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Dell EMC SC Series Storage: CommVault Version 11

Dell EMC Storage Engineering
March 2017

A Dell EMC Best Practices Guide

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Revisions

Date	Revision	Description
March 2017	3.0	Third Release, CommVault v11. Updated to use new template.
July 2013	2.0	Second Release, Simpana v10.
June 2013	1.0	Initial Release, Simpana v9.

Acknowledgements

Table of Contents

1 Introduction

CommVault® version 11 offers scalable data protection with snapshot, replication and persistent copies that are secure and deduplicated. Offering seamless integration with Dell EMC™ SC Series arrays, data can be protected and managed through a single, unified platform.

1.1 Audience

This document was written for technology professionals interested in learning more about best practices for configuring CommVault 11 to backup and restore data residing on a Dell EMC SC array using Microsoft® Windows Server®, and VMware vSphere®.

1.2 Prerequisites

Understanding the material in this document requires advanced working knowledge of:

- Installing and configuring CommVault Version 11
- Configuring and operating SC Series arrays
- Operating Dell Storage Manager (DSM)
- Configuring and operating Windows Server 2012 or newer
- Configuring and operating VMware vSphere 5.5 or newer

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2   Overview

2.1   SC Series storage overview

SC Series storage solutions provide many robust features including:

- True flash optimization
- Thin provisioning
- Data optimization
- Data reduction (compression and deduplication)
- Automated sub-LUN tiering
- Sub-disk RAID levels
- Synchronous replication with automatic failover
- Intelligent read and write data placement.

SC Series arrays provide a unified platform for the ultimate experience in performance, adaptability, and efficiency.

In addition to raw capacity and I/O performance, other important factors such as monitoring, reporting, data protection (backups, snapshots, and replication), and the ability to recover in case of a disaster are equally important. The SC Series array is well suited to provide a solid, proven storage solution for Windows Server and VMware environments to meet all of these business needs. To learn more about specific SC Series arrays, visit the dell.com SC Series Storage Solutions page.

2.2   SC Series integration with CommVault 11

Leveraging SC Series snapshots, CommVault IntelliSnap® creates hardware-based snapshots of Hyper-V®, VMware, SQL Server®, Exchange Databases and Windows File Servers. For a listing of Storage Center Operating System (SCOS) versions supported by CommVault, refer to the CommVault support matrix.

2.3   CommVault 11 component reference

Note: All installed components of CommVault must be at the same service pack level.

2.3.1   CommCell

A CommCell® is the basic organizational unit of a data management system. A CommCell contains one CommServe® StorageManager, at least one client, and at least one MediaAgent.

2.3.2   CommServe

The CommServe communicates with all clients and MediaAgents and coordinates all operations (such as backups, restores, copies and media management) within a CommCell. There is only one CommServe per CommCell. Typically, the CommServe GUI is installed on the CommServe.

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2.3.3 MediaAgent

A MediaAgent manages the transmission of data between clients and backup media and manages the data stored in the media.

> **Note**: A MediaAgent installation is required to back up a server. To create IntelliSnap backups of ESX virtual machines, a MediaAgent and virtual server agent must be installed on the same server.

2.3.4 Virtual server agent

A virtual server agent backs up a complete image of each virtual machine.

> **Note**: For minimal load on host resources, it is strongly recommended that the virtual server agent be installed on a proxy server that can communicate with the Virtual Center or ESX server being backed up. The proxy server can be a virtual machine on the Virtual Center or ESX server if sufficient resources are available on the host.

> **Note**: A single instance of a Virtual Server Agent can support about 30-40 TB of front-end load when backing up virtual machines. Depending on the amount and size of virtual machines in the environment, a second Virtual Server Agent may need to be installed on a separate proxy server.

2.3.5 Windows file system iDataAgent

This agent performs the backup and restore of the client data.

> **Note**: The Windows File System iDataAgent must be installed with a MediaAgent in order to create IntelliSnap backups of Hyper-V guests, a Windows file server, SQL Server or Exchange Server.
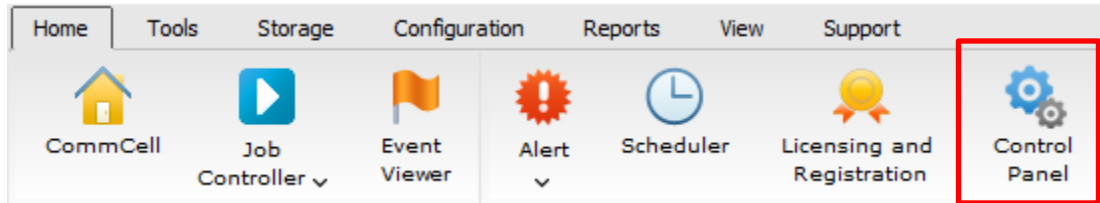
> **Note**: The Windows File System iDataAgent does not need to be installed to create backups of Windows virtual machines on an ESX server. The Virtual Server Agent handles this process.

> **Note**: The CommVault VSS Provider must be installed to create Windows file system backups.
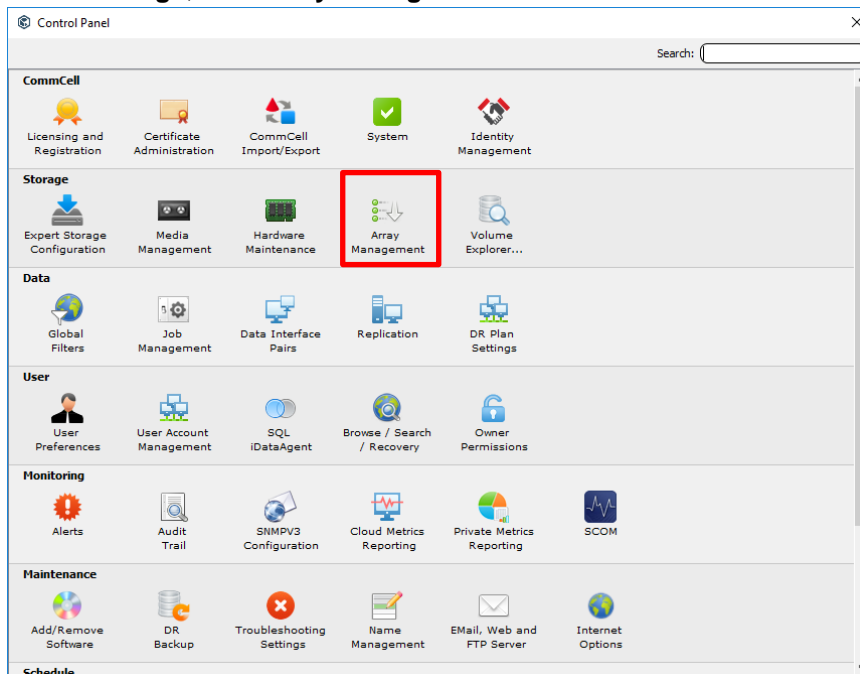
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3 Adding an SC Series array to array management

Note: Prior to using IntelliSnap to take hardware-based snapshots of an SC Series volume, a SC Series array must be added in Array Management.
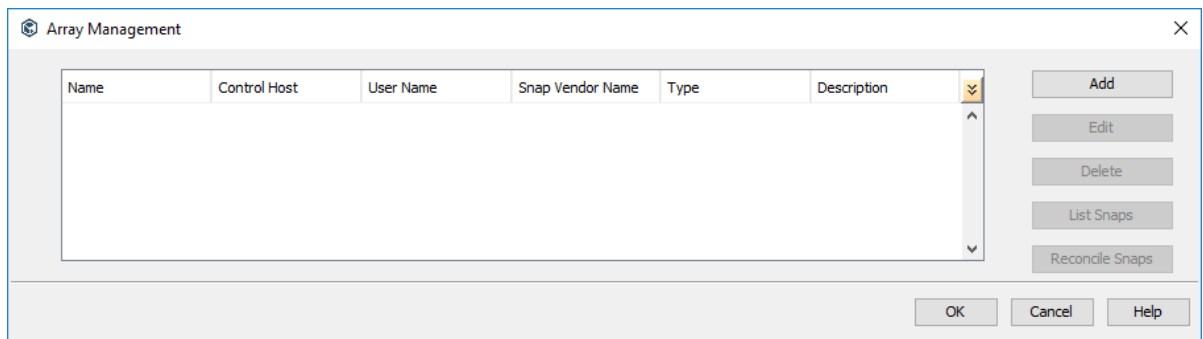
1. Open the CommCell Console GUI.
2. On the Home tab, choose **Control Panel**.

3. Under **Storage**, click **Array Management**.

4. Click **Add**.

5. In the Snap Vendor drop-down menu select **Dell Compellent**.
6. Enter the name of the Storage Center (for example, SC17).
7. In the Control Host field enter the IP Address of the SC Series array.

Note: When entering the array IP, always use the SC Series Management IP address. This is the IP address used in Dell Storage Manager (DSM) to connect to the SC Series array.

8. Click **Change**.
9. Enter a user name and password that provide administrator access to the SC Series array.

Note: The user name and password are case-sensitive.

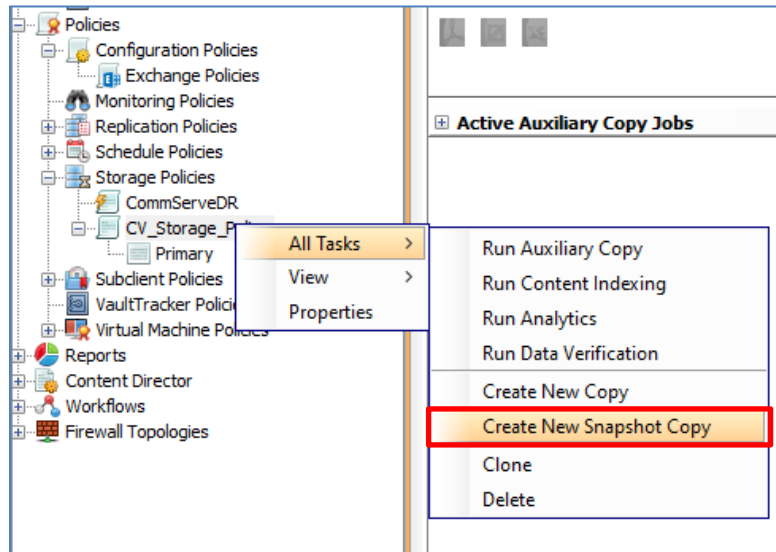10. Click **OK** to see the SC Series array displayed in the Array Management window.

Note: To use this CommVault instance to backup volumes on more than one SC Series array, all applicable SC Series arrays must be added in Array Management.
Note: If " is not a Compellent device" is displayed during a backup operation, it means the Array Management entries are not correct.

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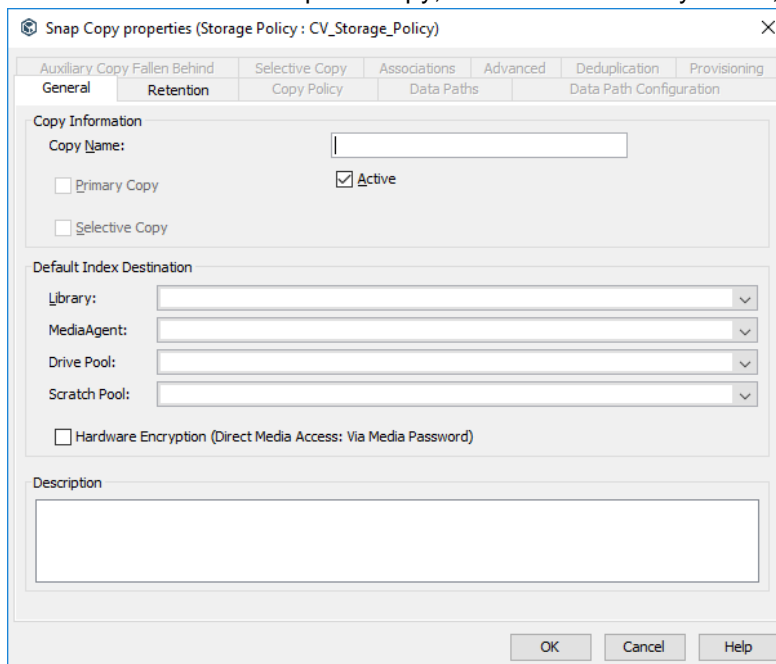
4 Configuring a storage policy to use IntelliSnap

In order for IntelliSnap to create hardware-based snapshot backups, a snapshot copy of an existing Storage Policy needs to be created.

1. Within the CommCell browser, expand **Policies** then expand **Storage Policies**.
2. Right-click on the Storage Policy to use for IntelliSnap backups and then click **All Tasks** > **Create New Snapshot Copy**.

3. The Snap Copy Properties window appears.
4. Enter a name for the Snapshot copy, choose a disk library to use, and select a media agent.

Note: If this policy will be used to backup Virtual Machines, choose the Media Agent for the Server where the Virtual Server Agent is installed.

5. Use the Retention tab to configure retention rules for backups created with this policy.

Note: An IntelliSnap backup process creates a new SC Series snapshot every time an IntelliSnap process is run. As a best practice, use the retention settings within the storage policy for expiring and removing old snapshots.
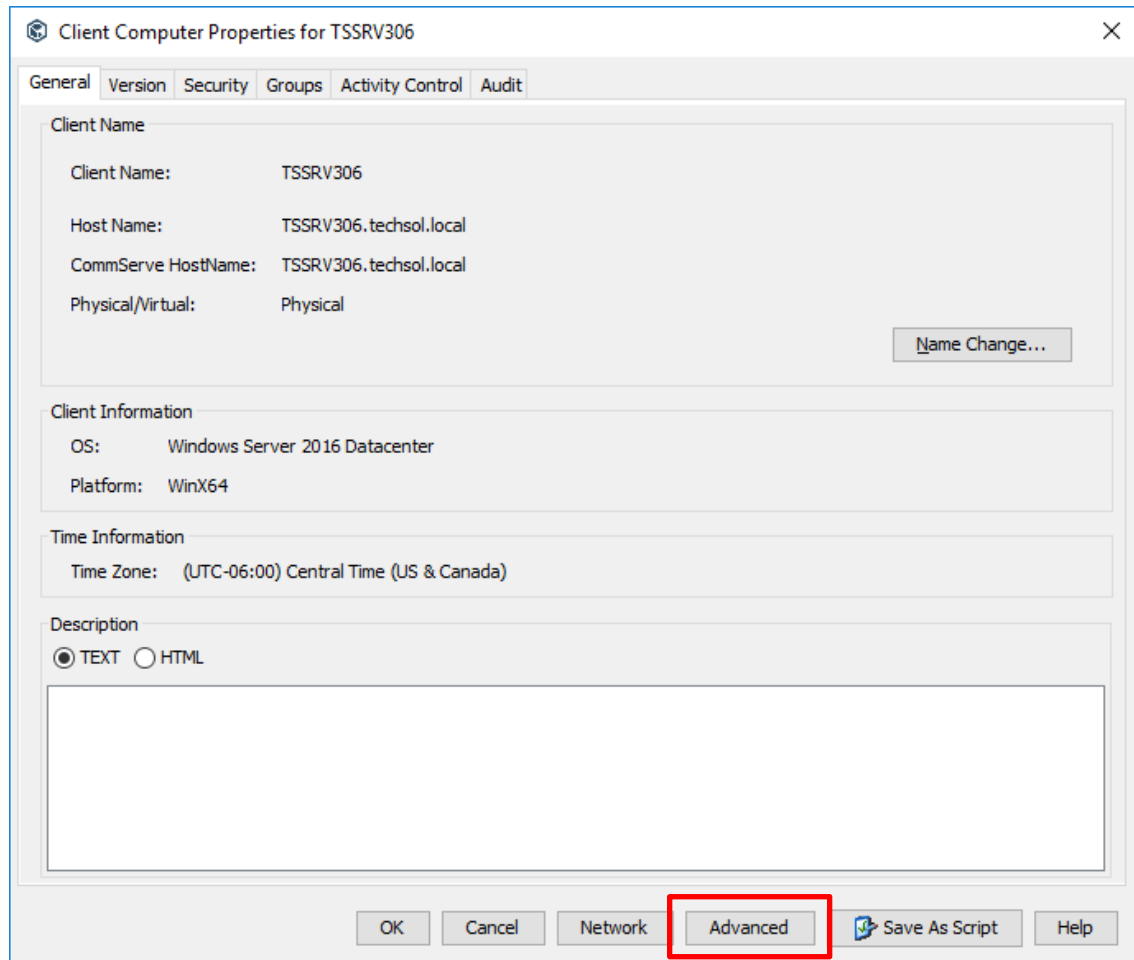
6. Click **OK** when finished.

5 Enabling IntelliSnap on clients

In order to create IntelliSnap backups of VMware virtual machines, Hyper-V virtual machines, SQL Server, or a Windows File Server, IntelliSnap must be enabled on the associated client computer where the agent is installed.

> **Note**: To use IntelliSnap to backup VMware virtual machines, follow the directions below to enable IntelliSnap on the proxy server where the virtual server agent is installed.

The instructions below illustrate how to enable IntelliSnap on a Windows file server. Follow the same process to enable IntelliSnap on an ESX, SQL, or a Hyper-V server.

1. Within the CommCell GUI, expand **Client Computers** in the CommCell Browser and locate the client computer.
2. Right-click the client computer and select **Properties**.
3. Click **Advanced**.

4. Select the General tab and check the **Enable IntelliSnap** box.

5. Click **OK** to return to the CommCell Console.

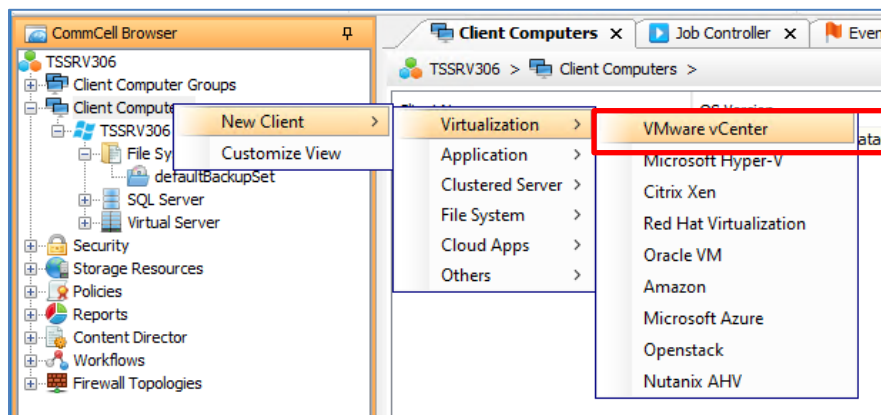# 6 Using IntelliSnap to backup VMware vSphere virtual machines

This section details the steps needed to configure CommVault IntelliSnap to backup Windows virtual machines running on a VMware vSphere server.

Before getting started, it is highly recommended to review *Dell EMC SC Series Best Practices with VMware vSphere 5.x-6.x* for information about how to configure a vSphere 5.x-6.x environment for best performance.

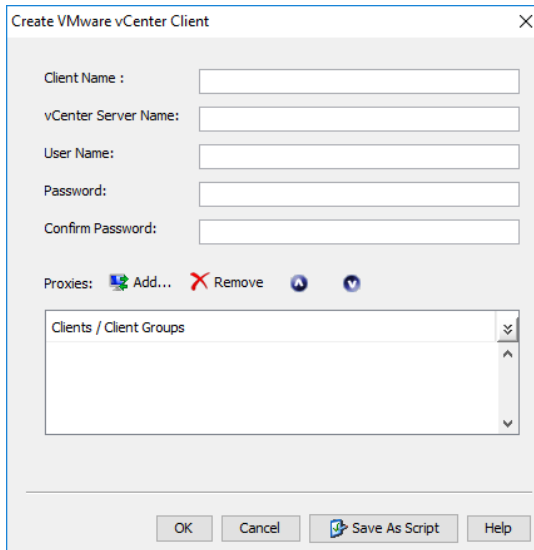> **Note**: As a best practice, do not create virtual machine datastores on the same volume that the vSphere host uses as its boot volume.
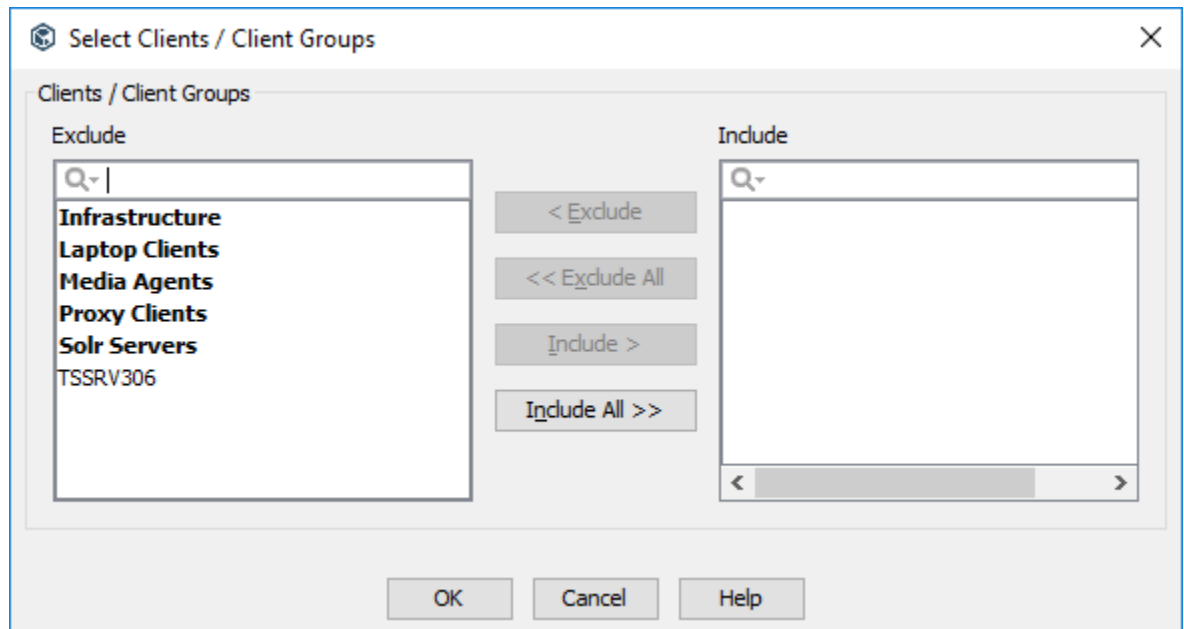
6.1 Configuring the virtual server agent

1. Within the CommCell Console, right-click on Client Computers. Select **New Client** > **Virtualization** > **VMware vCenter**.
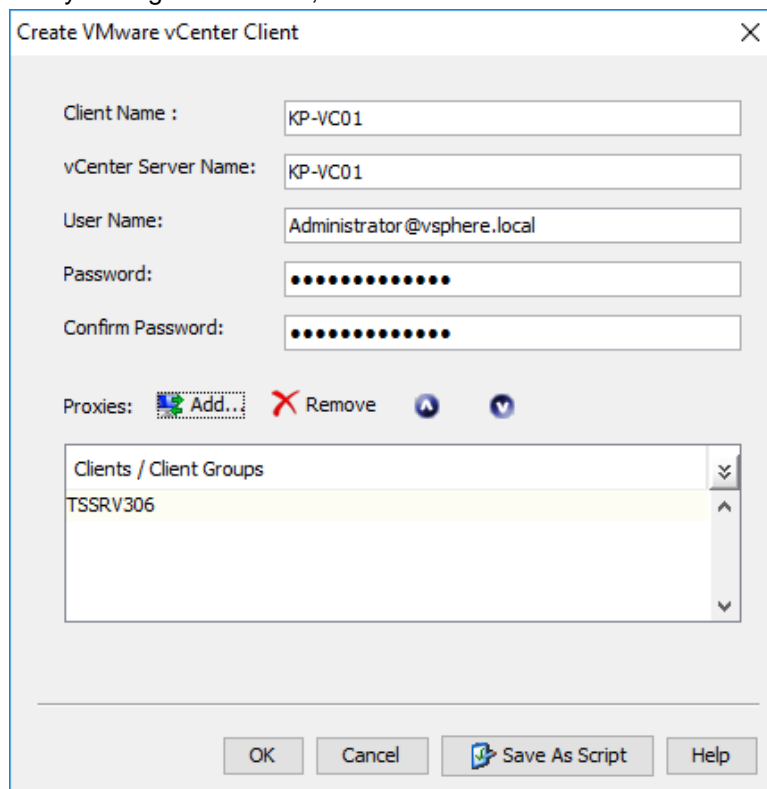

2. The Create VMware vCenter Client Window appears.

3. Enter the vCenter host name, user name and password information. When finished, click **Add…**
4. Select a server from the Exclude list that has the Virtual Server Agent installed. Click **Include >** to add the server to the Include list. Click **OK** when finished.
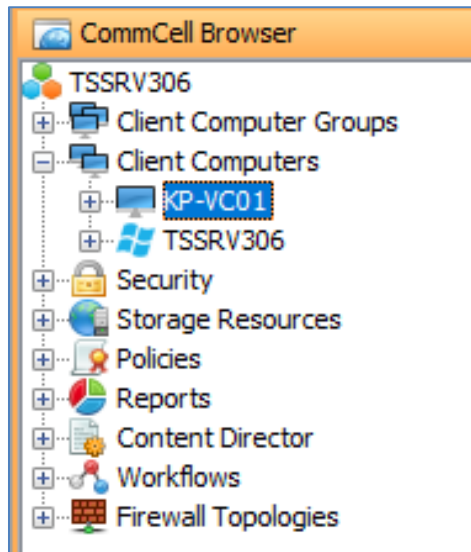

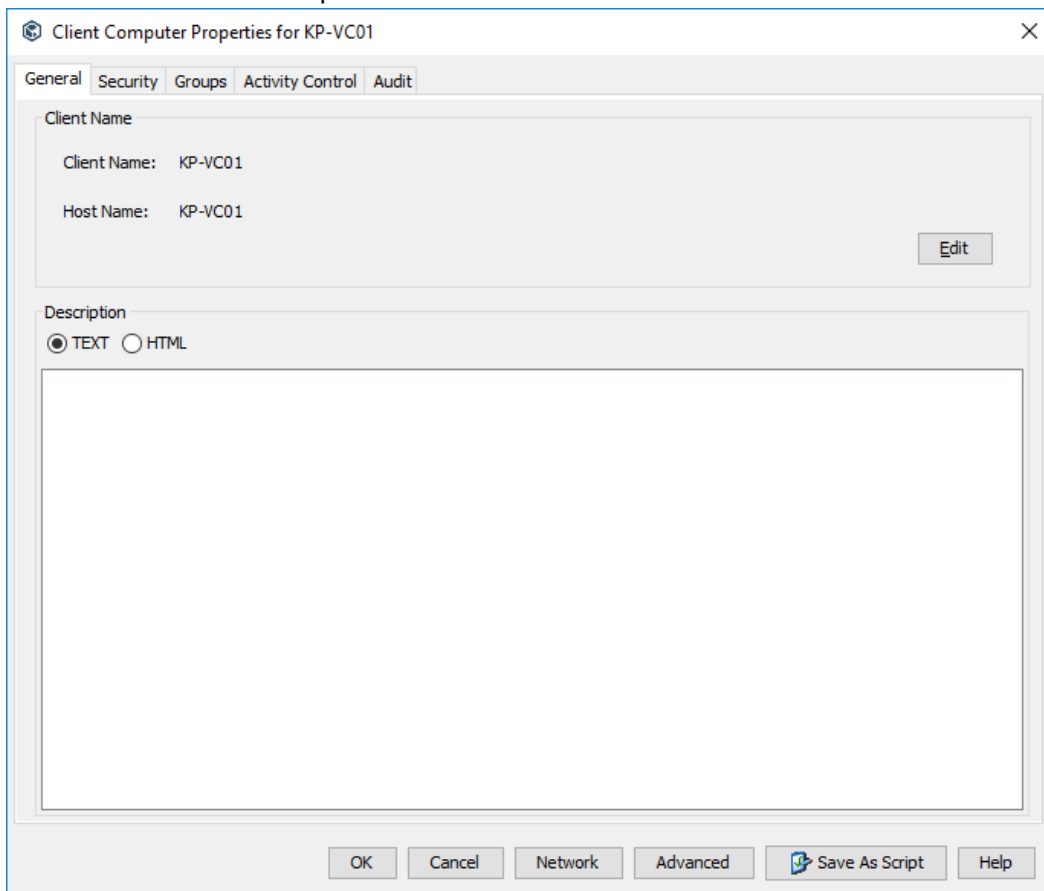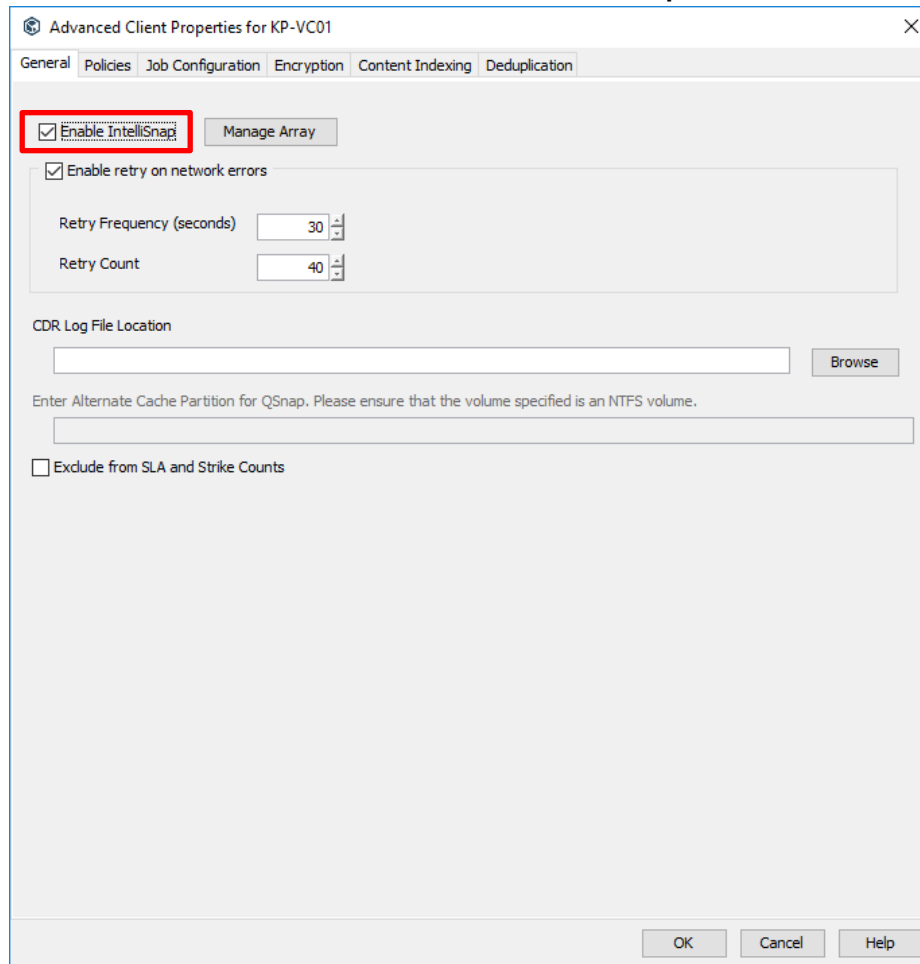5. Verify settings are correct, and click **OK**.

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6. The vCenter Host will be added to the Client Computers list.

7. **Right-click** on the vCenter host and select **Properties**.
8. Click **Advanced** in the Properties window.

9. On the General tab, check the box to **Enable IntelliSnap**.

10. Click **OK** twice when finished.

6.2 Creating subclients

> **Note**: For optimal performance, a single Subclient should be created for each vSphere datastore.

1. Right-click **defaultBackupSet** and then select **All Tasks** > **New Subclient**.

2. Enter a name for the Subclient.

> **Note**: Although not a requirement, it is recommended that each Subclient name match the datastore it will be associated with. This makes it easier to keep track of datastores as the environment grows.

3. Open the IntelliSnap Operations tab and check the **IntelliSnap** box.

4. Review the warning dialog box and then click **OK**.

5. From the dropdown box, choose **Dell Compellent Snap**.
6. Select the **Manage Array** box.

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7. Verify the SC Series array that hosts the vSphere datastore volumes is listed. Click **Edit** to make any changes. Click **OK** when finished.

8. Select the check box to Use Separate Proxy for Backup Copy.
9. In the **Proxy** dropdown, select a vSphere host server.

Important notes about using a proxy server:

- CommVault utilizes the proxy server by mounting snapshots to the proxy server to inventory and collect metadata about the virtual machines included in the snapshot.
- The proxy server selected should be a different server than the host(s) selected to backup virtual machines.
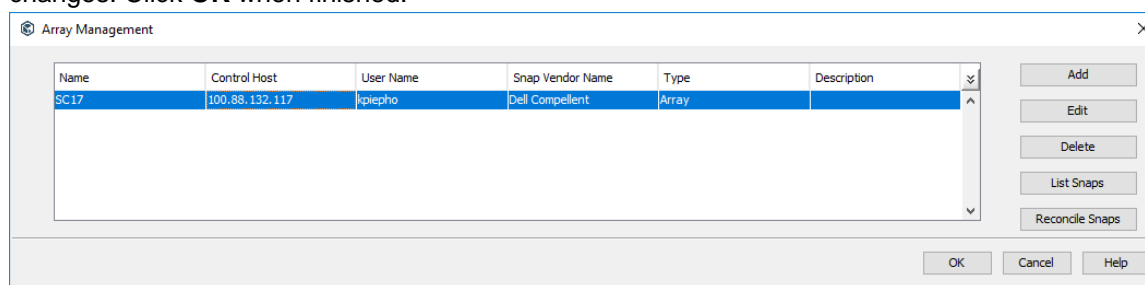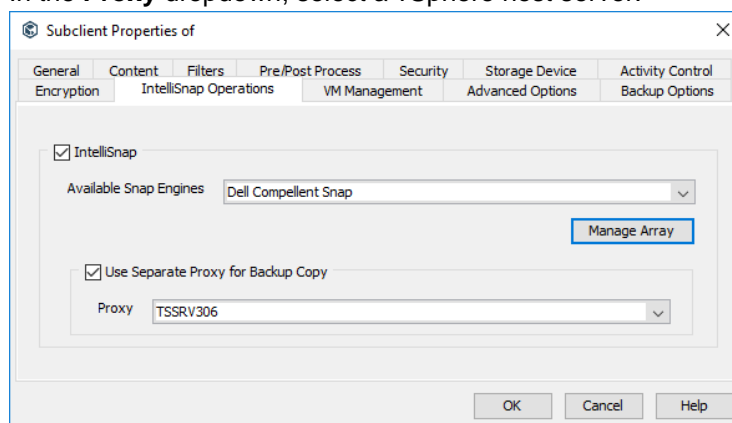- In order to use a vSphere host as a proxy server, a separate VMware vCenter client must be added to Client Computers in the CommCell browser. Refer to section 6.1 for instructions on how to add another VMware vCenter client.
- The proxy server must be connected (via Fibre Channel or iSCSI) to the SC Series array where the vSphere datastore volumes are located. A corresponding server object must also exist within Dell Storage Manager for the proxy server.
- To increase speed of proxy mounting, the vSphere proxy server should have as few connected LUNs as possible.

10. Click the **Storage Device** tab.

11. From the **Storage Policy** drop-down box, select the desired IntelliSnap Storage Policy.

12. Open the **Content** tab and click the **Browse** button.

13. Click the drop down arrow and select datastores and datastore clusters.

14. Expand the list of available datastores.

15. Check the box next to the datastore to be backed up.

Note: Expanding the datastore will show the virtual machines contained within. Specific virtual machines can be selected and backed up individually. Selecting the entire datastore will back up all virtual machines contained within it.

16. Check the virtual machines to be backed up.

17. Click **OK** when finished. The selected datastore should now be listed in the contents of Subclient window.

18. Click **OK** to close the Subclient properties window.
19. Repeat this process for each datastore that contains VMs to be backed up.

6.3 Performing a backup

CommVault has the option to run a backup of a single Subclient, or all Sublclients at once.

6.3.1 Backing up a single subclient

1. Within the CommCell Browser expand the **Virtual Server** > **VMware** and click on **defaultBackupSet**.

2. In the operations window all Subclients are displayed.

3. Right-click the Subclient to backup, then click **Backup**.

4. The Backup Options window appears for the Subclient. Select the desired backup type.
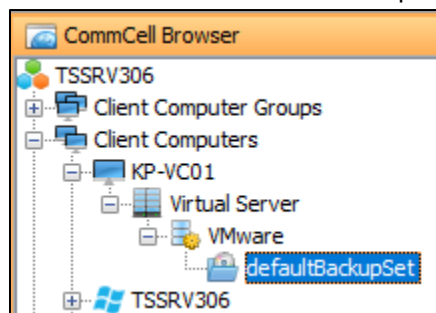
Note: By default, the first time an IntelliSnap backup runs it will create a full backup set regardless of the backup type. This is necessary to create a baseline for subsequent backups. A full backup takes more time to complete because it contains all the data of a subclients contents. Depending on requirements, subsequent backups can be set to Incremental or Differential.

5. Click **Advanced**.

6. To send a copy of this snapshot to backup media, check the box to **Create Backup Copy immediately**.

7. If desired, check the box to **Enable Granular Recovery for IntelliSnap**.

Note: Enabling Granular Recovery allows file and folder restores from within virtual machines on the snapshot. Depending on the number of virtual machines in the datastore to back up, enabling this option significantly increases the time needed to create a backup of the Subclient. During this process, the IntelliSnap volume is mounted to the vSphere proxy server, and an inventory is taken of all folders and files in each virtual machine located in the backup set.

Note: Enabling granular recovery is not required to recover files and folders from virtual machines running a Windows Server or desktop operating system. Alternately, using the CommVault Live Browse functionality allows browsing of a backup set, selecting a specific virtual machine, and then choosing which folders/files to restore. This process similar to granular recovery; when choosing the virtual machine to restore from, CommVault mounts the snapshot to the vSphere proxy server, runs an inventory of all the virtual machines within the snapshot, and then displays those folders and files. Depending on proxy server hardware configuration, and the amount of virtual machines contained on the snapshot, it may take some time to mount the snapshot on the vSphere server before displaying files and folders.

8. Click **OK** to close the Advanced Backup Options window.
9. Click **OK** to begin the backup.
10. Monitor the backup process in the Job Controller window.

11. The backup process is finished when the Job Controller shows a **Completed** status (Progress = 100%).

6.3.2 Backing up all subclients

Note: Use this option to backup all virtual machines at the same time.

1. Within the CommCell Browser expand the Virtual Server and right-click on **defaultBackupSet** > **Backup All Subclients**.

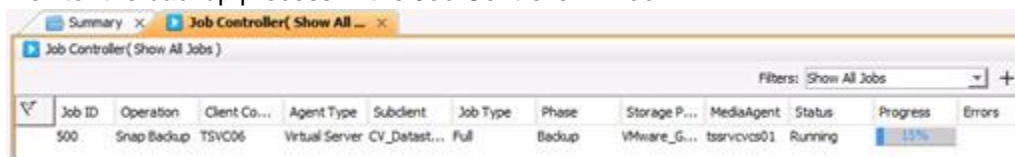
2. Answer **Yes** to backup all subclients of this backup set.

3. When the Backup Options window appears, select the desired backup type.

Note: By default, the first time an IntelliSnap backup runs it will create a full backup set regardless of what the backup type is set to. Depending on requirements, subsequent backups can be set to Incremental or Differential.

Note: When backing up all subclients, there is no option to enable granular recovery.

4. Click **OK** to start the backup. The following error message will appear if the default subclient is not associated with a Storage Policy.

Error in running job

Failed to get the Target Storage Policy for Client [KP-VC01] Subclient [default].
Check the Storage Policy under the subclient properties.

OK

5. Click **OK** to ignore the error.
6. Monitor the status of all backup jobs in the Job Controller window.

Job ID	Operation	Client Co...	Agent Type	Subclient	Job Type	Phase	Storage P...	MediaAgent	Status	Progress	Errors
503	Snap Backup	TSVC06	Virtual Server	CV_Datast...	Full	Backup	VMware_G...	tssrvcvcs01	Running	15%	
504	Snap Backup	TSVC06	Virtual Server	CV_Datast...	Full	Backup	VMware_G...	tssrvcvcs01	Running	15%	

Note: A separate job will be created for each Subclient that is backed up.

7. The backup process is finished when the Job Controller shows with a status of Completed (Progress = 100%) for all jobs.

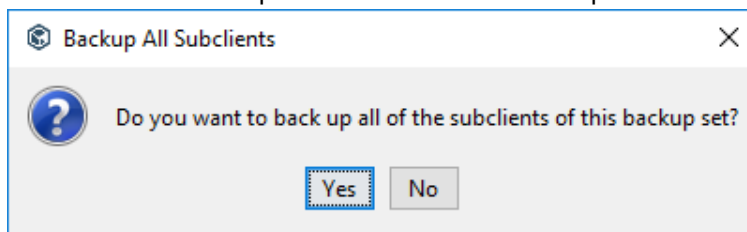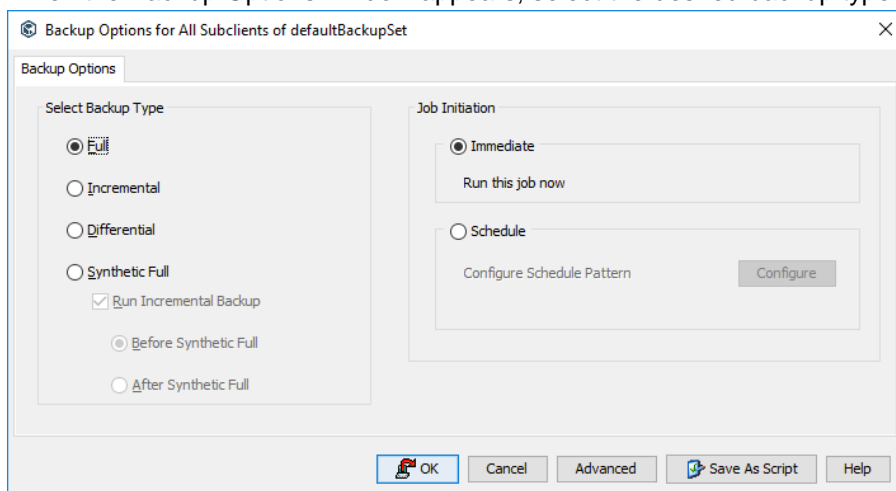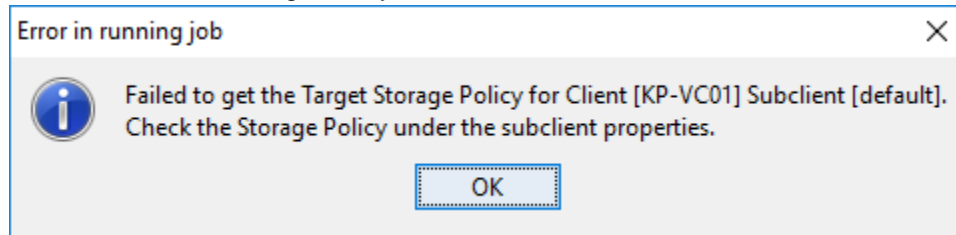| Job ID	Operation	Client Co...	Agent Type	Subclient	Job Type	Phase	Storage P...	MediaAgent	Status	Progress	Errors
503	Snap Backup	TSVC06	Virtual Server	CV_Datast...	Full	N/A	VMware_G...	tssrvcvcs01	Completed	100%	
504	Snap Backup	TSVC06	Virtual Server	CV_Datast...	Full	N/A	VMware_G...	tssrvcvcs01	Completed	100%	

Note: Improve backup performance by spreading virtual machines over multiple datastores. For heavily utilized virtual machines, Dell EMC recommends fewer virtual machines per datastore.

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6.4 VMware restore from an IntelliSnap backup

CommVault 11 allows the following types of restores from a VMware IntelliSnap backup:

- Individual files/folders (from a Granular Recovery Enabled snapshot, or by using Live View)
- Entire volume
- Container restore (to restore files like VMDK/VHD or entire guest OS)
- Virtual machine

For detailed information on how to perform the above restores, please refer to the CommVault online documentation.

7   Using IntelliSnap to backup a SQL Server

CommVault uses IntelliSnap to backup a SQL Server by using VSS to quiesce SQL, and then create a snapshot of the SC Series volume(s) that contain the SQL database(s).

Before getting started, it is highly recommended to review *Dell Storage SC Series Arrays and Microsoft SQL Server*. This document contains important information about how to configure a SQL Server environment for best performance.

> **Note**: To backup SQL databases with IntelliSnap, the databases must be installed on mapped SC Series volumes. The databases cannot be installed on local volumes.
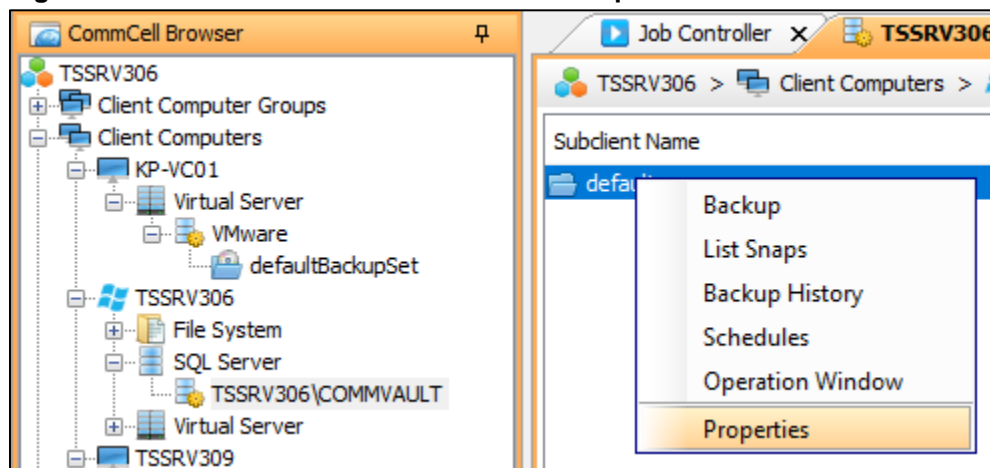
> **Note**: In order to use IntelliSnap to backup a virtual instance of SQL server running on ESX, SC Series volumes must be presented to the virtual machine as raw device mappings (RDMs) from the ESX host. The SQL databases and transaction logs must be stored on the SC Series volumes.

Install CommVault components on the SQL Server as detailed in the CommVault - SQL Server Deployment Documentation.
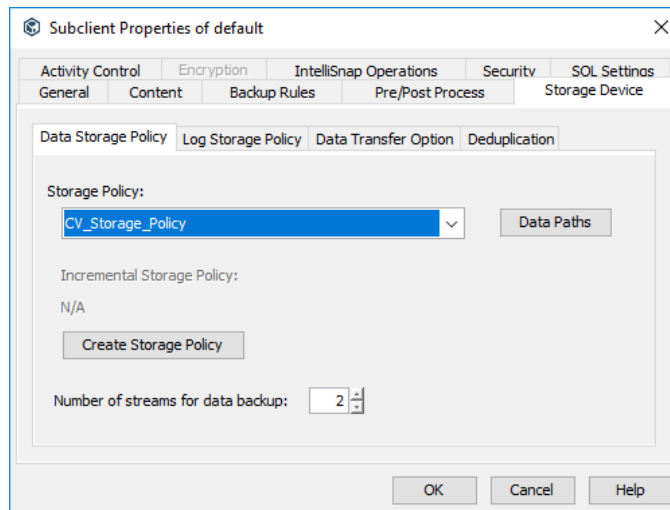
Once the SQL Server iDataAgent has been installed on the SQL Server, the SQL Server is automatically added to Client Computers in the CommCell Console.

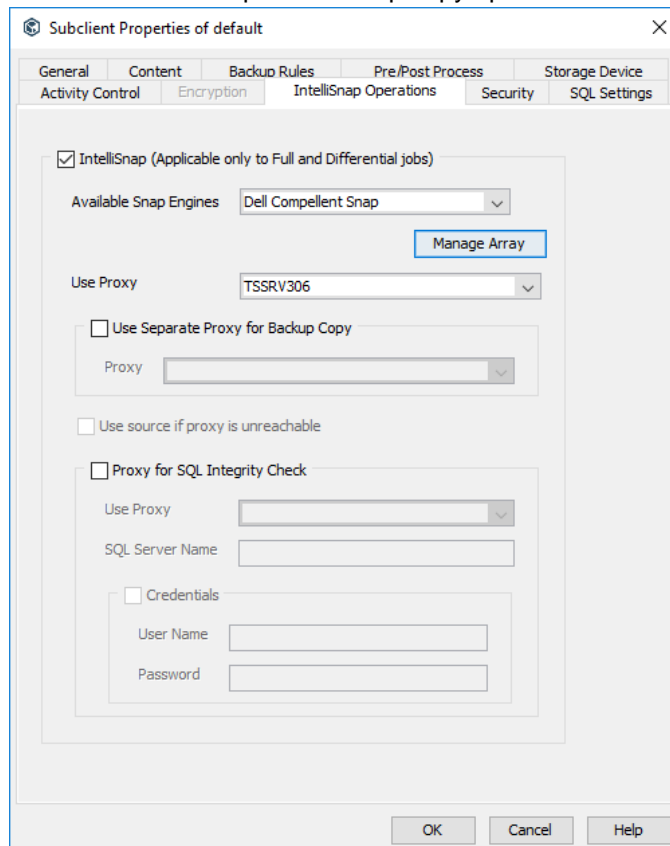## 7.1   Configuring the SQL server subclient

1. In the CommCell Browser navigate to Client, expand the SQL Server, expand the SQL Server iData Agent, and select the SQL Server.
2. **Right-Click** on the default Subclient and select **Properties**.

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3. Click the **Storage Device** tab, and select an IntelliSnap-enabled Storage Policy from the drop down list.
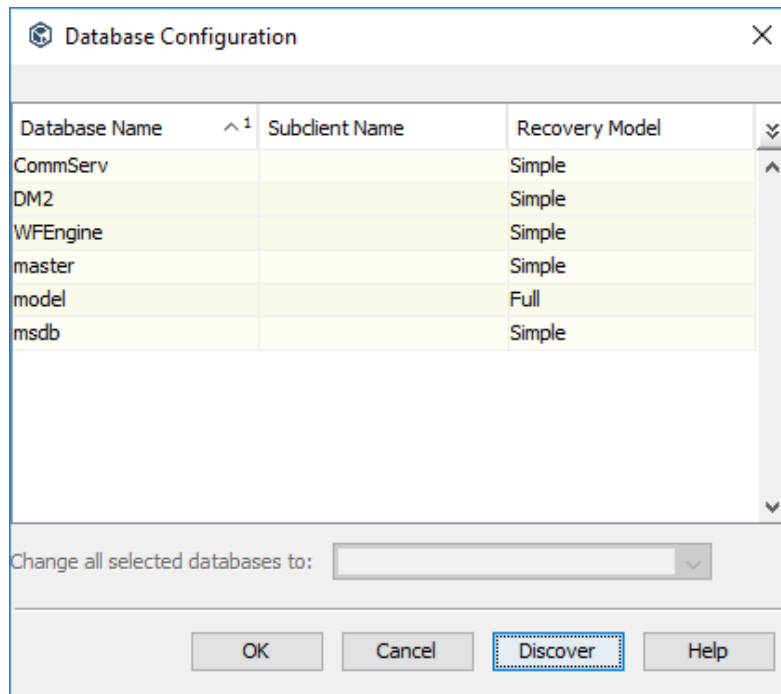

4. Click on the **IntelliSnap Operations** tab.
5. Check the **IntelliSnap (Applicable only to Full and Differential jobs)** box, select **Dell Compellent Snap** from the Available Snap Engines drop-down, From the Use Proxy list, select the MediaAgent where the IntelliSnap and backup copy operations will be performed.
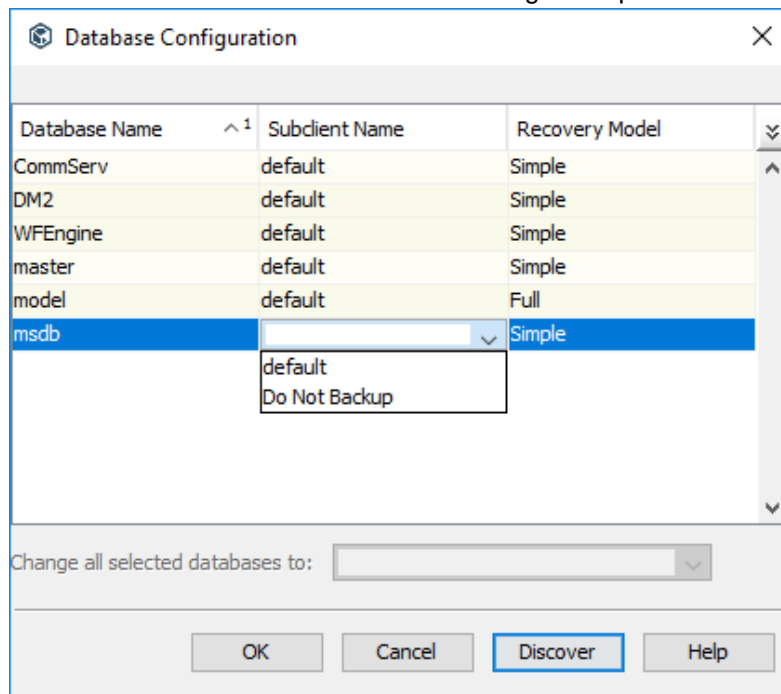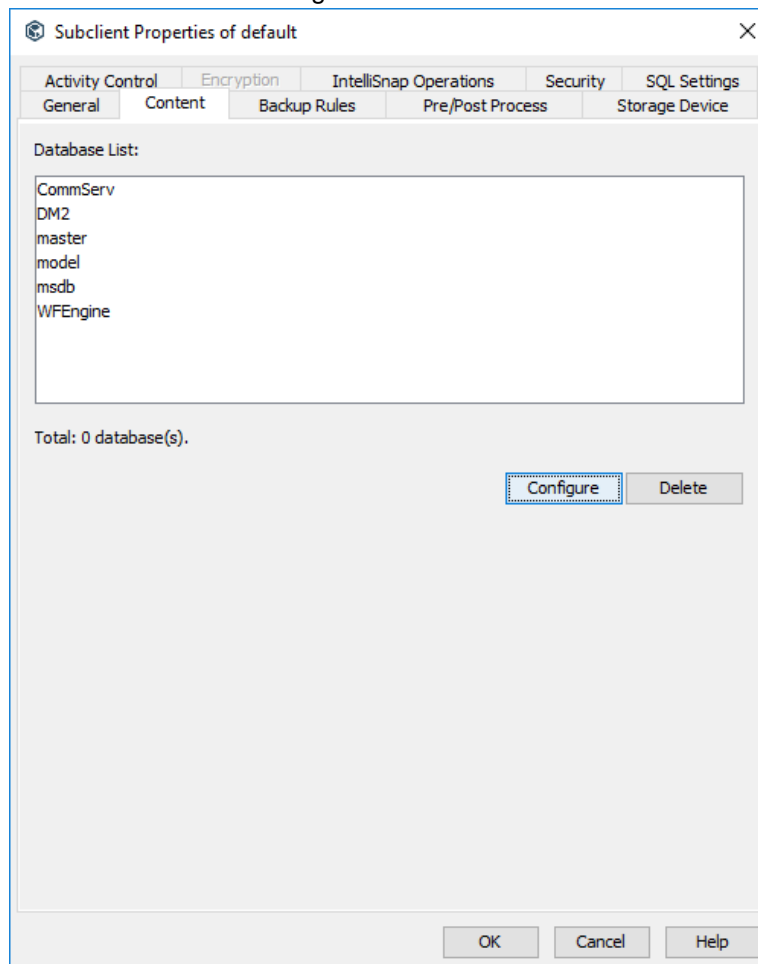
6. Select the **Content** tab.
7. Click **Configure** to discover and associate databases to this subclient.
8. Click **Discover** and CommVault will list all the databases on the SQL Server.

9. Right-click in the Subclient Name column next to the database name. Assign databases to backup to the default Subclient. Databases not needing backup should be set to Do Not Backup.
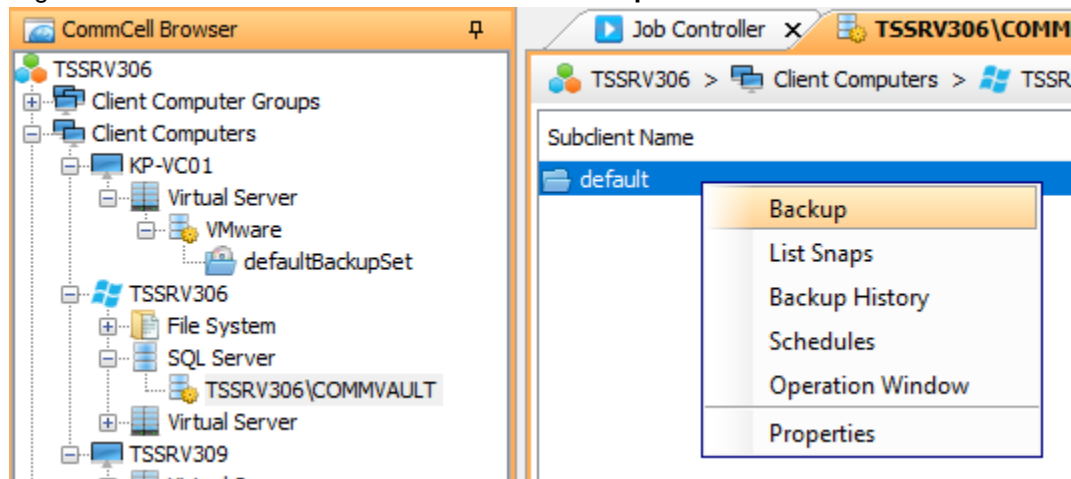
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10. Click **OK**. Databases assigned to the default Subclient will be listed in the Database List.
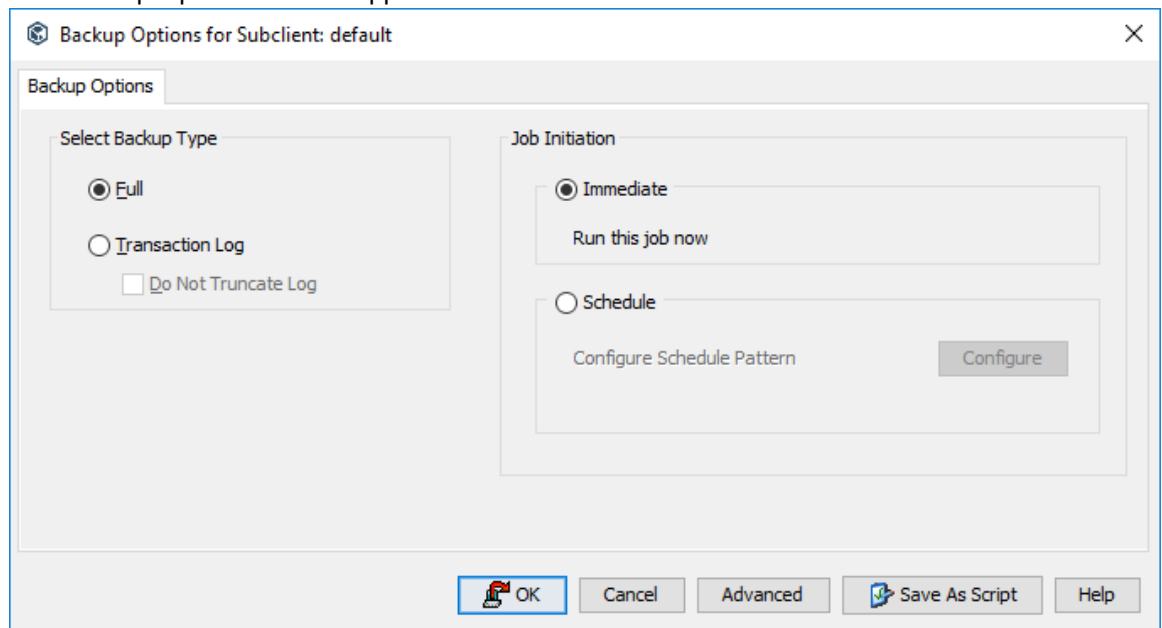

11. Click **OK** to close the Subclient Properties window.
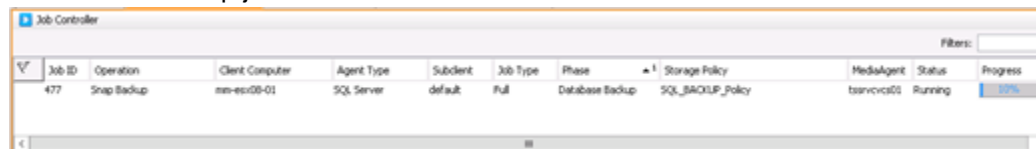
7.2 Running a SQL server backup

1. In the CommCell Browser navigate to Client, expand the SQL Server, expand the SQL Server iData Agent, and select the SQL Server.
2. Right-click on the default Subclient and select **Backup**.

3. The Backup Options window appears.

4. Click **OK** to start the backup.
5. Monitor the backup job status in the Job Controller and Event Viewer windows.

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6. The backup job is complete when the Job Controller Status shows **Completed** and Progress is 100%.
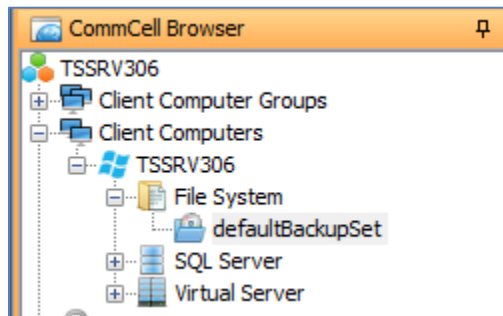

7.3 Restoring a SQL database from an IntelliSnap backup

Refer to the CommVault online documentation for detailed instructions on how to restore a SQL database from an IntelliSnap backup.
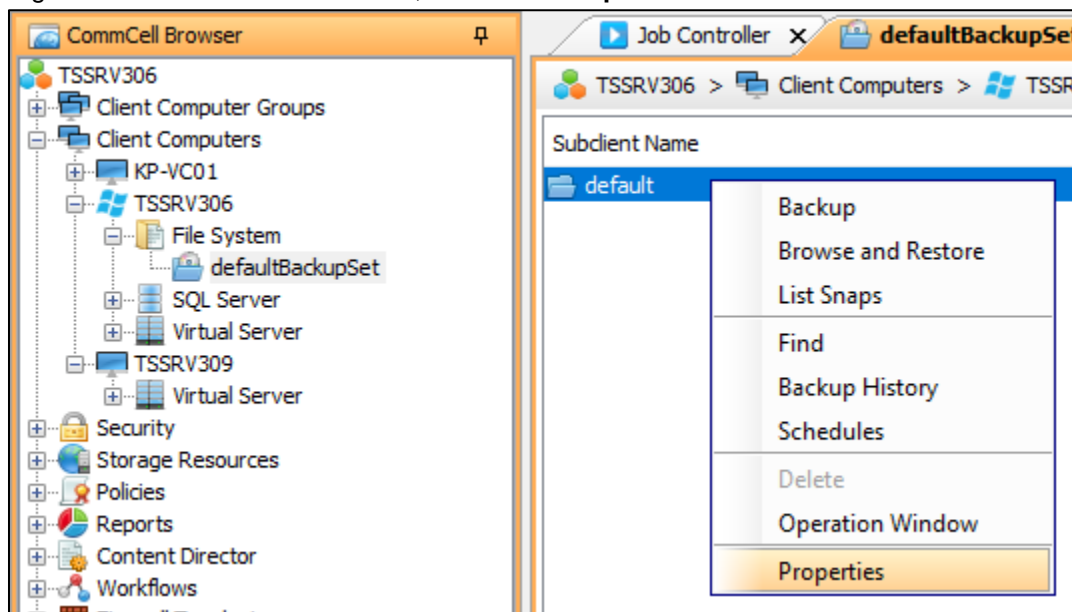
8 Using IntelliSnap to backup a Windows File System

Before getting started, it is highly recommended to review _Windows Server 2012 R2 Best Practices for Dell Compellent Storage Center_ or _Dell EMC SC Series Storage: Microsoft Windows Server 2016 and Nano Server_. These documents contain important information about how to configure a Windows Server 2012 R2 or Server 2016 environment for best performance.

1. In the CommCell Browser, navigate to Client Computers. Expand the Windows Server, expand File System and select **defaultBackupSet**.

2. Right-click on the default Subclient, and select **Properties**.
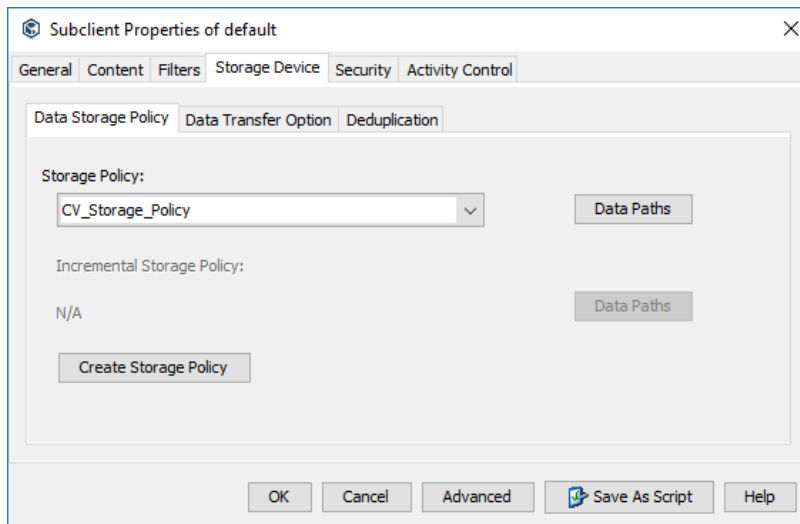

3. In the default subclient properties window, check the **Use VSS** box. Also select the **For all files** and **Fail the job** radio buttons.

Note: IntelliSnap backups of a Windows File System will fail if VSS is not used.

4. Select the Storage Device tab. Select the IntelliSnap enabled Storage Policy from the drop-down list.
5. Click the **Advanced** button.

6. Select the **IntelliSnap Operations** Tab. Check the box to enable IntelliSnap.
7. Select **Dell Compellent Snap** from the drop down list. If more than one SC Series array is defined, select the Manage Array box and choose the specific SC Series array to use.
8. Choose a proxy server from the drop-down list.

9. Click **OK**.
10. On the **Content** tab, click **Browse** and specify content for the Subclient.

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Note: Do not select any local or boot-from-SAN volumes.

Note: If nothing is selected to backup, CommVault will attempt to IntelliSnap all volumes on the server (including local volumes). This will cause the backup to fail.
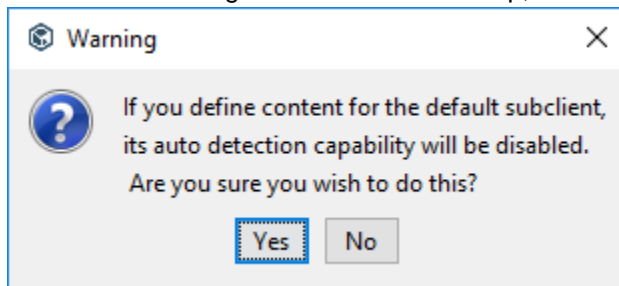
Note: By selecting an entire drive (i.e. D:), CommVault will backup all files on the drive, and allow for the restore of all files. Selecting specific files and folders only allows for the restore of those files and folders.

11. When first selecting a drive or file to backup, the following message will appear:

12. Click **Yes** to disable auto detection. Click **OK** to return to the Content tab.
13. Uncheck **Backup System State** and click **OK** to exit to the CommCell Console.

8.1   Running a Windows file system IntelliSnap backup

1. Right-click on the default Subclient for the Windows Server and select **Backup**.

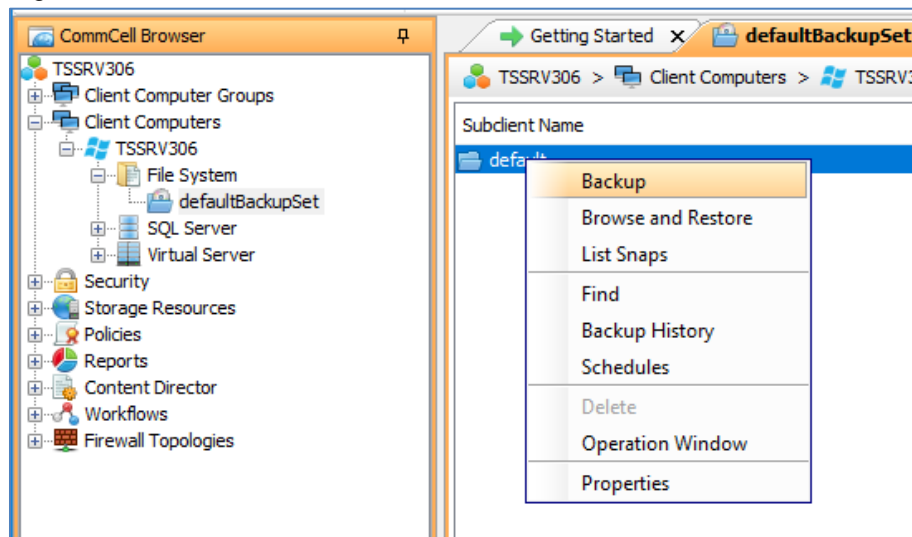2. The Backup Options for Subclient: default appears. Select the desired backup type.

Note: By default, the first time an IntelliSnap backup runs it will create a full backup set regardless of the backup type. Depending on requirements, subsequent backups can be set to be incremental or differential.

3. Select **OK** to begin the backup.
4. Monitor the job status in the Job Controller and Event Viewer windows.

5. The backup job is complete when the Job Status is completed and Progress is 100%.
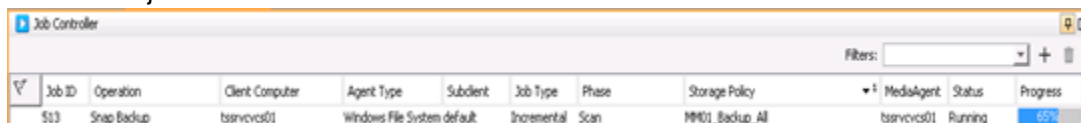

8.2 Restoring a Windows file system from an IntelliSnap backup

Please refer to the [CommVault online documentation](#) for detailed instructions on how to restore from a Windows File System IntelliSnap backup.

9 Using IntelliSnap to backup Hyper-V virtual machines

IntelliSnap backup enables the creation of point-in-time snapshot of a Hyper-V virtual machine by temporarily quiescing the data, taking a snapshot and then resuming live operations. CommVault 11 supports backing up Hyper-V virtual machines with IntelliSnap. The following steps will show how to configure IntelliSnap virtual machine backups in an environment utilizing an SC Series array and Hyper-V.
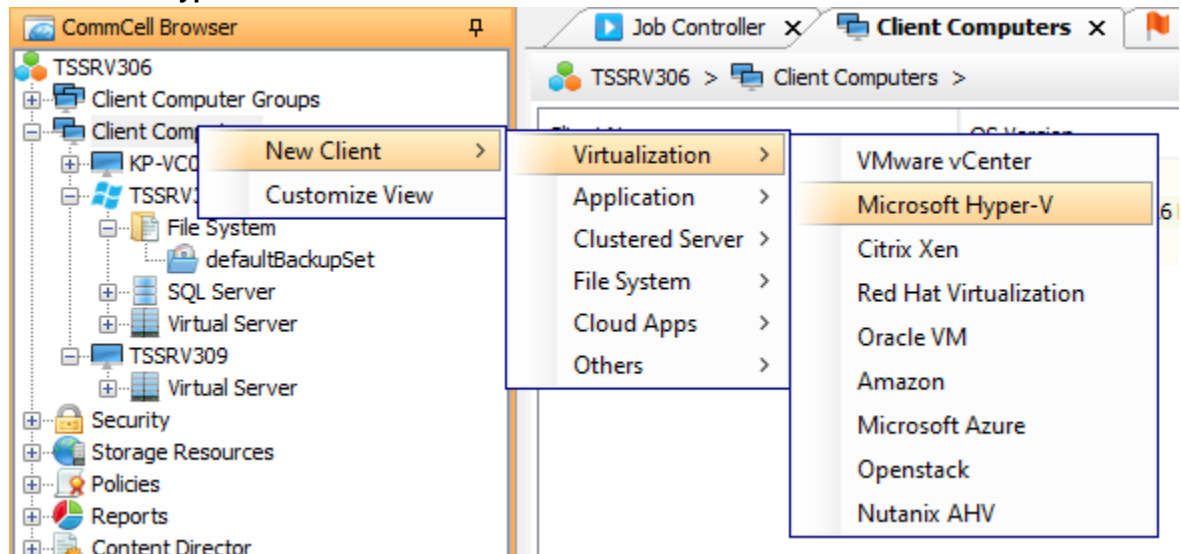
Before getting started, it is highly recommended to review the *Dell SC Series Storage and Microsoft Hyper-V* best practices guide. This document contains important information about how to configure a Hyper-V environment for best performance.

Note: Ensure the SC Series array where the Hyper-V hosts and their virtual machines reside have been added in array management. The steps for this process are outlined in Chapter 3 of this document.

Note: In order to use IntelliSnap to backup virtual machines on stand-alone Hyper-V hosts or Hyper-V clusters, the CommVault Media Agent and Virtual Server iDataAgent must be installed on all Hyper-V host server(s) and configured to communicate with the CommCell server. Instructions for installing the Media Agent and Virtual Server iDataAgent can be found in CommVault online documentation.

9.1 Configure the virtual server agent

1. Within the CommCell console, right-click **Client Computers**, and select **New Client** > **Virtualization** > **Microsoft Hyper-V**.

2. Enter a client name and user credentials.

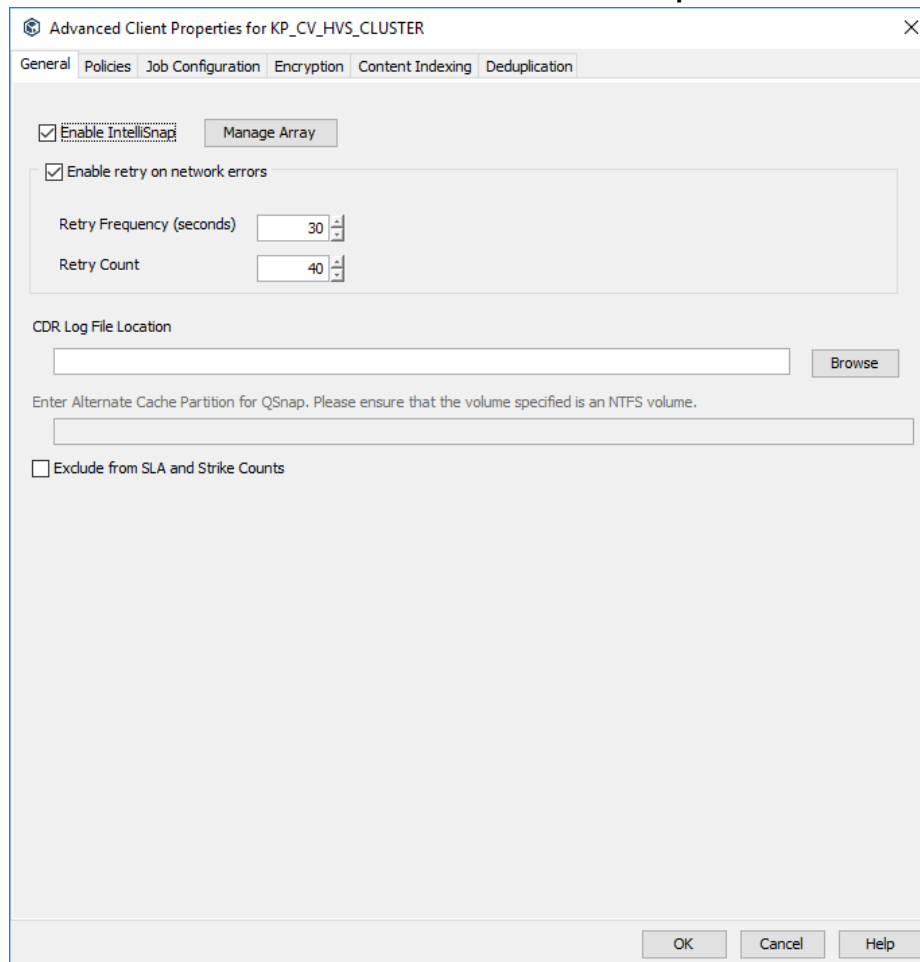3. Click the Add button to add Hyper-V servers. Make sure to add all nodes of a Hyper-V cluster.

4. Click **OK** to add the Hyper-V client.
5. In the CommCell browser, right-click the newly added Hyper-V client, and select **Properties**.

6. Click **Advanced** and check the box to **Enable IntelliSnap**.

7. Click **OK** twice to return to the CommCell browser.

9.2 Creating subclients

Note: For optimal performance, a single Subclient should be created for each Cluster Shared Volume (CSV) that is used to host virtual machines in a clustered Hyper-V environment.

1. In the CommCell browser, expand the Hyper-V client > **Virtual Server** > **Hyper-V** and right-click **defaultBackupSet**. Select **All Tasks** > **New Subclient**.

2. Assign a name to the new Subclient.

Note: Although not a requirement, in clustered Hyper-V environments it is recommended that each Subclient name match the CSV it will be associated with. This makes it easier to keep track of CSVs as the environment grows.

3. Click the **IntelliSnap Operations** tab. Check the box to **enable IntelliSnap**. Click **OK** on the warning message.

4. Select **Dell Compellent Snap** from the **Available Snap Engines** drop-down. Select the proxy server (usually the CommServe).

5. Select the **Storage Device** tab, and select a **Storage Policy** from the drop-down.

6. Select the **Content** tab. Click the **Browse** button.
7. To select individual VMs, expand a server and select VMs to backup.

8. To backup VMs stored on specific Cluster Shared Volumes (CSVs), click the drop-down and select **Storage**.

9. Expand Cluster Shared Volumes. Select a specific CSV to backup all VMs contained within, or select individual VMs.
10. Click **OK** when finished.

11. Click **OK** to close the Subclient.
12. Repeat this process to create additional Subclients.

9.3 Performing a backup

CommVault has the option to run a backup of a single Subclient, or all Subclients at once.

9.3.1 Backing up a single subclient

1. Within the CommCell Browser expand the **Virtual Server** > **Hyper-V** and click on **defaultBackupSet**.

2. In the operations window all Subclients will be displayed.

3. Right-click the Subclient to backup, then choose **Backup**.

4. The Backup Options window appears for the Subclient. Select the desired backup type.

Note: By default, the first time an IntelliSnap backup runs it will create a full backup set regardless of what the Backup Type is set to. This is necessary to create a baseline that is applied to subsequent backups. A full backup will take more time to complete as it contains all the data that comprises a subclients contents. Depending on requirements, subsequent backups can be set to Incremental or Differential.

5. Click **Advanced**.

6. To send a copy of this snapshot to backup media, check the box to **Create Backup Copy immediately**.
7. If desired, check the box to **Enable Granular Recovery for IntelliSnap**.

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Note: Enabling Granular Recovery allows file and folder restores from within virtual machines on the snapshot. Depending on the number of virtual machines in the datastore to back up, enabling this option significantly increases the time needed to create a backup of the Subclient. During this process, the IntelliSnap volume is mounted to the Hyper-V proxy server, and an inventory is taken of all folders and files in each virtual machine located in the backup set.

Note: It is not required to enable granular recovery to recover files and folders from virtual machines running a Windows server or desktop operating system. Alternately, using CommVault's Live Browse functionality allows browsing of a backup set, selecting a specific virtual machine, and then choosing which folders/files to restore. This process works in much the same way granular recovery does, in that when choosing the virtual machine to restore from, CommVault mounts the snapshot to the Hyper-V proxy server, runs an inventory of all the virtual machines within the snapshot, and then displays those folders and files. Depending on proxy server hardware configuration, and the amount of virtual machines contained on the snapshot, it may take some time to mount the snapshot on the Hyper-V server before displaying files and folders.

8. Click **OK** to close the Advanced Backup Options window.
9. Click **OK** to begin the backup.
10. Monitor the backup process in the Job Controller window.

11. The backup process is finished when the Job Controller shows a status of Completed (Progress = 100%).

9.3.2 Backing up all subclients

Note: Use this option to backup all virtual machines at the same time.
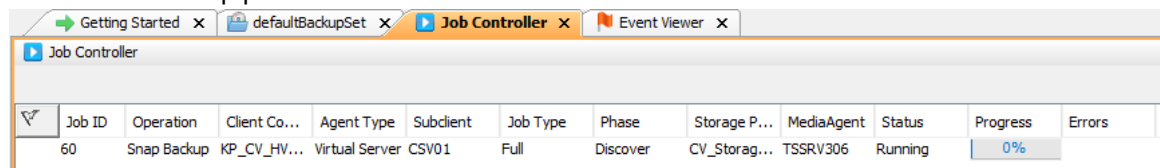
1. Within the CommCell Browser expand the Virtual Server and right-click on **defaultBackupSet** > **Backup All Subclients**.

2. Answer **Yes** to backup all subclients of this backup set.

3. When the Backup Options window appears, select the desired backup type.

Backup Options for All Subclients of defaultBackupSet

Backup Options

Select Backup Type
- ● Full
- ○ Incremental
- ○ Differential
- ○ Synthetic Full
  - ☑ Run Incremental Backup
    - ● Before Synthetic Full
    - ○ After Synthetic Full

Job Initiation
- ● Immediate
  - Run this job now
- ○ Schedule
  - Configure Schedule Pattern   Configure

OK   Cancel   Advanced   Save As Script   Help

Note: By default, the first time an IntelliSnap backup runs it will create a full backup set regardless of the backup type. Depending on requirements, subsequent backups can be set to Incremental or Differential.

Note: When backing up all subclients, there is no option to enable granular recovery.

4. Click **OK** to start the backup. The following error message will appear if the default subclient is not associated with a Storage Policy.
5. Click **OK** to ignore the error.

Error in running job

ℹ Failed to get the Target Storage Policy for Client [KP_CV_HVS_CLUSTER] Subclient [default]. Check the Storage Policy under the subclient properties.

OK

6. Monitor the status of all backup jobs in the Job Controller window.

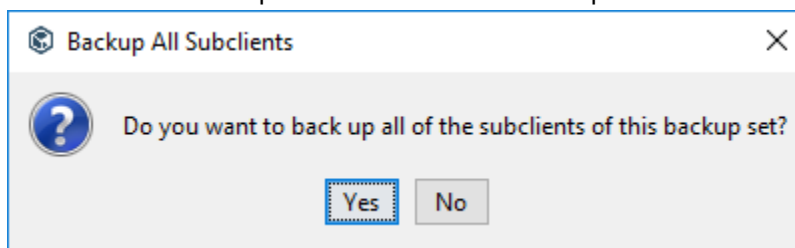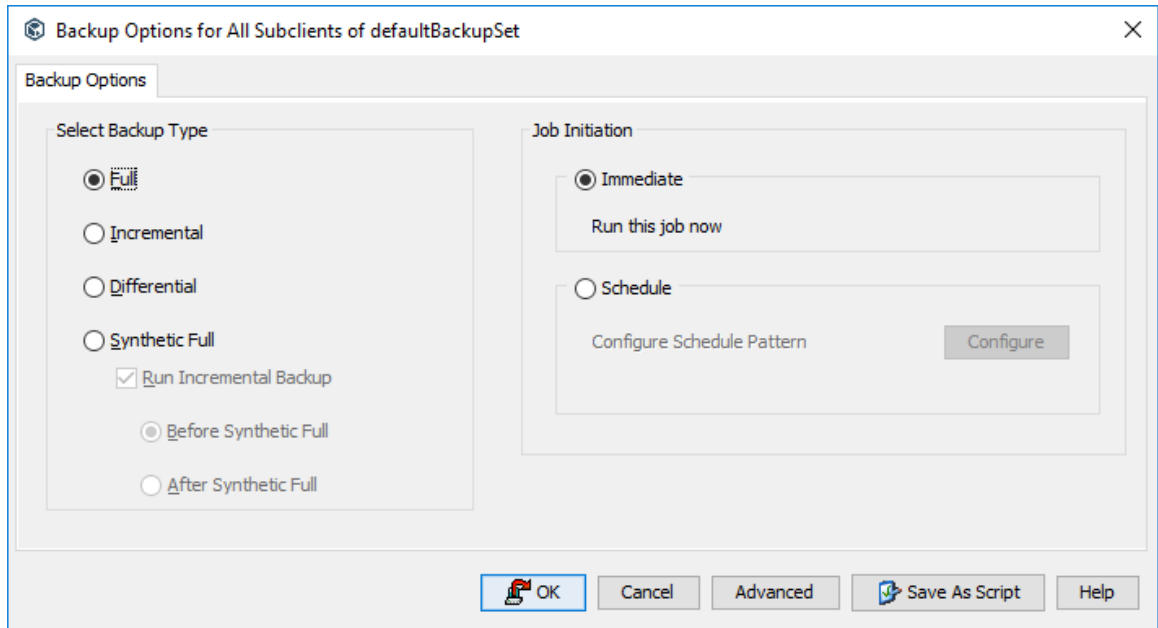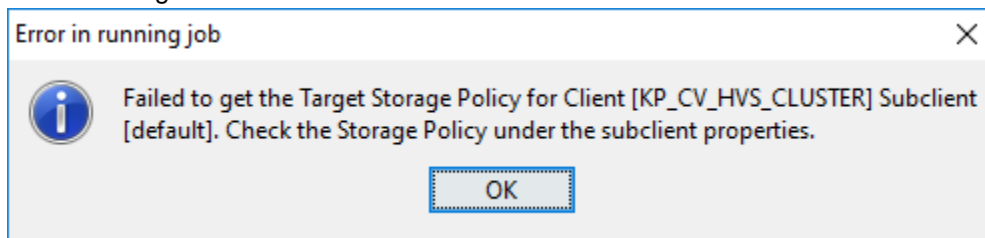defaultBackupSet ×   Job Controller ×   Event Viewer ×

Job Controller

Job ID	Operation	Client Comp...	Agent Type	Subclient	Job Type	Phase	Storage P...	MediaAgent	Status	Progress	Errors
63	Snap Backup	KP_CV_HVS_C...	Virtual Server	CSV02	Full	Discover	CV_Storag...	TSSRV306	Running	0%	
62	Snap Backup	KP_CV_HVS_C...	Virtual Server	CSV01	Full	Discover	CV_Storag...	TSSRV306	Running	0%	

Note: A separate job will be created for each Subclient that is backed up.

7. The backup process is finished when the Job Controller shows with a status of Completed (Progress = 100%) for all jobs.

Note: Improve backup performance by spreading virtual machines over multiple CSVs. For heavily utilized virtual machines, Dell EMC recommends fewer virtual machines per CSV.

9.4 Restoring a Hyper-V virtual machine using IntelliSnap

Refer to the [CommVault online documentation](#) for detailed instructions on how to restore from a Hyper-V IntelliSnap backup.

A Technical support and resources

Dell.com/support is focused on meeting customer needs with proven services and support.

Dell TechCenter is an online technical community where IT professionals have access to numerous resources for Dell EMC software, hardware and services.

Storage Solutions Technical Documents on Dell TechCenter provide expertise that helps to ensure customer success on Dell EMC Storage platforms.

A.1 Related documentation

Table 1 Table 1 Referenced or recommended resources

Vendor	Resource
CommVault	*CommVault Books Online*

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