User Guide - Exchange Database *i*DataAgent

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Install the Exchange *i*DataAgents
Walks you through the process of installing the Exchange Agents.

INTRODUCTION

The Exchange Server *i*DataAgents provide a unified protection and recovery vehicle for all Exchange data in your enterprise. In addition to complete protection of entire Exchange databases for disaster recovery, more granular backup and recovery options are available for mailboxes and public folders. Added options for Outlook integration, deduplication, content indexing, and advanced reporting help ensure all your Exchange data is easily traceable and retrievable whenever the need arises.

KEY FEATURES

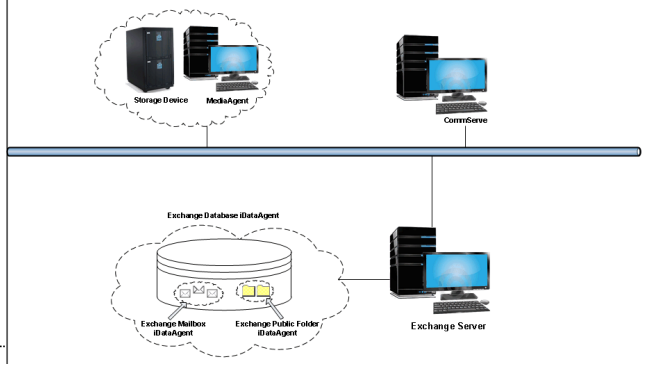
The Exchange Server *i*DataAgents offer the following key features:

DATABASE PROTECTION FOR DISASTER RECOVERY

The Exchange Database *i*DataAgent backs up each Exchange database, which includes the following key components:

- Information Stores containing individual user mailboxes
- Public Folder Stores containing data shared among multiple users
- Transaction Logs

In the event of a serious system failure, such as the breakdown of hardware, software, or operating systems, the Exchange Database *i*DataAgent provides point-in-time recovery of a given database, ensuring that the state of the Exchange Database as it existed at any given time is ready for use whenever necessary.



GRANULAR PROTECTION OF MESSAGES AND MAILBOX ITEMS

The Exchange Mailbox *i*DataAgent backs up individual mailboxes for quick retrieval of individual mailbox data, such as messages and attachments, that may have been lost from a user's Outlook mailbox. Regular backups of mailboxes also provide the facility to quickly restore entire mailboxes without requiring restores of the Exchange database.

GRANULAR PUBLIC FOLDER PROTECTION FOR SHARED INFORMATION

The Exchange Public Folder *i*DataAgent backs up public folders for quick retrieval of shared data between Exchange users, such as group documents, messages, attachments, and calendars. As with the Exchange Mailbox *i*DataAgent, regular backups of mailboxes also provide the facility to quickly restore any number of public folders without requiring restores of the Exchange database.

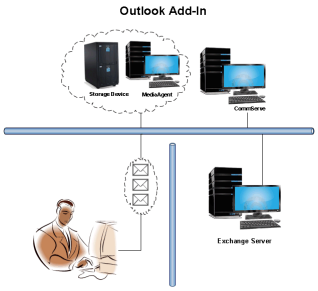
ADD-ON COMPONENTS

SNAPPROTECT BACKUP

SnapProtect Backup enables you to create a point-in-time snapshot by temporarily quiescing the data, taking a snapshot, and then resuming live operations. SnapProtect backups work in conjunction with hardware snapshot engines.

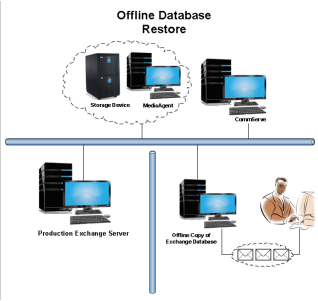
OUTLOOK ADD-IN

Outlook Add-In fully integrates with Microsoft Outlook to provide users with a convenient way to browse, search and restore mailbox items directly from Outlook. All mailbox entities, including messages, attachments, calendar items, and notes, are retrievable from either the locally installed Outlook application or the Outlook Web Access web browser application.



OFFLINE DATABASE RESTORE

Offline Database Restore using the Exchange Offline Mining Tool provides Exchange users with the ability to restore mail messages, attachments, and other mailbox entities from an offline copy of the Exchange database. This capability is especially useful in environments where the Exchange Server experiences significant day-to-day overhead. By providing users with an offline copy of the Exchange database to retrieve their data, the Exchange Server does not experience the reduction in performance it otherwise would if users retrieved their data from it directly.



DESKTOP BROWSE

Desktop Browse enables users to browse and restore data from a Web Browser, which provides the facility to access and restore data from anywhere.

CONTENT INDEXING AND SEARCH

Content Indexing and Search enables users to content index their data and later search the data from a user-friendly web interface. The users can also perform restore operations or other advanced actions on the searched data.

TERMINOLOGY

The Microsoft Exchange Server *i*DataAgent documentation uses the following terminology:

DATABASE	Includes all operational elements of the Exchange Server, such as Stores, Transaction Logs, Patch Files, and Exchange Organizational Data.
NON-EXCHANGE SERVER	A computer other than the Exchange Server on which the Mailbox and Public Folder *i*DataAgents may be installed. Using a non-Exchange Server often results in less overhead on the Exchange Server during backup and restore operations.
AFFINITY	An association between two entities used in Automatic Discovery scenarios. For example, automatic discovery of mailboxes by database affinity implies the mailbox is included in the selected database.

CUSTOMIZED FEATURES FOR YOUR EXCHANGE VERSION

The **Advanced** pages of this documentation outline the features applicable for your version of Exchange in a tabular format for quick access to the documentation you need as shown below:

EXCHANGE 2010	**EXCHANGE 2007**	**EXCHANGE 2003**

Sections not listed for a particular version of Exchange are not applicable or supported for that Exchange version.

System Requirements - Exchange Database *i*DataAgent

System Requirements | Supported Features

The following requirements are for the Microsoft Exchange Database *i*DataAgent:

APPLICATION

Microsoft Exchange 2003 32-bit Server up to the latest service pack
Microsoft Exchange 2007 64-bit Server up to the latest service pack
Microsoft Exchange 2010 64-bit Server up to the latest service pack
Microsoft Exchange 2013 64-bit Server up to the latest service pack

OPERATING SYSTEM

WINDOWS SERVER 2012
Microsoft Windows Server 2012 Editions

WINDOWS SERVER 2008
Microsoft Windows Server 2008 x64 Editions*
*Core Editions not supported

WINDOWS SERVER 2003
Microsoft Windows Server 2003 32-bit and x64 Editions with a minimum of Service Pack 1

CLUSTER - SUPPORT

The software can be installed on a Cluster if clustering is supported by the above-mentioned operating systems.

For information on supported cluster types, see Clustering - Support.

HARD DRIVE

1 GB of minimum disk space is required for installing the software.
256 MB of free disk space is required for job result directory.
256 MB of free disk space is required for log directory.

MEMORY

32 MB RAM minimum required beyond the requirements of the operating system and running applications

PROCESSOR

All Windows-compatible processors supported

SUPPORTED COMPONENTS

EXCHANGE OFFLINE MINING TOOL

The Exchange Offline Mining Tool is supported on any Windows Server platform.

NOTES ON EXCHANGE OFFLINE MINING TOOL INSTALLATION

The following additional software packages must be installed on the same computer where the Exchange Offline Mining Tool is installed, if they are not already present on the computer:

- .NET Framework 4.0 (will be automatically installed during Offline Mining Tool installation, if needed)
- Microsoft Outlook 2003 (or later)
- For Exchange Server 2010 Editions, the Exchange Offline Mining Tool is supported only with 32-bit versions of Outlook.
- For Exchange Server 2013, the Exchange Offline Mining Tool is supported only with 32-bit versions of Outlook.

PERIPHERALS

DVD-ROM drive

Network Interface Card

MISCELLANEOUS

NETWORK

TCP/IP Services configured on the computer.

The File System *i*DataAgent will be automatically installed during installation of this software, if it is not already installed. For System Requirements specific to the File System *i*DataAgent, refer to System Requirements - Microsoft Windows File System *i*DataAgent.

DISCLAIMER

Minor revisions and/or service packs that are released by application and operating system vendors are supported by our software but may not be individually listed in our System Requirements. We will provide information on any known caveat for the revisions and/or service packs. In some cases, these revisions and/or service packs affect the working of our software. Changes to the behavior of our software resulting from an application or operating system revision/service pack may be beyond our control. The older releases of our software may not support the platforms supported in the current release. However, we will make every effort to correct the behavior in the current or future releases when necessary. Please contact your Software Provider for any problem with a specific application or operating system.

Additional considerations regarding minimum requirements and End of Life policies from application and operating system vendors are also applicable

Deployment - Exchange Server Agents

PLANNING YOUR INSTALLATION

The Microsoft Exchange Server Agents can be installed individually or in any combination. However, your installation options will differ depending on your environment and the combination of Agents you intend to install.

To ensure you select the appropriate installation option for your environment, first compile the following information:

EXCHANGE AGENTS TO BE INSTALLED

For complete protection, it is recommended all Agents be installed in your environment.

EXCHANGE SERVER VERSION

The Exchange Server Version can be 2010, 2007, or 2003.

WILL THE AGENTS BE INSTALLED ON THE EXCHANGE SERVER?

You can install Agents on the Exchange Server or another computer (Non-Exchange Server). The Database iDataAgent, however, must be installed on the Exchange Server.

IS THE COMPUTER 32-BIT OR 64-BIT?

Whether installing on the Exchange Server or a Non-Exchange Server, the bit-rate can be 32-bit or 64-bit.

WHAT VERSION OF OUTLOOK IS INSTALLED ON THE COMPUTER?

Outlook must be installed on the computer for all Agents except the Database iDataAgent and can be version 2010 or 2007.

IS THE OUTLOOK VERSION 32-BIT OR 64-BIT?

The Outlook bit-rate can be 32-bit or 64-bit.

WILL YOU BE INSTALLING THE AGENTS IN A CLUSTERED ENVIRONMENT?

INSTALLATION OPTIONS

Once you have compiled the above information, choose the appropriate installation procedure as described in the tables below.

EXCHANGE SERVER 2013

SERVER SETUP	OUTLOOK VERSION	INSTALLATION PROCEDURE	SUPPORTED AGENTS
INSTALLING ON THE EXCHANGE SERVER			
64-bit Exchange Server	N/A	Install the 64-bit Exchange Agents for Exchange Server 2013	Database Agent for Database Availability Group (DAG) Configuration

EXCHANGE SERVER 2010

SERVER SETUP	OUTLOOK VERSION	INSTALLATION PROCEDURE	SUPPORTED AGENTS
INSTALLING ON THE EXCHANGE SERVER			
64-bit Exchange Server	Outlook 2010 64-bit	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Exchange Server	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents for Exchange Server 2010 or 2007	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers

64-bit Exchange Server	N/A	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007	Database Agent for Database Availability Group (DAG) Configuration
INSTALLING ON A NON-EXCHANGE SERVER			
32-bit Non-Exchange Server	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents on a Non-Exchange Server	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Non-Exchange Server	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents for Exchange Server 2010 or 2007	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Non-Exchange Server	Outlook 2010 64-bit	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers

EXCHANGE SERVER 2007

SERVER SETUP	OUTLOOK VERSION	INSTALLATION PROCEDURE	SUPPORTED AGENTS
INSTALLING ON THE EXCHANGE SERVER			
64-bit Exchange Server	Outlook 2010 64-bit	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Exchange Server - Cluster	Outlook 2010 64-bit	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007 - Clustered Environment	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Exchange Server	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents for Exchange Server 2010 or 2007	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Exchange Server - Cluster	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents for Exchange Server 2010 or 2007 - Clustered Environment	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
INSTALLING ON A NON-EXCHANGE SERVER			
32-bit Non-Exchange Server	Outlook 2010/2007 32-bit	Install the 32-bit Exchange Agents on a Non-Exchange Server	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
64-bit Non-Exchange Server	Outlook 2010/2007 64-bit	Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers

EXCHANGE SERVER 2003

SERVER SETUP	OUTLOOK VERSION	INSTALLATION PROCEDURE	SUPPORTED AGENTS
INSTALLING ON THE EXCHANGE SERVER			
Exchange Server	Not Required	Install the Exchange Agents on Exchange Server 2003	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
Exchange Server - Cluster	Not Required	Install the Exchange Agents on Exchange Server 2003 - Clustered Environment	Database, Mailbox, and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers
INSTALLING ON A NON-EXCHANGE SERVER			
Non-Exchange Server	Outlook 2010/2007 32-bit	Install the Exchange Agents for Exchange Server 2003 on a Non-Exchange Server	Mailbox and Public Folder iDataAgents Compliance, Mailbox, and Public Folder Archivers

Install the 64-bit Exchange Agents for Exchange Server 2010 or 2007

Previous Next

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

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

WHERE TO INSTALL

The Exchange Agents can be installed in one of two ways:

- Directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.
- On a separate computer with connectivity to the Exchange Server. This method is referred to as an Non-Exchange Server installation and is useful if you want to offload the memory and processing resources required for backups and restores from the Exchange Server.

  Install the Exchange Agents on all the nodes on which backups have to be run in a DAG configuration.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

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

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on a client computer.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

If you are installing the Exchange Agents on a 64-bit off-host proxy computer, perform the following pre-requisite task before installing these agents:

- Ensure that the proxy computer has been added to the same Domain in which the Exchange Server 2007 resides.
- Install Microsoft Outlook 2007 or higher on the off-host proxy computer in order to supply the software drivers necessary for Exchange-based agents to function in an off-host proxy configuration.

FOR EXCHANGE SERVER 2010

- Ensure that the service account is a member of Organization Management group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

To assign full access follow the steps given below:

- Using ADSIEDIT navigate to Configuration | Services | Microsoft Exchange.
- Right-click your organization name, click Properties | Securities and click the Advanced tab.
- Click Edit to modify the permissions set for Organization Management group.
- Click to select Full Control, Receive As and Send As permissions and wait for replication.
- Click the Effective Permission tab and Select the name of the backup account.
- The backup account should display the following as selected:

  Full Control

  All Extended Rights

  Send As

  Receive As

- Start the PowerShell and type the following to add the backup account so it has full control over all the databases:

```
Get-MailboxDatabase -server (server name) | Add-ADPermission -user "backup account" -ExtendedRights Receive-As
```

Run the above PowerShell every time a new database is added.

- Navigate to the Exchange Management Console, right-click the <mailbox> and click Manage Full Access Permissions to view the mailbox listed under Full Access Permissions.

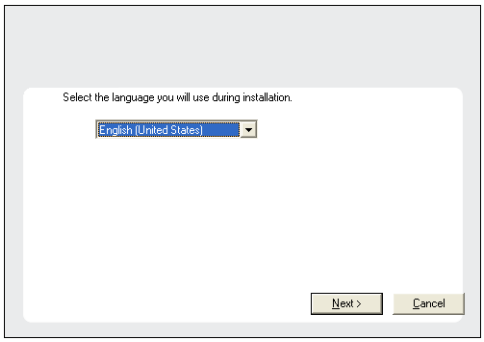
FOR EXCHANGE SERVER 2007

- Service account should be a member of Exchange Organization Administrators group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

METHOD 1: INTERACTIVE INSTALL

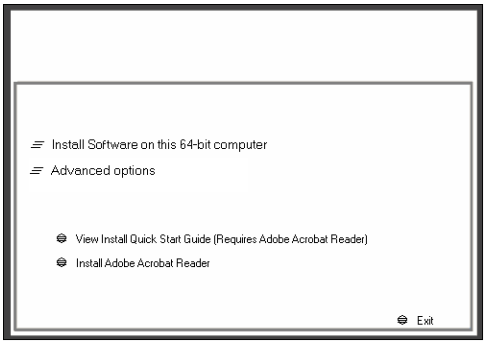
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from the Software Installation Package.
3. Select the required language.

   Click **Next**.



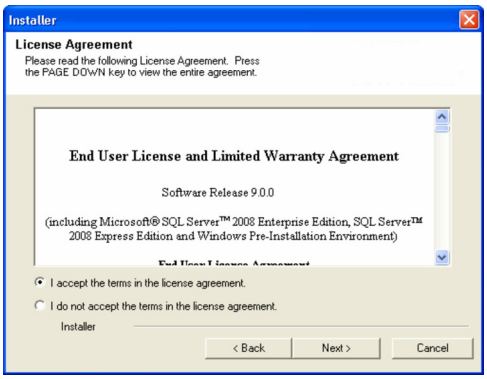
4. Select the option to **Install Calypso on this 64-bit computer**.

   Your screen may look different from the example shown.



5. Select **I accept the terms in the license agreement**.

   Click **Next**.

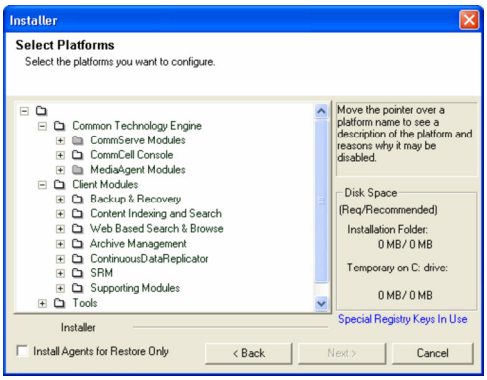


6. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:
   - **Exchange Database *i*DataAgent**
   - **Exchange Mailbox *i*DataAgent**
   - **Exchange Public Folder *i*DataAgent**

   To install the **Exchange Archiver Agents**, expand **Client Modules | Archive Management**, and select one or more of the following:
   - **Exchange Compliance Archiver**
   - **Exchange Mailbox Archiver Agent**
   - **Exchange Public Folder Archiver Agent**

Click **Next**.

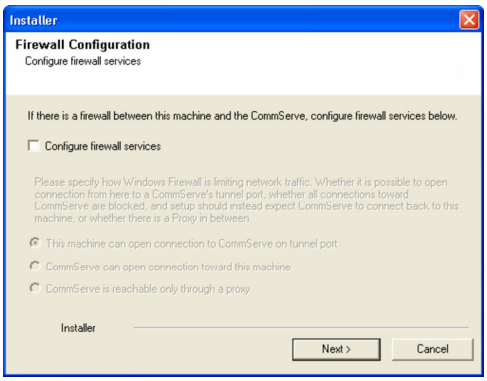
For Non-Exchange Server, Exchange Database *i*DataAgent will not be applicable.



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

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

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

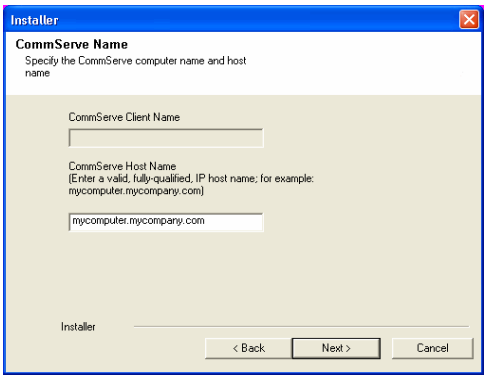


8. Enter the fully qualified domain name of the **CommServe Host Name**.

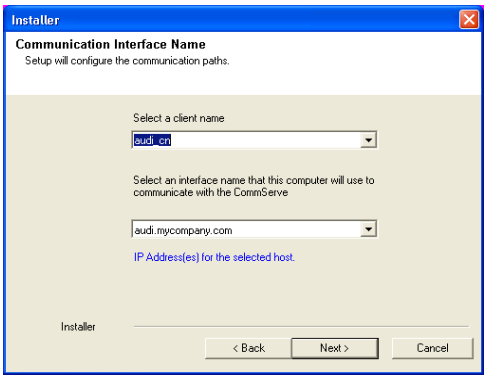
   Click **Next**.

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

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



9. Click **Next**.

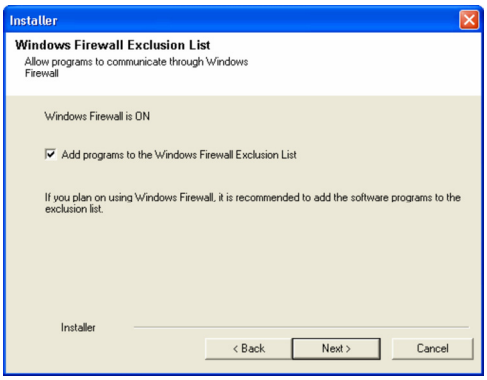


10. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

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



11. Verify the default location for software installation.

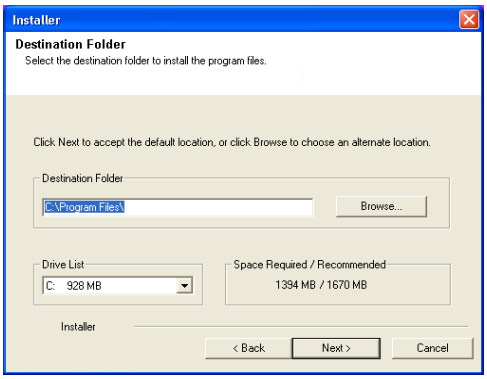
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

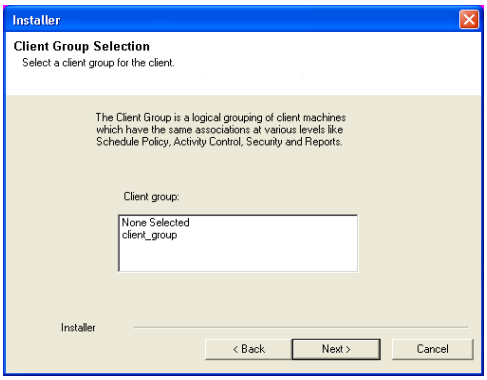
      It is recommended that you use alphanumeric characters only.



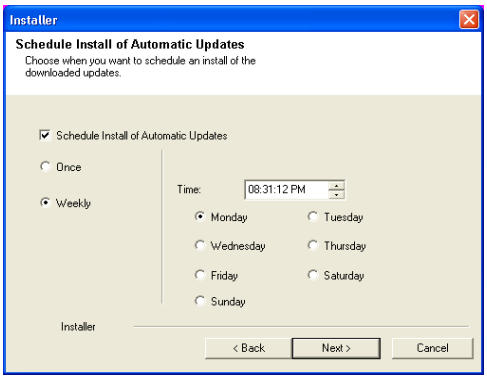
12. Select a Client Group from the list.

    Click **Next**.

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

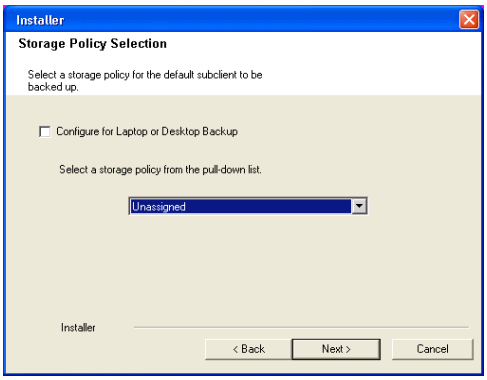


13. Click **Next**.



14. Select a **Storage Policy**.

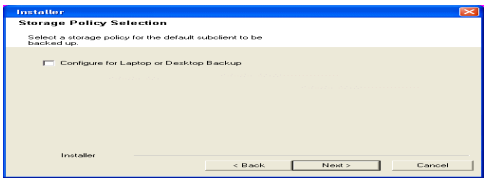
    Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

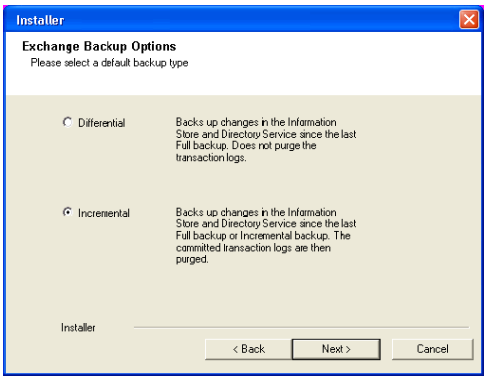
You can create the Storage Policy later in step 24.



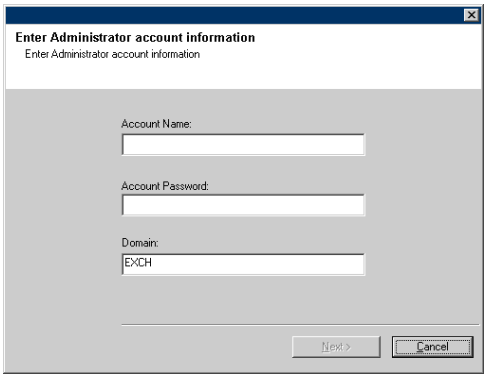
- If you are installing the Exchange Database *i*DataAgent on the Exchange Server, click Configure Exchange Database Specific Information.
- If you are installing the Exchange Agents on the Non-Exchange Server, skip to Configure Exchange Agents Specific Information.

CONFIGURE EXCHANGE DATABASE SPECIFIC INFORMATION

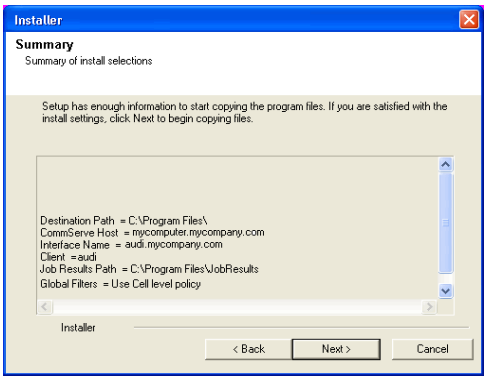
15. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



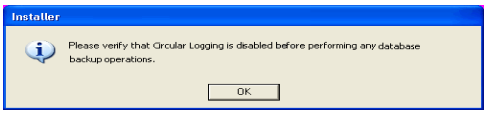
16. Enter the user credentials to access the Exchange Server to perform the backup operation.
    - The User Account must have Exchange Administrator privileges.
    - The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange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



17. Click **Next**.



18. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is disabled:



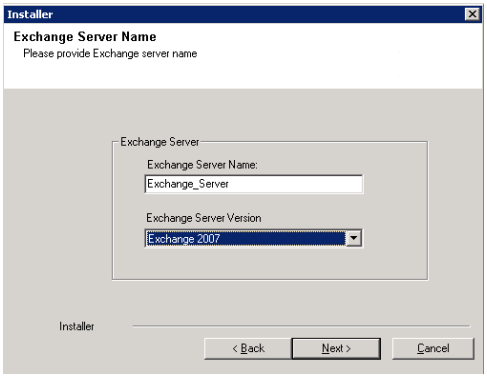
- From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
- Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Click **OK**.

- If you are installing the Exchange Agents, then click Configure Exchange Agents Specific Information.
- If you are installing the Exchange Database *i*DataAgent, skip to Verify Summary of Install Options.

CONFIGURE EXCHANGE AGENTS SPECIFIC INFORMATION

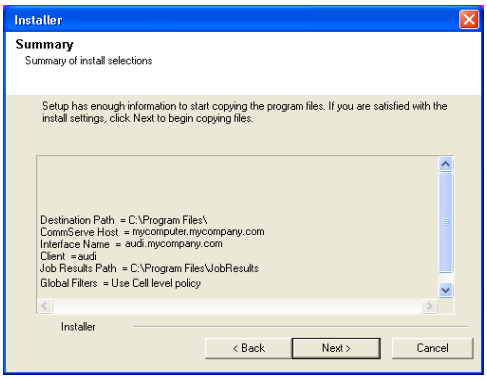
19. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.



Click **Next**.

This screen will appear when you are installing Exchange Agents on Non-Exchange Server.

20. Click **Next**.

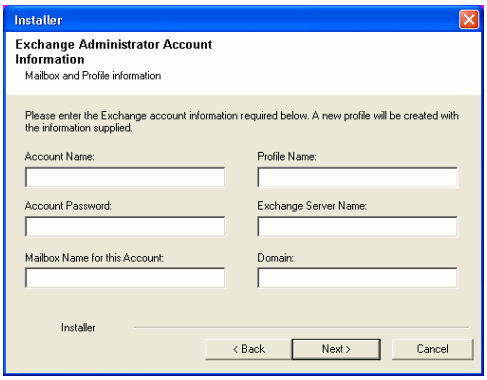


21. Enter the following Exchange Administrator information then click **Next**.
- **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
- **Account Password** - The password assigned to the domain user.
- **Mailbox Name for this Account** - Mailbox associated with the user above.
- **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.

- **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.

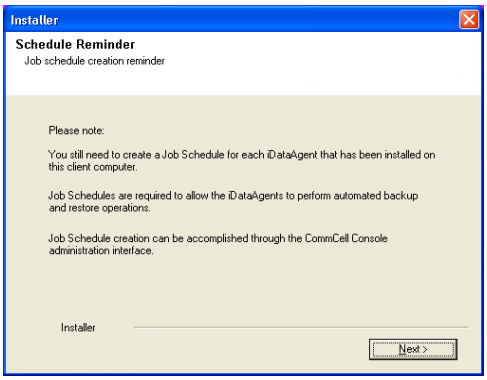
  Enter the Mailbox Role Server name (NetBIOS). After installation configure the roles as described in Configure Mailboxes in Database Availability Group (DAG) Servers.

- **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.

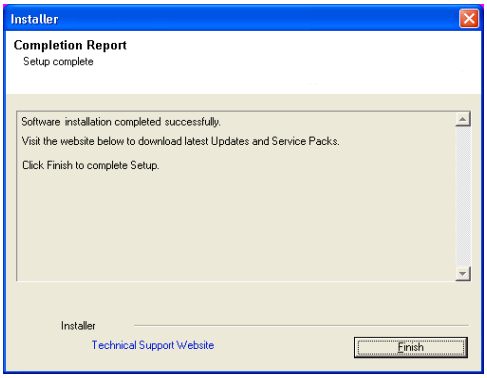


VERIFY SUMMARY OF INSTALL OPTIONS

22. Click **Next**.



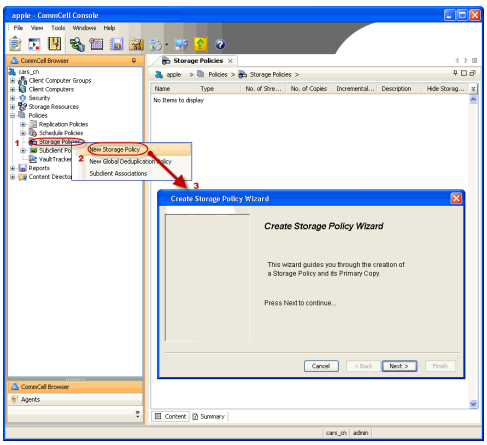
23. Click **Finish**.



CHOICE If you already have a storage policy selected in step 14, Click Next ➤ button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

24. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.

   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.

- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

  Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
- Review the details and click **Finish** to create the Storage Policy.

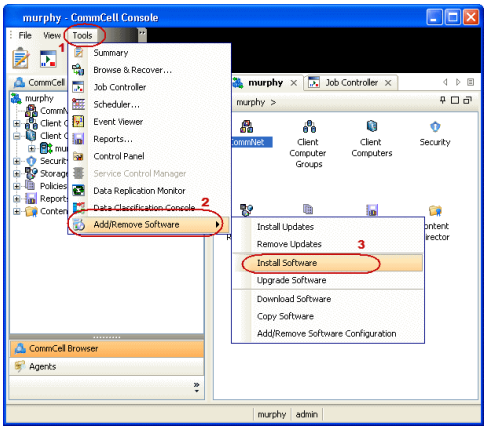
25. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

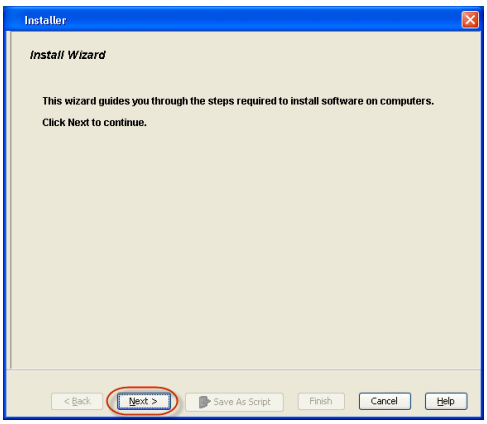
  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select **Tools**, point to **Add/Remove Software**, and then click **Install Software.**

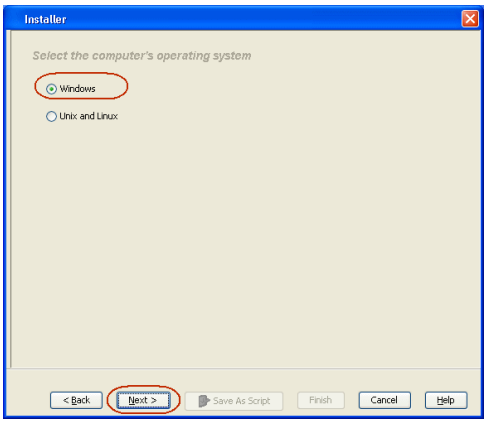


2. Click **Next**.



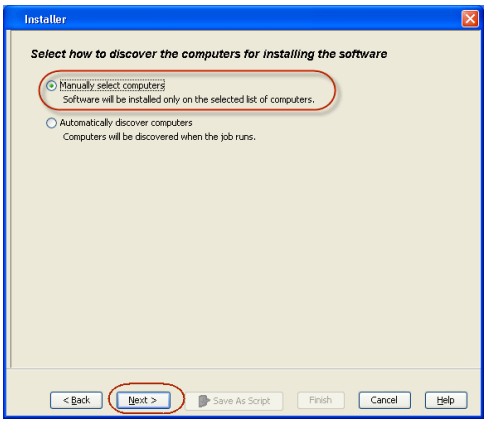
3. Select **Windows**.

   Click **Next**.



4. Select **Manually Select Computers**.

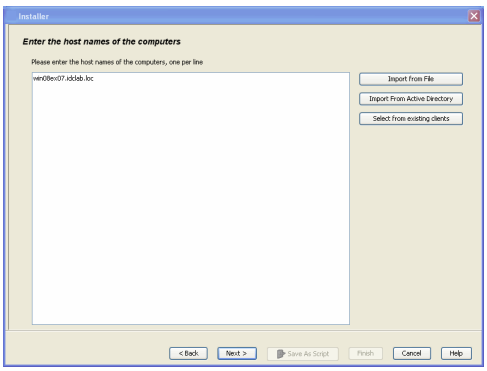
   Click **Next**.



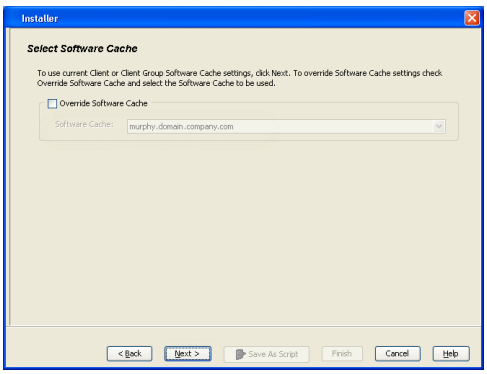
5. Enter the fully qualified domain name of the computer on which you have Exchange Server.

   For example: `win08ex07.idclab.loc`

   Click **Next**.

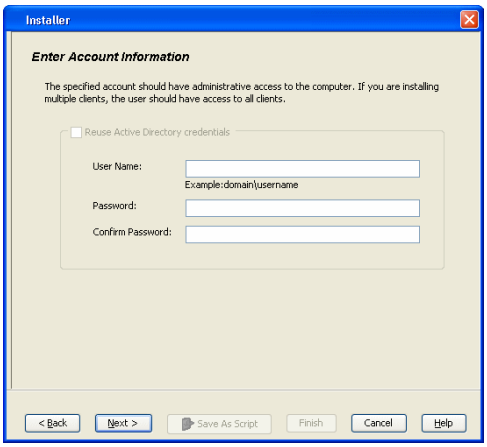


6. Click **Next**.



7. Specify **User Name** and **Password** that must be used to access the computer.

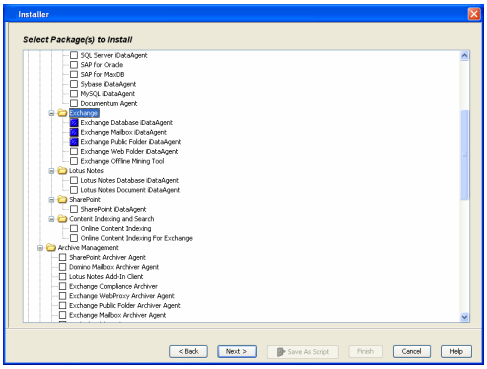
   Click **Next**.



8. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:
   - **Exchange Database *i*DataAgent**
   - **Exchange Mailbox *i*DataAgent**
   - **Exchange Public Folder *i*DataAgent**

   Click **Next**.

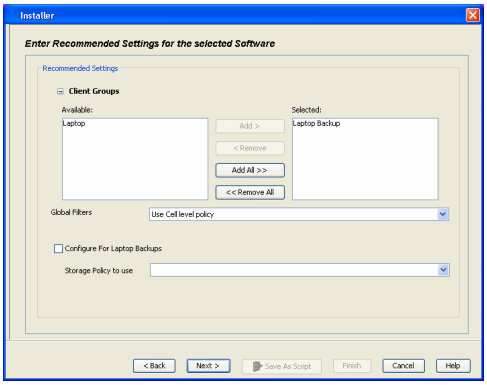
   For Non-Exchange Server, Exchange Database *i*DataAgent will not be applicable.



9. - Select **Client Group** from **Available** and click **Add**.
   - Select a **Storage Policy** from the drop-down list. Click **Next**.

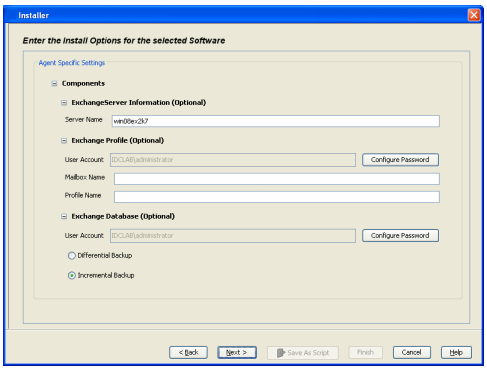
   NOTES:

   - Select the **Configure for Laptop or Desktop Backup** option to install **Backup Monitor** utility. This utility allows you to view the backup job summary from the client computer without opening the CommCell Console. See Monitor - Laptop User for more information.

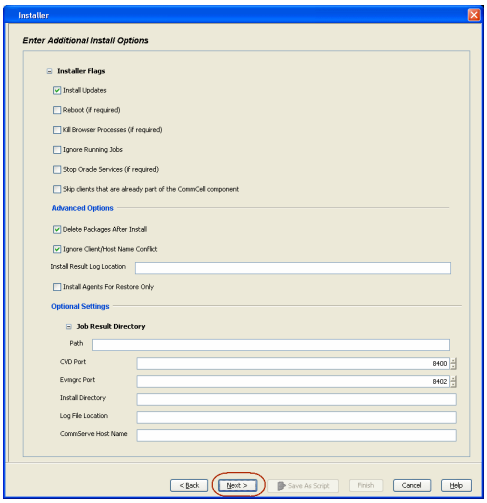


10. Type the Agent Specific Settings information.

    Click **Next**.

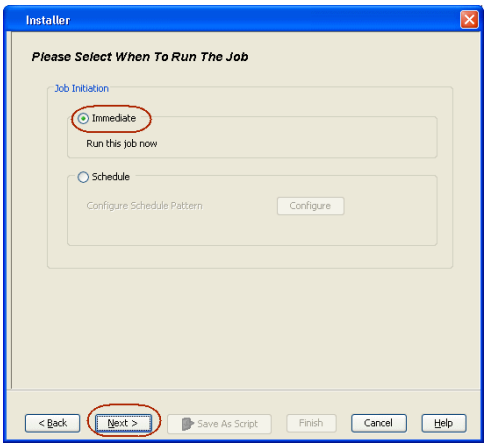


11. Click **Next**.

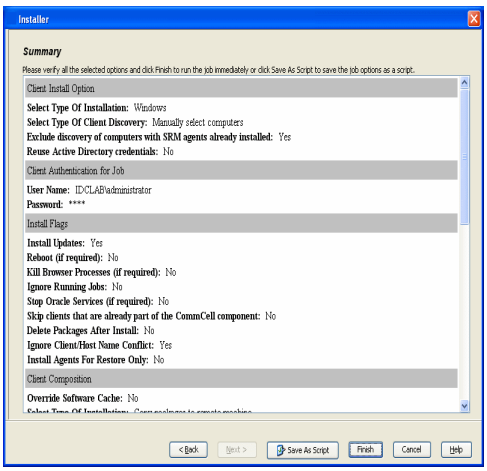


12. Select **Immediate**.

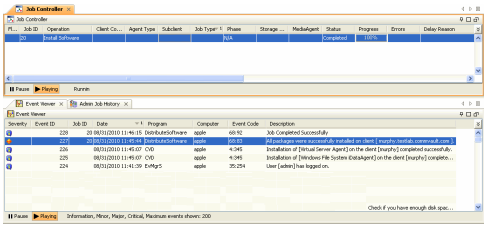
    Click **Next**.



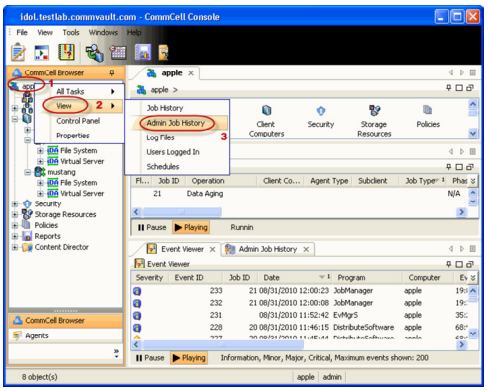
13. Click **Finish**.



14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

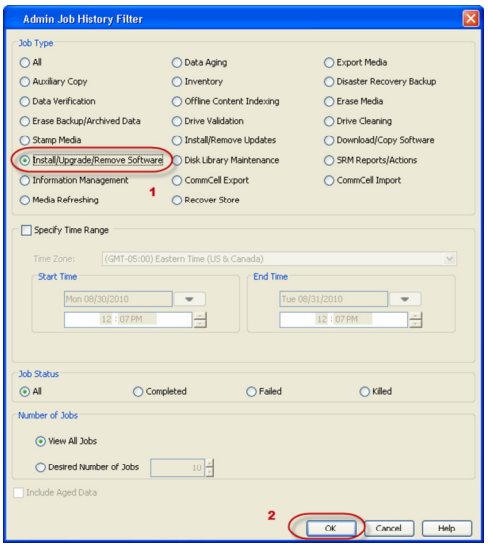


15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.

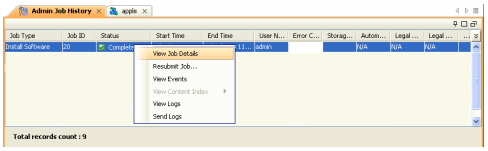


16. Select **Install/Upgrade/Remove Software**.

    Click **OK**.



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



18. Enable the following registry key to create job specific profiles:
    - From the CommCell Browser, navigate to Client Computers.
    - Right-click the <Client> in which you want to add the registry key, and then click Properties.
    - Click the Registry Key Settings tab.
    - Click Add.
    - Enter CreateProcessSpecificProfile in the Name field.
    - Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

      Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
    - Enter REG_DWORD in the Type filed.
    - Enter 1 to enable and 0 to disable the key in the Value field.
    - Click OK.

Previous Next

Install the 64-bit Exchange Agents for Exchange Server 2007 - Clustered Environment

Previous Next

Follow the steps given below to install the 64-bit Exchange Agents on Exchange Server 2007 or on Non-Exchange Server in a clustered environment.

WHERE TO INSTALL

The Exchange Agents can be installed in one of two ways:

- Directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.
- On a separate computer with connectivity to the Exchange Server. This method is referred to as an Non-Exchange Server installation and is useful if you want to offload the memory and processing resources required for backups and restores from the Exchange Server.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

If you are installing the Exchange Agents on a 64-bit off-host proxy computer, perform the following pre-requisite task before installing these agents:

- Ensure that the proxy computer has been added to the same Domain in which the Exchange Server 2007 resides.
- Install Microsoft Outlook 2007 or higher on the off-host proxy computer in order to supply the software drivers necessary for Exchange-based agents to function in an off-host proxy configuration.

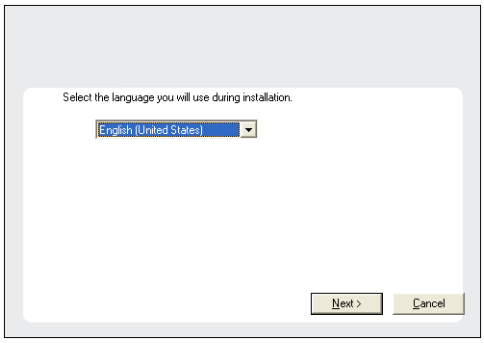
The below mentioned prerequisites are for Mailbox Agents only. Ensure that you have the following:

- Service account is a member of Exchange Organization Administrators group.
- The mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.
- Ensure that you assign full access to all mailboxes on the server. For details, see How do I Assign Full Access to All Mailboxes on a Server.

INSTALL PROCEDURE

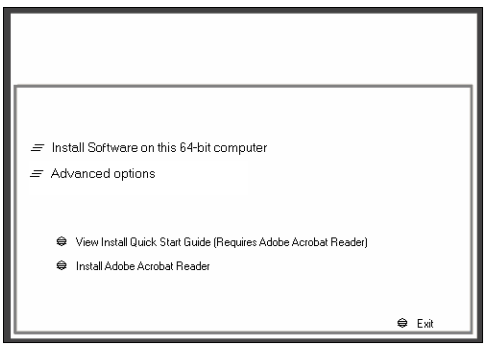
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from the Software Installation Package.
3. Select the required language.

   Click **Next**.



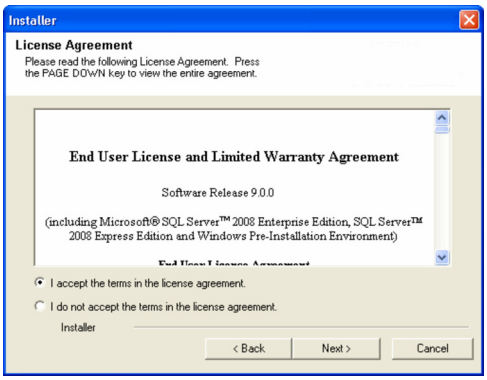
4. Select the option to **Install Calypso on this 64-bit computer**.

   NOTES:
   - Your screen may look different from the example shown.



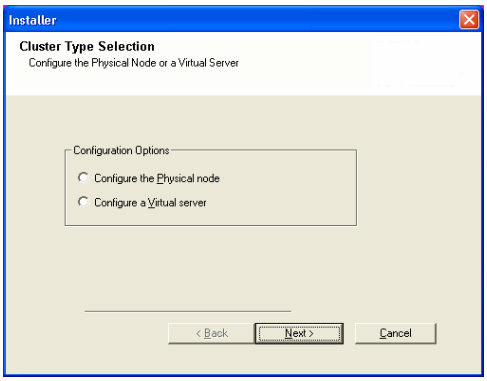
5. Select **I accept the terms in the license agreement**.

   Click **Next**.



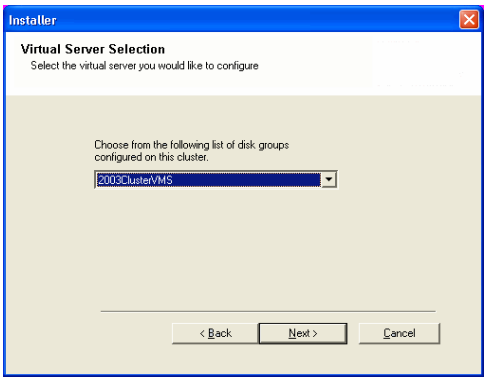
6. Select **Configure a Virtual Server**.

   Click **Next**.



7. Select the disk group in which the virtual server resides.

   Click **Next**.



8. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:

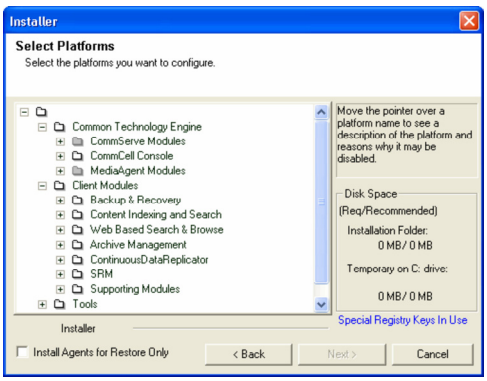
   - **Exchange Database *i*DataAgent**
   - **Exchange Mailbox *i*DataAgent**
   - **Exchange Public Folder *i*DataAgent**

   To install the **Exchange Archiver Agents**, expand **Client Modules | Archive Management**, and select one or more of the following:

   - **Exchange Compliance Archiver**
   - **Exchange Mailbox Archiver Agent**
   - **Exchange Public Folder Archiver Agent**

   Click **Next**.

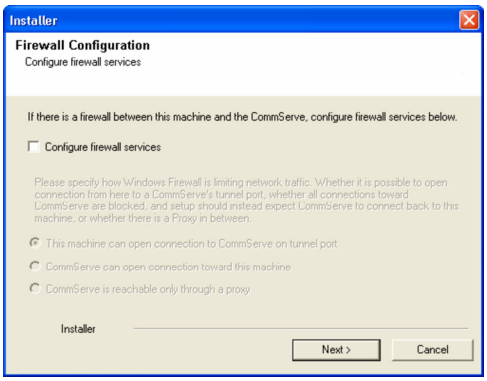
   For Non-Exchange Server, Exchange Database *i*DataAgent will not be applicable.



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

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

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

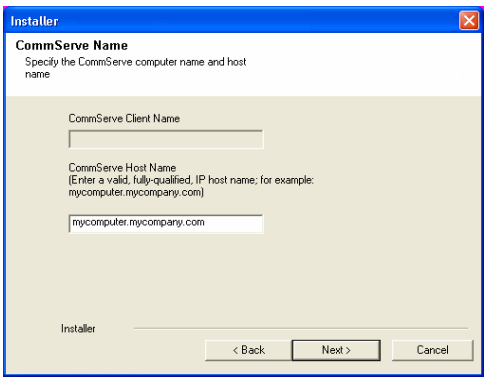


10. Enter the fully qualified domain name of the **CommServe Host Name**.

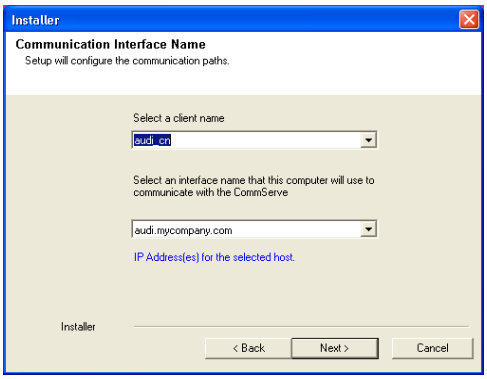
    Click **Next**.

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

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



11. Click **Next**.

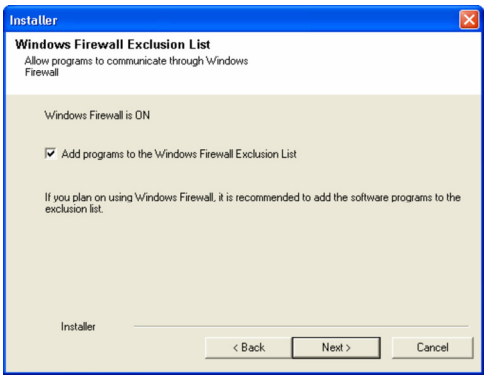


12. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

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



13. Verify the default location for software installation.

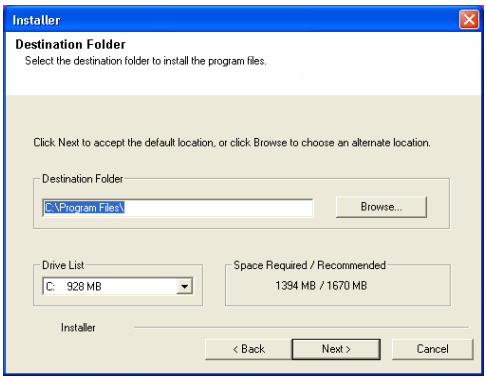
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

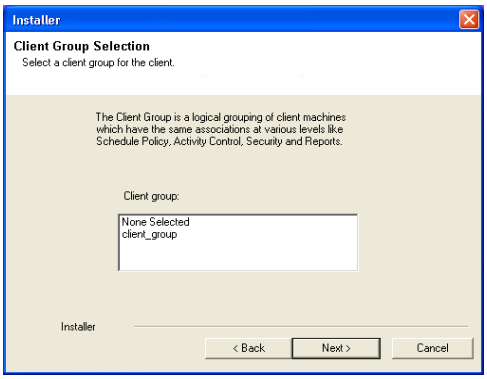
It is recommended that you use alphanumeric characters only.



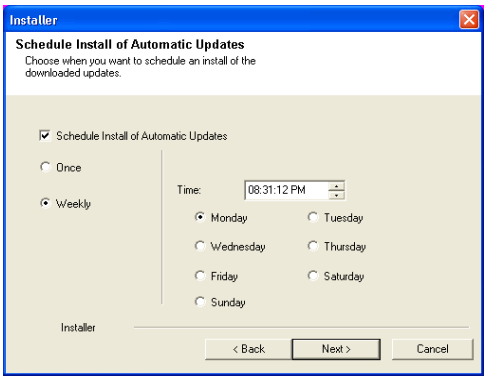
14. Select a Client Group from the list.

    Click **Next**.

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

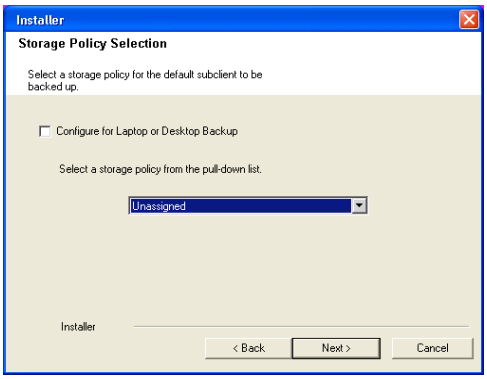


15. Click **Next**.



16. Select a **Storage Policy**.

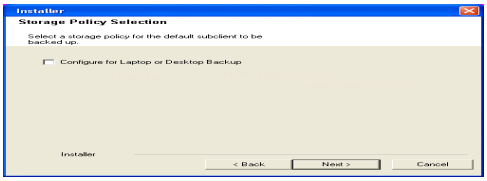
    Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

You can create the Storage Policy later in step 31.

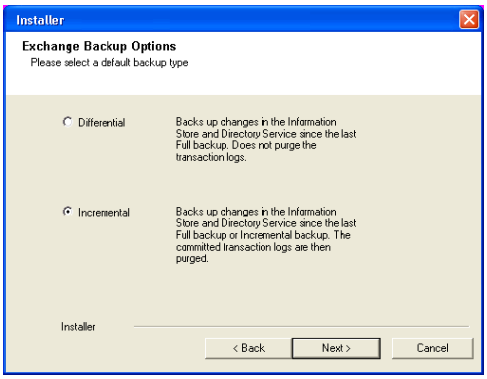


- If you are installing the Exchange Database *i*DataAgent on the Exchange Server, click Configure Exchange Database Specific Information.

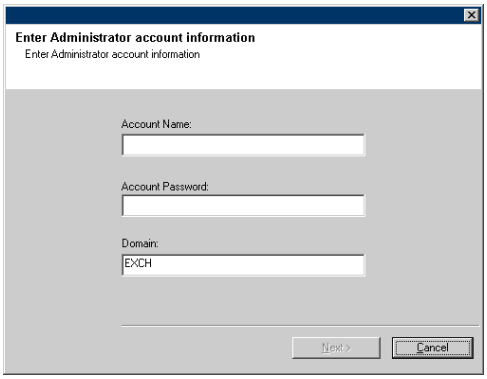
- If you are installing the Exchange Agents on the Non-Exchange Server, skip to Configure Exchange Agents Specific Information.

CONFIGURE EXCHANGE DATABASE SPECIFIC INFORMATION

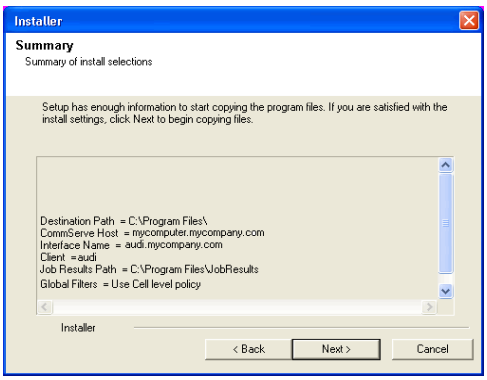
17. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



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

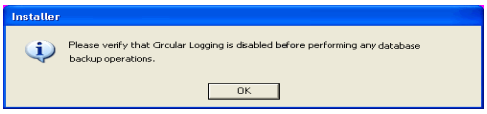


19. Click **Next**.



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

    Click **OK**.



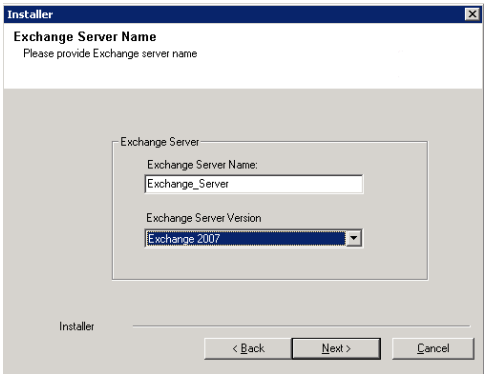
- If you are installing the Exchange Agents, then click Configure Exchange Agents Specific Information.
- If you are installing the Exchange Database *i*DataAgent, skip to Install Remaining Cluster Nodes.

CONFIGURE EXCHANGE AGENTS SPECIFIC INFORMATION

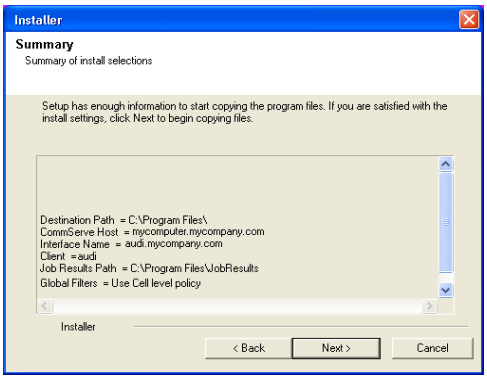
21. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.

Click **Next**.

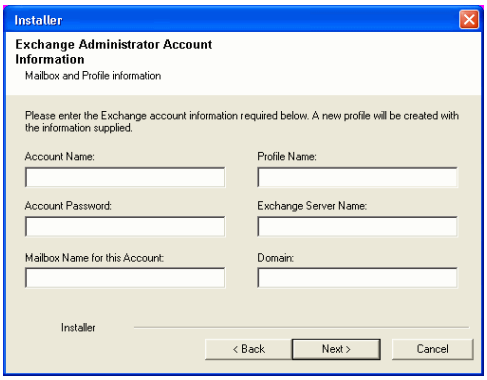
This screen will appear when you are installing Exchange Agents on Non-Exchange Server.



22. Click **Next**.



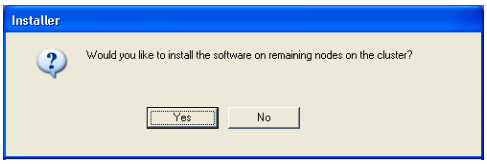
23. Enter the following Exchange Administrator information then click **Next**.
- **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
- **Account Password** - The password assigned to the domain user.
- **Mailbox Name for this Account** - Mailbox associated with the user above.
- **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.
- **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.
- **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.



INSTALL REMAINING CLUSTER NODES

24. To install the software on the remaining nodes of the cluster, click **Yes**.

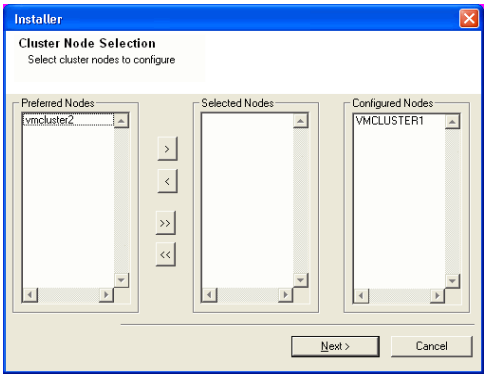
To complete the install for this node only, click **No**.



25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

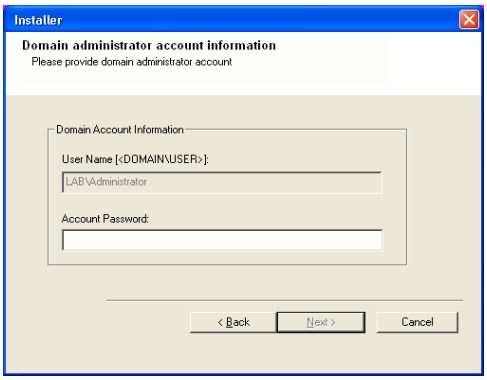
Once you complete your selections, click **Next**.

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



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

Click **Next**.



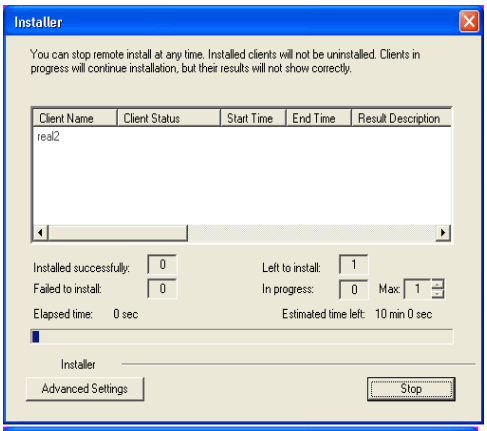
27. The progress of the remote install for the cluster nodes is displayed; the install can be interrupted if necessary.

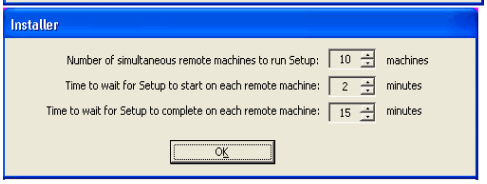
Click **Stop** to prevent installation to any nodes after the current ones complete.

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

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

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

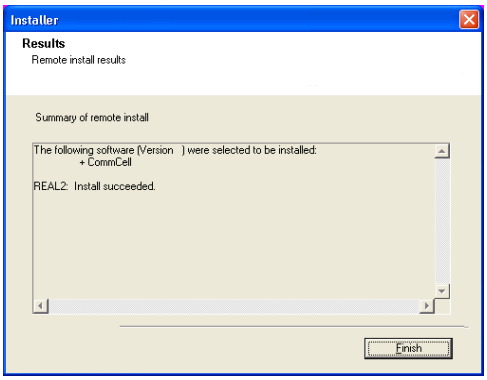




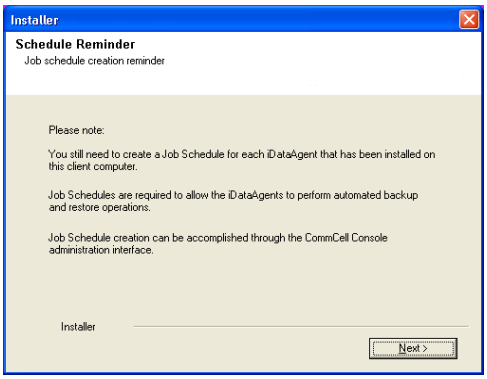
28. Read the summary for remote installation to verify that all selected nodes were installed successfully.

Click **Next**.

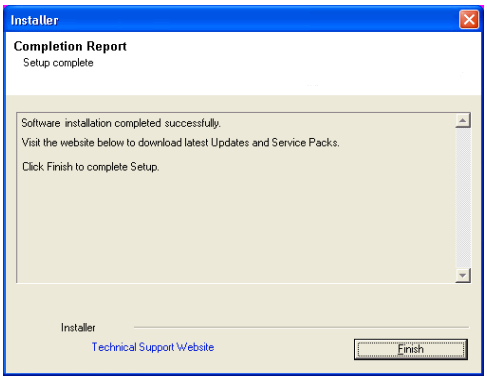
- If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
- The message displayed on your screen will reflect the status of the selected nodes,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



29. Click **Next**.



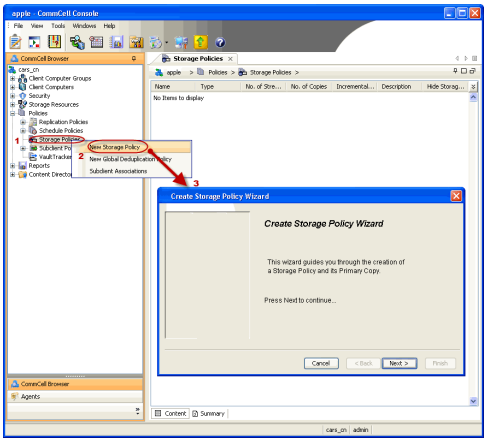
30. Click **Finish**.



CHOICE If you already have a storage policy selected in step 16, Click Next button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

31. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

     Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
   - Review the details and click **Finish** to create the Storage Policy.

32. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

Previous Next

Install the 32-bit Exchange Agents for Exchange Server 2010 or 2007

Previous Next

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

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

WHERE TO INSTALL

The Exchange Agents can be installed in one of two ways:

- Directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.
- On a separate computer with connectivity to the Exchange Server. This method is referred to as an Non-Exchange Server installation and is useful if you want to offload the memory and processing resources required for backups and restores from the Exchange Server.

  Install the Exchange Agents on all the nodes on which backups have to be run in a DAG configuration.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

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

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on a client computer.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

If you are installing the Exchange Agents on a 64-bit off-host proxy computer, perform the following pre-requisite task before installing these agents:

- Ensure that the proxy computer has been added to the same Domain in which the Exchange Server 2007 resides.
- Install Microsoft Outlook 2007 or higher on the off-host proxy computer in order to supply the software drivers necessary for Exchange-based agents to function in an off-host proxy configuration.

The below mentioned prerequisites are for Mailbox Agents only. Ensure that you have the following:

FOR EXCHANGE SERVER 2010

- Ensure that the service account is a member of Organization Management group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

To assign full access follow the steps given below:

- Using ADSIEDIT navigate to Configuration | Services | Microsoft Exchange.
- Right-click your organization name, click Properties | Securities and click the Advanced tab.
- Click Edit to modify the permissions set for Organization Management group.
- Click to select Full Control, Receive As and Send As permissions and wait for replication.
- Click the Effective Permission tab and Select the name of the backup account.
- The backup account should display the following as selected:

  Full Control

  All Extended Rights

  Send As

  Receive As

- Start the PowerShell and type the following to add the backup account so it has full control over all the databases:

Get-MailboxDatabase -server (server name) | Add-ADPermission -user "backup account" -ExtendedRights Receive-As

Run the above PowerShell every time a new database is added.

- Navigate to the Exchange Management Console, right-click the <mailbox> and click Manage Full Access Permissions to view the mailbox listed under Full Access Permissions.

FOR EXCHANGE SERVER 2007

- Service account should be a member of Exchange Organization Administrators group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

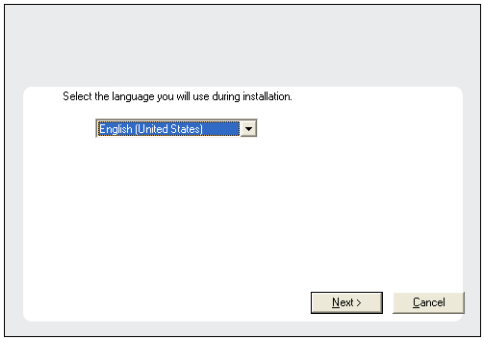
METHOD 1: INTERACTIVE INSTALL

INSTALL THE EXCHANGE DATABASE *i*DATAAGENT

The Exchange Database *i*DataAgent must be installed first. Follow the steps described below to install Exchange Database *i*DataAgent.

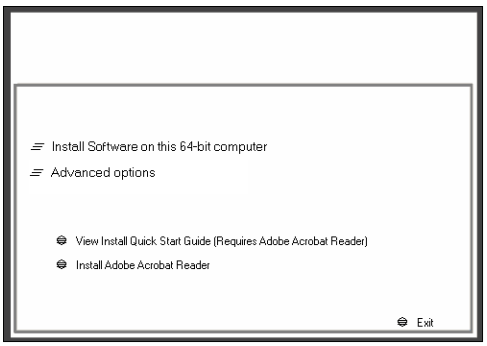
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from **Software Installation Package**.
3. Select the required language.

   Click **Next**.



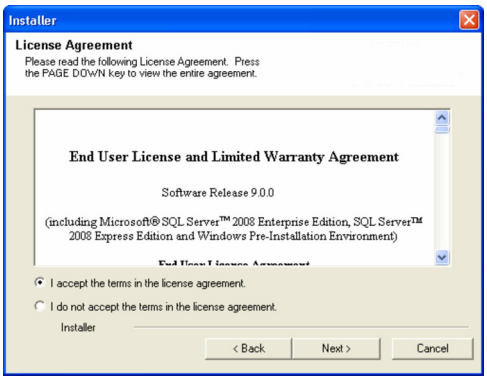
4. Select the option to **Install Calypso on this 64-bit computer**.

   Your screen may look different from the example shown.

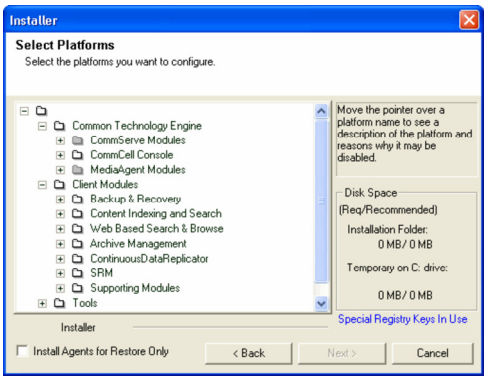


5. Select **I accept the terms in the license agreement**.

   Click **Next**.



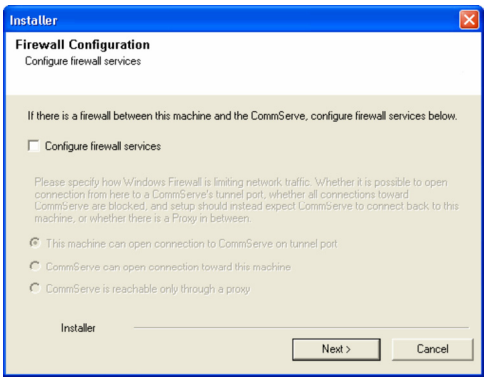
6. Expand **Client Modules | Backup & Recovery | Exchange | File System** and select **Exchange Database *i*DataAgent**.



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

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

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

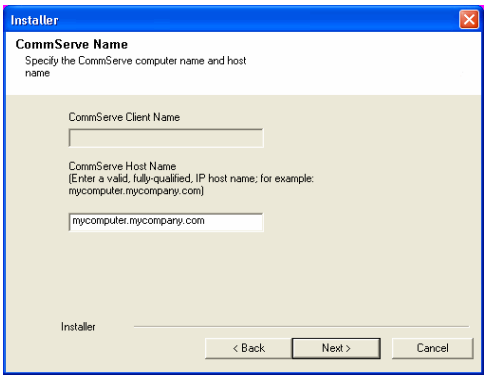


8. Enter the fully qualified domain name of the **CommServe Host Name**.

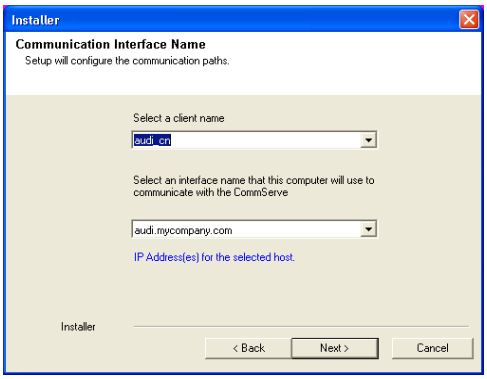
   Click **Next**.

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

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



9. Click **Next**.

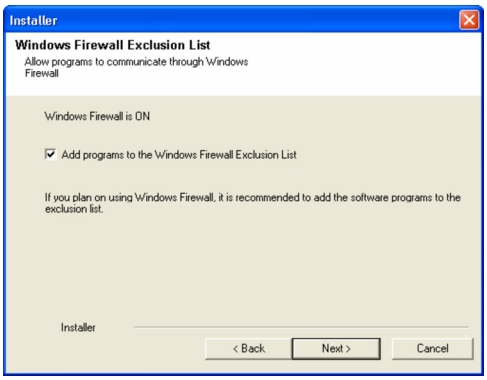


10. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

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



11. Verify the default location for software installation.

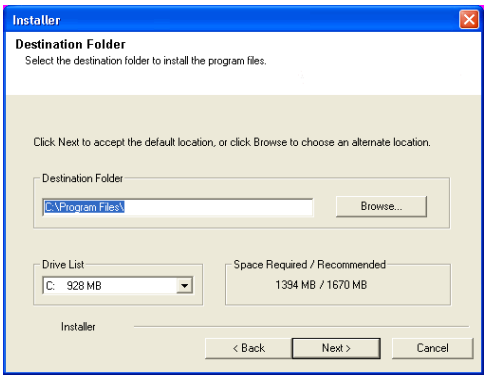
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

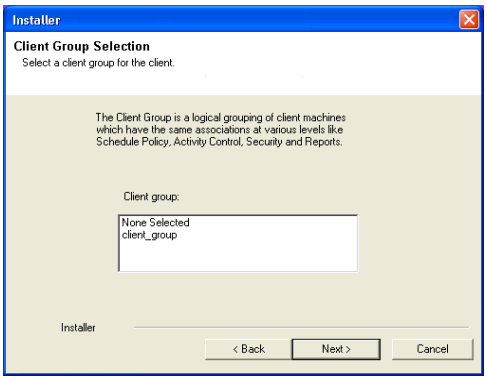
      It is recommended that you use alphanumeric characters only.



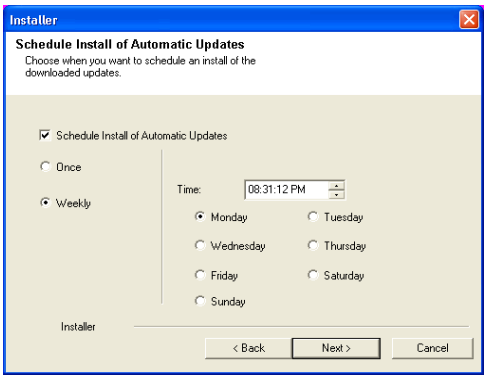
12. Select a Client Group from the list.

    Click **Next**.

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

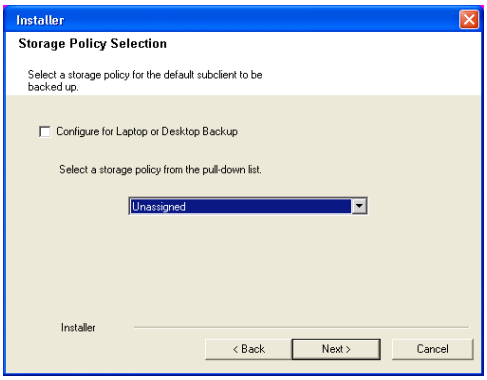


13. Click **Next**.



14. Select a **Storage Policy**.

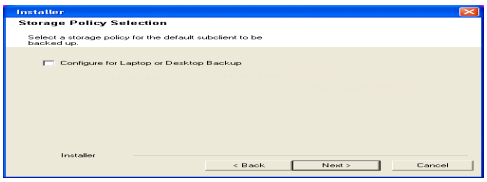
    Click **Next**.



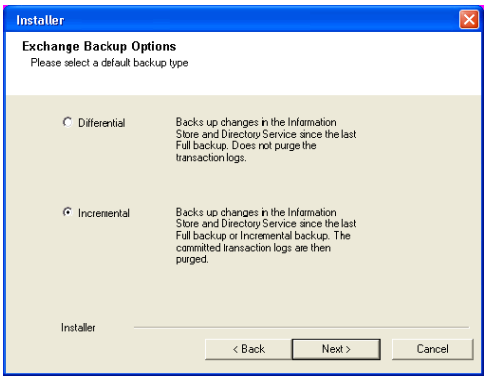
If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

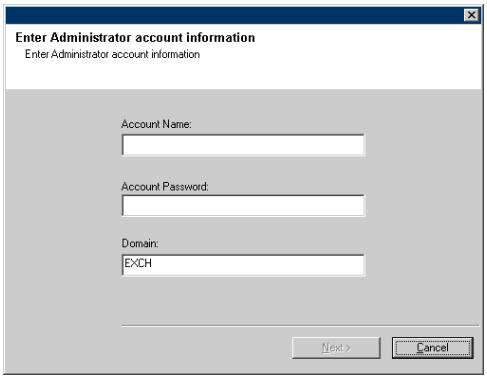
You can create the Storage Policy later in step 21.



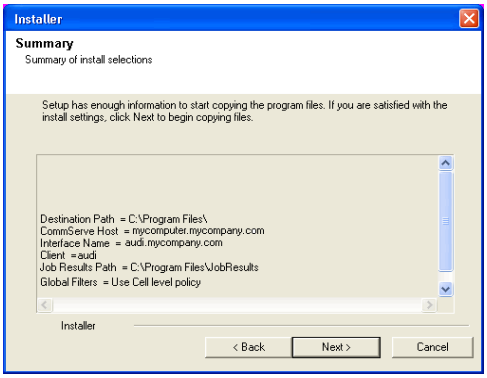
15. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



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



17. Click **Next**.

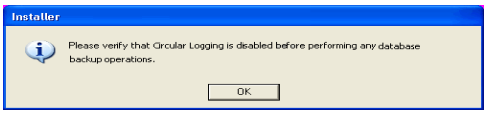


18. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is

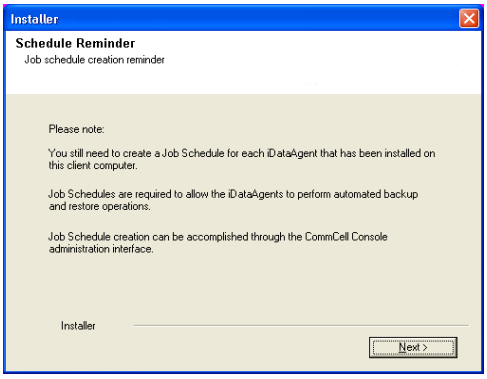
disabled:

- From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
- Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

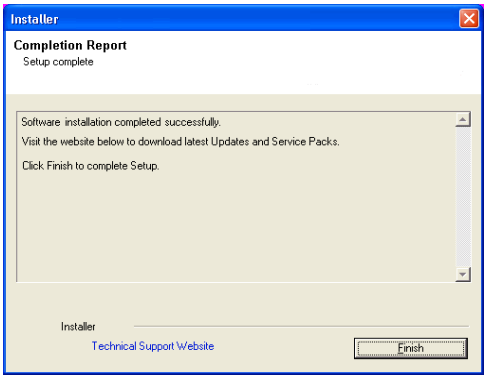
Click **OK**.



19. Click **Next**.



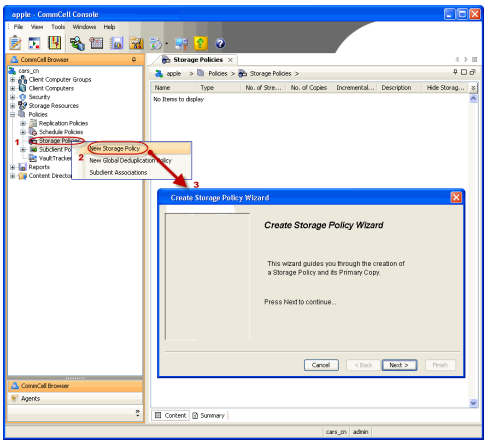
20. Click **Finish**.



CHOICE If you already have a storage policy selected in step 14, Click Next ➤ button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

21. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

     Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
   - Review the details and click **Finish** to create the Storage Policy.

- If you want to install Exchange Agents (such as Exchange Mailbox *i*DataAgent, Exchange Public Folder *i*DataAgent, Exchange Mailbox Archiver

and/or Exchange Public Folder Archiver), click Create the Registry Keys.

- If you are installing the Exchange Database *i*DataAgent, click Next ➤ button available at the bottom of the page to proceed to the **Configuration** section.

CREATE THE REGISTRY KEYS

Create the `bAllowMultiInstances` and `bAllow32BitInstallOn64Bit` registry keys.

22. Create the bAllowMultiInstances registry key.

To create the registry key, see the following steps:

1. Start the Registry Editor (Regedit.exe or Redegt32.exe)
2. Locate the directory under which you want to create a key, e.g., `HKEY_LOCAL_MACHINE\SOFTWARE\`.
3. Right click the `SOFTWARE` and click **New -> Key**.
4. Name the key as `GalaxyInstallerFlags`.
5. Right click the `GalaxyInstallerFlags` and select **New -> DWORD** value, name it as `bAllowMultiInstances` and by double clicking the `bAllowMultiInstances` key modify the **Value data** to 1.

23. Create the bAllow32BitInstallOn64Bit registry key.

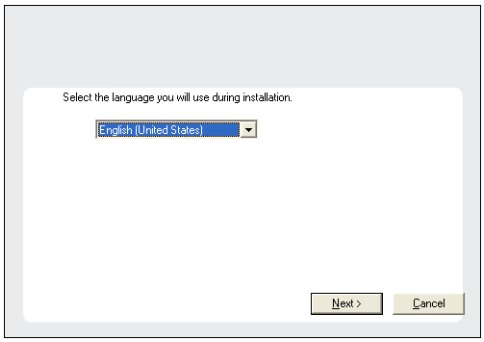
To create the registry key, see the following steps:

1. Start the Registry Editor (Regedit.exe or Regedit32.exe)
2. Locate the directory under which you want to create a key, e.g., `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node`.
3. Right click the `SOFTWARE` and click **New -> Key**.
4. Name the key as `GalaxyInstallerFlags`.
5. Right click the `GalaxyInstallerFlags` and select **New -> DWORD** value, name it as `bAllow32BitInstallOn64Bit` and by double clicking the `bAllow32BitInstallOn64Bit` key modify the **Value data** to 1.

24. Run **Setup.exe** from Software Installation Package.

25. Select the required language.

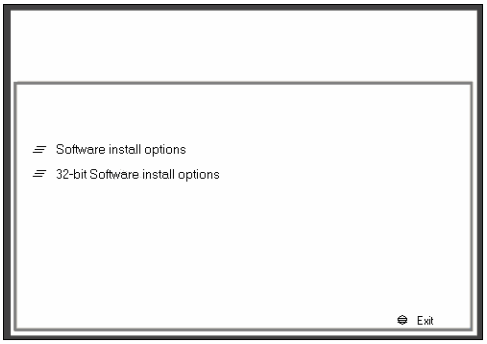
Click **Next**.



26. Select the **Calypso 32-bit Software install options** to install software.

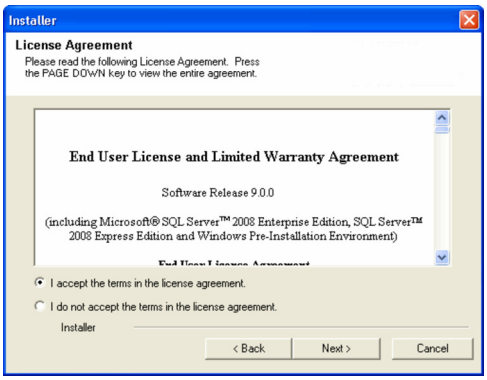
NOTES

- This screen will only appear when the `bAllow32BitInstallOn64Bit` registry key has been created and enabled on this computer.

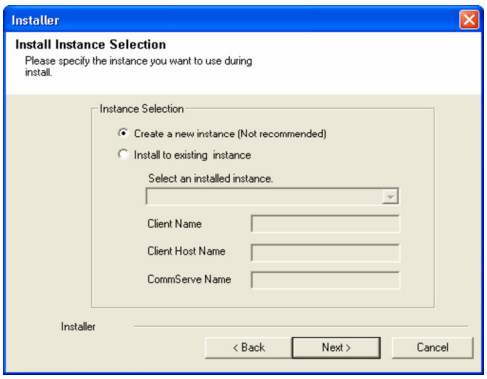


27. Select **I accept the terms in the license agreement**.

Click **Next**.



28. Select **Create a new instance** option to install the Exchange Agents on separate instance.



NOTES

- This screen will appear when the bAllowMultiInstances registry key has enabled on this computer.
- This screen will not appear if no other software components are installed on the computer.

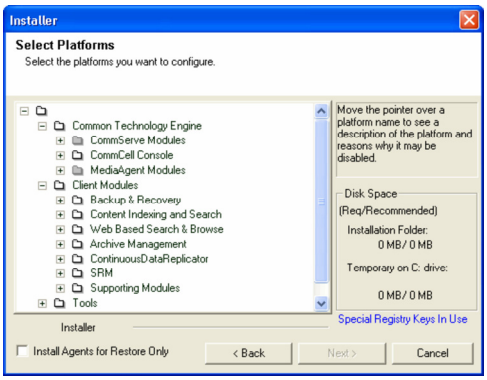
29. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:

- **Exchange Mailbox *i*DataAgent**
- **Exchange Public Folder *i*DataAgent**

To install the **Exchange Archiver Agents**, expand **Client Modules | Archive Management**, and select one or more of the following:

- **Exchange Compliance Archiver**
- **Exchange Mailbox Archiver Agent**
- **Exchange Public Folder Archiver Agent**

Click **Next**.

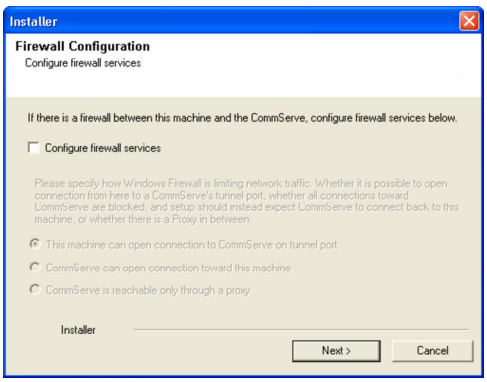


Note that the Exchange Database *i*DataAgents must be installed on the Exchange Server, see Install the Exchange Database *i*DataAgent for step-by-step procedure.

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

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

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

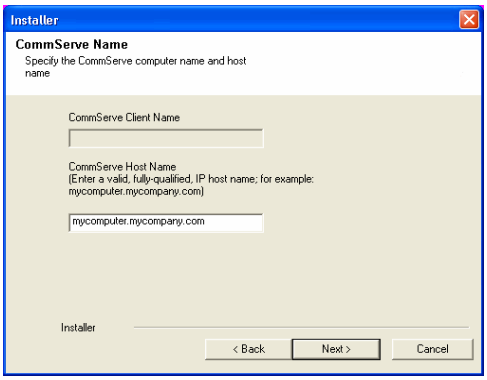


31. Enter the fully qualified domain name of the **CommServe Host Name**.

Click **Next**.

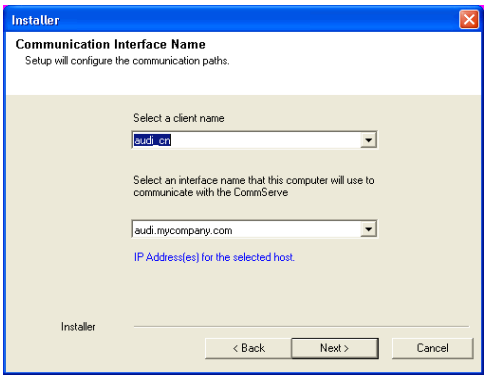
Do not use space and the following characters when specifying a new name for the CommServe Host Name:

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



32. Click **Next**.

If there is any other instance installed on the computer, make sure that the host name does not match the client name entered in the **Select a client name** field in the previous instance.

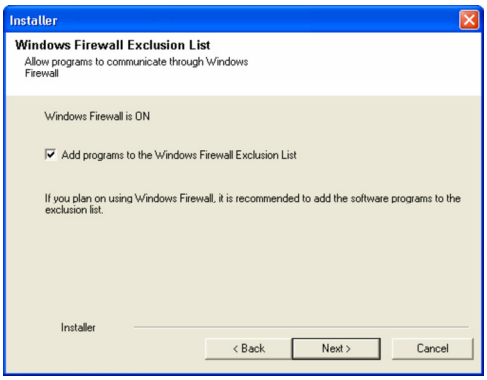


33. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click **Next**.

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

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



34 Verify the default location for software installation.

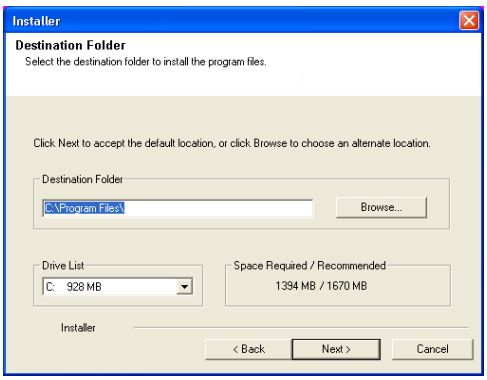
Click **Browse** to change the default location.

Click **Next**.

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

  / : * ? " < > | #

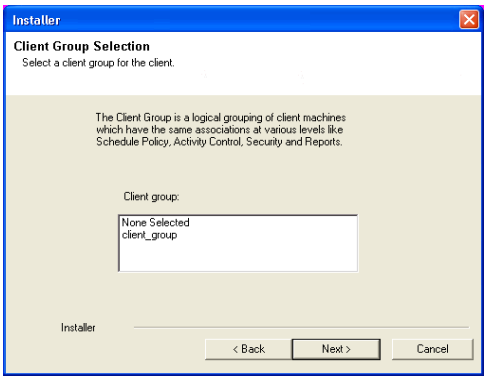
  It is recommended that you use alphanumeric characters only.



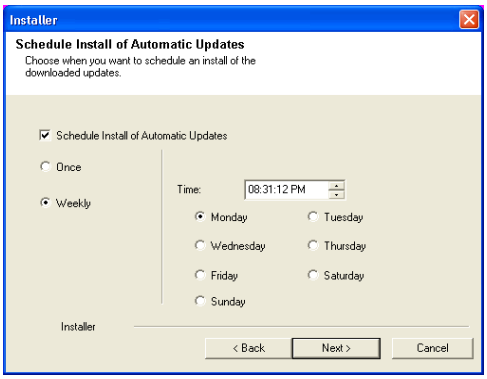
35. Select a Client Group from the list.

Click **Next**.

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

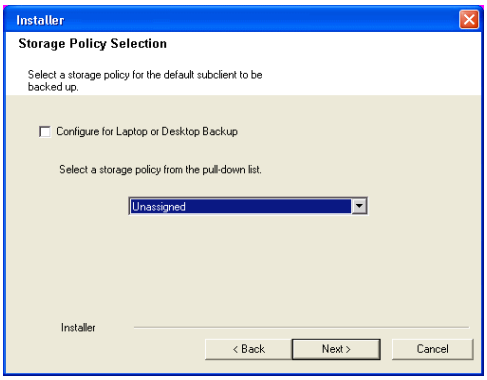


36. Click **Next**.



37. Select a **Storage Policy**.

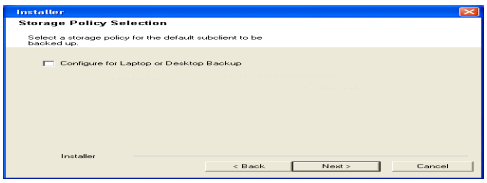
Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

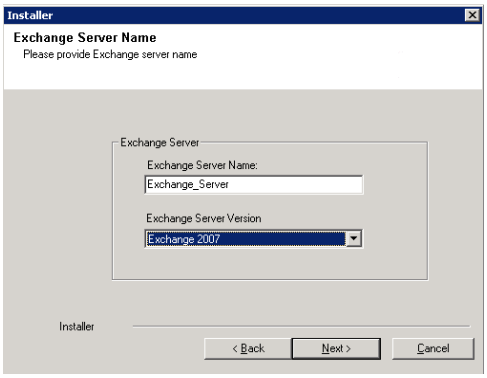
You can create the Storage Policy later in step 43.



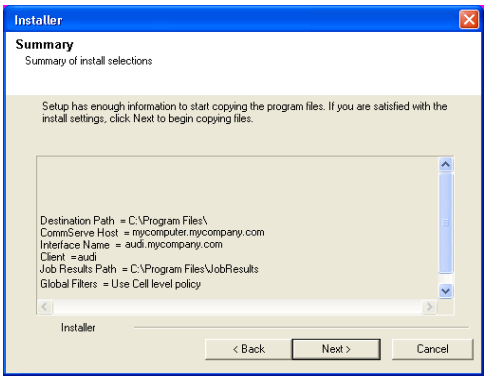
38. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.

Click **Next**.

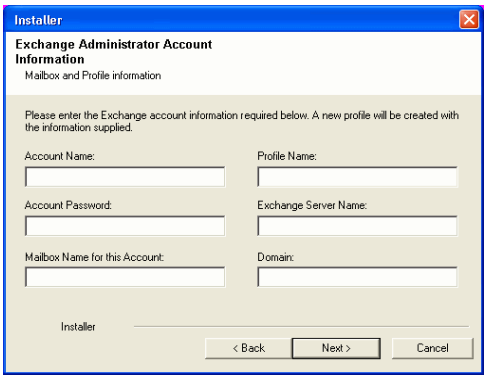
This screen will appear when you are installing Exchange Agents on Non-Exchange Server.



39. Click **Next**.



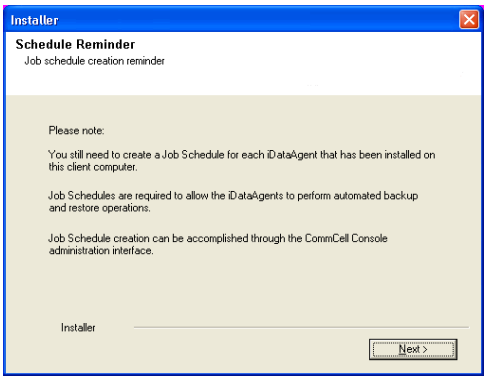
40. Enter the following Exchange Administrator information then click **Next**.



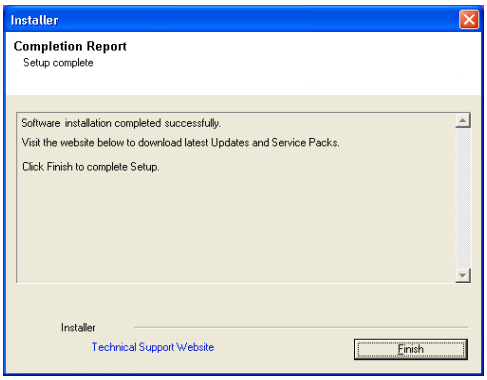
- **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
- **Account Password** - The password assigned to the domain user.
- **Mailbox Name for this Account** - Mailbox associated with the user above.
- **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.
- **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.

  Enter the Mailbox Role Server name (NetBIOS). After installation configure the roles as described in Configure Mailboxes in Database Availability Group (DAG) Servers.
- **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.

41. Click **Next**.



42. Click **Finish**.



If you already have a storage policy selected in step 37, Click Next ➤ button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

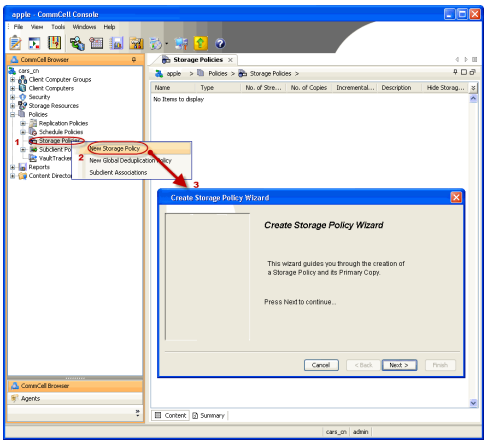
43. Create a Storage Policy:
    1. From the CommCell Browser, navigate to **Policies**.
    2. Right-click the **Storage Policies** and then click **New Storage Policy**.
    3. Follow the prompts displayed in the Storage Policy Wizard. The required options

are mentioned below:

- Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
- Enter the name in the **Storage Policy Name** box and click **Next**.
- From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

  Ensure that you select a library attached to a MediaAgent operating in the current release.
- From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
- For the device streams and the retention criteria information, click **Next** to accept default values.
- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

  Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
- Review the details and click **Finish** to create the Storage Policy.



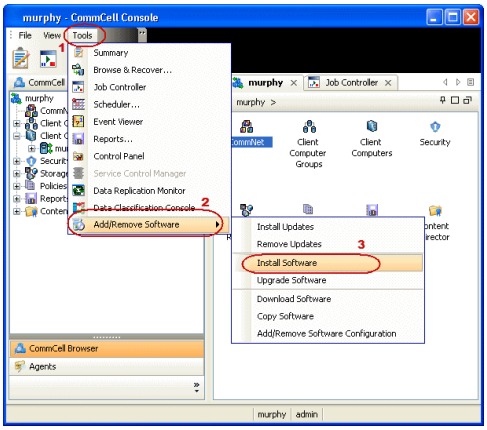
44. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

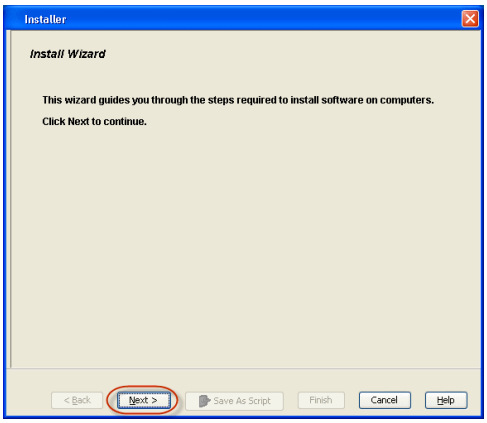
  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select **Tools**, point to **Add/Remove Software**, and then click **Install Software.**

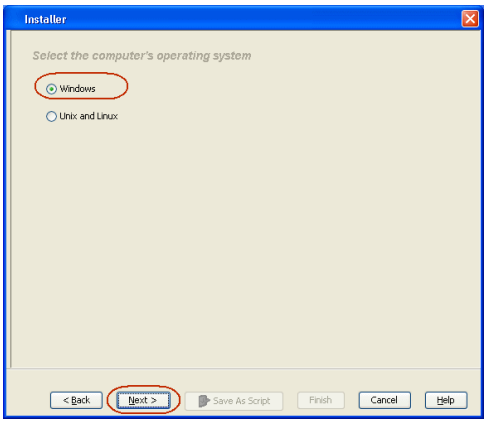


2. Click **Next**.



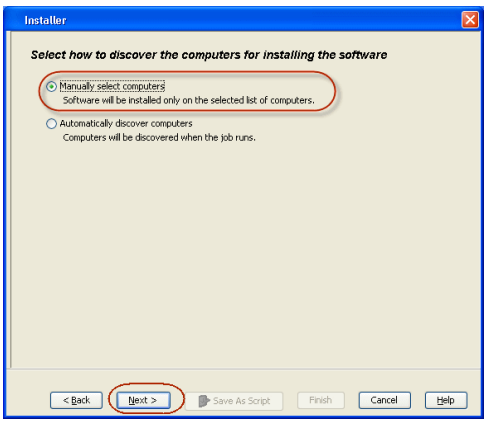
3. Select **Windows**.

   Click **Next**.



4. Select **Manually Select Computers**.

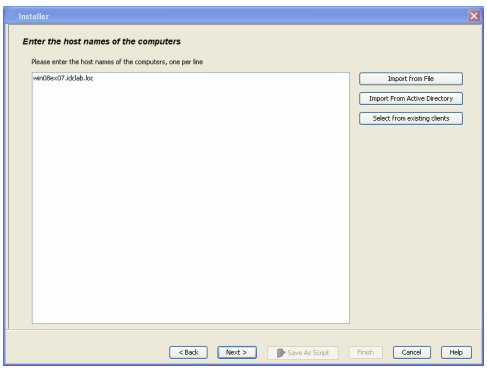
   Click **Next**.



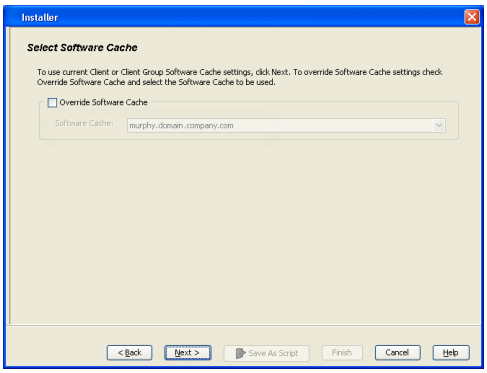
5. Enter the fully qualified domain name of the computer on which you have Exchange Server.

   For example: `win08ex07.idclab.loc`

   Click **Next**.

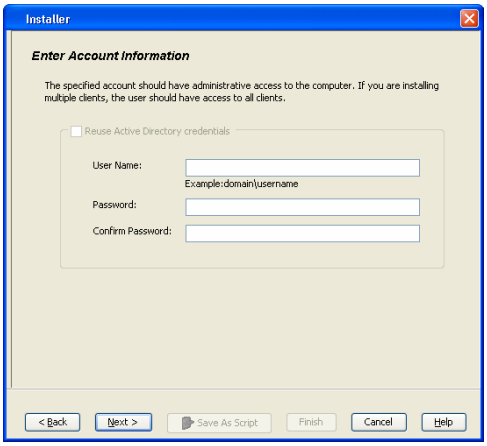


6. Click **Next**.



7. Specify **User Name** and **Password** that must be used to access the computer.

   Click **Next**.

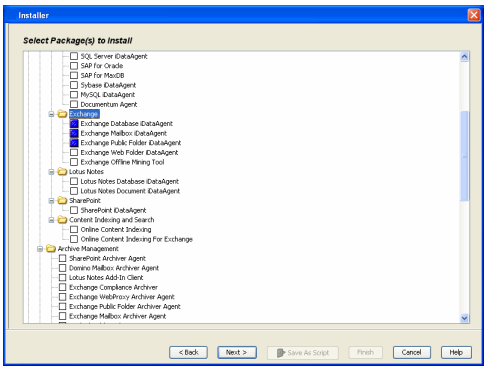


8. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:

   - **Exchange Database *i*DataAgent**
   - **Exchange Mailbox *i*DataAgent**
   - **Exchange Public Folder *i*DataAgent**

   Click **Next**.

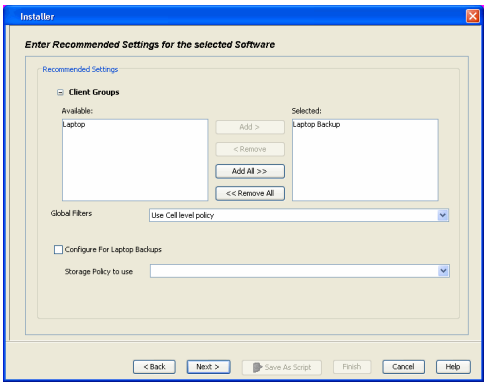
   For Non-Exchange Server, Exchange Database *i*DataAgent will not be applicable.



9. - Select **Client Group** from **Available** and click **Add**.
   - Select a **Storage Policy** from the drop-down list. Click **Next**.

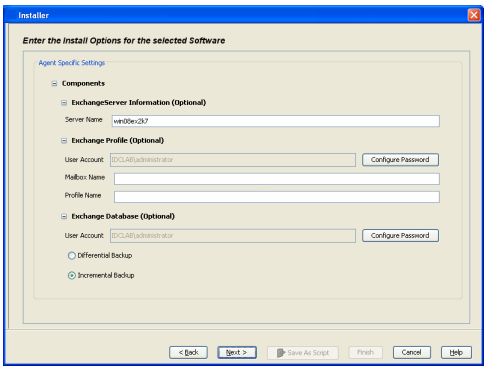
   NOTES:

   - Select the **Configure for Laptop or Desktop Backup** option to install **Backup Monitor** utility. This utility allows you to view the backup job summary from the client computer without opening the CommCell Console. See Monitor - Laptop User for more information.

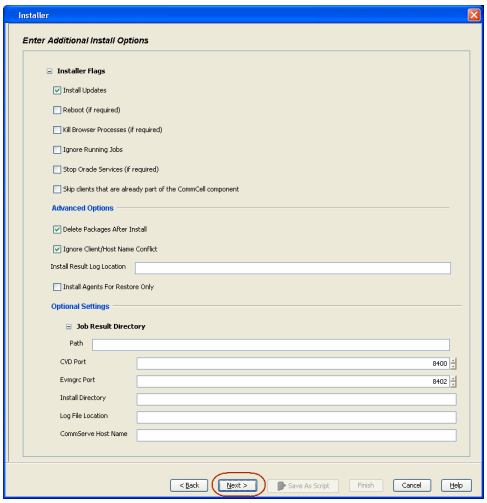


10. Type the Agent Specific Settings information.

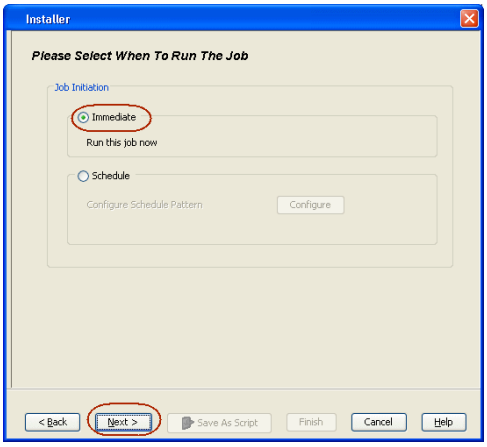
    Click **Next**.



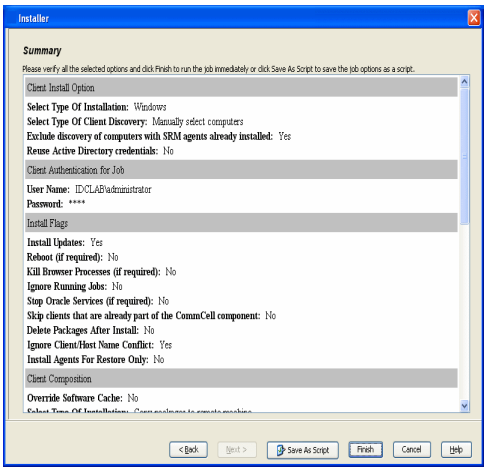
11. Click **Next**.



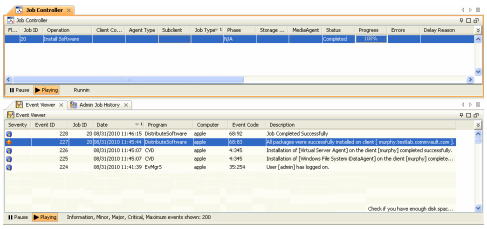
12. Select **Immediate**.
    Click **Next**.



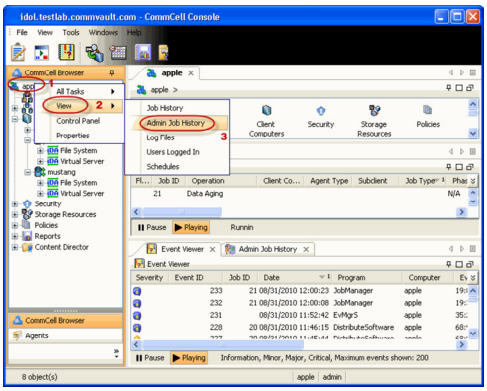
13. Click **Finish**.



14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

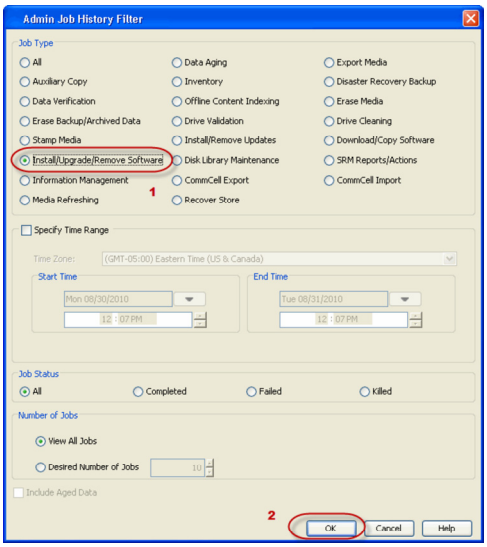


15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.



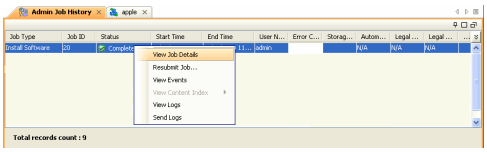
16. Select **Install/Upgrade/Remove Software**.

    Click **OK**.



17. You can view the following details about the job by right-clicking the job:
    - Items that succeeded during the job
    - Items that failed during the job
    - Details of the job

- Events of the job
- Log files of the job



18. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

Previous Next

Install the 32-bit Exchange Agents on Exchange Server 2007/2010 or 64-bit Non-Exchange Server - Clustered Environment

Previous Next

The Exchange Agents are designed to protect an entire Exchange Server database. Follow the steps given below to install the 64-bit Exchange Agents on Exchange Server 2007/2010 or on Non-Exchange Server.

WHERE TO INSTALL

The Exchange Agents can be installed in one of two ways:

- Directly onto the Exchange Server. This method is referred to as an on-host installation and is useful if you want to preserve hardware resources.
- On a separate computer with connectivity to the Exchange Server. This method is referred to as an Non-Exchange Server installation and is useful if you want to offload the memory and processing resources required for backups and restores from the Exchange Server.

Make sure the computer satisfies the minimum requirements specified in the System Requirements.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

The below mentioned prerequisites are for Mailbox Agents only. Ensure that you have the following:

FOR EXCHANGE SERVER 2010

- Ensure that the service account is a member of Organization Management group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

To assign full access follow the steps given below:

- Using ADSIEDIT navigate to Configuration | Services | Microsoft Exchange.
- Right-click your organization name, click Properties | Securities and click the Advanced tab.
- Click Edit to modify the permissions set for Organization Management group.
- Click to select Full Control, Receive As and Send As permissions and wait for replication.
- Click the Effective Permission tab and Select the name of the backup account.
- The backup account should display the following as selected:

  Full Control

  All Extended Rights

  Send As

  Receive As

- Start the PowerShell and type the following to add the backup account so it has full control over all the databases:

```
Get-MailboxDatabase -server (server name) | Add-ADPermission -user "backup account" -ExtendedRights Receive-As
```

Run the above PowerShell every time a new database is added.

- Navigate to the Exchange Management Console, right-click the <mailbox> and click Manage Full Access Permissions to view the mailbox listed under Full Access Permissions.

FOR EXCHANGE SERVER 2007

- Service account should be a member of Exchange Organization Administrators group.
- Ensure that the mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.

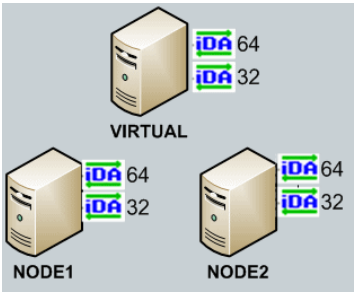
EXCHANGE AGENTS IN X64 CLUSTERS

When installing 32-bit agents on a x64 virtual server, the 32-bit File System *i*DataAgent must be installed on each physical node in the cluster prior to installing the 32-bit agents on the virtual server.

For example, to support a two-node cluster with one Exchange virtual server instance supporting both x64 and 32-bit Agents, a minimum of two installation instances (one 32-bit

and one x64) are required on the virtual server and each physical node. This configuration will result in six client objects in the CommCell console; three x64 instances and three 32-bit instances.

The sample image shown on the right illustrates the required configuration for installing 32-bit Exchange Agents in an x64 cluster.

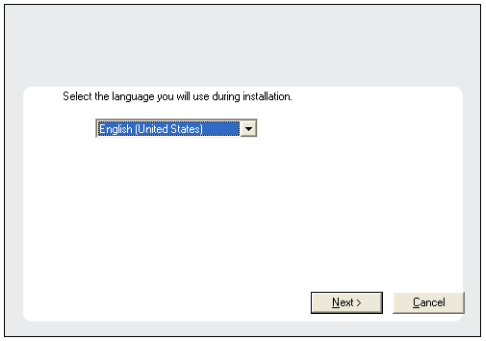


INSTALL THE EXCHANGE DATABASE *i*DATAAGENT

The Exchange Database *i*DataAgent must be installed first. Follow the steps described below to install Exchange Database *i*DataAgent.

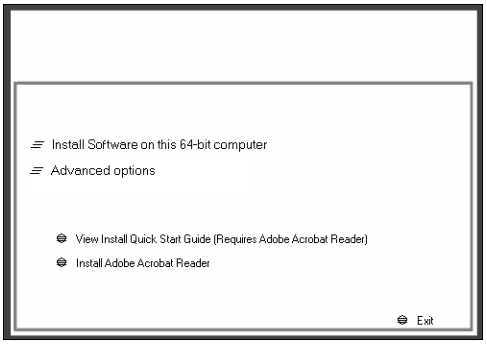
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from **Software Installation Package**.
3. Select the required language.

   Click **Next**.

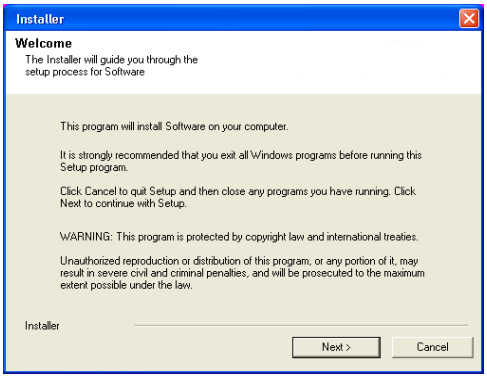


4. Select the option to **Install Calypso on this 64-bit computer**.

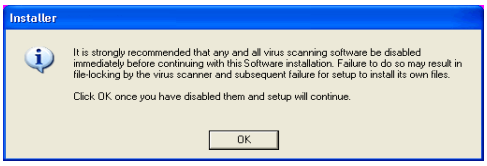
   NOTES:
   - Your screen may look different from the example shown.



5. Click **Next**.

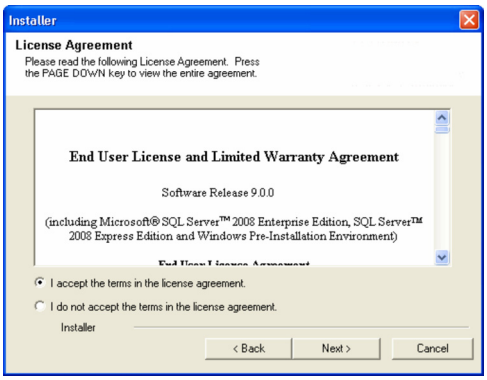


6. Click **OK**.



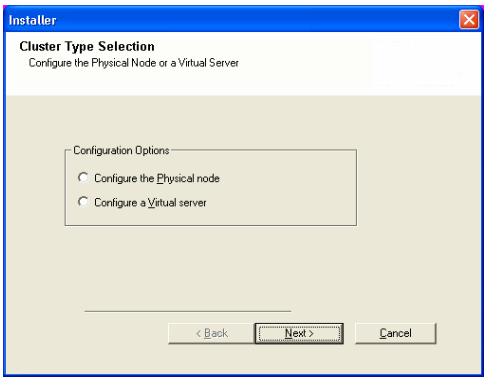
7. Select **I accept the terms in the license agreement**.

   Click **Next**.



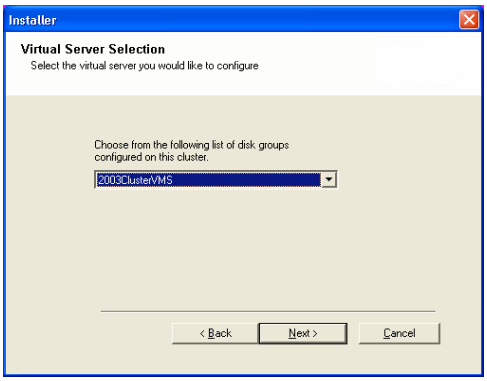
8. Select **Configure a Virtual Server**.

   Click **Next** to continue.

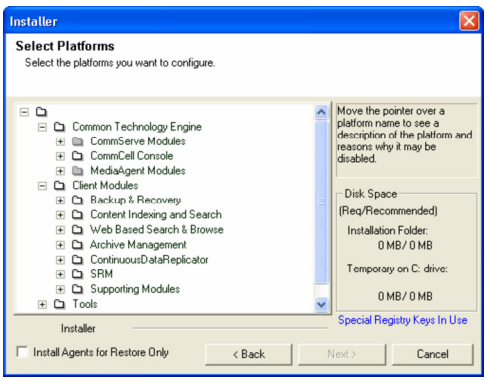


9. Select the disk group in which the cluster group resides.

   Click **Next** to continue.



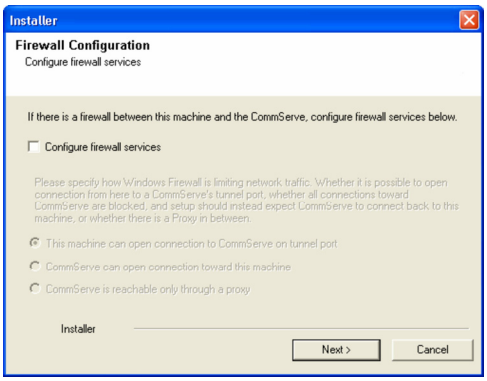
10. Expand **Client Modules** | **Exchange** | **File System** and select **Exchange Database *i*DataAgent**.



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

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

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

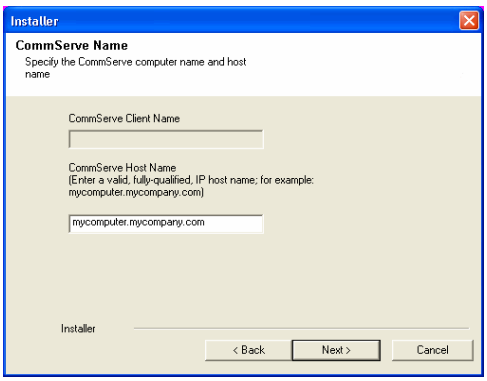


12. Enter the fully qualified domain name of the **CommServe Host Name**.

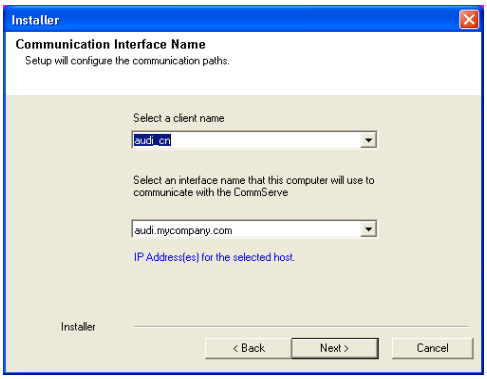
    Click **Next**.

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

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



13. Click **Next**.

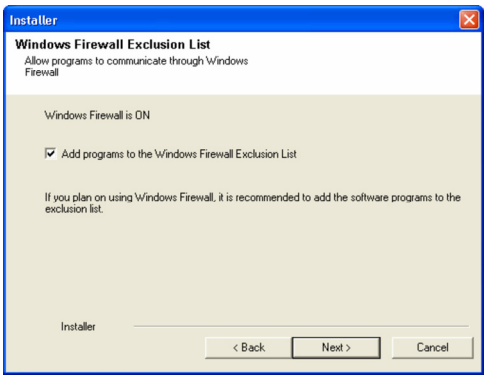


14. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

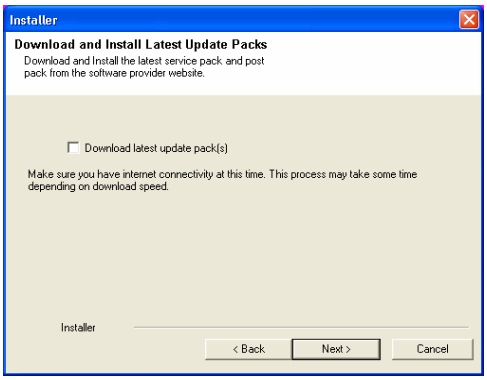
    It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.



15. Click **Next**.

    NOTES

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



16. Verify the default location for software installation.

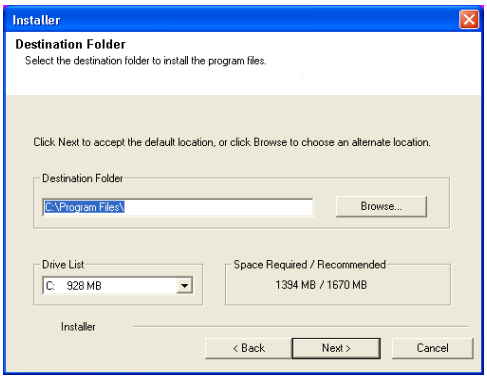
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

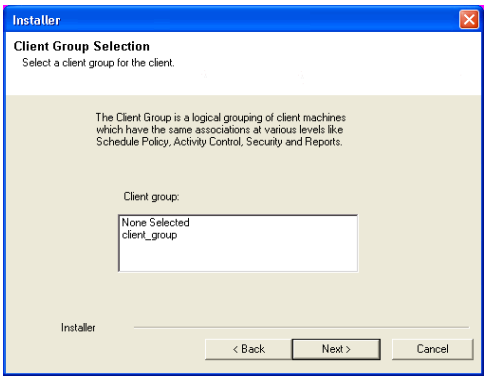
      It is recommended that you use alphanumeric characters only.



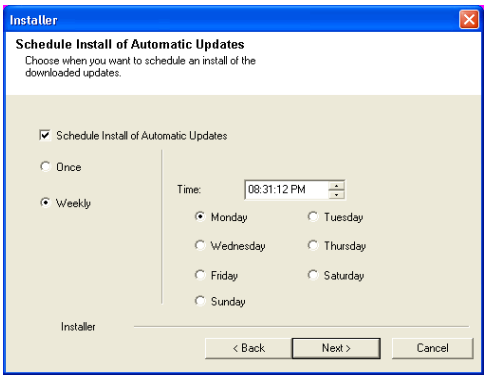
17. Select a Client Group from the list.

    Click **Next**.

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

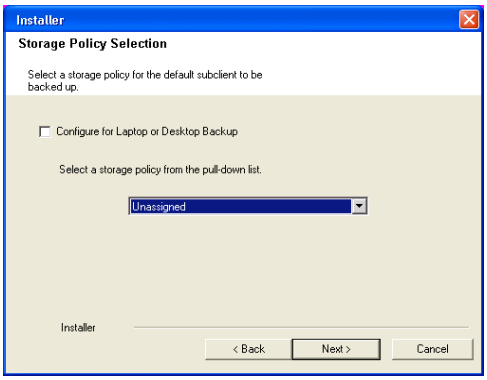


18. Click **Next**.



19. Select a **Storage Policy**.

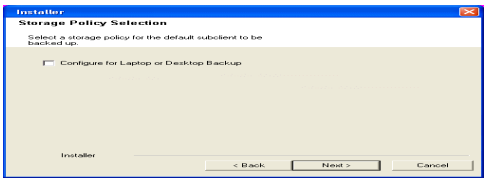
    Click **Next**.



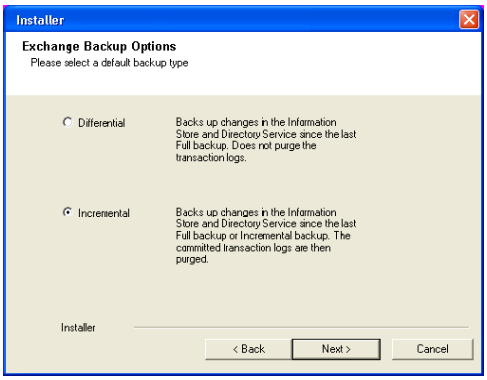
If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

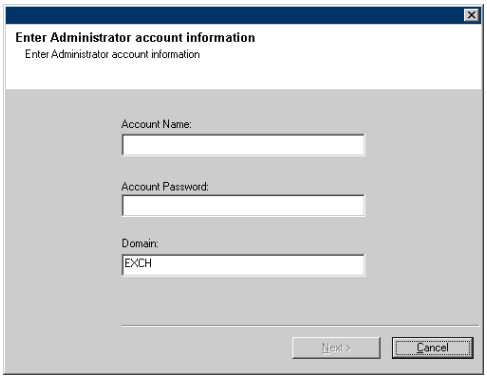
You can create the Storage Policy later in step 31.



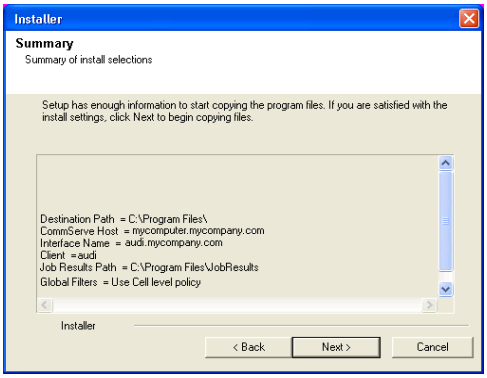
20. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



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



22. Click **Next**.

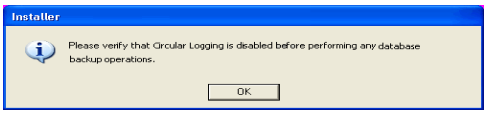


23. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is

disabled:

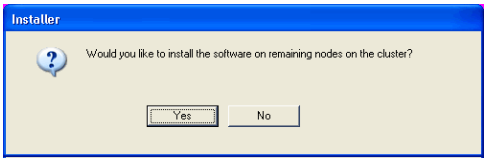
- From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
- Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Click **OK**.



24. To install the software on the remaining nodes of the cluster, click **Yes**.

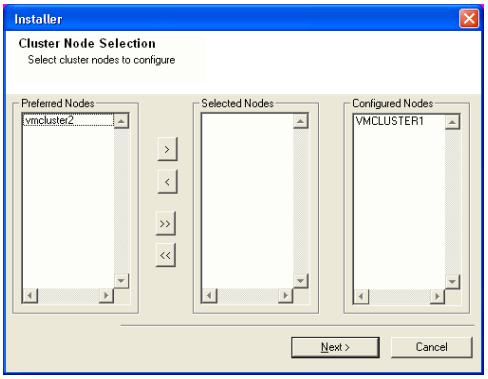
To complete the install for this node only, click **No**.



25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

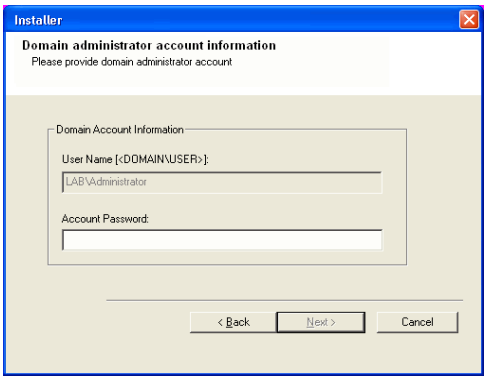
Once you complete your selections, click **Next**.

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



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

Click **Next**.



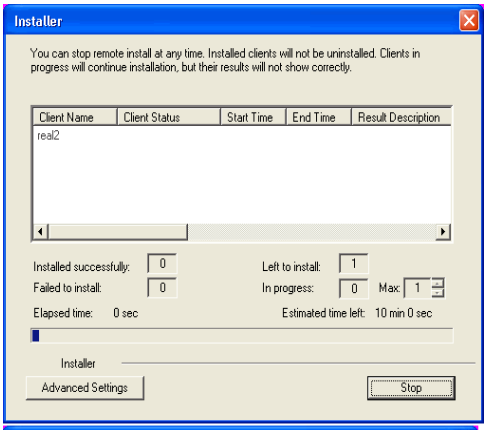
27. The progress of the remote install for the cluster nodes is displayed; the install can be interrupted if necessary.

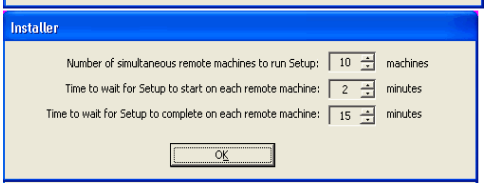
Click **Stop** to prevent installation to any nodes after the current ones complete.

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

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

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



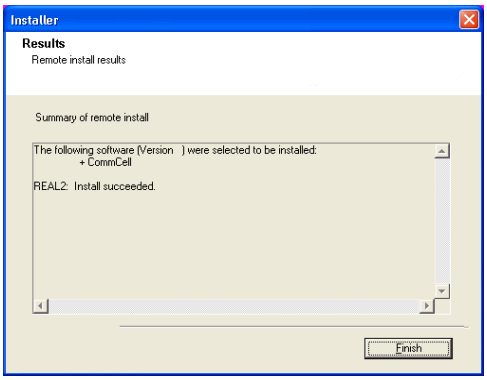


28. Read the summary for remote installation to verify that all selected nodes were

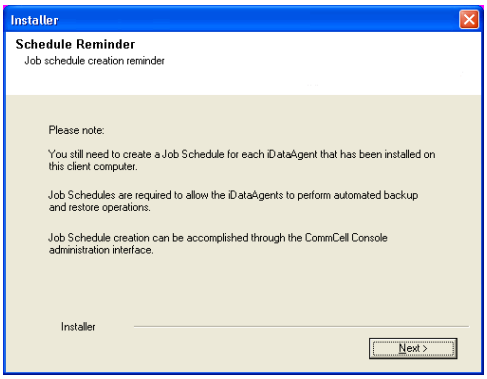
installed successfully.

Click **Next**.

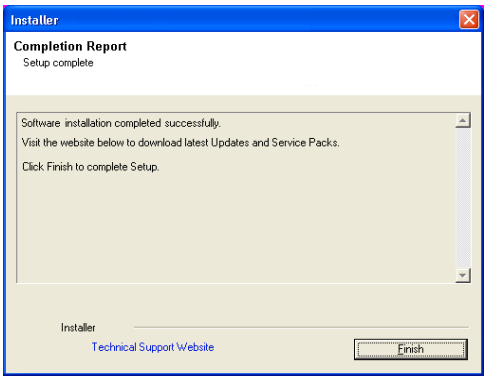
- If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
- The message displayed on your screen will reflect the status of the selected nodes,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



29. Click **Next**.



30. Click **Finish**.



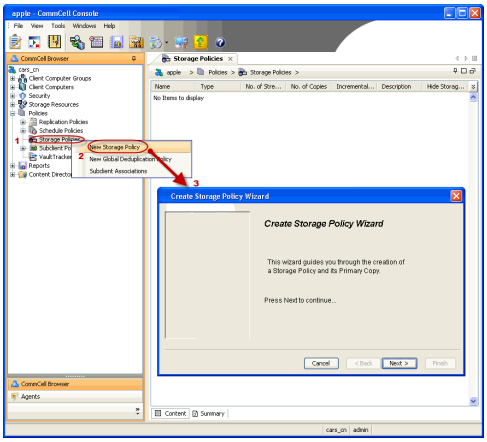
CHOICE If you already have a storage policy selected in step 19, Click Next button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

31. Create a Storage Policy:

1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.



Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

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

32. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

INSTALL THE EXCHANGE AGENTS

The Windows File System *i*DataAgent must be first installed onto all of the physical nodes of the cluster. See Install the Microsoft Windows File System *i*DataAgent if you have not installed it on all of the physical nodes.

Once it has been installed onto the physical nodes, the Exchange Agents (such as Exchange Mailbox *i*DataAgent, Exchange Public Folder *i*DataAgent, Exchange Mailbox Archiver and/or Exchange Public Folder Archiver) and Windows File System *i*DataAgent can be installed from the active node to the virtual server using the following steps described below to install Exchange Agents.

The software can also be automatically installed on all available passive nodes when the software is installed onto the virtual server, or you can choose to install any passive node(s) separately.

CREATE THE REGISTRY KEYS

Before installing the Exchange Agents, create the `bAllowMultiInstances` and `bAllow32BitInstallOn64Bit` registry keys.

1. Create the bAllowMultiInstances registry key.

   To create the registry key, see the following steps:

   1. Start the Registry Editor (Regedit.exe or Redegt32.exe)
   2. Locate the directory under which you want to create a key, e.g., `HKEY_LOCAL_MACHINE\SOFTWARE\`.
   3. Right click the `SOFTWARE` and click **New -> Key**.
   4. Name the key as `GalaxyInstallerFlags`.
   5. Right click the `GalaxyInstallerFlags` and select **New -> DWORD** value, name it as `bAllowMultiInstances` and by double clicking the `bAllowMultiInstances` key modify the **Value data** to 1.

2. Create the bAllow32BitInstallOn64Bit registry key.

   To create the registry key, see the following steps:

   1. Start the Registry Editor (Regedit.exe or Regedit32.exe)
   2. Locate the directory under which you want to create a key, e.g., `HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node`.
   3. Right click the `SOFTWARE` and click **New -> Key**.
   4. Name the key as `GalaxyInstallerFlags`.
   5. Right click the `GalaxyInstallerFlags` and select **New -> DWORD** value, name it as `bAllow32BitInstallOn64Bit` and by double clicking the `bAllow32BitInstallOn64Bit` key modify the **Value data** to 1.

INSTALL PROCEDURE

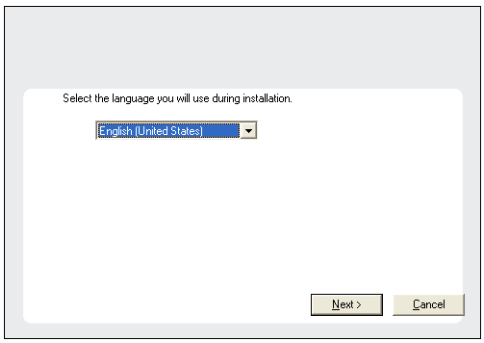
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer

- Administrator of the Exchange Server

2. Run **Setup.exe** from Software Installation Package.

3. Select the required language.

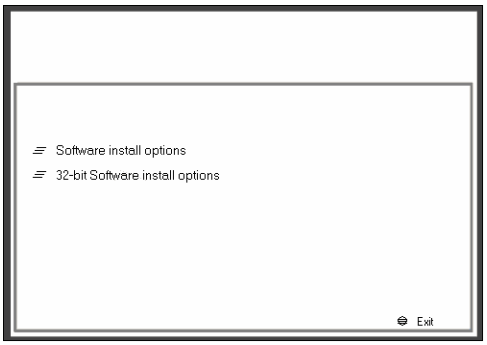
   Click **Next**.



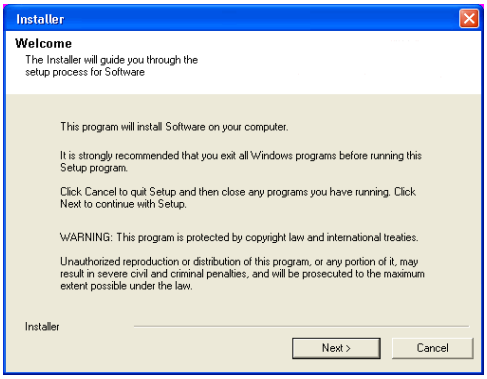
4. Select the **Calypso 32-bit Software install options** to install software.

   NOTES

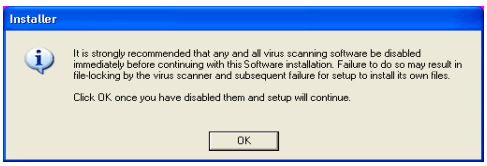
   - This screen will only appear when the `bAllow32BitInstallOn64Bit` registry key has been created and enabled on this computer.



5. Click **Next**.

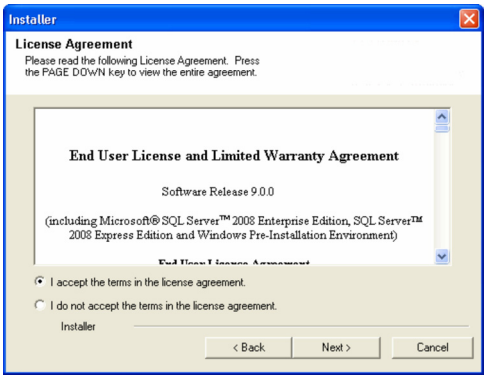


6. Click **OK**.



7. Select **I accept the terms in the license agreement**.

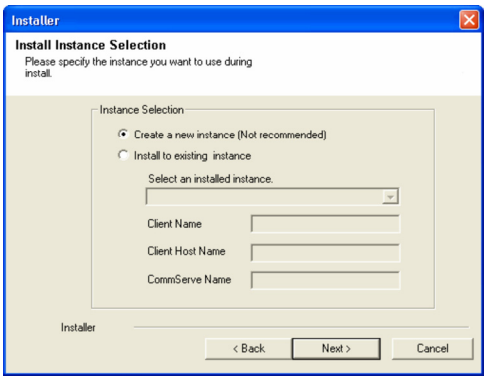
   Click **Next**.



8. Select **Create a new instance** option to install the Exchange Agents on separate instance.

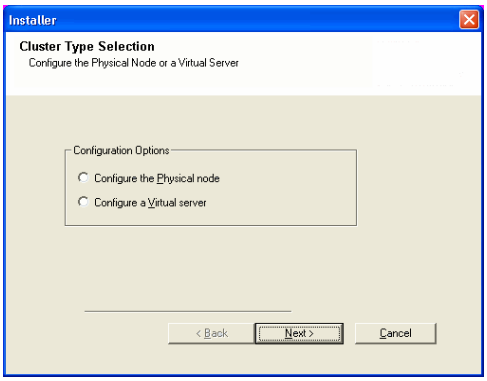
NOTES

- This screen will appear when the bAllowMultiInstances registry key has enabled on this computer.
- This screen will not appear if no other software components are installed on the computer.



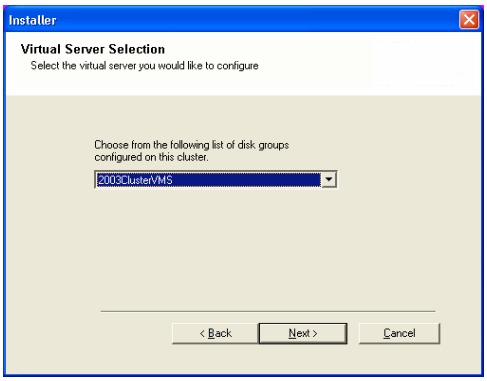
9. Select **Configure a Virtual Server**.

   Click **Next** to continue.



10. Select the disk group in which the cluster group resides.

    Click **Next** to continue.



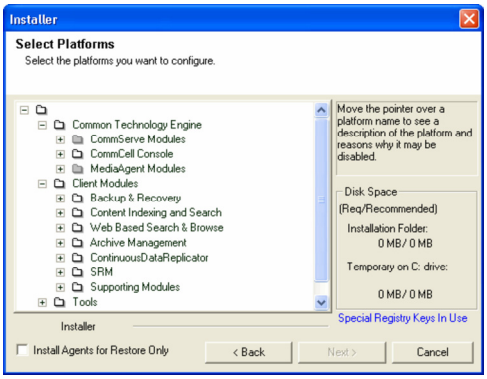
11. To install the **Exchange *i*DataAgents** expand **Client Modules | Exchange,** and select one or more of the following:

    - **Exchange Mailbox *i*DataAgent**
    - **Exchange Public Folder *i*DataAgent**

    To install the **Exchange Archiver Agents**, expand **Client Modules | Archive Management**, and select one or more of the following:

    - **Exchange Compliance Archiver**
    - **Exchange Mailbox Archiver Agent**
    - **Exchange Public Folder Archiver Agent**

    Click **Next**.

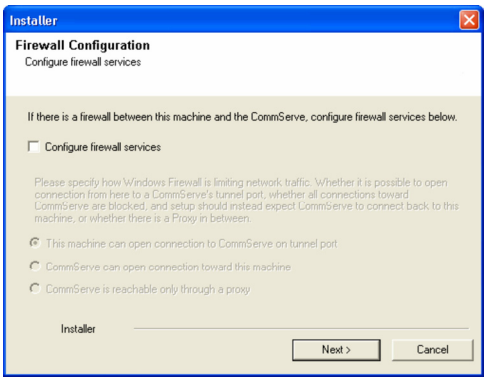


    Note that the Exchange Database *i*DataAgents must be installed on the Exchange Server, see Install the Exchange Database *i*DataAgent for step-by-step procedure.

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

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

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

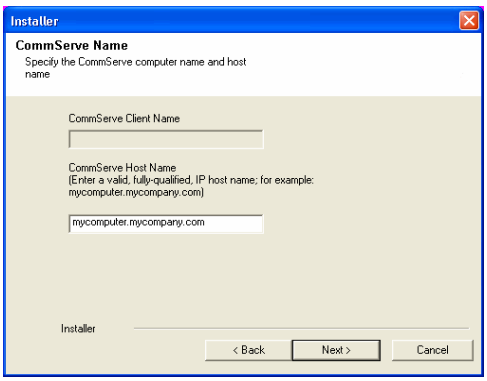


13. Enter the fully qualified domain name of the **CommServe Host Name**.

    Click **Next**.

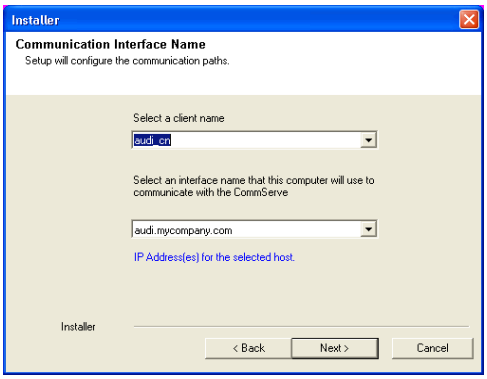
    Do not use space and the following characters when specifying a new name for the CommServe Host Name:

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



14. Click **Next**.

    If there is any other instance installed on the computer, make sure that the host name does not match the client name entered in the **Select a client name** field in the previous instance.

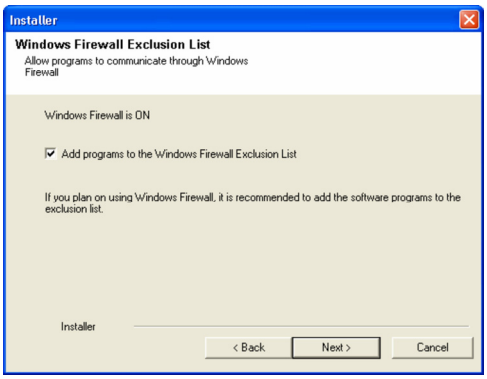


15. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

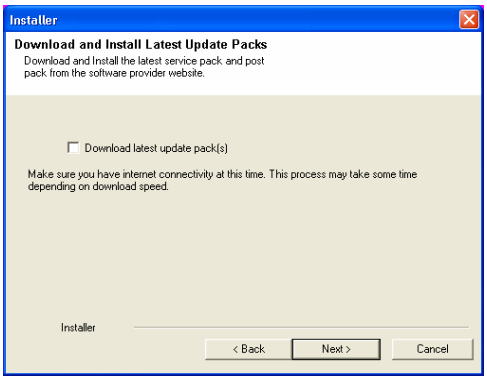
    Click **Next**.

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

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



16. Click **Next**.



17. Verify the default location for software installation.

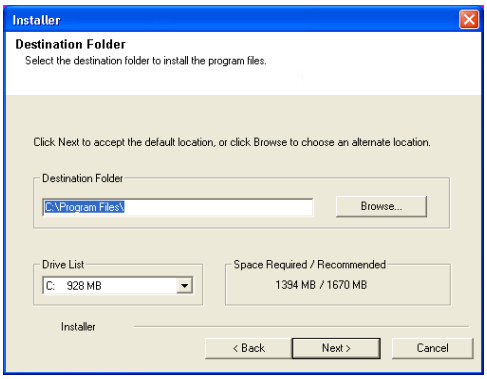
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

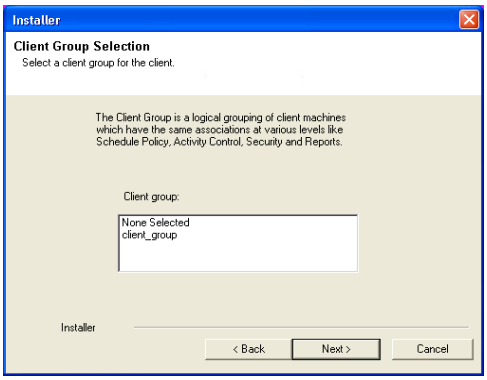
      It is recommended that you use alphanumeric characters only.



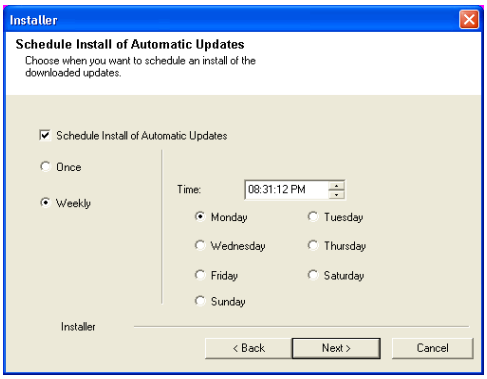
18. Select a Client Group from the list.

    Click **Next**.

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

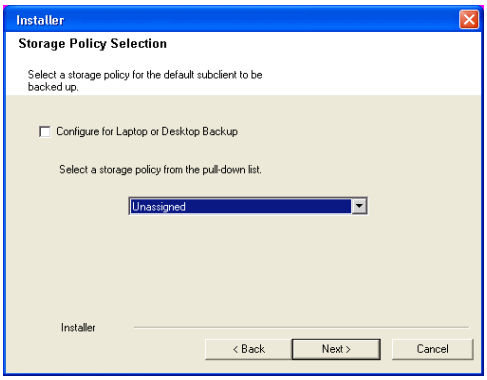


19. Click **Next**.



20. Select a **Storage Policy**.

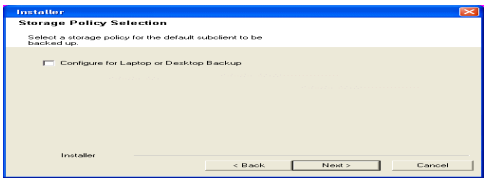
    Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

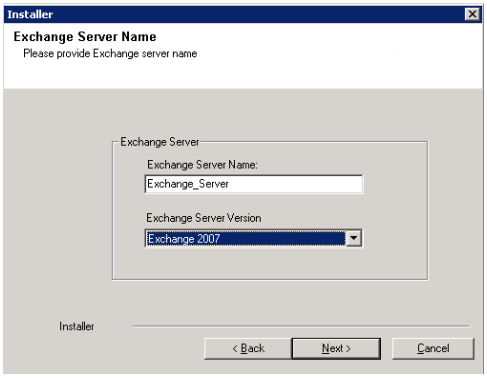
You can create the Storage Policy later in step 31.



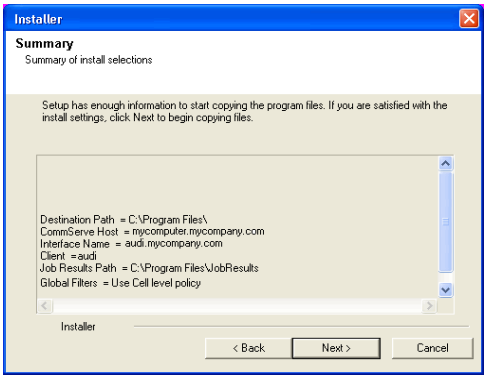
21. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.

    Click **Next**.

    This screen will appear when you are installing Exchange Agents on Non-Exchange Server.



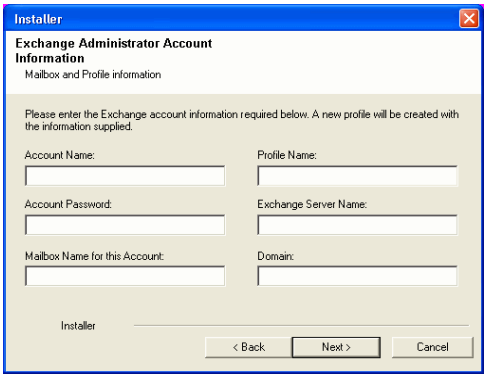
22. Click **Next**.



23. Enter the following Exchange Administrator information then click **Next**.

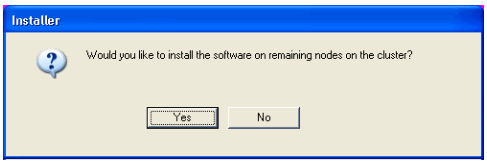
    - **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
    - **Account Password** - The password assigned to the domain user.
    - **Mailbox Name for this Account** - Mailbox associated with the user above.
    - **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.
    - **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.

      For Exchange Server 2010, enter the Client Access Role. After installation configure the roles as described in Configure Mailboxes in Database Availability Group (DAG) Servers.
    - **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.



24. To install the software on the remaining nodes of the cluster, click **Yes**.

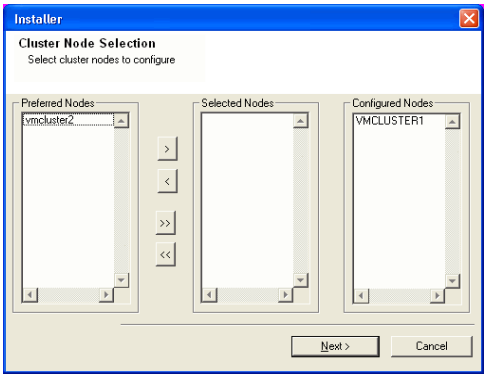
To complete the install for this node only, click **No**.



25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

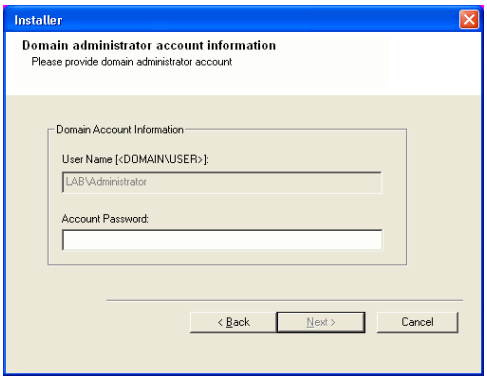
    Once you complete your selections, click **Next**.

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



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

    Click **Next**.



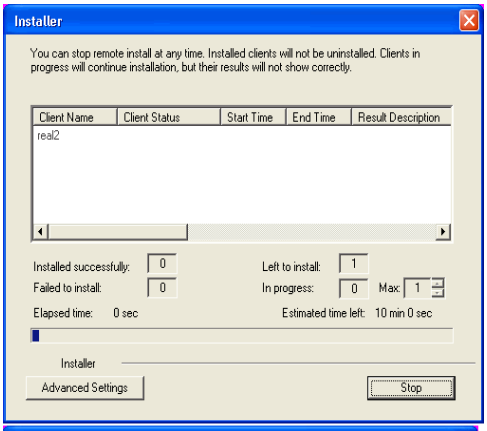
27. The progress of the remote install for the cluster nodes is displayed; the install can be interrupted if necessary.

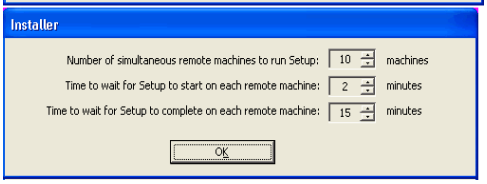
    Click **Stop** to prevent installation to any nodes after the current ones complete.

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

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

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

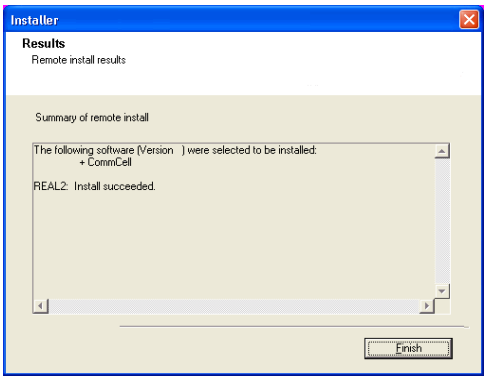




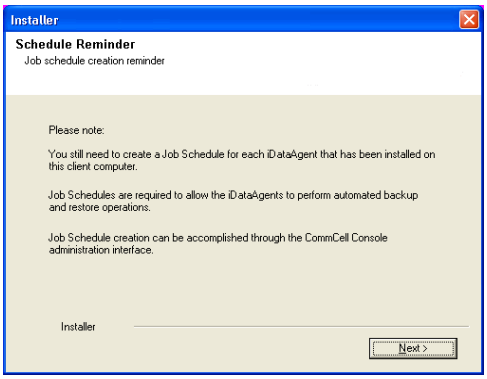
28. Read the summary for remote installation to verify that all selected nodes were installed successfully.

    Click **Next**.

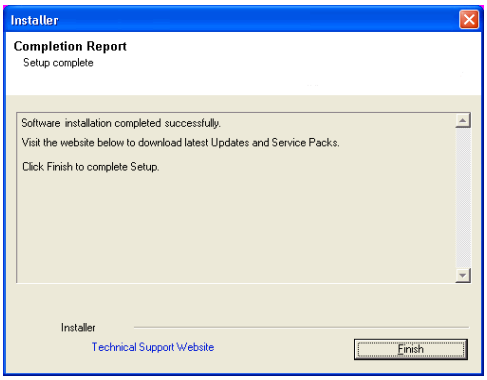
    - If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
    - The message displayed on your screen will reflect the status of the selected nodes,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



29. Click **Next**.



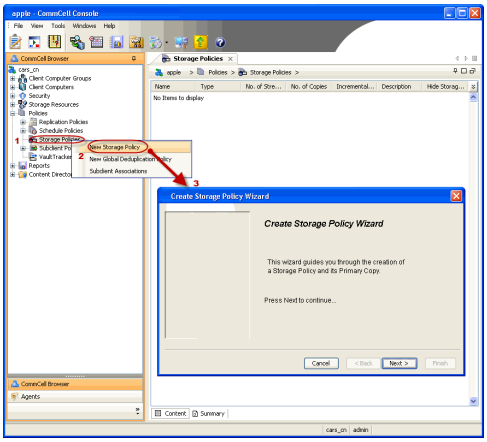
30. Click **Finish**.



CHOICE If you already have a storage policy selected in step 20, Click Next button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

31. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

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

32. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

Previous Next

Install the Exchange Agents on Exchange Server 2003

Previous Next

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

WHERE TO INSTALL

Install the software directly on the Exchange Server you wish to protect

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

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

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on a client computer.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

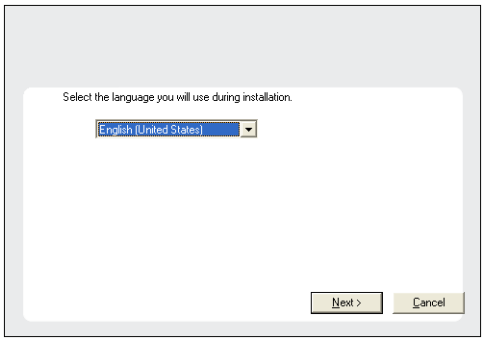
The below mentioned prerequisites are for Mailbox Agents only. Ensure that you have the following:

- The mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.
- Using the Exchange System Manager snap-in, right-click the organization object and delegate control.
- Using the Wizard, assign the MailboxAdmin user Exchange Full Administrator privileges.
- Ensure that you assign full access to all mailboxes on the server. For details, see How do I Assign Full Access to All Mailboxes on a Server.

METHOD 1: INTERACTIVE INSTALL

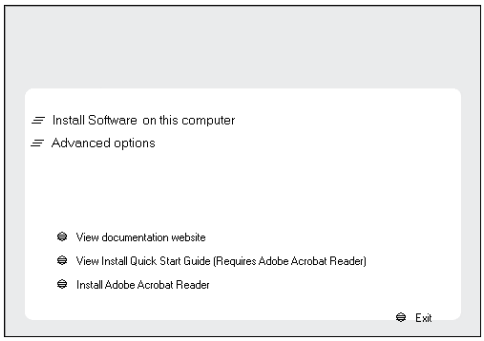
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from the Software Installation Package.
3. Select the required language.

   Click **Next**.



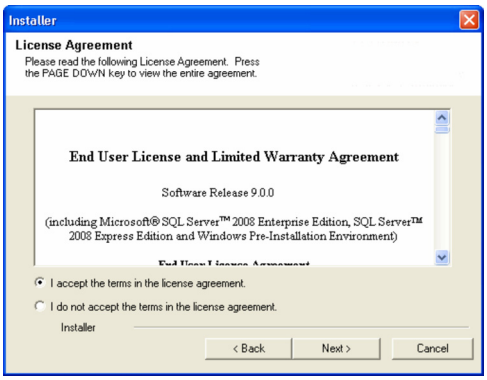
4. Select the option to install software on this computer.

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



5. Select **I accept the terms in the license agreement**.

Click **Next**.



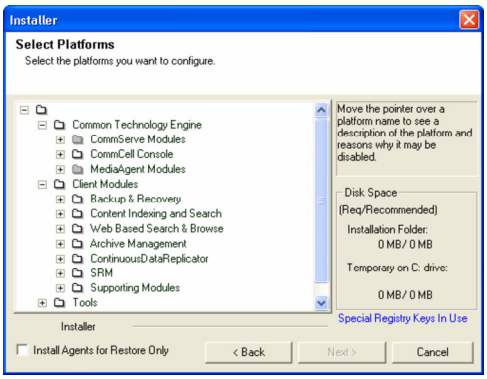
6. To install the Exchange *i*DataAgents expand **Client Modules | Backup & Recovery | Exchange**, and select one or more of the following:

   - **Exchange Database iDataAgent**
   - **Exchange Mailbox iDataAgent**
   - **Exchange Public Folder iDataAgent**

   To install the Exchange Archiver Agents, expand **Client Modules | Archive Management**, and select one or more of the following:

   - **Exchange Compliance Archiver**
   - **Exchange Mailbox Archiver Agent**
   - **Exchange Public Folder Archiver Agent**

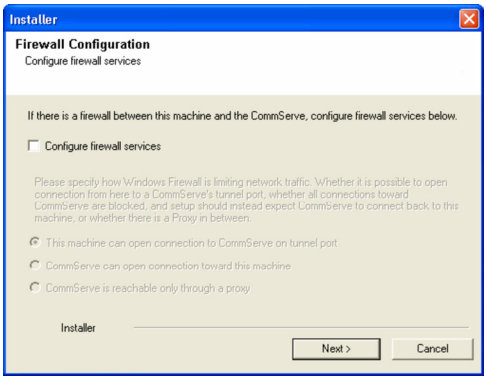
   Click **Next**.



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

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

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

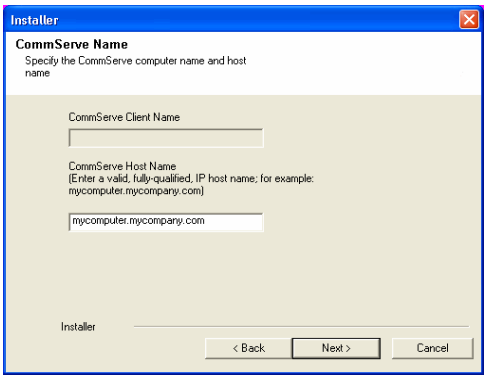


8. Enter the fully qualified domain name of the **CommServe Host Name**.

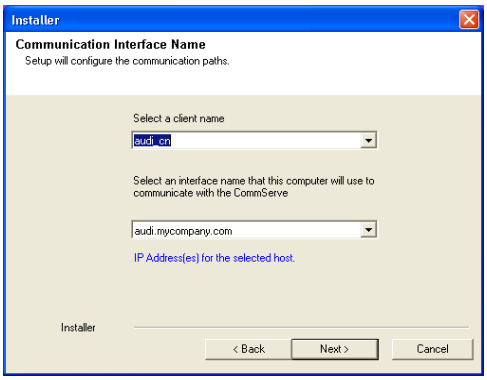
   Click **Next**.

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

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



9. Click **Next**.

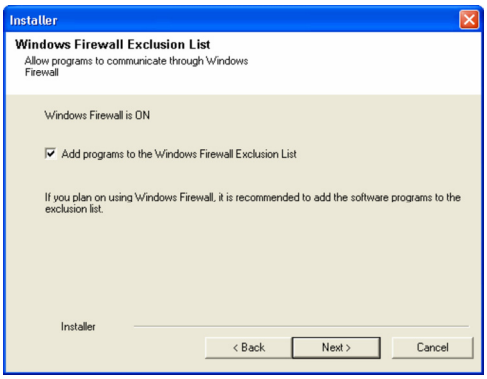


10. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

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



11. Verify the default location for software installation.

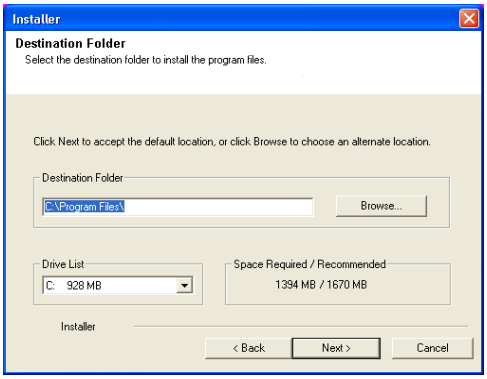
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

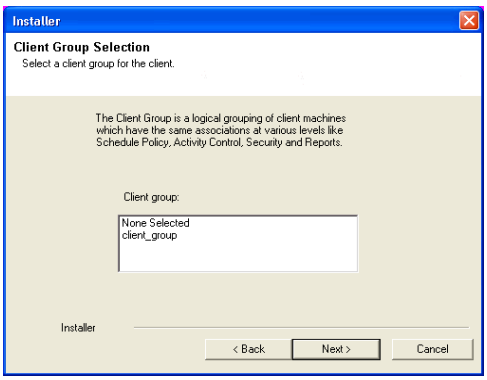
      It is recommended that you use alphanumeric characters only.



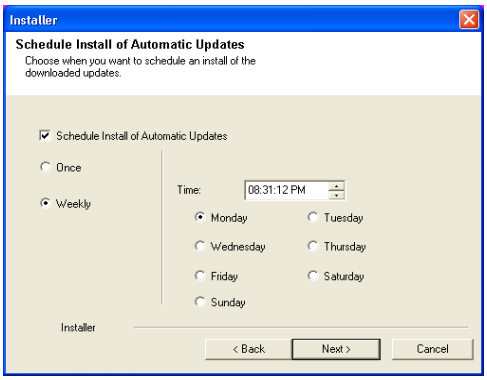
12. Select a Client Group from the list.

    Click **Next**.

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

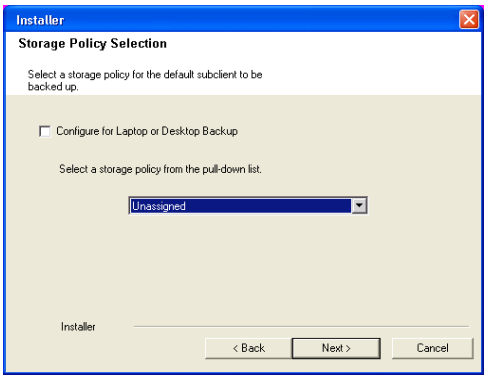


13. Click **Next**.



14. Select a **Storage Policy**.

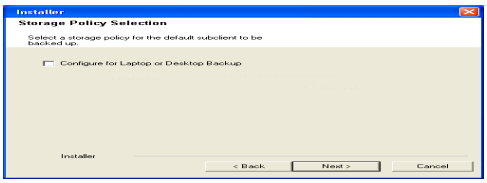
    Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

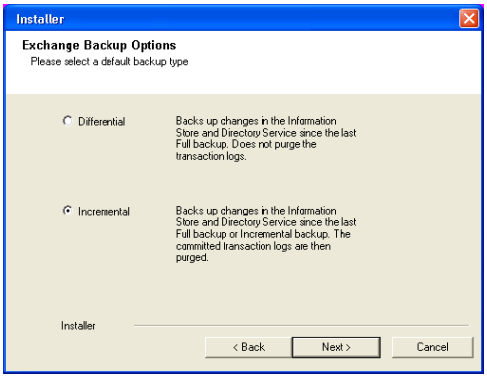
You can create the Storage Policy later in step 25.



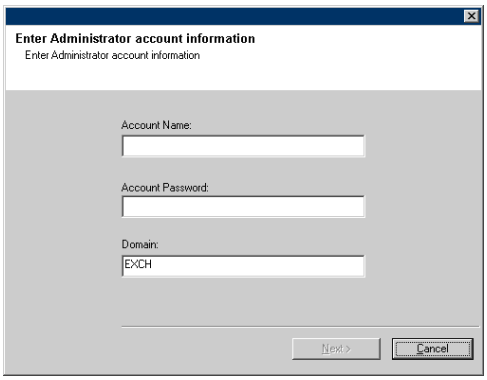
- If you are installing the Exchange Database *i*DataAgent, click Configure Exchange Database Specific Information.
- If you are installing the Exchange Agents, skip to Configure Exchange Agents Specific Information.

CONFIGURE EXCHANGE DATABASE SPECIFIC INFORMATION

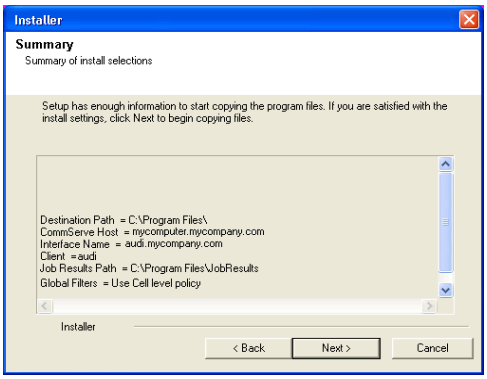
15. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



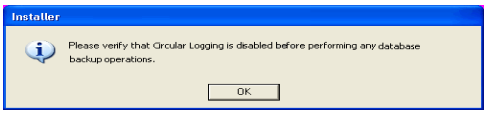
16. Enter the user credentials to access the Exchange Server to perform the backup operation.
    - The User Account must have Exchange Administrator privileges.
    - The installation detects the domain name. If necessary, you can modify the domain name by specifying Windows domain that the Exchange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



17. Click **Next**.



18. The install program displays a reminder to verify that Circular Logging is disabled before performing any database backup operations. To verify that Circular Logging is disabled:



- From Exchange System Manager, navigate to and expand the server that the Database *i*DataAgent is being installed on.
- Verify that the Circular Logging check box has not been selected for each Storage Group. If Circular Logging has been enabled for a Storage Group, disable it at this time.

Click **OK**.

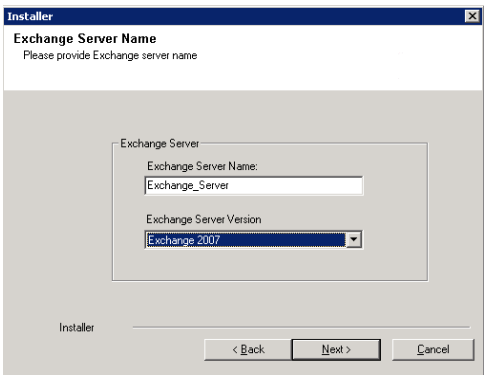
- If you are installing the Exchange Agents, then click Configure Exchange Agents Specific Information.
- If you are installing the Exchange Database *i*DataAgent, skip to Verify Summary of Install Options.

CONFIGURE EXCHANGE AGENTS SPECIFIC INFORMATION

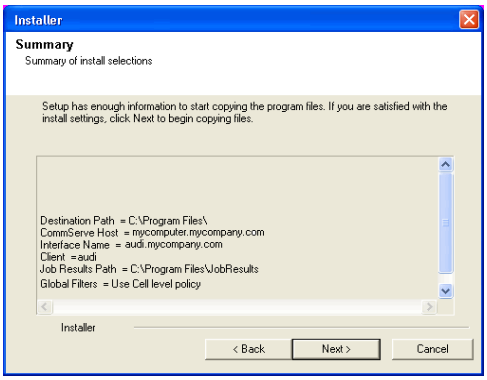
19. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.

Click **Next**.

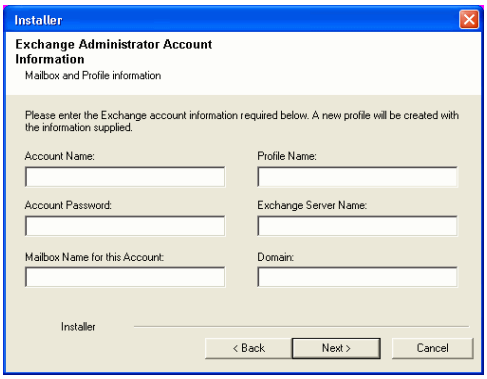
This screen will appear when you are installing Exchange Agents on Non-Exchange Server.



20. Click **Next**.



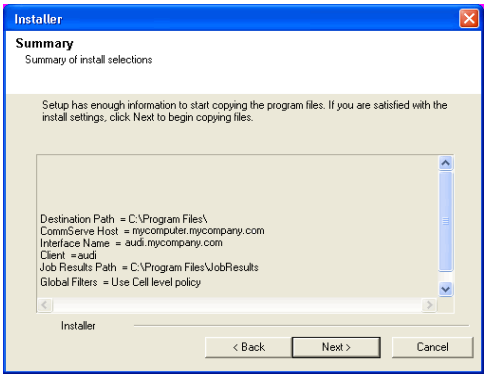
21. Enter the following Exchange Administrator information then click **Next**.



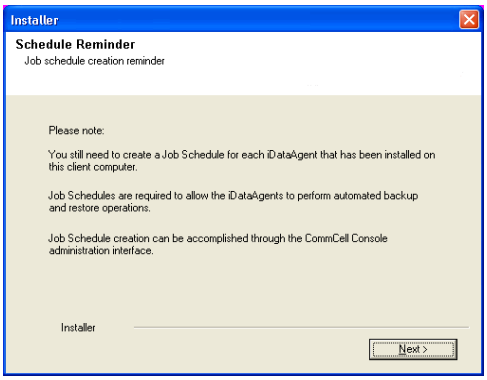
- **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
- **Account Password** - The password assigned to the domain user.
- **Mailbox Name for this Account** - Mailbox associated with the user above.
- **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.
- **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.
- **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.

VERIFY SUMMARY OF INSTALL OPTIONS

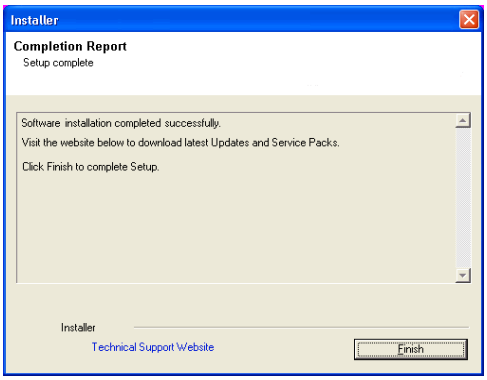
22. Click **Next**.



23. Click **Next**.



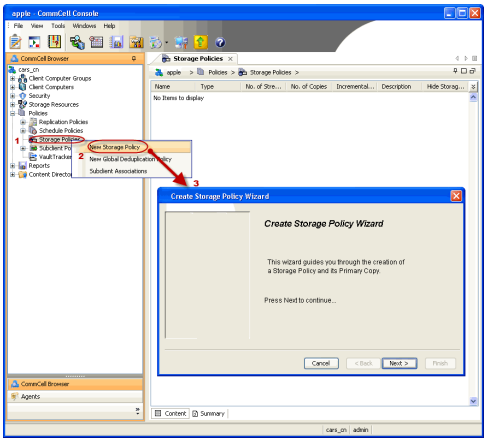
24. Click **Finish**.



CHOICE If you already have a storage policy selected in step 14, Click Next button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

25. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

     Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
   - Review the details and click **Finish** to create the Storage Policy.

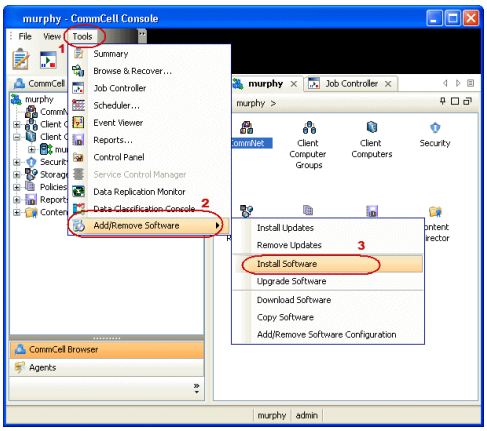
26. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

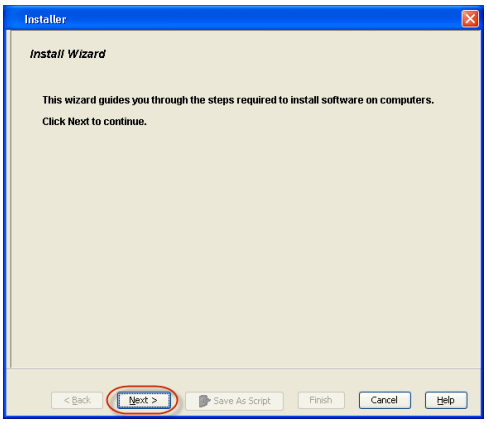
  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select **Tools**, point to **Add/Remove Software**, and then click **Install Software.**

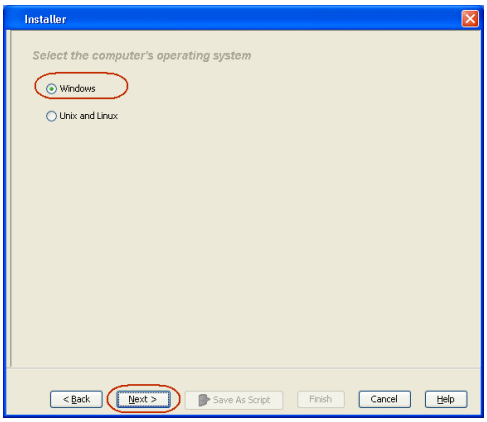


2. Click **Next**.



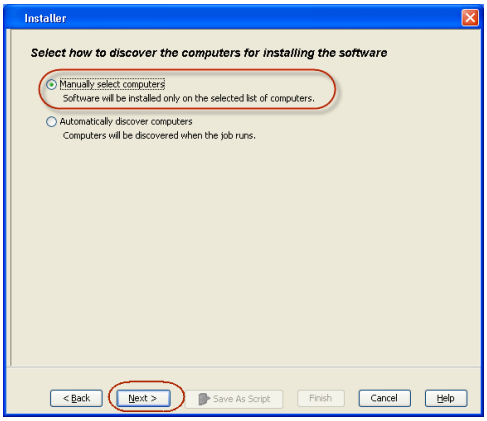
3. Select **Windows**.

   Click **Next**.



4. Select **Manually Select Computers**.

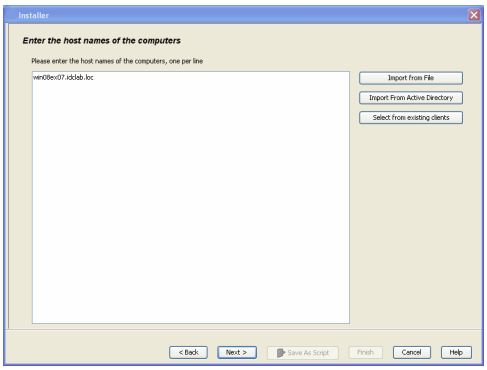
   Click **Next**.



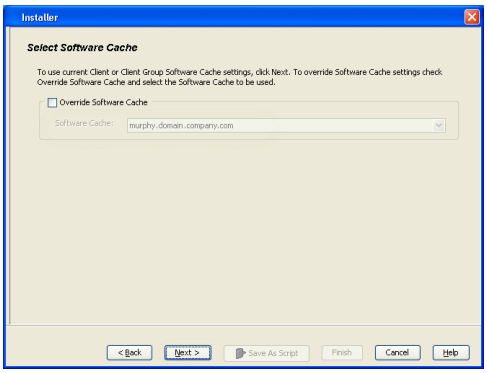
5. Enter the fully qualified domain name of the computer on which you have Exchange Server.

For example: `win08ex07.idclab.loc`

Click **Next**.

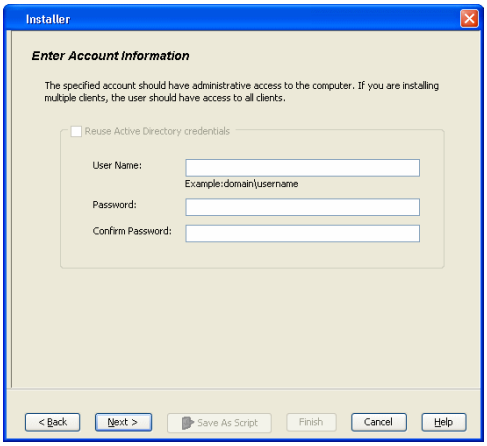


6. Click **Next**.



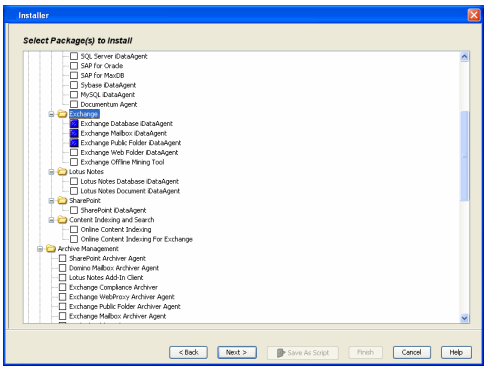
7. Specify **User Name** and **Password** that must be used to access the computer.

   Click **Next**.



8. To install the **Exchange *i*DataAgents** expand **Client Modules | Backup & Recovery | Exchange,** and select one or more of the following:
   - **Exchange Database *i*DataAgent**
   - **Exchange Mailbox *i*DataAgent**
   - **Exchange Public Folder *i*DataAgent**

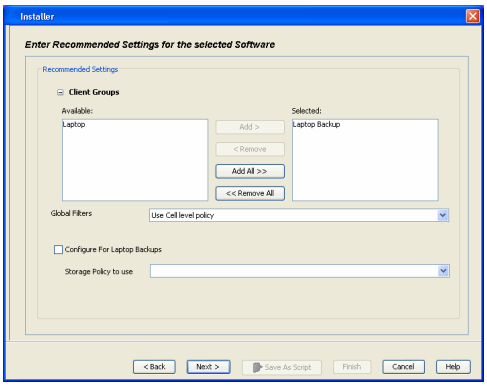
   Click **Next**.



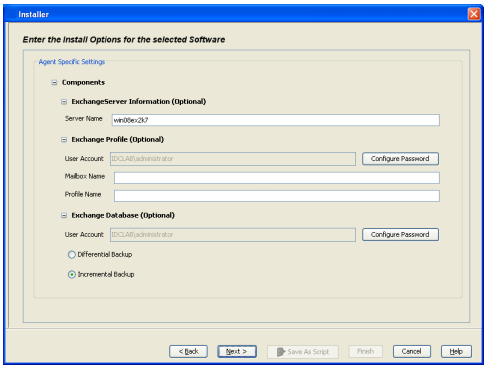
9. - Select **Client Group** from **Available** and click **Add**.
   - Select a **Storage Policy** from the drop-down list. Click **Next**.

   NOTES:

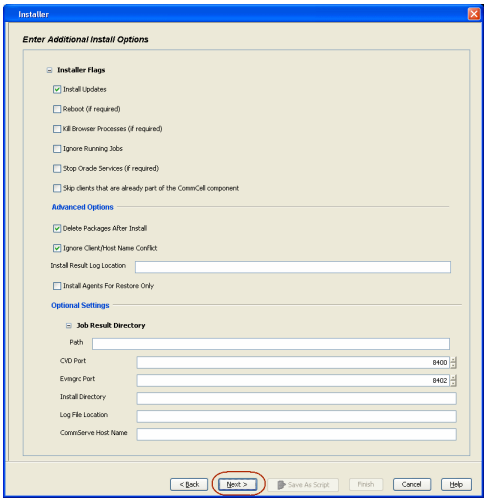
   - Select the **Configure for Laptop or Desktop Backup** option to install **Backup Monitor** utility. This utility allows you to view the backup job summary from the client computer without opening the CommCell Console. See Monitor - Laptop User for more information.



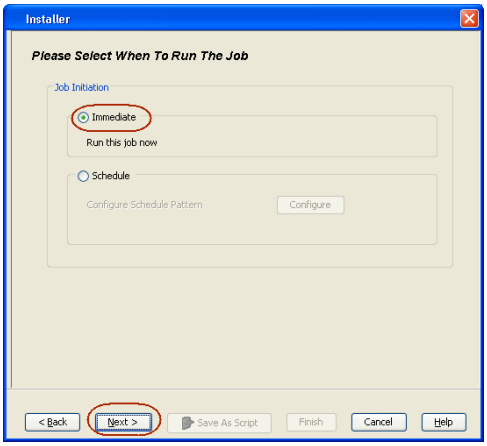
10. Type the Agent Specific Settings information.
    Click **Next**.



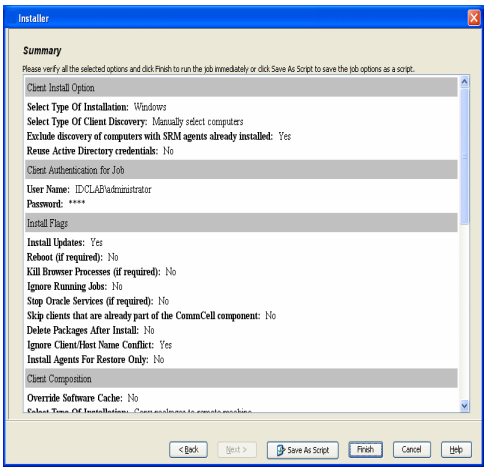
11. Click **Next**.



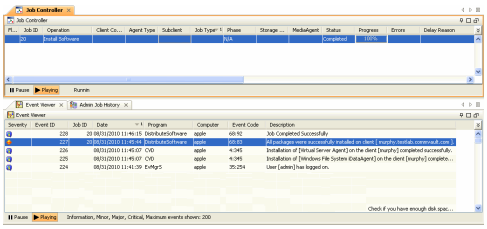
12. Select **Immediate**.
    Click **Next**.



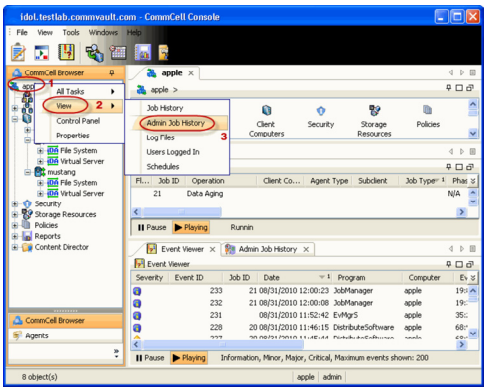
13. Click **Finish**.



14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

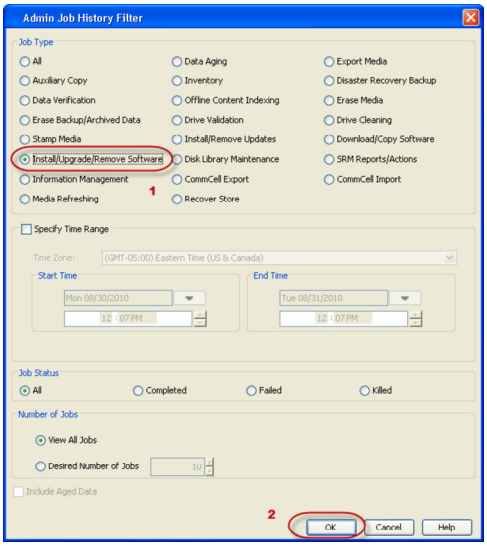


15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.



16. Select **Install/Upgrade/Remove Software**.

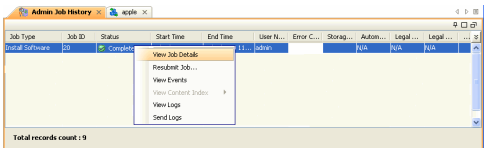
Click **OK**.



17. You can view the following details about the job by right-clicking the job:

- Items that succeeded during the job
- Items that failed during the job
- Details of the job

- Events of the job
- Log files of the job



18. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

Previous Next

Install the Exchange Agents on Exchange Server 2003 - Clustered Environment

Previous Next

Follow the steps given below to install the Exchange Agents in clustered environment on the following:

- Exchange Server 2003
- Non-Exchange Server

WHERE TO INSTALL

The following procedure describes the steps involved in installing the Exchange Agents for Exchange Server 2003 on the following:

- Direct install on a Exchange Server or
- On an Non-Exchange Server computer. This may be used for the following circumstances:
  - In the configuration where a single non-Exchange client is used to backup multiple Exchange Servers.
  - To off-load the backup of Exchange Server, so that the performance of the Exchange Server will not be effected.

RELATED TOPICS

Download Software Packages
Provides step-by-step procedure to download the latest packages for software install.

System Requirements
Verify that the computer in which you wish to install the software satisfies the System Requirements.

Firewall
Provides comprehensive information on firewall.

PREREQUISITES

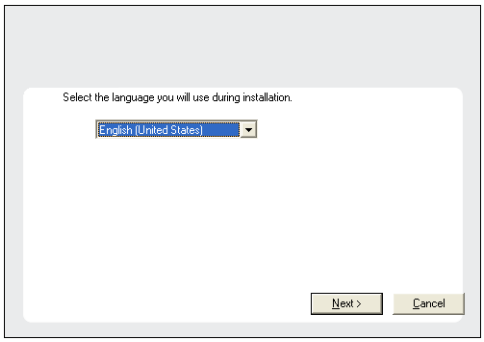
The below mentioned prerequisites are for Mailbox Agents only. Ensure that you have the following:

- The mail-enabled user is a member of the Local Administrator Group and have rights to all mailboxes on the server.
- Using the Exchange System Manager snap-in, right-click the organization object and delegate control.
- Using the Wizard, assign the MailboxAdmin user Exchange Full Administrator privileges.
- Ensure that you assign full access to all mailboxes on the server. For details, see How do I Assign Full Access to All Mailboxes on a Server.

INSTALL PROCEDURE

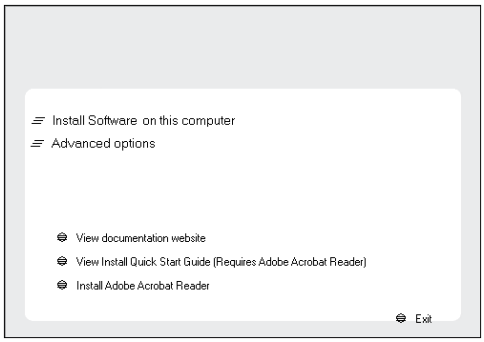
1. Log on to the computer using an account with the following privileges:
   - Administrator of the local computer
   - Administrator of the Exchange Server
2. Run **Setup.exe** from the Software Installation Package.
3. Select the required language.

   Click **Next**.



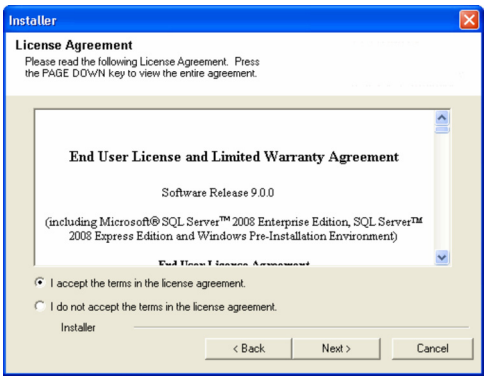
4. Select the option to install software on this computer.

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



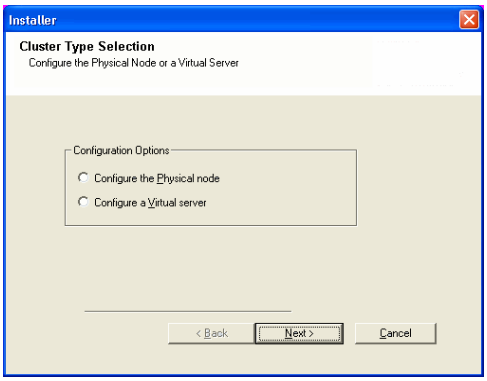
5. Select **I accept the terms in the license agreement**.

Click **Next**.



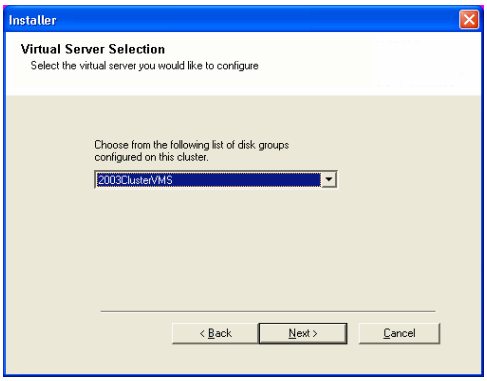
6. Select **Configure a Virtual Server**.

   Click **Next**.



7. Select the disk group in which the virtual server resides.

   Click **Next**.



8. To install the Exchange *i*DataAgents expand **Client Modules | Exchange**, and select one or more of the following:

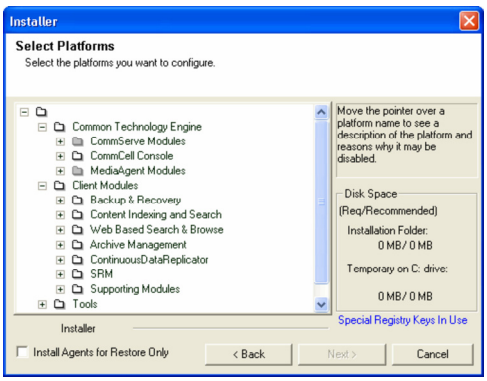
   - **Exchange Database iDataAgent**
   - **Exchange Mailbox iDataAgent**
   - **Exchange Public Folder iDataAgent**

   To install the Exchange Archiver Agents, expand **Client Modules | Archive Management**, and select one or more of the following:

   - **Exchange Compliance Archiver**
   - **Exchange Mailbox Archiver Agent**
   - **Exchange Public Folder Archiver Agent**

   Click **Next**.

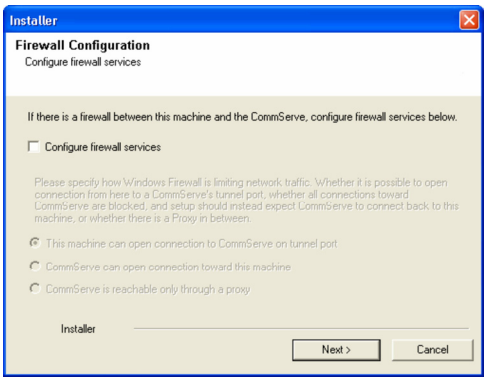
   For Non-Exchange Server, Exchange Database *i*DataAgent will not be applicable.



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

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

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

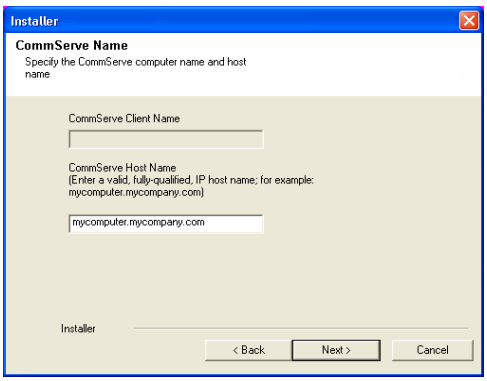


10. Enter the fully qualified domain name of the **CommServe Host Name**.

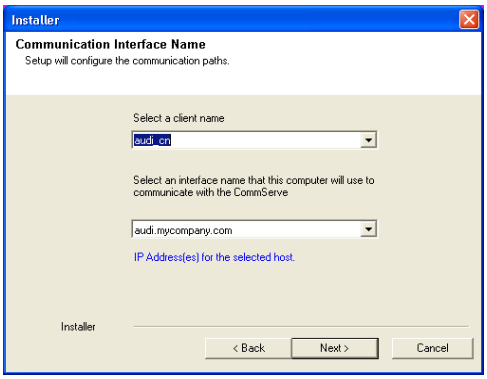
    Click **Next**.

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

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



11. Click **Next**.

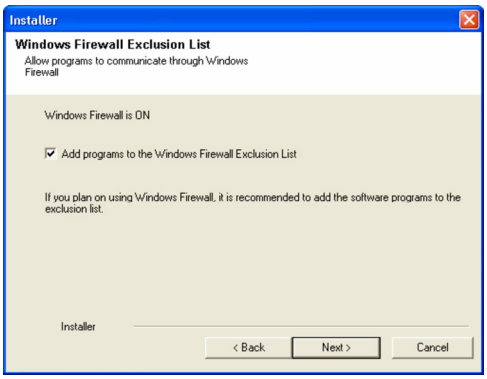


12. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

    Click **Next**.

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

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



13. Verify the default location for software installation.

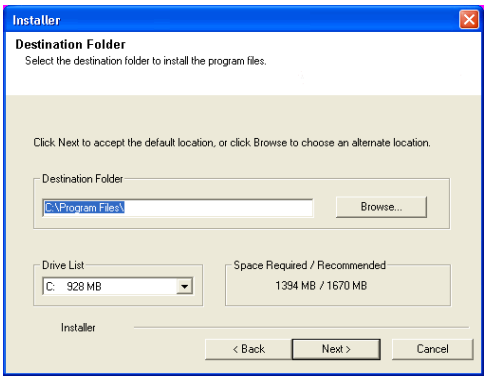
    Click **Browse** to change the default location.

    Click **Next**.

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

      / : * ? " < > | #

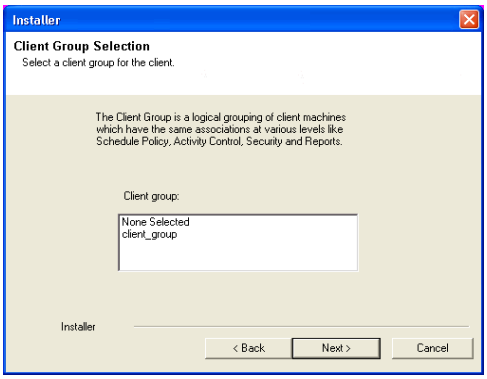
It is recommended that you use alphanumeric characters only.



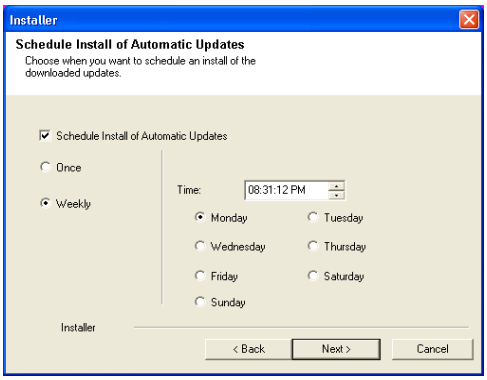
14. Select a Client Group from the list.

    Click **Next**.

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

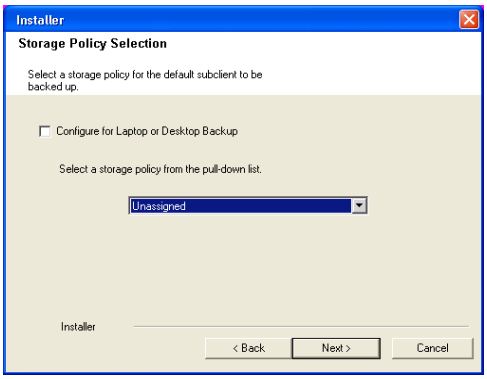


15. Click **Next**.



16. Select a **Storage Policy**.

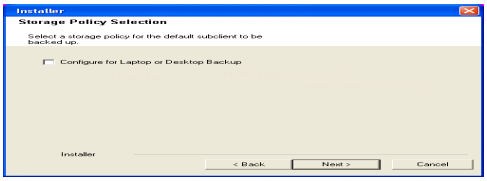
    Click **Next**.



If you do not have Storage Policy created, this message will be displayed.

Click **OK**.

You can create the Storage Policy later in step 32.

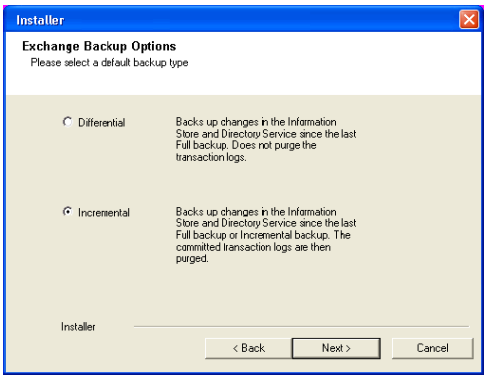


- If you are installing the Exchange Database *i*DataAgent on the Exchange Server, click Configure Exchange Database Specific Information.

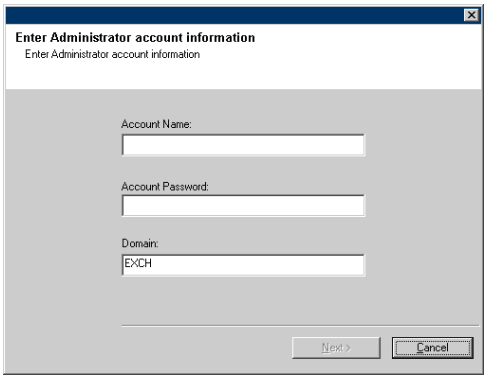
- If you are installing the Exchange Agents on the Non-Exchange Server, skip to Configure Exchange Agents Specific Information.

CONFIGURE EXCHANGE DATABASE SPECIFIC INFORMATION

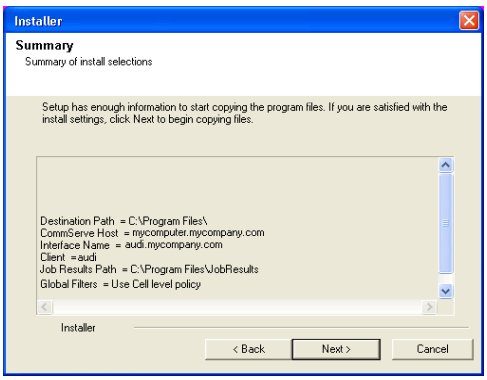
17. Select the backup type for Exchange Database backups. Choose either of the following options, then click **Next**.
    - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
    - **Incremental**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



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

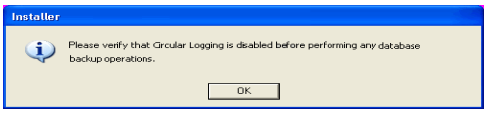


19. Click **Next**.



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

    Click **OK**.



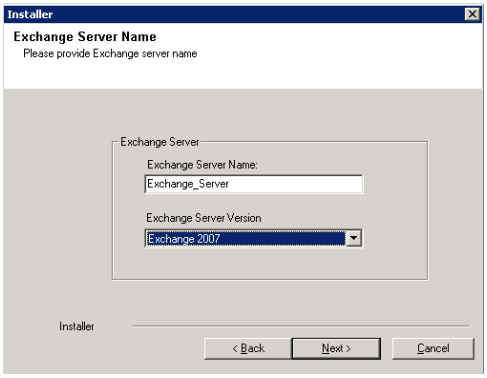
- If you are installing the Exchange Agents, then click Configure Exchange Agents Specific Information.
- If you are installing the Exchange Database *i*DataAgent, skip to Install Remaining Cluster Nodes.

CONFIGURE EXCHANGE AGENTS SPECIFIC INFORMATION

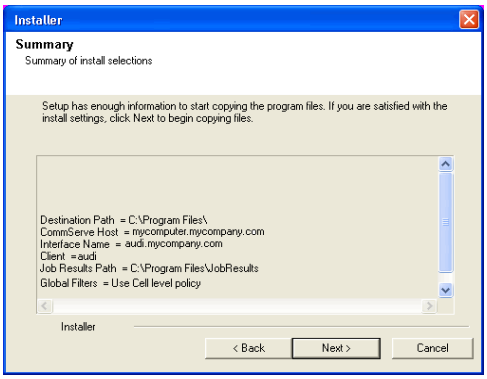
21. Select **Exchange Server Name** and **Exchange Server Version** from drop-down list.

Click **Next**.

This screen will appear when you are installing Exchange Agents on Non-Exchange Server.



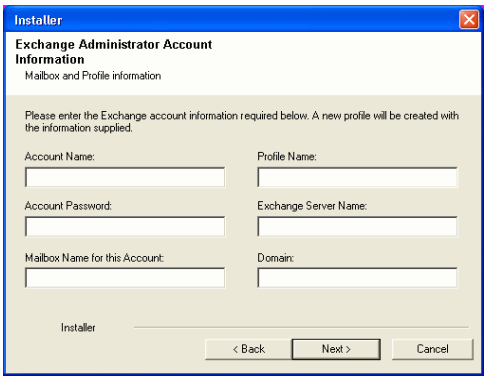
22. Click **Next**.



23. Enter the following Exchange Administrator information then click **Next**.

- **Account Name** - Domain user account created with the exchange server administrator permissions. Do not include the domain name here.
- **Account Password** - The password assigned to the domain user.
- **Mailbox Name for this Account** - Mailbox associated with the user above.
- **Profile Name** - Specify profile name to be created during agent install. This profile is associated with the domain user's mailbox.
- **Exchange Server Name** - Name of the Exchange Server that the agent will communicate with for data protection and recovery operations.

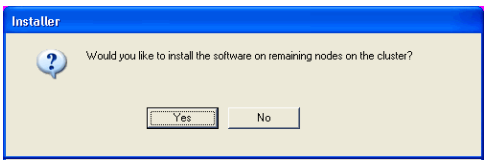
  For Exchange Server 2010, enter the Client Access Role. After installation configure the roles as described in Configure Mailboxes in Database Availability Group (DAG) Servers.
- **Domain** - The installation detects and enters a domain name. If necessary, modify the domain name by specifying Windows domain that the Exchange Server resides in.



INSTALL REMAINING CLUSTER NODES

24. To install the software on the remaining nodes of the cluster, click **Yes**.

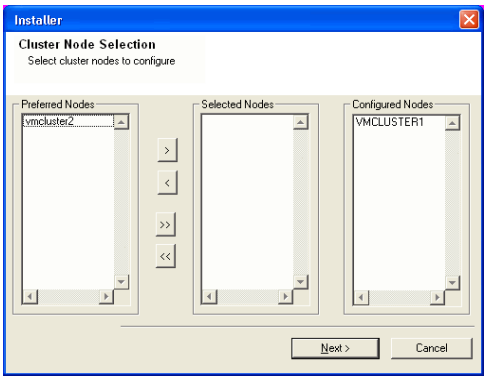
To complete the install for this node only, click **No**.



25. Select cluster nodes from the **Preferred Nodes** list and click the arrow button to move them to the **Selected Nodes** list.

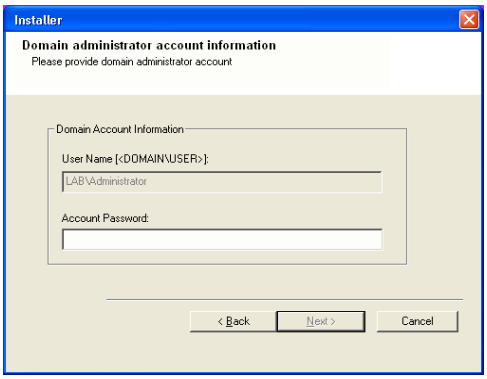
Once you complete your selections, click **Next**.

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



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

Click **Next**.



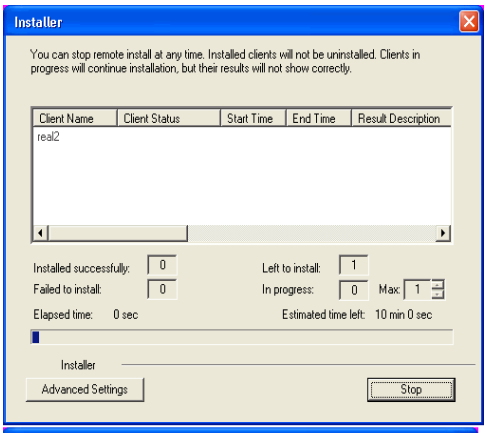
27. The progress of the remote install for the cluster nodes is displayed; the install can be interrupted if necessary.

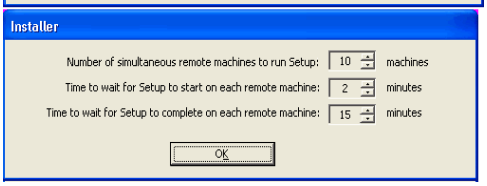
Click **Stop** to prevent installation to any nodes after the current ones complete.

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

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

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

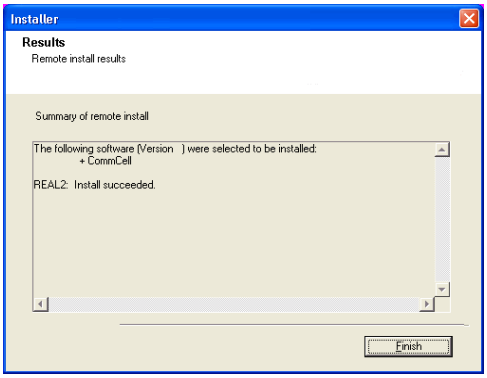




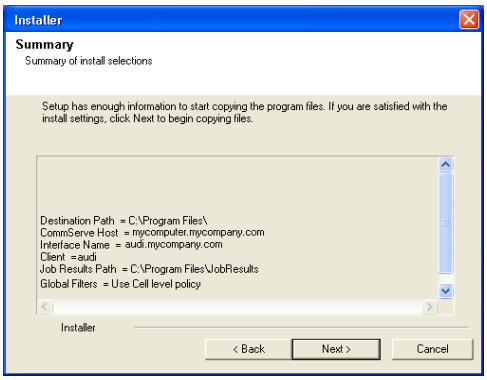
28. Read the summary for remote installation to verify that all selected nodes were installed successfully.

Click **Next**.

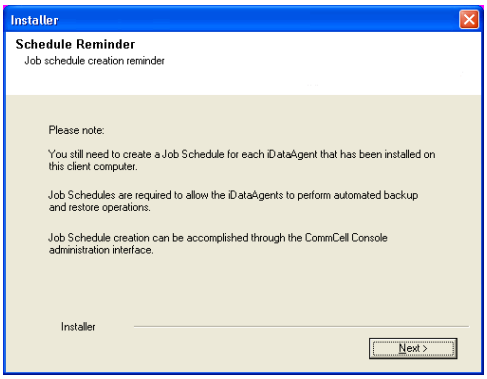
- If any node installation fails, you must manually install the software on that node once the current installation is complete. See Manually Installing the Software on a Passive Node for step-by-step instructions.
- The message displayed on your screen will reflect the status of the selected nodes,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



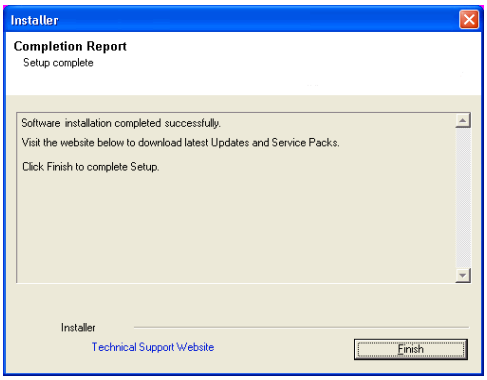
29. Click **Next**.



30. Click **Next**.



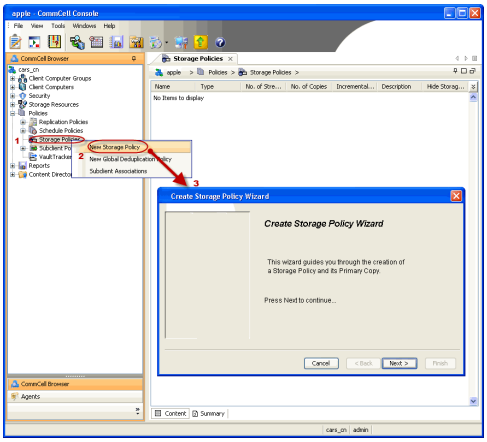
31. Click **Finish**.



CHOICE If you already have a storage policy selected in step 16, Click Next button available at the bottom of the page to proceed to the **Configuration** section.

If you do not have Storage Policy created, continue with the following step.

32. Create a Storage Policy:



1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

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

33. Enable the following registry key to create job specific profiles:

- From the CommCell Browser, navigate to Client Computers.
- Right-click the <Client> in which you want to add the registry key, and then click Properties.
- Click the Registry Key Settings tab.
- Click Add.
- Enter CreateProcessSpecificProfile in the Name field.
- Enter MSExchangeMBAgent in the Location field. (For Exchange Mailbox iDataAgent).

  Enter MSExchangeDMAgent in the Location field. (For Exchange Mailbox iDataAgent).
- Enter REG_DWORD in the Type filed.
- Enter 1 to enable and 0 to disable the key in the Value field.
- Click OK.

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Getting Started - Exchange Database *i*DataAgent Configuration

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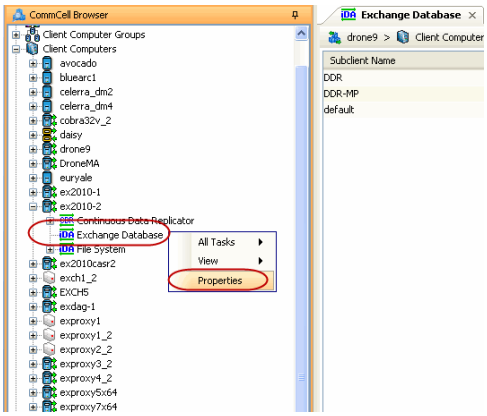
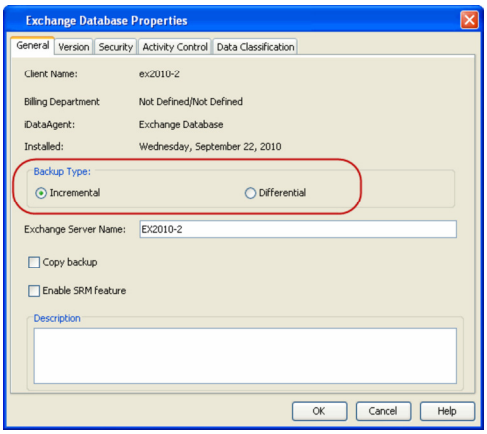
Once installed, verify your backup type and configure a subclient as follows.

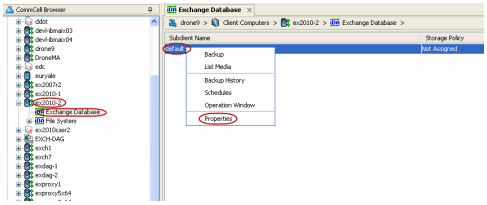
1.
   - From the CommCell Console, navigate to **Client Computers | <Client> | Exchange Database**.
   - Right-click the **Exchange Database** and click **Properties.**



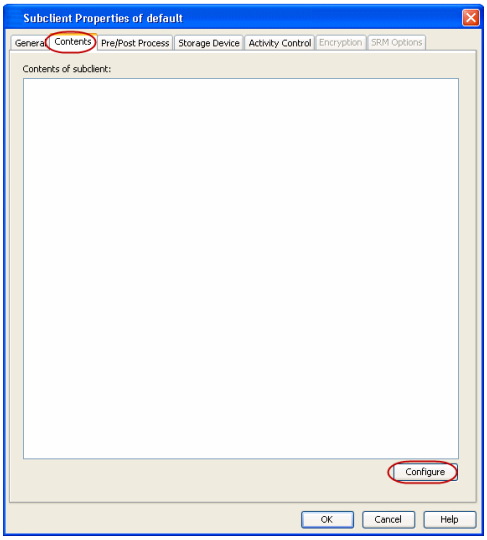
2.
   - Verify or change the backup type that was selected during installation:
     - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
     - **Incremental** - Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.
   - Click **OK**.



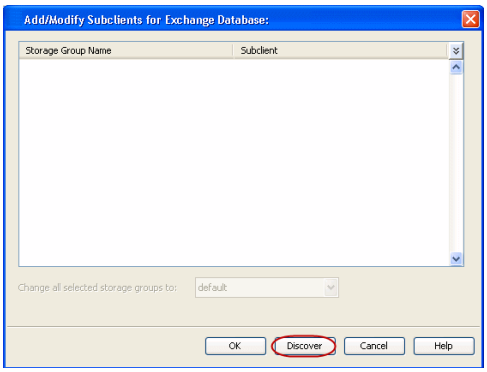
3.
   - From the CommCell Console, navigate to **Client Computers | <Client> | Exchange Database.**
   - Right-click the default subclient and then click **Properties**.



4.
   - Click **Contents** tab.
   - Click **Configure.**

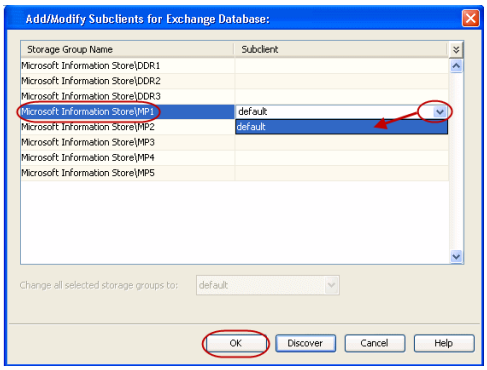


5. Click **Discover**.

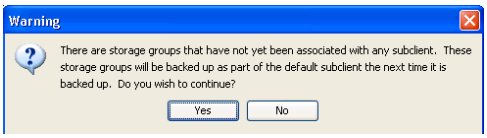


6.
- Select a database to be backed up from the **Display Name** column.
- Select the **Default Subclient** from the **Subclient** column for the database you want to back up.
- Click **OK**.

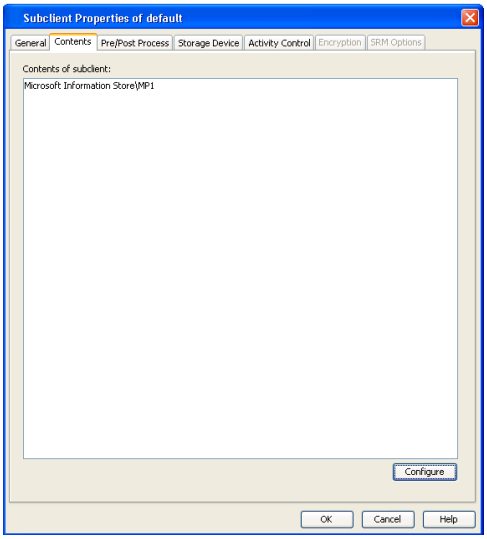
For your first backup, select just one database. Otherwise the backup will take longer when multiple databases are selected.



7. Click **Yes**.



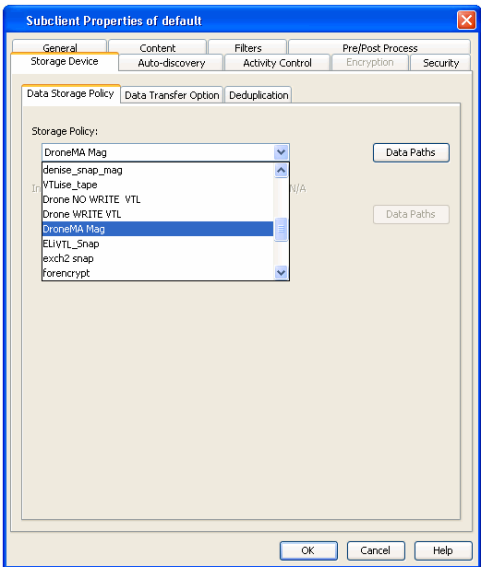
8. Verify that the database appears under **Contents of subclient**.



9.
- Click the **Storage Devices** tab.
- Select a **Storage Policy**.
- Click **OK**.

Click Next ➤ to continue.

If you do not have Storage Policy created, click **Create Storage Policy** and proceed to the next step.

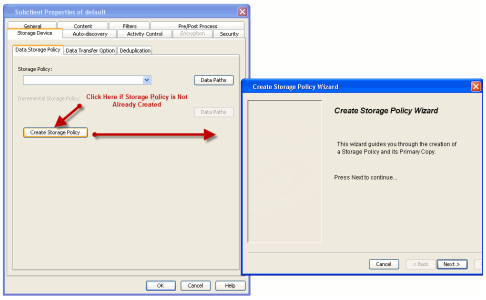


10.

1. Click **Create Storage Policy**.
2. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
   - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
   - Enter the name in the **Storage Policy Name** box and click **Next**.
   - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

     Ensure that you select a library attached to a MediaAgent operating in the current release.
   - From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
   - For the device streams and the retention criteria information, click **Next** to accept default values.
   - Select **Yes** to enable deduplication for the primary copy.
   - From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

     Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
   - Review the details and click **Finish** to create the Storage Policy.



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Getting Started - Exchange Database *i*DataAgent Backup

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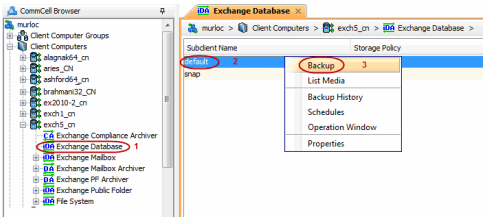
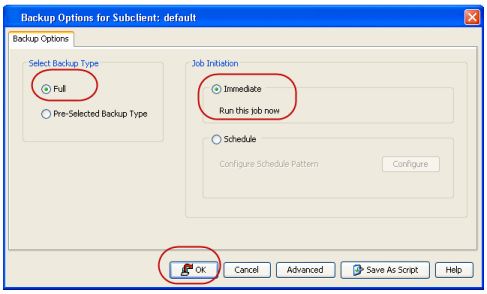
WHAT GETS BACKED UP	WHAT DOES NOT GET BACKED UP
Exchange Database data	System State Dataa
Information and Public Folder stores	Active Directory Data
Transaction Logs	Personal Information Stores
Recovery Databases To avoid backup failure Recovery Databases should be filtered. For details see: Configuring to Filter Recovery Databases from Backups	Personal Address Books
Recovery Storage Groups To avoid backup failure Recovery Storage Groups should be filtered. For details see: Configuring to Filter Recovery Databases from Backups	Offline Folders Use the Windows File System *i*DataAgent to back up the above mentioned data types.

PERFORM A BACKUP

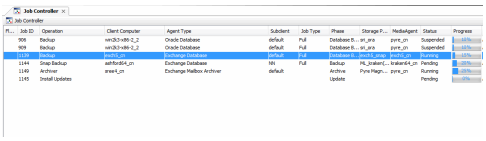
1. Ensure that Circular Logging has been disabled on the Exchange Server.
2. - From the CommCell Console, navigate to **Client Computers | <Client> | Exchange Database**.
   - Right-click the **default subclient** and click **Backup**.



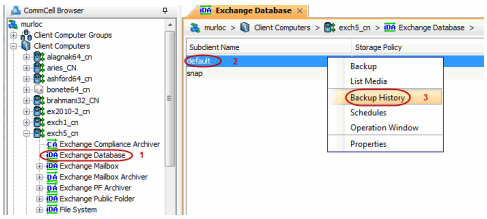
3. - Select **Full** as backup type and **Immediate** to run the job immediately.
   - Click **OK**.



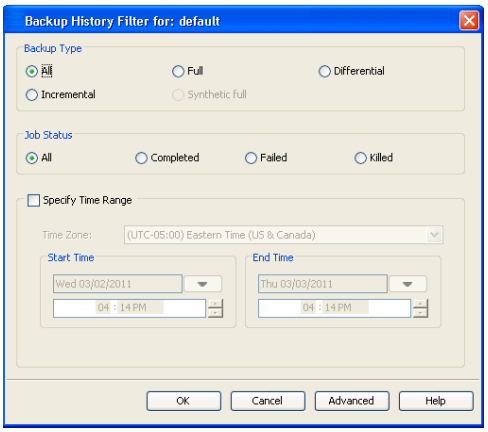
4. You can track the progress of the job from the **Job Controller** window of the CommCell console.



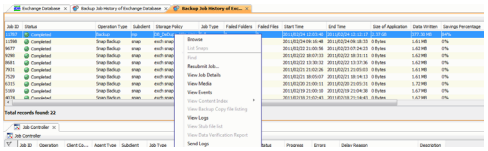
5. Once job is complete, view the details of job from the **Backup History**. Right-click the **Subclient** and select **Backup History**.



6. Click **OK**.



7. Right-click the job to:
   - View job details, such as the number of mailboxes backed up.
   - View media associated with the job.
   - View events associated with the job.
   - Resubmit the job.
   - View messages that were backed up.
   - Send the log file that is associated with the job.



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Getting Started - Exchange Database *i*DataAgent Restore

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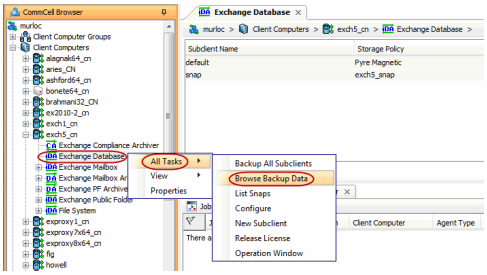
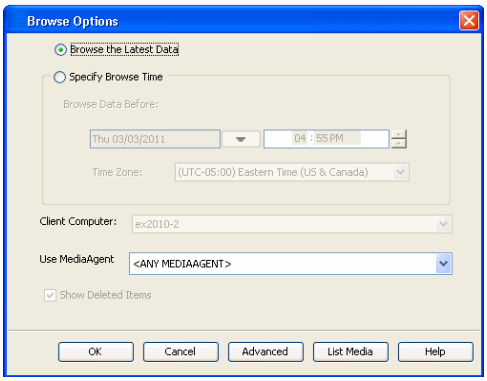
PERFORM A RESTORE

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process. The following section explains the steps for performing an out-of-place restore of a single database to a different client computer.

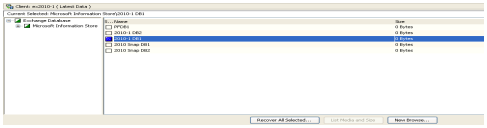
1.
   - From the CommCell Console, navigate to **Client Computers | <Client> | Exchange Database**.
   - Right-click the Agent and then click **All Tasks | Browse Backup Data**.



2. Click **OK**.

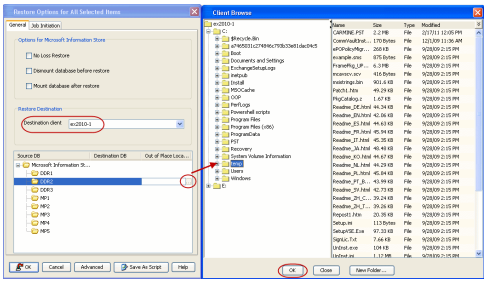


3.
   - Select the database in the left pane. The data and logs will be selected in the right pane.
   - Click **Recover All Selected**.

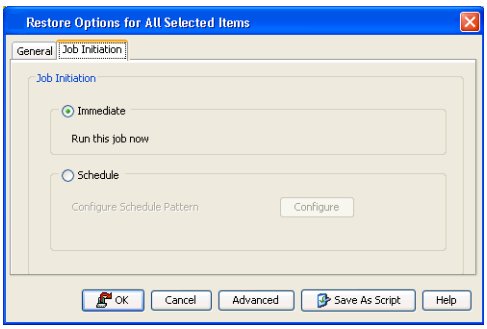


4.
   - Select the name of the client computer from the **Destination Client** list.

     This client should not be the same client on which the database originally resided.
   - Click **...** under **Out of Place** Location column.
   - Select a folder on the destination client.

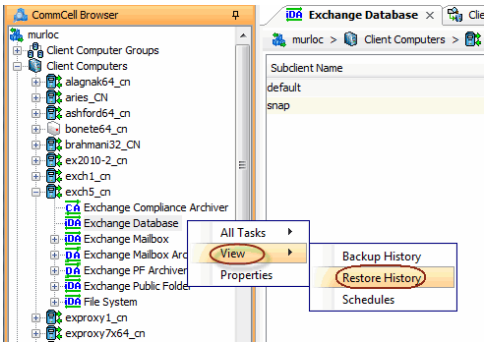


5.
   - Select **Immediate** from the **Job Initiation** tab.
   - Click **OK**.

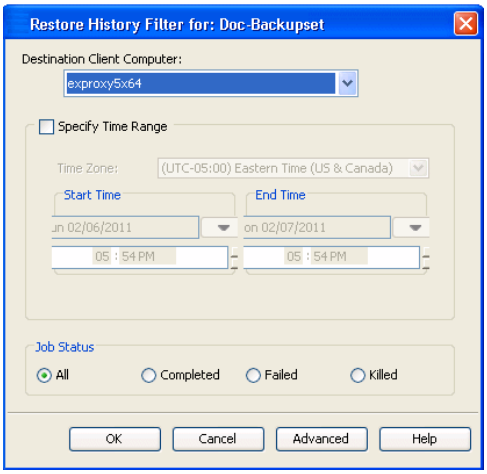


6. You can monitor the progress of the restore job in the **Job Controller** window of the CommCell Console.

7. Once the restore job has completed, right-click the agent and click **View** | **Restore History**.

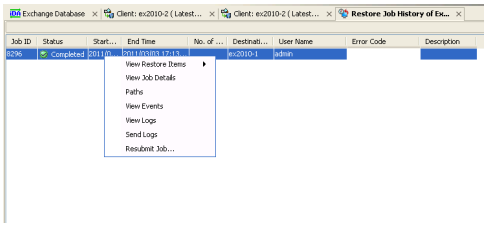


8. Click **OK**.

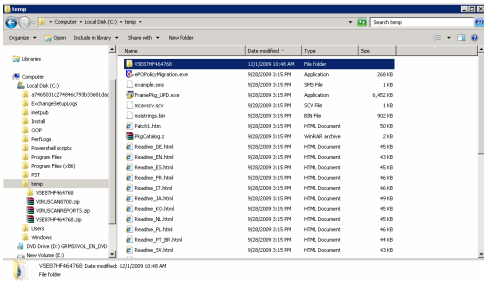


9. You can view the following details about the job by right-clicking the job:
   - View Restore Items

     You can view them as **Successful**, **Failed**, **Skipped** or **All**.
   - View Job Details
   - View Events of the restore job.
   - View Log files of the restore job.



10. The database is restored to the directory and client that was specified.



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

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

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Advanced - Exchange Database *i*DataAgent Configuration

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Creating User-Defined Subclients	**Creating User-Defined Subclients**	**Creating User-Defined Subclients**	**List Schedule Policy Association**
Configuring Event Check During Backups	**Configuring Event Check During Backups**	**Configuring Event Check During Backups**	
Configuring Database Availability Group (DAG) Backups	**Configuring Backups of Locked Databases**	**Configuring Backups of Locked Databases**	
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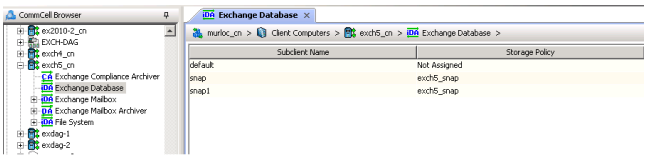
Deleting an Agent or Subclient	**Configuring Cluster Continuous Replication (CCR) Backups**	**Modifying an Agent or Subclient**	
Configuring to Filter Recovery Databases from Backups	**Modifying an Agent or Subclient**	**Deleting an Agent or Subclient**	
	Deleting an Agent or Subclient		
	Configuring to Filter Recovery Storage Groups from Backups		

UNDERSTANDING THE COMMCELL CONSOLE

The Exchange Database *i*DataAgent uses one main component to perform backup and restore operations from the CommCell Console.

Agent - defines the Exchange Server to be backed up.

Subclient - defines the database to be backed up.

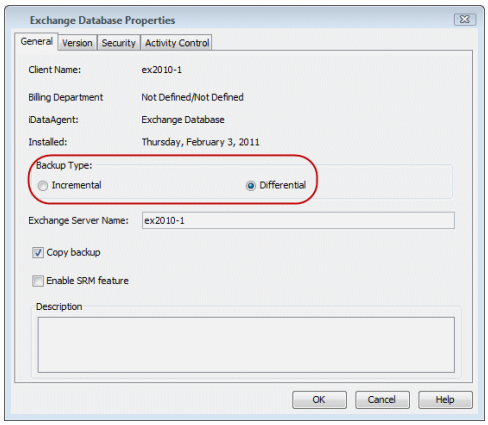


PRE-SELECTING A BACKUP TYPE

The backup type that was selected during installation can be changed. However, after it is run, note that the next backup must be a Full backup.

1. From the CommCell Browser, right-click the Exchange Database agent in which you need to change the backup type, and then click **Properties**.
2. Click **Incremental** or **Differential** and click **OK**.
   - **Differential** - Specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup. Transaction lobs are not purged.
   - **Incremental** - Specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type. Committed transaction logs are purged.
3. Right-click the Exchange Database agent and click **All Tasks | Backup All Subclients**.
4. Click **Pre-Selected Backup Type** and click **OK**.

   The next backup that is run must be a Full backup.



CREATING USER-DEFINED SUBCLIENTS

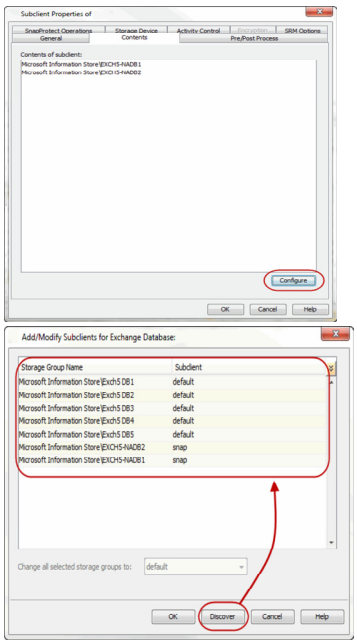
By default, all databases are automatically assigned to the default subclient. However, you can divide databases across one or more user-defined subclients to leverage your backups efficiently. Note, however, that once a database is assigned to a user-defined subclient, it is automatically removed from the default subclient.

1. From the CommCell Browser, right-click the Exchange Database agent on the source client, and click **All Tasks** | **New Subclient**.
2. Click the **Contents** tab and then click **Configure**.
3. From the **Add/Modify Subclients** window, click the subclient entry for the database

that you want to add to the new subclient.

Click **Discover** to display all databases.

4. Alternatively, you can select and assign a range of databases to the new or existing subclient using the **Change all selected databases/storage groups to** list.
5. Click **OK**.



CONFIGURING EVENT CHECK

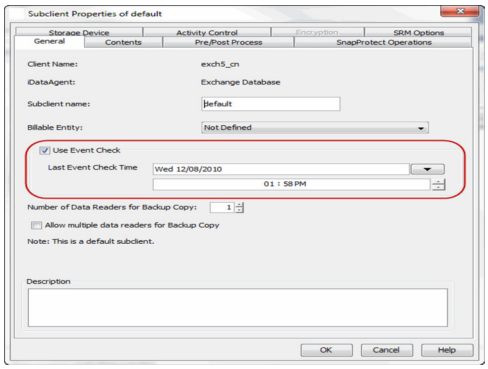
The Event Check option can examine the event logs for the Exchange application to ensure that these errors have not occurred before initiating a backup of the database. Any of these errors occurring in the Exchange application event log before the specified date and time will be ignored, and any found after the specified date and time will cause the backup to fail.

This option can scan for the following file-level damage errors prior to continuing with the backup:

- `-1018 JET_errReadVerifyFailure`
- `-1022 JET_errDiskIO`.

Follow the steps below to enable the event check option:

1. From the CommCell Browser, right-click the subclient you want to configure for Event Check, then click **Properties**.
2. Click **Use Event Check**.
3. Specify the date and time in the **Last Event Check Time** field. This will serve as the starting point to begin checking the Exchange application event log.
4. Click **OK**.



CONFIGURING DATABASE AVAILABILITY GROUP (DAG) BACKUPS

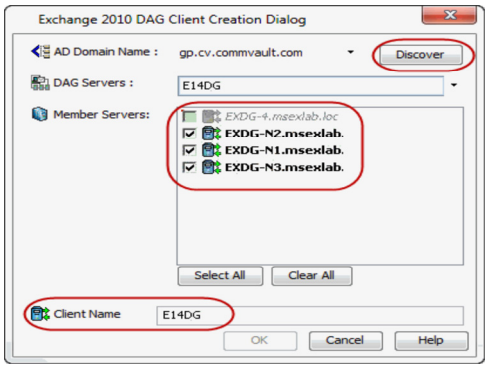
Prior to using the Exchange Database *i*DataAgent in Database Availability Group (DAG) environments, you must configure a master client and select the appropriate server as follows:

1. From the CommCell Browser, right-click the **Client Computers** node and select **New Client**.
2. Select **Exchange 2010 DAG Client**.
3. Click **Discover** and enter the Active Directory credentials in the **AD Server Credentials** dialog. These credentials can be either for the current domain or a pre-configured external domain.

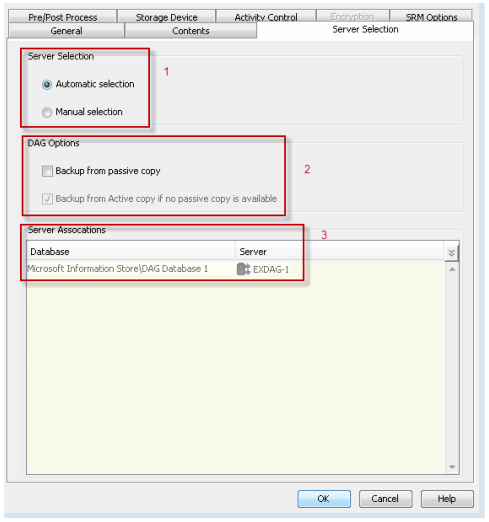
   Click **OK**. DAG **Member Servers** are listed with their fully qualified domain name and will appear highlighted if the Exchange Database *i*DataAgent of the current software release is installed.

4. Select a server from the **DAG Servers** drop-down list.
5. Enter the **Client Name**.
6. Click **OK**.

   The master client is created. All configuration, backup and restore operations will be initiated from the master client.



7. From the CommCell Browser, navigate to the Master Client's subclient, right-click and select **Properties**.
8. Click the **Server Selection** tab.
9. Select **Auto** or **Manual**.
   - If selecting **Auto**, then select **Backup from passive copy**. If a passive copy is not available, then select **Backup from Active copy if no passive copy is available**.
   - If selecting **Manual**, a list of all discovered databases will be listed under **Server Associations**. Select the server to which you want to backup the databases.
10. Click **OK**.



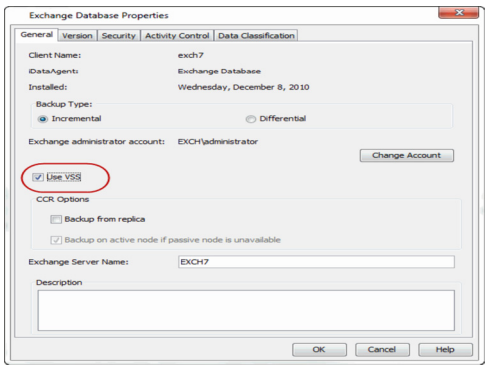
CONFIGURING BACKUPS OF LOCKED DATABASES

In some cases, it may be desirable to allow write operations on data being backed up to continue while the backup runs. Enabling VSS for backups provides this capability.

During a VSS backup, the free space needed on a volume for the shadow copy is related to the duration of the backup and the amount of changes being made to the data objects (files, databases) that are being backed up. VSS snapshots capture and copy disk blocks that are being changed by other processes while the backup for a particular object is running. If the backup runs longer, or there is a lot of disk activity (files or databases being changed). This causes VSS to copy more data blocks and therefore, use more disk space.

VSS can be enabled for backups of local volumes in both clustered and non-clustered environments. If the operating system fails to create a shadow copy of the data a traditional backup of the data will be performed, and a corresponding message will appear in the Event Viewer. A consistency check of the database integrity will be performed by the system prior to backing up the data, and if the integrity check fails then the backup will fail.

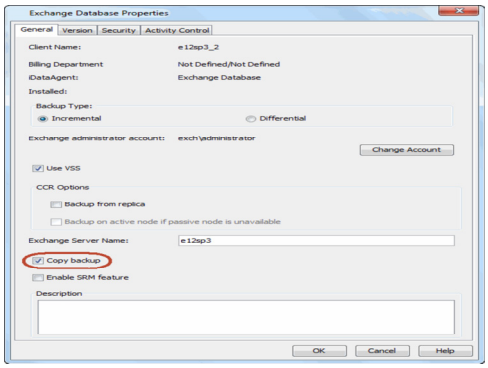
1. Ensure the Exchange database is mounted.
2. From the CommCell Browser, navigate to **Client Computers | Exchange Database | Subclient.**
3. Click **Properties**.
4. Select **Use VSS**.
5. Click **OK**.



PREVENTING LOG TRUNCATION DURING BACKUPS

By default, log files are truncated during backups. However, it may be desirable to keep log files from being truncated to preserve their original state if needed during a restore. This can be accomplished using the **Copy Backup** feature.

1. From the CommCell Browser, right-click the Agent for the Exchange Database , and then click **Properties**.
2. Click **Copy Backup**.
3. Click **OK**.



CONFIGURING CLUSTER CONTINUOUS REPLICATION (CCR) BACKUPS

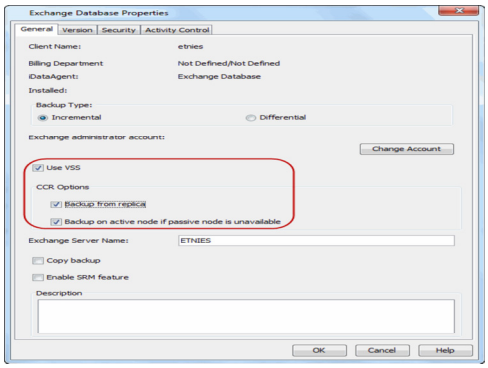
CCR backups continuously replicate the Exchange Database transaction logs residing on the active node of a CCR cluster to the passive node. In the event of failover, the replicated database will be available to users, which reduces the frequency at which full backups must be taken and the volume of backup data and media usage, as well as shortening the time it takes to recover from failure. No resources are shared and and only one virtual server is used.

Follow the steps below to enable cluster continuous replication backups:

1. From the CommCell Browser, right-click the Agent for the Exchange 2007 Database that you want to configure for CCR backups, and then click **Properties**.
2. Click the **Use VSS** and **Backup from replica** check-boxes.

   Select **Backup on active node if passive node is unavailable** if appropriate for your environment and if you intend to use backups from the active node to perform a CCR seeding operation of data to the passive node.
3. Click **OK**.

   CCR options are configured. Subsequent backups for the agent will use VSS to perform a Shadow Copy backup of the replica database on the passive node of a CCR cluster.



MODIFYING AN AGENT OR SUBCLIENT

There are several configurable properties available for your agent that can be modified from the agent or subclient level as per need.

It is recommended that that you do not modify the properties of a subclient when a job is in progress for that specific subclient. If a job is in progress, either wait for the job to complete or kill the job from the Job Controller.

The following table describes the properties that can configured from the agent and subclient levels.

OPTION	DESCRIPTION	RELATED TOPICS
Change the Exchange Server Name	You can modify the name of the Exchange Server. However, the exchange server name should not be the same as Client or Host Name. 1. From the CommCell browser, right-click the Exchange Database Agent. 2. Click **Properties**. 3. Select **General.** 4. Type the **Exchange Server Name**. 5. Click **OK.**	
Enable SRM Feature	You can enable the SRM feature to generate the Exchange Database Summary Reports. 1. From the CommCell browser, right-click the Exchange Database Agent. 2. Click **Properties**. 3. Select **General.** 4. Select **Enable SRM Feature**. 5. Click **OK.**	Refer SRM Exchange
Change Storage Policies	You can modify the storage policies in any of the following situations: • To include a different media for the backup operation. • To use a storage policy with a different retention criteria. You can change the storage policies from the subclient level.	Refer to Storage Policies.

	1. From the CommCell Browser, right-click the subclient. 2. Click **Properties**. 3. Click **Storage Device**. 4. Select the **Storage policy** from the drop-down menu. 5. Click **OK**.	
Rename a Subclient	You can rename a subclient: 1. From the CommCell Browser, right-click the subclient. 2. **C**lick **Properties.** 3. Type the new name in the **Subclient name** field. 4. Click **OK**.	
Data Transfer Options	You can efficiently configure the available resources for transferring data secured by data protection operations from the subclient level. This includes the following: • Enable or disable **Data Compression** either on the client or the MediaAgent. • Configure the transfer of data in the network using the options for **Network Bandwidth Throttling** and **Network Agents**. You can configure the data transfer options. 1. From the CommCell Browser,right-click the subclient. 2. Click **Properties.** 3. Click **Storage Device.** 4. Click **Data Transfer Option** tab. 5. Choose the appropriate software compression option for this subclient. 6. Select **Throttle Network Bandwidth** and set the required bandwidth. 7. Click **OK.**	Refer to Data Compression and Network Bandwidth Throttling.
View Data Paths	You can view the data paths associated with the primary storage policy copy of the selected storage policy or incremental storage policy. You can also modify the data paths including their priority from the subclient level. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties.** 3. Click **Storage Device.** 4. Select **Storage Policy** from the drop-down menu. 5. Click **Data Paths**.	
Number of Data Readers for a Backup Copy	Use this option to specify the number of simultaneous backup data streams allowed for this subclient. You can specify multiple data readers for backup copy from this subclient. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties** 3. Select the **Number of Data Readers.** 4. Select **Allow multiple data readers for Backup Copy** 5. Click **OK.**	Refer to Streams.
Configure a Subclient for Pre/Post Processing of Data Protection	You can add, modify or view Pre/Post processes for the subclient. These are batch files or shell scripts that you can run before or after certain job phases. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties**. 3. Click **Pre/Post Process**. 4. Click one of the following phases and type the full path of the process that you want to execute during that phase. Alternatively, click **Browse** to locate the process (applicable only for paths that do not contain any spaces). ○ **PreBackup Process** ○ **PostBackup Process** ○ **PreSnap Process** ○ **PostSnap Process** 5. Click **OK**. 6. Select **Run Post Backup Process for all attempts** to run a post backup process for all attempts. 7. For subclients on Windows platforms, **Run As** displays **Not Selected**. If you want to change the account that has permission to run these commands, click **Change**.	Refer to Pre/Post Processes.

	a. In the **User Account** dialog box, select **Use Local System Account,** or select **Impersonate User** and enter the user name and password. Click **OK**. b. If you selected Local System Account, click **OK** to the message advising you that commands using this account have rights to access all data on the client computer.	
Configure Activity Control	You can enable backup and restore operations from the agent and subclient level. However, you can enable restore operations only from the agent level. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties.** 3. Click **Activity Control**, select or clear option(s) as desired. 4. Click **OK**.	Refer to Activity Control.
Configure User Security	You can configure user security from the agent or subclient level. You can perform the following functions: ● Identify the user groups to which this CommCell object is associated. ● Associate this object with a user group. ● Disassociate this object from a user group. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties.** 3. Click **Security**. 4. Select the appropriate user groups to which you want to associate to the CommCell object from the **Available Groups** pane, and then move the user group to the **Associated Groups** pane. 5. Click **OK**.	Refer to User Administration and Security.
Enable/Disable Data Encryption	You can enable data encryption from the suclient level.Encryption must be enabled at the client level prior to configuring any instances residing on that client. 1. From the CommCell browser, right-click the subclient. 2. Click **Properties.** 3. Click **Encryption.** 4. Select the desired encryption. 5. Click **OK**.	Refer to Data Encryption.
View Software Version	The **Version** tab, at the Agent level displays the software version of the component. 1. From the CommCell browser, right-click the agent. 2. Click **Properties**. 3. Click **Version**. 4. Click **OK**.	
CommCell Configuration Report	The CommCell Configuration Report provides the properties of the CommServe, MediaAgents, clients, agents, SRM agents, subclients, and storage policies within the CommCell based on the selected filter criteria. 1. From the CommCell browser, click **Reports** icon. 2. Select **CommCell Configuration**. 3. Click **Run**.	Refer to CommCell Configuration.

DELETING AN AGENT OR SUBCLIENT

The following sections describe the steps involved in deleting an agent or subclient.

When you delete an instance or backupset, the associated data is logically deleted and you can no longer access the corresponding data from CommCell Console for recovery purposes.

Refer to the troubleshooting article on Recovering Data Associated with Deleted Clients and Storage Policies for information on how to recover data if you accidentally delete an entity.

DELETING AN AGENT

You need to uninstall or DeConfigure the agent software from the client computer before deleting from CommCell Browser. After you delete the client software, you can either leave the corresponding data intact for appropriate action or you can remove the data immediately. If you choose to remove the data immediately, you must delete the agent from the CommCell Browser. If you delete the agent, all of the agent's data is irretrievably lost.

- You cannot delete an agent while operations for that agent are running.

1. From the CommCell Browser, navigate to **Client Computers | *<Client>***.
2. Right-click the ***<Agent>***, and then click **Delete**.

3. A confirmation message is displayed with the following message:

   ```
   This operation will permanently delete the data backed up from this level and it cannot be restored.
   ```

4. Click **OK** to continue with the deletion operation., or click **No** to abort the deletion.

DELETING A SUBCLIENT

Consider the following before deleting a subclient:

- You cannot delete a default subclient.
- Schedules associated with the subclient are also automatically deleted.

1. From the CommCell Browser, navigate to **Client Computers | *<Client>* | *<Agent>* | *<Backup Set>.***
2. Right-click the ***<subclient>*** that you want to delete, and then click **Delete**.
3. A confirmation message is displayed, asking if you want to delete the subclient.

   Click **No** to cancel the deletion and retain the subclient, or click **Yes** to continue the deletion.

CONFIGURING TO FILTER RECOVERY DATABASES FROM BACKUPS

By default the Recovery Databases are auto discovered along with the other databases, but they should not be backed up as the backups will fail. To filter Recovery Databases from backups follow the steps given below:

1. From the CommCell Browser, right-click the Exchange Database agent on the source client, and click **All Tasks** | **New Subclient**.
2. Click the **Contents** tab and then click **Configure**.
3. From the **Add/Modify Subclients** window, click the subclient entry for the database that you want to add to the new subclient.

   Click **Discover** to display all databases.
4. Select the Recovery Databases and assign to the new subclient using the **Change all selected databases/storage groups to** list.
5. Click **OK**.

   Ensure that the subclient with Recovery Databases as its content is not scheduled for backups.

CONFIGURING TO FILTER RECOVERY STORAGE GROUPS FROM BACKUPS

By default the Recovery Storage Groups are auto discovered along with the other databases, but they should not be backed up as the backups will fail. To filter Recovery Storage Groups from backups follow the steps given below:

1. From the CommCell Browser, right-click the Exchange Database agent on the source client, and click **All Tasks** | **New Subclient**.
2. Click the **Contents** tab and then click **Configure**.
3. From the **Add/Modify Subclients** window, click the subclient entry for the database that you want to add to the new subclient.

   Click **Discover** to display all databases.
4. Select the Recovery Storage Groups and assign to the new subclient using the **Change all selected databases/storage groups to** list.
5. Click **OK**.

   Ensure that the subclient with Recovery Storage Groups as its content is not scheduled for backups.

COMMAND LINE OPERATIONS

You can add, modify or delete several configurable properties for the Exchange Database *i*DataAgent from command line.

Command line configuration enables you to:

- configure the same properties across multiple clients simultaneously.
- reuse the same configurations for additional entities.

The following sections describe the available command line configurations:

LOG ON TO THE COMMSERVE

To run command line operations you must first login to the CommServe as follows:

- From Command prompt, navigate to <Software_Installation_Directory>/Base and run the following command:

```
qlogin -cs <commserve name> -u <user name>
```

- For example, to log on to CommServe 'server1' with username 'user1':

```
qlogin -cs server1 -u user1
```

CONFIGURE SUBCLIENTS

CREATE SUBCLIENT

Use the following steps to create subclients from the command line. This operation is not supported for DAG configuration.

1. Download the create_subclient_template.xml file and save it on the computer from where the command will be executed.
2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execute -af create_subclient_template.xml -appName 'Exchange Database' -clientName xxxxx -subclientName xxxxx
```

GET SUBCLIENT PROPERTIES

1. Download the get_subclient_properties_template.xml file and save it on the computer from where the command will be executed.
2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execute -af get_subclient_properties_template.xml -appName 'Exchange Database' -clientName xxxxx -subclientName xxxxx
```

MODIFY SUBCLIENT

1. Download the update_subclient_add_template.xml file and save it on the computer from where the command will be executed.
2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execute -af update_subclient_add_template.xml -appName 'Exchange Database' -clientName xxxxx -subclientName xxxxx
```

DELETE SUBCLIENT

1. Download the delete_subclient_template.xml file and save it on the computer from where the command will be executed.
2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execute -af delete_subclient_template.xml -appName 'Exchange Database' -clientName xxxxx -subclientName xxxxx
```

AVAILABLE COMMAND PARAMETERS

The following table displays all the parameters you can use with the commands mentioned in the above sections. To add a parameter to your command, use the following syntax: (Some examples are provided at the end of the table.)

```
qoperation execute -af <template XML file> -<parameter name> <value>
```

PARAMETER	DESCRIPTION OF PARAMETER VALUES
clientName	Name of the client computer.
backupsetname	Name of the backup set.
appName	Name of the application. In this case it would be 'Exchange Database'.
subclientname	Name of the subclient.
enableBackup	Option to enable/disable backup. Valid values are True/False.
encryptionFlag	Option to set the encryption points during backups. Valid values are: • ENC_MEDIA_ONLY, to encrypt the backup data after transmission and prior to storage on the media. • ENC_NETWORK_AND_MEDIA, to encrypt the backup data before transmission. The data is stored encrypted on the media. • ENC_NETWORK_ONLY, to encrypt the backup data for transmission and then decrypt the data prior to storage on the media. • ENC_NONE, to disable data encryption.
networkAgents	Number of Network Agents.
softwareCompression	Option to enable compression on the Client or MediaAgent computer. Valid values are: • ON_CLIENT, to enable software compression on the client. • ON_MEDIAAGENT, to enable software compression on the MediaAgent. • OFF, to disable software compression.
throttleNetworkBandwidth	Enhancing backup performance by reducing network bandwidth overhead.

	Valid values are 0/1.
enableDeduplication	Option to enable deduplication on subclient. Valid values are True/False.
generateSignature	A component of deduplication performed on the client or MediaAgent computer. Valid values are: • ON_CLIENT, to enable signature generation on the client. • ON_MEDIA_AGENT, to enable signature generation on the MediaAgent. • OFF, to disable signature generation.
storagePolicyName	Name of the Storage Policy to be associated for backup.
useGlobalFilters	Option to enable the use of global filters. Valid values are: • ON, to enable global filters for the subclient. • USE_CELL_LEVEL_POLICY, to enable the use of global filters if the **Use Global Filters on All Subclients** option is enabled on the Control Panel (Global Filters) dialog. If the option is disabled, USE_CELL_LEVEL_POLICY will disable global filters for the subclient. • OFF, to disable global filters.
useVSS	Option to enable/disable VSS for backing up the file system data. Valid values are True/False.
useVSSForSystemState	Option to enable/disable VSS for backing up the system state. Valid values are True/False.
backupSystemState	Option to enable/disable back up of the system state. Valid values are True/False.
postBackupCommand	Path to the post process script that will be run after the backup.
postScanCommand	Path to the post process script that will be run after the scan phase
preBackupCommand	Path to the pre process script that will be run before the backup.
preScanCommand	Path to the pre process script that will be run before the scan phase
runAs	Option to specify the user name who has permissions to run the pre/post process scripts. Valid values are: • USE_IMPERSONATION, to specify a user with enough privileges to run the scripts. When using this value, you also need to provide the user credentials: `-prepostUserName/userName <user name> -prepostUserName/password <password>` • USE_LOCAL_SYS_ADMIN, to use the administrator account to run the scripts.
content/path	Location of the content to be backed up. This parameter must be used along with the contentOperationType parameter, for example: `-contentOperationType <value> -content/path '<path value>'`
content/excludepath	Location of the content to be excluded from backup. This parameter must be used along with the contentOperationType parameter, for example: `-contentOperationType <value> -content/excludepath '<path value>'`
content/includepath	Location of the content to be included in the backup from the excluded list. This parameter must be used along with the contentOperationType parameter, for example: `-contentOperationType <value> -content/includepath '<path value>'`
contentOperationType	Modification type. Valid values are • ADD, to add content to the subclient • OVERWRITE, to overwrite contents to the subclient. • DELETE, to delete the contents from the subclient.

The following examples show how to add a parameter for a command:

Adding Content	To update the location for the subclient content use the following command: `qoperation execute -af update_subclient_add_template.xml -appName 'Exchange Database' -clientName client1 -subclientName subclient1`
Setting a Storage Policy	To assign a storage policy to a subclient, add the 'storagePolicyName' parameter to the following command: `qoperation execute -af update_subclient_add_template.xml -appName 'Exchange Database' -clientName client1 -subclientName subclient1 -storagePolicyName sp1`

For detailed information on the Subclient parameters see Subclient Properties.

CHANGE THE EXCHANGE ADMINISTRATIVE DETAILS

User credentials are required for Exchange database restore. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execscript -sn SetExchangeDBIDAProp -si @clientName='client1' -si @userName='domain\user1' -p2
@password='password' -si  @backupType='Incremental' -si @useVss='true' -si @backupFromReplica='true' -si
@backupOnActiveNode='true' -si @serverName='server1' -si @copyBackup='true'
```

where:

ClientName is the short name of the Exchange Server.

UserName and **Password** are the user credentials that you want to define for the account.

LIST SCHEDULE POLICY ASSOCIATION

1. Download the sched_policy_association_template.xml file and save it on the computer from where the command will be executed.
2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

```
qoperation execute -af sched_policy_association_template.xml -taskName mypolicy
```

PARAMETER	DESCRIPTION OF PARAMETER VALUES
taskName	Name of the Schedule Policy to be associated.

Advanced – Microsoft Exchange Database *i*DataAgent Backup

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Additional Options

RELATED TOPICS

Scheduling
Provides comprehensive information on scheduling jobs.

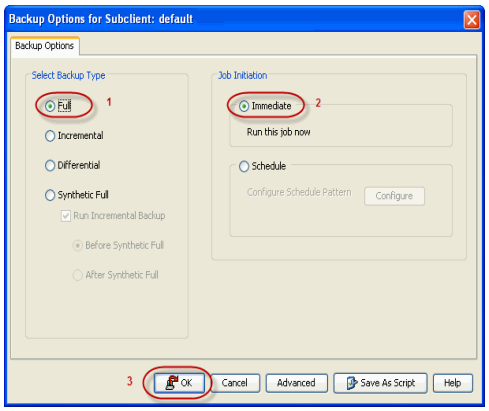
Job Management
Provides comprehensive information on managing jobs.

FULL BACKUP

Full backups provide the most comprehensive protection of data.

1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database.**
2. Right click the <***Subclient***> and click **Backup**.
3. Select **Full** as backup type and **Immediate** to run the job immediately.
4. Click **OK**.

   You can track the progress of the job from the **Job Controller**. When the backup has completed, the **Job Controller** displays **Completed**.



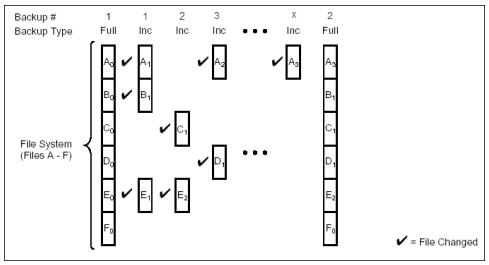
INCREMENTAL BACKUP

An incremental backup contains only data that is new or has changed since the last backup, regardless of the type. On average, incremental backups consume less media and use less resources than full backups.

The illustration on the right clarifies the nature of full and incremental backups.

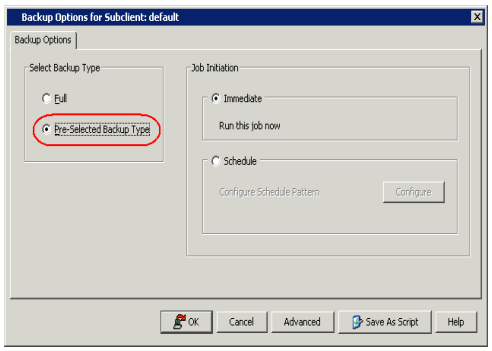
Follow steps given below to perform an incremental backup:

> To perform an incremental backup, the Pre-selected Backup Type must have been configured for incremental backups during installation.



1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**.
2. Right click the <***Subclient***> and click **Backup**.
3. Select **Pre-Selected Backup Type** as backup type and **Immediate** to run the job immediately.
4. Click **OK**.

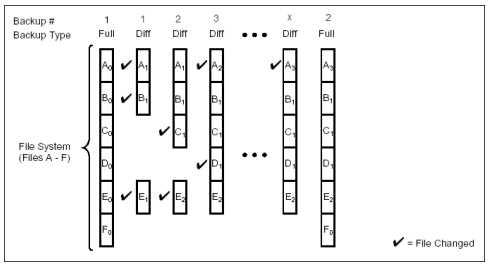
   You can track the progress of the job from the **Job Controller**. When the backup has completed, the **Job Controller** displays **Completed**.



DIFFERENTIAL BACKUP

A differential backup contains only the data that is new or has changed since the last full backup. Like incremental backups, differential backups also consume less media and use less resources than full backups. Differential backups are cumulative. This means that each differential backup contains all changes accumulated since the last full backup. Each successive differential backup contains all the changes from the previous differential backup.

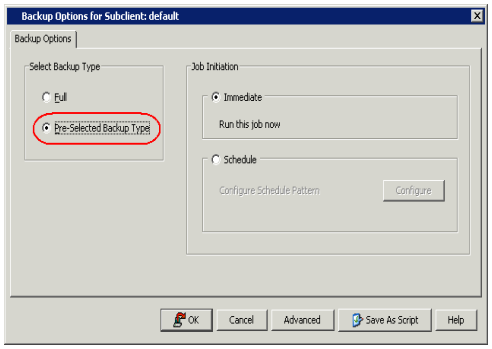
The illustration on the right demonstrates the nature of differential backups. For simplicity, assume there is a file system that contains six files as represented in the figure.



> To perform a differential backup, the Pre-selected Backup Type must have been configured for differential backups during installation.

1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**.
2. Right click the <***Subclient***> and click **Backup**.
3. Select **Pre-Selected Backup Type** as backup type and **Immediate** to run the job immediately.
4. Click **OK**.

   You can track the progress of the job from the **Job Controller**. When the backup has completed, the **Job Controller** displays **Completed**.

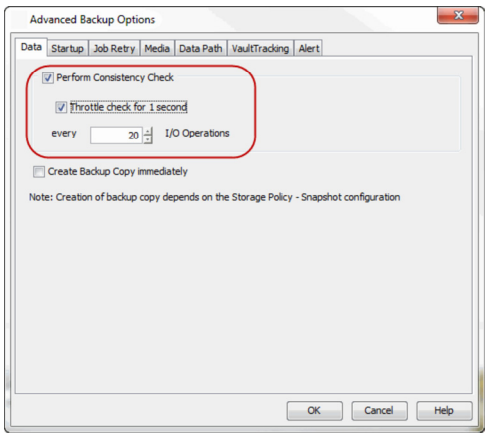


PAUSE CONSISTENCY CHECKS DURING BACKUPS

Pause points allow Exchange system resources to be made available periodically to other processes (e.g. send and receive e-mail messages) during the following:

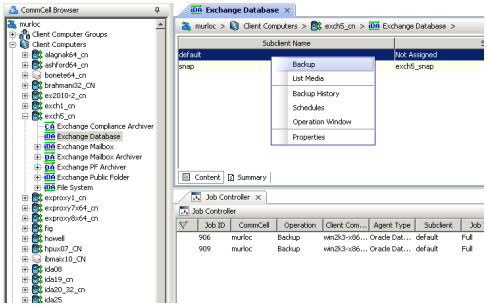
- Prolonged consistency checks of large databases
- High load on the Exchange Server

1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**.
2. Right click the <***Subclient***> and click **Backup**.
3. Click **Advanced**.
4. Click the **Data** tab and select the **Perform Consistency Check** option.
5. Select the **Throttle check for 1 second** option and enter the number of I/O operations to complete before the throttle check is performed.
6. Click **OK**.

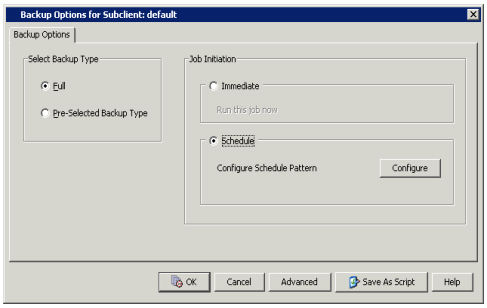


SCHEDULING A BACKUP

1.
   - Navigate to ***<Client>*** | **Exchange Database**.
   - Right-click the
   - **Right-click the Subclient and click Backup.**

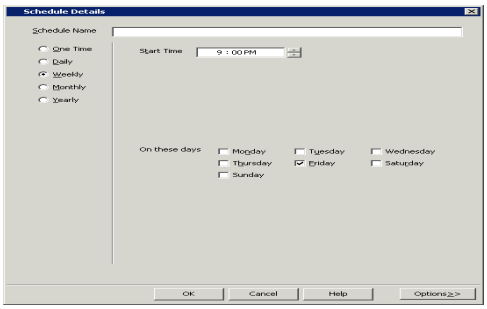


2.
   - Click **Schedule** to schedule the backup for a specific time.
   - Click Configure to set the schedule for the backup job. The Schedule Details dialog displays.



3. Select the appropriate scheduling options. For example:
   - Click **Weekly**.
   - Check the days you want the run the backup job.
   - Change the Start Time to 9:00 PM
   - Click **OK** to close the Schedule Details dialog
   - Click **OK** to close the Backup Options dialog

   The backup job will execute as per the schedule.



MANAGING JOBS

Once you initiate the backup operation, a backup job is generated in the Job Controller. Jobs can be managed in a number of ways. The following sections provide information on the different job management options available:

RESTARTING JOBS

Jobs that fail to complete successfully are automatically restarted based on the job restartability configuration set in the Control Panel. Keep in mind that changes made to this configuration will affect all jobs in the entire CommCell.

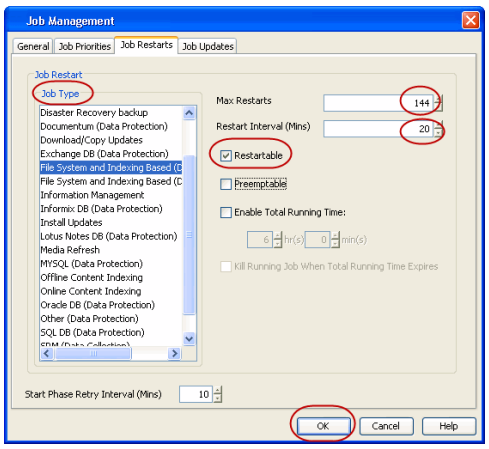
To Configure the job restartability for a specific job, you can modify the retry settings for the job. This will override the setting in the Control Panel. It is also possible to override the default CommServe configuration for individual jobs by configuring retry settings when initiating the job. This configuration, however, will apply only to the specific job.

Backup jobs for this Agent are resumed from the point-of-failure.

CONFIGURE JOB RESTARTABILITY AT THE COMMSERVE LEVEL

1. From the CommCell Browser, click **Control Panel** icon.
2. Select **Job Management.**
3. Click **Job Restarts** tab and select a **Job Type.**
   - Select **Restartable** to make the job restartable.
   - Change the value for **Max Restarts** to change the maximum number of times the Job Manager will try to restart a job.
   - Change the value for **Restart Interval (Mins)** to change the time interval between attempts for the Job Manager to restart the job.

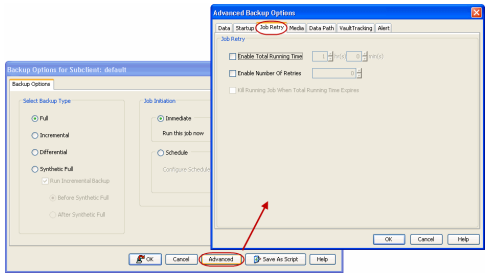
4. Click **OK.**



CONFIGURE JOB RESTARTABILITY FOR AN INDIVIDUAL JOB

1. From the CommCell Console, navigate to ***<Client>*** | **Exchange Database**
2. Right-click the **Subclient** and select **Backup**
3. Click **Advanced.**
4. In the **Advanced Backup Options** dialog box, click the **Job Retry** tab.
5. Select **Enable Total Running Time** and specify the maximum elapsed time before a job can be restarted or killed.

   Select **Kill Running Jobs When Total Running Time Expires** to kill the job after reaching the maximum elapsed time.
6. Select **Enable Number Of Retries** and specify the number of retries.
7. Click **OK.**



CONTROLLING JOBS

The following controls are available for running jobs in the Job Controller window:

SUSPEND	Temporarily stops a job. A suspended job is not terminated; it can be restarted at a later time.
RESUME	Resumes a job and returns the status to Waiting, Pending, Queued, or Running. The status depends on the availability of resources, the state of the Operation Windows, or the Activity Control setting.
KILL	Terminates a job.

SUSPENDING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Suspend**.
2. The job status may change to **Suspend Pending** for a few moments while the operation completes. The job status then changes to **Suspended.**

RESUMING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Resume**.
2. As the Job Manager attempts to restart the job, the job status changes to **Waiting**, **Pending**, or **Running**.

KILLING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Kill**.
2. Click **Yes** when the confirmation prompt appears if you are sure you want to kill the job. The job status may change to **Kill Pending** for a few moments while the operation completes. Once completed, the job status will change to **Killed** and it will be removed from the Job Controller window after five minutes.

COMMAND LINE BACKUPS

You can perform backups of Exchange Databases from the command line interface.

Command line backups enable you to perform backup operation on multiple clients simultaneously. In order to run the backups from command line, you need an input xml file which contains the parameters for configuring the backup options. This input xml file can be obtained from one of the following ways:

- Download the input xml file template and save it on the computer from where the backup will be performed.

- Generate the input xml file from the CommCell Console and save it on the computer from where the backup will be performed.

LOG ON TO THE COMMSERVE

To run command line operations you must first login to the CommServe as follows:

- From Command prompt, navigate to <Software_Installation_Directory>/Base and run the following command:

```
qlogin -cs <commserve name> -u <user name>
```

- For example, to log on to CommServe 'server1' with username 'user1':

```
qlogin -cs server1 -u user1
```

PERFORM THE BACKUP

1. Download the backup_template.xml file and save it on the computer from where the command will be executed.
2. Execute the saved .xml script using qoperation execute command.

   ```
   qoperation execute -af backup_template.xml -backupLevel  FULL -subclientName xxxxx -clientName xxxxx
   ```

3. Verify the status of the job using the following command:

   ```
   qlist job -j JOBID
   ```

4. Once the job completes, logout from the CommServe using the qlogout command.

   ```
   qlogout [-cs commserver] [-all] [-tf tokenfile] [-tk token] [-h]
   ```

EXAMPLES

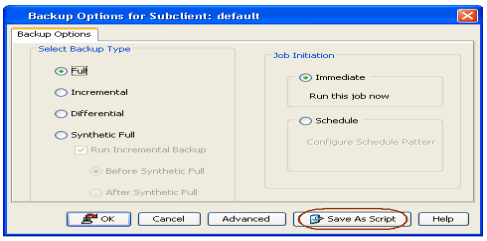
Performing a Full Backup	`qoperation execute -af backup_template.xml -backupLevel  FULL -subclientName subclient1 -clientName client1`
Performing an Incremental Backup	`qoperation execute -af backup_template.xml -backupLevel  INCREMENTAL -subclientName subclient1 -clientName client1`

GENERATE THE COMMAND LINE SCRIPT FROM THE COMMCELL CONSOLE

In addition to the parameters provided in the template xml file, if you want to include additional options for the backup, you can do so by selecting the required options from the CommCell Console and generate the command line xml script for the backup.

Follow the steps given below to generate a script which you can use to perform a backup from the command line interface:

1. From the CommCell Console, navigate to ***<Client>*** | **Exchange Database *i*DataAgent** | **defaultBackupSet**.
2. Right click the default subclient and click **Backup**.
3. Select the required backup options which you want to execute using the script.
4. Click **Save as Script**.



5. Enter the location where you want to save the script or click **Browse** and navigate to the location.

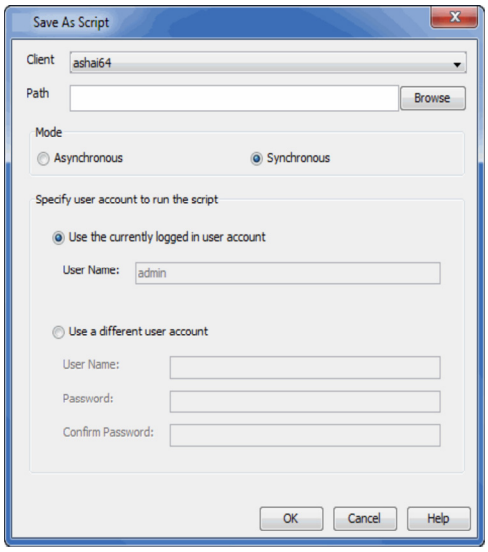
   The script will be saved as a .xml file and a .bat file is created.

   If a file with the same name already exists in the specified location, the .xml file will be created with a timestamp. However, the .bat file will overwrite the existing file.

6. Enter the username and password for the user account which you want to use to perform the backup.

   By default, the user account which you have used to login to CommCell console is used for performing the backup. However, if the user account does not have access to any application or database, click **Use a different account**.

7. Click **OK**.



ADDITIONAL OPTIONS

Several additional options are available to further refine your backup operations. The following table describes these options, as well as the steps for configuring them.

Be sure to read the overview material referenced for each feature prior to using them.

OPTION	DESCRIPTION	RELATED TOPICS
Startup Options	The Job Manager will use the startup priority setting when allocating the required resources. This is useful if you have jobs that are very important and must complete, or jobs that can be moved to a lower priority. 1. From the CommCell Browser, navigate to ***<Client>*** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Startup**. 6. Select **Default Priority.** You can select **Change Priority** for a job, between 0 (highest priority) and 999 (lowest priority). 7. Select **Start up in suspended State** to specify the selected job to start in the Job Controller in a suspended state. 8. Click **OK**.	Refer to Job Priority and Priority Precedence.
Job Retry Options	The Job Retry option helps in configuring the retry behavior of the backup jobs. You can specify the maximum elapsed time before a job can be restarted or killed and the maximum number of restart attempts. 1. From the CommCell Browser, navigate to ***<Client>*** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Job Retry**. 6. Select **Enable Total Running Time** and specify the maximum elapsed time in hours and minutes. 7. Select **Number Of Retries** and specify the number of retries. Based on this number, the Job Manager attempts to restart the job. 8. Select **Kill Running Jobs When Total Running Time Expires.** The job will be killed when the job is still in running status even after reaching the maximum elapsed time. 9. Click **OK**.	Refer to Job Management.
Start New Media	The Start New Media option helps in starting the backup/archive operation on a new media. This media management feature provides a degree of control over where the data physically resides. 1. From the CommCell Browser, navigate to ***<Client>*** | **Exchange Database**.	Refer to Start New Media.

	2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Media**. 6. Select **Start New Media**. 7. Click **OK**.	
Mark Media Full	The Mark Media Full on Success option marks the Media as Full, 2 minutes after the successful completion of the backup/archive. This feature prevents any other data being written to the same media. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Media**. 6. Select **Mark Media Full on Success.** 7. Click **OK**.	Refer to Export Media.
Allow other Schedules to use Media Set	The Allow Other Schedules to use Media Set option allows jobs that are part of the schedule or schedule policy and using the specific storage policy to start a new media. It also prevents other jobs from writing to the same set of media. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select Media. 6. Select **Allow Other Schedules To Use Media Set.** 7. Click **OK**.	Refer to Creating an Exportable Media Set.
Extend Job Retention	This option allows you to extend the retention end time of the selected job. You can extend the retention period to infinite period or for a specified number of days. You can also extend to storage policy default period. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select Media. 6. Select any of the following Extend Job Retention period options: **Infinite/Number of days/Storage Policy default.** 7. Click **OK**.	
Data Path Options	Data Protection operations use a specific data path (Library, MediaAgent, Drive Pool, and Drive) to perform the backup operations as configured in the CommCell. By default, the system automatically identifies the data path for the backup operations. The following are some of the important situations where you may need to change the data path: • When the preferred MediaAgent, library or drive pool is not available during the backup • When you need to use a different MediaAgent, library or drive pool for load balancing purposes. • When you need to direct that backup to a particular location for compliance purposes. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Data Path**. 6. Select the **MediaAgent** and **Library**. 7. Select the **Drive Pool** and **Drive** for optical and tape libraries. 8. Click **OK**.	Refer Change Data Path.
Vault Tracker	The VaultTracker feature provides the facility to manage media that are removed from a library and stored in offsite locations. The VaultTracker function provides the following capabilities in your day-to-day operations:	Refer to VaultTracker or VaultTracker Enterprise.

	• Identifies media that must be sent off-site for storage or brought back from off site locations. • Automatically moves the media in sequence in the library and provides a pick-up list for the operators. • Identifies and tracks the media during transit. • Records and tracks the movement of media not used by all MediaAgents or Foreign Media. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **VaultTracking.** 6. Select the necessary options. 7. Click **OK**.	
Alerts	The Alert option is used for setting up the criteria to raise notifications/alerts for job statuses such as failure, success, or any other conditions triggered by the backup job. Adding alerts helps the user or the user group to get the notification automatically about the status of the backup job. 1. From the CommCell Browser, navigate to **<*Client*>** | **Exchange Database**. 2. Right-click the **Subclient** and click **Backup**. 3. Click **OK**. 4. Click **Advanced**. 5. Select **Alert**. 6. Click **Add Alert**. 7. From the Add Alert Wizard window, select the **Threshold and Notification Criteria**. Click **Next.** 8. Select the **Notification Types.** Click **Next.** 9. Select the **Users and User Groups.** Click **Next.** 10. Verify the **Summary**. 11. Click **Finish**. 12. Click **OK**.	Refer to Alerts.
Command Line Backups	Command Line Interface enables you to perform backups from the command line. The commands can be executed from the command line or can be integrated into your own scripts or scheduling programs. In addition, you can also generate scripts for specific operations from the CommCell Console using the **Save As Script** option. These scripts can later be executed using the commands from the command line interface.	Refer to Command Line Interface.
CommCell Readiness Report	The CommCell Readiness Report provides you with vital information about the condition of your CommCell.	Refer to CommCell Readiness Report.
Backup Job Summary Report	The Backup Job Summary Report provides the details of all the backup jobs of clients.	Refer to Backup Job Summary Report.

Advanced - Microsoft Exchange Database *i*DataAgent Restore

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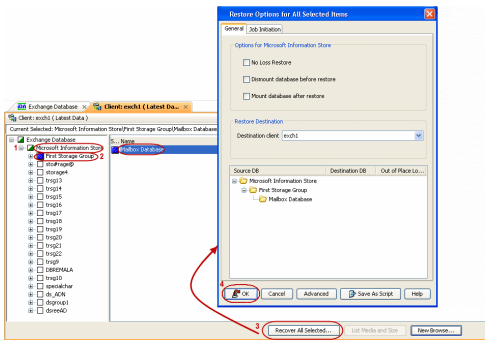
RESTORING A DATABASE

By default the database is restored to the same client from which it is backed up. Follow the steps given below to perform the in-place restore:

1. Ensure the database is marked for overwrite on the Exchange Server prior to performing the restore.
2. From the CommCell Console, navigate to **Client Computers | <*Client*>.**
3. Right-click **Exchange Database** and click **All Tasks** | **Browse Backup Data**.
4. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Click **OK** to start the restore.
7. Manually mount the stores after the restore.



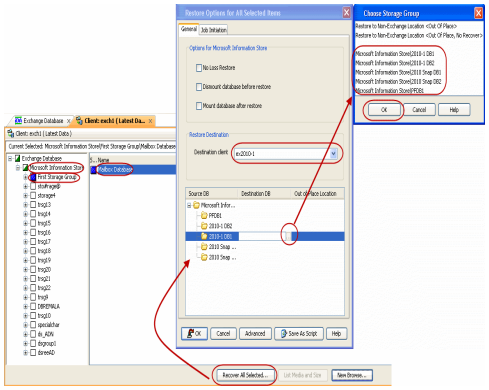
PERFORMING AN OUT-OF-PLACE RESTORE FOR VSS-ENABLED BACKUPS

Use one of the methods below to restore VSS-Enabled backups for Exchange Server 2007 and 2010. When restoring VSS-enabled backups, the options **No Loss Restore** and **Mount database after restore** do not apply.

RESTORING TO A STORAGE GROUP

You can restore the database stores to a different storage group (including Recovery Storage Groups) on the same Exchange Server, or to a different Exchange Server within the same Exchange organization.

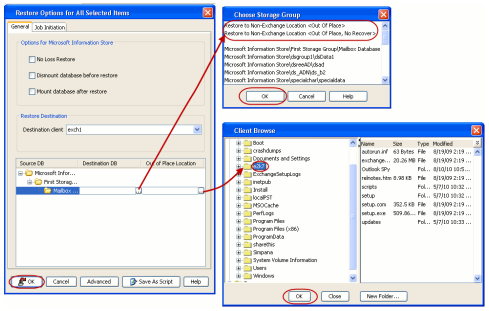
1. Ensure the database you want to restore is dismounted and marked for overwrite.
2. From the CommCell Console, navigate to **Client Computers | <*Client*>.**
3. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
4. Click **OK**.
5. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
6. Select the database to be restored in the right pane and click **Recover All Selected**.
7. Select the **Destination client**.
8. Select the **Source DB** and double-click in the **Destination DB** column.
9. Click **..** and select a **Storage Group**.
10. Click **OK**.
11. Click **OK** to start the restore.
12. Manually mount the stores after the restore.



RESTORING TO A DIFFERENT DISK LOCATION

You can restore the database stores to be a physically different location on disk (i.e., non-Exchange location) with a choice of whether or not to replay the logs.

1. From the CommCell Console, navigate to **Client Computers | <*Client*>.**
2. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Select the **Destination client**.
7. Select the **Source DB** and double-click in the **Destination DB** column.
8. Click **..** and select one of the following options in the **Storage Group** dialog box:
   - **Restore to Non-Exchange Location <Out of Place>** - The database will be restored to the specified location and the logs will be replayed.
   - **Restore to Non-Exchange Location <Out of Place, No Recover>** - The database will be restored to the specified location and the logs will not be replayed.
9. Double click in the **Out of Place Location** column and click **..** to specify the fully-qualified destination.
10. Select the destination folder from the Destination client.
11. Click **OK**.
12. Click **OK** to start the restore.
13. Manually mount the stores after the restore.

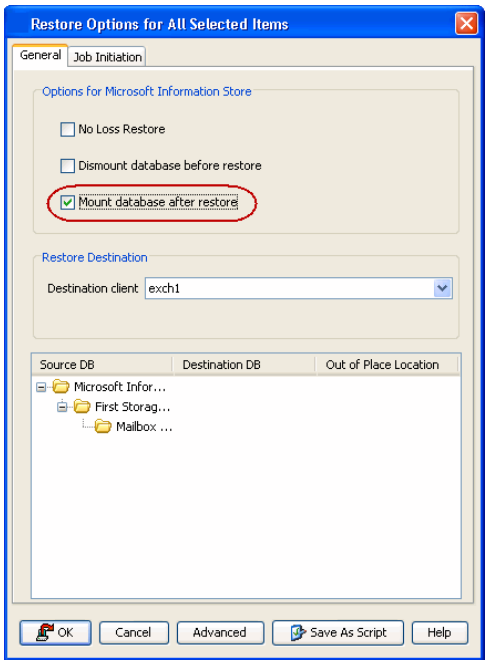


AUTOMATICALLY MOUNT DATABASE AFTER RESTORE

This option does not apply when restoring VSS-enabled backups.

You can automatically mount a database after a restore as follows:

1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Select **Mount database after restore**.
7. Select the **Source DB** and double-click in the **Destination DB** column.
8. Click **..** and select a storage group.
9. Click **OK** to start the restore.

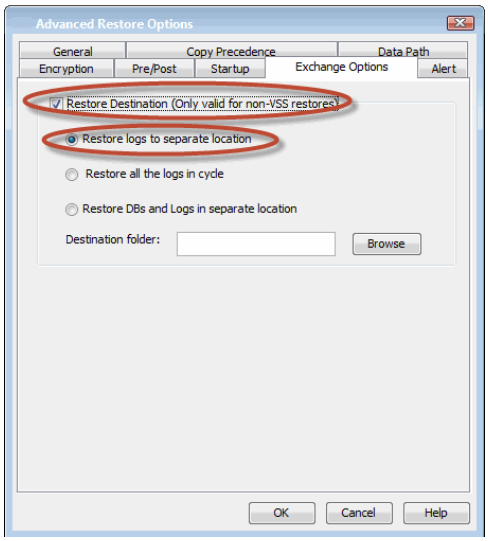


RESTORING LOGS

When you have not enabled VSS before performing a backup, you can choose the restore destination for database and logs as follows:

RESTORING LOGS TO A SEPARATE LOCATION

1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Select the **Source DB** and double-click in the **Destination DB** column.
7. Click **..** and select a storage group.
8. Click **Advanced**.
9. Click the **Exchange Options** tab.
10. Select **Restore logs to separate location**.
11. Click **Browse** and select a destination folder for logs.
12. Click **OK**.
13. Click **OK** to start the restore.

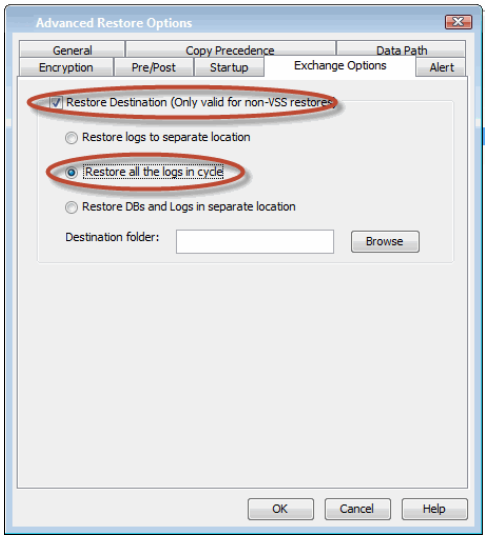


RESTORING LOGS FROM THE LAST BACKUP

Follow the steps given below to restore only the log files backed up in the current cycle to a specified out-of-place location:

1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Click **Advanced**.

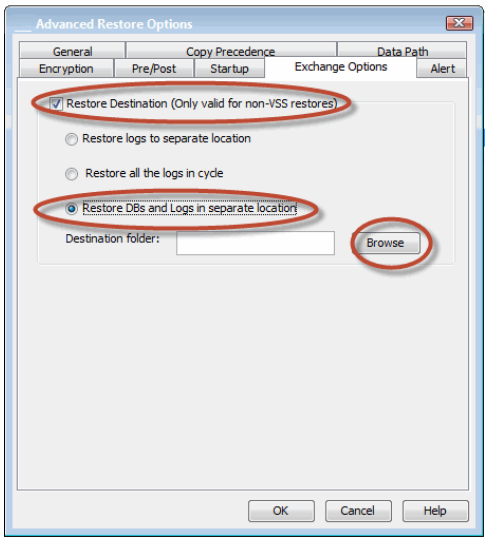
7. Click the **Exchange Options** tab.
8. Select **Restore all the logs in cycle**.
9. Click **OK**.
10. Click **OK** to start the restore.



RESTORING LOGS AND DATABASES SIMULTANEOUSLY

Follow the steps given below to restore both the database and log files to a specified out-of-place location.:

1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Click **Advanced**.
7. Click the **Exchange Options** tab.
8. Select **Restore DBs and Logs in separate location**.
9. Click **Browse** and select a destination folder for logs and databases.
10. Click **OK**.
11. Click **OK** to start the restore.



EXCHANGE SERVER 2010 DAG OUT-OF-PLACE RESTORES

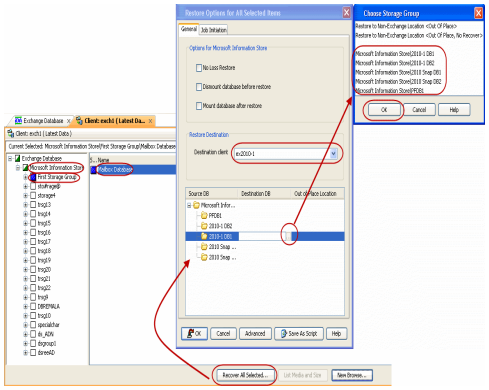
For Exchange Server 2010 DAG, follow the steps given below to perform Out-of-Place restores:

RESTORING TO A STORAGE GROUP

You can restore the database stores to a different storage group (including Recovery Storage Groups) on the same Exchange Server, or to a different Exchange Server within the same Exchange organization.

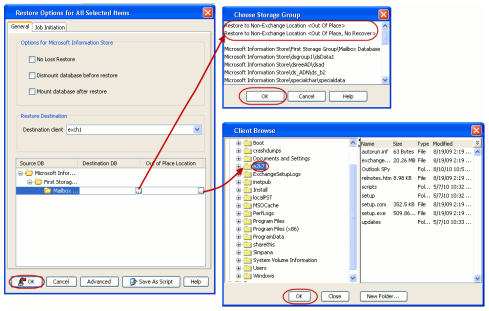
1. Ensure the database you want to restore is dismounted and marked for overwrite.
2. From the CommCell Console, navigate to **Client Computers | <*Client*>.**
3. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
4. Click **OK**.
5. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
6. Select the database to be restored in the right pane and click **Recover All Selected**.
7. Select the **Destination client**.
8. Select the **Source DB** and double-click in the **Destination DB** column.

9. Click **..** and select a **Storage Group**.
10. Click **OK**.
11. Click **OK** to start the restore.
12. Manually mount the stores after the restore.



RESTORING TO A DIFFERENT DISK LOCATION

You can restore the database stores to be a physically different location on disk (i.e., non-Exchange location) with a choice of whether or not to replay the logs.

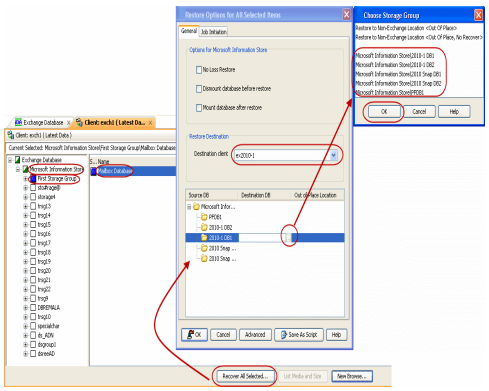


1. From the CommCell Console, navigate to **Client Computers | *<Client>*.**
2. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Select the **Destination client**.
7. Select the **Source DB** and double-click in the **Destination DB** column.
8. Click **..** and select one of the following options in the **Storage Group** dialog box:
   - **Restore to Non-Exchange Location <Out of Place>** - The database will be restored to the specified location and the logs will be replayed.
   - **Restore to Non-Exchange Location <Out of Place, No Recover>** - The database will be restored to the specified location and the logs will not be replayed.
9. Double click in the **Out of Place Location** column and click **..** to specify the fully-qualified destination.
10. Select the destination folder from the Destination client.
11. Click **OK**.
12. Click **OK** to start the restore.
13. Manually mount the stores after the restore.

EXCHANGE SERVER 2013 DAG OUT-OF-PLACE RESTORES

RESTORING TO A DATABASE

You can restore the database stores to an active copy to a different database on the same Exchange Server, or to an active copy in a different Exchange Server within the same Exchange organization. For more details, see KB article number Backup, Restore, and Disaster Recovery.



1. Ensure the database you want to restore is dismounted and marked for overwrite.
2. From the CommCell Console, navigate to **Client Computers | *<Client>*.**
3. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
4. Click **OK**.
5. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
6. Select the database to be restored in the right pane and click **Recover All Selected**.
7. Select the **Destination client**.
8. Select the **Source DB** and double-click in the **Destination DB** column.
9. Click **..** and select a **Storage Group**.
10. Click **OK**.

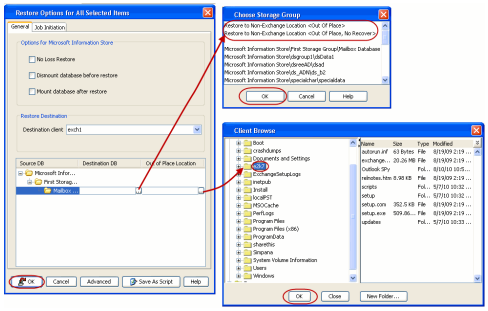
11. Click **OK** to start the restore.
12. Run the following defragmentation command, in case the database fails to mount:

    Eseutil /d [edb file path]

    Example: Eseutil /d "E:\Mailbox\MDB01\MDB01.edb"
13. Manually mount the stores after the restore.

RESTORING TO A DIFFERENT DISK LOCATION

You can restore the database stores to be a physically different location on disk (i.e., non-Exchange location) with a choice of whether or not to replay the logs.

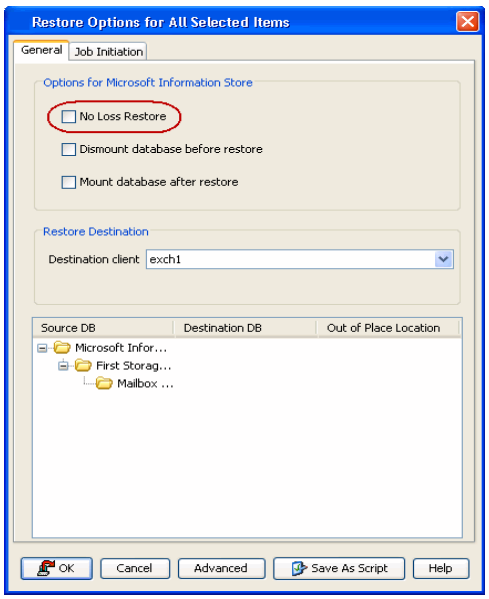


1. From the CommCell Console, navigate to **Client Computers | <*Client*>.**
2. Right-click **Exchange Database** and then click **All Tasks** | **Browse Backup Data**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Select the **Destination client**.
7. Select the **Source DB** and double-click in the **Destination DB** column.
8. Click **..** and select one of the following options in the **Storage Group** dialog box:
   - **Restore to Non-Exchange Location <Out of Place>** - The database will be restored to the specified location and the logs will be replayed.
   - **Restore to Non-Exchange Location <Out of Place, No Recover>** - The database will be restored to the specified location and the logs will not be replayed.
9. Double click in the **Out of Place Location** column and click **..** to specify the fully-qualified destination.
10. Select the destination folder from the Destination client.
11. Click **OK**.
12. Click **OK** to start the restore.
13. Manually mount the stores after the restore.

KEEP EXISTING TRANSACTION LOGS (NO LOSS RESTORE)

This option does not apply when restoring VSS-enabled backups.

A No Loss Restore appends the log files created since the last database backup to a restored database, thus bringing the database to the most current possible state. To perform a No Loss Restore, the database to be restored must be from the latest backup.



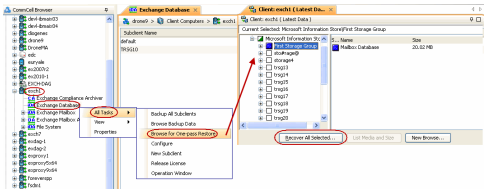
1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.
4. From the **Browse** window, select the data to be restored in the right pane and click **Restore Current Selected**.
5. From the **General** tab, select **No Loss Restore**.
6. Click **OK**.

ENHANCING RESTORE PERFORMANCE FROM TAPES (ONE-PASS RESTORE)

The One-pass Restore feature provides a performance-enhancing solution for conducting non-VSS restores of data from backups on tape. Restoring data from tapes is generally less efficient and more time consuming to accomplish than restoring data from other types of media. With this feature, only one-pass through the media is required to gather all the information on the data to be restored and then execute the restore.

One-pass Restores can also improve performance of non-multiplexed backups on tape. However, using One-pass Restores for non-tape media, which use a random access methodology for gathering the information and data to be restored, generally does not yield any performance improvement.

Before performing a browse and One-Pass restore, it is strongly recommended to assign one storage group per subclient as the proper configuration for supporting this type of restore as **No Loss Restore** capabilities are not provided (data will be overwritten for all stores within a storage group).

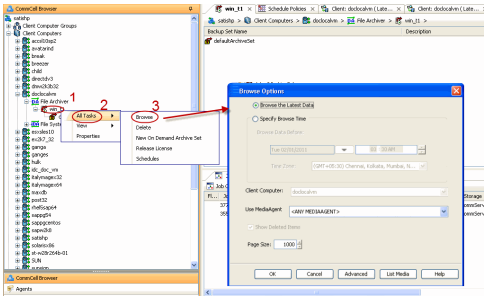


1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse for One-Pass Restore**.
3. Click **OK**.
4. In the left pane of the **Client Browse** window, navigate to **Exchange Database | Microsoft Information Store | <Storage Group>**.
5. Select the database to be restored in the right pane and click **Recover All Selected**.
6. Click **OK** to start the restore.

BROWSING DATA

Browse and Restore from the CommCell Console allows you browse and restore mailboxes and mailbox items that were backed up. The browse option can also be invoked from the client, agent, backup set, or subclient level.

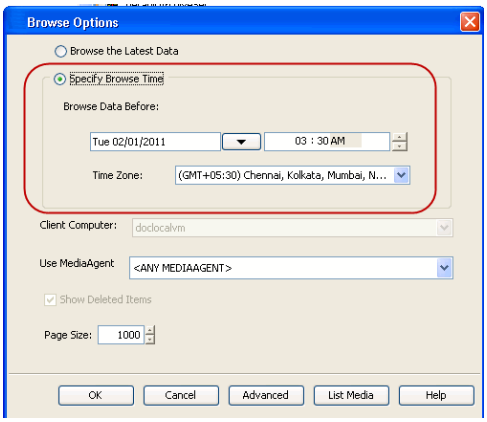
BROWSING THE LATEST DATA



1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Click **OK**.

The browse option can also be invoked from the client, agent, backup set, or subclient level.

BROWSING DATA BEFORE A SPECIFIED TIME

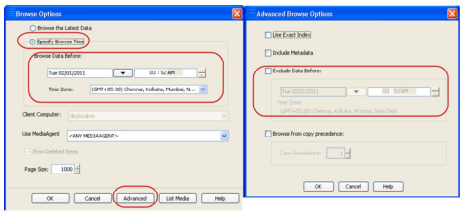


1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Select **Specify Browse Time** and the **Time Zone.**
4. Click **OK**.

BROWSING DATA BETWEEN A SPECIFIED TIME

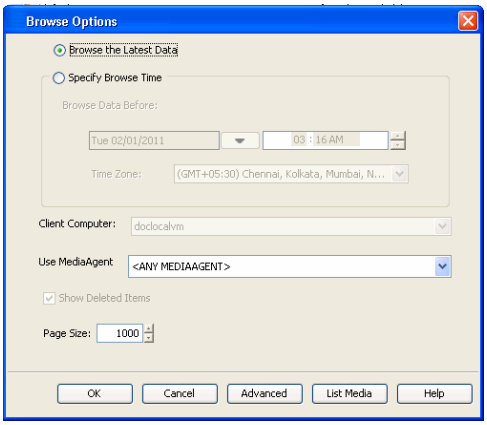
1. From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
2. Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
3. Select **Specify Browse Time** and the **Time Zone.**

4. Click **Advanced.**
5. Select **Exclude Data Before,** select the date and time from which you wish to view the data in the browse window.
6. Click **OK**.

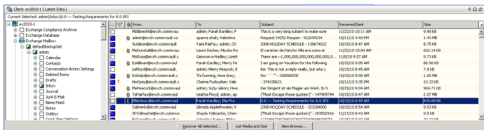


SCHEDULING A RESTORE

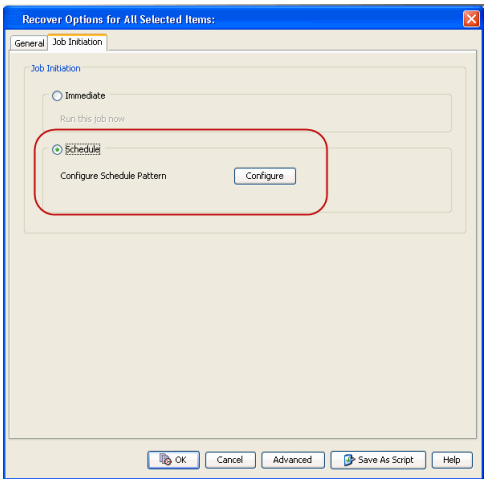
1.
   - From the CommCell Browser, navigate to **Client Computers |<*Client*>**.
   - Right-click the **Exchange Database** and click **All Tasks | Browse Backup Data**.
   - Click **OK**.



2.
   - Select one or storage groups in the left pane. The mailbox items (e.g., calendars, journals, etc.) will be selected in the right pane.
   - Click **Recover All Selected**.

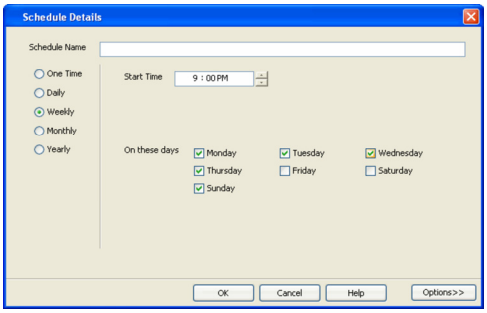


3.
   - Click **Job Initiation** tab and click **Schedule**.
   - Click **Configure**.



4. Select the appropriate scheduling options. For example:
   - Click **Weekly**.
   - Check the days you want the run the restore job.
   - Change the Start Time to 9:00 PM
   - Click **OK** to close the Schedule Details dialog
   - Click **OK** to close the Restore Options dialog

   The restore job will execute as per the schedule.



LISTING MEDIA

List media option is useful to predict media required for the following operations:

- To restore data associated with a specific backup set, subclient or instance
- To restore the index required to browse data associated with a specific backup set or subclient
- To restore a specific file (or specific files and folders)
- To restore data associated with a specific job

The list media operation can be performed for instances, backup sets, and subclients. The following sections describe each of these methods.

The List Media feature can also be used in a number of other capacities. Refer to the List Media documentation for a complete overview of this feature.

LISTING MEDIA FOR A SUBCLIENT

1. From the CommCell Browser, navigate to **Client Computers | <*Client*> | Exchange Database.**
2. Right-click the subclient for which you wish to list media in the right pane and then click **List Media**.
3. From the **List Media** dialog box choose one of the following options:
   - Click **Media For the Latest Data** to list media associated with the most recent data protection cycle.
   - Click **Specify Time Range** to list media associated with data protection operations up to the specified date and time range. Use the **Data Before** box to specify the end date and time.
   - Click **Advanced** and then click **Exclude Data Before** to list media associated with data protection operations after the specified date and time.

   Note that you can use the **Specify Browse Time** and **Exclude Data Before** options to list media between a specified date and time range.
4. Click **OK**.

   The appropriate media is listed in the **Media** dialog box.

MANAGING RESTORE JOBS

Once you initiate the restore operation, a restore job is generated in the Job Controller. Jobs can be managed in a number of ways. The following sections provide information on the different job management options available:

RESTARTING JOBS

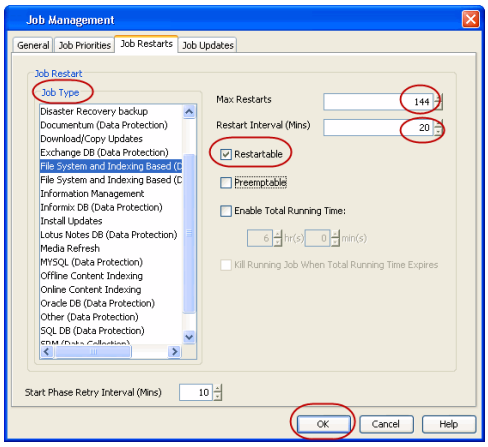
Jobs that fail to complete successfully are automatically restarted based on the job restartability configuration set in the Control Panel. Keep in mind that changes made to this configuration will affect all jobs in the entire CommCell.

To Configure the job restartability for a specific job, you can modify the retry settings for the job. This will override the setting in the Control Panel. It is also possible to override the default CommServe configuration for individual jobs by configuring retry settings when initiating the job. This configuration, however, will apply only to the specific job.

Backup jobs for this Agent are resumed from the point-of-failure.

CONFIGURE JOB RESTARTABILITY AT THE COMMSERVE LEVEL

1. From the CommCell Browser, click **Control Panel** icon.
2. Select **Job Management.**
3. Click **Job Restarts** tab and select a **Job Type.**
   - Select **Restartable** to make the job restartable.
   - Change the value for **Max Restarts** to change the maximum number of times the Job Manager will try to restart a job.
   - Change the value for **Restart Interval (Mins)** to change the time interval between attempts for the Job Manager to restart the job.
4. Click **OK.**



CONTROLLING JOBS

The following controls are available for running jobs in the Job Controller window:

	Temporarily stops a job. A suspended job is not terminated; it can be restarted at a later time.

SUSPEND	
RESUME	Resumes a job and returns the status to Waiting, Pending, Queued, or Running. The status depends on the availability of resources, the state of the Operation Windows, or the Activity Control setting.
KILL	Terminates a job.

SUSPENDING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Suspend**.
2. The job status may change to **Suspend Pending** for a few moments while the operation completes. The job status then changes to **Suspended.**

RESUMING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Resume**.
2. As the Job Manager attempts to restart the job, the job status changes to **Waiting**, **Pending**, or **Running**.

KILLING A JOB

1. From the Job Controller of the CommCell Console, right-click the job and select **Kill**.
2. Click **Yes** when the confirmation prompt appears if you are sure you want to kill the job. The job status may change to **Kill Pending** for a few moments while the operation completes. Once completed, the job status will change to **Killed** and it will be removed from the Job Controller window after five minutes.

COMMAND LINE RESTORES

You can restore Exchange Database from the command line interface.

Command line restores enable you to perform restore operations on multiple clients at the same time. It also allows you to reuse the command line scripts for additional restores.

When performing command line restores, note that backups taken from the CommCell Console can be restored using Command Line and vice versa. However, backups taken from a previous version of the CommCell Console can be restored only from the Command Line.

In order to run the restores from command line, you need an input xml file which contains the parameters for configuring the restore options. This input xml file can be obtained using one of the following ways:

- Download the input xml file template and save it on the computer from where the restore will be performed.
- Generate the input xml file from the CommCell Console and save it on the computer from where the restore will be performed.

LOG ON TO THE COMMSERVE

To run command line operations you must first login to the CommServe as follows:

- From Command prompt, navigate to <Software_Installation_Directory>/Base and run the following command:

```
qlogin -cs <commserve name> -u <user name>
```

- For example, to log on to CommServe 'server1' with username 'user1':

```
qlogin -cs server1 -u user1
```

PERFORM THE RESTORE

1. Download the restore_template.xml file and save it on the computer from where the command will be executed.
2. Execute the saved xml script using qoperation execute command.

   ```
   qoperation execute -af restore_template.xml -clientName xxxxx
   ```

3. Verify the status of the job using the following command:

   ```
   qlist job -j JOBID
   ```

4. Once the job completes, logout from the CommServe using the qlogout command.

   ```
   qlogout [-cs commserver] [-all] [-tf tokenfile] [-tk token] [-h]
   ```

EXAMPLES

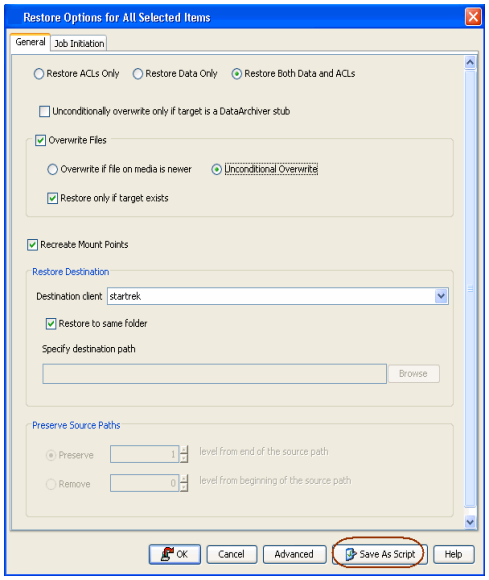
Out of Place Restore	`qoperation execute -af restore_template.xml -clientName client1`
In-Place Restore	`qoperation execute -af outplace_restore_template.xml -clientName client1 -toTimeValue 2011-11-28`

GENERATE THE COMMAND LINE SCRIPT FROM THE COMMCELL CONSOLE

In addition to the parameters provided in the template xml file, if you want to include additional options for the restore, you can do so by selecting the required options from the CommCell Console and generate the command line xml script for the restore operation.

Follow the steps given below to generate a script which you can use to perform a restore from the command line interface:

1. From the CommCell Console, navigate to ***<Client>*** | **Exchange Database *i*DataAgent** | **defaultBackupSet**.
2. Right-click the ***<Subclient>*** in the right pane and then click **Browse Backup Data**.
3. Click **OK**.
4. In the right pane of the Browse window, select the data that you want to restore and click **Recover All Selected**.
5. Select the required restore options which you want to execute using the script.
6. Click **Save as Script**.

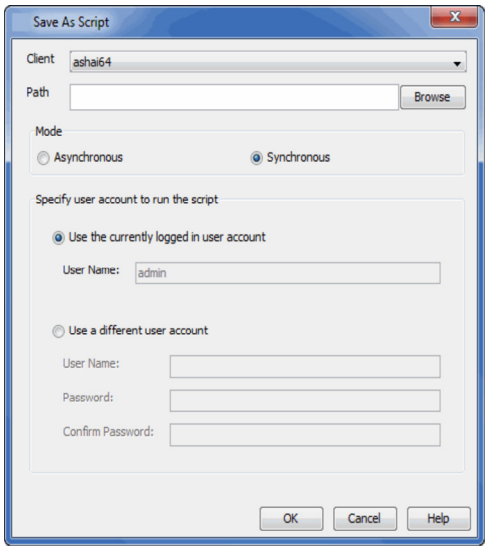


7. Enter the location where you want to save the script or click **Browse** and navigate to the location.

   The script will be saved as a .xml file and a .bat file is created.

   If a file with the same name already exists in the specified location, the .xml file will be created with a timestamp. However, the .bat file will overwrite the existing file.
8. Enter the username and password for the user account which you want to use to perform the restore.

   By default, the user account which you have used to login to CommCell console is used for performing the restore. However, if the user account does not have access to application and database, click **Use a different account**.
9. Click **OK**.



ADDITIONAL RESTORE OPTIONS

Several additional options are available to further refine your restore operations. The following table describes these options, as well as the steps to implement them.

Be sure to read the overview material referenced for each feature prior to using them.

OPTION	DESCRIPTION	RELATED TOPIC
Use hardware revert capability if available	This option allow you to revert the data to the time when the snapshot was created. Selecting this option brings back the entire LUN to the point when the snapshot was created, overwriting all the modifications to data since the snapshot creation. This option is only available if the snapshot engine used for SnapProtect Backup supports the revert operation. 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**. 3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all**	

	Selected. 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. Select **Use hardware revert capability if available**. 7. Click **OK**.	
Startup Options	The Startup Options are used by the Job Manager to set priority for resource allocation. This is useful to give higher priority to certain jobs. You can set the priority as follows: 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**. 3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all Selected.** 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. In the **Advanced Restore Options** dialog box, click **Startup**. 7. On the **Startup** tab, select **Change Priority**. 8. Enter a priority number - 0 is the highest priority and 999 is the lowest priority. 9. Select the **Start up in suspended State** check box to start the job in a suspended state. 10. Click **OK**.	Refer to Job Priority and Priority Precedence.
Copy Precedence	By default, the system retrieves data from the storage policy copy with the lowest copy precedence. If the data was pruned from the primary copy, the system automatically retrieves data from the other copies of the storage policy in the lowest copy precedence to highest copy precedence order. Once the data is found, it is retrieved, and no further copies are checked. You can retrieve data from a specific storage policy copy (Synchronous Copy or Selective Copy). If data does not exist in the specified copy, the data retrieve operation fails even if the data exists in another copy of the same storage policy. Follow the steps given below to retrieve the data from a a specific storage policy copy: 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**. 3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all Selected.** 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. In the **Advanced Restore Options** dialog box, click **Copy Precedence**. 7. On the **Copy Precedence** tab, select the **Restore from copy precedence** check box. 8. Enter the copy precedence number. 9. Click **OK**.	Refer to Recovering Data From Copies.
Data Path Options	The data recovery operations use a default Library, MediaAgent, Drive Pool, and Drive as the Data Path. You can use this option to change the data path if the default data path is not available. Follow the steps given below to change the default data path: 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**. 3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all Selected.** 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. In the **Advanced Restore Options** dialog box, click **Data Path**. 7. On the **Data Path** tab, select the **MediaAgent** and **Library**. 8. Select the **Drive Pool** and **Drive** for optical and tape libraries. 9. Select the name of the **Proxy** server if you wish to restore using a proxy server. You can select the Proxy server only when you are restoring from a snapshot. This option is not available for a regular restore. 10. Click **OK**.	Refer to Change Data Path.
Encryption	If the client's data is encrypted with a pass phrase, you must enter the pass-phrase to start the data recovery operation. Follow the steps given below to enter the pass-phrase: 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**.	Refer to Data Encryption.

	3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all Selected.** 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. In the **Advanced Restore Options** dialog box, click **Encryption**. 7. Enter the Pass Phrase. 8. Click **OK**.	
Alerts	This option enables users or user groups to get automatic notification on the status of the data recovery job. Follow the steps given below to set up the criteria to raise notifications/alerts: 1. From the CommCell Browser, click **Client Computers** | **<Client>**. 2. Right-click the **Exchange Database** and select **All Tasks** | **Browse Backup Data**. 3. In the **Browse Options** dialog box, click **OK**. 4. In the **Client Browse** tab, select the data to be restored and click **Recover all Selected.** 5. In the **Restore Options for All Selected Items** dialog box, click **Advanced**. 6. In the **Advanced Restore Options** dialog box, click **Alerts**. 7. Click **Add Alert.** 8. From the **Add Alert Wizard** dialog box, select the required threshold and notification criteria and click **Next**. 9. Select the required notification types and click **Next**. 10. Select the recipients and click **Next**. 11. Click **Finish**. 12. Click **OK**.	Refer to Alert.
Command Line Restores	Command Line Interface enables you to perform backups or restore from the command line. The commands can be executed from the command line or can be integrated into scripts. You can also generate command line scripts for specific operations from the CommCell Browser using the **Save As Script** option.	Refer to Command Line Interface.
CommCell Readiness Report	The CommCell Readiness Report provides you with vital information, such as connectivity and readiness of the Client, MediaAgent and CommServe. It is useful to run this report before performing the data protection or recovery job. Follow the steps given below to generate the report: 1. From the **Tools** menu in the CommCell Console, click **Reports**. 2. Navigate to **Reports | CommServe | CommCell Readiness**. 3. Click the **Client** tab and click the **Modify** button. 4. In the **Select Computers** dialog box, clear the **Include All Client Computers and All Client Groups** check box. 5. Select the client from the **Exclude** list. 6. Click the **Include >** button. 7. Click **OK**. 8. Click the **MediaAgent** tab. 9. Clear the **Include All MediaAgents** checkbox. 10. Select the MediaAgent from the **Exclude** list. 11. Click **Include >**. 12. Click **Run**. The generated report is displayed.	Refer to CommCell Readiness Report.
Restore Job Summary Report	The Restore Job Summary Report provides you with information about all the data recovery jobs that are run in last 24 hours for a specific client and agent. You can get information such as failure reason, failed objects, job options etc. It is useful to run this report after performing the restore. Follow the steps given below to generate the report: 1. From the **Tools** menu in the CommCell Console, click **Reports**. 2. Navigate to **Reports | Jobs | Job Summary**. 3. Click **Data Recovery** on the **General tab** in the right pane. 4. On the **Computers** tab, select the client and the agent for which you want to run the report. 5. Click **Run**.	Refer to Restore Job Summary Report.

Data Aging - Microsoft Exchange Database *i*DataAgent

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Getting Started

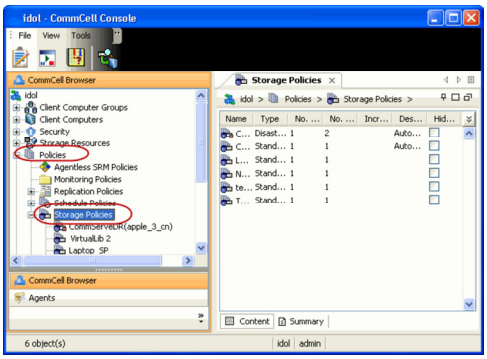
Extended Retention Rules

GETTING STARTED

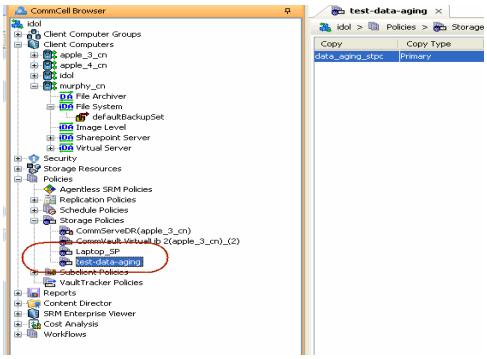
Data Aging is the process of removing old data from secondary storage to allow the associated media to be reused for future backups.

By default, all backup data is retained infinitely. However, you should change the retention of your data based on your needs. Note that if you continue to have infinite retention, you will also need infinite storage capacity.

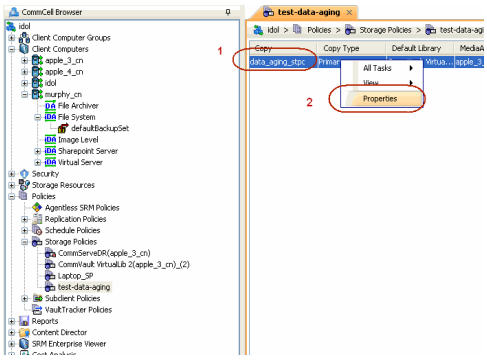
1. From the CommCell Browser, navigate to **Policies | Storage Policies**.



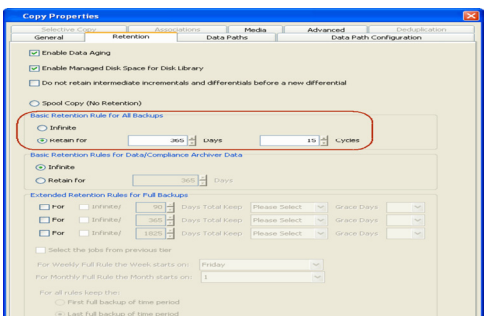
2. Highlight the **Storage Policy**.



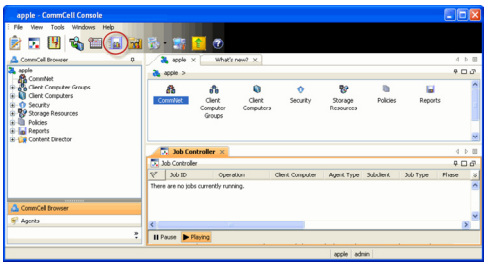
3. From the right pane, right-click the **Storage Policy Copy** and click the **Properties**.



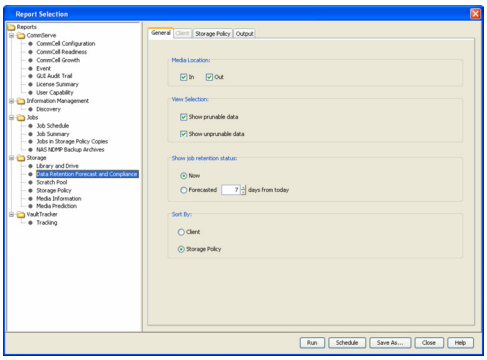
4.
- Click the **Retention** tab.
- Click the **Retain For** in the **Basic Retention Rules for All Backups** area.
- Enter number of days to retain the data.
- Enter number of cycles to retain the data.
- Click **OK**.



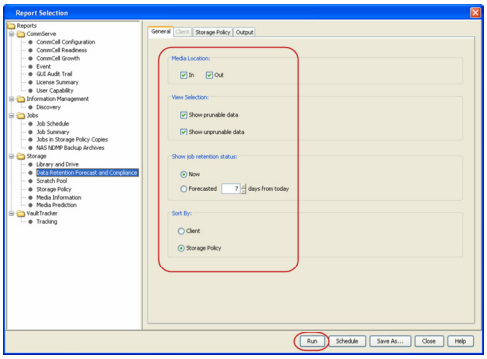
5. From the CommCell Browser, click the **Reports** icon.



6. Expand Reports and select **Data Retention Forecast and Compliance.**



7. Click **Run**.

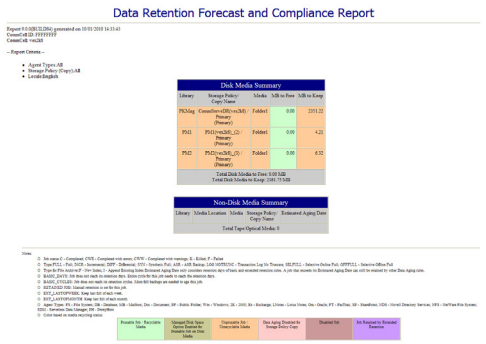


8. The report will display the data to be pruned when a data aging job is run.

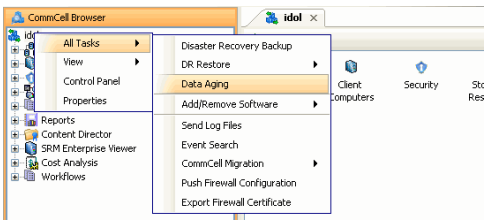
   To ensure only data intended for aging is actually aged, it is important to identify the data that will be aged based on the retention rules you have configured. Hence, ensure this report includes only the data you intend to age.

   If necessary, fine-tune your rules so that only the intended data is aged.

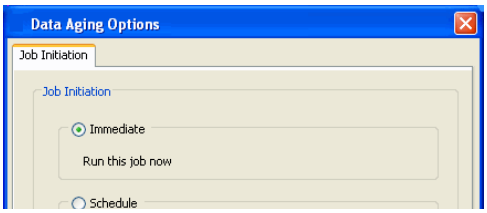
   Once you run a data aging job, the data will be lost.



9. From the CommCell Console, right click the CommServe icon and click **All Tasks** | **Data Aging**.

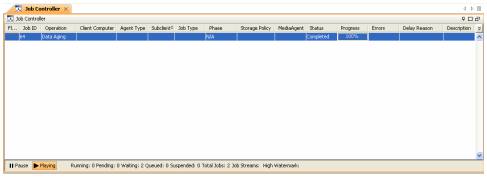


10. Select **Immediate** in the Job Initiation section and click **OK**.



11. You can track the progress of the job from the **Job Controller** window. When the job has completed, the Job Controller displays **Completed**.

    Make sure that the job completes successfully. If the job did not complete successfully, re-run the job.



EXTENDED RETENTION RULES

Extended retention rules allow you to keep specific full (or synthetic full) backups for longer periods of time.

Extended retention rules can be used in the following circumstances:

- If you have a single drive tape library
- If you want to create a hierarchical retention scheme (grandfather-father-son tape rotation)

In all other cases, it is recommended that the Auxiliary Copy feature be used for extended storage as it actually creates another physical copy of the data, thereby reducing the risk of data loss due to media failure.

UNDERSTANDING EXTENDED RETENTION RULES

Extended retention allows you to retain a specific full (or synthetic full) backup for an additional period of time. For example, you may want to retain your monthly full backups for 90 days.

Extended retention rules allow you to define three additional "extended" retention periods for full (or synthetic full) backups. For example:

- You may want to retain your weekly full backups for 30 days.
- You may want to retain your monthly full backup for 90 days.
- You may want to retain your yearly full backup for 365 days.

A backup job will be selected for extended retention based on its start time. For example: If a backup job starts at 11:55 pm on August 31st and ends at 1 am on September 1st, then it will be selected as the last full backup for the month of August and will be picked up for extended retention.

SETTING UP EXTENDED RETENTION RULES

Use the following steps for setting up the extended retention rules:

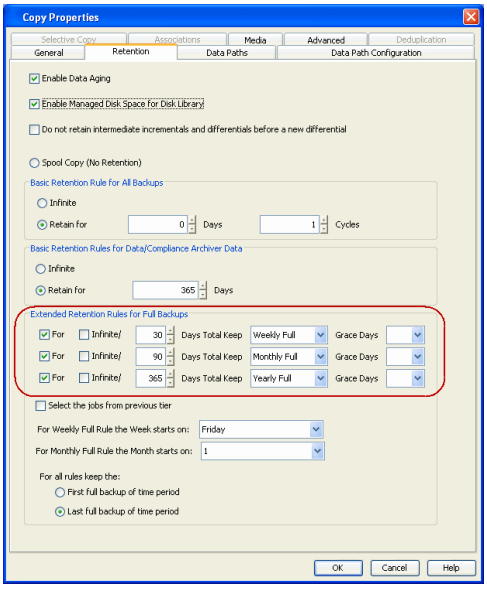
1. Right-click the storage policy copy and click **Properties**.
2. Click the **Retention** tab.
3. Set the basic retention rules by clicking **Retain for** and entering the number of days and cycles appropriate for your organization.
4. Set the extended retention rules as follows:

   Click the **For** button.

   Enter the number of **Days Total** to retain the backup.

   Click the **Keep** drop-down list, and select the desired backup criteria (e.g., Monthly Full).

   Click the **Grace Days** drop-down list and select the number of days (e.g., 2).
5. Repeat Step 4 to configure additional extended retention.
6. Click **OK**.



ADVANCED TOPICS

Data Aging - Advanced
Provides comprehensive information on additional Data Aging capabilities.

Disaster Recovery - Microsoft Exchange *i*DataAgent Database

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Planning for a Disaster Recovery

Disaster Recovery of the Exchange Database

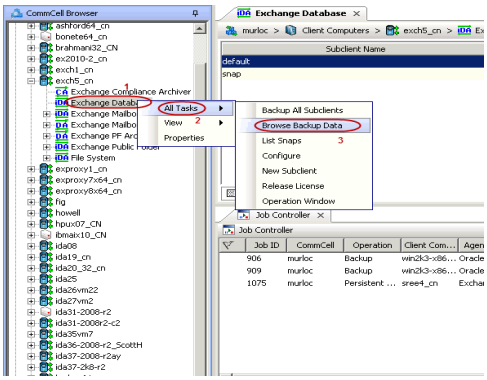
PLANNING FOR A DISASTER RECOVERY

Before you begin a disaster recovery, make sure to do the following:

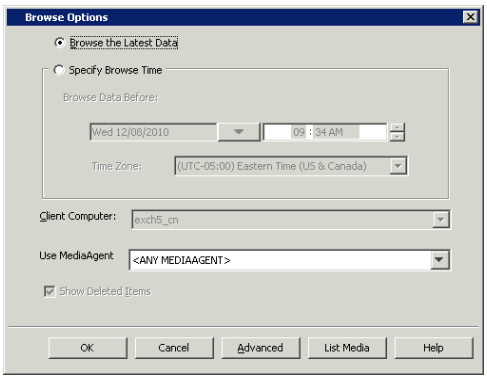
- Perform regular backups of the Exchange databases. These backups can be scheduled to run at convenient intervals.
- Ensure that the destination client is same as source client while performing a disaster recovery.
- Ensure that you have performed a Disaster Recovery of the computer using the Windows File System *i*DataAgent prior to restoring the Exchange databases. Refer to Disaster Recovery - Windows File System for detailed information.
- Make sure to install the Exchange database application in the destination client and create an empty database in the same directory structure as existing in the source client. In the case of Exchange Server 2003, also ensure that the database name is created with the same name as that in the source client.

DISASTER RECOVERY OF THE EXCHANGE DATABASE

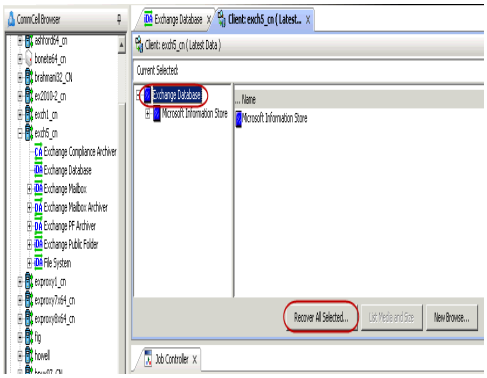
1.
   - From the CommCell Console, navigate to **<*Client*>** | **Exchange Database**.
   - Right-click the subclient that contains the data you want to restore and click **All Tasks** | **Browse Backup Data**.



2. Click **OK**.



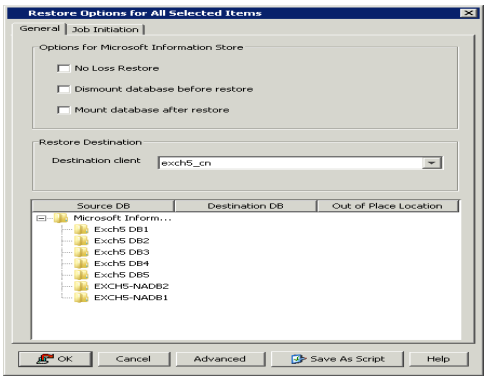
3.
   - Select Exchange database. Its entire contents will be automatically selected in the right pane.
   - Click **Recover All Selected**.



4.
   - Select the name of the client computer with the database you want to restore in

the **Destination Client** from the list.

- Click **OK**.



In addition to Exchange databases, the Exchange Server also heavily utilizes following types of data that provide enhanced functionality and is critical to the continuous operation of the Exchange Server.

- System State Data
- Active Directory Data, such as information about distribution lists, recipients etc.
- Personal Information Stores contain messages that are moved from a server-controlled information store to `.pst` files. They are residing on a client's hard drive or shared location on a network.
- Personal Address Books stored on a client's hard drive in `.pab` files
- Offline Folders. These are the local copies of the folders on the exchange server, stored in `.ost` files.

These data types are backed up using the Windows File System *i*DataAgent:

For comprehensive information on performing non-database Exchange data backups, see Windows File System *i*DataAgent.

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Additional Operations - Microsoft Exchange Database *i*DataAgent

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Auxiliary Copy
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Schedule Policy
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Subclient Policy
Uninstalling Components

AUDIT TRAIL

The Audit Trail feature allows you to track the operations of users who have access to the CommCell. This capability is useful if a detrimental operation was performed in the CommCell and the source of that operation needs to be determined.

Audit Trail tracks operations according to four severity levels:

- **Critical**: This level records operations that will result in imminent loss of data.
- **High**: This level records operations that may result in loss of data.
- **Medium**: This level records changes to the general configuration of one or more entities. Such changes may produce unintended results when operations are performed.
- **Low**: This level records changes to status, addition of entities, and other operations that have minimal impact on existing CommCell functions.

To set Audit Trail retention periods:

1. From the **Tools** menu in the CommCell Console, click **Control Panel**, and then select **Audit Trail**.
2. From the **Audit Trail** dialog box, select the desired retention time (in days) for each severity level.
3. Click **OK**.

AUXILIARY COPY

An auxiliary copy operation allows you to create secondary copies of data associated with data protection operations, independent of the original copy.

1. Expand the **Policies** node, right-click storage policy for which you want to perform an auxiliary copy, click **All Tasks**, and then click **Run Auxiliary Copy**.
2. If you are starting the auxiliary copy operation from the CommServe level, select the storage policy for which you wish to perform the auxiliary copy.

   If you are starting the auxiliary copy operation from the Storage Policy level, the Storage Policy field is already populated with the name of the Storage Policy you selected.

3. If the source copy is configured with a shared library, select the **Source MediaAgent** for the auxiliary copy.
4. Click **OK** to start the auxiliary copy operation. A progress bar displays the progress of the operation.

LICENSE ADMINISTRATION

REQUIRED LICENSES

The Exchange Database *i*DataAgent requires the ***i*DataAgent for Exchange Database** license.

CONVERTING EVALUATION LICENSES TO PERMANENT LICENSES

If you installed the software using an Evaluation License, you can upgrade to a Permanent License as follows:

1. From the CommCell Browser, right-click the CommServe icon, click **Control Panel**, and then click **License Administration**.
2. Select the **Update License** tab and then click **Convert**.
3. Check the box that corresponds to the evaluation license you would like to upgrade and then click **Convert**.

The license information is updated in the **License Administration** window.

USING CAPACITY-BASED LICENSING

License Usage by Capacity is a licensing mechanism that allows you to obtain licenses based on the amount of data you back up. It provides the following features:

- Flexibility of usage on all agents, rather than being tied to number of server, agents, etc.
- Allows you to purchase licenses based on your data protection needs

Both **Core** and **Enterprise** license types are available. Refer to License Usage by Capacity for comprehensive information on utilizing this method.

RELEASING A LICENSE

If you no longer require a license on a computer, such as cases where the computer is being retired, you can release the license and use it later for another computer. Backup data from the retired computer can still be restored after the license is released provided the data is not aged.

1. From the CommCell Browser, right-click the name of the client from which you want to release a license, click **All Tasks**, and then click **Release License for Client**.
2. Click **OK** to continue releasing the license
3. Click **Yes** to confirm you want to release the license or **No** to abort.

ONLINE HELP LINKS

Use the following links to view the online help for the corresponding tabs in the CommCell Console:

OPERATIONS	ENTITY	ONLINE HELP LINKS	SUB LINKS
CONFIGURATION	Agent	Exchange Database Properties (General) Exchange Database Properties (Version) Exchange Database Properties (Security) Exchange Database Properties (Activity Control)	
	Subclient	Subclient Properties of <*Subclient Name*> (General) Subclient Properties of <*Subclient Name*> (Contents) Subclient Properties of <*Subclient Name*> (Pre/Post Process) Subclient Properties of <*Subclient Name*> (Encryption) Subclient Properties of <*Subclient Name*> (Storage Device) Subclient Properties of <*Subclient Name*> (SnapProtect Operations) Subclient Properties of <*Subclient Name*> (Activity Control) Subclient Properties of <*Subclient Name*> (SRM Options)	Add/Modify Subclient Content - Database Configuration User Account (Pre/Post)
BACKUP	Backup Options	Backup Options for Subclient <*Subclient Name*>	Save As Script Command Line XML Options
	Advanced Backup Options	Advanced Backup Options (Replication) Advanced Backup Options (Data) Advanced Backup Options (Startup) Advanced Backup Options (Job Retry) Advanced Backup Options (Media) Advanced Backup Options (VaultTracking) Advanced Backup Options (Alert)	
RESTORE	Restore Options	Exchange Restore Options (General)	Save As Script Choose Storage Group
	Advanced Restore Options	Advanced Restore Options (General) Advanced Restore Options (Options) Advanced Restore Options (Copy Precedence) Advanced Restore Options (Data Path) Advanced Restore Options (Encryption) Advanced Restore Options (Startup) Advanced Restore Options (Alert)	Restore Log for Exchange Database

OPERATING SYSTEM AND APPLICATION UPGRADES

Operating system upgrades are only supported when upgrading from one version of an OS to a different version of the same OS (e.g., Win2003 to Win2008). The two methods of upgrading are:

- **Seamless Upgrade -** This involves uninstalling the Agent software, upgrading the operating system, and then re-installing the Agent software.
- **Full OS Replacement -** This involves performing a clean install of a new version of the OS, re-installing any application software, then re-installing the CommServe, MediaAgent, and/or Agent software.

For Full OS Replacement, the client computer must be configured to have the CommServe, MediaAgent, and/or Client software re-installed to the same location, the same Fully Qualified Domain Name or short domain name, the same partitions, disk drive format (FAT, NTFS, et. al.), and IP configuration as previously.

> If it is necessary to remove Agent software to facilitate an operating system or application upgrade, do not delete the icon for the Agent from the CommCell Console, or all associated backed up data will be lost.

Use the following strategy to upgrade the operating system software:

- Identify the computers you want to upgrade and the CommCell components installed on each of these computers.
- Choose the type of upgrade procedure you want to use on each computer: seamless or full replacement.
- CommServe, MediaAgent, and Client computers can be upgraded in any order.

OPERATION WINDOW

By default, all operations in the CommCell can run for 24 hours. To prevent certain operations from running during certain periods of the day, you can define operation rules so that these operations are disabled during those times.

When operation rules are configured, operations that are started within the time window specified will go to a queued (as opposed to pending) state. Once the time window specified in the operation rule has elapsed, these queued or running operations will resume automatically.

1. In the CommCell Browser, right-click the appropriate entity, click **All Tasks,** and then click **Operation Window**.
2. Click **Add**.
3. From the **Operation Window** dialog box:
   - Enter the name of the rule in the **Name** field.
   - Select either an administration, data protection (either full or non-full), and/or a data recovery operation from the **Operations** pane.
4. Click **OK**.

SCHEDULE POLICY

A schedule policy is a defined schedule or group of schedules for specific operations to be performed on associated objects within the CommCell. When the schedules from a policy are run, the specified operations, (e.g., auxiliary copy, backup, etc.,) will be performed on the associated CommCell objects.

1. Expand the **Policies** node, right-click **Schedule Policies** and click **Add**.
2. Type the **Name** of the schedule policy.
3. Select the **Type** of schedule policy.
4. Select the **Agent Type**.
5. Type a description of the schedule policy.
6. Click **Add**.
7. Enter a Schedule Name in the **Schedule Pattern** tab.
8. Click **OK**.
9. On the **Associations** tab, select the objects to be associated with the schedule policy.
10. Click **OK**.

STORAGE POLICY

A Storage policy defines the data lifecycle management rules for protected data. Storage policies map data from its original location to a physical storage media and determine its retention period.

1. Expand the **Policies** node, right-click **Storage Policies**, and select **New Storage Policy**.
2. Click **Next.**

3. Select **Data Protection and Archiving** to create a regular storage policy or **CommServe Disaster Recovery Backup** to backup the CommServe database and click **Next**.
4. Click **Next**.
5. Enter the name of storage policy and click **Next**.
6. Enter the name of the primary copy and click **Next**.
7. From the drop down box, select the default library for the primary copy and click **Next**.
8. From the drop down box, select the MediaAgent and click **Next**.
9. Enter number of data streams and set the retention period for the policy and click **Next**.
10. Click **Next**.
11. Click **Browse,** browse to your designated deduplication store location and click **Next**.
12. Confirm your selections and click **Finish**.

SUBCLIENT POLICY

Subclient policies allow you to configure multiple subclients within a CommCell from a centralized template. This alleviates the need to manually configure each subclient that shares a similar configuration.

1. Expand the **Policies** node, right-click **Subclient Policies** and click **New Subclient Policy**.
2. Enter policy name in the **Name** entry field, then select the appropriate file system type from the ***i*DataAgent** drop-down list.
3. In the Subclient pane, assign a storage policy for each subclient template by clicking in the drop down box under the **Storage Policy** column.
4. Click **OK**.

UNINSTALLING COMPONENTS

You can uninstall the components using one of the following method:

Method 1: Uninstall Components Using the CommCell Console

Method 2: Uninstall Components from Add or Remove Programs

METHOD 1: UNINSTALL COMPONENTS USING THE COMMCELL CONSOLE

1. From the CommCell Browser, right-click the desired Client Computer and click **All Tasks -> Add/Remove Programs** and click **Uninstall Software**.
2. **Uninstall Software Options** dialog will appear.
3. In the **Uninstall Software** tab, select **Uninstall All** to uninstall all the software packages.
4. In the **Job Initiation** tab, select **Immediate** to run the job immediately.

   You can track the progress of the job from the **Job Controller** or **Event Viewer**.

METHOD 2: UNINSTALL COMPONENTS FROM ADD OR REMOVE PROGRAMS

1. Click the **Start** button on the **Windows** task bar and then click **Control Panel**.
2. Double-click **Add/Remove Programs**.

   For Windows Vista/Windows 2008, click Uninstall a Program in the **Control Panel**.
3. Click **Remove** to uninstall the components in the following sequence:
   1. <Agent>
   2. File System *i*DataAgent
   3. Base Software

ADVANCED TOPICS

Provides comprehensive information about additional capabilities for the following features:

- Audit Trail
- Auxiliary Copy
- License Administration
- License Usage by Capacity

- Operating System and Application Upgrades
- Operation Window
- Schedule Policy
- Storage Policies
- Subclient Policies
- Uninstalling Components

Back to Top

Offline Database Restore (Administrator)

The Exchange Offline Mining Tool is a stand-alone console which allows users to locate email messages from an offline copy of the Exchange database.

WERE TO INSTALL

Install the Exchange Offline Mining Tool on a computer with Outlook 2003 or higher installed and that satisfies the minimum system requirements.

PREREQUISITES

Install the following before installing the Exchange Offline Mining tool if you are using it for Exchange 2013 databases:

Visual C++ Redistributable for Visual Studio 2012. For step-by-step instructions, see Visual C++ Redistributable for Visual Studio 2012.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

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

METHOD 2: INSTALL FROM COMMCELL CONSOLE

Use this procedure to install remotely on a client computer.

BEFORE YOU BEGIN

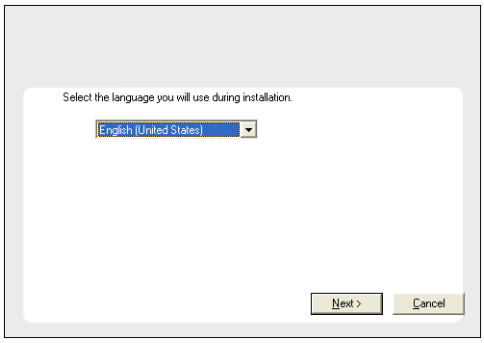
Download Software Packages
Download the latest software package to perform the install.

Verify System Requirements
Verify that the computer in which you wish to install the Exchange Offline Mining Tool satisfies the System Requirements.

METHOD 1: INTERACTIVE INSTALL

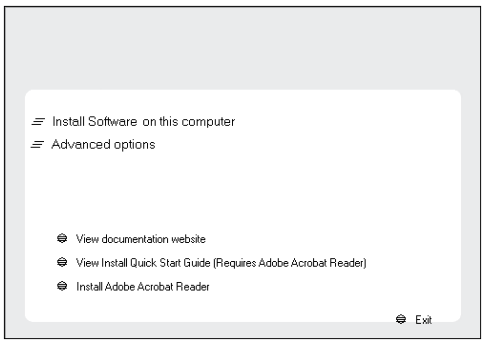
1. Run **Setup.exe** from the **Software Installation Package.**
2. Select the required language.

   Click **Next**.



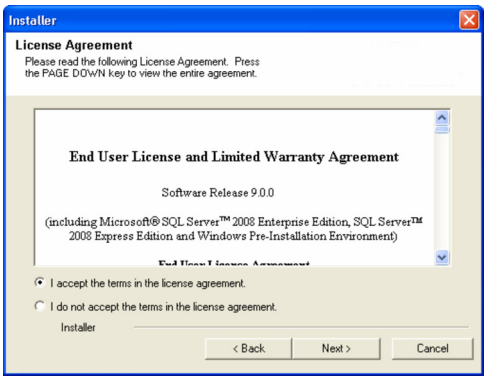
3. Select the option to install software on this computer.

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



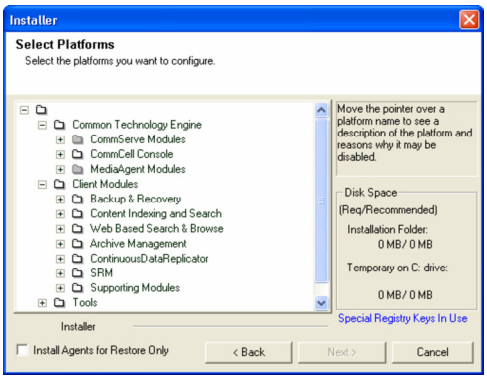
4. Select **I accept the terms in the license agreement**.

   Click **Next**.



5. Expand **Client Modules** | **Backup & Recovery** | **Exchange** and select **Exchange Offline Mining Tool**.

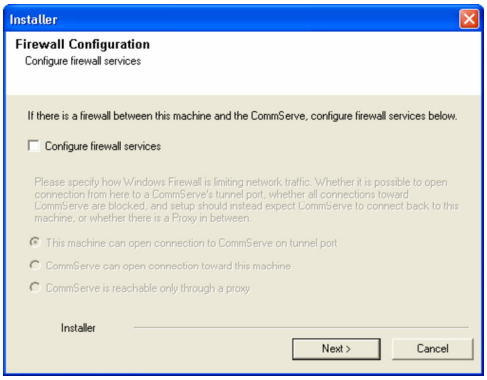
   Click **Next**.



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

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

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

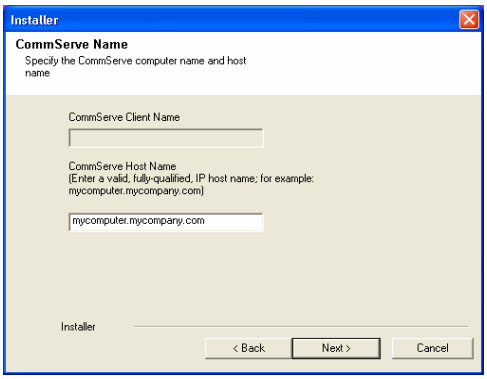


7. Enter the fully qualified domain name of the **CommServe Host Name**.

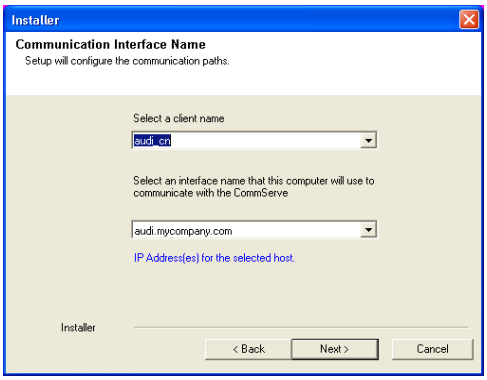
   Click **Next**.

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

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



8. Click **Next**.

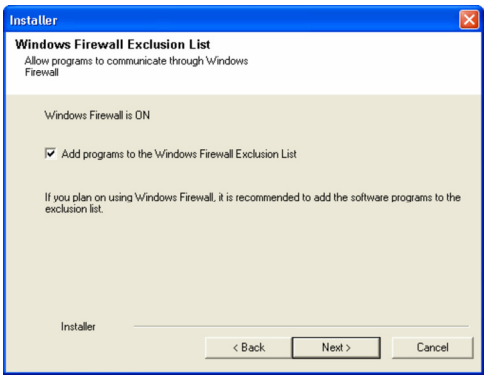


9. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

   Click **Next**.

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

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



10. Verify the default location for software installation.

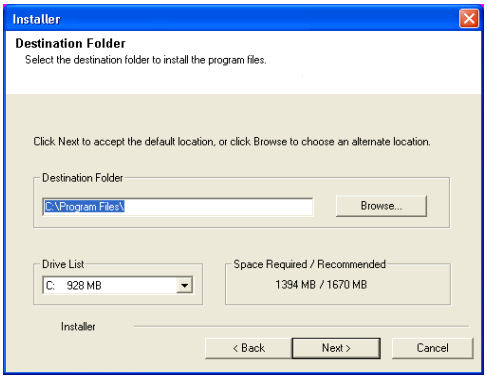
    Click **Browse** to change the default location.

    Click **Next**.

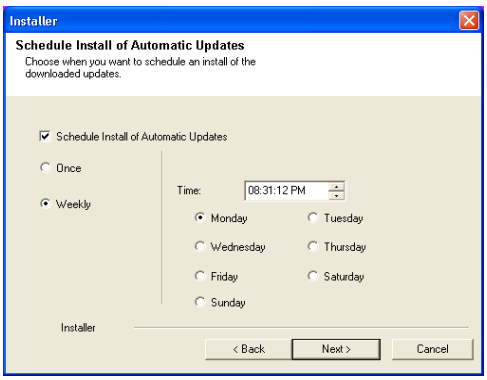
    - Do not install the software to a mapped network drive.
    - Do not use the following characters when specifying the destination path:

      / : * ? " < > | #

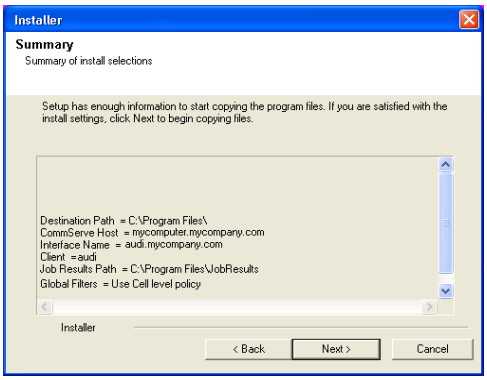
      It is recommended that you use alphanumeric characters only.



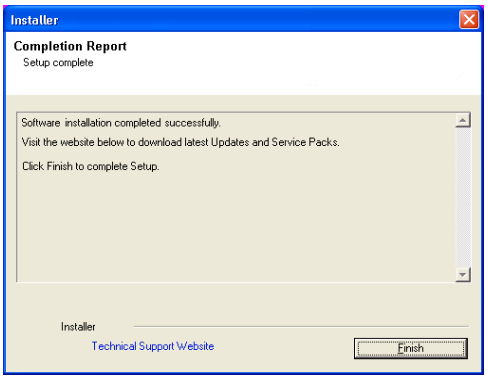
11. Click **Next**.



12. Click **Next**.

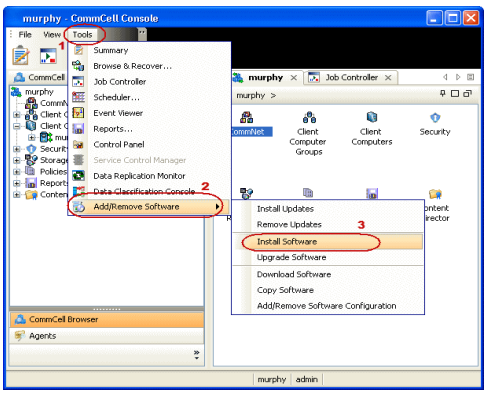


13. Click **Finish**.

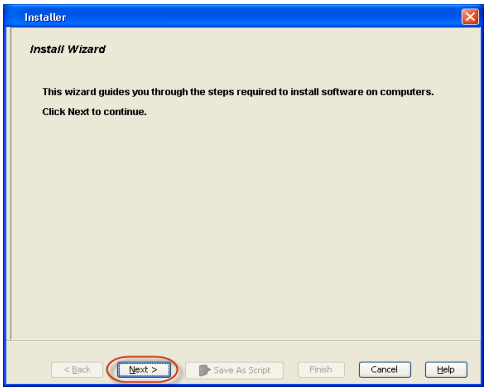


METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select **Tools** | **Add/Remove Software** | **Install Software.**

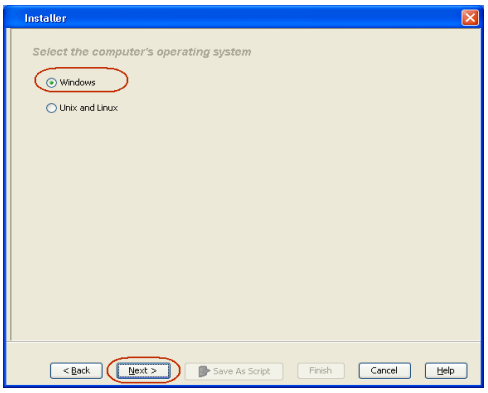


2. Click **Next**.

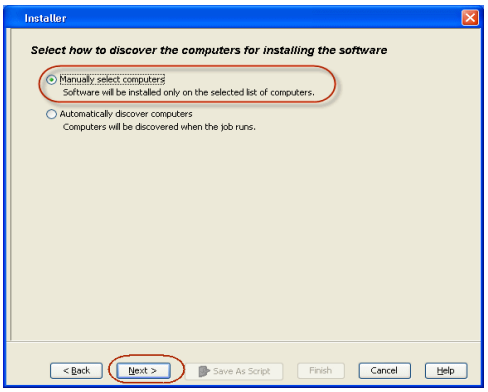


3. Select **Windows**.

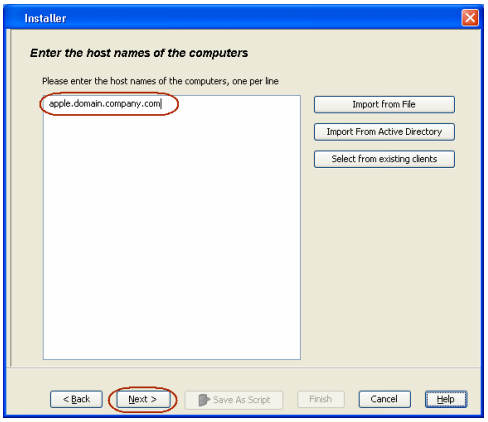
   Click **Next**.



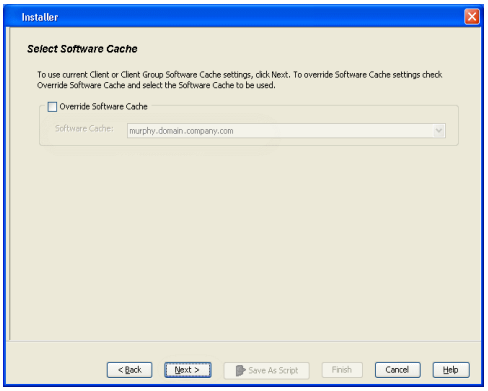
4. Select **Manually Select Computers**.
   Click **Next**.



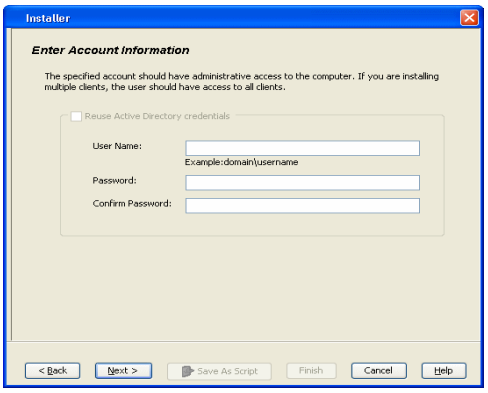
5. Enter the fully qualified domain name of the computer in which you wish to install.
   For example: `apple.domain.company.com`
   Click **Next**.



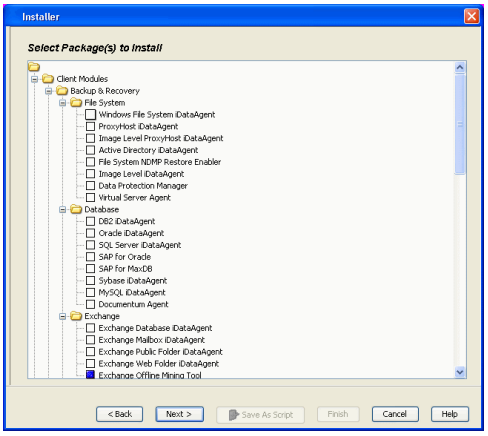
6. Click **Next**.



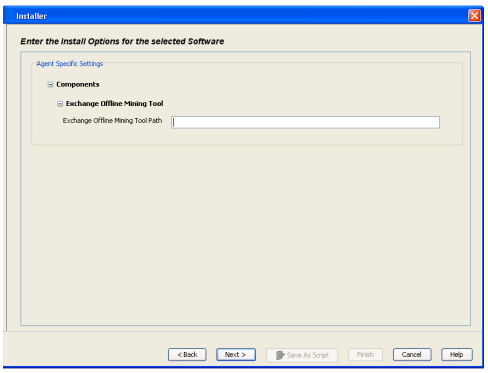
7. Specify **UserName** and **Password**.
   Click **Next**.



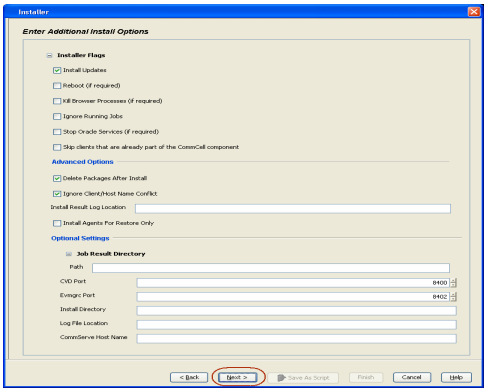
8. Select **Exchange Offline Mining Tool**.
   Click **Next**.



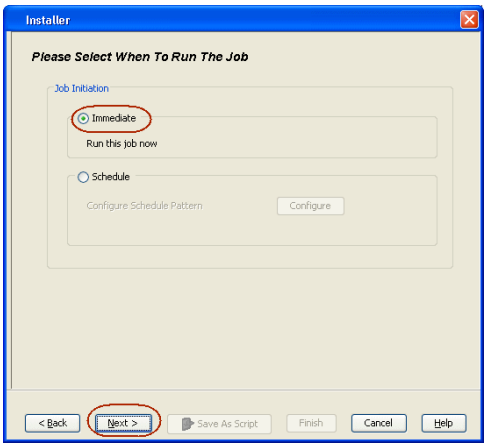
9. Verify the default location for software installation.
   Click **Next**.



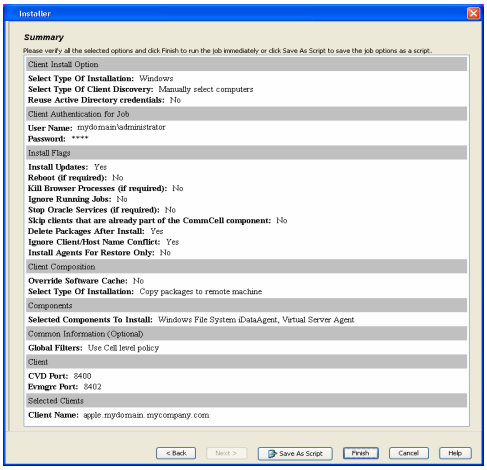
10. Click **Next**.



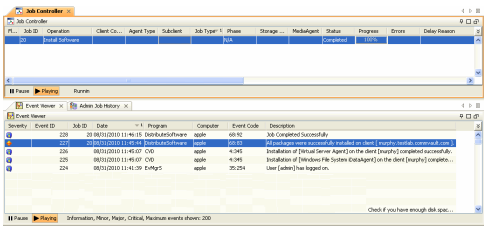
11. Select **Immediate**.
    Click **Next**.



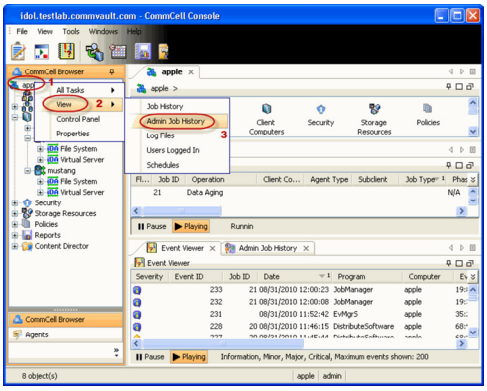
12. Click **Finish**.



13. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.

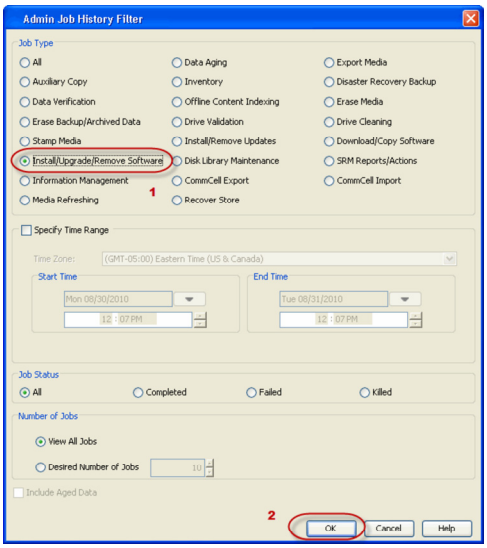


14. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.

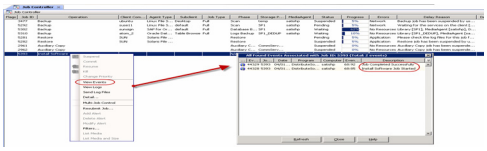


15. Select **Install/Upgrade/Remove Software**.

    Click **OK**.



16. You can view the following details about the job by right-clicking the job:
    - Event, which displays that software installation has started and completed.
    - Date of software installation.
    - Client computer name on which the software was installed.
    - Logs of the job.

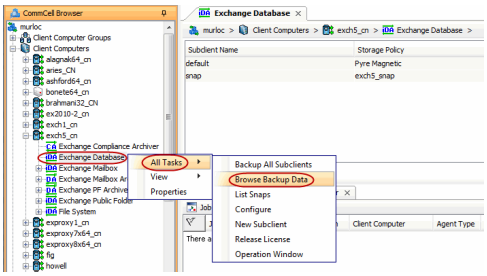


Previous Next

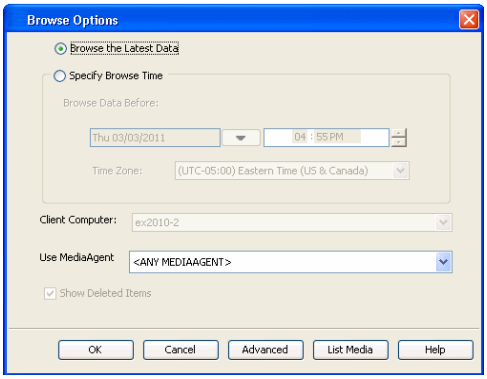
Offline Database Restore (Administrator)

CREATE THE OFFLINE DATABASE

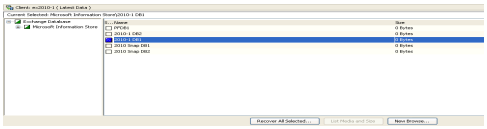
1.
   - From the CommCell Console, navigate to **Client Computers | <Client> | Exchange Database**.
   - Right-click the **<Agent>** and then click **All Tasks | Browse Backup Data**.



2. Click **OK**.

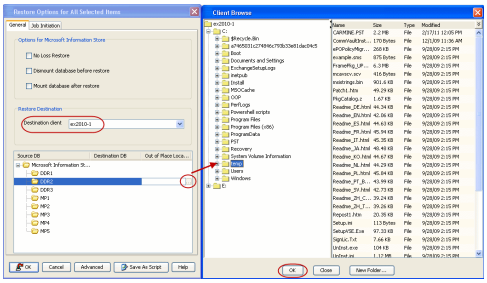


3.
   - Select the database in the left pane.
   - Click **Recover All Selected**.

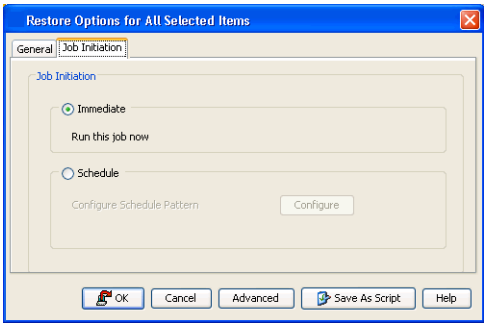


4.
   - Click **...** under **Out of Place** location column.
   - Select a folder on the client.

     The selected folder should be different from the one from which the database originated.

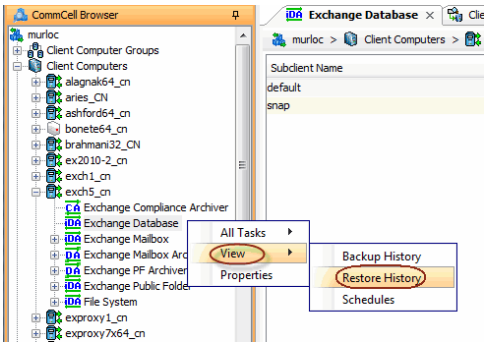


5.
   - Select **Immediate** from the **Job Initiation** tab.
   - Click **OK**.

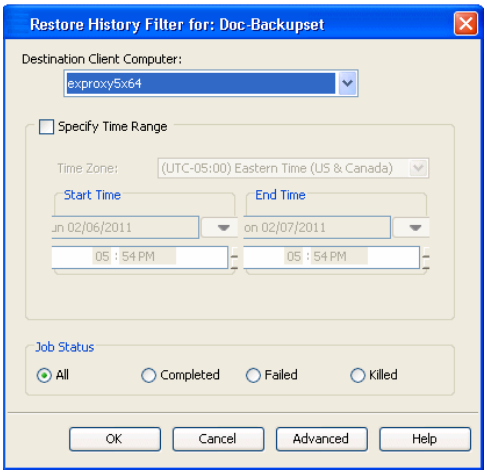


6. You can monitor the progress of the restore job in the **Job Controller** window of the CommCell Console.

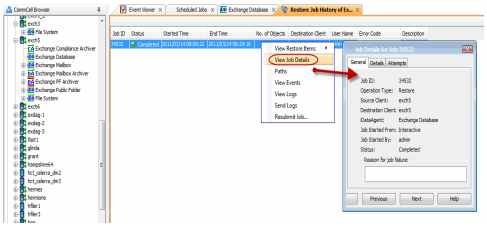
7. Once the restore job has completed, right-click the agent and click **View** | **Restore History**.



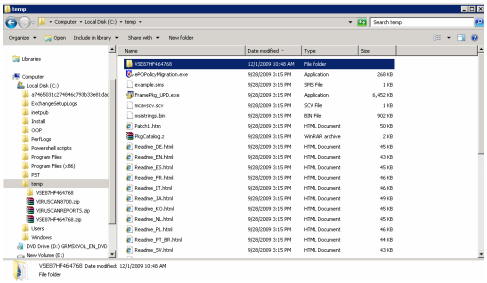
8. Click **OK**.



9. Right-click the job to view the following details:
   - Source client name.
   - Destination client name
   - Job status.
   - Reason for job failure.
   - View Events of the restore job.
   - View Log files of the restore job.



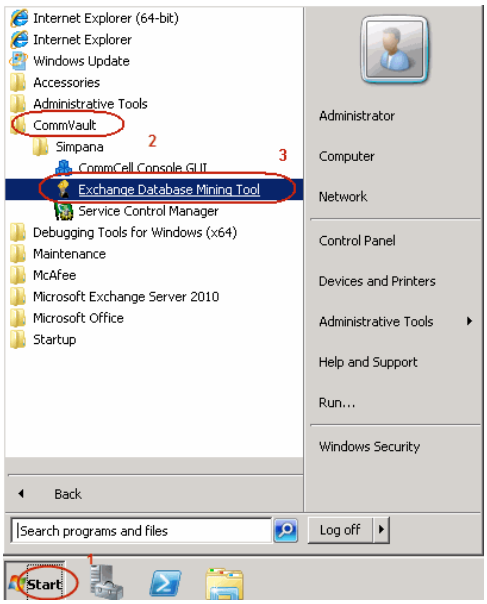
10. The database is restored on the selected location.



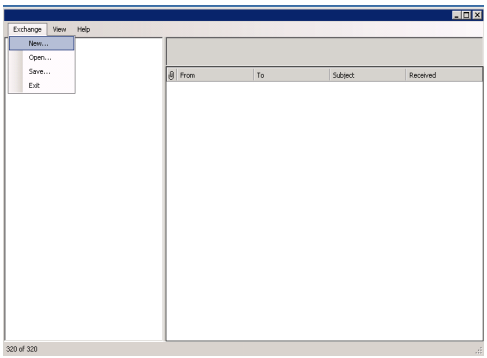
REGISTER THE OFFLINE DATABASE

11. Log onto client computer that has the Exchange Offline Mining Tool installed.

12.
   - Navigate to **Start | All Programs | *<software>*** folder**.**
   - Click **Exchange Database Mining Tool.**

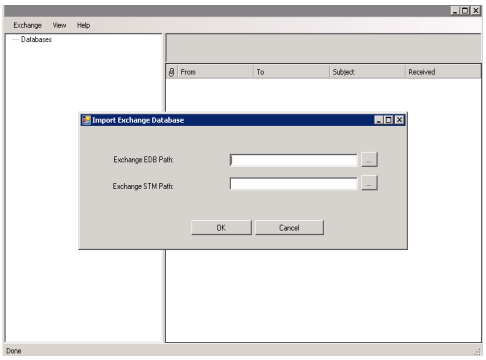


13. Click the **Exchange** menu and then click **New**.



14.
- Browse or enter the location of the offline database's .edb files in the **Exchange EDB Path** box.

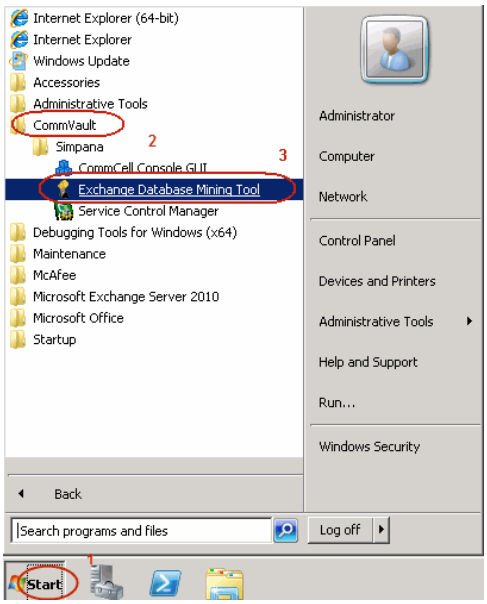
  For Exchange 2003, browse or enter the location of the offline database's .stm files in the **Exchange STM Path** box.
- Click **OK**.
- Repeat this step to register additional databases.



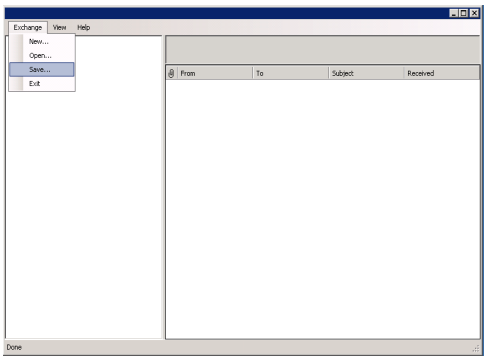
EXPORT DATABASE CONFIGURATION FOR END-USERS

15. Log onto client computer that has the Exchange Offline Mining Tool installed.

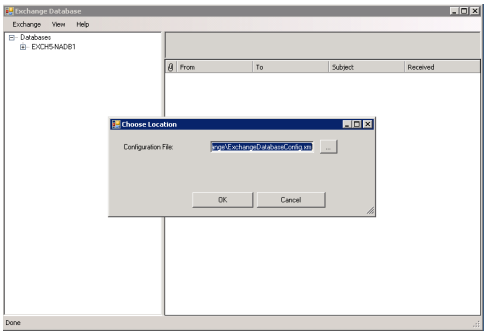
16.
- Navigate to **Start | All Programs | *<software>*** folder.
- Click **Exchange Database Mining Tool**.



17. Click the **Exchange** menu and then click **Save**.



18.
- Browse or enter the location of the **Configuration File** to be exported.
- Click **OK**.



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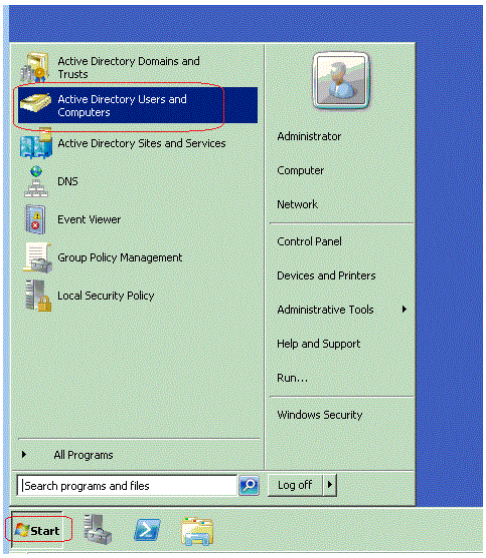
CONFIGURE PERMISSIONS TO VIEW ALL MAILBOXES

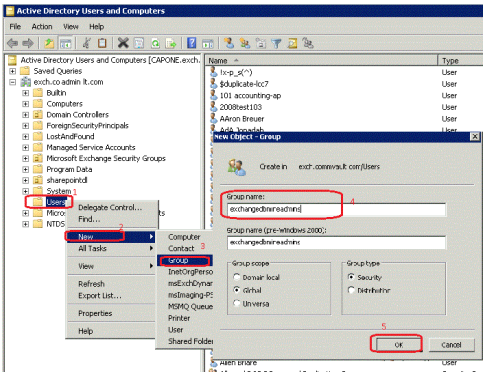
You can provide certain users with the ability to view all mailboxes as follows:

1. Log on to the computer with Exchange Offline Mining Tool and Active Directory installed.

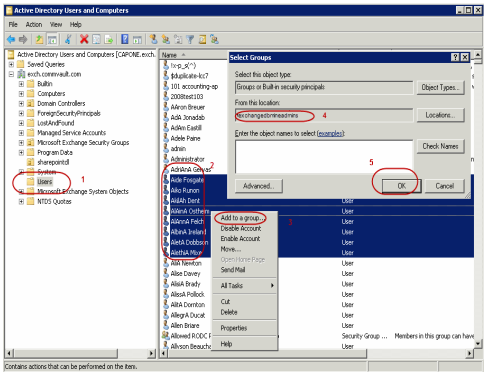
2. Navigate to **Start** and click **Active Directory Users and Computers.**



3.
   - Right-click **Users**, point to **New** and then click **Groups**.
   - Enter **exchangedbmineadmins** in the **Group Name** box.
   - Under **Group Type** select **Security**.
   - Click **Ok.**



4.
   - Navigate to **Start** and click **Active Directory Users and Computers.**
   - Select **Users.**
   - In the right-pane select a user or group of users, right-click and select **Add to a group...**
   - From the **Locations...** tab, browse to the **exchangedbmineadmins** group in the **From this location** box.
   - Click **Ok**.



CONFIGURE TOOL TO RUN FROM UNC PATH OR OUTLOOK

Follow the steps given below to configure to run the Exchange Offline Mining Tool to from a remote location.

1. Log onto the computer with Exchange Mining Tool installed.
2. Start the command prompt and run the following:

   ```
   caspol -m -addgroup "LocalIntranet_Zone" -allcode FullTrust -n "DB
   Mining Tool Policy" -d "This policy is used to run DBMining Tool"
   ```

3. To push permission settings to multiple computers simultaneously, perform the following:
   - Start the command prompt of the remote computer:
   - On the command prompt navigate to the folder location of the .NET Framework's version directory.
   - Run the following command:

   ```
   CasPol.exe -pp off -m -ag 1.2 -url //<computer_name>/ FullTrust
   ```

   Where computer name is the full path where .edb files and the log files reside.

   ```
   c:\Progrm Files\Support Tools>cd
   c:\windows\Microsoft.NET\Framework\v2.0.50727 >CasPol.exe
   -pp off -m -ag 1.2 -url//\\base2003
   \MiningToolExchange/FullTrust Microsoft <R> .NET Framework
   Caspol 2.0.50727.42
   Copyright <c> Microsoft Corporation. All rights reserved.
   Added union code group with"-url" membership condition to
   the Machine level. Success
   c:\windows\Microsoft.NET\Framework\v2.0.50727
   ```

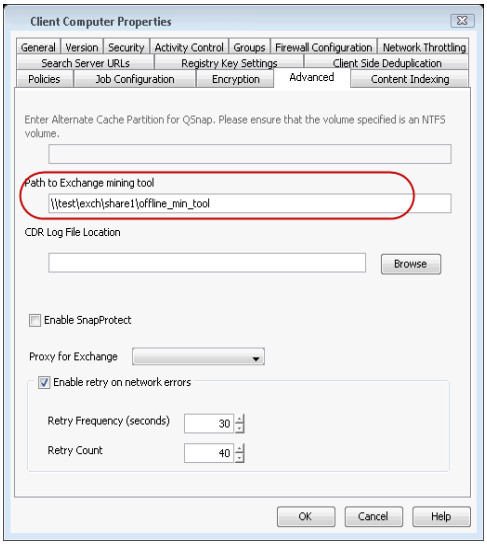
4. To establish a default security configuration file, perform the following:
   - Navigate to Microsoft.NET\Framework\<version_number>\config\security.config.
   - Copy the **security.config** file and append it with **.default** extension.

CONFIGURE OUTLOOK FOR OFFLINE DATABASE RESTORES

You can provide end-users with the capability to access the tool from Outlook toolbar by configuring the following:

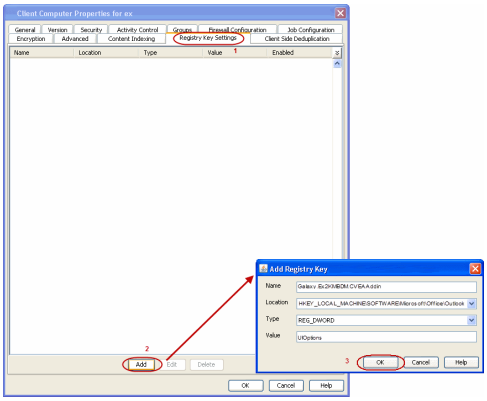
Note that this functionality is supported with Exchange 2003 databases only.

1. Ensure that all users accessing the Exchange Offline Mining Tool must have read and execute permissions for the chosen UNC path.
2. - From the CommCell Console, navigate to the <**Client**> with Exchange Mailbox Archiver Agent installed.
   - Right-click the <**Client**> and then click **Properties**.
   - Select the **Advanced** tab.
   - Enter the fully qualified UNC path to the Exchange Offline Mining Tool in the **Path to Exchange mining tool** box.



3.

- From the CommCell Console, navigate to **Client Computers**, with Exchange Mailbox Archiver Agent installed.
- Right-click the **<Client>** and select **Properties**.
- Select the **Registry Key Settings** tab**.**
- Click **Add**.
- In the **Name** box enter `Galaxy.Ex2KMBDM.CVEAAddin`.
- In the **Location** box enter `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\Outlook\Addins\`.
- In the **Type** box enter REG_DWORD.
- In the **Value** box enter `UIOptions`.
- Click **OK**.



CONFIGURE LANGUAGE SUPPORT

By default, the Exchange Offline Mining tool will use the language setting of the computer on which it is installed. If you want the tool to use a different language, follow the steps given below:

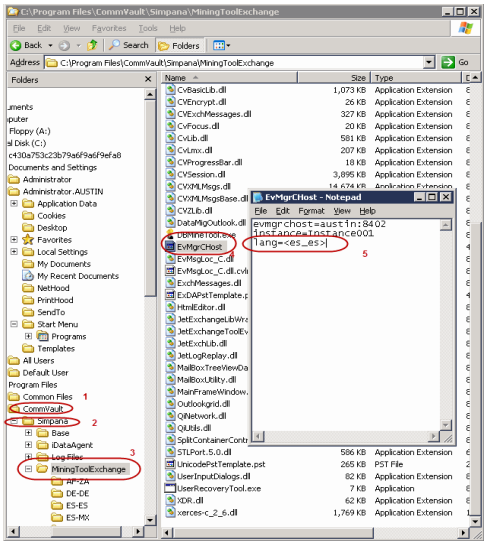
1. Log onto the computer where the Exchange Offline Mining tool is installed.

2.

- Navigate to `EvMgrCHost` file, located in the `MiningToolExchange` directory available in the software folder.
- Open the `EvMgrCHost` file in the edit mode and add **`lang=<language_code>`**

  Where ***`language_code`*** is one of the following:

  - fr-fr (French - France)
  - fr-ca (French - Canada)
  - es-es (Spanish - Spain)
  - es-mx (Spanish - Mexico)
  - de-de (German - Standard)
  - it-it (Italian)
  - ja-jp (Japanese)
  - ru-ru (Russian)
  - zh-cn (Chinese - Simplified)
  - en-us (English - United States)



CREATE DATABASE USING A SNAPSHOT

Database snapshots created with SnapProtect™ can be used for offline mining.

If you have not previously used SnapProtect to back up your databases, perform the following tasks:

- Configure the Microsoft Exchange Database *i*DataAgent. See Microsoft Exchange Database Configuration for more details.
- Configure the available arrays. See Storage Array Configuration for more details.
- Perform a SnapProtect backup of the Exchange Database *i*DataAgent. See Exchange Database iDataAgent Backup for more information.

Once you have the database snapshot, configure the database as described in the following sections.

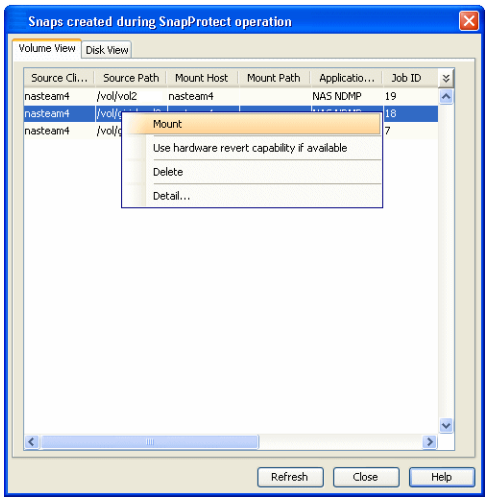
MOUNT THE SNAPSHOT

1. From the CommCell Browser, navigate to **Client Computers** | <***Client***>.
2. Right-click **Exchange Database** and click **All Tasks** | **List Snaps**.
3. Right-click the snapshot that you wish to mount and click **Mount**.
4. Click **Yes**.
5. In the **Mount Path** dialog box, specify the destination client and the path on the client in the **Destination Client** and **Destination Path** fields.

   On a Windows platform, enter a **CIFS Share Name** for the Agent.

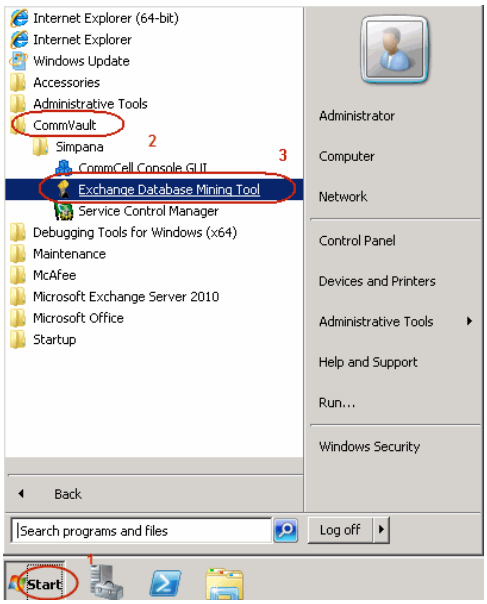
6. If you do not wish to save any changes made to the mounted snapshot after the snapshot is unmounted, select **Protect Snapshot during mount**.
7. Click **OK**.

   If you do not select **Protect Snapshot during mount**, the changes made to snapshot when it is mounted will be retained after the snapshot is unmounted and the snapshot can no longer be used for restore.

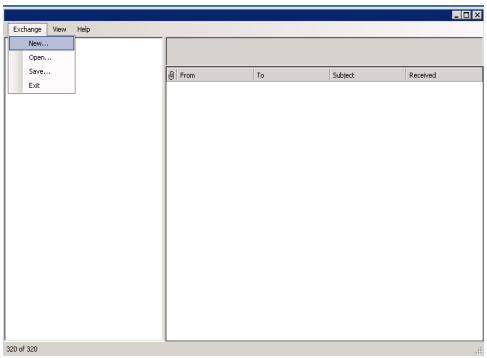


PREPARE THE DATABASE

1. Log onto the computer on which the Exchange Offline Mining Tool is installed.
2. Navigate to the Destination path, where the snapshot is mounted.
3. Copy the **.edb/.stm, log** and **.dll** files to a location from where the Exchange Offline Mining Tool will access these files.
4. - Navigate to **Start | All Programs | *<software>*** folder.
   - Click **Exchange Database Mining Tool**.



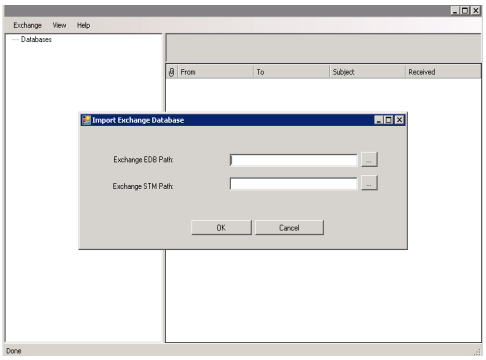
5. Click the **Exchange** menu and then click **New.**



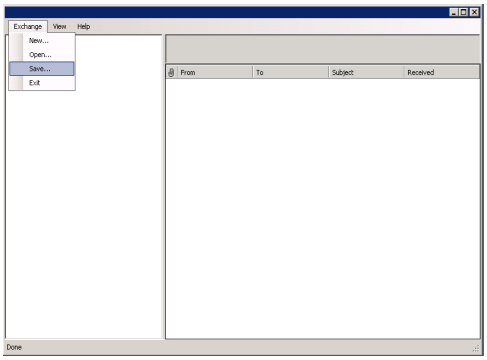
6. - Browse or enter the location of the .edb files in the **Exchange EDB Path** box.

   For Exchange 2003, browse or enter the location of .stm files in the **Exchange STM Path** box.

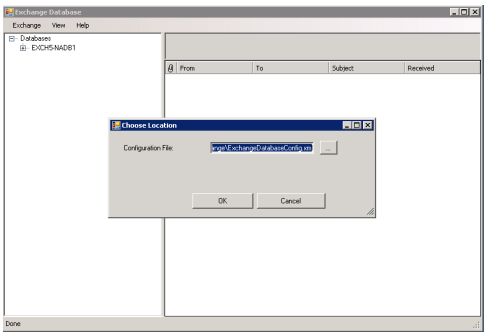
- Click **OK**.
- Repeat this step to register additional databases.



7. Click the **Exchange** menu and then click **Save.**



8.
- Browse or enter the location of the **Configuration File** to be exported.
- Click **OK**.



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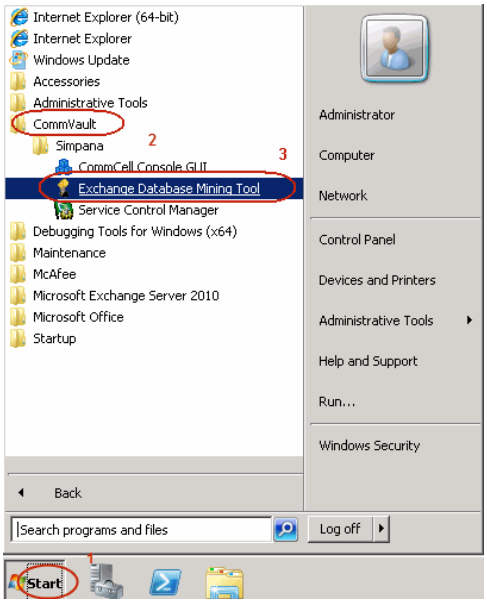
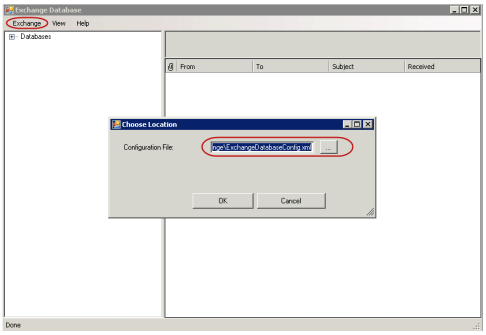
Offline Database Restore (User)

RESTORE A MESSAGE

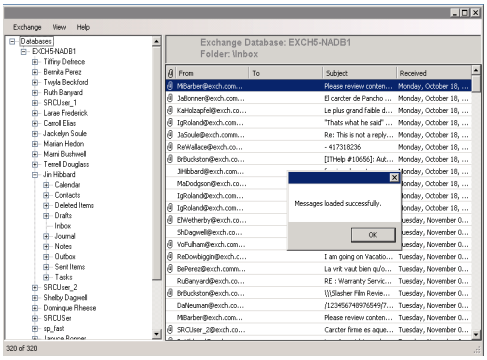
1. Ensure you have access to the **Configuration File** provided by your administrator.
2. Log onto client computer where Exchange Database Mining Tool is installed.
3.
   - Navigate to **Start | All Programs | *<software_location>***
   - Select **Exchange Database Mining Tool**.



3.
   - From the **Exchange** menu, click **Open.**
   - Type in or browse to the **Configuration File.**
   - Click **OK**.

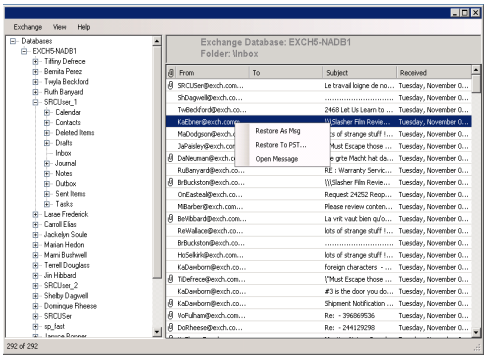


4. From the left pane, expand the **Databases** |**Mailbox** and select a mailbox**.**

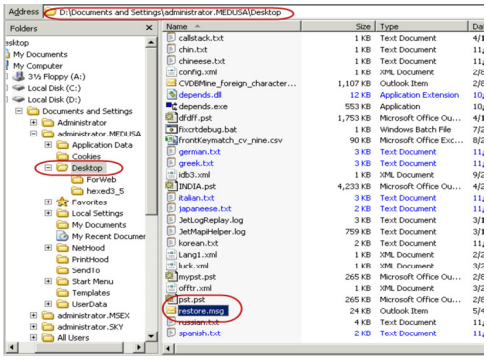


5.
   - Right-click the message and select **Restore As Msg**.
   - Type in or **Browse** to the message restore location.

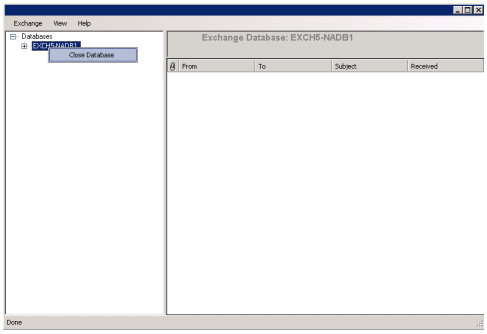
     For example: C:\offline\restore_1
   - Click **OK**.



6.
- Navigate to the location where message has been restored.
  For example: C:\offline\restore_1
- Double-click the restored file to open in Outlook.



7. Right-click the database and select **Close Database.**



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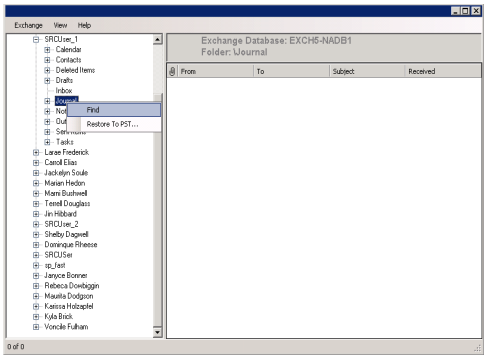
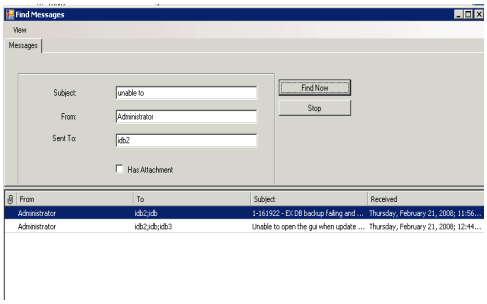
FIND A MESSAGE

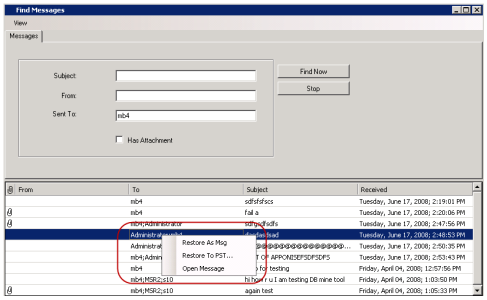
1.
   - Log onto client computer where Exchange Database Mining Tool is installed.
   - Navigate to **Start | All Programs | *<software_location>***
   - Select **Exchange Database Mining Tool**.
   - From the **Exchange** menu, click **Open.**
   - Type in or browse to the location of the **Configuration File.**
   - Click **OK**.
   - From the left pane, expand the **Databases** | **Mailbox** and select a mailbox**.**
   - Right-click the folder and select **Find**.



2.
   - Enter the search criteria in the **From**, **To** and/or **Subject** boxes.
   - Click **OK**.

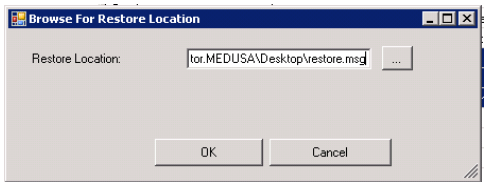


3. Right-click the message or range of messages and select **Restore As Msg.**

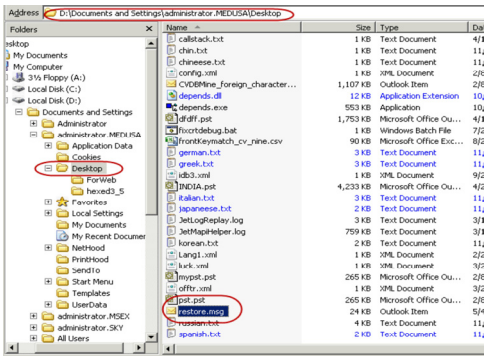


4.
   - Type in or **Browse** the message restore location.

     For example: C:\offline\restore_1
   - Click **OK**.



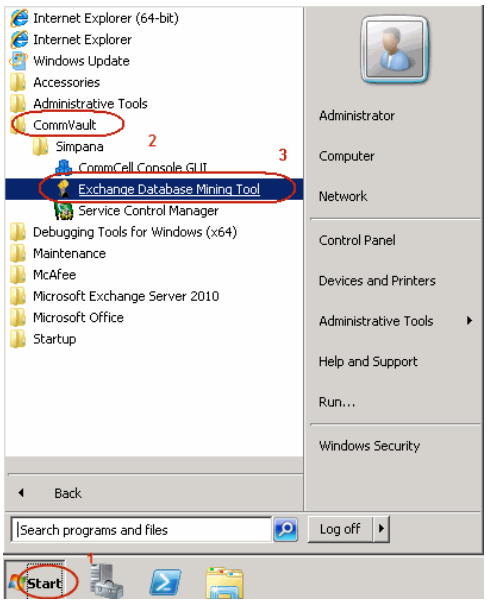
5.
   - Navigate to the message restore location.
   - Double-click the MSG file to open the message.



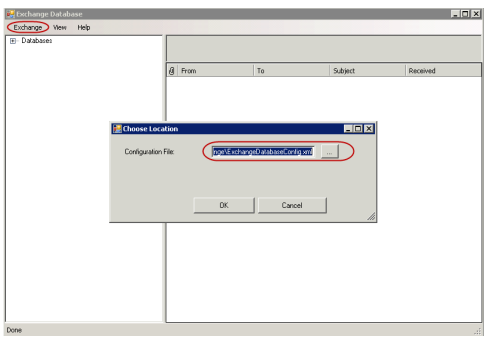
RESTORING MULTIPLE MESSAGES

Follow the steps given below to restore multiple messages or a message folder:

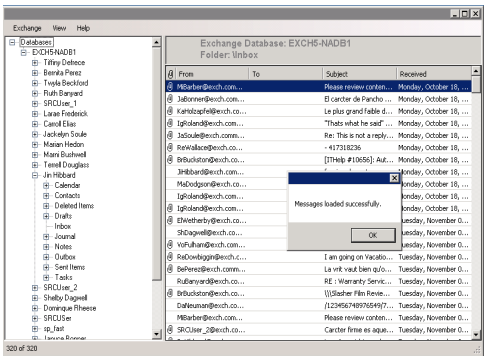
1. Ensure you have access to the **Configuration File** provided by your administrator.
2. Log onto client computer where Exchange Database Mining Tool is installed.
3.
   - Navigate to **Start | All Programs | *<software_location>***
   - Select **Exchange Database Mining Tool**.



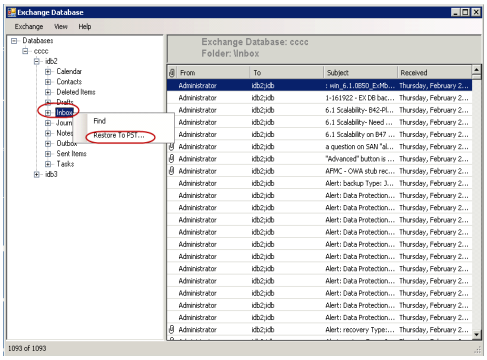
3.
   - From the **Exchange** menu, click **Open.**
   - Type in or browse to the **Configuration File.**
   - Click **OK**.



4. From the left pane, expand the **Databases** | **Mailbox** and select a mailbox**.**

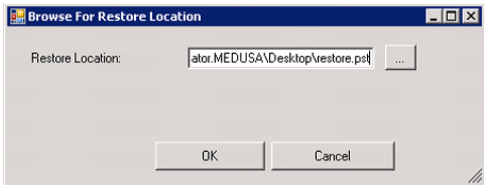


5. Right-click a range of messages and select **Restore As PST**.



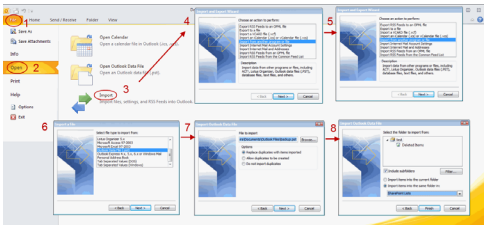
6.
- Type in or **Browse** to the message restore location.

  Example: C:\offline\restore_1
- Click **OK**.

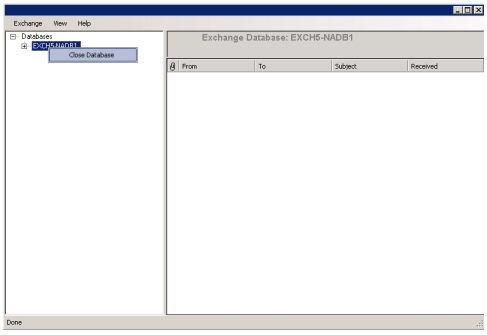


7. Follow the steps given below to view the restored .pst file:
- Navigate to **Start | Outlook**.
- Click **File** and then click **Open**.
- Click **Import**.
- Select **Import from another program or file** option and click **Next**.
- Under **File Type**, select **Outlook Data File (.pst)** and click **Next**.
- Click **Browse** and choose the .pst that was restored and click **Next**.
- Choose to import the file to the current folder or choose another folder and click **Finish**.

  When **Import items into the same folder** is selected, the data from the imported file will be added to the same folder in Outlook if the folder matches. If the folder doesn't match in Outlook, it will be created.

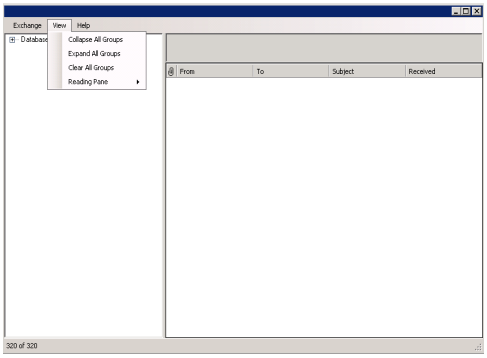


8. Right-click the database and select **Close Database.**

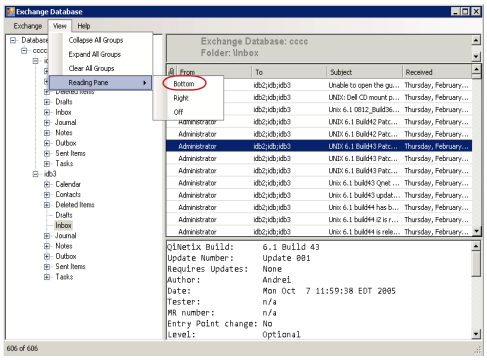


CUSTOMIZE THE DISPLAY

1.
- Navigate to **Start | All Programs | *<software_location>***
- Select **Exchange Database Mining Tool**.
- Click **View**.



2. Select from the following options:



- **Collapse All Groups** - collapses all the message folders of a mailbox in the selected database in the left pane.
- **Expand All Groups** - expands all the message folders of a mailbox in the selected database in the left pane.
- **Clear All Groups** - displays the default view.
- **Reading Pane** (**Bottom** | **Right** | **Off**) - displays the selected message at the **Bottom** or on the **Right**.

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SRM for Exchange - Reports

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OVERVIEW

Managing storage resources is a critical job for any organization, which can be challenging because these resources are distributed across the network. SRM Exchange reports provide a sleek, versatile, and easy-to-use reporting framework that enables you to compare mailbox sizes, display messages that have been archived and display generic information on your Exchange Servers. Customized reporting is available through the selection of filter criteria e.g., individual columns, specific clients, specific client computer groups, report options, and SQL Queries.

CONFIGURATION

Reports are generated from the data collected in a data collection job. The data is then stored on the SRM Server. Schedule your first reports to run after your first data collection jobs have completed. Note that data collection and Report Generation jobs are scheduled independently, at different times and intervals. Thus, you can, for example, collect data nightly, hourly, or on-demand, but generate reports only once per week if desired.

> The SRM for Exchange Database *i*DataAgent collects data only for the default subclient. Data is not collected for any other subclients on the SRM for Exchange Database *i*DataAgent. Therefore, only data for the default subclient appears in reports.

OPTION	DESCRIPTION
Enable SRM for all backups	SRM can be enabled from the Agent levels for the *i*DataAgent. When Enable SRM is selected at the Agent level, SRM options get enabled for all subclients. 1. From the CommCell Browser, right-click the *i*DataAgent for which you want to enable SRM feature and select **Properties**. 2. **Enable SRM** must be selected from the **General** tab. A Discovery and Analysis Data Collection job is automatically set when you enable SRM. 3. Then confirm your selection by clicking **OK**.
Run a Backup	A full backup contains all the data that comprises a subclient's contents. If a client computer has multiple agents installed, then the subclients of each agent require a full backup in order to secure all of the data on that client. 1. To perform a full backup, right-click the subclient, and click **Backup** in the CommCell Browser. 2. One of the following options must be selected from the Backup Options dialog box: • Backup Type: Select **Full**. • Backup Schedule: Select **Immediate** if you want to run the backup now. • Granular Recovery: Select **Enable Granular Recovery** if you intend to restore individual files and folders from a disk or volume-level backup. 3. Then confirm your changes by clicking **OK**. You can track the progress of the backup job from the Job Controller window. When the backup has completed, the Job Controller displays Completed. After performing a first full backup you may select any other backup type for performing Data Collection operations.

GENERATE SRM REPORTS

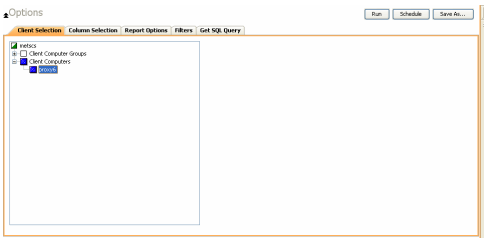
The sections below discuss running, scheduling, and saving a report.

RUNNING A REPORT

You can choose to run a report so that you view it immediately. Alternatively, to view it at a later point in time you can schedule it or save it as a template to a file. When running a report, you can choose an out-of the box template or generate a more customized report by picking and choosing individual columns from a category.

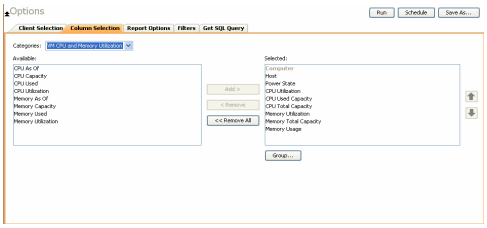
TO RUN A SRM REPORT IMMEDIATELY:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then click a template to display the **Options** window.
3. Click the **Client Selection** tab and select the client computers or client computer group. This is a required step.



4. Click **Column Selection** tab.

   For an out-of-the-box template, the columns are displayed here. To change the columns, select a category and click **Add** or **Remove** to move the columns between the **Available** and **Selected** boxes. Clicking **Remove All** will remove all previously selected filters for the reports.



5. Click **Run** to generate the report immediately and view the results.

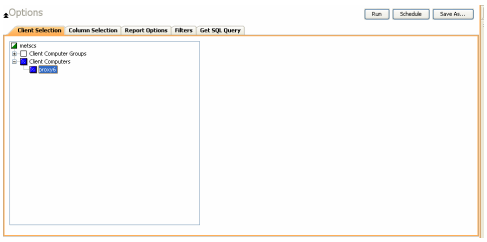
SCHEDULING A REPORT

Scheduling allows you to run a report on a user-defined schedule, send it in a different language or format, and configure notifications for specified recipients when the report has run. Reports can be scheduled so that they follow a backup schedule in order to guarantee up-to-date reporting. Scheduling a report involves these tasks:

- Specify a daily, weekly, monthly, yearly, or even one time basis schedule. When scheduling, patterns can be applied to the report so it runs on a specific time, repeated every so many days, or run for a particular number of times.
- Scheduled reports support different languages and formats. Default language is English and default output is HTML. You can even save the report to local drive or a network share.
- When scheduled reports are run, notifications can be sent in the form of an email or page, SNMP trap, RSS feed, or Event Viewer message to inform email recipients, computers, or a script that a report has run and is now available.

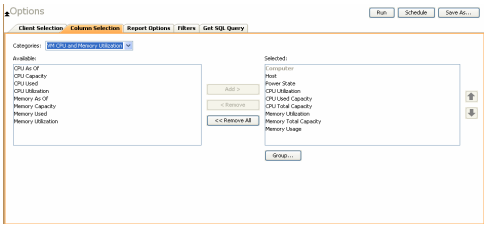
TO SCHEDULE A SRM REPORT:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then click a template to display the **Options** window.
3. Click the **Client Selection** tab and select the client computers or client computer group. This is a required step.



4. Click **Column Selection** tab.

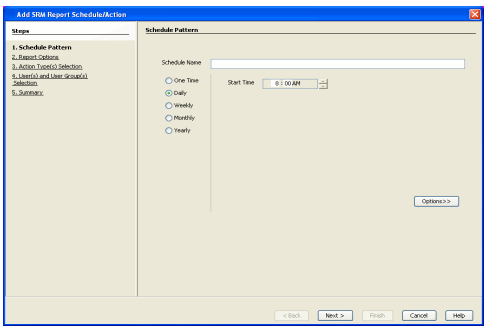
   For an out-of-the-box template, the columns are displayed here. To change the columns, select a category and click **Add** or **Remove** to move the columns between the Available and Selected boxes. Clicking **Remove All** will remove all previously selected filters for the reports.



5. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

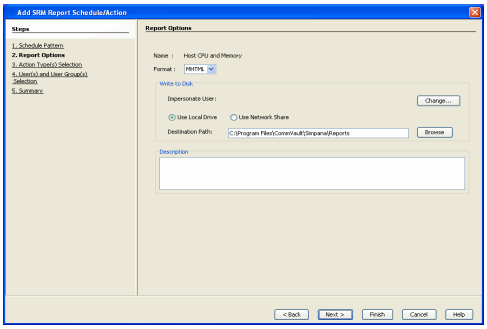
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



6. Select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

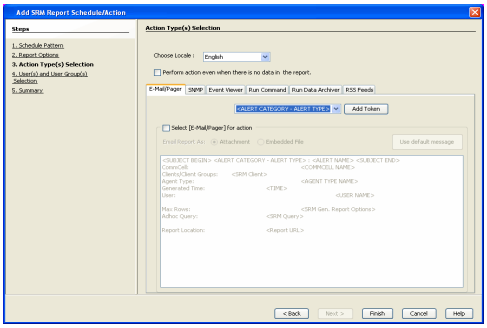
   Click **Next**.



7. Configure the notifications for the scheduled report, such as:
   - Select the **E-Mail/Pager** tab and click **Select [E-Mail/Pager] for notification**. Click either **Use default message** or add more tokens by selecting **Add Token**.
   - Select the **SNMP** tab and click **Select [SNMP] for notification**. Click either **Use default message** or add more tokens by selecting **Add Token**. The SNMP Enabler software must be installed on the CommServe. See SNMP Enablers for more information.
   - Select the **Event Viewer** tab and click **Select [Event Viewer] for notification**. Click either **Use default message** or add more tokens by selecting **Add Token**.
   - Select the **Run Command** tab and click **Select [Run Command] for notification**. Click either **Run on CommCell** or **Run on Client**. Specify a path in **Command Script Location** and optionally specify arguments for the script in **Arguments**.
   - Click **Run Data Archiver** tab to write files and directories of the report to a text file.
   - Click **RSS Feeds** tab and click **Select [RSS Feeds] for notification**. Click either **Use default message** or add more tokens by selecting **Add Token**. Specify a feed location in **Select/Enter the FeedLocation** field.

   Click **Next**.

   Refer to the **Actions** documentation for more comprehensive information.

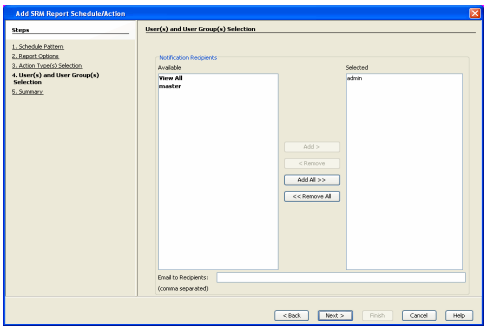


8. In this dialog, select the recipients for the scheduled report.

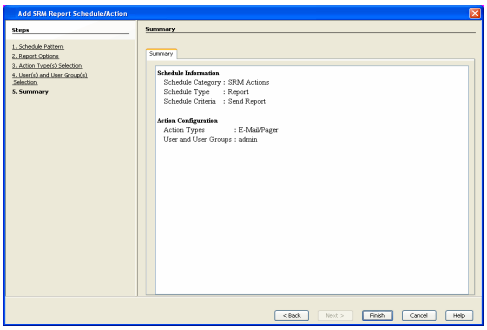
   Use the **Add>** or **<Remove** buttons to specify CommCell users as the notification recipients.

   Or, enter one or more email addresses in the **Email to Recipients** field. Separate multiple addresses with commas.

   Click **Next**.



9. Review the summary and if satisfied, click **Finish**.

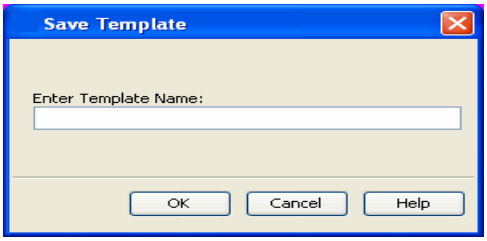


SAVING A REPORT

Saving a report allows you to save the filter criteria and schedule information, including notifications, to a template so it can be used to generate a report at a later date. All report templates are saved under **My Reports**.

TO SAVE A SRM REPORT TO A TEMPLATE:

1. Create a report and optionally specify scheduling criteria as explained in Scheduling a Report. Advanced criteria such as Filters will also be saved in the report template.
2. In the right-hand corner, click **Save As...** and enter a name for the report and click **OK**.



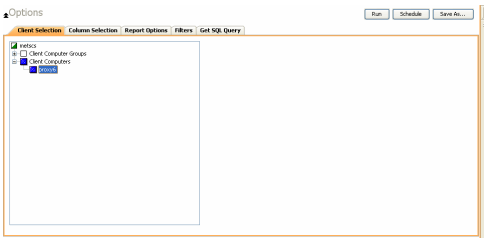
3. The report template is saved under **My Reports**.

SEND A NOTIFICATION WHEN A SRM REPORT HAS RUN

Configuring notifications is a step when scheduling a report. For example, when scheduled reports are run, an email notification can be sent to inform the recipient that a report has run and is now available. The recipient can be either a CommCell user, a CommCell user group, a domain or external user (e.g., yahoo, gmail, etc.), or a pager address. For a comprehensive description of all notification types, refer to Actions.

TO SEND AN EMAIL NOTIFICATION WHEN A SCHEDULED REPORT HAS RUN:

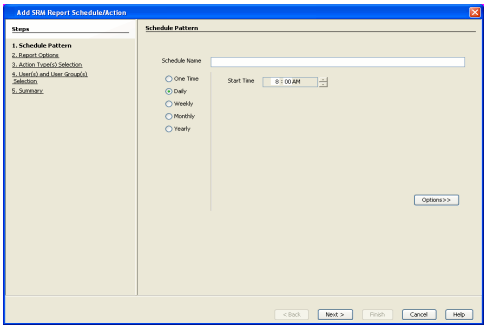
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Click **Applications** or **Enterprise**. Then click a template to display the **Filters** window.
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries. Refer to Options, Report Options, and Filters respectively.



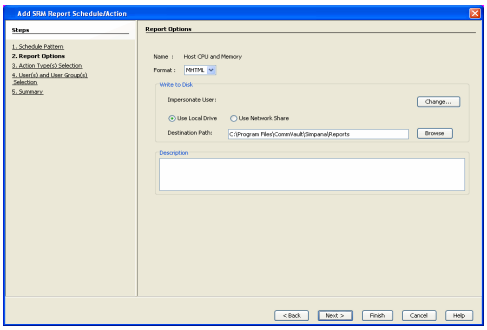
5. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

   Optionally, click **Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



6. In this dialog, select the report output options, such as:

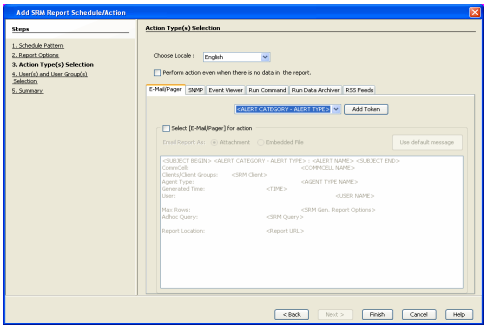


- **Format** - select **HTML**, **EXCEL**, or **PDF**.
- In **Locale**, select a report language. See Languages - Support for the list of supported languages.
- Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

> TIFF is no longer a supported output format. SRM supports saving Reports in these formats: HTML, EXCEL, and PDF.

Click **Next**.

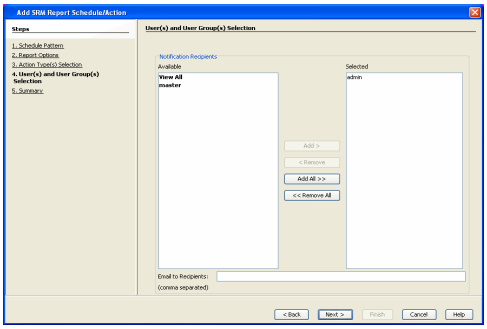
7. In this dialog, configure the **E-Mail/Pager** notification for the scheduled report as follows:



- Click **Select [E-Mail/Pager] for notification**.
- Either accept default format or add more tokens by selecting a token from the pulldown menu and clicking **Add Token**. The tokens are explained in Alert Tokens. Click **Use default message** to revert back to original default format.

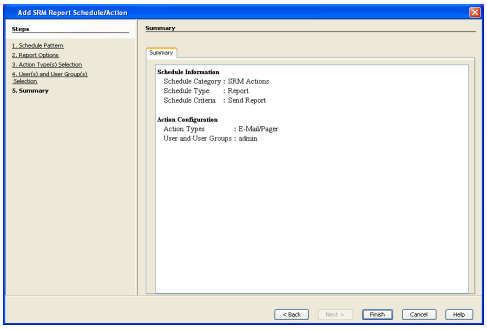
Click **Next**.

8. In the **User(s) and User Group(s) Selection** dialog, specify the recipients to whom the notification will be sent as follows:



- To add or remove CommCell users or a CommCell user group, select a user in the **Available** or **Selected** boxes and click **Add>** or **<Remove**.
- To specify a domain or external user (e.g., yahoo, gmail, etc.) or a pager address, enter the email address in **Email to Recipients** field. Separate multiple addresses with a comma.

9. Review the summary and if satisfied, click **Finish**.



GETTING STARTED WITH EXCHANGE SERVER REPORTS

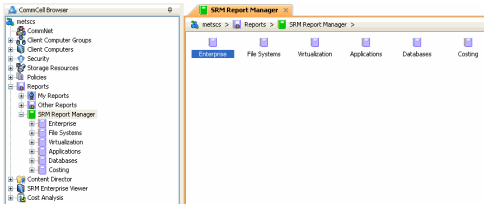
The following illustrates a few possibilities of how Exchange Server reports can be generated and used. For more information that explains the reports comprehensively and how to generate reports using all possible features, refer to Advanced page.

MAILBOX DISTRIBUTION BY SIZE

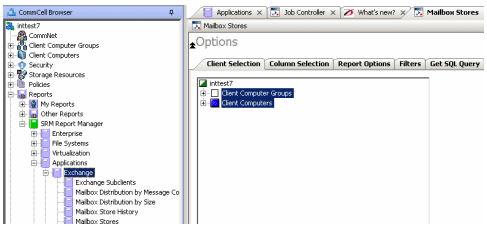
Use this report to compare mailbox sizes of a store so that if a mailbox exceeds a normal capacity for your enterprise, quotas could be increased on the Exchange Server to allocate the additional space that is required.

TO DISPLAY MAILBOX SIZES OF A STORE:

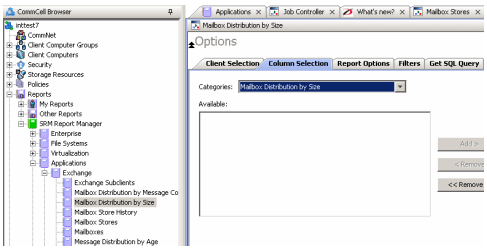
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.



2. Click **Applications** and click **Exchange**.

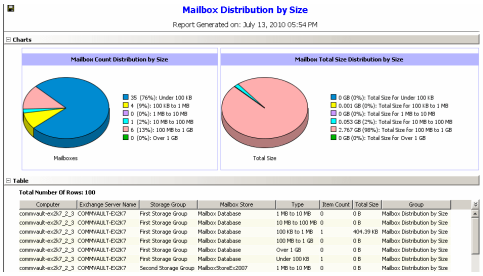


3. Click the **Mail Distribution by Size** template and select the client computers in the **Client Selection** tab.



4. Click **Run**.

   Graphs showing mailbox count and mailbox total size are displayed as well as a list of mailboxes by computer, exchange server, storage group, mailbox store, and group.

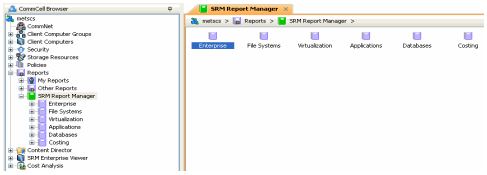


MESSAGE DISTRIBUTION BY AGE

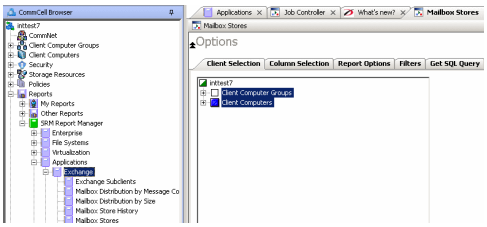
Use this report to display messages that have been archived and how much media space was required for each archive job run.

TO VIEW MESSAGES THAT HAVE BEEN ARCHIVED:

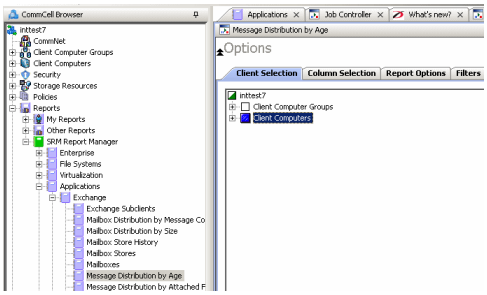
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.



2. Click **Applications** and click **Exchange**.

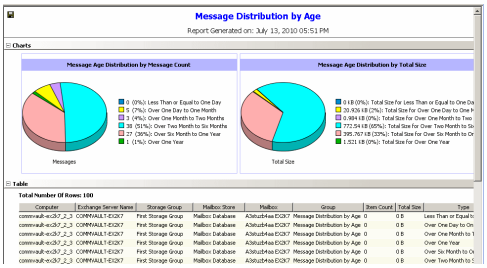


3. Click the **Mail Distribution by Age** template and select the client computers in the **Client Selection** tab.



4. Click **Run**.

   Graphs showing message age distribution by total count and total sizeare displayed as well as a list of mailboxes by computer, exchange server, storage group, mailbox store, mailbox, group, count, size, and type.

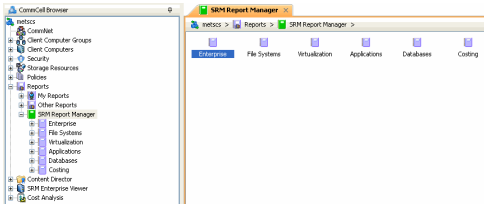


MAILBOX STORES

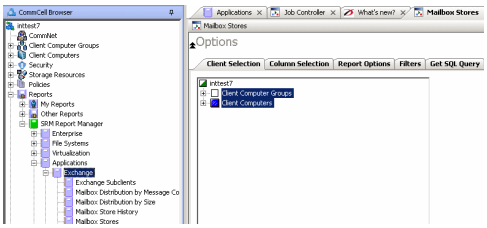
Use this report to view the size of the mailboxes per store to aid in restructuring the mailboxes equally across stores. For example, if one store is over-weighted with mailboxes, mailboxes can be redistributed to a store with fewer mailboxes.

TO VIEW MAILBOXES ACROSS STORES:

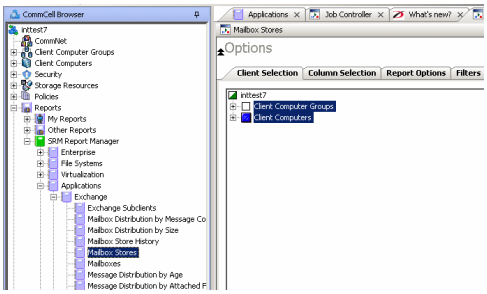
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.



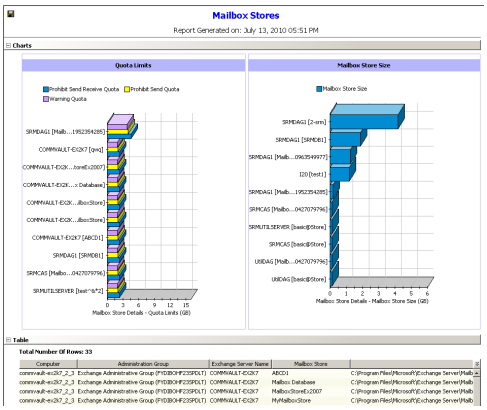
2. Click **Applications** and click **Exchange**.



3. Click the **Mailbox Stores** template and select the client computers in the **Client Selection** tab.



4. Click **Run**.

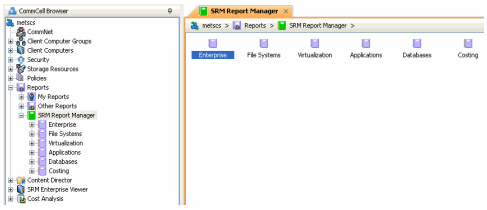


SERVER INFORMATION

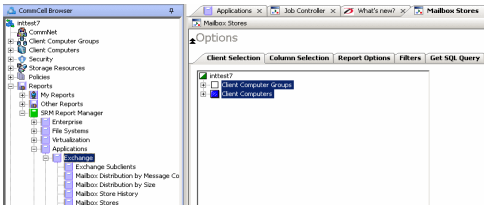
Use this report to display generic information on your Exchange Servers and ensure that they are up-to-date.

TO VIEW EXCHANGE SERVER INFORMATION:

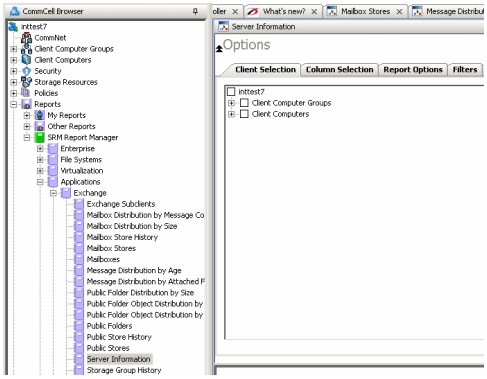
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.



2. Click **Applications** and click **Exchange**.

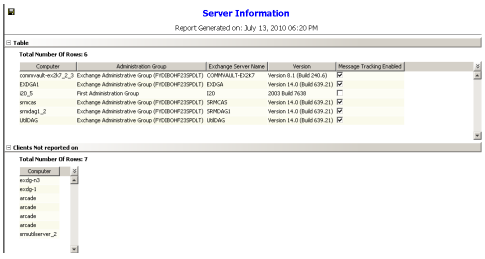


3. Click the **Server Information** template and select the client computers in the **Client Selection** tab.



4. Click **Run**.

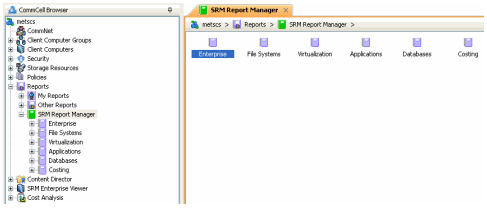
   A list of Exchange Servers is displayed along with its version number, administration group to which it belongs, and if Message Tracking is enabled or not.



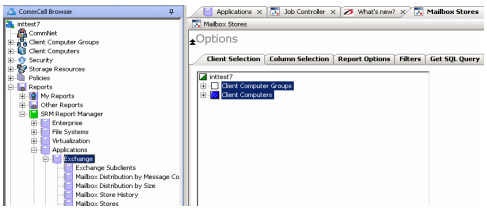
DAG CLIENTS INFORMATION

Use this report to display the information on DAG clients and ensure that they are up-to-date.

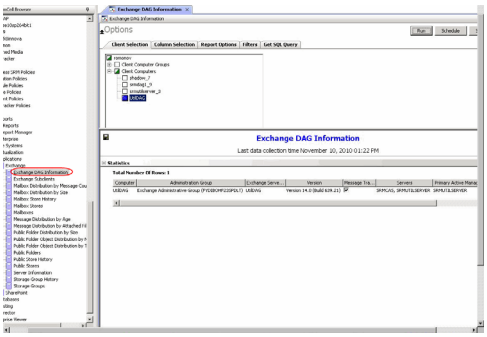
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.



2. Click **Applications** and click **Exchange**.

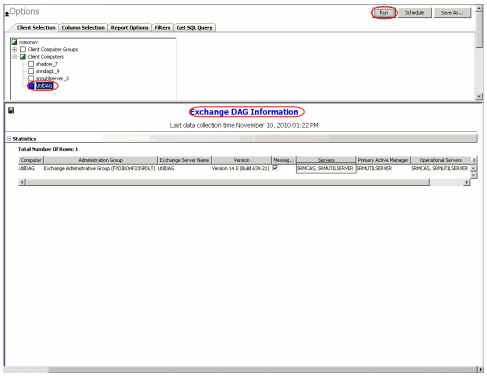


3. Click the **Exchange DAG Information** template and select the client computers in the **Client Selection** tab.



4.
   - Select **DAG Clients**.
   - Click **Run**.

   A list of DAG clients' Information is displayed along with their version numbers, administration group to which they belong, Exchange Server Name, Primary Active Manager and Operation servers.



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SRM for Exchange - Reports

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OVERVIEW

SRM reporting provides a sleek, versatile, and easy-to-use reporting framework that enables you to easily and effectively choose, view, and analyze vital data. Enterprise and application-based reports can be rapidly generated with out-of-the-box templates or customized with filter criteria. Reports can be run immediately or scheduled to run daily, weekly, monthly, etc.

In essence, SRM Exchange reports provide these features:

- Templates of predefined columns are provided so that a report can be generated quickly. The columns are preselected but can be adjusted as needed.
- Filter criteria. Reports can be customized according to particular criteria, such as client or client group, the columns to display in the report, etc.
- Report options control how the data is displayed in a report or chart. You can control the data size units, number of rows to display in an entire report or before a page break, sorting order, etc.
- Advanced features, such as Filters and SQL queries can also be applied to further refine the report.
- When scheduled, reports can be saved and shared in various formats (HTML, Excel, PDF) or in different languages.
- Actions. When scheduled reports are run, notifications can be sent in the form of an email or page, SNMP trap, RSS feed, Event Viewer message to inform email recipients, computers, or a script that a report has run and is now available.

The following sections describe the SRM Exchange reporting features in more detail.

REPORT FEATURES

The following features are provided by SRM Reports.

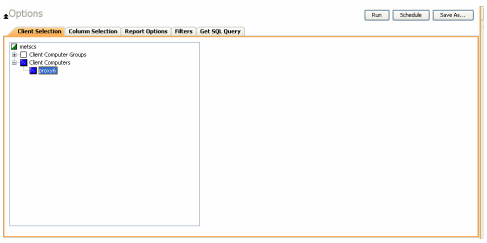
OPTIONS

Out-of-the box templates provide pre-selected columns and can be run immediately after selecting clients or client computer groups. To generate a customized report, you can start with a template and then alter the pre-selected columns by adding or removing the columns. Note that when selecting clients, SRM data collection must be enabled and a full backup needs to have run for the Agent in order to have up-to-date information presented in the report.

> Pay particular attention when specifying filter criteria. Selecting criteria judiciously will aid in generating a useful report. Otherwise, the report may be too cumbersome and cluttered.

TO FILTER A SRM REPORT:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Click the **Client Selection** tab and select the client computers or client computer group. This is a required step.

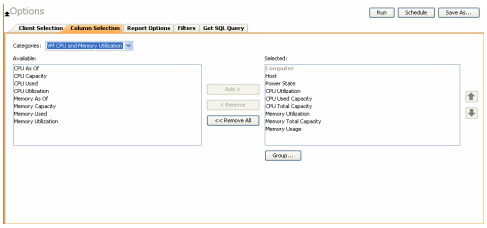


4. Click **Column Selection** tab.

   For an out-of-the-box template, the columns are displayed here. To change the columns, select a category and click **Add** or **Remove** to move the columns between

the **Available** and **Selected** boxes. Clicking **Remove All** will remove all previously selected filters for the reports.

The columns that can be selected are listed in **Available Columns**.

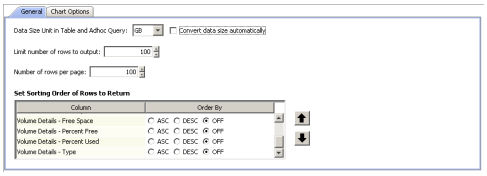


REPORT OPTIONS

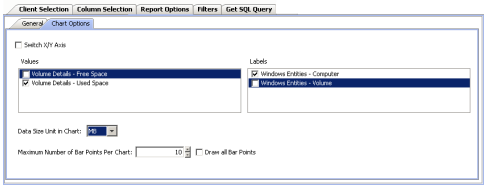
The report options control how data is presented in the report. Either accept the defaults or modify the options as described below.

TO SPECIFY REPORT OPTIONS OF A SRM REPORT:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Click the **Report Options** tab and click the **General tab** to modify these options:
   - Determine the **Data Size Unit** in the table section of the report and when building ad hoc queries. You can elect to have them converted for you automatically by selecting **Convert data size automatically** or you can specify the unit (e.g., Bytes, KB, MB, GB, MB, TB, PB). Default is GB.
   - Either accept the default number of 100 rows to display in the entire report or enter a new number in Limit number of rows to output.
   - Specify the number of rows to display in the report before breaking the page. Either accept the default of 100 or enter a new number in Number of rows per page.
   - For the columns selected, use the up and down arrows to move the sorting order of the columns in Set Sorting Order of Rows to Return. Also specify if you want ascending (ASC) or descending (DESC) order. For example, moving a column to the Top of the sorting order will filter the data base on that order first, followed by the rest of the columns. Select OFF to not include the column in the sort.



4. Click the **Report Options** tab and click the **Chart Options tab** to modify these options:
   - If you want to switch the X/Y Axes in the charts, click **Switch X/Y Axis**.
   - Select the columns in **Values** and **Labels** that should be displayed in the chart. To preserve charting space, only the first 25 characters for a label are visible in the report. To see the entire label, hover over the label with the mouse.
   - Specify the **Data Size Units in Chart** (e.g., BYTES, KB, MB, GB, MB, TB, PB) that you want displayed in the charts.
   - Enter the e **Maximum Number of Bar Points Per Chart** you want displayed, or click **Draw all Bar Points** to have all possible bar points drawn. Default is **10**.



FILTERS

For the columns selected, Filters can also be applied to further refine the data in the report.

Selecting the **Get Query** tab will display the SQL query in long notation that will be used to get the data and generate the report. The query that is displayed is Read-only and can be used in a third-party SQL application, such as SQL Server Management Studio.

ACTIONS

Configuring notifications is a step when scheduling a report. When scheduled reports are run, notifications can be sent in the form of an email or page, SNMP trap, RSS feed, Event Viewer message to inform email recipients, computers, or a script that a report has run and is now available. The possible notifications are explained in the sections below.

E-MAIL/PAGER ADDRESS

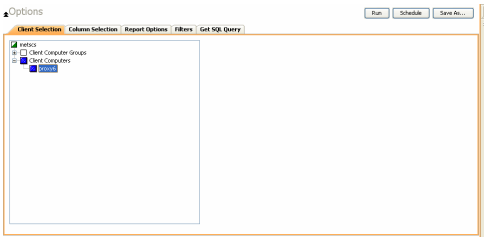
A notification can be sent to email or pager recipients when a scheduled report has run. The recipient can be either a CommCell user, a CommCell user group, a domain or external user (e.g., yahoo, gmail, etc.), or a pager address.

A notification can be e-mailed or sent to a pager to a selected list of recipients when a scheduled report has run. The recipients can be either a CommCell user, a CommCell user group, a domain or external user (e.g., yahoo, gmail, etc.), or a pager address.

TO CONFIGURE AN EMAIL/PAGER NOTIFICATION WHEN A SCHEDULED REPORT HAS RUN:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.

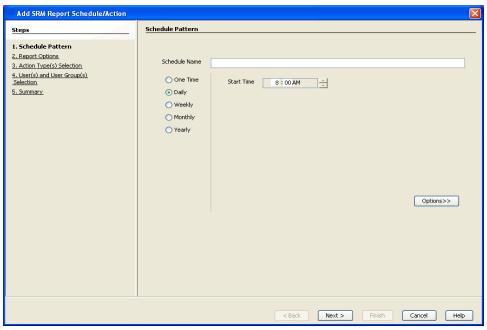
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries.



5. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

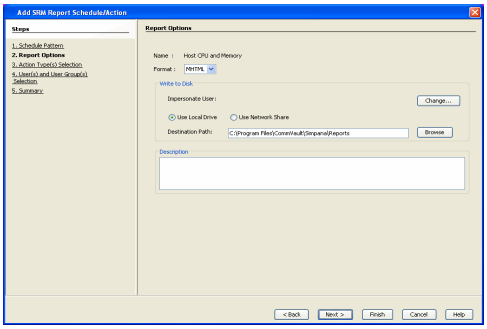
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



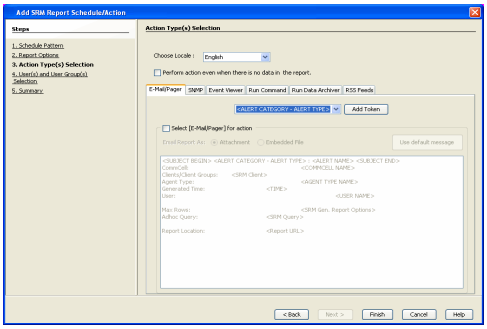
6. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

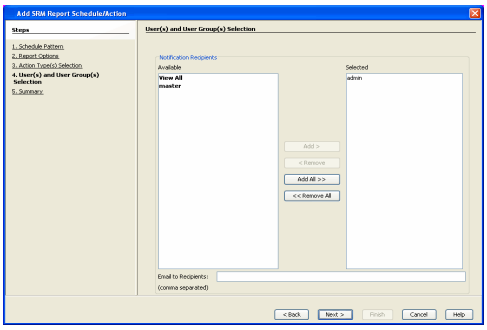


7. In this dialog, configure the **E-Mail/Pager** notification for the scheduled report as follows:
   - Click **Select [E-Mail/Pager] for notification**.
   - Either accept default format or add more tokens by selecting a token from the pulldown menu and clicking **Add Token**. The tokens are explained in Alert Tokens. Click **Use default message** to revert back to original default format.

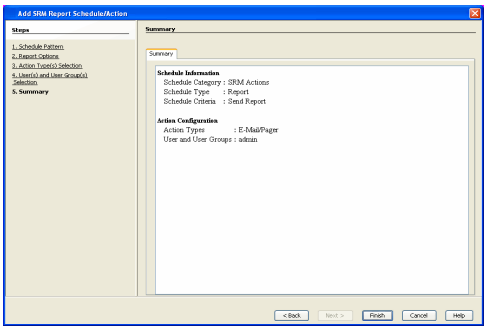
   Click **Next**.



8. In the **User(s) and User Group(s) Selection** dialog, specify the recipients to whom the notification will be sent as follows:
   - To add or remove CommCell users or a CommCell user group, select a user in the **Available** or **Selected** boxes and click **Add>** or **<Remove**.
   - To specify a domain or external user (e.g., yahoo, gmail, etc.) or a pager address, enter the email address in **Email to Recipients** field. Separate multiple addresses with a comma.



9. Review the summary and if satisfied, click **Finish**.

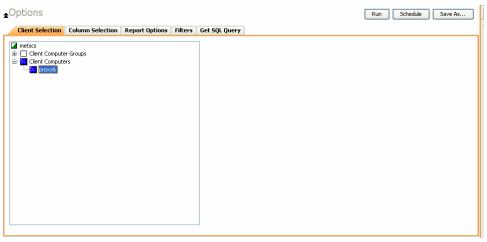


SNMP TRAPS

A notification can be sent by a CommServe, using the SNMP protocol, to other computers in the form of SNMP traps when a scheduled report has run. This notification type requires that the SNMP Enabler software must be installed on the CommServe computer. See SNMP Enablers for more information.

TO CONFIGURE AN SNMP TRAP NOTIFICATION WHEN A SCHEDULED REPORT HAS RUN:

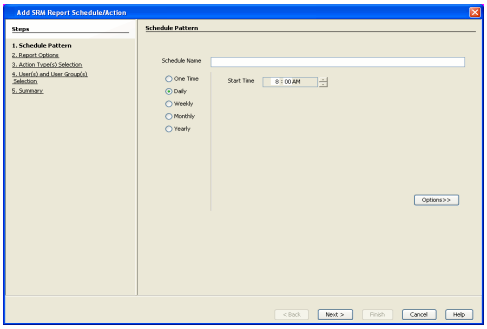
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries.



4. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

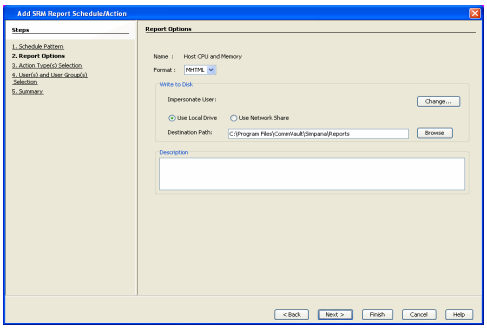
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



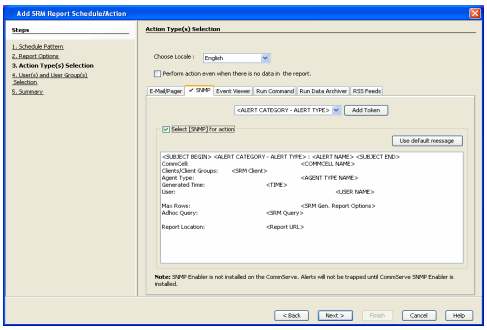
5. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

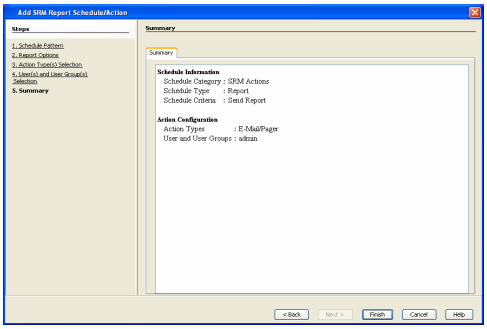


6. Click the **SNMP** tab and configure this notification type as follows:
   - Click **Select [SNMP] for notification**.
   - Either accept default format or add more tokens by selecting a token from the pulldown menu and clicking **Add Token**. The tokens are explained in Alert Tokens. Click **Use default message** to revert back to original default format.

   Click **Next**.



7. Review the summary and if satisfied, click **Finish**.

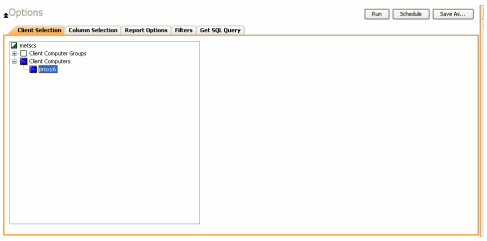


EVENT VIEWER

A message can be sent to the Event Viewer on the CommServe when a report is run or scheduled.

TO CONFIGURE AN EVENT VIEWER NOTIFICATION WHEN A SCHEDULED REPORT HAS RUN:

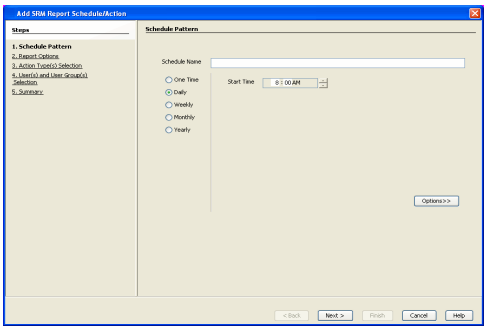
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries.



4. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

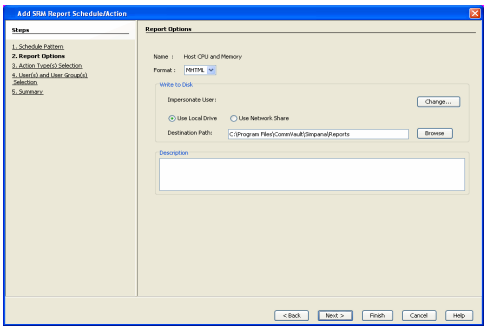
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



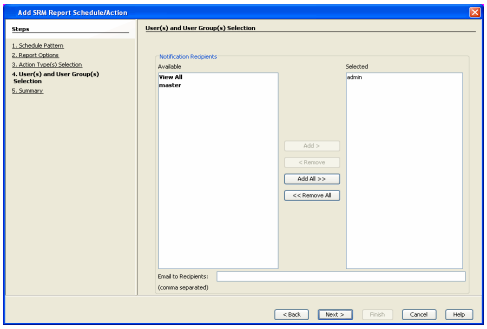
5. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

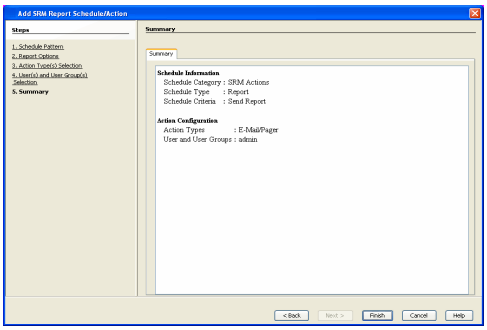


6. Click the **Event Viewer** tab and configure this notification type as follows:
   - Click **Select [Event Viewer] for notification**.
   - Either accept default format or add more tokens by selecting a token from the pulldown menu and clicking **Add Token**. The tokens are explained in Alert Tokens. Click **Use default message** to revert back to original default format.

   Click **Next**.



7. Review the summary and if satisfied, click **Finish**.

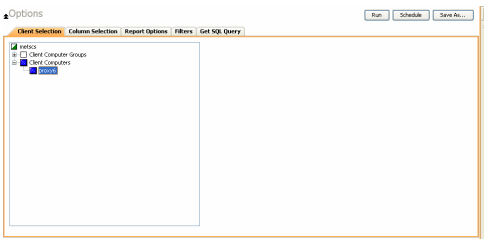


RUNNING A SCRIPT

A notification can be sent to a script when a scheduled report has run. Once receiving the notification, the script can be specified to run on the CommCell or a client computer. Arguments can be specified for the script as well. You can also select an option to read and archive a list of files and directories of a report if a supported Archiver Agent is installed on the client computer and an On Demand Archive Set is configured with SRM enabled.

TO CONFIGURE A NOTIFICATION TO RUN A SCRIPT WHEN A SCHEDULED REPORT HAS RUN:

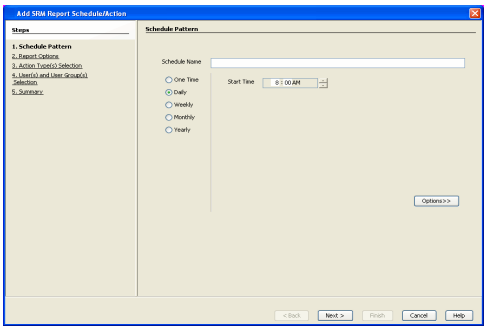
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries.



4. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

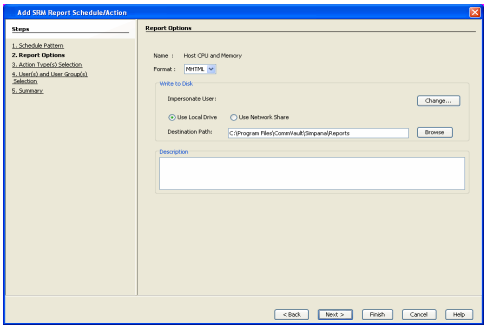
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



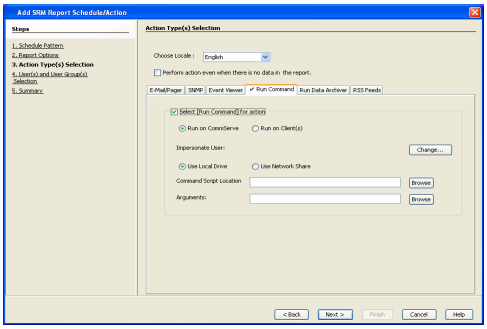
5. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

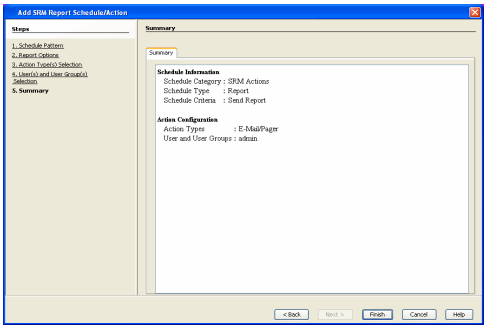


6. Click the **Run Command** tab and configure this notification type as follows:
   - Click **Select [Run Command] for notification**.
   - Select either **Run on CommCell** or **Run on Client** to specify where to run the script.
   - Click either **Use Local Drive** or **Use Network Share** to specify the location of the script.
   - Click **Change...** if you need to provide user account credentials so the script has the correct permissions to run. Specify a Windows User Account with the appropriate privileges to access the scripts directory. User impersonation requires that the specified user have write permissions to the scripts directory; otherwise, the user impersonation account may not take effect. This is especially true if the associated computer is not part of a domain and if the user is not a domain user.
   - Click **Browse** or enter a path where the script is located in **Command Script Location**.
   - Click **Browse** or enter in arguments in **Arguments** to be passed to the script while running.

   Click **Next**.



7. Review the summary and if satisfied, click **Finish**.



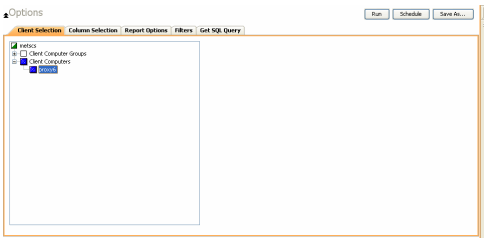
RUN DATA ARCHIVER

A notification can be sent to run a Data Archiver operation when a scheduled report has run. You can select an option to read and archive a list of files and directories of a report if a supported Archiver Agent is installed on the client computer and an On Demand Archive Set is configured with SRM enabled. For the Data Archiver schedule to run successfully, archive rights on the client computer are required.

TO CONFIGURE A NOTIFICATION TO RUN A DATA ARCHIVER OPERATION WHEN A SCHEDULED REPORT HAS RUN:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Configure the report by specifying clients and columns, report options, and optionally,

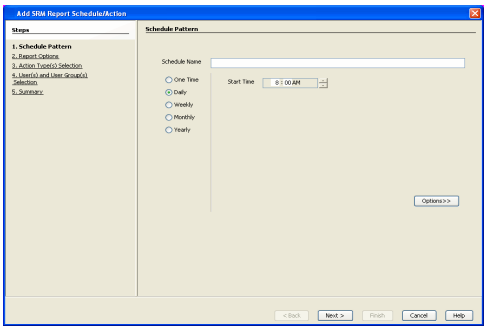
ad hoc queries.



4. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

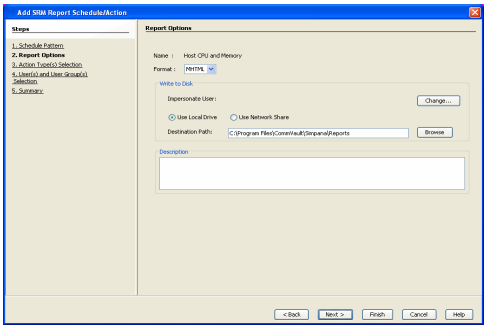
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



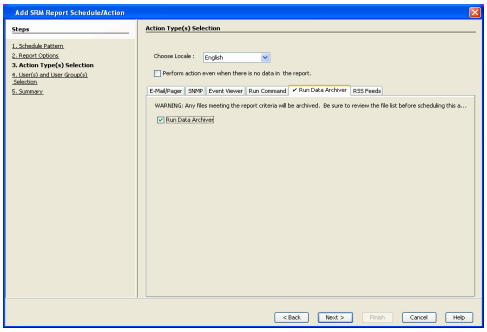
5. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

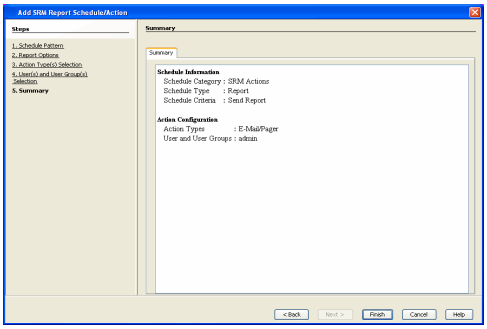


6. Click the **Run Data Archiver** tab and configure this notification type by selecting **Run Data Archiver** if a supported Archiver Agent is installed on the client computer and an On Demand Archive Set is configured with SRM enabled. In this case, the list of files and directories of the report will be read and an archive operation will be performed on the default subclient of the archive set.

   Click **Next**.



7. Review the summary and if satisfied, click **Finish**.

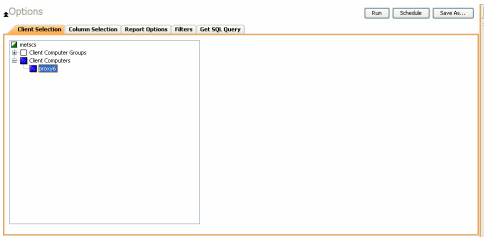


RSS FEEDS

A notification can be sent in a Really Simple Syndication (RSS) feed when a scheduled report has run. The RSS feed can be automatically integrated with your Web Browser.

TO CONFIGURE A RSS FEED NOTIFICATION WHEN A SCHEDULED REPORT HAS RUN:

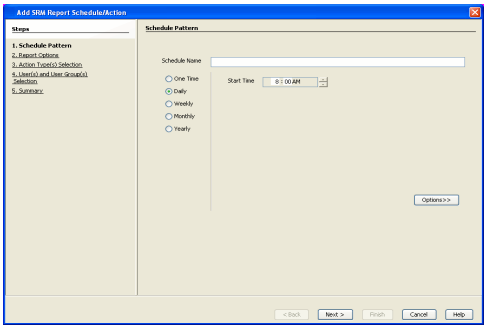
1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Configure the report by specifying clients and columns, report options, and optionally, ad hoc queries.



4. Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis.

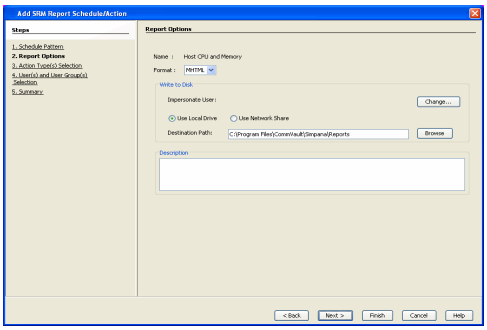
   Optionally, click **Report Options** to repeat sending the report every so many days, or run it for a particular number of times.

   Click **Next**.



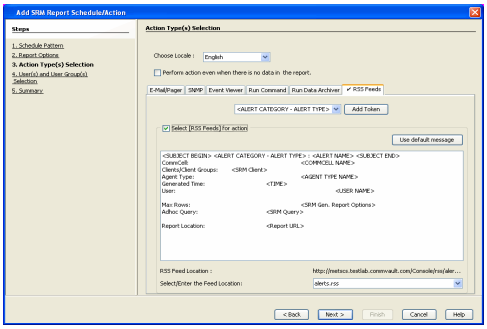
5. In this dialog, select the report output options, such as:
   - **Format** - select **MHTML**, **EXCEL**, or **PDF**.
   - Specify a path in **Destination Path** if you want to save the report to a local drive or network share.

   Click **Next**.

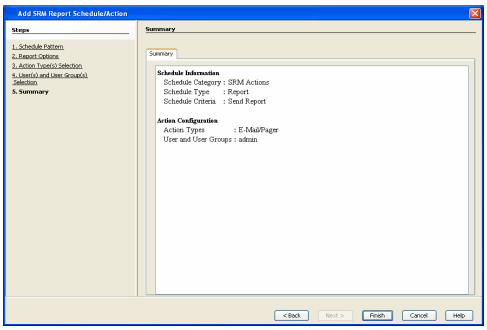


6. Click the **RSS Feeds** tab and configure this notification type as follows:
   - Click **Select [RSS Feeds] for notification**.
   - Either accept default format or add more tokens by selecting a token from the pulldown menu and clicking **Add Token**. The tokens are explained in Alert Tokens. Click **Use default message** to revert back to original default format.
   - Specify the feed location in **Select/Enter the Feed Location** field.

   Click **Next**.



7. Review the summary and if satisfied, click **Finish**.



FORECASTING

Forecasting is prediction of data usage in future, based on the usage pattern in the past. Since Prediction allows visualizing data usage in future, it helps make business decisions accordingly. Prediction is available on history reports and it can be done based on Daily/weekly/Monthly data. In the graphs, prediction lines are shown as thin lines while the actual usage is shown as thick lines.

COPY CHART

When viewing a report in the CommCell Console, you can copy any chart to the clipboard in `.bmp` format by right-clicking the chart and selecting **Copy Chart**. This allows you to easily copy a chart into other applications. Note that the Copy Charts function is not compatible with Microsoft WordPad.

CATEGORIES AND COLUMNS

The following table lists the available SRM Exchange Agent categories and columns that can be selected to configure a customized report.

Category/Column	Description	SRM Exchange Agent	
		Discovery Job	Discovery and Analysis Job
Client Properties	Displays aspects of the client computer on which the SRM Exchange Server Agent is installed.		
Hostname		✓	
Memory		✓	
Operating System		✓	
OS Vendor		✓	
OS Version		✓	
Processors		✓	
Service Pack		✓	
SP Version		✓	
Time Zone		✓	
DAG	Displays information of mailbox servers as part of a database availability group (DAG), which provides automatic recovery at the individual mailbox database level instead of at the server level.		
Admin Display Name		✓	
Alternate Witness Server		✓	
Alternate Witness Directory		✓	
Database Availability Group IPv4 Addresses		✓	
Datacenter Activation Mode		✓	
Distinguished Name		✓	
Exchange Version		✓	
GUID		✓	
Is Valid		✓	
Name		✓	
Network Compression		✓	
Network Encryption		✓	
Network Names		✓	
Object Category	Exchange -2010 do not support Public Folder Object Category.	✓	
Object Class		✓	
Operational Servers		✓	
Organization Id		✓	
Originating Server		✓	

Primary Active Manager		✓	
Replication Port		✓	
Runspace Id		✓	
Servers		✓	
Started Mailbox Servers		✓	
Stopped Mailbox Servers		✓	
Third Party Replication		✓	
When Changed		✓	
When Created		✓	
Witness Directory		✓	
Witness Server		✓	
Exchange Entities	Displays overall aspects per each computer selected (e.g., computer name, host group, etc.).		
Administration Group		✓	
Client Computer Group		✓	✓
Collection Status		✓	
Collection Time		✓	
Computer		✓	
Exchange Server Name		✓	
Folder Tree		✓	
Mailbox Store		✓	
Public Folder			✓
Public Store		✓	
Storage Group		✓	
Mailbox Distribution by Message Count	Displays a list of mailboxes per message counts (e.g., computer name, host group).		
Group			✓
Item Count			✓
Total Size			✓
Type			✓
Mailbox Distribution by Size	Displays sizes of mailboxes (total size, type, item count, and group).		
Group			✓
Item Count			✓
Total Size			✓
Type			✓
Mailbox Store Details	Summarizes aspects of mailbox stores (i.e. database that contains the mailboxes) and compares the relative sizes of the mailbox stores in your enterprise.		
Copies		✓	
Copy Servers		✓	
Database		✓	
Healthy Copy Servers		✓	
Mailbox			✓
Mailbox Archived Item Count			✓
Mailbox Archived Space Saved			✓

Mailbox Item Count			✓
Mailbox Size			✓
Mailbox Store Size		✓	
Mailboxes Total Size			✓
Mounted Server		✓	
Prohibit Send Quota		✓	
Prohibit Send Receive Quota		✓	
Streaming Database		✓	
Total Mailboxes Archived Space Saved			✓
Warning Quota		✓	
Mailbox Store History	Displays store size and mount status from past data collections of each mailbox store over time. Used for trending purposes.		
As Of		✓	
Mounted		✓	
Size		✓	
Message Distribution by Age	Displays graphs showing message age distribution by total count and total size as well as a list of mailboxes by computer, exchange server, storage group, mailbox store, mailbox, group, count, size, and type.		
Group		✓	
Item Count		✓	
Total Size		✓	
Type		✓	
Message Distribution by Attached File Type	Displays graphs showing message attached file type distribution by total size and by file count.		
Group		✓	
Item Count		✓	
Total Size		✓	
Type		✓	
Physical Devices	Displays graphs showing partition count, block counts, unallocated space, cost category, and allocated space.		
Allocated Space		✓	
Block Counts		✓	
Block Size		✓	
Capacity		✓	
Computer		✓	
Cost Category		✓	
Disk Name		✓	
Interface		✓	
Manufacturer		✓	
Partition Count		✓	
Serial Number		✓	
Public Folder Distribution by Size	Displays graphs showing public folder total size and public count distribution by size.		
Group		✓	
Item Count		✓	
Type		✓	

Total Size		✓	
Public Folder Object Distribution by Modification Age	Displays graphs showing public folder object modification age distribution by total size and by object.		
Group		✓	
Item Count		✓	
Total Size		✓	
Type		✓	
Public Folder Object Distribution by Type	Displays graphs showing public folder object space usage distribution by type and count distribution by type.		
Group		✓	
Item Count		✓	
Total Size		✓	
Type		✓	
Public Store Details	Summarizes aspects of public stores and compares the relative sizes and other characteristics of the public stores present in your enterprise.		
Database		✓	
Maximum Item Size		✓	
Mounted		✓	
Prohibit Post Quota		✓	
Public Folder Item Count			✓
Public Folder Size			✓
Public Folders Total Size			✓
Public Store Size		✓	
Server Name		✓	
Streaming Database		✓	
Warning Quota		✓	
Public Store History	Displays store size and mount status from past data collections of each public store over time. Used for trending purposes.		
As Of		✓	
Mounted		✓	
Size		✓	
Server Details	Summarizes aspects of the Exchange server.		
Back End Type		✓	
Circular Logging Enabled		✓	
Client Access Type		✓	
Edge Transport Type		✓	
Front End Type		✓	
Hub Transport Type		✓	
Log File		✓	
Mailbox and Public Stores Total Size		✓	
Mailbox Stores		✓	
Mailbox Stores Total Size		✓	
Mailbox Type		✓	
Message Tracking Enabled		✓	
Public Stores		✓	

Public Stores Total Size		✓	
Service Pack		✓	
Storage Group Size		✓	
Storage Group Volume		✓	
Subject Logging Enabled		✓	
System File		✓	
Unified Messaging Type		✓	
Version		✓	
Zero Database Enabled		✓	
Storage Group History	Displays storage group size (including the log files and system size) from past data collections and growth tracking of each storage Group over time. Used for trending purposes.		
As Of		✓	
Size		✓	
Subclient Details	Displays total size and count of mailboxes and public folders on each Exchange Server, per subclient.		
Mailboxes			✓
Public Folders			✓
Subclient			✓
Total Mailbox Size			✓
Total Public Folder Size			✓
Total Size			✓

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SRM for Exchange - Reports

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OVERVIEW

Customized queries can be applied as additional reporting filters to retrieve specific SRM information from the clients and client groups in your CommCell. These queries are extremely useful if the provided report filters (clients, columns) do not provide the necessary data required for your environment. For example, you could apply SQL query filters to the `Allocated Space` column to display disks of a certain size, such as 2 GB. This ad hoc query further refines and filters the data to facilitate management of your storage infrastructure.

More examples of why you may want to use filters for SQL queries include:

- You wish to generate a list of users who consume more than 10 MB of disk space.
- You want so see how much space is consumed by Exchange mailboxes on particular clients.
- You need to see a list of volumes on a NAS filer that exceed 5 TB of space.

Since the query will run against the CommServe database to retrieve the requested SRM data, which can be easily configured from the CommCell Console when specifying filter criteria of an SRM report. Any SQL query that is supported by a SQL Server can be used in Filters for SRM reporting. If desired, once the conditions have been defined, you can retrieve the full SQL query for use in third-party applications.

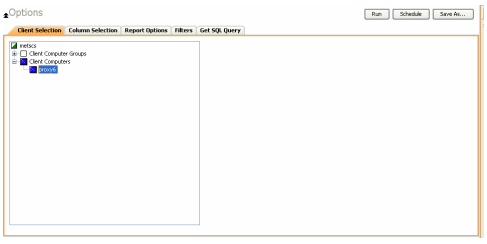
GENERATE A REPORT WITH FILTERS

Filters in the form of SQL queries can be defined during the configuration of an SRM report. You can add a SQL query to the report to filter additional data for a specified column. To configure a report with filters, you must complete the following:

1. Select the type of SRM report you wish to generate. An SRM report can be selected from the SRM Report Manager node.
2. Determine which client(s) and client computer group(s) from which you wish to collect data.
3. Determine and select the type of data to collect for the report (filtering).
4. Define the conditions for the SQL query. Queries that include strings are case-sensitive.
5. Generate the report.

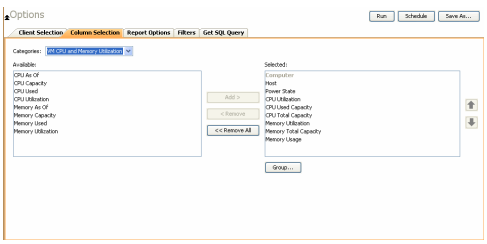
TO GENERATE A REPORT WITH FILTERS:

1. From the CommCell Browser, click **Reports**, and then click **SRM Report Manager**.
2. Expand the applicable tree to view your agent. Then select your agent and click a template to display the **Options** window.
3. Click the **Client Selection** tab and select the client computers or client computer group. This is a required step.

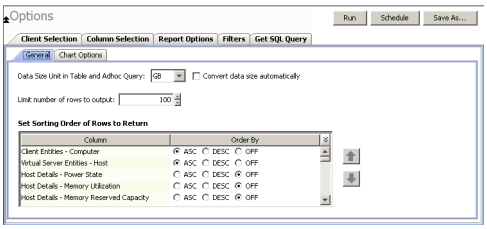


4. Click **Column Selection** tab.

   Select a category and **Add** or **Remove** columns between the Available and Selected boxes. The categories and columns differ for each type of report. Clicking **Remove All** will remove all previously selected filters for the reports.



5. Click the **Report Options** tab to configure settings in the report. Click the **General** tab to:

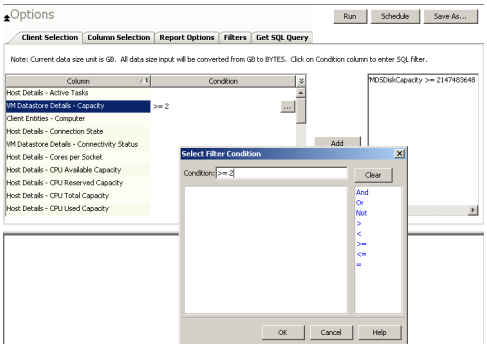


   - Set the time range of the report.
   - Enable forecasting by clicking **Include Trending** and specifying default trending interval and number of data points on which the trending interval is based.
   - Enter the **Maximum number of Bar Points per chart** or select **Draw All Bar Points**.
   - Either accept the default of 100 rows or increase or decrease the rows to display in the report by specifying a number in the **Limit number of rows to output** field.

   Click the **Advanced** tab to:

   - Set the **Data Size Unit** to **GB** for the tables.
   - Set the Sorting order of the columns in either ascending or descending order or no sorting order.

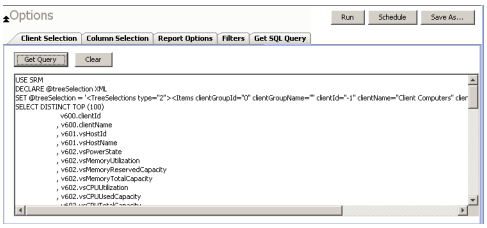
6. Select **Filters** tab to run real-time SQL queries can also be applied to the data to provide further filtering.



   - Select a column in which you want to specify a condition (e.g., **VM Datastore Details - Capacity**) and click the **Conditions** field of Free Space and then click the ellipsis button.
   - In the **Select Filter Condition** dialog box, double-click the operator and in the **Condition** field, enter the values of the condition, such as **>2** and click **OK**.
   - Click **Add**.

   See Examples of Queries used in filters for an explanation of the operators.

7.



   - The full SQL query can be generated if necessary after adding the condition and selecting the **Get SQL Query** tab.
   - The query that is displayed is Read-only and can be used in a third-party application, such as SQL Server Management Studio and used there to collect and report data.

8. Generate or save the report with one of these options:
   - Click **Run** to generate the report immediately and view the results in the CommCell Console.
   - Click **Schedule** to generate and schedule the report on a daily, weekly, monthly, yearly, or even one time basis. Specify the report language (see Languages - Support for the list of languages supported in Reports), format (HTML, EXCEL, PDF), and location. Optionally, notifications can be configured so the report can be emailed, sent to an SNMP trap, or RSS feed, etc.

     When scheduling, patterns can also be applied to the report so it runs on a specific time, repeated every so many days, or run for a particular number of times. Some reports allow enabling Forecasting by specifying default trending interval and number of data points on which the trending interval is based.

   - Click **Save As...** to save the report filter criteria, schedule information, notifications to a template so it can be used to generate a report at a later date. All report templates are saved under **My Reports**.

EXAMPLES OF QUERIES USED IN FILTERS

The sections below explain the operators than can be used in a SQL query as well as real-world examples describing why and how to specify the condition and build the query.

OPERATORS EXPLAINED

The following explains the operators that can be used in filters using SQL queries. Examples for each are provided. Queries that include strings are case-sensitive.

OPERATOR	DESCRIPTION	EXAMPLE
And	Is a binary operator that operates on two *operands* (data that is manipulated by the operator). Works with both numeric and string queries. Displays a result if both operands are TRUE and no result is displayed if either is FALSE.	Display a computer group that starts with B and ends with M (e.g., Birmingham). 1. Select `Client Computer Group` column.

		2. Enter this query: `Starts With B And Ends With M`
Or	Is a binary operator that operates on two *operands* (data that is manipulated by the operator). Works with both numeric and string queries. Displays a result if either operand is TRUE and no result is displayed if both are FALSE.	Display a computer that starts with B or starts with M (e.g., Birmingham, Milwaukee). 1. Select `Computer` column. 2. Enter this query: `Starts With B Or Starts With M`
Not	An operation on logical values that changes true to false, and false to true. The NOT operator inverts the result of a comparison expression or a logical expression. The specified condition must be false in order to view a result. Example: Display a computer that does not have less that < 4 GB of used space. Therefore, only computers with 4 or more GB of used space will be displayed.	Display a computer that does not have less that < 4 GB of used space. 1.Click **Report Options** tab and set data size unit to GB. 2. Select `Used Space` column. 3. Enter this query: `Not < 4`
Like	The LIKE operator is used in character string comparisons with pattern matching. It can contain the special wild-card pattern matching characters percent -- '%' and underscore -- '_'. Underscore matches any *single* character. Percent matches zero or more characters.	Display a computer that contains `eng` characters in its name to identify computers in the engineering department. 1. Select `Computer` column. 2. Enter this query: `%eng%`
Starts With	The Starts With operator is used in character string comparisons with pattern matching.	All names of computers in the engineering department use the convention of `eng_`. Display all computers that start with E to list computers in the engineering department. 1. Select `Computer` column. 2. Enter this query: `Starts With E`
Ends With	The Ends With operator is used in character string comparisons with pattern matching.	All names of computers in the System Test department use the convention of `system_test`. Display a computer that ends with T to list computers in the system_test department. 1. Select `Computer` column. 2. Enter this query: `Ends With T`
> (Greater Than)	A comparison operator that tests whether two expressions are the same. Works with only numeric queries.	Display file sizes that are larger than 2 GB. 1. Click **Report Options** tab and set data size unit to GB. 2. Select `Maximum Size` column. 3. Enter this query: `> 2`
< (Less Than)	A comparison operator that tests whether two expressions are the same. Works with only numeric queries.	Display file sizes that are less than 4 GB. 1. Click **Report Options** tab and set data size unit to GB. 2. Select `Maximum Size` column. 3. Enter this query: `< 4`
>= (Greater Than or Equal To)	A comparison operator that tests whether two expressions are the same. Works with only numeric queries.	Display file sizes that are greater than or equal to 2 TB. 1. Click **Report Options** tab and set data size unit to TB. 2. Select `Maximum Size` column. 3. Enter this query: `>= 2`
<=(Less Than or Equal To)	A comparison operator that tests whether two expressions are the same. Works with only numeric queries.	Display computers with less than or equal to 1 GB free space.

		1. Click **Report Options** tab and set data size unit to GB. 2. Select `Free Space` column. 3. Enter this query: `<= 1`
= (Equal)	The equals comparison operator compares two values for equality. Works with both numeric and string queries.	Display files that are located in the /usr/bin directory. 1. Select `Path` column. 2. Enter this query: `=/usr/bin`

RULES TO FOLLOW

When constructing a filter using SQL query, adhere to these rules:

- Queries that include strings are case-sensitive.
- When a string has a space, enclose it with double quotes. For example, enter "`Program Files`".

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SRM for Exchange - Summaries

Overview

Agent Summaries

Storage Devices Summaries

Public Folder Database and Mailbox Database Summaries

OVERVIEW

SRM Exchange Agent Summaries provide a concise view of the status of Exchange Server entities in the CommCell Console. Summary information is provided as images in the form of bar graphs and pie charts to provide a succinct snapshot of the statistical information. While viewing summary, data rows in tables can be sorted by any one of the columns listed in that summary.

When you select an Exchange Server entity from the CommCell Console, its summary information appears in the main window. Each section can be expanded or collapsed as desired.

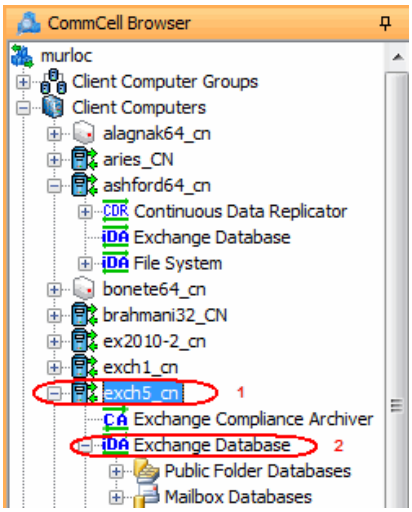
The following section describes the available summary types of SRM Exchange Agent at different levels in the CommCell Console:

AGENT SUMMARIES

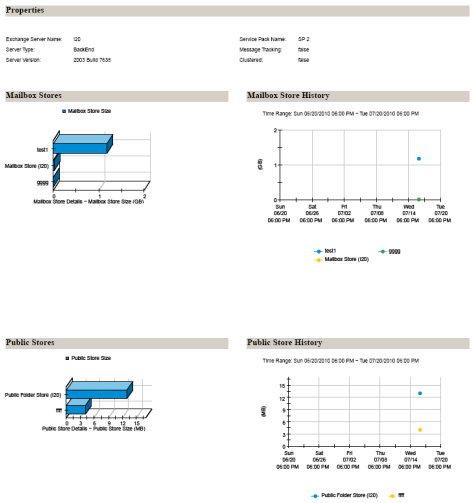
Summary information includes Properties at the agent level showing physical information like Exchange Server Name, Server Type, Server Version, Service Pack Name, etc. for the associated Exchange Server. Summary information at this level also displays graphs for Mailbox Stores, Mailbox Store History, Public Store and Public Store History.

1. From the CommCell Console, select the Client Computer with SRM Exchange Agent for which you want to view summaries.

   Expand **SRM** and select **Microsoft Exchange**.



2. The associated **Agent Summary** will appear in the main window.

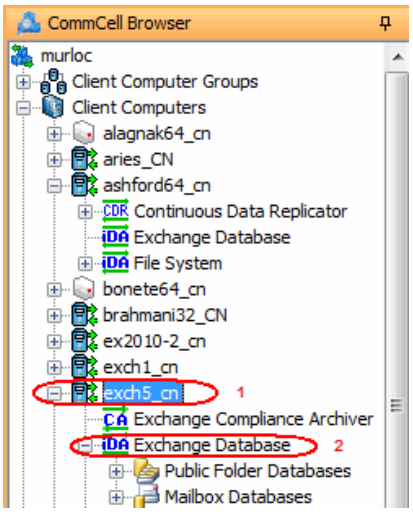


STORAGE DEVICES SUMMARIES

Summary at the Storage Groups level display charts for **Allocated Vs Unallocated Space per Disk**.

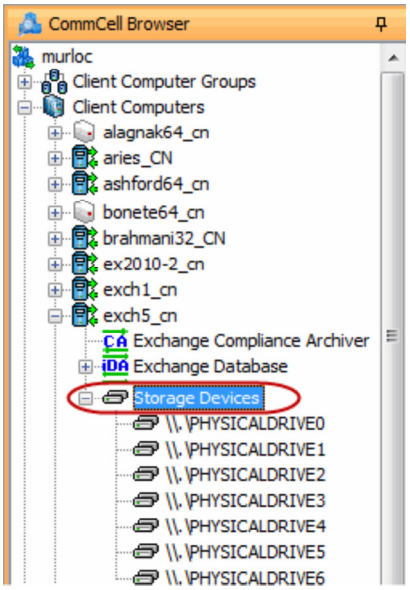
1. From the CommCell Console, select the Client Computer with SRM Exchange Agent for which you want to view summaries.

   Expand **SRM** and select **Microsoft Exchange**.

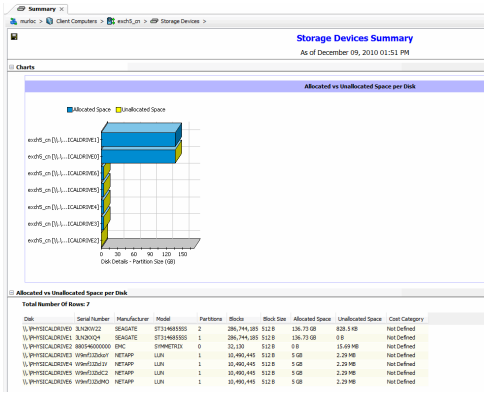


2. Select **Storage Devices**.

   - Separate charts are displayed for each physical drive when selected.
   - Storage devices information is not available for DAG clients however it is visible for clients which are member servers in that DAG.



3. The associated **Storage Devices Summary** will appear in the main window.

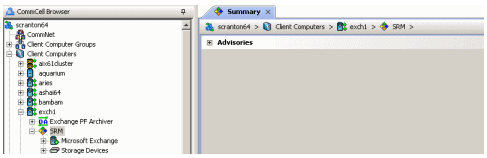


PUBLIC FOLDER DATABASE AND MAILBOX DATABASE SUMMARIES

The integrated SRM Agent with Exchange Database *i*DataAgent displays store information details in summaries (e.g. on which server it was mounted, copy status and number of copies, etc.) of all the clients which are configured with the DAG client. If the copies column display the value 1 then they belongs to local stores and if the value displayed is 2, it indicates they are shared (i.e. DAG configured). Store information on individual clients displays the local store information as well as shared ones of the selected clients.

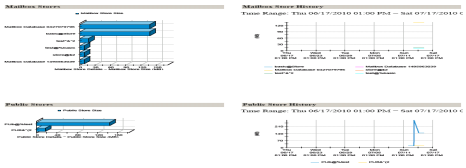
Clients using Exchange 2010 will not display the storage groups information in summary.

1. From the CommCell Console, select the Client Computer with SRM for Exchange Agent for which you want to view summaries.



2. Expand **Agent** and select **Public Folder Database** or **Mailbox Database**.

3. The associated **Summary** will appear in the main window.



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SRM for Exchange - Best Practices

ENABLING SRM WITH SNAPPROTECT

It is recommended not to enable SRM when SnapProtect™ backup is enabled on a subclient as SRM Data Collection phase is not supported with SnapProtect™ Backup.

Troubleshooting - Microsoft Exchange Database *i*DataAgent Backup

Backup | **Restore**

The following section provides information on some of the troubleshooting scenarios related to backup:

COMPLETED WITH ONE OR MORE ERRORS

Backup jobs from Exchange Database *i*DataAgent will be displayed as `Completed w/ one or more errors` in the Job History in the following cases:

1. For Exchange Legacy:
   - If at least one database is found to be un-mounted and the remaining databases are backed up successfully.
   - If one database is failed to backup due to exchange streaming api failure or network failure and we cannot recover from those errors for the legacy backup.
2. For VSS backup:
   - Some databases mounted, some un-mounted within one Storage Group will not cause any failure
   - 'un-mounted' error may cause job failure if all databases within one Storage Group are un-mounted.
   - Other database failures due to exchange, includes Exchange information store server down, Exchange VSS writer not in stable state etc.
3. For Exchange 2010:
   - Backup from one node that is failing and the other succeeding will cause Completed w/ one or more Errors.
   - Any un-mounted database (involved in a backup) will cause a job failure.
   - Other database failures due to exchange, includes Exchange information store server down, Exchange VSS writer not in stable state etc.

BACKUPS FAILING WITH "NO MORE ALLOCATED STREAMS ARE AVAILABLE" ERROR MESSAGE

Backups may fail with this error message if incremental storage policy is being used. It is recommended to remove the incremental storage policy and assign a standard storage policy before running the backups.

Troubleshooting - Microsoft Exchange Database *i*DataAgent Restore

Backup | Restore

The following section provides information on some of the troubleshooting scenarios related to restore:

RESTORE FAILURES

Transaction Log restore fails	Transaction log files are temporarily stored in the Job Results directory during a restore. Before performing a restore of these files, ensure that the Job Results directory has enough free space to hold all the transaction logs or the restore will fail.
In-Place Database restore fails	Ensure the database is marked for overwrite on the Exchange Server prior to performing the restore.
No Loss restore fails	The sequence of transaction logs may be broken or have become corrupted. Ensure that the transaction log sequence is in tact prior to performing the restore.
Database mounting fails after a restore	The database may contain a "+" character in the name. To resolve this issue: 1. Manually dismount the original database. 2. Perform the restore. 3. Once the restore is completed, manually mount the database.

COMPLETED WITH ONE OR MORE ERRORS

Restore jobs from Exchange Database *i*DataAgent will be displayed as `Completed w/ one or more errors` in the Job History in the following cases:

- During restore, if few databases or storage groups cannot be restored since no data was found to restore from.
- During restore, if at least one of the databases were not restored successfully though the rest were successfully restored.

LOCAL CONTINUOUS REPLICATION CONTINUES TO OCCUR DURING A RESTORE

Suspend the Storage Group copy so that replication does not attempt to take place during the restore.

OLD FILES APPEAR IN THE PASSIVE COPY AFTER RESTORE

After the restore has completed, you must manually resume the Storage Group copy, which will delete the old files in the passive copy and then reseed it before resuming replication.

For more information on performing this task, refer to the Microsoft TechNet article on "Local Continuous Replication".

RECOVERING DATA ASSOCIATED WITH DELETED CLIENTS AND STORAGE POLICIES

The following procedure describes the steps involved in recovering data associated with the following entities:

- Deleted Storage Policy
- Deleted Client, Agent, Backup Set or Instance

BEFORE YOU BEGIN

This procedure can be performed when the following are available:

- You have a Disaster Recovery Backup which contains information on the entity that you are trying to restore. For example, if you wish to recover a storage policy (and the data associated with the storage policy) that was accidentally deleted, you must have a copy of the disaster recovery backup which was performed before deleting the storage policy.
- Media containing the data you wish to recover is available and not overwritten.
- If a CommCell Migration license was available in the CommServe when the disaster recovery backup was performed, no additional licenses are required. If not, obtain the following licenses:
  - IP Address Change license
  - CommCell Migration license

  See License Administration for more details.
- A standby computer, which will be used temporarily to build a CommServe.

RECOVERING DELETED DATA

1. Locate the latest Disaster Recovery Backup which contains the information on the entity (Storage Policy, Client, Agent, Backup Set or Instance) that you are trying to restore.

- You can check the Phase 1 destination for the DR Set or use Restore by Jobs for CommServe DR Data to restore the data.
- If the job was pruned and you know the media containing the Disaster Recovery Backup, you can move the media in the **Overwrite Protect Media** Pool. See Accessing Aged Data for more information. You can then restore the appropriate DR Set associated with the job as described in Restore by Jobs for CommServe DR Data.
- If the job is pruned and you do not know the media containing the Disaster Recovery Backup, you can do one of the following:

  If you regularly run and have copies of the Data on Media and Aging Forecast report you can check them to see if the appropriate media is available.

2. On a standby computer, install the CommServe software. For more information on installing the CommServe, see CommServe Deployment.
3. Restore the CommServe database using the CommServe Disaster Recovery Tool from the Disaster Recovery Backup described in Step 1. (See Restore a Disaster Recovery Backup for step-by-step instructions.)
4. Verify and ensure that the **Bull Calypso Client Event Manager Bull Calypso Communications Service (EvMgrS)** is running.
5. If you did not have a CommCell Migration license available in the CommServe when the disaster recovery backup was performed, apply the IP Address Change license and the CommCell Migration license on the standby CommServe. See Activate Licenses for step-by-step instructions.
6. Export the data associated with the affected clients from the standby CommServe as described in Export Data from the Source CommCell.

   When you start the Command Line Interface to capture data, use the name of the standby CommServe in the `-commcell` argument.

7. Import the exported data to the main CommServe as described in Import Data on the Destination CommCell.

   This will bring back the entity in the CommServe database and the entity will now be visible in the CommCell Browser. (Press F5 to refresh the CommCell Browser if the entity is not displayed after a successful merge.)
8. If you have additional data that was backed up after the disaster recovery backup and before the deletion of the entity, use the procedure described in Import Metadata from a Tape or Optical Media to obtain the necessary information.
9. You can now browse and restore the data from the appropriate entity.

   As a precaution, mark media (tape and optical media) associated with the source CommCell as READ ONLY before performing a data recovery operation in the destination CommCell.

Online Help Topics

Agent Properties (General)

Use this tab to obtain general information on the selected Exchange Database Agent.

Client Name

Displays the name of the client computer.

Billing Department

Displays the name of the billing department, when the Agent is associated with a billing department. This option is applicable when CommNet is enabled.

***i*DataAgent/Agent Type**

Displays the name of the agent.

Installed date

Displays the date on which the agent was installed or upgraded on the client computer.

Backup Type

Specifies the pre-selected backup level. This determines which data is secured by an Exchange Database backup that is not a full backup.

- **Incremental** specifies that each non-full Exchange Database backup secures only that data that has changed since the last backup of any type.
- **Differential** specifies that each non-full Exchange Database backup secures all data that has changed since the last full backup.

Exchange Administrator Account

Displays the Exchange Administrator Account for the site in which this Exchange Server resides.

Change Account

Click and populate the resulting dialog box only if you changed the Exchange Administrator Account and it now differs from the one displayed in the **Exchange Administrator Account** field.

Use VSS

This options applies for Exchange Server 2007/2003.

When enabled, VSS is used to backup locked databases.

When cleared, locked databases will be skipped during backups.

CCR Options

These options applies for Exchange Server 2007 when Cluster Continuous Replication (CCR) is configured.

These options require the **Use VSS** option to be enabled.

- **Backup from replica**

  When enabled, the CCR database replica is backed up using VSS.

- **Backup on active node if passive node is unavailable**

  When enabled, the database will be backed up from the active node of the CCR cluster using VSS in cases where the passive node is not available.

Exchange Server Name

Displays the name of the Exchange Server that is installed on the client computer. Use this space to modify this server name if the name displayed is incorrect (e.g., not the same as the Client name or Host name).

Copy Backup

When selected, logs will be truncated. When cleared, logs will not be truncated.

Enable SRM feature

Select this option to Enable SRM Options.

Description

Use this field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.

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Version

Use this dialog box to view the software version.

Version Information

Displays the Agent software version installed on the computer.

Activity Control

Use this dialog box to enable or disable data management and data recovery operations on a selected client or client computer group.

Enable Backup

Specifies whether data management operations will occur from this agent.

If cleared:

- The button **Enable after a Delay** appears to the right side of this operation activity. It allows to pre-determine the date and time at which data management operations will begin on the selected agent.
- Data management operations from this agent cannot be started and are skipped.
- Running and waiting data management operations for this agent run to completion.
- Stopped data management operations for this agent cannot be resumed until this option is enabled.
- Pending data management operations for this agent do not run until this option is enabled.

(Job states are indicated in the Job Controller.)

Enable Restore

Specifies whether data recovery operations will occur from this agent.

If cleared:

- The button **Enable after a Delay** appears to the right side of this operation activity. It allows to pre-determine the date and time at which data recovery operations will begin on the selected agent.
- Data recovery operations for this agent cannot be started and are skipped.
- Running data recovery operations for this agent run to completion.
- Pending data recovery operations for this agent do not run until data recovery operations are enabled.

(Job states are indicated in the Job Controller.)

Security

Use this dialog box to:

- Identify the user groups to which this CommCell object is associated.
- Associate this object with a user group.
- Disassociate this object from a user group.

Available Groups

Displays the names of the user groups that are not associated with this CommCell object.

Associated Groups

Displays the names of user groups that are associated with this CommCell object.

Backup/Archive Options

Use this dialog box to schedule or immediately run a backup/archive job. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent for which the information is being displayed.

Select Backup Type

- **Full**

  Specifies the job as a Full backup, which backs up all data for the selected subclient(s).

- **Pre-Selected Backup Type**

  Specifies the job as either an Incremental or Differential backup, as determined during installation or later through client configuration. An Incremental backup backs up all data that is new or has changed since the last backup for the selected subclient. A Differential backup backs up all data that is new or has changed since the last Full backup for the selected subclient.

Job Initiation

- **Run Immediately**

  Specifies this job will run immediately.

- **Schedule**

  Specifies this job will be scheduled. Click **Configure** to specify the schedule details.

Configure Alert

- **Alert**

  The currently configured Alert.

- **Add/Modify Alert**

  When clicked, opens the Alert Wizard to configure alerts for this operation.

- **Delete Alert**

  When clicked, deletes any existing alerts that are already configured.

Advanced

Click to select advanced backup/archive options, such as create a new index, start new media, and mark media as full.

Save As Script

Click to open the Save As Script dialog, which allows you to save this operation and the selected options as a script file (in XML format). The script can later be executed from the Command Line Interface using `qoperation execute` command.

When you save an operation as a script, each option in the dialog will have a corresponding xml parameter in the script file. When executing the script, you can modify the value for any of these XML parameters as per need.

To view the XML values for each of the options in the dialog, see the following:

Command Line XML Options for Microsoft Exchange Database *i*DataAgent

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Advanced Backup/Archive Options (Data)

You can select advanced backup/archive data options for the operation.

Perform Consistency Check

Select this option to perform a consistency check.

- **Throttle check for 1 second**

  Enter the number of I/O operations to complete before a consistency check is performed.

Create Backup Copy immediately

Select to create an inline backup copy to start movement of snapshot to media, immediately after the completion of the SnapProtect backup job.

Advanced Backup/Archive/Content Indexing Options (Startup)

You can specify advanced backup/archive/content indexing startup options for the operation. For more information, select one of the following:

Set a Job Priority

Description

Use this field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.

Startup in Suspended State

Job Retry

Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent or operation for which the information is being displayed.

Enable Total Running Time

The maximum elapsed time, in hours and minutes, from the time that the job is created. When the specified maximum elapsed time is reached, as long as the job is in the "Running" state, it will continue; if the job is not in the "Running" state when the specified time is reached, Job Manager will kill the job.

Enable Number of Retries

The number of times that Job Manager will attempt to restart the job. Once the maximum number of retry attempts has been reached, if the job has still not restarted successfully, Job Manager will kill the job. Note that this job-based setting will not be valid if restartability has been turned off in the Job Management Control Panel.

Kill Running Jobs When Total Running Time Expires

Option to kill the job when the specified Total Running Time has elapsed, even if its state is "Running". This option is available only if you have specified a Total Running Time.

Advanced Backup Options (Media)

You can select advanced backup media options for the operation.

Start New Media

This option starts the backup/migration/archive operation on a new media, which causes the following to occur:

- If removable media is used, the current active media is marked as Appendable and a new media is used for the backup/migration/archive.
- If disk media is used, a new volume folder is created for the backup/migration/archive.

If cleared, the operation automatically uses the current active media or volume.

Mark Media Full On Success

This option marks media full, 2 minutes after the completion of the backup/archive operation. If any jobs are initiated within the 2 minutes, they are allowed to write to the media. If the job was associated with the prior media, new media (such as a new tape) will be used for subsequent jobs. (Applies to all backup/archive types.)

Allow other Schedule to use Media Set

This option allows jobs that are part of a schedule policy or schedule and using a specific storage policy to start a new media and also prevent other jobs from writing to the set of media. It is available only when the **Start New Media** and **Mark Media Full** options are enabled, and can be used in the following situations:

- When one scheduled job initiates several jobs and you only want to start new media on the first job.
- When you want to target specific backups to a media, or a set of media if multiple streams are used.

Extend Job Retention

- **Infinite**: Select this option to retain this job indefinitely.
- **Number of Days**: Select this option to prune this job after the number of days specified.
- **Storage Policy Default**: Select this option to apply the retention rules of the associated storage policy, which is the default option.

Advanced Backup Options (Data Path)

Select the data path to be used for the backup/archive operation.

Ensure that the Library, MediaAgent, Drive Pool, and Drive selected for this operation is available online and is a part of the associated Storage Policy.

Use MediaAgent

Specifies the name of the MediaAgent that will be used to perform the backup operation. If necessary, you can change the name of the MediaAgent.

For example, if the library is shared and you wish to use a specific MediaAgent (instead of the system selected MediaAgent, or a MediaAgent which may be idle, or less critical) or if you know that the library attached to the specified MediaAgent.

Use Library

Specifies the name of the library that will be used to perform the backup operation. Use this option when you wish to backup to a specific library.

Use Drive Pool

Specifies the name of the Drive Pool that will be used to perform the backup operation. Use this option when you wish to backup using a specific Drive Pool.

Use Drive

Specifies the name of the Drive that will be used to perform the backup operation. Use this option when you wish to backup using a specific Drive from the selected Drive Pool.

Vault Tracking

Select options to export and track media, using Vault Tracker.

Vault Tracking Options will be displayed only when a Vault Tracker license is available in the CommServe.

Vault Tracking options are only applicable for data protection operations using a storage policy associated with a library containing removable media (e.g., tape, optical or stand-alone.)

Export media after the job finishes

Specifies the media used by the data protection operation and media with the specific Media Status (if specified) will be exported and tracked by Vault Tracker.

Exclude Media Not Copied

When selected, allows you to exclude media with jobs that have to be copied.

Media Status

- **All**

  Click to select all media. Clear this option to select media with a specific status.

- **Active**

  Click to select media with its status marked as active.

- **Full**

  Click to select media with its status marked as full.

- **Overwrite Protected**

  Click to select media with its status marked as read-only .

- **Bad**

  Click to select media with its status marked as bad.

Export Location

Specifies the destination location and lists the stationary locations entered using the **Export Location Details** dialog box.

Track Transit

Specifies that transit information must be tracked, and lists the transit locations entered using the **Export Location Details** dialog box.

Use Virtual Mail Slots

Specifies the exported media is stored within the library in the virtual mail slots defined in the **Library Properties (Media)** dialog box.

Filter Media By Retention

Specifies that the system must automatically filter media based on whether the media has extended retention jobs or not.

- **Media with extended retention job(s)**

  Specifies that media with at least one extended retention job will be exported.

- **Media with no extended retention job(s)**

  Specifies that media with no extended retention jobs will be exported.

Alert

Use this tab to configure an alert for a schedule policy.

Configure Alert

- **Alert**

  The currently configured Alert.

- **Add/Modify Alert**

  When clicked, opens the Alert Wizard to configure alerts for this operation.

- **Delete Alert**

  When clicked, deletes any existing alerts that are already configured.

Browse Options

Use this dialog box to select the basic options under which you want to browse the data secured by a data protection operation in the selected client, agent, instance/partition, or backup set level depending on the functionality of a given agent.

The system provides several browse options. These options influence the behavior of the browse operation in the subsequent Browse window. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent for which the information is being displayed.

Browse the Latest Data

Specifies whether the browse operation must display data from the most recent data protection operation (from now back to the last full backup) in the Browse window. (This option is selected by default.)

Specify Browse Time

Specifies whether the browse operation must display data, up to the specified date and time in the Browse window. Data secured after the specified date and time will be omitted in this window.

- **Browse Data Before/Browse to Point-In-Time**

  Specifies the date and time that must be used to display the data in the Browse window.

- **Time Zone**

  Lists the time zones. To change the time zone, click one in the list.

Select from Available Browse Times

Displays a list containing the time of different backup jobs available in the destination, from which data can be browsed. For Workstation Backup Agent, this option displays the list of recovery points available in the destination. Select the desired time.

Use MediaAgent

Specifies the name of MediaAgent that will be used to perform the browse (and restore) operation. If necessary, you can change the name of the MediaAgent. For example, if the library is shared and you wish to use a specific MediaAgent (instead of the system selected MediaAgent, or a MediaAgent which may be idle, or less critical) or if you know that the media containing the data you wish to restore is available in the library attached to the specified MediaAgent.

If the media containing the data is not available in the tape/optical library attached to the MediaAgent, the system will automatically prompt you to insert the appropriate media. In the case of a disk library, the operation will fail if the requested data is not available in the disk library attached to the specified MediaAgent.

Client Computer

Lists the client computers available for the browse operation. This option is available only when the browse operation is performed either from the client node in the CommCell Browser, **Browse & Recover** option from the **Tools** menu in the CommCell Console or when the **New Browse** button is clicked in the Browse window.

Specify Browse Path

Specifies the starting point for the browse operation. Also provides a space for you to type the path.

Show Deleted Items

Specifies whether the operation will browse all the data (including deleted items) secured by all data protection operations for the selected backup set as of the specified browse items.

Table View

Specifies whether the backup data should be displayed as database tables during the browse operation.

Image Browsing

Specifies whether the operation will browse all the data (including deleted items) secured by all data protection operations for the selected backup set as of the specified browse times.

The main difference between image browse and no-image browse is that deleted items are shown only by the no-image browse.

Keep in mind that the display of deleted items depends on whether full backup transparency is enabled. If full backup transparency is disabled (the default), only those deleted items that existed back through the most recent full backup are shown. However if full backup transparency is enabled, the deleted items shown includes those that existed during the time interval from initial index creation through the time being browsed.

To determine whether full backup transparency is enabled or disabled, from the CommCell Browser, right-click the *i*DataAgent and then select **Properties.** Click the **Index** tab. If **Create new index on full backup** is selected, then full backup transparency is disabled.

File Level Browse (Restore individual files/folders from disk image)

Specifies whether the operation will browse all the files and folders secured by all data protection operations for the selected backup set as of the specified browse items.

Volume Level Browse (Restore the disk image/volume)

Specifies whether the operation will browse all the volumes secured by all data protection operations for the selected backup set as of the specified browse items.

Database

For SQL Server, specifies whether to browse individual databases.

File/File Group

For SQL Server, specifies whether to browse file groups and files for the databases.

Page Size

Use the space to enter the default number of objects to be displayed in the Browse window. This field reverts back to the default setting after use. In the Browse window, you can browse through each page list by selecting the appropriate page number.

Browse Data from SQL

Specifies that SharePoint documents can be mined from an offline mining database.

SQL Instance

For SharePoint Offline mining, specifies the SQL instance that is associated with the offline mining database. Click ... to select from a list or type the instance name.

User Account

For SharePoint Offline mining, specifies the Username and Password of the account that can access the instance. Click Edit to enter the username and password.

Config Database

For SharePoint Offline mining, specifies the Configuration Database that will be used to mine SharePoint documents. Click ... to select from a list or type the Configuration Database name.

Browse only volumes

Specifies that the browse operation must display only a list of volumes; required for a Volume Level Restore.

Advanced

Click to access additional browse capabilities.

List Media

Click to display media required for restore or index restore operations.

Type of Intended Restore (Virtual Server *i*DataAgent)

This section provides the facility to select the type of restore you want to perform following the Browse operation.

- **Individual Files/Folders**

  Select this option if you intend on performing a file/folder-level restore.

- **Entire Volume**

  Select this option if you intend on performing a volume-level restore.

- **Container Restore**

  Select this option if you intend on performing a disk-level restore.

Browse/Restore Directory Server data from database

For Active Directory Offline Mining, enter the path to the database from which you want to restore directory server data. For Active Directory Server databases, this file will be the `ntds.dit` file. For ADAM and Lightweight Server databases, this file will be the `adamntds.dit` file. Click **Browse** to locate the database or enter the complete database path in the **File Path** field.

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Advanced Browse Options

Use this dialog to access additional browse capabilities for the browse window. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent for which the information is being displayed.

Use MediaAgent

Select the MediaAgent associated with the data you want to browse, or select **Any MediaAgent**.

Show Deleted Items

Specifies whether the operation will browse all the data (including deleted items) secured by all data protection operations for the selected backup set as of the specified browse items.

Page Size

Specifies the number of objects to be displayed in the browse window.

Include Metadata

Specifies that the browse operation results must also include data containing metadata information.

Exclude Data Before

Specifies that the browse operation must return data that has been backed up after the specified date. Also provides a space for you to type the date and time.

Browse from copy precedence

When selected, the system retrieves the data from the storage policy copy with the specified copy precedence number. If data does not exist in the specified copy, the operation fails even if the data exists in another copy of the same storage policy.

When cleared, (or by default) the system retrieves data from the storage policy copy with the lowest copy precedence. If the data was pruned from the primary copy, the system automatically retrieves the data from the other copies of the storage policy starting with the copy with the lowest copy precedence and proceeding through the copies with higher copy precedence. Once the data is found, it is retrieved, and no further copies are checked.

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List Media

Use this dialog box to select the options that must be used to predict the required media.

Media For the Latest Data

Specifies whether the list media operation must display media associated with the most recent data protection operation (from now back to the last full backup) This option is selected by default.

Specify Time Range

Specifies whether the whether the list media operation must display media associated with the specified date and time.

- **Data Before/Time Range**

  Specifies the date and time that must be used to display media.

- **Time Zone**

  Lists the time zones. To change the time zone, click one in the list.

Advanced

Click to access additional options.

Add/Modify Subclient Content - Database Configuration

Use this dialog box to discover and change the associations of database elements/Storage Groups to the available subclients. The last five fields are exclusive to versions of SharePoint that interact with SQL Server databases.

Database Name/Storage Group Name

Displays the display name of the database element/Storage Group.

Subclient (Name)

Lists the name of the subclient currently associated with the database element/Storage Group. To change the subclient association, click on the subclient then select a different one from the list.

Change all selected databases/storage groups/data types to:

When a range of database elements/Storage Groups is selected, you may select a subclient from the list to assign all of the selected database elements/Storage Groups to the selected subclient. If a single database element/Storage Group is selected, this field is disabled.

Discover

Click to discover any new database elements/Storage Groups, or if the display dialog box is blank and does not display any items, or to manually discover new items.

Data Type

Displays the type of object that has been discovered.

Virtual Server

Displays the name of the IIS virtual server that the object uses.

Portal Site/Index Server

For an object, displays the name of the Portal Site that the object is part of. For Site indexes, displays the Index Server name.

Desc

For site databases, displays the type of database. For any other items, displays an index value.

Database Server

Displays the name of the SQL instance used to store the databases.

Operation Window

Use this dialog box to add, modify, or delete operation rules for system operations.

Name

The friendly name assigned to the operation window.

Operations

The operations included in the rule.

Days

Displays the days in which the operations in this rule should not be run.

Do not run intervals

Displays the times in which the operations in this rule should not be run.

Add

Click this button to add an operation rule from the Operation Rule Details dialog box.

Modify

Click this button to modify an operation rule from the Operation Rule Details dialog box.

Delete

Click this button to delete an operation rule.

Ignore Operation Rules at Higher Levels (not applicable at the CommServe and Client group level)

Select this option to disable all operation rules set at levels above the currently selected entity.

Subclient Properties (General)

Use Subclient Properties (General) tab to add, modify or view general information on the selected subclient.

Client Name

Displays the name of the Client computer to which this subclient belongs.

Billing Department

Displays the name of the billing department, when the subclient is associated with a billing department. For more information on Billing and Costing See the *CommNet Books Online*.

***i*DataAgent Type**

Displays the name of the Agent to which this subclient belongs.

Subclient Name

Displays the name of this Subclient. You can use this space to enter or modify the name of the subclient.

Billable Entity

The name of the Billable Entity assigned to this subclient.

Use Event Check

Specifies whether the system will examine application event logs for Exchange Database to ensure that the three most common errors associated with file-level damage to the database have not occurred prior to backing up the database. When selected, event logs will be examined for these errors based on the starting point specified in **Last Event Check Time**.

- **Last Event Check Time**

  Use the spaces provided to choose the date and time that you would like to configure as the starting point for the Event Check. Any of the three most common file-level damage errors occurring in the Exchange application event log before the specified date and time will be ignored, and any found after the specified date and time will cause the backup to fail.

Number of Data Readers for Backup Copy

Use this space to specify the number of simultaneous backup data streams allowed for this subclient. For best performance, this should not be set higher than the number of physical drives that hold this subclient's data, except for specialized hardware such as RAID.

Allow multiple data readers for Backup Copy

Specifies whether multiple data reads are allowed for a single Windows physical drive during backups on this subclient. This should be selected only for specialized hardware such as RAID, or possibly in the case of spanned volumes.

Description

Use this field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.

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Subclient Properties (Content)

Use this dialog to add databases to the subclient.

Contents of subclient

Displays a list of databases included as content for this subclient.

Configure

Click to discover and change the associations of the database to the subclients. Any content included for a user-defined subclient will be automatically excluded from the default subclient.

Subclient Properties (Pre/Post Process)

Use this dialog box to add, modify or view Pre/Post processes for the selected subclient.

Pre-Backup process

Displays the name/path of the process that you want to run before the backup phase.

You can use this space to enter a path for a process that will execute before the backup phase on the subclient . Click **Browse** to search for and select the name/path of the process.

Use a quotation mark if the name/path has a space.

For example., "c:\program files\test file\pre.bat"

Post-Backup process

Displays the name/path of the process that you want to run after the backup phase.

You can use this space to enter a path for a process that will execute after the backup phase on the subclient . Click **Browse** to search for and select the name/path of the process.

Use a quotation mark if the name/path has a space.

Run Post Backup Process for all attempts

When selected, specifies to execute the specified pre-post processes to run when the job phase is interrupted, suspended, or fails. When cleared, the specified process will only execute for successful, killed, or failed jobs.

PreSnap process

Displays the name/path of the Snap process that you want to run before the respective phase. You can use this space to add or modify PreSnap processes for a subclient. Click **Browse** to search for and select the name/path of the process. The system allows the use of spaces in the name/path, provided they begin with an opening quotation mark and end with a closing quotation mark.

PostSnap process

Displays the name/path of the Snap process that you want to run after the respective phase. You can use this space to add or modify PostSnap processes for a subclient. Click **Browse** to search for and select the name/path of the process. The system allows the use of spaces in the name/path, provided they begin with an opening quotation mark and end with a closing quotation mark.

On Source

Specifies whether the PreSnap/PostSnap process will execute on the source computer.

On Proxy

Specifies whether the PreSnap/PostSnap process will execute on the proxy computer.

Browse

Click to search for and select the Pre/Post Process.

Run As / User Account

Displays either the Local System Account, or for added security, another account as having permission to run these commands.

Change

Click to add or modify the account that has permission to run these commands.

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Storage Device

Use this dialog box to establish the storage device related settings on the selected subclient. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent or enabler for which the information is being displayed.

The following tabs are displayed:

- (Data) Storage Policy
- Data Transfer Option
- Deduplication

STORAGE POLICY

Use this tab to select or view storage policy settings on the selected subclient.

Data/Database/Transaction Log Storage Policy

Displays the storage policy to which this subclient is currently associated. To associate a storage policy to a new subclient or to change the storage policy associated with an existing subclient, click one in the list.

Incremental Storage Policy

Displays the name of the Incremental Storage Policy associated with this subclient, if the storage policy has the Incremental Storage Policy option enabled.

Data Paths

Click to view or modify the data paths associated with the primary storage policy copy of the selected storage policy.

Number of Data/Database/Transaction Log Backup Streams

Displays the number of streams used for backup operations. To change the number of streams, click one in the list. For DB2 DPF, be sure to set the appropriate number of streams for each database partition by double-clicking the appropriate **Stream** space and typing the desired number.

Client/Instance/Status/Stream

Displays the names of the instances according to current backup priority along with other associated information that are included in the Oracle RAC node. To change the backup priority of the instances, click the instance name as appropriate and use the directional arrows provided.

Maximum Backup Streams

For Informix, displays the maximum number of streams used for database backup operations, which is determined from the ONCONFIG file. The number of streams for backups cannot be set currently from the CommCell Console. Instead, you must set the BAR_MAX_BACKUP parameter in the $ONCONFIG file on the Informix client. Also, the number of streams specified by the storage policy must be greater than or equal to the number specified by the BAR_MAX_BACKUP parameter.

Data Threshold Streams

For Oracle RAC, specifies whether to run the backup job immediately when the total number of reserved streams is greater than or equal to the value in this field. If you click this option, use the space provided to change this value if desired.

Create Storage Policy

Click to launch the Create a Storage Policy wizard. Once the storage policy has been created, it will be displayed in the list of storage policies to which the selected subclient can be associated.

Buffer Size

Use this space to specify the size (in 4 KB pages) of each buffer to be used for building the backup image. The minimum value is 8, and the default value is 1024. If you select value 0, the value of the `backbufz` database manager configuration parameter will be used as the buffer allocation size.

DATA TRANSFER OPTION

Use this tab to establish the options for data transfer. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent for which the information is being displayed.

Software Compression

Indicates whether software compression for the subclient or instance is enabled or disabled, and if enabled whether it is performed on the client or MediaAgent computer.

- **On Client**

  Click to enable software compression on the client computer.

- **On MediaAgent**

  Click to enable software compression on the MediaAgent computer.

- **Use Storage Policy Settings**

  Click to use the settings enabled on deduplicated storage policy copy.

  This option applies when subclient is associated with a storage policy copy that is deduplicated. See Copy Properties (Deduplication) - Advanced tab for compression settings on deduplicated storage policy copy.

- **Off**

  Click to disable software compression.

Note that hardware compression has priority over the software compression. Hardware compression is established in the Data Path Properties dialog box. The above software compression option will take effect when the data path is associated with a disk library, or when hardware compression is disabled in the data path associated with tape libraries.

For non-deduplicated storage policy copy, select **On Client** or **On MediaAgent** options to turn on compression, depending upon your environment.

Resource Tuning

Indicates the processes used by the client to transfer data based and whether bandwidth throttling is enabled or not.

- **Network Agents**

  Specifies the number of data pipes/processes that the client uses to transfer data over a network. Increasing this value may provide better throughput if the network and the network configuration in your environment can support it. On non-UNIX computers, the default value is 2 and a maximum of 4 can be established if necessary. On UNIX computers the default value is 1 and a maximum of 2 can be established if necessary.

- **Throttle Network Bandwidth (MB/HR)**

Specifies whether the backup throughput is controlled or not. (By default this option is not selected and therefore the throughput is not controlled). When selected, use the space to specify a value for the throughput. By default, this is set to 500. The minimum value is 1 and there is no limit to the maximum value. (In this case the backup throughput will be restricted to the maximum bandwidth on the network.)

Use this option to set the backup throughput, based on the network bandwidth in your environment. Use this option to reduce the backup throughput, so that the entire network bandwidth is not consumed, especially in slow links. Increasing this value will end up consuming the bandwidth with the maximum throughput limited to the network bandwidth capability.

Note that throttling is done on a per Network Agent basis.

Application Read Size

This option specifies the amount of application data (such as SQL data, Windows File System data, and virtual machine data) backup jobs will read for each unit transferred to the MediaAgent.

The default value for this options is 64KB; however, this value may be increased to reduce the amount of data read from the given application, which in turn reduces the amount of I/O operations performed against it. As a result, overall backup performance may increase. However, backup memory usage may also increase, which may inadvertently consume additional resources from the application. Thus, it is recommended that this value be set at either the default value or match the block size directed by the application.

DEDUPLICATION

Use this tab to establish the options for deduplication on the subclient. It indicates whether deduplication for the subclient is enabled or disabled, and if enabled whether the signature generation (a component of deduplication) is performed on the client or MediaAgent computer.

Note that deduplication is supported on disk storage devices. So the deduplication options are applicable only if the subclient is associated with a Storage Policy containing disk storage.

On Client

Click to enable signature generation on the client computer.

On MediaAgent

Click to enable signature generation on the MediaAgent computer.

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Subclient Properties (SnapProtect Operations)

SnapProtect Backup with hardware Snap Engines | SnapProtect Backup with Data Replicator

Use this tab to enable SnapProtect backup and to establish the options for SnapProtect backup operation, for the selected subclient.

These options are available if you select a hardware Snap Engine. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the agent for which the information is being displayed.

SnapProtect

Specifies whether SnapProtect backup for the selected subclient is enabled or disabled.

Available Snap Engines

Lists the available snapshot engine vendors. To select a snapshot engine vendor, click the pull-down arrow and click the one that you want to use.

- **Enter Array Credentials**

Click to access the Array Management dialog box, which enables you to add or modify access information for a array.

Use Proxy

Use this list to specify the name of the proxy server that will be used for performing the SnapProtect backup operations.

Use Separate Proxy for Snap to Tape

Use this option if you want to perform backup copy operations in a different MediaAgent. Select the MediaAgent from the **Proxy** list. If not selected, the MediaAgent that is specified in **Use Proxy** will be used.

Minimum size of file using hash comparisons

The minimum size of the file (in KB) that would be picked up for hash comparisons during data replication. Files less than the minimum size would be replicated without comparison.

Block size to use for hashing

Block size (in KB) used in hash comparisons.

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Activity Control

Use this dialog box to enable or disable data management and data recovery operations on a selected client or client computer group.

Enable Backup

Specifies whether data management operations will occur from this agent.

If cleared:

- The button **Enable after a Delay** appears to the right side of this operation activity. It allows to pre-determine the date and time at which data management operations will begin on the selected agent.
- Data management operations from this agent cannot be started and are skipped.
- Running and waiting data management operations for this agent run to completion.
- Stopped data management operations for this agent cannot be resumed until this option is enabled.
- Pending data management operations for this agent do not run until this option is enabled.

(Job states are indicated in the Job Controller.)

Encryption

Use this dialog box to select the data encryption options for the selected content. When accessing this dialog box from the Subclient Properties Encryption tab, this setting applies only to the selected subclient content for operations run from the CommCell Console. When accessing this dialog box from the Instance Properties Encryption tab, this setting applies only to third-party Command Line operations. The functionality is not propagated to the Subclient Properties Encryption tabs.

None

When selected, no encryption will take place during a data protection operations.

Media Only (MediaAgent Side)

When selected, for data protection operations, data is transmitted without encryption and then encrypted prior to storage. During data recovery operations, data is decrypted by the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will be required to provide a pass-phrase for data recovery operations unless you export the client pass-phrase to the destination client(s). When using pass-phrase security for third-party Command Line operations or DataArchiver Agents stub recovery operations, you must export the pass- phrase to the destination client.

Network and Media (Agent Side)

When selected, for data protection operations, data is encrypted before transmission and is stored encrypted on the media. During data recovery operations, data is decrypted by the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will be required to provide a pass-phrase for data recovery operations unless you export the client pass-phrase to the destination clients.

Network Only (Agent Encrypts, MediaAgent Decrypts)

When selected, for data protection operations, data is encrypted for transmission and then decrypted prior to storage on the media. During data recovery operations, data is encrypted by the MediaAgent and then decrypted in the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will not be required to provide a pass-phrase for data recovery operations.

Script Preview

Click to display the backup script, based on the current subclient configuration, that will be submitted to RMAN when backups are performed for the selected Oracle subclient.

Subclient Properties (SRM Options)

Use this dialog box to specify the Data Collection requirements.

SRM Data Collection

This option will be enabled if **Enable SRM feature** option is selected in the agent's Properties tab.

- **Discovery**

  Select this option for the collection of less detailed information for the client.

Restore Options (General)

Use this dialog box to control how the specified data is to be restored.

Job Details

Displays a summary of the restore job, including the job type, *i*DataAgent, etc.

Options for Microsoft Information Store

These options are not available for certain databases.

No Loss Restore

Specifies that the restore operation will perform a no loss restore of the transaction logs. The transaction logs created since the last backup are appended to the restored data.

Mount database after restore

Specifies whether the restore operation should remount the database or store(s) when the restore operation is completed. If the option is cleared, the database or store(s) must be remounted manually after the restore operation.

When restoring Exchange Database data from a VSS backup, the restore options to Mount database after restore and No Loss Restore do not apply.

Dismount database during restore

Specifies whether the system will automatically dismount the selected store(s) during the initial phase of the restore operation. Selecting this option will cause the system to dismount the store(s) you selected on the Browse Data window before restoring them.

display pane

For Exchange 2007 database, the display pane provides options for out-of-place restores when restoring from a VSS-enabled backup.

- **Source DB**

  Displays a browseable tree of information stores on the client which allows you to select the stores you want to restore from.

- **Destination DB**

  When a store is selected from the Source DB column, you can double-click the space under the Destination DB column in the display pane to show the "..." button which, when clicked, displays a dialog box for you to select out-of-place restore options.

- **Out of Place Location**

  This field is only enabled when **Restore to Non-Exchange Location <Out Of Place>** or **Restore to Non-Exchange Location <Out Of Place, No Recover>** is selected for the Destination DB column. When enabled, you can double-click the space under this column in the display pane to show the "..." button which, when clicked, displays a browse window for you to select a path on the destination client to which the data will be restored.

Advanced

Click to select additional restore options.

Save As Script

Click to open the Save As Script dialog, which allows you to save this operation and the selected options as a script file (in XML format). The script can later be executed from the Command Line Interface using `qoperation execute` command.

When you save an operation as a script, each option in the dialog will have a corresponding xml parameter in the script file. When executing the script, you can modify the value for any of these XML parameters as per need.

To view the XML values for each of the options in the dialog, see the following:

Command Line XML Options

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Restore Log for Exchange Database

Use this dialog box to enter the date/time of the incremental backup to which you want all store(s) within the selected Storage Group to be rolled forward. Prior to using this feature, an existing recovered QR Volume is required.

To Time

Specifies the time to which the databases within the selected Storage Group will be rolled forward.

Time Zone

Lists the time zones. To change the time zone, select one from the list.

Mount database after restore

Specifies whether the restore operation should remount the database or store(s) when the restore operation is completed. If the option is cleared, the database or store(s) must be remounted manually after the restore operation.

When restoring Exchange Database data from a VSS backup, the restore options to Mount database after restore and No Loss Restore do not apply.

Decryption

Click to enter the pass-phrase that is currently assigned to the client for restore operations that are run immediately.

Change Priority

Click to change the priority for the restore operation.

Choose Storage Group

Use this dialog box to select options for restoring data out-of-place from a VSS-enabled backup of Exchange 2007 Database.

Restore to Non-Exchange Location <Out Of Place>

When selected, the data will be restored to a location on the Exchange Server and the logs will be played back. Keep in mind that the data can be restored only on the Exchange Server, but to any location on that computer.

Restore to Non-Exchange Location <Out Of Place, No Recover>

When selected, the data will be restored to a location on the Exchange Server and the logs will not be played back. Keep in mind that the data can be restored only on the Exchange Server, but to any location on that computer.

storage group list

Use the storage group list in the display pane to select the storage group that you want to restore data to.

Job Initiation

Select from the following options. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the operation for which the information is being displayed.

Immediate

Run This Job Now

Specifies this job will run immediately.

Schedule

Specifies this job will be scheduled. When you click **Configure**, the Schedule Details dialog box will open and allow you to configure the schedule pattern.

Result file location on CommServe

This option is only applicable for List Media operations. Specifies the name of the file in which the results of the scheduled list media job must be saved. Click **Browse** to access to the **Directory Browse** dialog box which allows you to select the folder / file in the CommServe computer.

Automatic Copy

Specifies that an auxiliary copy operation will be performed at the interval specified. This operation will occur when new data that must be copied is found on the primary copy.

Interval

The time interval in which the Automatic Copy will be performed. The default interval is 30 minutes.

Save As Script

Click to open the Save As Script dialog, which allows you to save this operation and the selected options as a script file (in XML format). The script can later be executed from the Command Line Interface using `qoperation execute` command.

When you save an operation as a script, each option in the dialog will have a corresponding xml parameter in the script file. When executing the script, you can modify the value for any of these XML parameters as per need.

To view the XML values for each of the options in the dialog, see the following:

Operations Supporting Save As Script

Configure Alert

Provides the necessary options to configure the alerts associated with this operation.

- **Add/Modify Alert**

  When clicked, opens the Alert Wizard to configure necessary alerts for this operation.

- **Delete Alert**

  When clicked, deletes any existing alerts that are already configured.

Advanced

Click to select additional options.

Script Preview

Click to display the restore script, based on the selected restore options, that will be submitted to RMAN when restores are performed for the selected Oracle client.

Advanced Restore Options (Copy Precedence)

Choose the copy from which you wish to recover or retrieve. Select from the following options:

Restore/recover from copy precedence

When selected, the system retrieves the data from the storage policy copy with the specified copy precedence number. If data does not exist in the specified copy, the operation fails even if the data exists in another copy of the same storage policy.

When cleared, (or by default) the system retrieves data from the storage policy copy with the lowest copy precedence. If the data was pruned from the primary copy, the system automatically retrieves the data from the other copies of the storage policy starting with the copy with the lowest copy precedence and proceeding through the copies with higher copy precedence. Once the data is found, it is retrieved, and no further copies are checked.

Use MediaAgent / Library / Drive Pool

See Advanced Restore Options (Data Path)

Advanced Restore Options (Data Path)

Select the data path for the restore/recovery operation. You can specify the MediaAgent, Library, Drive Pool, and Drive from which the restore operation must be performed.

Use MediaAgent

Specifies the name of the MediaAgent that will be used to perform the restore operation. If necessary, you can change the name of the MediaAgent.

For example, if the library is shared and you wish to use a specific MediaAgent (instead of the system selected MediaAgent, or a MediaAgent which may be idle, or less critical) or if you know that the media containing the data you wish to restore is available in the library attached to the specified MediaAgent.

If the media containing the data is not available in the tape/optical library attached to the MediaAgent, the system will automatically prompt you to insert the appropriate media. In the case of a disk library, the operation will fail if the requested data is not available in the disk library attached to the specified MediaAgent.

Use Library

Specifies the name of the library that will be used to perform the restore operation. Use this option when you wish to restore using a specific library.

For example, if you know that the media containing the data you wish to restore is available in a specific library.

Use Drive Pool

Specifies the name of the Drive Pool that will be used to perform the restore operation. Use this option when you wish to restore using a specific Drive Pool.

To restore NAS data, select the drive pool type that was used to perform the backup, *i.e.*, if a drive pool associated with an NDMP Remote Server was used to

perform the backup, select a drive pool associated with an NDMP Remote Server. Similarly, if an NDMP drive pool was used, specify an NDMP drive pool.

Use Drive

Specifies the name of the drive in the drive pool that will be used to perform the restore operation. Use this option when you wish to restore using a specific Drive in the Drive Pool.

Use Proxy

Specifies the name of the proxy server that will be used to perform the restore operation. Use this option when you wish to restore using a proxy server.

Advanced Restore Options (Encryption)

Pass-Phrase

Enter the pass-phrase that is currently assigned to the client, whose data you are restoring. Note that if you have changed the pass-phrase since you secured the client data, you need to provide the new pass-phrase here, not the old one.

Re-enter Pass-Phrase

Re-enter the pass-phrase for confirmation.

If you attempt an immediate restore of encrypted data that was pass-phrase protected without entering the pass-phrase here, the restore operation will fail.

If you have an exported pass-phrase set up, and you enter the pass-phrase under **Decryption**, you over-ride (not overwrite) the client properties pass-phrase. Thus, if you enter the pass-phrase incorrectly, the restore does not complete successfully.

Startup

Select from the following options. Note that all the options described in this help may not be available and only the options displayed in the dialog box are applicable to the operation for which the information is being displayed.

Priority

- **Use Default Priority**

  If selected, the default priority for this type of job will be used in determining how the Job Manager will allocate resources for this job.

- **Change Priority**

  Use this option to manually specify the priority for the job, between 0 (highest priority) and 999 (lowest priority). The Job Manager will use the priority setting when allocating the required resources. This is useful if you have jobs that are very important and must complete, or jobs that can be moved to a lower priority.

Start up in suspended state

Specifies that this job will start in the Job Controller in a suspended state and cannot run until the job is manually resumed using the **Resume** option. This option can be used to add a level of manual control when a job is started. For example, you could schedule jobs to start in the suspended state and then choose which scheduled jobs complete by resuming the operation started in the suspended state.

Description

Use this field to enter a description about the entity. This description can include information about the entity's content, cautionary notes, etc.

Advanced Restore Options (Options)

Use this dialog box to make modifications in the names and locations of databases for restore.

Database

Displays the name of the database. You can edit the name by clicking within the box. Changes cause the data to be restored to a new database on the selected server.

For a detailed description on how to change the name of a SQL database, see the procedure titled "Restore a Database with a Different Name" in *Books Online*.

Device Name

Displays the device name of the database.

File Name

Displays the name of the database file to be restored.

Physical Path

Displays the complete path to the selected database file. You can edit the path by clicking within the box. Changes cause the database files to be restored to a new location. If the specified path does not exist, it will be created during the restore process.

For SQL, if the database file path is changed without changing the name of the database, then the existing database will be overwritten and will point to the new location. For a detailed description, see the procedure titled "Restore with a Different Data File Path" in *Books Online*.

Size (MB)

Displays the size of the database file in megabytes.

Find & Replace

For SQL, click to change multiple Database Name or Database File Path.

Alert

Use this tab to configure an alert for a schedule policy.

Configure Alert

- **Alert**

  The currently configured Alert.

- **Add/Modify Alert**

  When clicked, opens the Alert Wizard to configure alerts for this operation.

- **Delete Alert**

  When clicked, deletes any existing alerts that are already configured.

Online Help Topics