VOL) are also supported.
				RAID Manager (01-25- 03/05 or higher) installed on Client and Proxy		The Virtual Server <i>i</i> DataAgent must be installed on a physical server and not on a virtual machine.
						The Virtual Machine HotAdd feature is not supported.
						The Virtual Server <i>i</i> DataAgent supports SnapProtect Backups when Hitachi Dynamic Link Manager (HDLM) plugin for VMWare is used for multipathing on the VMWare ESX Server.
	Copy-on-Write	HUS 100 series	Licenses for Copy-on-Write	Device Manager 7.2.1	Fibre Channel	No HyperV
HITACHI DATA SYSTEMS HUS	Shadow Image		(COW) snapshot and Shadow Image	(or higher) Agent installed on Client and Proxy	FCoE (Fibre Channel over Ethernet)*	The Virtual Server iDataAgent must be installed on a physical server and not on a virtual machine. The Virtual Machine HotAdd feature is not supported. The Virtual Server <i>i</i> DataAgent supports SnapProtect Backups when Hitachi Dynamic Link Manager (HDLM) plugin for VMWare is used for multipathing on the VMWare ESX
		EVA	HP Business Copy EVA feature		Fibre Channel	Server. No HyperV
HP EVA	Copy Snapshot and Clone			Command View Version 9.1, 9.3, 10.0	FCoE (Fibre Channel over Ethernet)* iSCSI	
HP (HDS OEM) XP, P9500 ARRAYS	Copy-on-Write Shadow Image	XP 12000 – 24000 P9500	Ìmagé	HP StorageWorks Command View Advanced Edition Agent (Device Manager 7.1.1 or higher) installed on client and proxy computers	Fibre Channel FCoE (Fibre Channel over Ethernet)*	No HyperV The Virtual Machine HotAdd feature is not supported.
				HP StorageWorks Command View Advanced Edition Server (Device Manager 7.1.1 or higher) installed on any computer.		
				HP StorageWorks		

				RAID Manager installed on client and proxy computers.		
	Snapshot and	InServ F200 3.1.2 or	Thin Provisioning (4096G)	3PAR SMI-S on Server	Fibre Channel	No HyperV
HP 3PAR	Clone	higher	Virtual Copy		FCoE (Fibre Channel over Ethernet)*	Also supports 2.3.1 (MU4) or higher except 3.1.1.342,
					iSCSI	3.1.1 MU1 + Patch 10 and 3.1.1 (MU2)
	Flash Copy	SVC / V7000 6.1.0.7 or	FlashCopy	IBM SMI-S on Server	Fibre Channel	No HyperV
IBM SVC	Space-efficient Flash Copy	higher			FCoE (Fibre Channel over Ethernet)*	
					iSCSI	
	Snap	ANY XIV Array	Included	IBM XCLI 2.3 or higher	Fibre Channel	No HyperV
IBM XIV				on Client and proxy	FCoE (Fibre Channel over Ethernet)*	
					iSCSI	
	Snapshot	Dell MD Series – 3000(i),	Snapshot	LSI SMI-S on Server	Fibre Channel	No HyperV
NETAPP E-SERIES (LSI ARRAYS)	VolumeCopy	IBM DS - 3200, 3300, 3400 - 3512, 3524, 3950, 4100, 4200, 4300, 4400, 4500 - 4700, 4800, 5020, 5100, 5300		and server 10.10.6054 or higher	FCoE (Fibre Channel over Ethernet)* iSCSI	SAN Transport mode with Virtual Server iDataAgent is not supported as snapshots cannot be mapped to two different host groups.
		SGI IS – 220, 350, 400, 4xxx, 5xxx				
		SGI TP – 9300(s), 9400 (s), 9500(s)				
		Sun - 25xx, 61xx, 65xx, 6780, 9176, FLX210, FLX240, FLX280				
	Snapshot	ONTAP 7.3.5 or ONTAP	FlexClone	A server running	Fibre Channel	Supported on HP-UX
NETAPP		8.1.x (7-mode only)	SnapRestore	NetApp DataFabric Manager server	FCoE (Fibre	running on Intel Itanium processors
			SnapVault/Mirror for replication	software 4.0.2 or later, or OnCommand	Channel over Ethernet)*	using Fibre Channel.
				UM 5.x is required.	ISCSI NFS	
NIMBLE	Snapshot	1.2.2.0-17686	Included	None	iSCSI	Supported on x64-bit Windows platforms
		1.3.0.0-22989				

	SUPPORTED HARDWARE ARRAYS FOR REPLICATED ENVIRONMENTS							
VENDOR	SNAPSHOT	VERSION/FIRMWARE	REQUIRED LICENSING	REQUIRED SOFTWARE	PROTOCOL	NOTES/CAVEATS		
NETAPP WITH SNAPVAULT SNAPMIRROR	SnapVault SnapMirror	ONTAP 7.3.5 or higher ONTAP 8.0.1, 8.0.2 and 8.1.0 (7-mode supported)	SnapVault/SnapMirror Primary and Secondary FlexClone SnapRestore	version 4.0.2 (Apr 2011) or OnCommand 5.0 and 5.1 with ONTAP 8.1.0 Provisioning Manager,	Fibre Channel FCoE (Fibre Channel over Ethernet)* iSCSI NFS	Supported on HP-UX running on Intel Itanium processors using Fibre Channel. vFilers not supported as a destination. For vFiler NAS /DataAgent clients, indexing snapshot data is only supported with ONTAP 8.1.1 or later or if the physica file server containing the vfiler is entered into Array Management.		

*Supported through Field Certification. Contact your Software Provider or Professional Services to see if the specific FCoE can be supported.

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SUPPORTED SOFTWARE SNAPSHOT ENGINES

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VENDOR	SNAPSHOT	VERSION/FIRMWARE	REQUIRED LICENSING	REQUIRED	NOTES/CAVEATS
				SOFTWARE	
DATA REPLICATOR	Not applicable		Local native snapshot license (Volume manager snapshot license or QSnap license) Hardware Snap Engine or native snap or QSnap license	ContinuousDataReplicator	

LUNs should be from same storage array. LUNs from different storage arrays of same model/vendor or different models/vendors are not supported.

Dynamic Disks on Window Operating Systems are not supported.

When performing SnapProtect backup for a Windows MSCS Cluster, a separate proxy server (external to the cluster nodes) must be used for mount, backup and restore operations as disk signature conflicts may occur if these operations are performed from one of the servers in the cluster.

The use of iSCSI is not supported when performing SnapProtect operations on computers running Solaris.

Boot from SAN volumes is not supported.

When the client is running on a virtual machine, you can perform the SnapProtect backup of the Fibre channel RDM devices if they are located on the NetApp storage array. However, you cannot use Virtual Server *i*DataAgent to perform the SnapProtect backup in such scenario. You can use any other *i*DataAgent, such as File System *i*DataAgent or Exchange Database *i*DataAgent etc.

For information on the supported snapshot engines, see Hardware Snapshot Engine Compatibility Matrix.

BACKUP TYPES

The following table lists the Agents supporting the SnapProtect backup and provides information about the various options supported by each of these Agents.

AGENTS	FULL BACKUP	INCREMENTAL BACKUP	DIFFERENTIAL BACKUP	NOTES
VIRTUAL SERVER				Backup of VM Templates is not supported.
(VMWARE)	\checkmark	\checkmark		Virtual Server instances configured with ESX server are not supported. Instances should be configured using Virtual Center.
				SRM is not supported.
EXCHANGE DATABASE				SnapProtect backups are not supported on Exchange 2007 CCR Passive nodes.
	V	√	V	DDR snapshots are not supported on Exchange 2010 DAG clients.
				SRM is not supported.
ORACLE	V	\checkmark		Incremental backups are applicable for Backup copies.
				See Backup Copy Operations for more information.
MICROSOFT SQL SERVER	V		V	Transactional Log backups always use the traditional backup method. Log backups are stored in the Primary (classic) copy.
NAS	√	√	√	
VIRTUAL SERVER (HYPER- V)				SnapProtect backups support online virtual machines with NetApp file servers.
	V			Other storage array vendors use the traditional backup method. To perform a SnapProtect backup, the virtual machine must be offline.
				SRM is not supported.
SAP FOR ORACLE	√			
DB2	V			Backup of partial databases is not supported.
	-			Log files always use the

				traditional backup method.
UNIX FILE SYSTEM				On Demand Backup Set is not supported for SnapProtect Backup.
	√	√	\checkmark	Raw partitions in Unix are supported.
				Mirrored Volume Manager/ZFS/ASM configuration is not supported.
WINDOWS FILE SYSTEM	V	V	V	On Demand Backup Set is not supported for SnapProtect Backup.

PLATFORMS

The following table lists the platforms supported for SnapProtect backup. The latest updates should be installed on all the platforms.

For AIX and Solaris, SnapProtect backups are supported for clients using the 32-bit packages of Calypso.

IntelliSnap with Veritas Volume Manager requires ALUA compliant LUNs (primary and secondary). For non-compliant ALUA LUNs, a workaround is explained in this Symantec KB article.

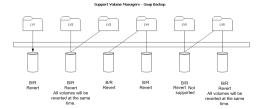
OPERATING SYSTEM	CLUSTER SUPPORT	FILE SYSTEMS	DATABASES	APPLICATIONS
			SQL version 2005, 2008, 2012	
WINDOWS 2003 AND HIGHER	MSCS	NTFS	Exchange 2003, 2007, 2010 – including DAG	
VMWARE ESX		iSCSI/FC/NFS datastores	ESX vSphere 4.x & vSphere 5.0	
AIX 5.3, 6.1, 7.1 (LPARS SUPPORTED, VIRTUAL SCSI DEVICES NOT SUPPORTED)	Veritas Cluster, HACMP	JFS, JFS2, VxFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0 & 7.1 on Oracle 10g R2, Oracle 11g R1 & R2
HP-UX 11 V2/V3 (PA-RISC AND ITANIUM)	Veritas Cluster, Service Guard	HFS, VxFS, VxCFS	Oracle 10g R2, Oracle 11g R1 & R2 DB2 version 9 or higher	SAP Brtools 7.0 & 7.1 on Oracle 10g R2, Oracle 11g R1 & R2
ORACLE ENTERPRISE LINUX 5.X AND 6.X		ext2, ext3, reiserfs, VxFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0, 7.1 & 7.2 on Oracle 10g R2, Oracle 11g R1 & R2
RED HAT/CENTOS LINUX 4.X AND 5.X	Linux Cluster Veritas Cluster	ext2, ext3, reiserfs, VxFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0 & 7.1 on Oracle 10g R2, Oracle 11g R1 & R2
RED HAT/CENTOS LINUX 6.X	Linux Cluster Veritas Cluster	ext2, ext3, ext4, reiserfs, VxFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0, 7.1 & 7.2 on Oracle 10g R2, Oracle 11g R1 & R2
SOLARIS 10 SPARC (SOLARIS ZONES SUPPORTED)	Sun Cluster Veritas Cluster	UFS, VxFS, ZFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0, 7.1 & 7.2 on Oracle 10g R2, Oracle 11g R1 & R2
SOLARIS 11 EXPRESS		UFS, VxFS, ZFS		
SUSE LINUX ENTERPRISE SERVER 10.2 AND 11	Veritas Cluster	ext2, ext3, ext4, reiserfs, VxFS	Oracle 10g R2, Oracle 11g R1 & R2, DB2 version 9 or higher	SAP Brtools 7.0 & 7.1 on Oracle 10g R2, Oracle 11g R1 & R2

The above list *does not* provide a comprehensive list of supported platforms for each agent. See System Requirements for information on the platforms supported by the individual Agents.

SUPPORTED VOLUME MANAGERS

- Logical Volume Manager
 - $\,\circ\,$ All versions supported on AIX and Linux
 - $\circ~$ Versions 1.0 and 2.x supported on HP-UX
- VERITAS Volume Manager (VxVM) 5.0 for AIX, Linux and Solaris
- Solaris ZFS Mirror
- Solaris Volume Manager

When using the Solaris Volume Manager, ensure that a



complete disk is used for a metaset. Also, ensure that the metaset is owned by single host and the ownership of the metaset is attained before performing the SnapProtect backup operations.

Supported Configurations:

- One Physical Volume containing one Logical Volume
- One Physical Volume containing one or more Logical Volumes
- Multiple Physical Volumes containing one Logical Volume
- Multiple Physical Volumes containing one or more Logical Volume

The adjacent diagram summarizes the Volume Manager support for SnapProtect backup.

MULTIPATH I/O SUPPORT

• For EMC CLARiiON, the SnapProtect backup is supported on the following Multipath I/O software. This support is provided using the SNAP_WITH_MULTIPATH_SOFTWARE registry key.

o EMC Powerpath on AIX, Linux and Solaris.

- For Dell EqualLogic, install Dell EqualLogic Host Integration Tools package to support Multipath I/O.
- HP PVlinks, Solaris MPxIO, Linux Device Mapper and AIX MPIO are supported in HPUX, Solaris, Linux and AIX respectively.
- VXVM DMP is supported in AIX, Solaris and HPUX.
- HDLM is not a supported MPIO solution with SnapProtect.