CommVault Simpana 10 Best Practices

for the Dell Compellent Storage Center

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Revisions

Date	Description
07-2013	Andrew Smith, Kris Piepho – Second Release, Simpana v10.
06-2013	Kris Piepho – Initial Release, Simpana v9.

Table of contents

1 Preface

1.1 Audience

The audience for this document is system administrators who are responsible for the setup and maintenance of CommVault Simpana 10 software running in a Windows environment used to backup and restore data residing on a Dell Compellent Storage Center. Readers should have a working knowledge of CommVault Simpana 10 in a Windows environment and administrative experience with the Dell Compellent Storage Center.

1.2 Purpose

This document provides an overview of CommVault Simpana 10 and introduces best practice guidelines for configuring CommVault on Windows Server 2012 using IntelliSnap to backup Dell Compellent Storage Center volumes. For installation procedures, please refer to documentation from CommVault's website.

1.3 Customer Support

Dell Compellent provides live support 1-866-EZSTORE (866.397.8673), 24 hours a day, 7 days a week, 365 days a year. For additional support, email Dell Compellent at support@compellent.com. Dell Compellent responds to emails during normal business hours.

2 Introduction

2.1 Introduction to CommVault Simpana 10

CommVault Simpana 10 offers scalable data protection via snapshot, replication and persistent copies that are secure and deduplicated. Offering seamless integration with Dell Compellent Storage Center, data can be protected and managed through a single, unified platform.

2.2 Dell Compellent Storage Center Integration with CommVault Simpana 10

Leveraging Dell Compellent Data Instant Replay, CommVault IntelliSnap creates hardware-based Snapshots of Hyper-V, VMware, SQL Server, Exchange Databases and Windows File Servers. System Center Operating System v5.5.2 and above is supported.

2.3 CommVault 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, media management, etc. within a CommCell. There is only one CommServe per CommCell. Typically, the CommServe GUI is installed on the CommServe.

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 backup 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 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 clients' 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. This process is handled by the Virtual Server Agent.

Note: The CommVault VSS Provider must be installed to create Windows file system backups.

3 Adding a Storage Center to Array Management

Note: Prior to using IntelliSnap to take hardware-based snapshots of a Dell Compellent volume, a Storage Center must be added in Array Management.

1. Open the CommCell Console GUI.

2. On the Home tab, choose Control Panel.

Figure 1 CommCell

3. The Control Panel will appear as shown in Figure 2.

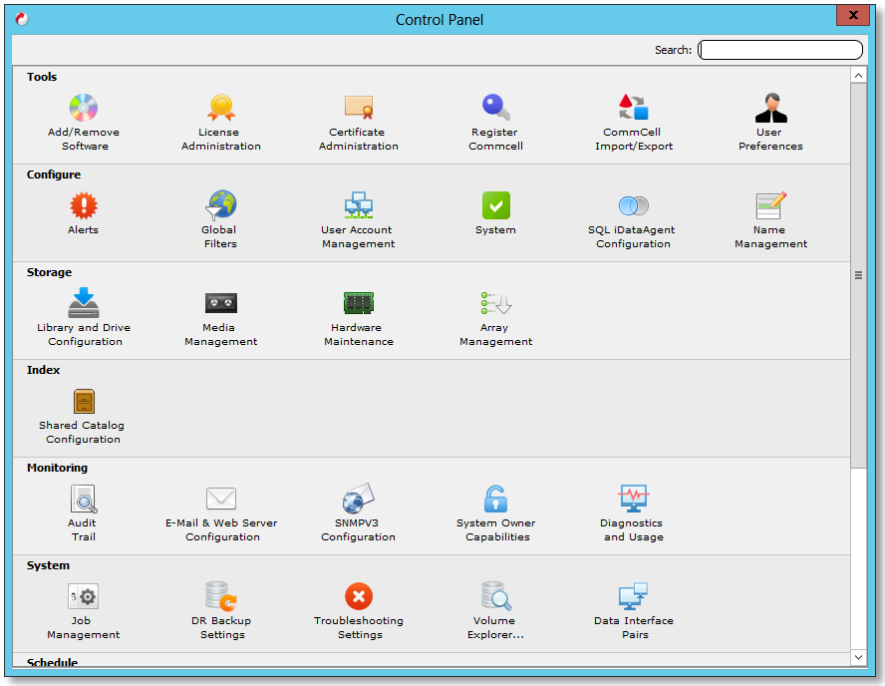

Figure 2 Control Panel

4. Under Storage, click Array Management.

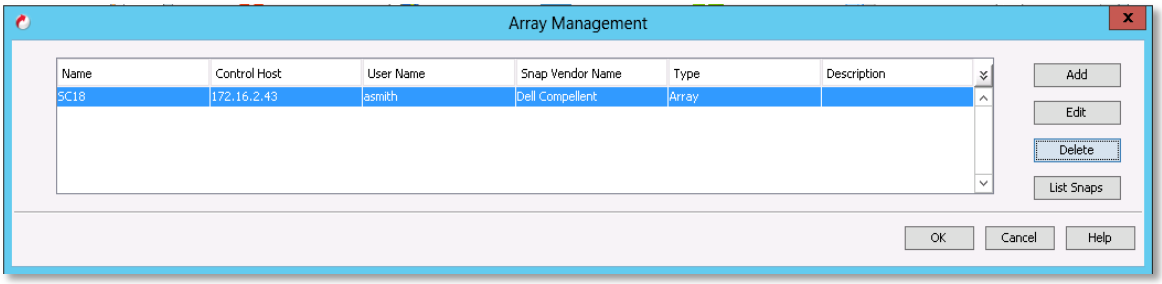

Figure 3 Array Management

5. Click Add.

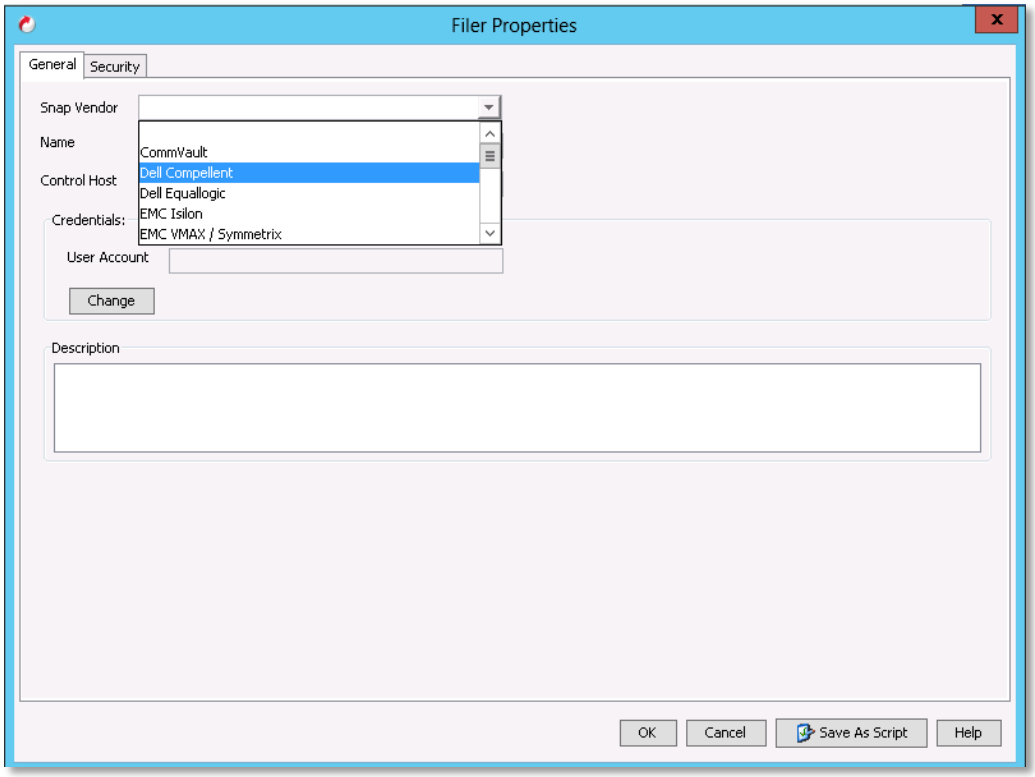

Figure 4 Array Properties

6. Click the drop down arrow for Snap Vendor and select Dell Compellent.

7. In the Name field enter the name of the Storage Center (i.e. SC520).

8. In the Control Host field enter the IP Address of the Storage Center.

Note: When entering the Array IP, always use the Storage Center Management IP address. This IP address can be found by opening the System Manager of the array required, then highlighting the System Center name and clicking Properties in the upper lefthand corner.

9. Click the Change button.

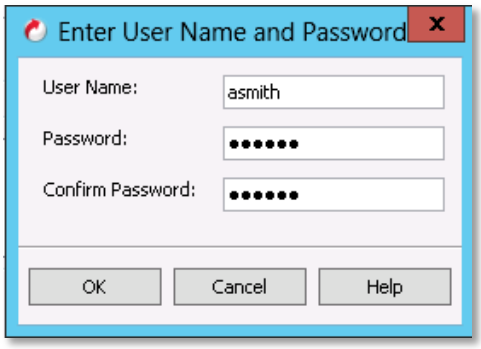

Figure 5 Username and Password

10. In the Enter User Name and Password dialog box, provide a User Name that has administrator access to the Storage Center along with the user's password.

Note: The User Name and Password are case-sensitive.

11. Click OK. The Array Management window now displays the added Dell Compellent Array.

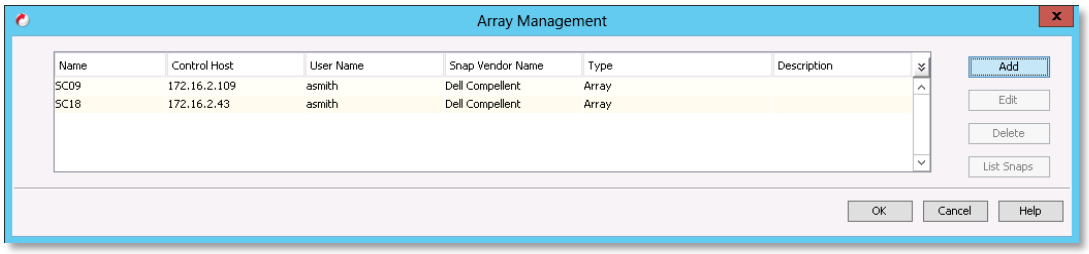

Figure 6 Array added

Note: To use this CommVault instance to backup volumes on more than one Storage Center, all applicable Storage Centers 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.

4 Configuring a Storage Policy to Use IntelliSnap

In order to use IntelliSnap to create hardware-based snapshot backups, a snapshot copy of an existing Storage Policy must 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, select **All Tasks**, then select **Create New Snapshot Copy.**

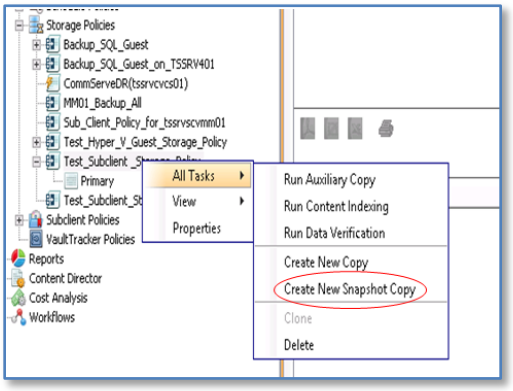

Figure 7 Create New SnapShot Copy

3. The **Snap Copy Properties** window appears.

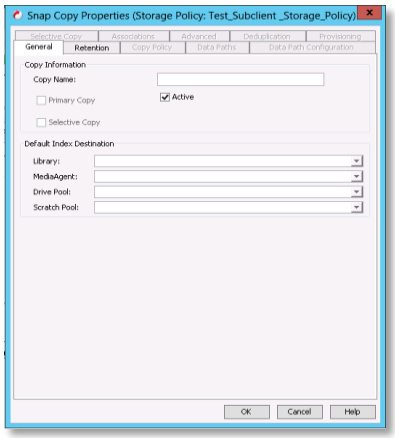

Figure 8 Snap Copy Properties

4. In the **Copy Name** field enter a name for the Snapshot copy.

5. Choose a disk library to use from the **Library** drop-down list.

6. Choose a media agent from the **MediaAgent** drop-down list.

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

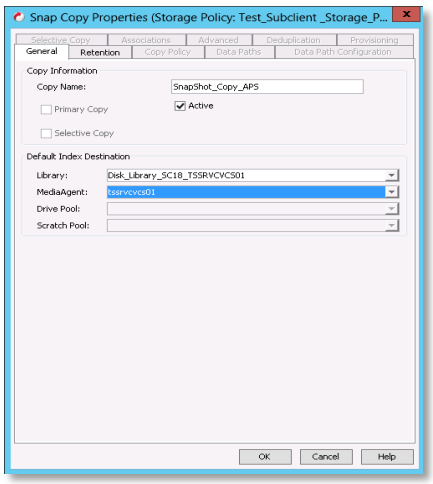

Figure 9 Library and MediaAgent selected

7. Use the **Retention** tab to configure retention rules for backup created using this policy.

Note: An IntelliSnap backup process creates a new Replay every time an IntelliSnap process is run. As a best practice, use the retention settings within the storage policies being used to expire and remove old Replays.

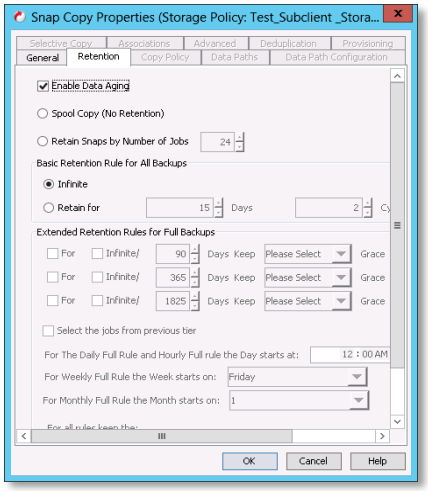

Figure 10 Retention settings

8. Click **OK** when finished.

5 Enabling IntelliSnap on Clients

In order to create IntelliSnap backups of VMware virtual machines, SQL Server, Exchange database or a Windows File Server, IntelliSnap must be enabled on the associated client computer where the Agent is installed. For example, to enable IntelliSnap backups on a SQL server, follow the directions below to enable IntelliSnap on the client where the SQL Server iData 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 SQL Server. Follow the same process to enable IntelliSnap on an ESX, Exchange, or Windows File Server.

1. Within the **CommCell GUI**, expand **Client Computers** in the **CommCell Browser** and locate the client computer to enable IntelliSnap on.

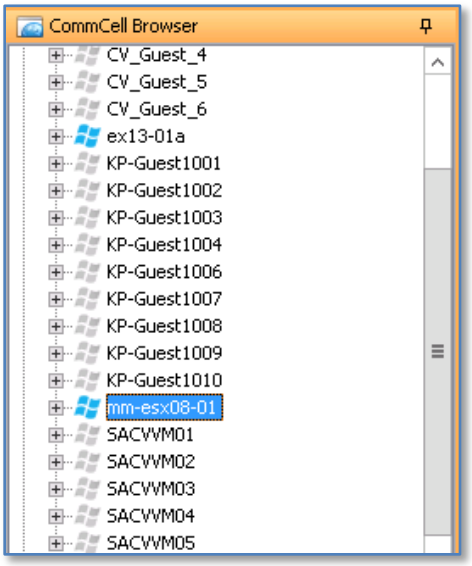

Figure 11 Select Client Computer

2. Right-click on the client computer and select **Properties.**

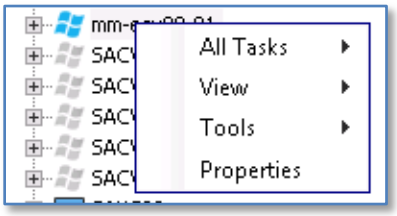

Figure 12 Select Properties

3. The Client Computer Properties window appears.

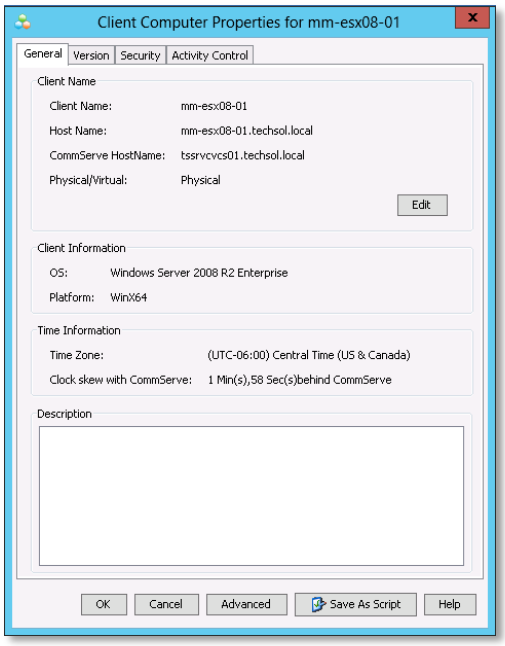

Figure 13 Properties Window

4. Click the Advanced button.

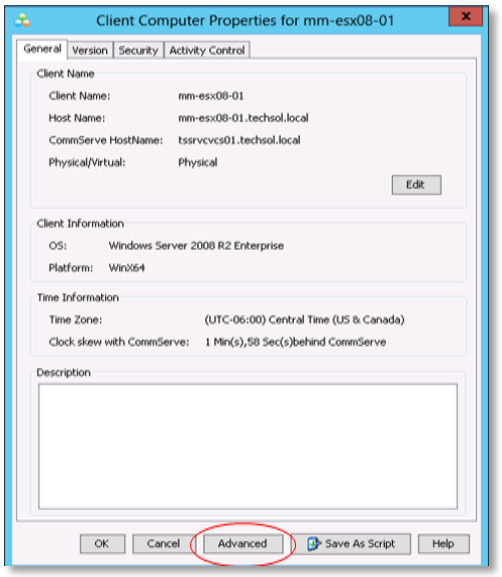

Figure 14 Click Advanced Button

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

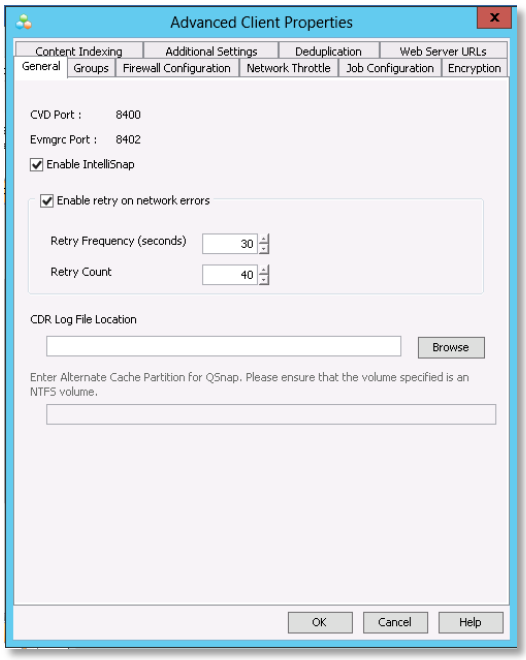

Figure 15 Enable IntelliSnap

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

6 Using IntelliSnap to Backup ESX Virtual Machines

This section details the steps needed to configure CommVault IntelliSnap to backup Windows virtual machines running on an ESX Server.

Before getting started, it is highly recommended to review the document titled "**Dell Compellent Storage Center Best Practices with vSphere 5.x**" located on Dell Compellent Knowledge Center. This document contains important information about how to configure a vSphere 5.x environment for best performance.

Note: As a best practice, do not create virtual machine datastores on the same volume that the ESX/ESXi 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.

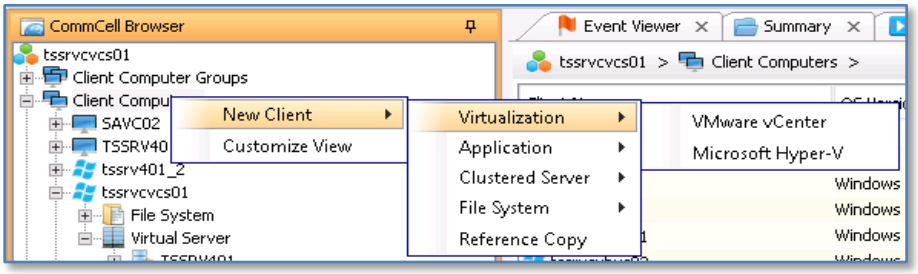

Figure 16 Select VMware vCenter

2. The Create VMware vCenter Client Window appears.

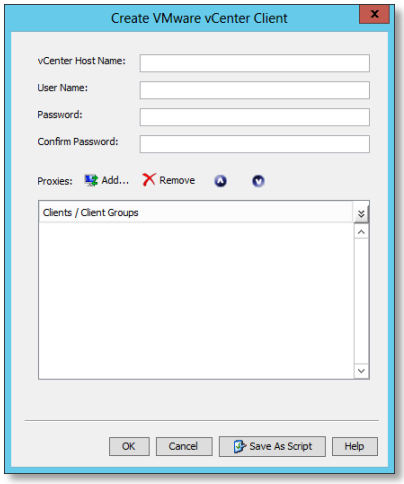

Figure 17 Create VMware vCenter Client

3. Enter the vCenter host name, user name and password information. When finished, click **Add...**

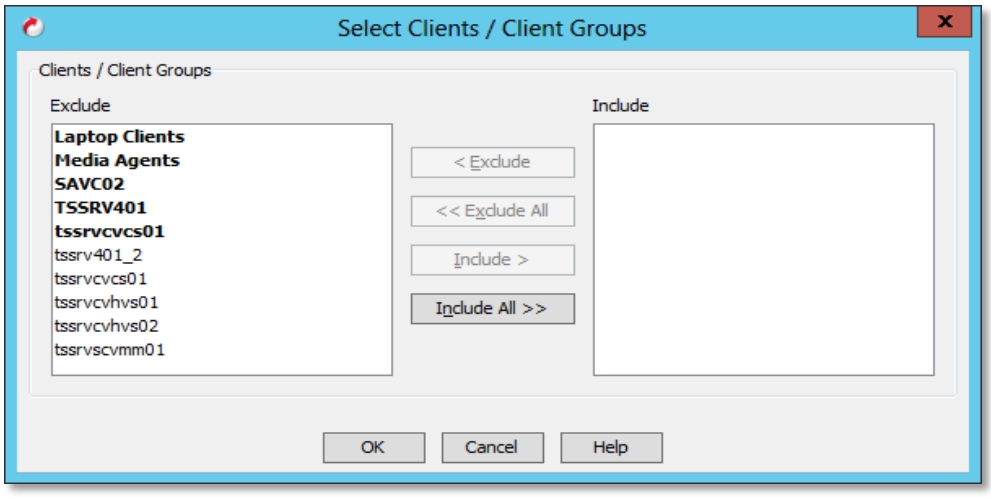

Figure 18 Adding Client

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.

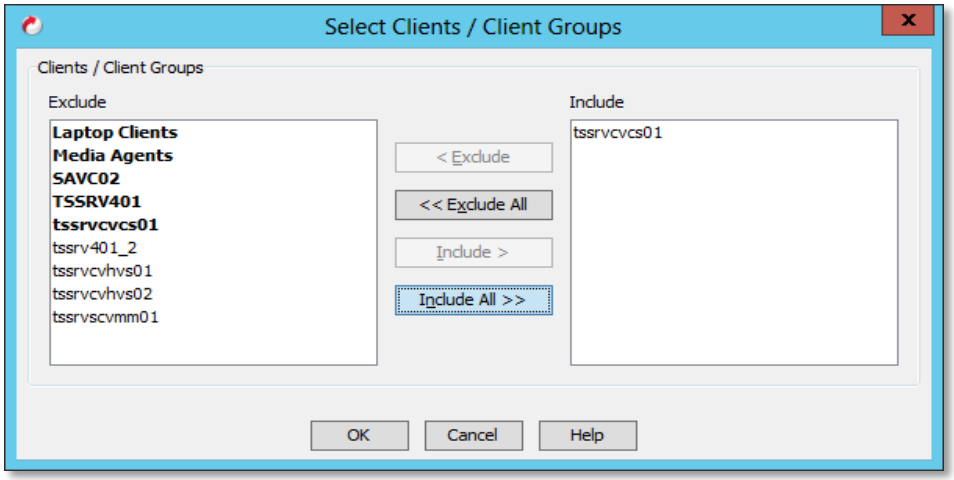

Figure 19 Client Selected

5. Verify all settings look correct, and click **OK**.

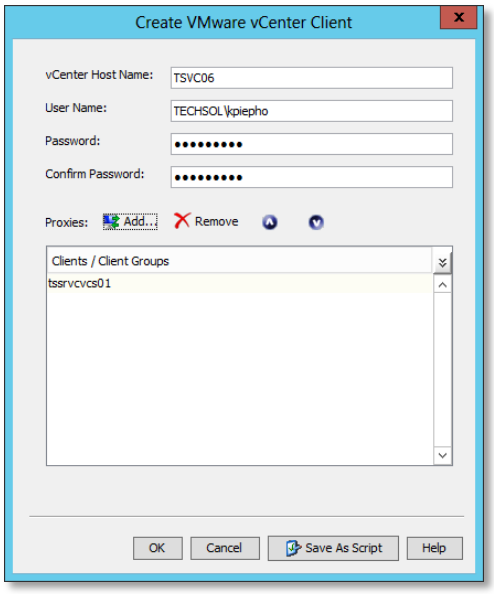

Figure 20 Verify Settings

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

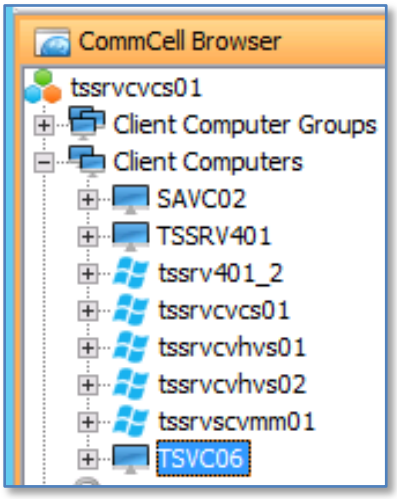

Figure 21 vCenter Added to Client Computers List

7. Right-click on the vCenter host and select **Properties.** The Properties window appears.

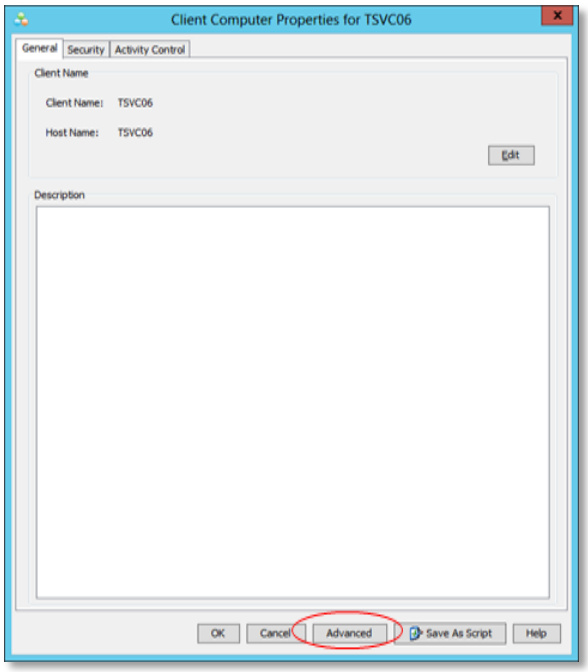

Figure 22 Properties Window

8. Click the **Advanced** button.

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

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

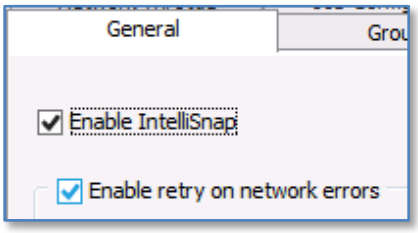

Figure 23 Check IntelliSnap Box

11. Expand the Virtual Server. Right-Click on **defaultBackupSet → Properties.** The Backup Set Property page appears.

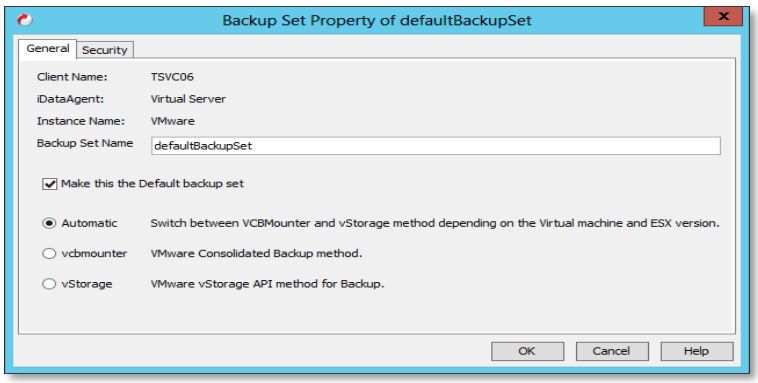

Figure 24 Backup Set Properties

12. Select **vStorage** as the backup method.

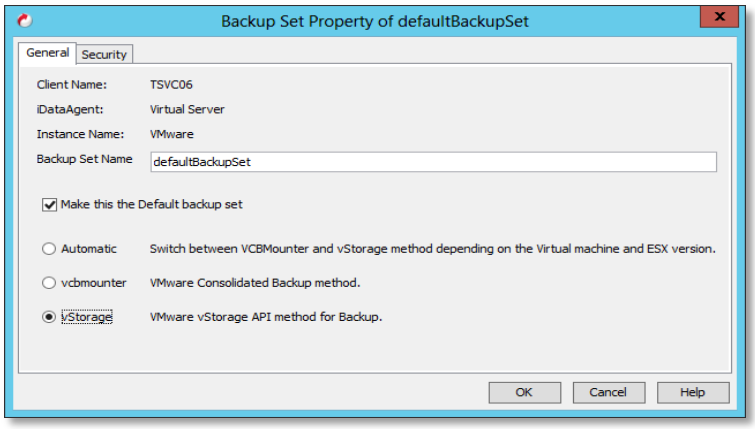

Figure 25 Select vStorage

13. Click **OK.**

6.2 Creating Subclients

Note: For optimal performance, a single Subclient should be created for each ESX Datastore.

1. Right-click on defaultBackupSet → All Tasks → New Subclient.

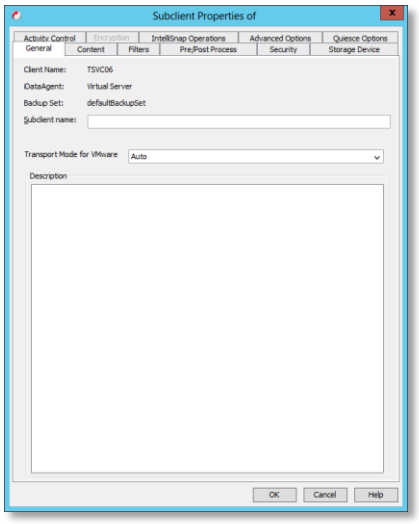

Figure 26 Creating New Subclient

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. Click the IntelliSnap Operations tab.

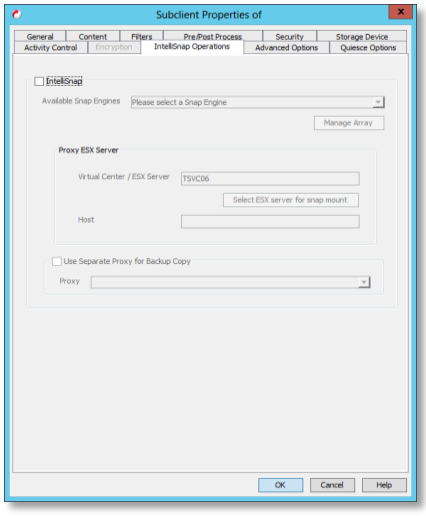

Figure 27 IntelliSnap Operations Page

4. Check the **IntelliSnap** box.

5. Review the warning dialog box and then click OK.

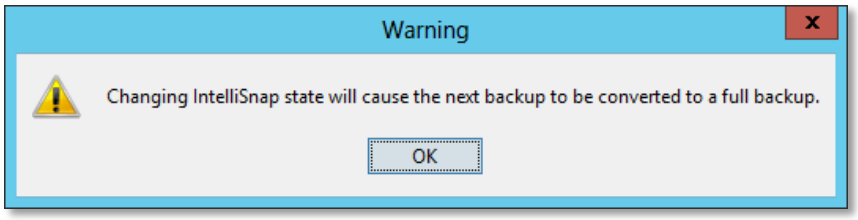

Figure 28 Warning Message

6. From the dropdown box, choose **Dell Compellent Snap.**

7. Select the **Manage Array** box.

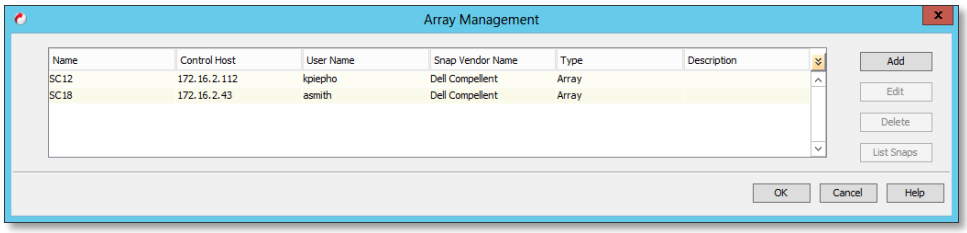

Figure 29 Array Management Window

8. Verify that the Storage Center the ESX Server Datastore volumes are located on is listed. Click **Edit** to make any changes.

9. Click **OK** when finished.

10. In the Proxy ESX Server box, click the Select ESX server for snap mount box.

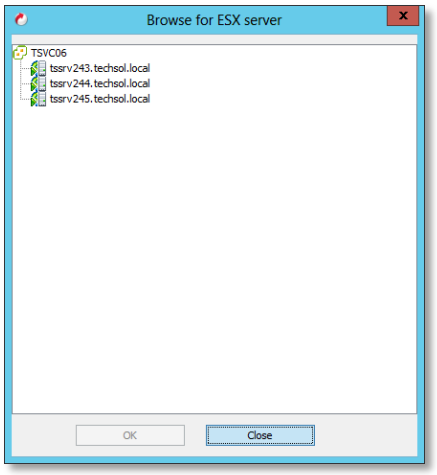

Figure 30 Choose Proxy Server

Note: CommVault utilizes the ESX proxy server by mounting snapshots to inventory and collecting metadata about the virtual machines included in the snapshot.

Note: The proxy server must be connected (via Fibre Channel or iSCSI) to the Storage Center where the ESX Datastore volumes are located. A corresponding server object must also exist within Storage Center for the proxy server.

Note: To increase speed of proxy mounting, the ESX proxy server should have as few connected LUNs as possible.

11. Choose a proxy server from the list.

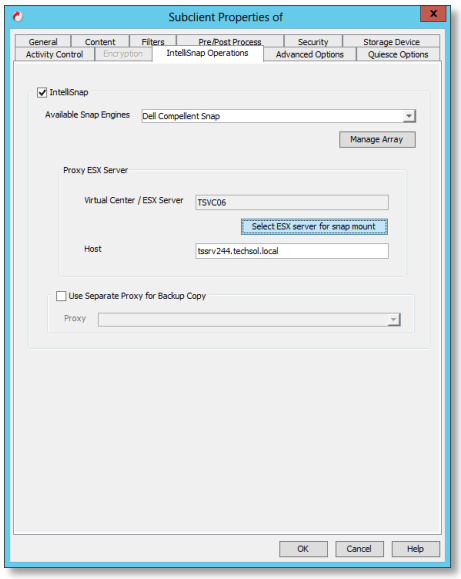

Figure 31 Proxy Server Selected

12. Click the **Storage Device** tab.

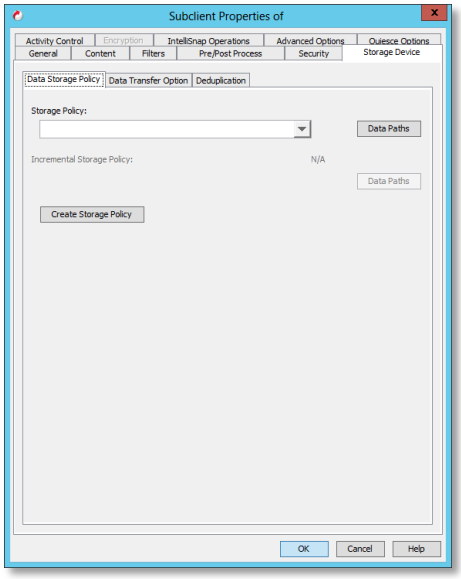

Figure 32 Storage Device Tab Selected

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

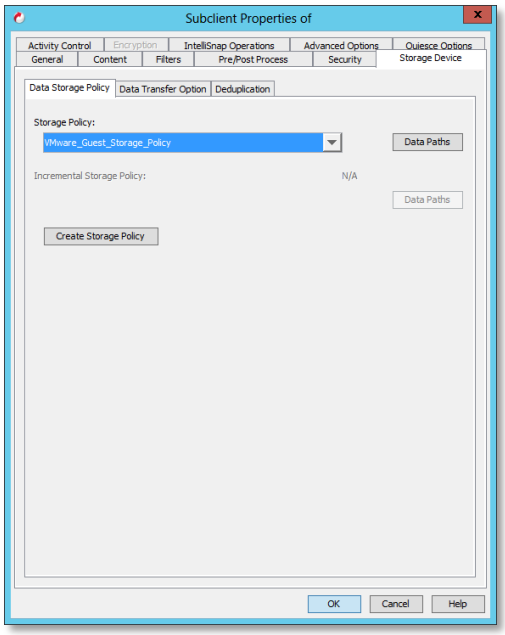

Figure 33 Select IntelliSnap Storage Policy

14. Click **OK** when finished.

Note: Repeat this process for each Subclient needed.

6.3 Associating a Subclient With a Datastore

1. In the CommCell Browser, expand **Virtual Server** → expand **defaultBackupSet** → right-click on **Subclient** → **Properties.**

Note: The default Subclient does not need to be associated with a Datastore.

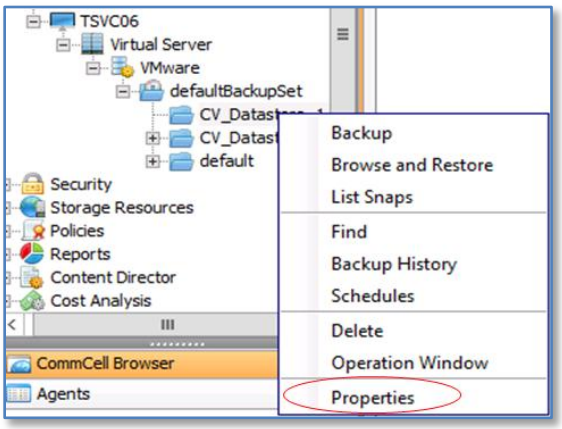

Figure 34 Select Properties

2. Click the **Content** tab.

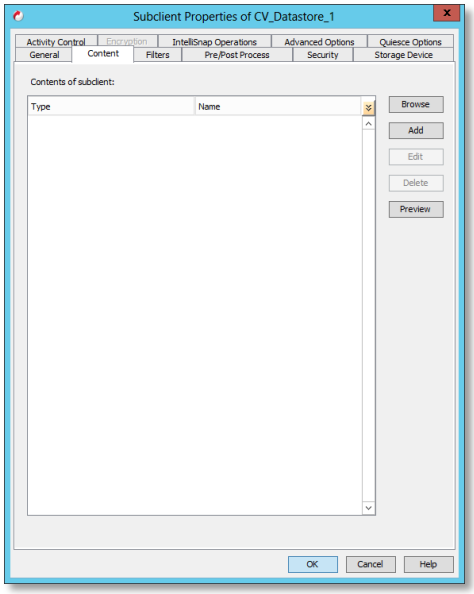

Figure 35 Subclient properties

3. Click the **Browse** button.

4. Click the drop down arrow and select **Datastores and Datastore Clusters.**

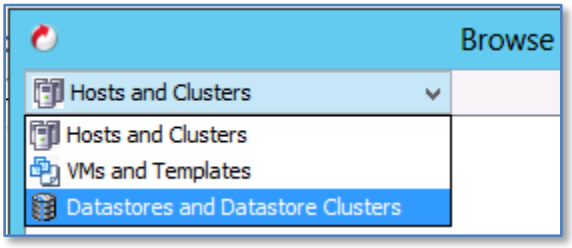

Figure 36 Select Datastores and Datastore Clusters

5. Expand the list of available Datastores.

6. Check the box next to the Datastore to be backed up.

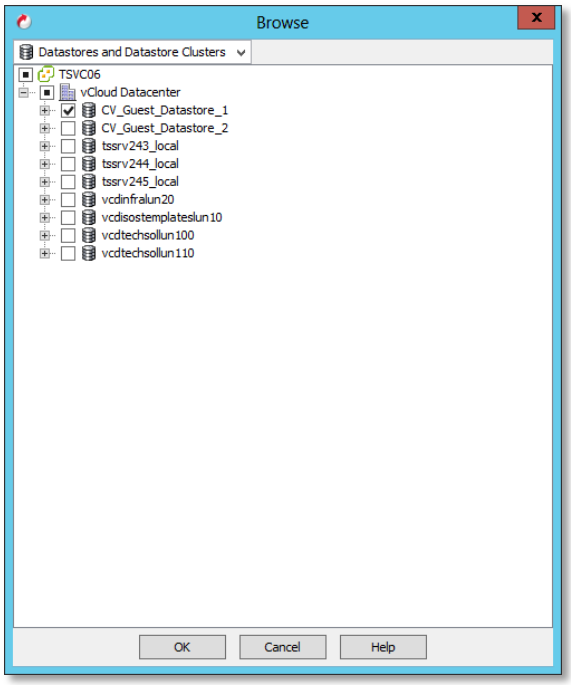

Figure 37 Select from list of Datastores

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

7. **Check** the virtual machines to be backed up.

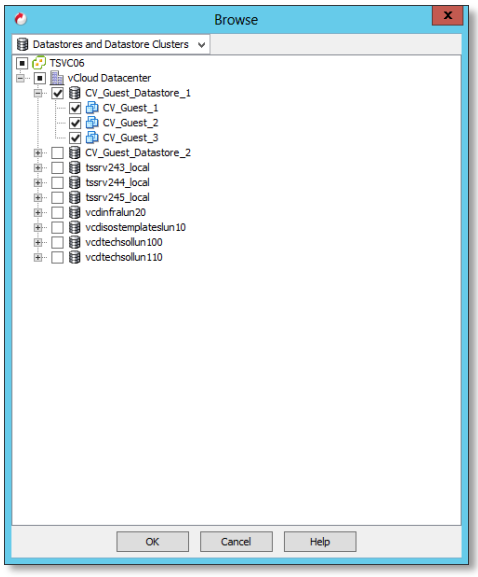

Figure 38 Check Virtual Machines to be backed up

8. Click **OK** when finished. The selected Datastore should now be listed in the **Contents of subclient** window.

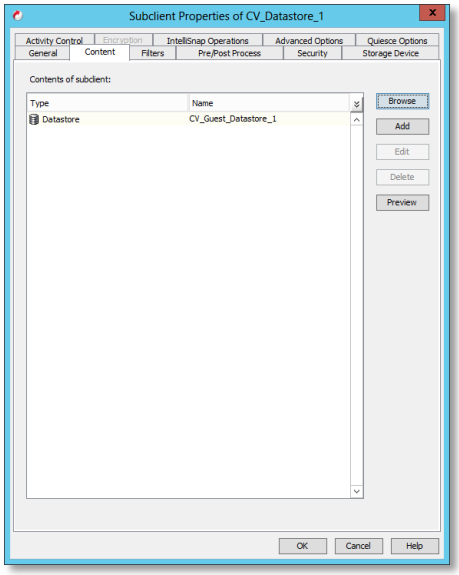

Figure 39 Datastore Selected

9. Click **OK** to close the subclient properties window. Repeat this process to associate a Datastore to each subclient.

6.4 Runnning a Backup

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

6.4.1 Backing Up a Single Subclient

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

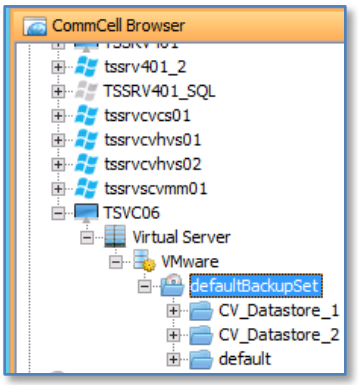

Figure 40 Open DefaultBackupSet

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

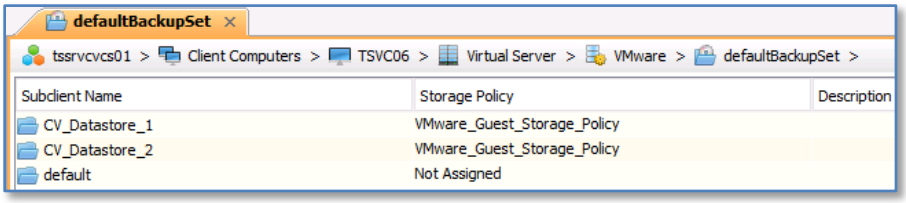

Figure 41 Subclients Displayed

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

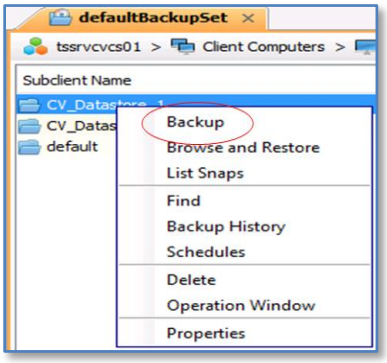

Figure 42 Select Backup

4. The **Backup Options** window appears for the Subclient. Select **Full 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 to which subsequent backups are applied. 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**.

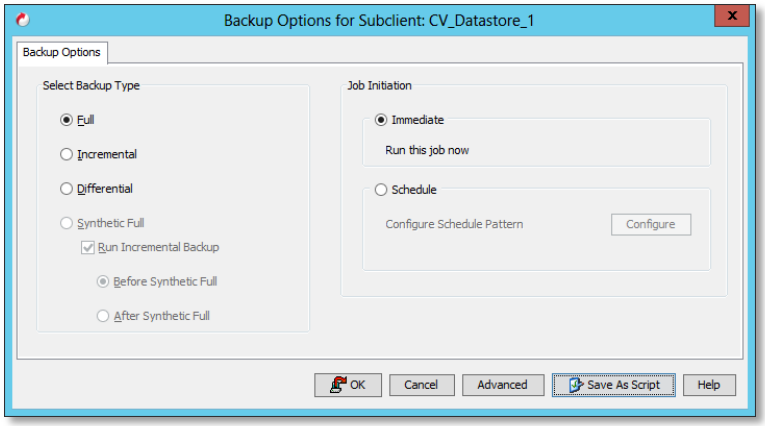

Figure 43 Backup Options for Subclient

5. Click the **Advanced** Button.

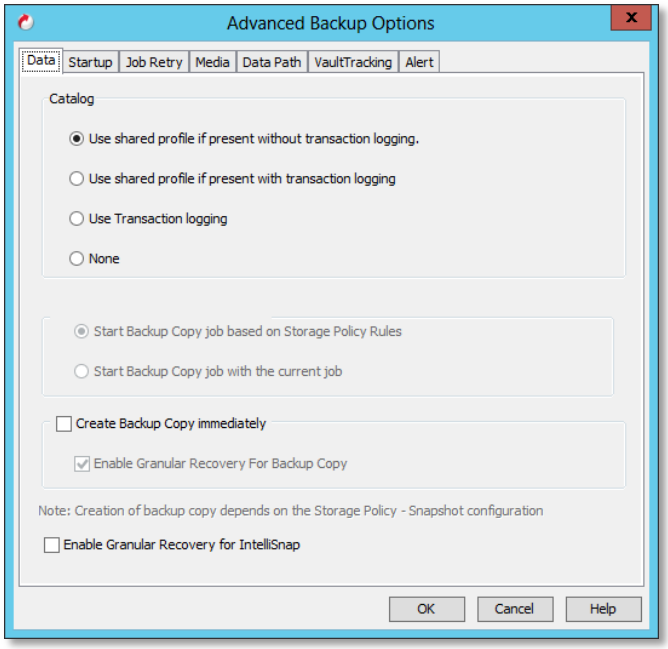

Figure 44 Advanced Backup Options

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 ESX 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 Windows virtual machines. 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, Simpana mounts the snapshot to the ESX 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 ESX 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.

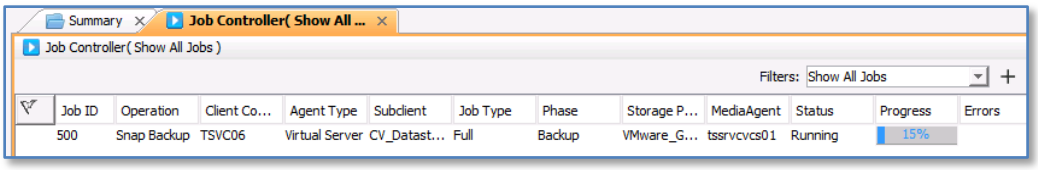

Figure 45 Job Controller Window

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

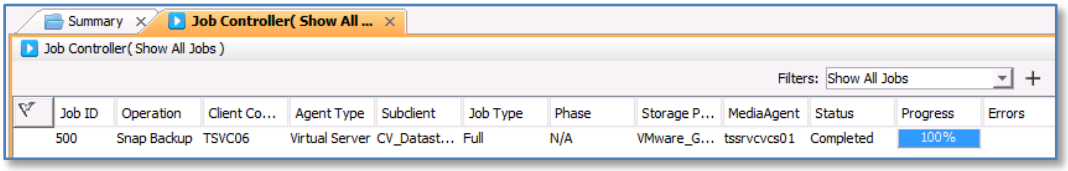

Figure 46 Job Controller Window Job Completed

6.4.2 Backup 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.

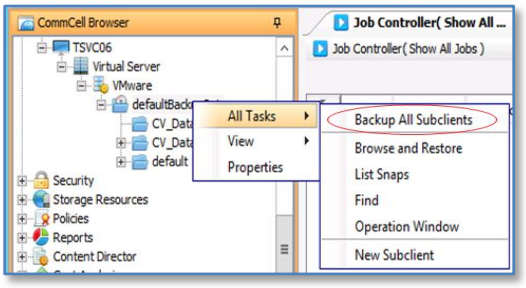

Figure 47 Select Backup All Subclients

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

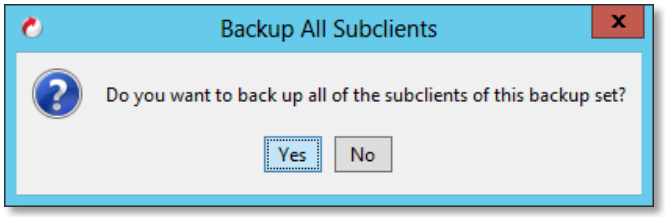

Figure 48 Select Yes to Backup All Subclients

3. When the Backup Options window appears, select **Full for the** backup type.

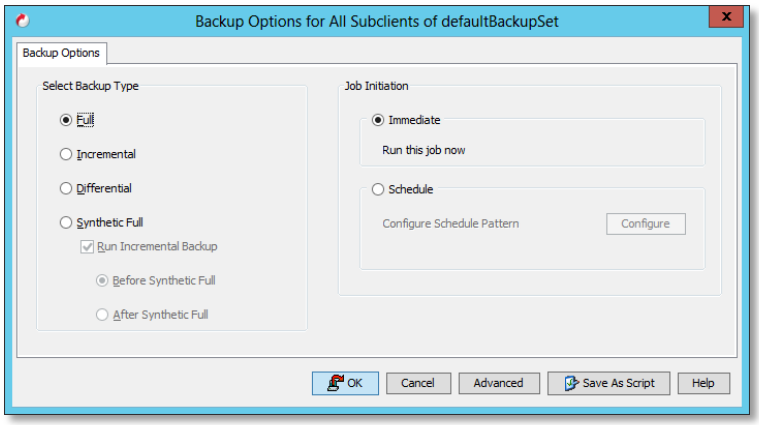

Figure 49 Select Full Backup

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.

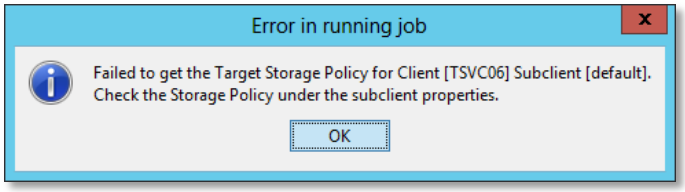

Figure 50 Error Message

4. Click **OK** to ignore the error.

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

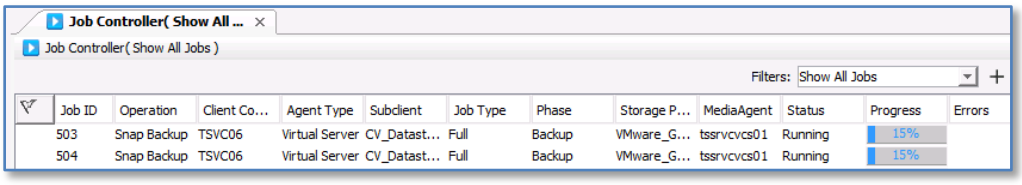

Figure 51 Job Controller Window – Job Starting

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

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

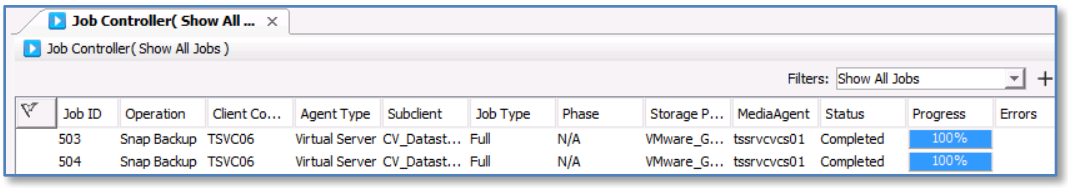

Figure 52 Job Controller Window - Job Completed

Note: Improve backup performance by spreading virtual machines over multiple Datastores. For heavily utilized virtual machines, Dell Compellent recommends fewer virtual machines per Datastore.

6.5 VMware Restore from an IntelliSnap Backup

Simpana 10 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

Simpana uses IntelliSnap to backup a SQL Server by using VSS to quiesce SQL, and then creating a snapshot of the Compellent volume(s) that contain the SQL database(s).

Note: To backup SQL databases with IntelliSnap, the databases must be installed on mapped Dell Compellent 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, Dell Compellent 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 Dell Compellent 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.**

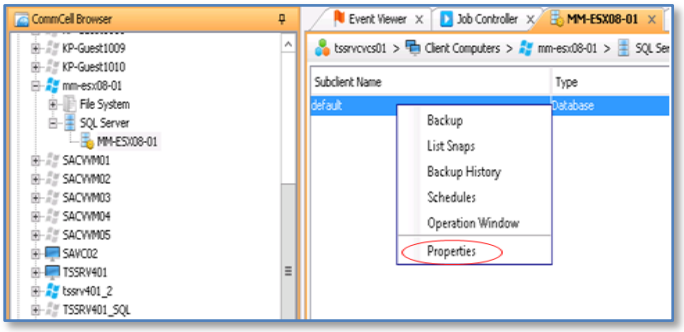

Figure 53 Open Default Subclient Properties

3. The **Subclient Properites** page appears.

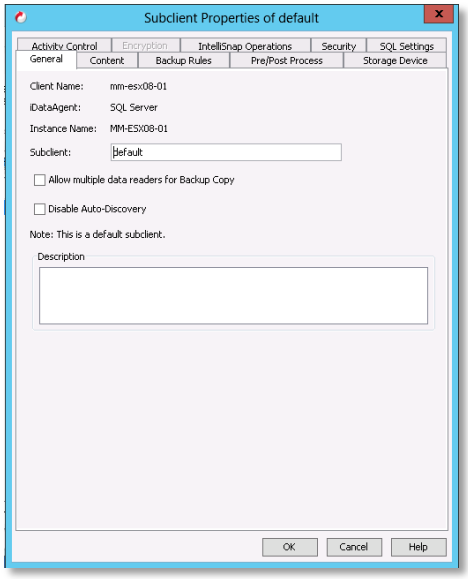

Figure 54 Subclient Properties

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

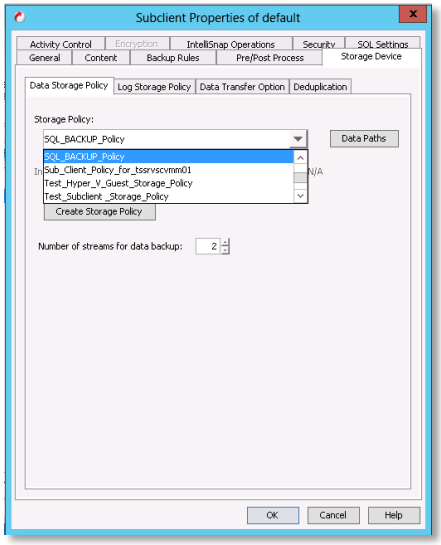

Figure 55 Select Storage Policy

5. Click on the **IntelliSnap Operations** tab.

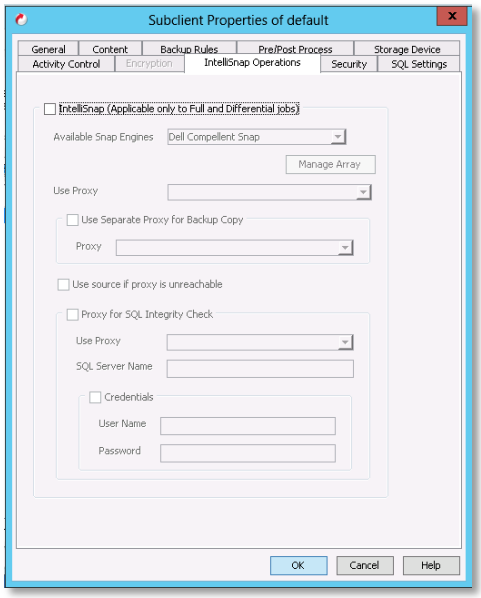

Figure 56 Select IntelliSnap Operations Tab

7. 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.

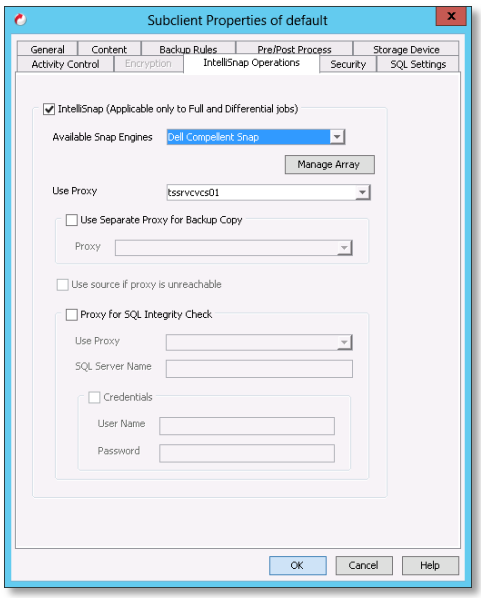

Figure 57 Check IntelliSnap Box

8. Select the **Content** tab.

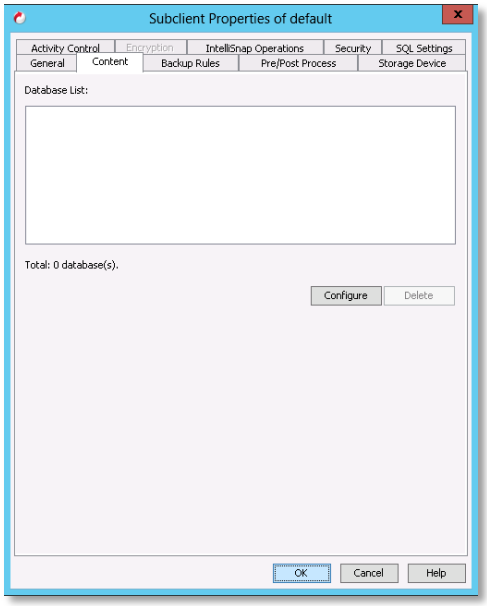

Figure 58 Content Tab Page

9. Click **Configure** to discover and associate databases to this subclient. The **Database Configuration** window appears.

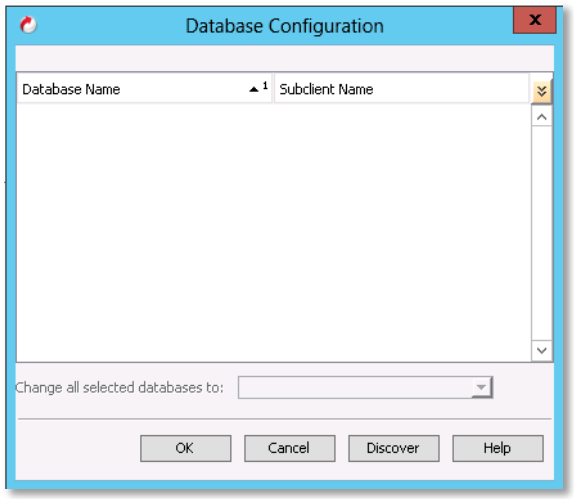

Figure 59 Database Configuration Window

10. Click **Discover** and Simpana will list all the databases on the SQL Server.

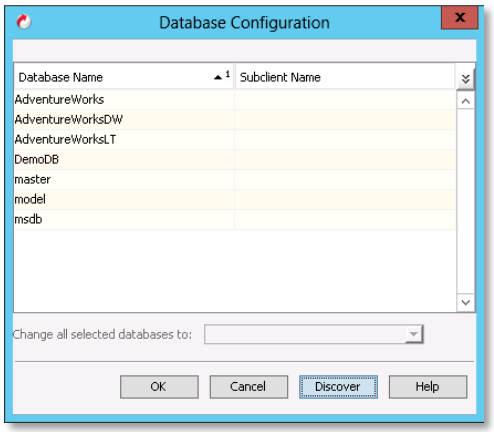

Figure 60 Discover Databases

11. 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**.

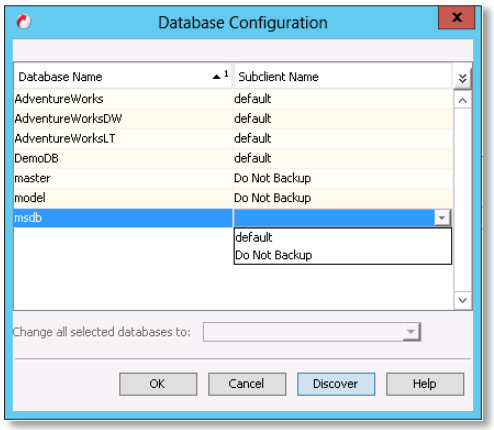

Figure 61 Choose which databases to back up

12. Click **OK.** Databases assigned to the default Subclient will be listed in the **Database List**.

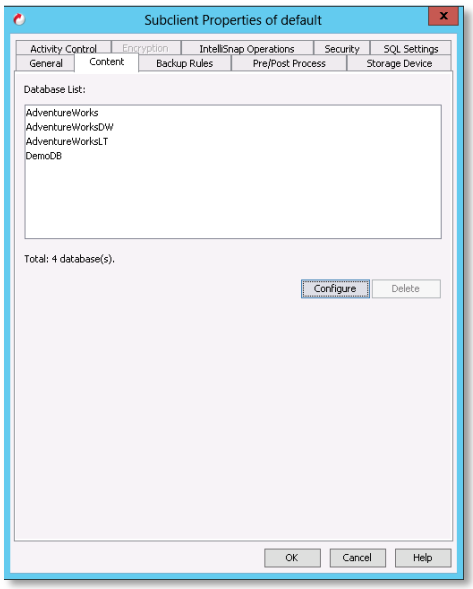

Figure 62 Databases in the database list

13. 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.**

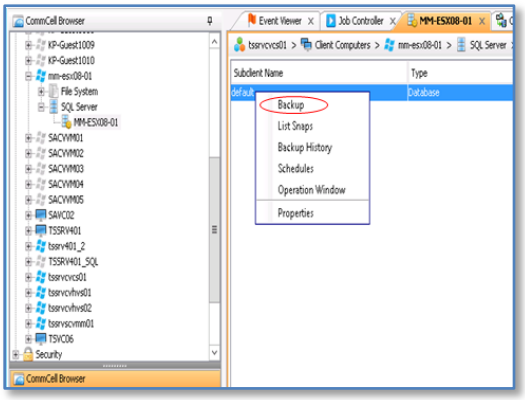

Figure 63 Select Backup

3. The **Backup Options** window appears.

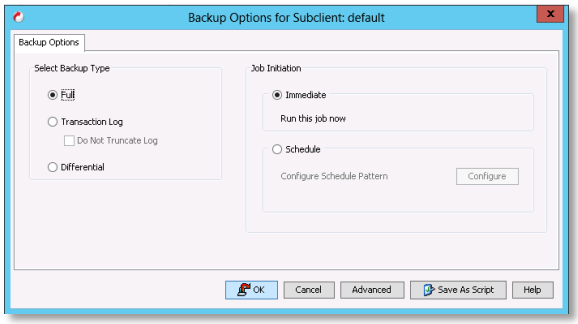

Figure 64 Backup Options Window

Note: By default, the first time a 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.

4. Click **OK** to start the backup.

5. Monitor the backup job status in the **Job Controller** and **Event Viewer** windows.

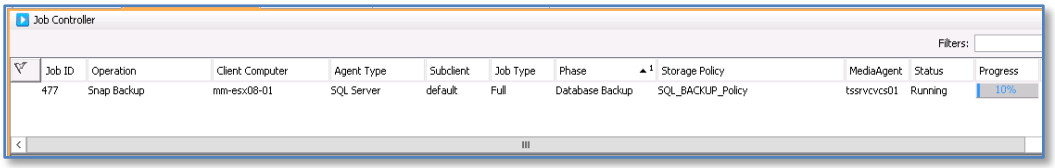

Figure 65 Job Controller monitoring a job

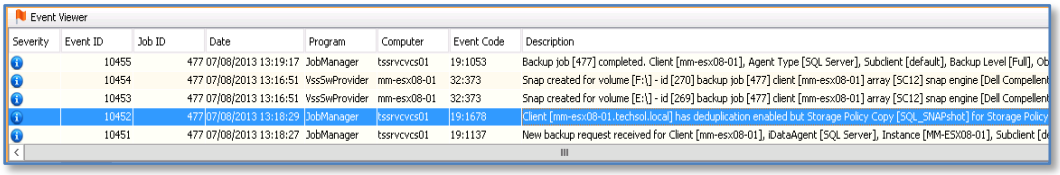

Figure 66 Event Viewer

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

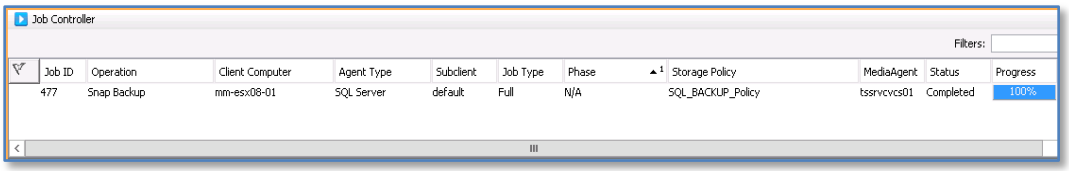

Figure 67 Job Controller: Job Completed

7.3 Restoring a SQL Database from an IntelliSnap backup

Please 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 an Exchange Server Database

Simpana uses IntelliSnap to backup a SQL Server by using VSS to quiesce SQL, and then creating a snapshot of the Compellent volume(s) that contain the SQL database(s).

Note: To backup SQL databases with IntelliSnap, the databases must be installed on mapped Dell Compellent 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, Dell Compellent 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 Dell Compellent 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**.

8.1 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.**

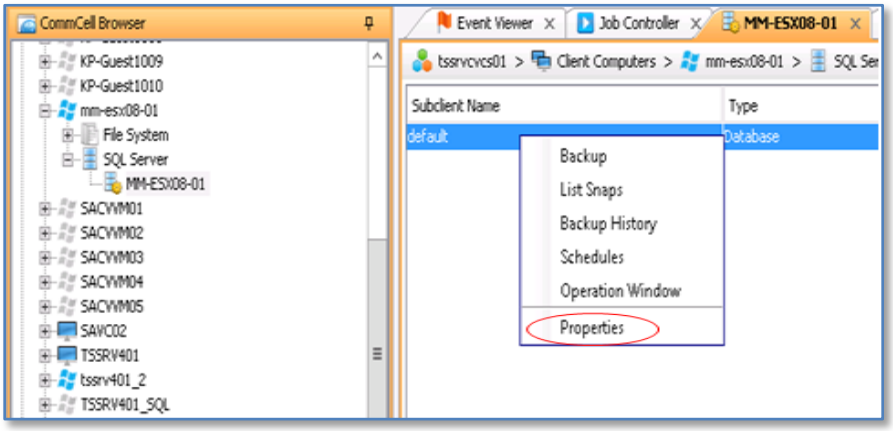

Figure 68 Open Default Subclient Properties

3. The Subclient Properites page appears.

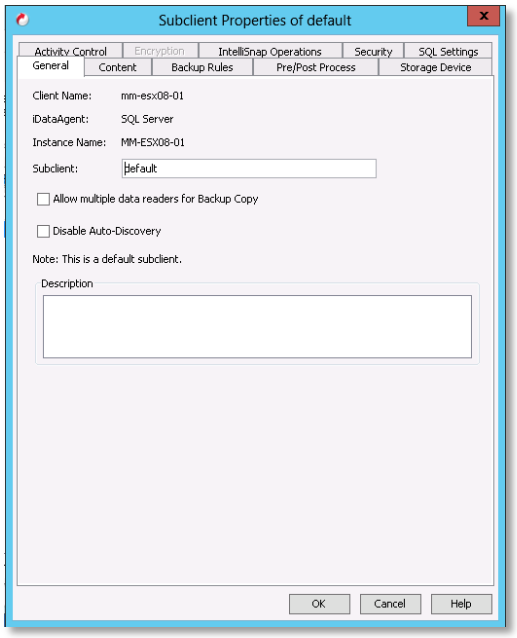

Figure 69 Subclient Properties

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

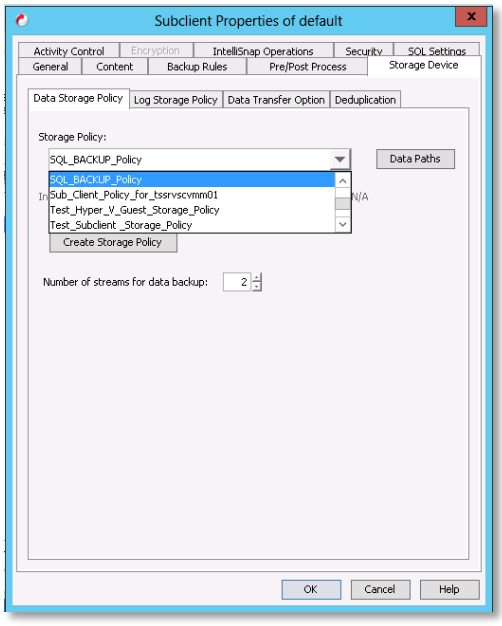

Figure 70 Select Storage Policy

5. Click on the IntelliSnap Operations tab.

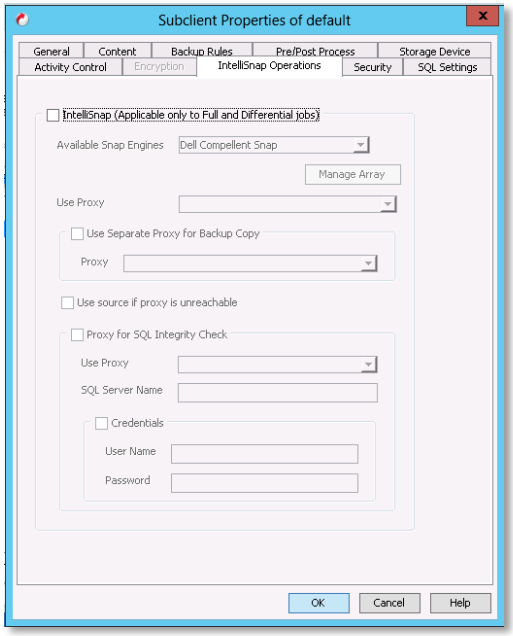

Figure 12: Select IntelliSnap Operations Tab

6. 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.

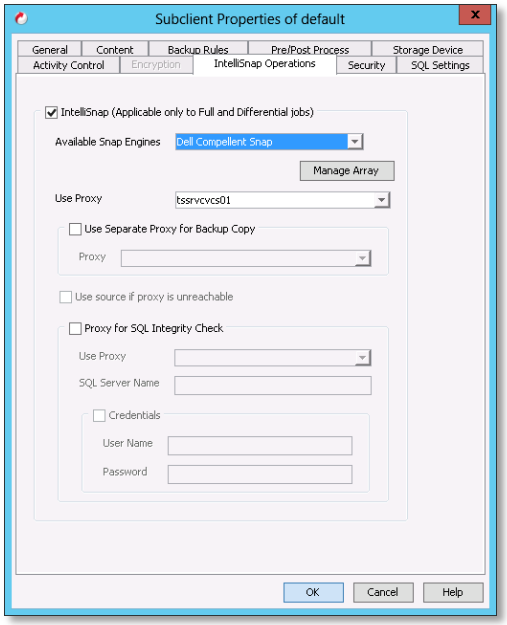

Figure 71 Check IntelliSnap Box

1. Select the **Content** tab.

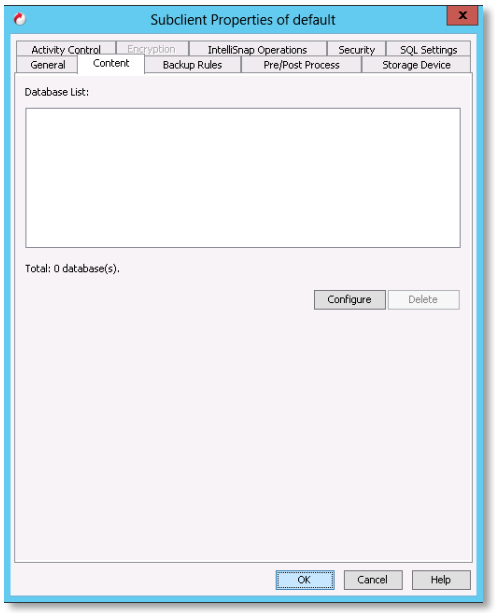

Figure 72 Content tab

7. Click **Configure** to discover and associate databases to this subclient. The **Database Configuration** window appears.

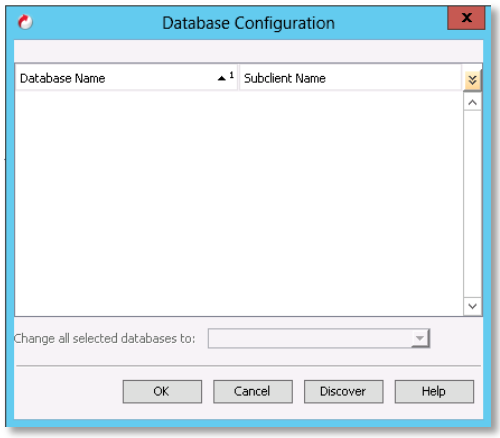

Figure 73 Database Configuration window

8. Click **Discover** and Simpana will list all the databases on the SQL Server.

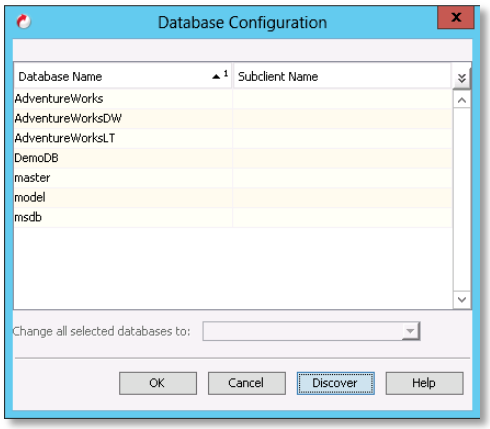

Figure 74 Discover Databases

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**.

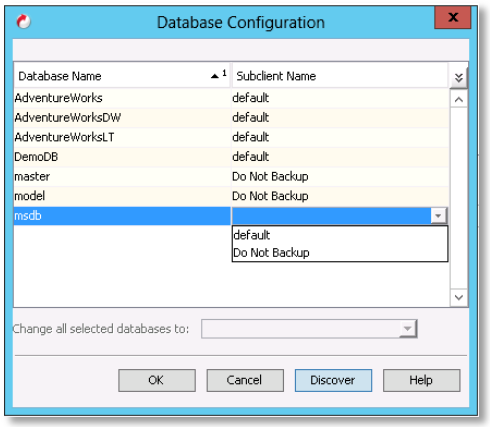

Figure 75 Choose which Databases to back up

10. Click **OK.** Databases assigned to the default Subclient will be listed in the **Database List**.

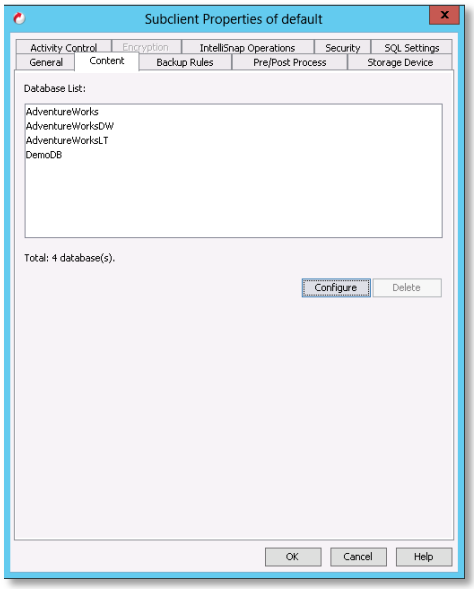

Figure 76 Databases listed in Database list

11. Click **OK** to close the Subclient Properties window.

8.2 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.**

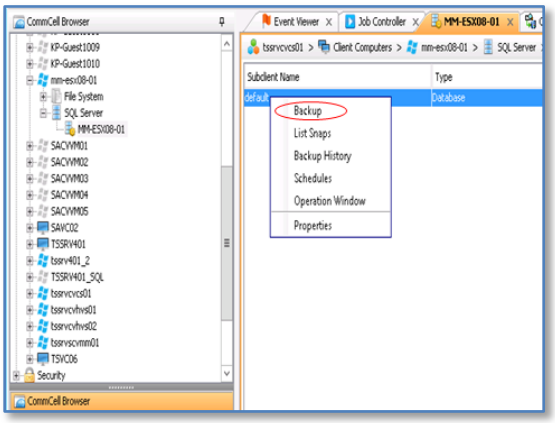

Figure 77 Select Backup

3. The **Backup Options** window appears.

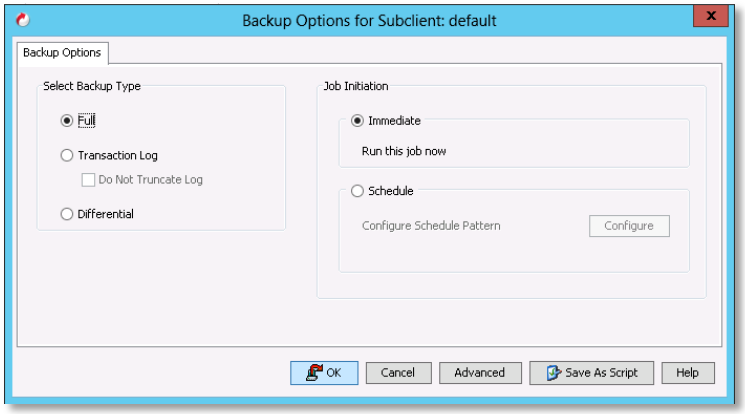

Figure 78 Backup Options Window

Note: By default, the first time a 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.

4. Click **OK** to start the backup.

5. Monitor the backup job status in the **Job Controller** and **Event Viewer** windows.

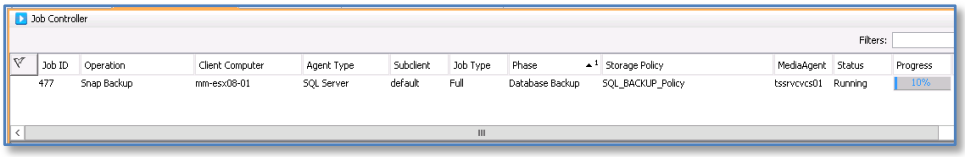

Figure 79 Job Controller Monitoring job

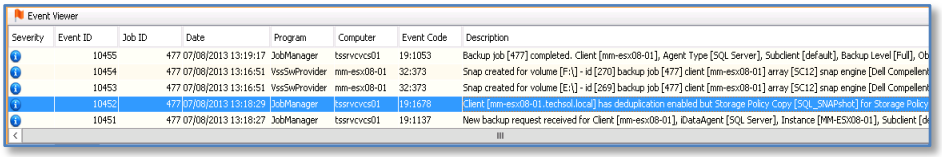

Figure 80 Event Viewer

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

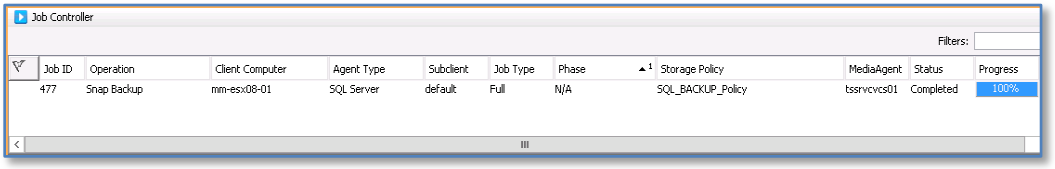

Figure 81 Job Controller Job Completed

8.3 Restoring a SQL Database from an IntelliSnap backup

Please refer to the CommVault Online Documentation for detailed instructions on how to restore a SQL database from an IntelliSnap backup.

9 Using IntelliSnap to Backup a Windows File System

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

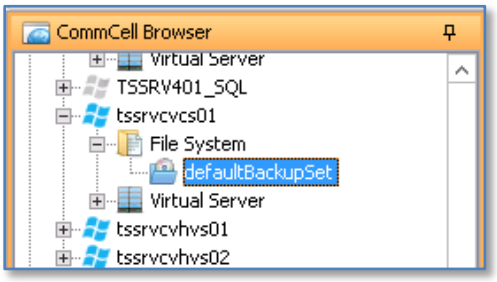

Figure 82 Select defaultbackupSet

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

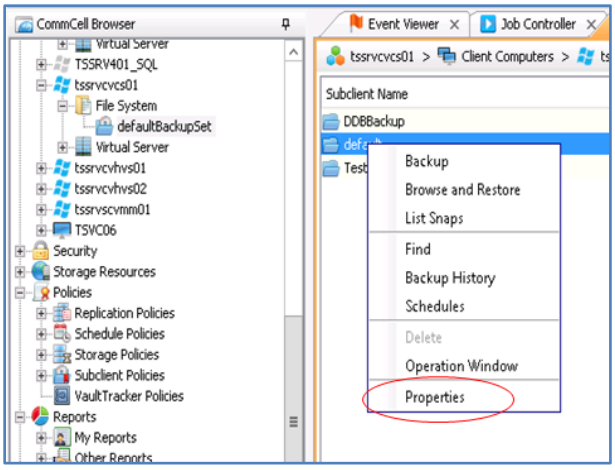

Figure 83 Default Subclient

3. The Default Subclient Properties window appears.

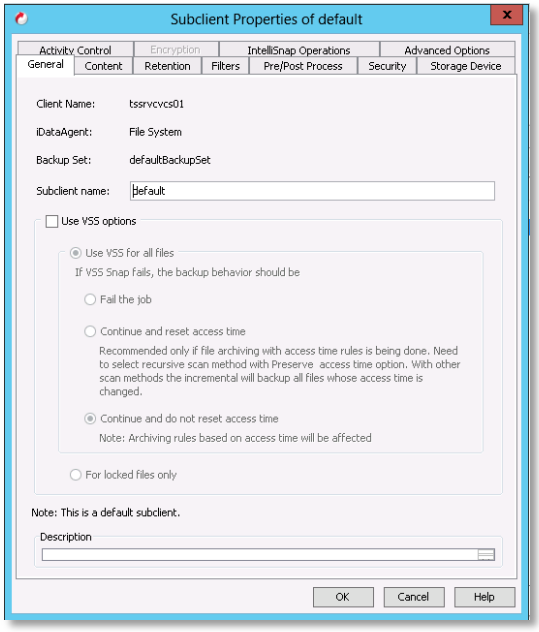

Figure 84 Default Subclient Properties

4. Check the **Use VSS** box.

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

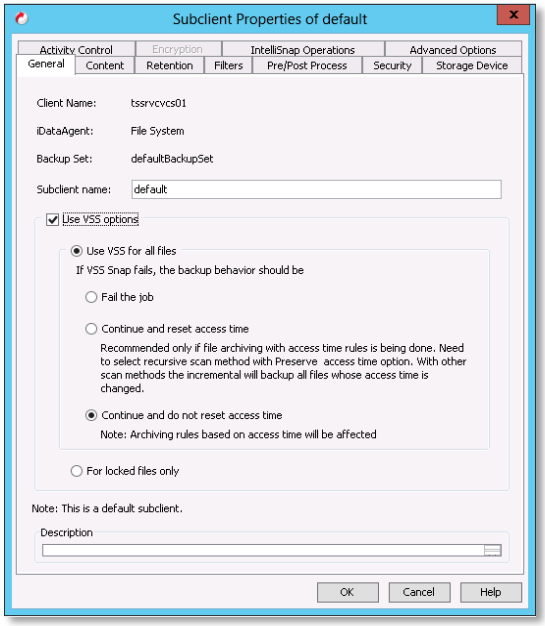

Figure 85 Check Use VSS Options

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

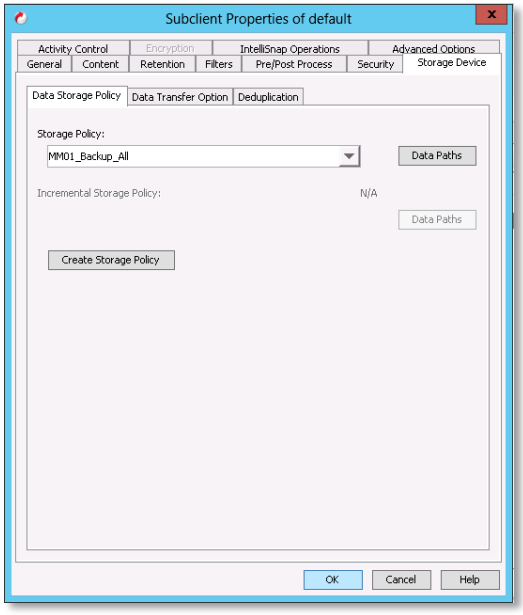

Figure 86 Select Storage Policy

6. Select the **IntelliSnap Operations** Tab. Check the box to **Enable IntelliSnap.** Select **Dell Compellent Snap** from the drop-down list. Choose a proxy server from the drop-down list.

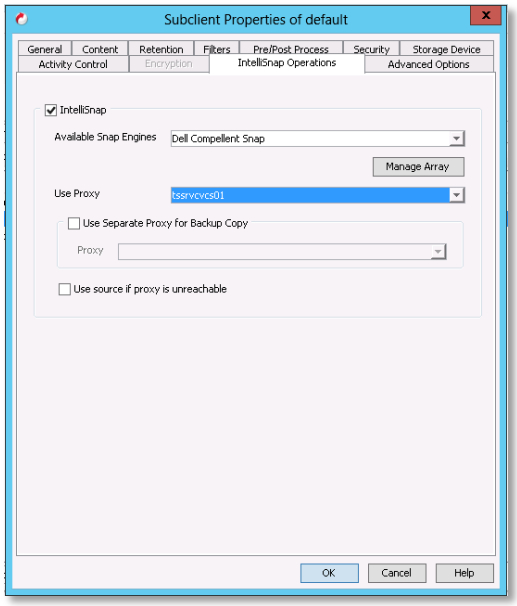

Figure 87 Select IntelliSnap

7. Click the **Content** Tab.

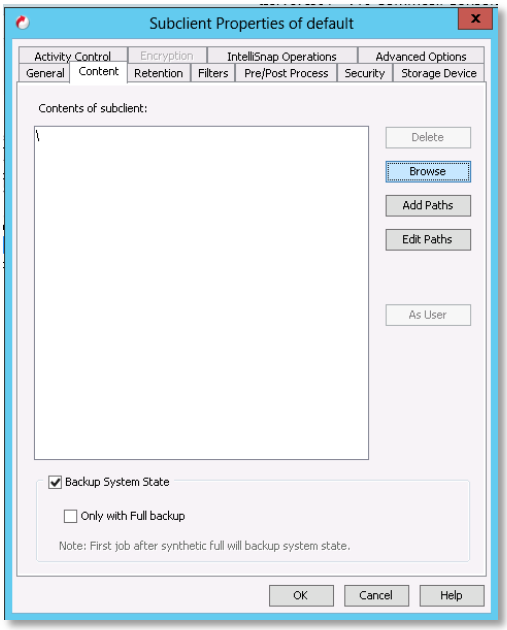

Figure 88 Contents of Subclient

8. Click Browse and specify content for the Subclient.

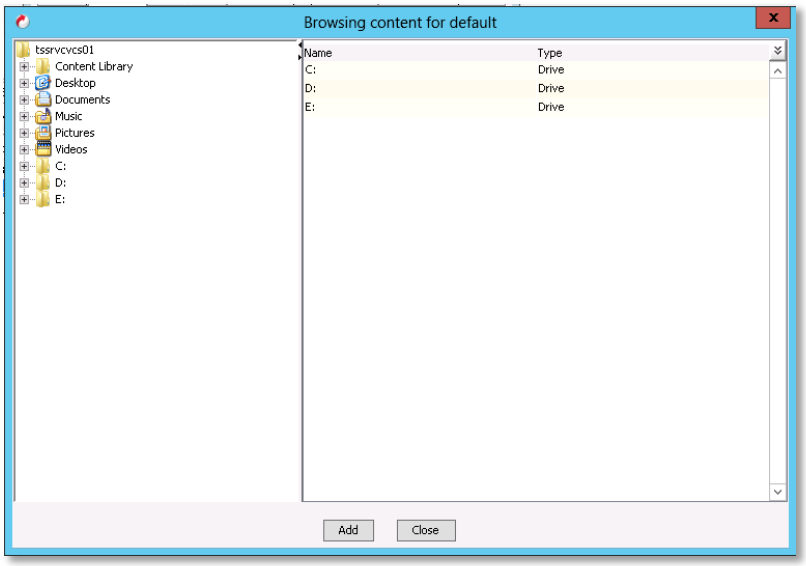

Figure 89 Browse for Content

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

Note: If nothing is selected to backup, Simpana 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:), Simpana 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.

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

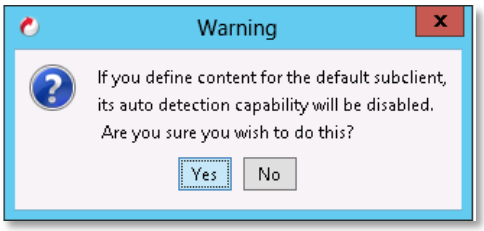

Figure 90 Auto Detection Warning Messaage

10. Click **Yes** to disable auto detection. Click **OK** to return to the **Content** tab. Uncheck the box to **Backup System State.**

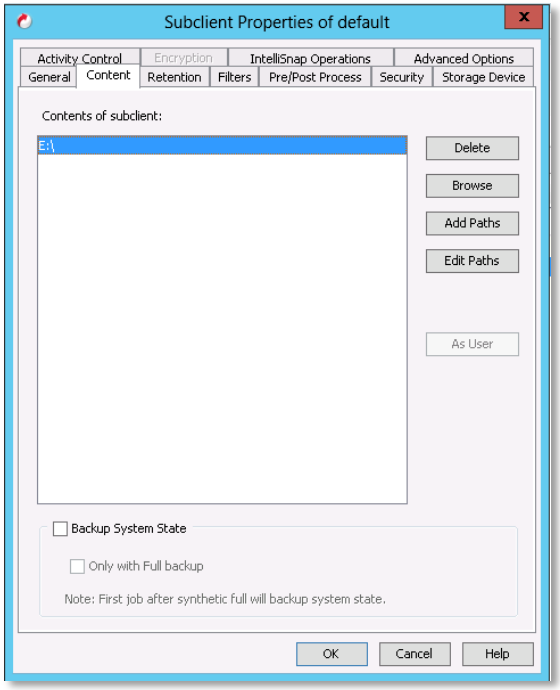

Figure 91 UnCheck Backup System State

11. Click **OK** to exit to the **CommCell Console.**

9.1 Running a Windows File System IntelliSnap Backup

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

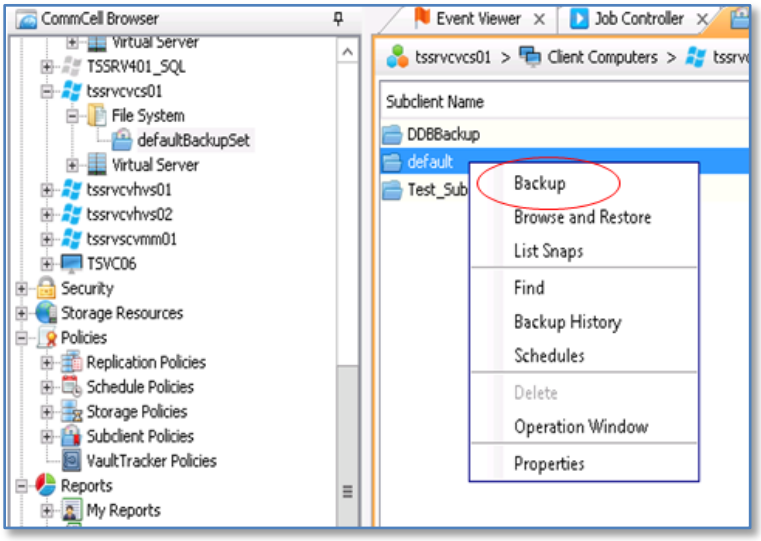

Figure 92 Starting Backup

13. The Backup Options for Subclient: default appears.

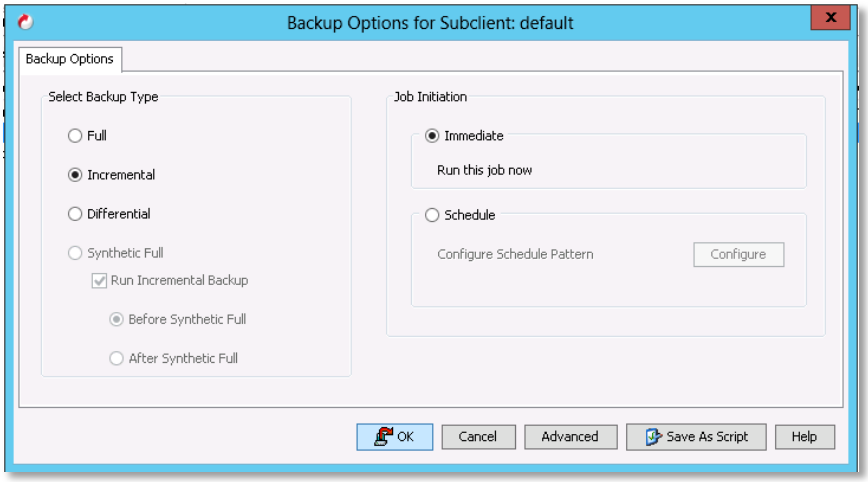

Figure 93 Backup Options for Default Subclient

Note: By default, the first time a 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.

14. Select **OK** to begin the backup.

15. Monitor the job status in the **Job Controller** and **Event Viewer** windows.

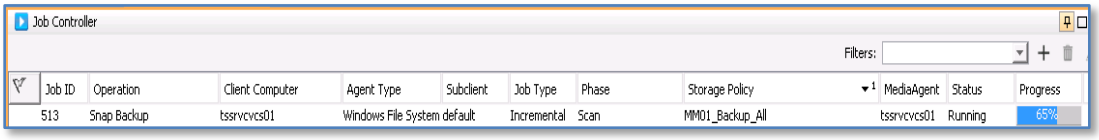

Figure 94 Job Controller showing Job Running

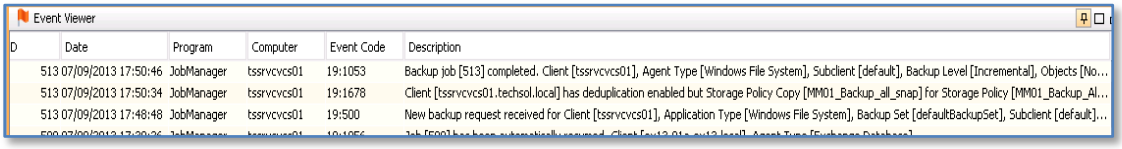

Figure 95 Event Viewer

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

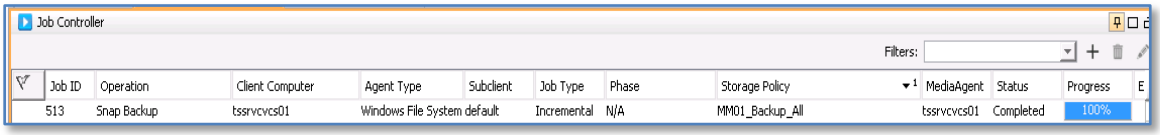

Figure 96 Completed Backup Job

9.2 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.

10 Using IntelliSnap to Backup Hyper-V Virtual Machines

IntelliSnap Backup enables the creation of point-in-time snapshot of a virtual machine by temporarily quiescing the data, taking a snapshot and then resuming live operations. Commvault Simpana 10 supports backing up Hyper-V virtual machines with IntelliSnap. The following steps will show how to set this up in a Dell Compellent environment.

Note: Ensure the Storage Center where the Hyper-V Hosts and their vitual machines reside have been added in Array Management in the CommCell being used. The steps for this process are outlined in Chapter 3 of this document.

Note: Ensure the Virtual Server iDataAgent is installed on all Hyper-V hosts. This is a requirement for proper IntelliSnap operation. Instructions for installing the Virtual Server iDataAgent can be found within the Commvault documentation located on their support web site.

Note: As of this writing, IntelliSnap backup of virtual machines with Microsoft Windows 2012 on cluster shared volumes is currently not supported and will be supported in a future Commvault service pack.

10.1 Performing a Backup of a Hyper-V Virtual Machine using IntelliSnap

1. In the CommCell Browser, right-click the server under **Client Computers** and select **Properties.**

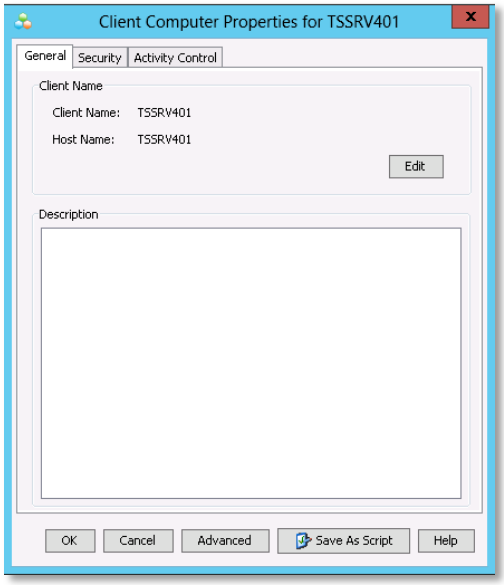

Figure 97 Client Computer Properties

2. Click the **Advanced** button and ensure the **Enable IntelliSnap** box is checked, then click **OK.**

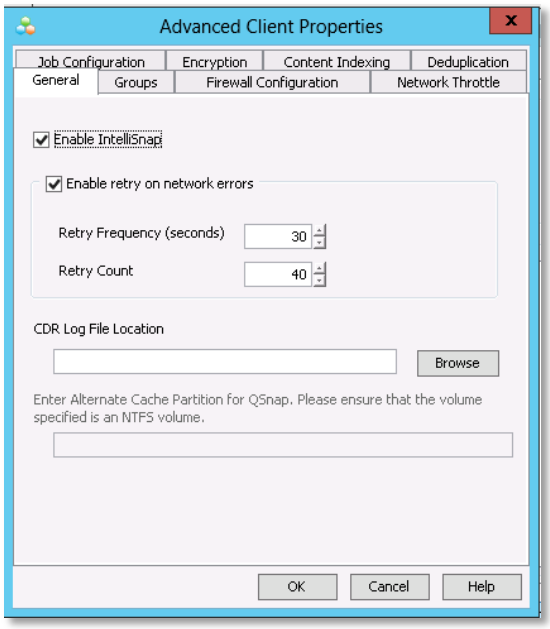

Figure 98 Check Enable IntelliSnap

3. Select the Computer that hosts the Hyper-V virtual machine to be backed up. Expand to **defaultBackupSet.**

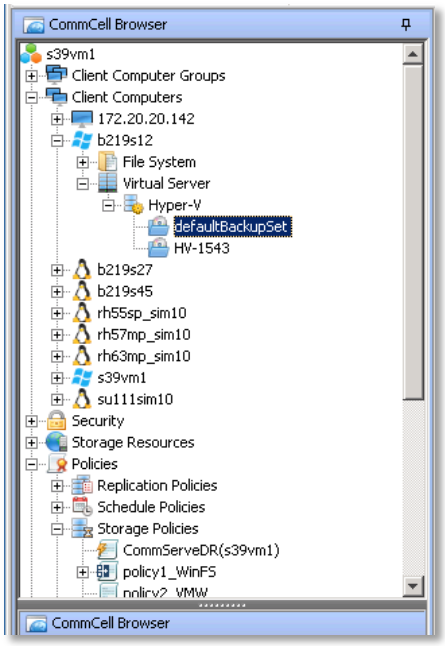

Figure 99 Right-Click defaultBackupSet

4. Right-click **defaultBackupSet** and select **All Tasks → New subclient.** The Subclient Properties window appears.

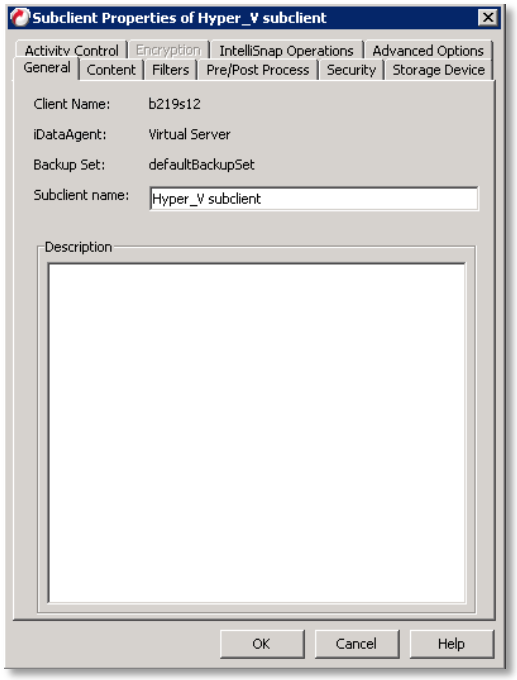

Figure 100 Subclient Properties

5. Type a name in the **Subclient** name field. Click the **Content** tab.

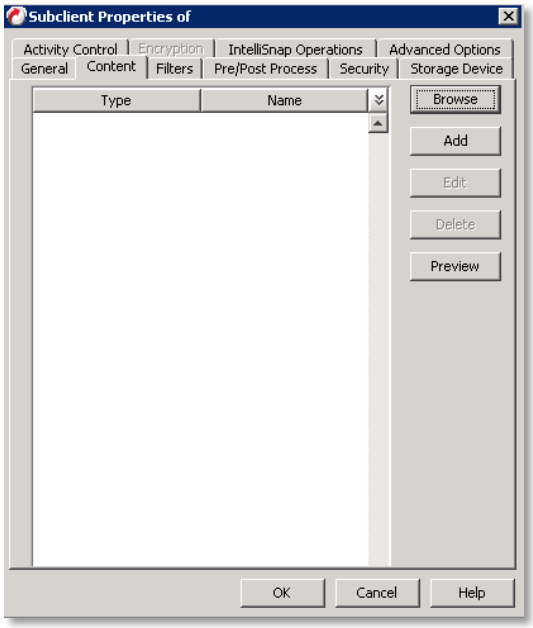

Figure 101 Content page

6. Click the **Browse** button. Expand the Hyper-V host server in the Browse window to expose its Hyper-V virtual machines. **Check** the boxes of the virtual machines desired for backup. Click **OK.**

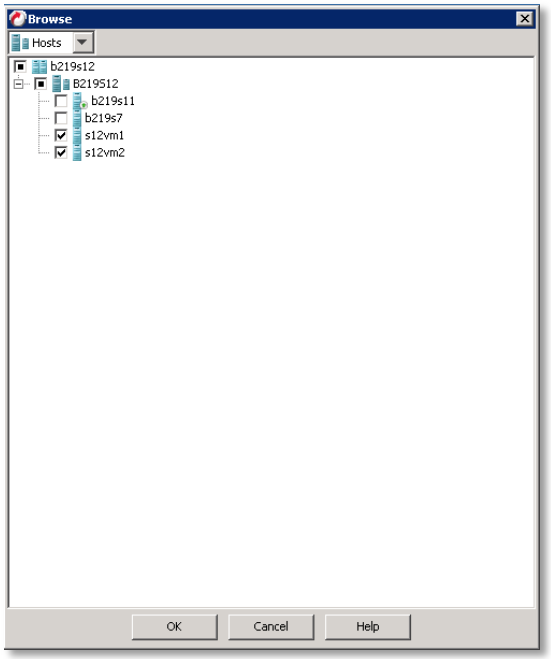

Figure 102 Hyper-V Virtual Machines Selected

7. Select the IntelliSnap Operations tab. Check the **IntelliSnap** box. A warning message will appear stating that the next backup will be converted to a full backup. Click **OK**.

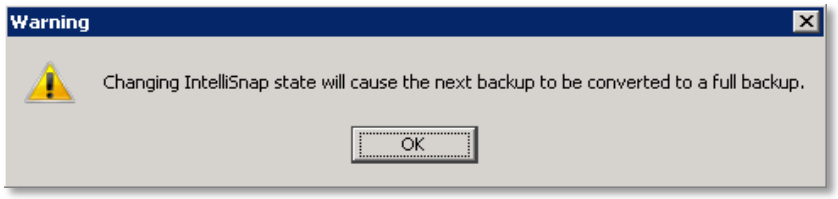

Figure 103 IntelliSnap Warning Message

8. Select the drop-down for Avalable Snap Engines and select Dell Compellent Snap.

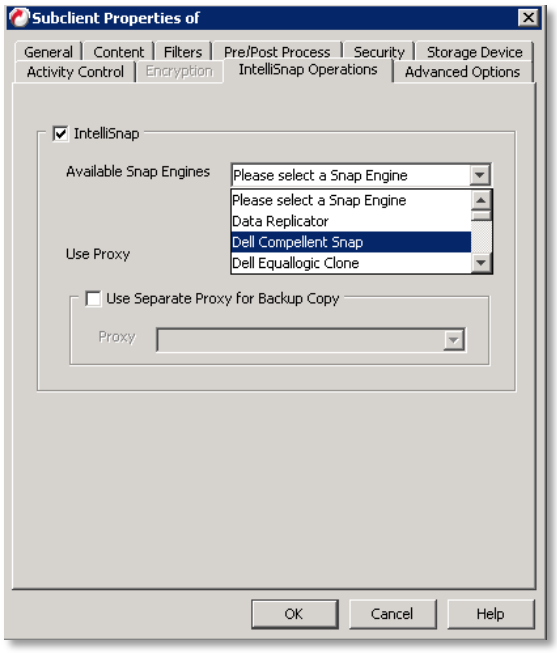

Figure 104 Select Snap Engine

9. Select the **Use Proxy** Drop-down and select the appropriate Proxy VSA agent.

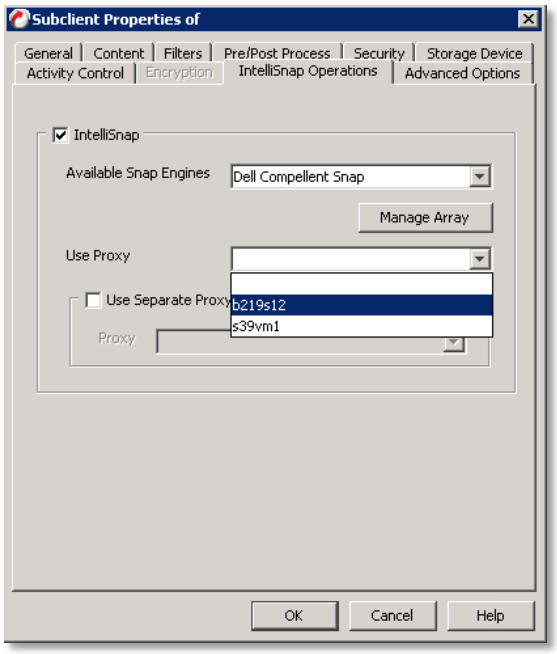

Figure 105 Select Proxy Server

10. Click on the **Storage Device** tab. Select the **Storage Policy** drop-down list to expose previously created storage policies and choose the appropriate policy.

Note: A new storage policy can be created at this point if required by clicking the **Create Storage Policy** button.

11. Click **OK** to create the new Subclient.

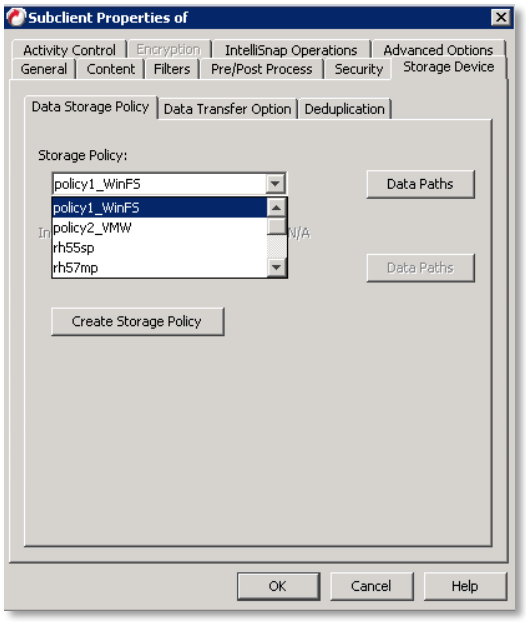

Figure 106 Select Storage Policy

10.2 Running a Backup

1. Once the Subclient has been created, a backup should be taken to verify functionality. Right-click on the newly created Subclient and select **Backup.**

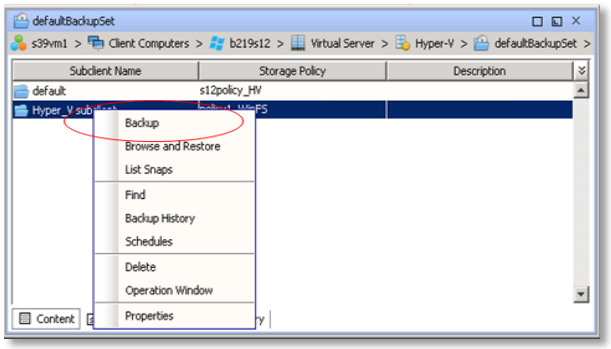

Figure 107 Select Backup

2. The **Backup Options** window appears.

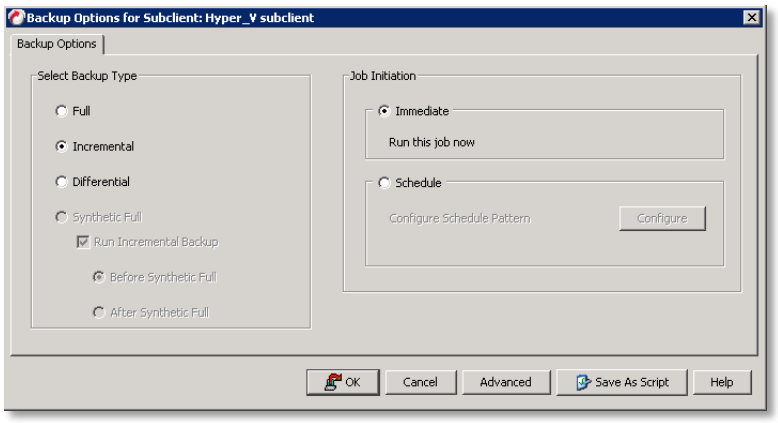

Figure 108 Backup Options

3. Select the **Full** backup type and click **OK**.

4. Open the **Job Controller** in the CommCell browser and ensure that the backup job is running.

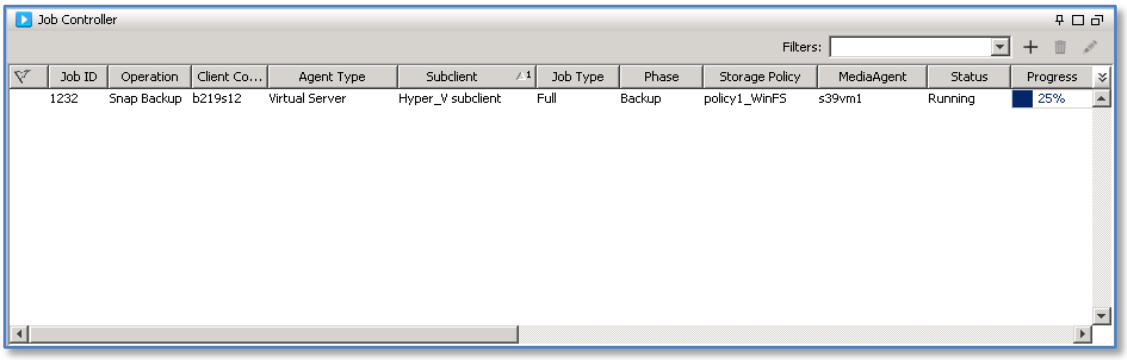

Figure 109 Job Controller view of Job Running

5. To ensure that IntelliSnap is working, open the **Dell Compellent System Center Manager** where the Hyper-V virtual machines being backed up reside. Go to **Volumes** and highlight the volume and select **Replays** to view all Replay activity. Figure 106 indicates that the Subclient has successfully integrated with the System Center and created a Replay using IntelliSnap.

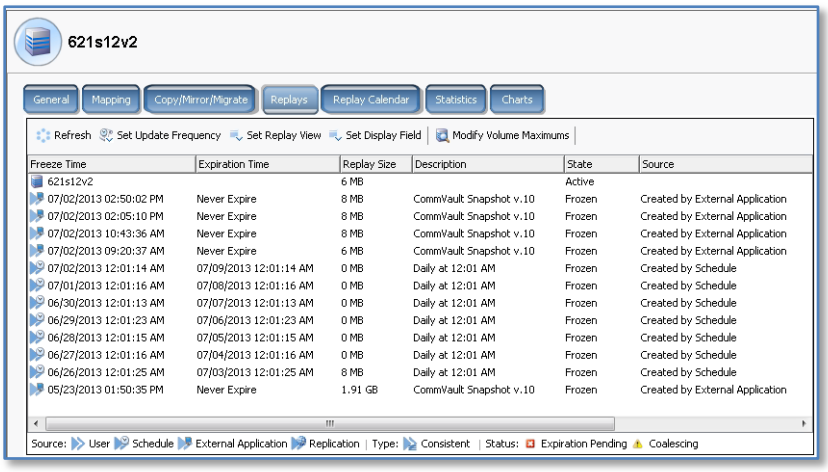

Figure 110 System Center Manager view of Replays created by IntelliSnap

Note: An IntelliSnap backup process creates a new Replay every time an IntelliSnap process is run. As a best practice, use the retention settings within the storage policies being used to expire and remove old Replays.

10.3 Restoring a Hyper-V Virtual Machine using IntelliSnap

Please refer to the CommVault Online Documentation for detailed instructions on how to restore from a Hyper-V IntelliSnap backup.

11 Conclusion

CommVault Simpana 10 and Dell Compellent Storage Center offers scalable data protection via snapshot, replication and persistent copies that are secure well integrated. Data can be protected and managed through a single, unified platform.

12 Additional Resources

Below are some links to additional resources:

Commvault Simpana 10 Books Online

http://documentation.commvault.com/commvault/release_10_0_0/books_online_1/default.htm

Dell and Commvault Products and Solutions

http://dell.commvault.com/

Dell Compellent Knowledge Center

http://kc.compellent.com