

Arcserve® Backup for Windows

Agent for Microsoft Exchange Server Guide

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Arcserve Product References

This document references the following Arcserve products:

- Arcserve® Backup
- Arcserve® Unified Data Protection
- Arcserve® Unified Data Protection Agent for Windows
- Arcserve® Unified Data Protection Agent for Linux
- Arcserve® Replication and High Availability

Contact Arcserve

The Arcserve Support team offers a rich set of resources for resolving your technical issues and provides easy access to important product information.

<https://www.arcserve.com/support>

With Arcserve Support:

- You can get in direct touch with the same library of information that is shared internally by our Arcserve Support experts. This site provides you with access to our knowledge-base (KB) documents. From here you easily search for and find the product-related KB articles which contain field-tested solutions for many top issues and common problems.
- You can use our Live Chat link to instantly launch a real-time conversation between you and the Arcserve Support team. With Live Chat, you can get immediate answers to your concerns and questions, while still maintaining access to the product.
- You can participate in the Arcserve Global User Community to ask and answer questions, share tips and tricks, discuss best practices and participate in conversations with your peers.
- You can open a support ticket. By opening a support ticket online, you can expect a callback from one of our experts in the product area you are inquiring about.

You can access other helpful resources appropriate for your Arcserve product.

Documentation Changes

The following documentation updates have been made since the last release of this documentation:

- Added [Exchange Granular Restore Utility](#) (see page 97). This topic describes how to restore Microsoft Exchange email and non-email objects.

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Chapter 1: Introducing the Agent

This section contains the following topics:

[Introduction](#) (see page 9)

[Microsoft Exchange Server Description](#) (see page 9)

[How to Protect Different Parts of Your Exchange Server Organization](#) (see page 10)

[How the Agent Backs Up and Restores Exchange Server Data](#) (see page 11)

Introduction

Arcserve Backup is a comprehensive, distributed storage solution for applications, databases, distributed servers, and file systems. It provides backup and restore capabilities for databases, business-critical applications, and network clients.

Among the backup agents Arcserve Backup offers is the Arcserve Backup Agent for Microsoft Exchange Server.

The agent works with Arcserve Backup to back up and restore Microsoft Exchange Server (Exchange Server) databases and mailboxes. The agent lets you ensure that your messaging solution is reliable and secure.

The agent provides you with the following types of backup and restore operations:

- Database level
- Document level

Microsoft Exchange Server Description

Microsoft Exchange Server is a centralized corporate messaging system that enables you to manage electronic mail and other messaging tools for your organization from a single location.

How to Protect Different Parts of Your Exchange Server Organization

The following Arcserve Backup agents and options can be used to protect different parts of your Exchange Server organization:

- **Arcserve Backup Agent for Microsoft Exchange Server**--Includes Database Level and Document Level backup and restore. Database Level backup and restore protects the Exchange Server database and logs. Document Level backup and restore, which is only available with this agent, eases and expedites many administrative tasks and maximizes flexibility by offering the most granular level of restore.
- **Arcserve Backup Client Agent for Windows**--Protects files and system state, including Active Directory. It is important to protect Active Directory when using Microsoft Exchange Server because it stores mailbox and user information. Arcserve Backup Client Agent for Windows also protects your domain controllers, which are equally as important to protect as your Exchange Server.
- **Arcserve Backup Disaster Recovery Option**--In the event of a disaster, the Arcserve Backup Disaster Recovery Option recovers the machine to the last full backup state.

Be aware of the following:

- You do not need to install an email client on the Exchange server that you are protecting. For example, Microsoft Outlook.
- You do not need to install the Arcserve Backup Agent for Open Files on the Exchange server that you are protecting. The Agent for Open Files is beneficial when you want to protect files that are open or in use by active applications. Because the Arcserve Backup Agent for Microsoft Exchange Server is an application-specific agent, dedicated to protecting Microsoft Exchange Servers, it offers a complete solution that encompasses all the features offered by the Agent for Open Files.

How the Agent Backs Up and Restores Exchange Server Data

The Agent for Microsoft Exchange Server integrates with Arcserve Backup to let you back up and restore Exchange Server databases and database components (such as mailboxes). It also integrates with the Exchange Server's backup and restore functions, enabling you to perform online backups.

The agent offers many benefits, such as:

- Manage backups of Exchange Server databases, mailboxes, and public folders from a remote location.
- Perform online database backups and restores using Exchange Server's backup and restore APIs.
- Schedule Exchange Server backups using the Backup Manager.

Note: For Exchange Server 2007, 2010, 2013, and 2016, Volume Shadow Copy Service (VSS) APIs are used.

- Schedule Exchange Server backups using the powerful Backup Manager.
- Back up to a wide array of storage devices.
- Push agent technology
- Multi-threading
- Multi-streaming support
- Enhanced cluster support (on Exchange Server versions prior to 2010)

The agent lets you perform the following types of Exchange Server backups and restores:

- Database level
- Document level

More information:

[How You Can Use the Agent to Perform Document Level Backups and Restores](#) (see page 13)

How You Can Use the Agent to Perform Database Level Backups and Restores

Using the agent to perform database level backup and restore, you can do the following:

Exchange Server 2007 Systems

- Restore the system in disaster recovery scenarios.
- Back up an Exchange Server system at the storage group level; it cannot be used to perform a more granular level of backup.
- Back up from replication and back up from an active database.
- Restore only individual databases and restore log files.
- Restore data to its original location and alternate locations such as:
 - Another Exchange server
 - Another Storage Group
 - Another Database
 - Windows File System

Note: To enable recovery from older full and copy backups to the current point in time, Exchange Server 2007 lets you restore the Log component individually from full or copy backups.

- With the use of a Recovery Storage Group, you can restore individual mailboxes from a database level backup using advance filters.

Important! Every time you back up your Exchange Server, you should perform a database level backup.

For more information, see the topic, [Performing Database Level Backups and Restores](#) (see page 35).

Exchange Server 2010 Systems

- Restore the system in disaster recovery scenarios.
- Back up an Exchange Server system at the database level.
- Back up and restore mailbox database or public folder database from a standalone server.
- Back up and restore mailbox database or public folder database from a Database Availability Group (DAG).
- Restore to the original or an alternate location.

For more information, see the topic, [Performing Database Level Backups and Restores](#) (see page 35).

Exchange Server 2013/2016 Systems

- Restore the system in disaster recovery scenarios.
- Back up an Exchange Server system at the database level.
- Back up and restore mailbox database from a standalone server.
- Back up and restore mailbox database from a Database Availability Group (DAG).
- Restore to the original or an alternate location.

More information:

[Backup and Restore Limitations on Exchange Server Data](#) (see page 14)

How You Can Use the Agent to Perform Document Level Backups and Restores

This type of operation should be used for a granular level of backup and restore, such as backing up individual folders, restoring individual messages. It should also be used as a supplement to database level backups.

Document level backup and restore lets you:

- Perform folder level backups and message level restores. Document level backup supports advanced filtering during backup and offers advanced configuration options.
- Maximize performance and flexibility by supporting complete messaging single instance storage, multi-threading, and by offering the most granular level of restore.
- Simplify many administrative tasks, such as auditing, migration, pruning, and aging.
- Back up many messaging objects including posts, tasks, notes, journal entries, mail messages, events, appointments, meeting requests, and contacts.

Note: The agent does not support backing up Microsoft Exchange Online Archiving data and Microsoft Personal Archives at document level granularity. Microsoft Exchange Online Archiving is a process of archiving Exchange Server 2010 SP1 and later mailbox data to cloud-based storage locations. Personal Archives is Microsoft Exchange Server 2010 and later functionality that lets Exchange users create personal archives of their Exchange Server data. For more information about Microsoft Exchange Online Archiving and Personal Archiving, see the Microsoft website.

The agent provides you with additional capabilities such as:

- Migration support
- Job continuation

For more information, see [Performing Document Level Backups and Restores](#) (see page 77).

Backup and Restore Limitations on Exchange Server Data

The following limitations affect backup and restore operations on Exchange server data:

The Arcserve Backup Restore Manager lets you restore Exchange server data based on the location of the source data (Restore by Tree) and by session (Restore by Session). You cannot restore Exchange server data using any of the following restore methods:

- Restore by Query
- Restore by Backup Media
- Restore by Image

Note: When you Restore by Tree, Search option is not supported.

How the Agent Communicates With Arcserve Backup

Communication between Arcserve Backup and the Agent for Microsoft Exchange Server is accomplished through the following:

- The agent is installed on the Exchange Server and facilitates all communication between Arcserve Backup and the Exchange Server database during backup and restore operations. In Exchange Server 2010/2013/2016 systems, the agent is installed on any mailbox server in a Database Availability Group (DAG).

Note: Installation on all DAG mailbox servers is not required.

This includes preparing, retrieving, transmitting, interpreting, and processing data packets that are sent back and forth across the network.

- When Arcserve Backup starts to back up a database or database component, it sends a request to the agent. The agent retrieves the data from the Exchange Server and sends it to Arcserve Backup, where the full database or the components are backed up to your storage media.

Similarly, the agent transfers database information when data is restored from storage media.

Chapter 2: Installing the Agent

The Arcserve Backup Agent for Microsoft Exchange Server can be installed locally or remotely.

This section contains the following topics:

[How to License the Agent](#) (see page 15)

[System Requirements](#) (see page 16)

[Installation Prerequisites](#) (see page 16)

[Install the Agent for Microsoft Exchange Server](#) (see page 17)

[Post-installation Tasks](#) (see page 18)

[Configure the Agent to Run on a Cluster](#) (see page 24)

[Configure IP Address for Microsoft Exchange Server 2010/2013/2016 Systems](#) (see page 26)

[Arcserve Backup Agent Deployment](#) (see page 27)

[Uninstall the Agent for Microsoft Exchange Server](#) (see page 27)

How to License the Agent

The Arcserve Backup Agent for Microsoft Exchange Server uses a count-based licensing method. You must register a number of licenses equal to the number of **active** Exchange Servers you wish to protect. You may install the Agent on either the active or replica server. Apply licenses on the Arcserve Backup Primary or Standalone Servers.

Examples: How to License the Agent

The following list describes typical installation scenarios:

- Your environment consists of one Exchange Server. You must register one Agent for Microsoft Exchange license and install the agent on the active server. (There is no replica in this example.)
- You wish to back up your Exchange Server 2010/2013/2016 system from a replica. You've set up a Database Availability Group (DAG) to replicate one active server to a passive node. You must purchase one Agent for Microsoft Exchange license (number of licenses equals number of active servers). You can install the agent on the passive node and back up your database from that node. Or, you can install the Agent on the active node.
- You have five active Exchange Server systems that you replicate to multiple passive servers. You must purchase five licenses (number of licenses equals number of active servers). You can install the Agent on all five active servers or on as many replica servers as you need to replicate your environment.

System Requirements

For a complete list of hardware and software requirements for installing and running the agent, see the Arcserve Backup Readme file.

Installation Prerequisites

Before installing the agent, you must satisfy the following prerequisites listed according to Microsoft Exchange Server version:

Prerequisite	2007	2010	2013	2016
Ensure your system requirements meet the minimum requirements needed to install the agent. For a list of requirements, see the readme file.	Yes	Yes	Yes	Yes
Ensure that you have Administrator privileges.	Yes	Yes	Yes	Yes
Ensure that you know the name and password of the machine you are installing the agent on.	Yes	Yes	Yes	Yes
If you will be performing remote backups, ensure that File and Printer Sharing for Microsoft Networks is enabled on the agent machine that you will be backing up.	Yes	Yes	Yes	Yes
The NetLogon service must be started to support pass-through authentication of account logon events for computers in a domain.	Yes	Yes	Yes	Yes
Ensure that the Microsoft Messaging API and Collaboration Data Objects 1.2.1. is installed before you install the Agent. You must perform this task because the Agent requires the Messaging API (MAPI) client libraries to run properly and perform document level backup operations. Note: Microsoft Messaging API and Collaboration Data Objects 1.2.1 is not included with the Exchange Server installation.	Yes	Yes	Yes	N/A

Prerequisite	2007	2010	2013	2016
If you are backing up or restoring mailboxes, the Exchange RPC Client Access Service must be running on the same server hosting the backup account's mailbox database. The RPC Client Access Service of the server configured as the client access server role of the mailbox database hosting the mailbox must be running.	No	Yes	Yes	N/A
If you are backing up or restoring public folders, the Exchange RPC Client Access Service must be running on the same server hosting the public folder.	No	Yes	N/A	N/A

Install the Agent for Microsoft Exchange Server

Before you install the agent, consider the following:

- You must install the agent on the server where you have Exchange Server installed and on the local drives of all Exchange Servers.

Note: For Exchange Server 2010/2013/2016, you do not need to install the agent on all mailbox servers in a Database Availability Group (DAG). Install the agent on the standalone server or on the DAG member server where the Mailbox Database will be protected.

- If your Exchange Server has high CPU usage during normal operations, you should have a separate server for the Backup Manager and should not install it on the same server where you install the agent.
- When you install the agent, you should also consider installing the Client Agent for Windows and the Disaster Recovery Option. The Client Agent allows you to back up your System State and the Disaster Recovery Option lets you recover the entire server in the event of a disaster.

Note: When you install the agent, the Arcserve Universal Agent is installed. Because the agent uses push technology and shares the transport layer with the Client Agent for Windows, you should see the *Client Agents Guide* for more information about configuring network communication.

- Remote installation is not supported on Exchange Server 2007 cluster environments.

After you have reviewed the installation considerations, you can install the agent using the standard installation procedure for all Arcserve Backup system components, agents, and options. For information about installing Arcserve Backup, see the *Implementation Guide*.

Post-installation Tasks

Before you can use the Arcserve Backup Agent for Microsoft Exchange Server, you must complete the following post-installation tasks:

- Configure the Agent for Database Level Backup and Restore
- Configure the Agent for Document Level Backup and Restore
- Create or Verify a Brick Level Account
- Delete Trace Log Files

Configure the Agent for Database Level Backup and Restore

This section describes how to configure the agent for database level backup and restore on Exchange Server 2007, Exchange Server 2010/2013/2016 installations.

To configure the agent for database level backup and restore

1. From the Windows Start menu, select All Programs, Arcserve, Arcserve Backup, and Backup Agent Admin.

The Arcserve Backup Agent Admin dialog opens.

2. From the drop-down list, select Arcserve Backup Exchange Server Agent and click Configuration.

The Configuration dialog with the Exchange Database Level tab selected opens.

Important! The options displayed on the Configuration dialog vary based on the version of Exchange that you are using in your environment.

3. Specify the following options as necessary:

Note: The options listed below apply to Exchange Server 2007, and Exchange Server 2010/2013/2016 systems, unless otherwise noted.

- **Log Detail Level**--Do not change this value unless directed by a trained Arcserve Customer Support technician. This option specifies the level of detail on the debug trace and log in the log location you specify. The default Debug Level value is 1 and the supported range is between 0 and 5.

- **Single log file size**--This option specifies the maximum size of a single log file. After the file reaches the specified maximum file size, a new file is created.

Note: The default value for this option is 200 MB.

- **Max log files**--This option specifies the maximum number of log files. After the maximum number of log files reaches this value, the oldest log file is deleted and a new log file is created.

Note: The default value for this option is 50.

- **Retry Counter**--If an Exchange backup API error or time out occurs while trying to retrieve data from the Exchange server, this option lets you control the number of times you want to retry. The default Retry counter value is 2 and the supported range is between 0 and 10.

- **Retry Delay**--If an Exchange backup API error or time out occurs while trying to retrieve data from the Exchange server, this option setting lets you control the delay between retries. The default Retry Delay value is 20 and the supported range is between 0 and 60.

- **Log Locations**--Specifies the path to the log file.

- **Path for creating recovery storage group**--If the Recovery Storage Group (RSG) needs to be created during the restore operation, specify the path to the RSG.

Note: This option affects only Exchange Server 2007 systems.

- **Path for creating recovery database**--If the Recovery Database (RDB) needs to be created during the restore operation, specify the path to it.

Note: This option applies to Exchange Server 2010/2013/2016 systems.

4. Click **OK**.

The database level options are saved.

Configure the Agent for Document Level Backup and Restore

After you install the Arcserve Backup Agent for Microsoft Exchange Server, you can configure performance and file location settings.

To configure the agent for document level backup and restore

1. From the Windows Start menu, select All Programs, Arcserve, Arcserve Backup, and Backup Agent Admin.

The Arcserve Backup Agent Admin dialog opens.

2. From the drop-down list, select Arcserve Backup Exchange Server Agent and then click Configuration.

The Configuration dialog with the Exchange Database Level tab selected opens.

3. Click the Document Level tab.

Note: The options displayed on the Configuration dialog vary based on the version of Exchange Server that you are using in your environment.

4. When the Configuration dialog opens, select the following settings as required for your environment:

Note: The options listed below apply to Exchange Server 2007, Exchange Server 2010, and Exchange Server 2013 systems unless otherwise noted.

- **Complete Messaging Single Instance Storage (Exchange Server 2007)** --This option checks to see if attachments, message bodies and other components of messages have already been backed up and then backs up only one copy. This eliminates the need to back up each time the attachment and message are referenced. This can significantly decrease the size of your backups.

No Single Instance Storage - Without Single Instance Storage, an Exchange Server is scanned mailbox by mailbox, and copies of individual message bodies and attachments are backed up as they arrive, without any regard for data that may have been backed up already.

- **Back up Only Local Public Folder Documents (Exchange Server 2007, and 2010)**--In Exchange Server, public folders can include multiple public folder stores on many servers across the organization. As a result, when you select to back up a public folder, you could be backing up many public folder stores. To save time and maximize performance, this option lets you exclude remote public folder documents during public folder backups.

- **Number of Threads**--This is the number of threads you want to use to connect to MAPI per session. If you increase this number, it increases performance, but also increases CPU utilization. The default Number of threads value is 1.5 multiplied by the number of CPUs rounded down and the supported range is between 1 and 64.
- **Thread Priority**--This is the priority you want to set for your threads: low, medium, or high. If you increase the priority, the operating system increases the CPU cycles to the thread. If you increase the number of threads in the Number of threads field, you should decrease the thread priority to lessen the impact on your server.
- **Maximum Backup Size**--To allow an efficient flow of information during backup, data is stored in a transition queue. This setting lets you configure the size of this queue. The default Max queue depth value is 256 items and the supported range is between 32 and 1024.
- **Maximum Restore Size**--This sets the threshold for memory that SIS restores will use before saving objects to the temporary location you specify. If the amount of cached SIS data exceeds this value, you can increase the value to gain better performance. If the amount of cached SIS data exceeds the value you select, the restore is not affected, but a notification message appears in the activity log. The default Max Restore memory value is half of your system RAM and the supported range is between 32 and 1024.
- **Retry Counter**--If a MAPI error or time out occurs while trying to retrieve an object from Exchange Server, this setting lets you control the number of times you want to retry. This is useful for when your backups are competing with third-party applications or during periods of high volume activity. If a MAPI error or time out occurs, the object is skipped, but the backup continues and a notification message is displayed in the log location you specify. The default Retry counter value is 1 and the supported range is between 0 and 10.
- **Retry Delay**--If a MAPI error or time out occurs while trying to retrieve an object from Exchange Server, this setting lets you control the delay between retries. This is useful when your backups are competing with third-party applications or during periods of high volume activity. If a MAPI error or time out occurs, the object is skipped, but the backup continues and a notification message is displayed in the Log location you specify. The default Retry Delay value is 0 and the supported range is between 0 and 60.

- **Log Detail Level**--This sets the level of detail on the debug trace and log in the log location you specify. The log detail level determines the level of detail in the debug trace and log. This does not affect the level of detail in the Activity Log in the Arcserve Backup Manager window. The default log detail level value is 1 and the supported range is between 0 and 5. If you want to disable agent side logging, use 0. Otherwise, you should always use level 1.

Important! Do not change this value unless directed by a trained Arcserve Customer Support technician.

- **Job Continuation Level**--If a job fails to complete, this setting lets you skip mailboxes and root public folders that already have been backed up and continue the job from the point of interruption. This is especially useful for continuing jobs in the case of a cluster failover. The default Job Continuation Level value is 1 and the supported range is between 0 and 2. 0 disables job continuation, 1 continues makeup jobs only, 2 continues any interrupted jobs.

Note: Because job continuation begins the job at the point of interruption and skips items that were already backed up in the original job, you should ensure that the skipped items were backed up properly in the original job and that they can be browsed from a restore view.

- **Skip Log Setting**--At the end of each backup job, a summary of each session is displayed in the Activity Log. If individual folders, messages, and attachments are not backed up, by default, the details will be listed in the skip log in the agent log directory. If you would rather view the skip log information in the Activity Log or if you want to view it in the Activity Log in addition to the skip log, this setting lets you configure the location. The default Skip Log Setting value is 0 and the supported range is between 0 and 2. 0 logs information to the skip log only, 1 logs information to the Activity Log only, 2 logs information to both the skip log and Activity Log.

Note: This skip log is also useful for tracking corrupt messages in an Exchange Server.

- **Backup Additional User Properties**--If you are using Exchange Server 2007, Exchange Server 2010, or Exchange Server 2013, this setting lets you back up a greater level of user properties detail and determines what is restored when using the Create user if not existing restore option.

Note: For more information on restore options, see [Document Level Restore Options](#). (see page 99)

If you do not enable this option, only the display name that is associated with the mailbox is backed up. This is useful if you will be using this user as a placeholder to perform an audit or test restore. If you do enable this option, most additional properties, such as first name, last name, fax number, and address information are backed up. This is useful for migration, but will increase the backup time.

- **Disable Purge Option**--When a backup job is created using the time based backup method, the Purge documents after backup option can be enabled so that documents are automatically deleted after they are backed up. However, since this option should be used with caution, you can enable the Disable Purge Option as a safety feature to override the purge and prevent an agent from pruning an Exchange Server.
- **Append To Restored Mailbox**--During restore, if you want to create duplicates of existing users and mailboxes in the same organization, you must append a string to the user and mailbox names. Enter the string you want to append in this field. Since the maximum character limit for user and mailbox names on some systems is 20 characters, try to keep the string short. If you do not want to create duplicates, leave this field blank.

Note: This option must be used in conjunction with the Create mailbox if not existing options. For information about Create mailbox if not existing, see [Configure Document Level Restore Options](#) (see page 99).
- **Log Location**--If you want to change your log location from the default location, click Browse and select a new location.
- **Temp Location**--If you want to change your temp location from the default, click Browse and select a new location.

5. Click OK.

The document level backup and restore options are saved.

Delete Trace Log Files

Arcserve Backup creates trace log files for backups and restores of Microsoft Exchange Server data. Trace log files provide you with data that you can use to debug problems that occur when performing document level and database level backups and restores of Microsoft Exchange Server data.

By default, Arcserve Backup stores Microsoft Exchange Server trace log files in the following directories on the Microsoft Exchange Server systems:

- Database level backups:
C:\Program Files\CA\ARCserve Backup Agent for Microsoft Exchange Server\DBLOG
- Document level backups:
For Exchange Server 2007/2010/2013
c:\Program Files\CA\ARCserve Backup Agent for Microsoft Exchange Server\DocumentLevel\Log

Trace log files contain the file extension .trc.

Over time, many trace log files can consume a large amount of free disk space on your Arcserve Backup server. To free disk space on your backup server, you can configure Arcserve Backup to delete trace log files after a specified period of time elapses.

To delete trace log files

1. Log in to the server where the agent is installed and open Windows Registry Editor.
2. Do the following:
 - For database level backups, locate the following registry key:
`HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\CA ARCserve Backup\ExchangeDBAgent\Parameters\AgentLogLife`
 - For document level backups, locate the following registry key:
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\CA ARCserve Backup\ExchangeDocumentAgent\Parameters\AgentLogLife`
3. Right-click AgentLogLife and click Modify on the pop-up menu.
The Edit DWORD Value dialog opens.
4. In the Value Data field, specify the number of days that you want to retain the trace log files.

Note: The default value for AgentLogLife is 14.

Example:

The value specified for AgentLogLife is 14. The next time that you back up or restore Microsoft Exchange Server data, the agent checks the trace log files directory on the Arcserve Backup server and deletes trace log files that were not modified in the last 14 days. With a value of 0, Arcserve Backup will not delete trace log files.

Click OK.

The new value is applied.

Configure the Agent to Run on a Cluster

The following information does not apply to Exchange Server 2010/2013 systems. For the agent to properly perform document level backups on a cluster, the cluster resource type Arcserve Backup Exchange Server Agent Notifier must be registered and the resource instance type Arcserve Backup Exchange Server Agent Notifier must be created.

The binaries for the cluster resource type are CAExCluRes.dll and CAExCluResEX.dll. The installation procedure registers the cluster resource type and creates the cluster resources instance for you automatically when you install the agent on local nodes.

After the cluster resources are registered, you must specify a common location for the check point file. This location should be accessible from all possible nodes on which a virtual server can potentially run. This allows job continuation and incremental and differential jobs to properly execute even if they fail over to a different node. To set this destination, use the following registry key:

Exchange Server 2007 Systems

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\CA ARCserve  
Backup\ExchangeDocumentAgent\Parameters  
Value Name:  <VirtualServerName>_ChkPath  
Value Type:  REG_SZ  
Value Data:  <Path>
```

Example: Traditional Single Copy Cluster (SCC)

If virtual server EXVS1 is using drive g: as a disk resource to store data and virtual server EXVS2 is using drive h: as a disk resource to store data, add the following registry key on all nodes that are possible owners of these virtual servers.

```
Value Name:  EXVS1_ChkPath  
Value Type:  REG_SZ  
Value Data:  g:\CA\Temp
```

```
Value Name:  EXVS2_ChkPath  
Value Type:  REG_SZ  
Value Data:  h:\CA\Temp
```

Example: Exchange Server 2007 Cluster Continuous Replication (CCR)

Find a server with a shared device that can be accessed from all possible nodes of the virtual Exchange Server by the Exchange Server agent backup account user.

Note: It is recommended that you use the server hosting the Majority Node Set (MNS) quorum.

If the path on the shared device is \\ServerName\C\$\CA\TEMP and the virtual server name is EXVS1, add the following registry key on all nodes that are possible owners of the virtual server.

```
Value Name:  EXVS1_ChkPath  
Value Type:  REG_SZ  
Value Data:  \\ServerName\C$\CA\Temp
```

For more information, see [Register the Cluster Resource Manually](#) (see page 145).

Configure IP Address for Microsoft Exchange Server 2010/2013/2016 Systems

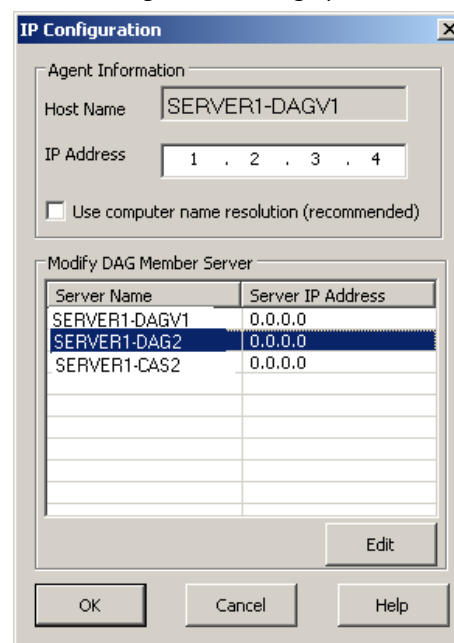
On Exchange Server 2010/2013/2016 systems, you should change the IP address if:

- The Exchange Server cannot be reached by resolving its name
- You want to use a specific IP address when the Exchange Server has multiple assigned IP addresses
- Exchange Servers from different domains have the same name.

To change the IP address

1. Launch the Arcserve Backup Backup Manager.
2. Right-click the Exchange Organization and select Active Directory Servers.
3. Click Add to add an AD server. Enter a Server Name, IP Address and account credentials. Click OK to return to the Exchange Organization browse dialog.
4. Right-click the Exchange Server 2010/2013/2016 server you added and click IP Configuration.

The IP Configuration dialog opens.



5. Select the Server whose IP address you wish to change and click Edit. If the server is a standalone deployment, this dialog will not show DAG Member Servers. If it is a DAG, the dialog shows a list of all member servers.
6. Select a server to modify and click Edit. Enter a new IP address and click OK.
7. Click OK to exit IP Configuration.

Arcserve Backup Agent Deployment

Arcserve Backup Agent Deployment can be used to install and upgrade the Arcserve Backup Agent for Microsoft Exchange Server on remote hosts. For more information, see the *Arcserve Backup Administration Guide*.

Agent Deployment does not support Exchange Server 2007 CCR, SCC, or Cluster installations.

Note: Arcserve Backup Agent Deployment works as specified:

1. When you select the **Do not display the Exchange Servers where the Agent for Exchange is installed** check box:
 - For Exchange Server 2010 and later
Agent deployment lists all the Exchange servers in a domain whether the agent is installed or not.
 - For Exchange Server 2007
Agent deployment does not list the Exchange servers in a domain, if the same version of the agent is installed.
2. When you do not select the **Do not display the Exchange servers where the agent for Exchange is installed** check box, then all the Exchange servers are listed for all versions.

Uninstall the Agent for Microsoft Exchange Server

Effective in this release, there is now only one entry for Arcserve Backup and its related options and agents in the Windows Add/Remove Programs dialog.

Click Remove. A list of the installed Arcserve Backup products is displayed. Select the products you wish to remove and then click Uninstall. The uninstallation utility breaks dependencies in the correct order automatically.

Chapter 3: Browsing Microsoft Exchange Servers

You can view Exchange servers from:

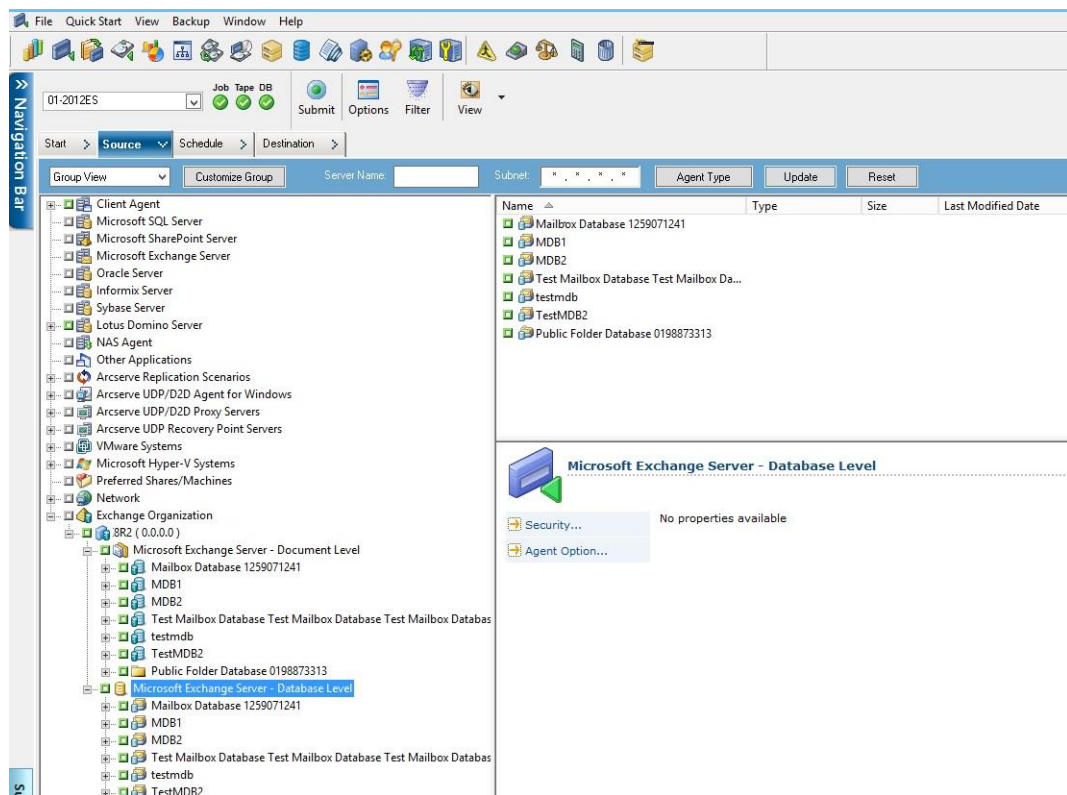
- The Exchange Organization View - All Exchange Server versions
- The Windows Systems View - Exchange 2007 Servers only

This section contains the following topics:

[Exchange Organization View](#) (see page 29)

Exchange Organization View

The Exchange Organization View provides a central display of your entire Exchange Organization. This lets you quickly find all the remote Exchange servers in your environment rather than having to enter each of them manually under the Windows Systems object or Preferred Shares/Machines object.



In the Exchange Organization View, the Exchange Server database objects are organized in a hierarchy similar to the Exchange Server Manager.

Exchange Server 2010/2013/2016 systems are not shown under Windows Systems. They are shown only under Exchange Organization.

Note: The Exchange Organization is always explicitly packaged. You must repackage jobs if Exchange servers are added or removed from your organization. For more information on packaging your jobs, see the *Administration Guide*.

How Microsoft Exchange Server Organization Hierarchy Works

A Microsoft Exchange Server messaging system comprises several administrative units, the largest of which is the organization. The organization hierarchy varies depending on the version of Exchange Server you are using:

- **Exchange Server 2007**--In Exchange Server 2007, there are four organization models:

- Simple Exchange organization
- Standard Exchange organization
- Large Exchange organization
- Complex Exchange organization

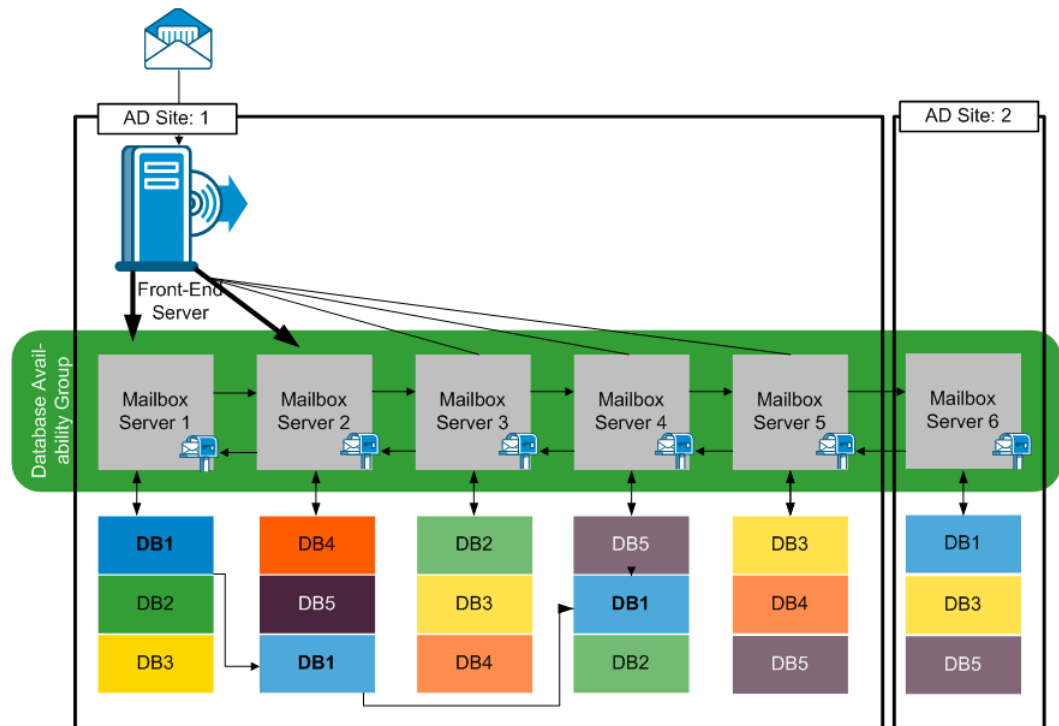
Note: For more information about Exchange Server 2007 organization models, see the Microsoft TechNet web site.

Each Exchange mailbox server in the organization can have up to 50 storage groups. In a non-replicated environment, each storage group can have up to five database stores. In a replicated environment, each storage group can have one database. Each database can be mounted and dismounted independently.

- **Exchange Server 2010/2013/2016**--In Exchange 2010/2013/2016, storage groups are no longer supported. A Database Availability Group (DAG) is a collection of up to 16 mailbox servers, where each server stores up to 100 mailbox databases. A copy of a database can be stored on any server in a DAG. Some additional changes in this version:
 - Recovery Storage Groups have been replaced with Recovery Database
 - Database names must now be unique across your organization
 - All copies are located at the same paths
 - Active Manager is required to mount a database and determines which database is mounted
 - All high availability configuration is performed post-setup

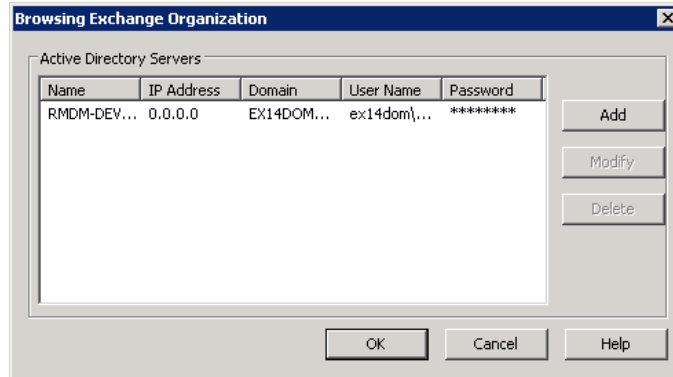
The concept of a Database Availability Group provides failover at database level, rather than server level, and is transparent to end users. In a DAG, only one copy of a database is active at any one time. Arcserve Backup lets you choose to back up from active databases or replicas. DAGs can include mailbox servers in separate physical locations, as well.

In this example, five members comprise the DAG with a sixth one off-site. Databases are spread across the DAG so that no two members have the same database configuration. This configuration is Microsoft's suggestion for providing database availability in the event of hardware failure. Users access the Exchange Server and are routed to the active database. Suppose DB1 hosted on Mailbox Server 1 is active. If Mailbox Server 1 fails, users can be routed to the copy of DB1 on Mailbox Server 2. If Mailbox Server 2 fails, users are routed to the copy of DB1 on Mailbox Server 4. For more information on how DAGs work, see the Microsoft website.

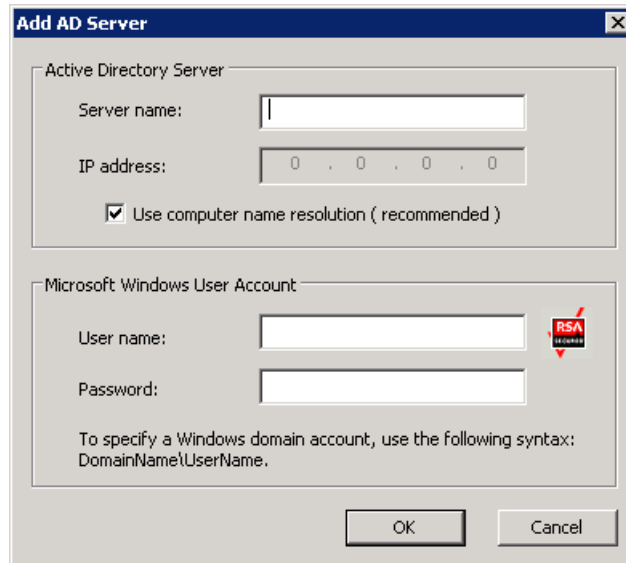


Browsing the Exchange Organization

If you did not use Agent Deployment, Arcserve Backup opens a dialog that prompts you to enter Active Directory server information when you browse the Exchange Organization from the Backup Manager. The information you enter is used to browse Exchange servers.

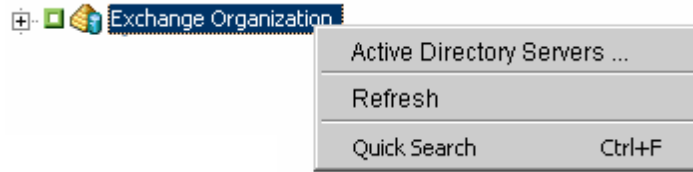


To add multiple Active Directory servers, click Add. To modify existing AD server information, click Modify.



You may add AD servers for different domains or that contain different Exchange Server versions. Adding more than one AD server ensures browsing even when one AD server is down. If there is more than one Exchange organization, all mailbox servers for all organizations are included.

To refresh the organization, right-click Exchange Organization and select Refresh from the shortcut menu.



User account requirements

The AD user account must satisfy the following conditions in order to browse the Exchange organization:

- It must be a Domain user
- It must have at least "View-only Organization Management" role

Note: If you want to back up and restore data using the AD user account, the AD user account must also satisfy the Database Level Agent and Document Level Agent levels backup account requirements described in the following topics:

- Backup Agent Service Account Requirements for Database Level Backup and Restore
- Backup Agent Service Account Requirements for Document Level Backup and Restore

Add Remote Servers to the Systems Object

To view and manage remote Exchange 2007 servers with the Windows System view, you must first add them to the Windows System object in the Backup Manager.

Note: Exchange Server 2010/2013/2016 systems are protected using only the Exchange Organization view.

To add a remote server to the Windows Systems object

1. From the Quick Start menu on the Arcserve Backup Home Page, click Backup Manager.

The Backup Manager window opens.

2. From the Arcserve Backup Manager window select the Source tab.
Right-click the Windows Systems object and select Add Machine/Object from the pop-up menu.

The Add Agent dialog opens.

3. From the Add Agent dialog, enter the Host Name for the machine and either enable the Use Computer Name Resolution option to automatically search for the correct IP address each time you connect to this computer, or you can enter a specific IP address.

Important! The machine that you are adding must be running and have the Universal Agent started.

4. Click Add.

The machine is added to the Windows Systems object.

5. Repeat the previous two steps to add more remote Exchange Server systems to your environment.

6. Click Close.

The remote agents are added to the Backup Manager, Windows Systems object.

Chapter 4: Performing Database Level Backups and Restores

Depending on the version of Microsoft Exchange you are protecting, the options and procedures for backing up and restoring vary. Make sure of the following:

- You are following the correct instructions before you begin. Topics in this section are organized by Exchange Server version.
- You have completed the required installation, post-installation and set-up tasks. For more information, see [Installing the Agent](#). (see page 15)
- You know which backup options are available for your Exchange version and how to set them. For more information, see Understanding How the Arcserve Backup Agent for Microsoft Exchange Server Works.

This section contains the following topics:

[How Database Level Backup Works](#) (see page 35)

[Database Level Views in the Backup Manager](#) (see page 37)

[Backup Agent Service Account Requirements for Database Level Backup and Restore](#) (see page 39)

[Database Level Backup](#) (see page 40)

[Database Level Data Restore](#) (see page 52)

[Selecting Database Restore Sources and Destinations](#) (see page 69)

[Perform a Database Level Data Restore](#) (see page 75)

How Database Level Backup Works

Database level backup and restore protects the Exchange Server database files and logs. It is the fundamental backup for your Exchange server, and you should always use it regardless of whether you use one of the other granular backup types. You can use database level backups to restore Exchange server data in the event of a system failure, database corruption, or disaster recovery scenario.

Note: In addition to the full database backups that you perform during your weekly backup strategy, you should perform full database backups after installing service packs, after performing restores, and after changing the Circular Logging setting on your Exchange server.

Database Level Backup and Restore Benefits

Database level backup and restore offers many benefits, including:

- **Push Agent Technology**--Database level backup uses push agent technology to increase the efficiency of your backup jobs by processing the data at the remote client workstations rather than processing it all from the Arcserve Backup host server. This off loads the system resources from the Arcserve Backup host server and minimizes network traffic.
- **Multi Streaming Support**--Database level backup lets you take advantage of the full capacity of multiple drives and high-speed RAID arrays capable of fast concurrent backups to multiple tapes. It does this by partitioning information into concurrent streams for parallel backups.

- **Enhanced Cluster Support-- (Exchange Server 2007)** Database level backup offers Active/Active and Active/Passive cluster support with cross cluster node failover.

For database level operations on Exchange Server 2007 platforms, the agent supports Cluster Continuous Replication (CCR) and Single Copy Cluster (SCC) environments.

Note: For more information about installing the agent on a cluster, see [Configure the Agent to Run on a Cluster](#).

- **Job Continuation**-- If a job fails to complete, the makeup job continues from the failed storage group (Exchange Server 2007) or the database (Exchange Server 2010/2013/2016).
- **Replica Database Support**--The agent can successfully back up replica databases (LCR and CCR), given the replication is healthy. This capability reduces the load on the active Exchange database. On Exchange Server 2010/2013/2016 systems, the agent can successfully back up replica databases in the Database Availability Group (DAG).

Microsoft VSS Writer Requirements

A shadow copy is created for each storage group (Exchange Server 2007) or mailbox database (Exchange Server 2010/2013/2016) that you back up when you back up systems using Microsoft Volume Shadow Copy Services (VSS).

To create the shadow copy, a volume shadow copy is created on each volume or mount point that contains the system files, log files, or database files of the storage group. The default initial size of the shadow copy storage area for the VSS is 300 MB. You should therefore have at least 300 MB of free disk space available on each shadow copy storage volume.

The size of the shadow copy storage area may increase when VSS creates multiple shadow copies on the same volume concurrently. In this case, more available free disk space is required to ensure that your backups are successful.

For more information, see *Volume Shadow Copy Service Tools and Settings* on the Microsoft web site.

Database Level Views in the Backup Manager

In this section:

- [Database Level Views - Exchange Server 2007](#) (see page 37)
- [Database Level Views - Exchange Server 2010/2013/2016](#) (see page 38)

Database Level Views - Exchange Server 2007

Depending on your configuration, Microsoft Exchange Server – Database Level appears in the Backup Manager under the following objects:

- Windows Systems
- Exchange Organization

The following diagram illustrates that when you expand the Microsoft Exchange Server – Database Level object, you can view your local and remote Exchange servers. When you expand a server, you can view the databases and their components that you can protect using database level backup and restore processes.



To set options for the respective databases, right-click the Microsoft Exchange Server - Database Level object and select options from the pop-up menu.

Database Level Views - Exchange Server 2010/2013/2016

Effective with Microsoft Exchange Server 2010/2013/2016, any Exchange Server 2010/2013/2016 servers in your environment now appear under the Exchange Organization, rather than under Windows Systems. Servers running versions of Exchange Server prior to 2010 still appear under both Windows Systems and Exchange Organization, no matter which version of the Arcserve Backup Agent for Microsoft Exchange Server installed. If you select an Exchange server for backup under Windows Systems and Exchange Organizations, your backup data is duplicated.

When you expand the Exchange Organization object, you can view your standalone servers and Database Availability Groups (DAG). When you expand a server or DAG, you can see the databases and components you can protect using Database Level backup and restore.

Note: Member servers in a DAG are not shown. Only master databases are shown. Recovery Databases (RDB) are not shown.

Backup Agent Service Account Requirements for Database Level Backup and Restore

To perform database level backup and restore jobs, your backup agent service account must meet the following criteria on the Exchange Server:

It must be:

- A domain account.
- A member of the Administrator group.
- A member of the Backup Operators group.
- (Exchange Server 2007 systems) Assigned either the Exchange Organization Administrator Role, or the Exchange Server Administrator Role.
- (Exchange Server 2010/2013/2016 systems) Assigned the Exchange Organization Management Role.

Notes:

For Exchange Server 2007

The service account needs to be assigned to Exchange View-Only Administrators when you do not use the following options:

- Allow databases of destination storage group to be overwritten
- Dismount database before restore
- Create Recovery Storage Group automatically

For Exchange Server 2010/2013/2016

The service account needs to be assigned only to the Exchange View-Only Organization Management role when you do not use the following options:

- Allow databases to be overwritten
- Dismount databases before restore
- Create Recovery Database automatically

If the database level backup service account has View-Only Organization Management role privileges, the following property is not available: the list of servers that have a copy of the database. This property is available when Exchange Organization Management Role privileges are used.

If you use the client agent with local account privileges to back up an Exchange Server 2010 mailbox folder, the database files and transaction log files are included in the backup job. These files are excluded only when backed up with a domain account with at least Exchange View-Only Organization Management privileges.

Database Level Backup

This section contains the following topics:

[Database Level Backup Options by Version](#) (see page 40)

[Database Level Global Options](#) (see page 41)

[Specify Backup Options for a Specific Database Level Backup Job](#) (see page 44)

[Perform a Database Level Backup](#) (see page 49)

[Configure the Agent for Database Level Backup and Restore](#) (see page 51)

Database Level Backup Options by Version

Backup options control how Arcserve Backup protects your data. The following matrix lists the options available by Exchange Server version. For descriptions of each agent, see the topic, [Database Level Global Options](#) (see page 41). For information on using options with a specific version of Exchange Server, see the related topics.

Options are applied at a global level by default. You can override global options by right-clicking a database and choosing Agent Option from the shortcut menu. Some of the following options are available only from the shortcut menu; they are noted.

	Exchange Server 2007	Exchange Server 2010/2013/2016
Backup Methods		
Use globally scheduled Custom or Rotation backup method	yes	yes
Full Backup	yes	yes
Copy Backup	yes	yes
Incremental Backup	yes	yes
Differential Backup	yes	yes
Backup Sources		
Use backup source specified in global agent options	yes (Agent Option)	yes (Agent Option)
Back up from active database	yes (Agent Option)	yes
Back up from replica	yes (Agent Option)	yes

Back up from active if there is no healthy replica available	yes (Agent Option)	yes
Database Availability Group Options		
Choose replica server according to database copy activation preference	no	yes
Customize preference	no	yes (Agent Option)
Reset All	yes (Agent Option)	yes (Agent Option)

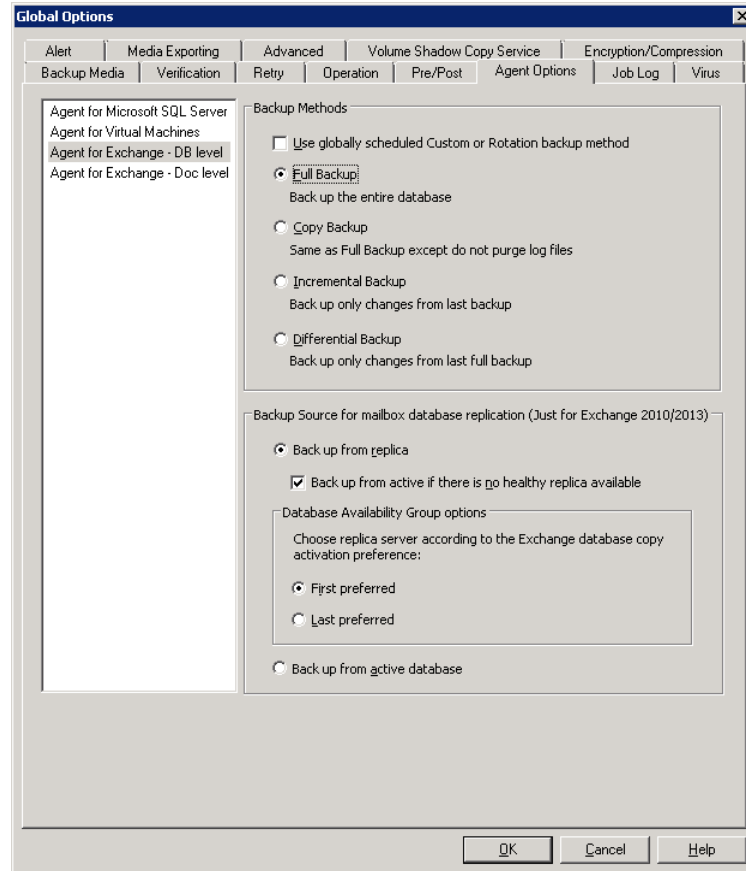
Agent Options are available only with this release of the Arcserve Backup Agent for Microsoft Exchange.

Database Level Global Options

The agent lets you configure default backup options for all Exchange Database Level backup jobs using the Global Options in the Backup Manager. Setting default options is appropriate for bulk jobs because these settings apply to all Exchange Server versions. You may override global options for a specific database using local agent options. For more information, see the topic, *Specify Backup Options for a Specific Database Level Backup Job*.

The following describes all options regardless of Exchange Server version. For information on what options are available by server version, see the related topics.

To set database level global options, open the Backup Manager and click Options. From the Global Options dialog, click the Agent Options tab. From the list of available agents on the left, select Agent for Exchange Server - DB Level.



Backup Methods

Use globally scheduled Custom or Rotation backup method

(Enabled by default) This option backs up using the Backup Method defined on the Schedule tab in the Backup Manager. You must disable this option if you want to set a different backup method for Exchange Database level backup jobs.

Note: If you do not disable this and select Custom Schedule on the Schedule tab, there is no difference between the full (Keep Archive Bit) and the Full (Clear Archive Bit) backup methods; they each function as full backups.

Full Backup

(Enabled by default) This option backs up the entire database, including the log files, and marks all log files that have been backed up in preparation for a subsequent incremental or differential backup. The backup operation then purges the committed log files.

Note: Always perform a full backup when running the agent for the first time, after upgrading to a Service Pack, and after performing a restore.

Copy Backup

This option backs up the entire database, including the log files, but does not mark the files as having been backed up. Use a copy backup if you want to make a full backup of your data but do not want to disrupt any existing incremental or differential backups.

Note: The log files are not truncated during a copy backup.

Important! If you select to back up only a mailbox store or public folder store without dynamically selecting the entire storage group, the copy backup method is automatically used so that the storage group's logs are not affected.

Incremental Backup

This option backs up the log files that have changed since the last full or incremental backup and marks them as backed up. The log files are also truncated. When restored, the log files are applied to re-create the database at the time of backup.

Differential Backup

This option backs up the log files that have changed since the last full backup. The log files are not truncated. It does not mark them as backed up.

Note: Microsoft does not support incremental or differential backups when the Circular Logging feature is enabled. If you do not disable Circular Logging and submit an incremental or differential backup job, the Agent automatically converts the job to a full backup. If you submit an incremental or differential job without first performing a full backup of the storage group or database, the Agent automatically converts the job to a full backup. If you perform an incremental or differential backup when an Exchange Server joins or disjoins a (Microsoft Exchange Server 2010) Database Availability Group (DAG), the job is converted to a full backup.

Backup Sources (Exchange Server 2010/2013/2016 only)**Back up from replica**

This option performs a backup job from a healthy replication.

Back up from Active Database if backup from replica fails

If there is no healthy replica available and this option is selected, the backup job is performed from the active database. Otherwise, the job fails.

Back up from Active Database

This option specifies the active database as the backup source.

Database Availability Group Options (Exchange Server 2010/2013/2016 only)

Choose replica server according to the database copy activation preference (This option is set only from Agent Option.)

Select this option to instruct the agent to use the sequence in the Exchange Server configuration to determine which server takes over in the event of failure. You must indicate First or Last preferred activation preference. Activation preference sequence can be configured using the Exchange PowerShell cmdlet:

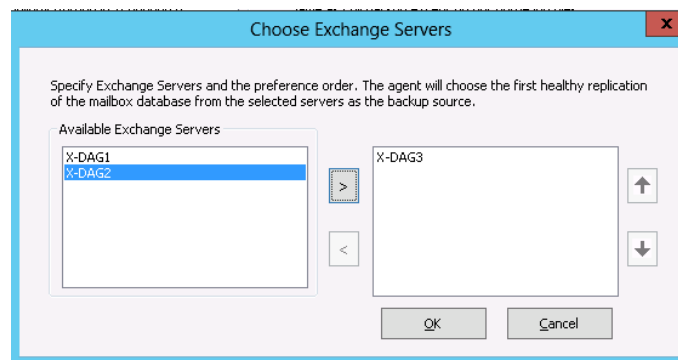
```
Set-MailboxDatabaseCopy -Identity MDB1WBX2 -ActivationPreference 1
```

To get the activation preference, use the following cmdlet:

```
Get-MailboxDatabaseCopy -Identity MDB1WBX2 | fl ActivationPreference
```

Customize server preference

Select this option to activate the Choose Exchange Servers button. From the Choose Exchange Servers dialog, choose an Available Exchange Server to use as a selected backup source. Change the sequence using the direction buttons, as needed.

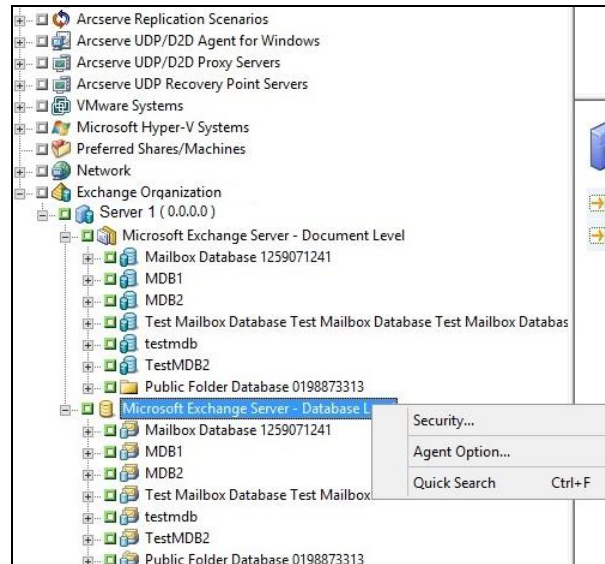


Specify Backup Options for a Specific Database Level Backup Job

When you submit a backup job, it uses Global Options by default. You can override Global Options and set options for a specific Exchange Server object using local agent options.

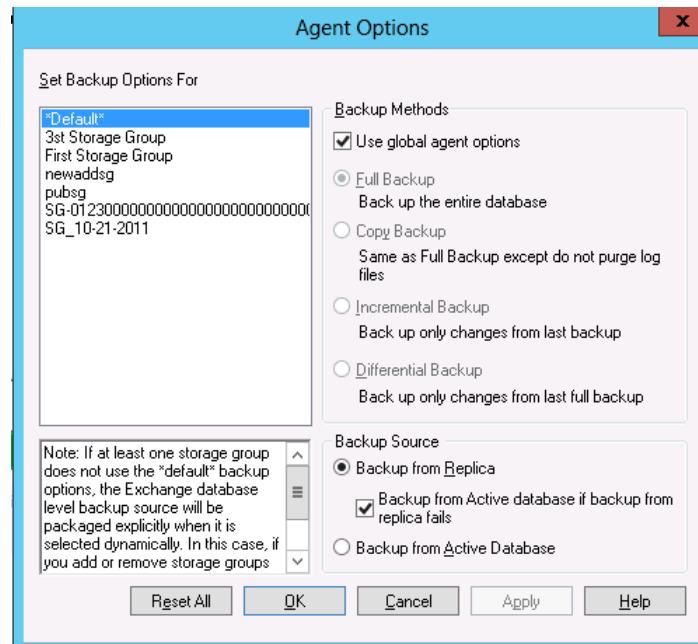
To set local agent options, right-click the Database Level Agent object (Microsoft Exchange Server - Database Level), and select Agent Option from the shortcut menu.

The Agent Option dialog opens.

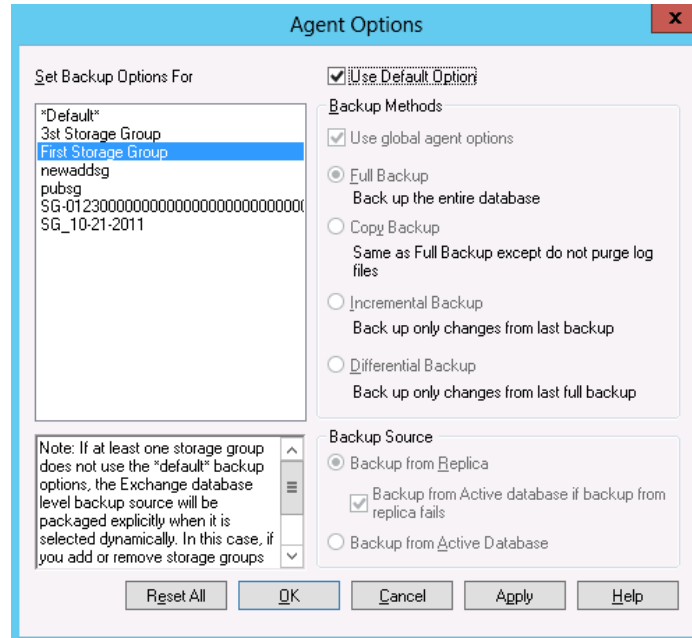


For Exchange Server 2007

In Exchange Server 2007, you can set options for all storage groups using the *Default* selection. See Database Level Global Options for descriptions of the options.



Or, you can apply options unique to a specific storage group. Select a storage group from the list on the left and clear the checkmark from Use Default Option to activate additional settings. The settings you enable are applied to only that storage group.



Important! If at least one storage group does not use the *default* backup options, the Exchange database level backup source will be packaged explicitly when it is selected dynamically. In this case, if you add or remove storage groups from the Exchange server, you must repackage the jobs. For information about packaging jobs, see the *Administration Guide*.

Reset All

The Reset All button resets the options selected back to the default settings for all of your Exchange Server storage groups.

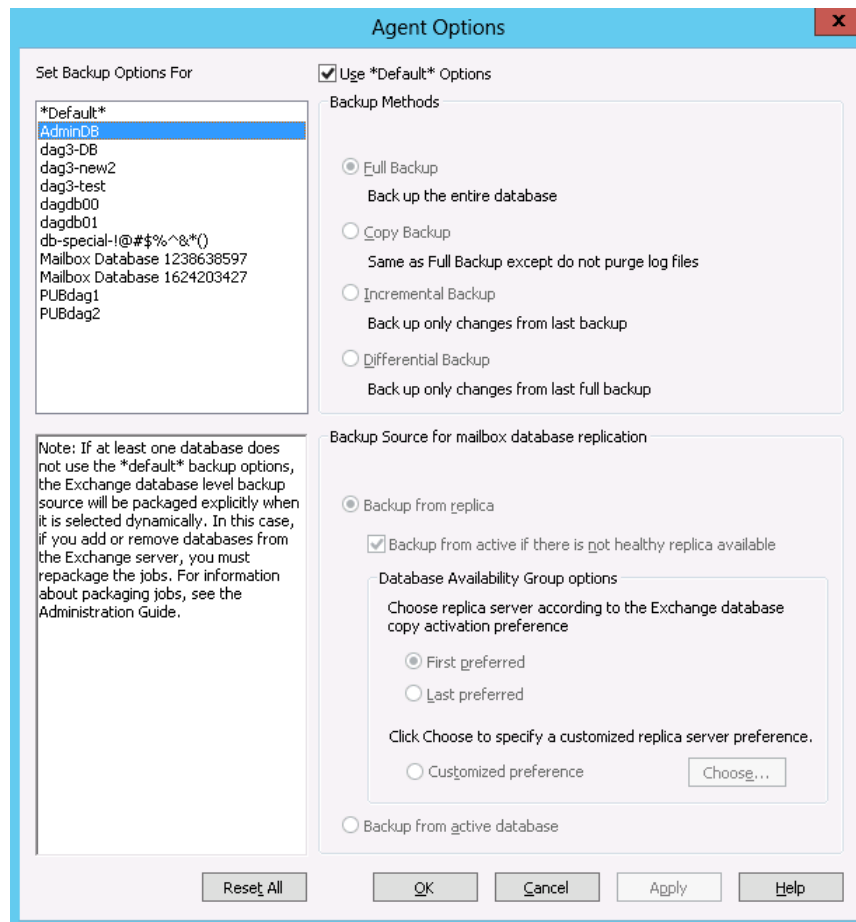
Specify a backup method and source according to the information in the topic, Database Level Global Options.

For Exchange Server 2010/2013/2016

There are no storage groups in Exchange 2010/2013/2016. You can specify a backup method for all databases using the *Default* selection.

The screenshot shows the 'Agent Options' dialog box with the title bar 'Agent Options' and a close button. The main area is titled 'Set Backup Options For'. On the left, there is a list of database names: '*Default*', 'AdminDB', 'dag3-DB', 'dag3-new2', 'dag3-test', 'dagdb00', 'dagdb01', 'db-special-!@#%&^*()', 'Mailbox Database 1238638597', 'Mailbox Database 1624203427', 'PUBdag1', and 'PUBdag2'. The '*Default*' option is selected. Below this list is a note: 'Note: If at least one database does not use the *default* backup options, the Exchange database level backup source will be packaged explicitly when it is selected dynamically. In this case, if you add or remove databases from the Exchange server, you must repackage the jobs. For information about packaging jobs, see the Administration Guide.' On the right, there are two sections. The first is 'Backup Methods' with a checked box for 'Use backup method specified in global Agent Options'. Below this are four radio button options: 'Full Backup' (selected), 'Copy Backup', 'Incremental Backup', and 'Differential Backup'. The second section is 'Backup Source for mailbox database replication' with a checked box for 'Use backup source specified in global Agent Options'. Below this are two radio button options: 'Backup from replica' (selected) and 'Backup from active database'. Under 'Backup from replica', there is a checked box for 'Backup from active if there is not healthy replica available'. Below this is a section for 'Database Availability Group options' with the text 'Choose replica server according to the Exchange database copy activation preference'. There are three radio button options: 'First preferred' (selected), 'Last preferred', and 'Customized preference'. Below the 'Customized preference' option is a 'Choose...' button. At the bottom of the dialog are four buttons: 'Reset All', 'OK', 'Cancel', and 'Apply', followed by a 'Help' button.

Or, you can specify options that are unique to the selected database. Select a mailbox database from the list on the left and then clear the check mark for Use Default Options to activate additional settings.



Important! If at least one database does not use the *default* backup options, the Exchange Server database level backup source is packaged explicitly when it is selected dynamically. In this case, if you add or remove databases from the Exchange Server, you must repackage your jobs. For more information about packaging jobs, see the *Arcserve Backup Administration Guide*.

Reset All

The Reset All button resets the options selected back to the default settings for all of your Exchange Server databases.

Specify a backup method and source according to the information in the topic, [Database Level Global Options](#) (see page 41).

Perform a Database Level Backup

Before you submit a database level backup job, make sure that the Exchange server databases are mounted on your server and that the Microsoft Exchange Information Store and the Arcserve Backup Universal Agent service are running on your server.

Note: The following steps apply to all versions of Microsoft Exchange Server.

To perform a database level backup

1. From the Arcserve Backup Home Page, select Backup from the Quick Start menu.
The Backup Manager window opens.
2. From the Backup Manager window, select the backup source (storage group, or databases you want to back up).
3. (Optional) Right-click the backup source and select Agent Option to specify any options unique to this job. These options override or are combined with applicable Global Options. For more information, see the topic, Database Level Global Options.

Note: Always perform a full backup when running the agent for the first time. This allows you to store a complete set of Exchange Server databases.

4. (Optional) Choose the desired server-side features such as CRC checking, data encryption, or data compression. For more information, see the *Arcserve Backup Administration Guide*.
 - a. From the Backup Manager window, click the Options toolbar button.
The Options dialog opens.
 - b. For CRC checking, select the Operations tab.
Enter a check mark in the Calculate and Store CRC Value on Backup Media option and click OK.
 - c. For data encryption and compression, select the Encryption/Compression tab.
Set Encrypt data - Select at Agent.
Set Session/Encryption password. You must provide a password to use data encryption.
Set Compress data - Select at Agent.
 - d. Click OK.
5. Click the Destination tab and specify a backup destination.

6. Click the Schedule tab.

If you want to use a Custom Schedule, select a Repeat Method. If you want to use a rotation scheme, select the Use Rotation Scheme option and set up your scheme. For more information on scheduling jobs and rotation schemes, see the online help or the *Administration Guide*.

Note: If you clear the check mark from the Use globally scheduled backup method option on the Agent Options dialog, the options in the Backup Method section on the Schedule tab do not apply. For more information, see Database Level Backup Global Options.

7. Click the Submit toolbar button.

The Security and Agent Information dialog opens.

8. From the Security and Agent Information dialog, ensure that the correct user name and password are filled in for each object. If you need to enter or modify a user name or password, click the Security button, make your changes, and then click OK.

Note: Database security is first priority. If database security credentials are not required, user security credentials take effect.

9. Click OK.

The Submit Job dialog opens.

10. From the Submit Job dialog, select Run Now to run the job immediately, or select Run On and select a future date and time when you want the job to run.

Enter a description for your job.

If you selected multiple sources to back up and want to set the priority in which the job sessions initiate, click Source Priority. Use the Top, Up, Down, and Bottom buttons to change the order in which the jobs are processed. When you finish setting priorities, click OK.

On the Submit Job page, click OK to submit your job.

In addition to performing a database level backup job, Microsoft Exchange is enabled to check the database integrity. However, if the database contains a large amount of log files then checking the database integrity becomes time consuming. To prevent this from occurring, set the following registry key to skip the integrity:

Set this registry on the Microsoft Exchange Server:

Key: HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\Arcserve
Backup\ExchangeDBAgent\Parameters

Value Name: (DWORD) SkipIntegrity

Value: 0 or 1

Note: The value of 1 skips the integrity checking where 0 performs the integrity checking. This registry applies to Exchange 2007/2010/2013/2016 Agents.

Important! Microsoft does not recommend disabling the DB integrity validation.

Configure the Agent for Database Level Backup and Restore

This section describes how to configure the agent for database level backup and restore on Exchange Server 2007, Exchange Server 2010/2013/2016 installations.

To configure the agent for database level backup and restore

1. From the Windows Start menu, select All Programs, Arcserve, Arcserve Backup, and Backup Agent Admin.

The Arcserve Backup Agent Admin dialog opens.

2. From the drop-down list, select Arcserve Backup Exchange Server Agent and click Configuration.

The Configuration dialog with the Exchange Database Level tab selected opens.

Important! The options displayed on the Configuration dialog vary based on the version of Exchange that you are using in your environment.

3. Specify the following options as necessary:

Note: The options listed below apply to Exchange Server 2007, and Exchange Server 2010/2013/2016 systems, unless otherwise noted.

- **Log Detail Level**--Do not change this value unless directed by a trained Arcserve Customer Support technician. This option specifies the level of detail on the debug trace and log in the log location you specify. The default Debug Level value is 1 and the supported range is between 0 and 5.
- **Single log file size**--This option specifies the maximum size of a single log file. After the file reaches the specified maximum file size, a new file is created.
Note: The default value for this option is 200 MB.
- **Max log files**--This option specifies the maximum number of log files. After the maximum number of log files reaches this value, the oldest log file is deleted and a new log file is created.
Note: The default value for this option is 50.
- **Retry Counter**--If an Exchange backup API error or time out occurs while trying to retrieve data from the Exchange server, this option lets you control the number of times you want to retry. The default Retry counter value is 2 and the supported range is between 0 and 10.
- **Retry Delay**--If an Exchange backup API error or time out occurs while trying to retrieve data from the Exchange server, this option setting lets you control the delay between retries. The default Retry Delay value is 20 and the supported range is between 0 and 60.

- **Log Locations**--Specifies the path to the log file.
- **Path for creating recovery storage group**--If the Recovery Storage Group (RSG) needs to be created during the restore operation, specify the path to the RSG.

Note: This option affects only Exchange Server 2007 systems.

- **Path for creating recovery database**--If the Recovery Database (RDB) needs to be created during the restore operation, specify the path to it.

Note: This option applies to Exchange Server 2010/2013/2016 systems.

4. Click **OK**.

The database level options are saved.

Database Level Data Restore

The following sections include information on the prerequisites you must meet before you perform a restore, the features that the agent offers when restoring from a Database Level backup, and the procedure for how to perform a restore.

Database Level Restore Prerequisites

Before you restore data, and to prepare your Exchange server, you must complete the following prerequisite tasks:

- Dismount the restore destination databases.

Note: You can dismount databases automatically using the agent option, Automatically dismount database before restore. For more information on this option, see Database Level Restore Options.

- Enable This database can be overwritten by a restore.

Note: You can also enable this by using the agent option, Allow database to be overwritten by restore. For more information on this option, see Database Level Restore Options.

- Ensure that all required Exchange Server services are running on the Exchange server.

- Ensure the following requirements are met according to your version of Exchange Server:
 - **For Exchange Server 2007** -- Ensure that the agent is installed on the same system as the Exchange Server and that the Arcserve Backup Universal Agent Service is running on that system.
 - Important!** Do not use the *tilde* special character (~) in Storage Group names or the Recover Storage Group job may fail.
 - **For Exchange Server 2010/2013/2016** -- Ensure that the agent is installed on the same system as the Exchange Server that is to be used as the backup source and that the Arcserve Backup Universal Agent Service is running on that system.

Database Level Restore Sets

When you back up an Exchange Server 2007, each storage group you selected to back up is saved on media as an individual session. When you back up an Exchange Server 2010/2013 server, each database you selected to back up is saved on media as an individual session. To restore an Exchange server, you must restore all of the sessions that, when combined, completely restore the backed up object. These sessions are called your restore set.

The number of sessions in your restore set depends on the backup methods you used:

- If you backed up using only the full backup method, your restore set includes only this full session.
- If you backed up using both full and incremental backups, your restore set includes your full session and at least one, but up to as many incremental sessions as you want to include. For example, in the following backup scenario, your restore set can be full and incremental 1, full and incremental 1 and 2, full and incremental 1, 2, and 3, or full and incremental 1, 2, 3, and 4:

Full	Incremental 1	Incremental 2	Incremental 3	Incremental 4
------	---------------	---------------	---------------	---------------

- If you backed up using both full and differential backups, your restore set includes your full session and one differential session. For example, in the following backup scenario, your restore set can be full and differential 1, full and differential 2, full and differential 3, or full and differential 4:

Full	Differential 1	Differential 2	Differential 3	Differential 4
------	----------------	----------------	----------------	----------------

After you determine your restore set, the entire set must be selected when you submit the restore job. When using the Restore by Tree method, select the last incremental or differential session in your restore set and the agent will automatically include the full session for you.

To select restore sets in the Restore Manager

1. From the Arcserve Backup Home Page, select the Restore Manager from the Quick Start menu.
2. When the Restore Manager opens, select Restore by Tree in the drop-down box below the Source tab.
3. Expand the server that has the Information Store that you backed up, select the Information Store, Storage Group, or database object, and select a Recovery Point session. Choose a backup date and then select a Recovery Point for that date. If your restore set includes incremental or differential backups, select the last incremental or differential backup in the set and the agent will automatically include the full backup for you.
4. Set your restore options, specify a destination, and submit the job.

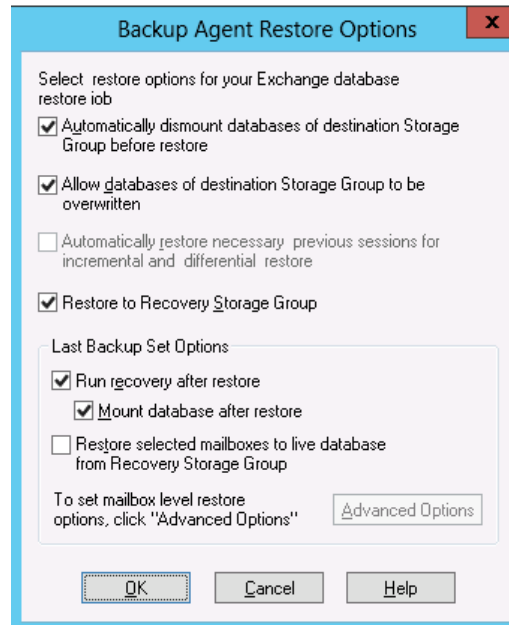
Note: If you use Restore by Session rather than Restore by Tree, you must repeat Steps 1 to 4 for each session in your restore set.

Database Level Restore Options

When you create a restore job, you can specify restore options to customize the job. The following topics describe the options available to each version of Exchange Server.

Exchange Server 2007 Database Level Restore Options

The Backup Agent Restore Options dialog displays the default options for a full backup session.



Note: For full backup sessions, the option, Automatically restore necessary previous sessions for incremental and differential restore, is disabled by default. For incremental and differential backup sessions, the option is selected and enabled by default.

Automatically dismount databases of destination Storage Group before restore--To prepare your Exchange server before you restore, you must dismount the database stores within all storage groups that you want to restore. To do this automatically, enable this option. For information on how to dismount databases manually, see Database Level Restore Prerequisites.

Allow databases of destination Storage Group to be overwritten--Before you restore, to prepare your Exchange server, you must allow each database store in the Storage Groups you want to restore to be overwritten. To do this automatically, enable this option. For information on how to do this manually, see Database Level Restore Prerequisites.

- **Automatically restore necessary previous sessions for incremental and differential restore**--This option applies to incremental and differential sessions only.
 - When you enable this option for incremental session restores, the last full backup session and necessary incremental backup sessions will be restored in sequence.
 - When you enable this option for differential session restores, the last full backup session will be restored before restoring the selected session.

- **Restore to Recovery Storage Group**--This option lets you restore the databases to the Recovery Storage Group (RSG). When you select this option you can specify a path to the RSG using the Backup Agent Admin utility. Through the Backup Agent Admin, the agent creates a subdirectory to the path specified for the RSG labeled as follows:

\RSG_<Original SG Name>

The variable <Original SG Name> represents the name of the source storage group.

Notes:

- For more information about using the Backup Agent Admin to specify the path for the RSG, see Post-installation Tasks on Exchange Server 2007 Systems.
- If the RSG already exists in a different path, or the existing RSG represents a different storage group, the agent removes the existing RSG and recreates it for the destination storage group.
- The contents of the subdirectory “\RSG_<Original SG Name>” will be emptied before the agent creates the Recovery Storage Group.

Last Backup Set Options

- **Run recovery after restore**--Enable this option when you want to run recovery after the restore is completed.
 - If you are restoring a set, use this option only when you are restoring the last backup in the set.
 - If this option is not selected, the database is left in an intermediate state and is not yet usable but is ready for a subsequent differential or incremental restore.
 - If you are restoring data to its original location, all of the existing logs will be played back into the database during the recovery process. This process ensures that the databases will be restored to the current point in time. However, if the existing logs are corrupt or not in sequence, the recovery will fail.

Note: If you want to restore the storage group to the point of the last backup, you can use the Restore files to their original location restore method and do the following:

1. Dismount all of the databases in the storage group.
2. Delete or move the existing log files and the .chk file for the storage group to a different location.
3. Restore the storage group using the Run recovery after restore option.
4. Perform a full backup of the storage group.

Note: To ensure that subsequent differential and incremental backups are properly sequenced with the last full backup, you must perform a full backup of the storage group at this time. If you do not perform a full backup at this time, your attempts to restore the subsequent differential and incremental backups will fail.

- **Mount database after restore**--Instructs Exchange Server to mount the database after the restore is completed. If you would rather manually mount your database, disable this option.
- **Restore selected mailboxes to live database from Recovery Storage Group**--You can enable this option only if the Restore to Recovery Storage Group option is selected. This option lets you browse the restore source down to the mailbox level and select individual mailboxes as the restore source. When you restore data with this option enabled, the agent restores the entire database to the recovery storage group (RSG), and then restores the selected mailboxes to their original mailbox location from the RSG. The original mailbox is the mailbox that contains the same GUID as the source mailbox.

You can also use this option with respect to Dial Tone restore strategies for disaster recovery on Exchange systems. Dial Tone restore is a process that lets you restore email service to users quickly and then restore the users' previous data. For more information about Dial Tone restore strategies, see the Microsoft TechNet web site.

For more information, see [How to Select Restore Source Objects](#) (see page 69).

- **Advanced Options**--When you click this button, the Restore Mailbox Options dialog opens.

Important! The Advanced Options button is available only if the Restore selected mailboxes to live database from Recovery Storage Group is selected.

Advanced Options

The Restore Mailbox Options dialog contains three properties sheets that let you configure advanced options that apply to how Arcserve Backup restores mailboxes. From the Restore Mailbox Options dialog, you can perform the following tasks:

- Configure Restore Options
- Configure Folder Filters
- Configure Message Filters

Restore Options

The Restore Options properties sheet contains the following fields:

- **Global Catalog Server Name**--The name of the global catalog server to use for searching for the target mailbox.
Note: If you leave this field blank, the default global catalog server will be used.
- **Maximum number of bad items**--Specifies the number of corrupted items in a mailbox to skip before the exporting mailbox operation fails. The default value is 0.
- **Maximum number of threads**--Specifies the maximum number of threads to use for the restore. The default value is 4.
- **Target Folder**--Identifies the mailbox folder to which all data will be restored.

Notes:

- If you specify a target folder, all other folders will remain unchanged.
- If you do not specify a target folder, all data is restored to its original location.
- If you are restoring messages to their original folder, Arcserve Backup will not restore messages that exist in their original folder.

Folder Filters

The Folder Filters properties sheet contains the following fields and buttons:

- **Choose Filter Type**--Specifies whether you want the specified folders to be excluded or included during mailbox export.
- **Full path of folder for filtering**--Specifies the list of folders to include or exclude during the mailbox export.
- **Specify a path**--Specifies the path of the folder filter.

Note: All folder paths must be preceded by the backslash "\" character.

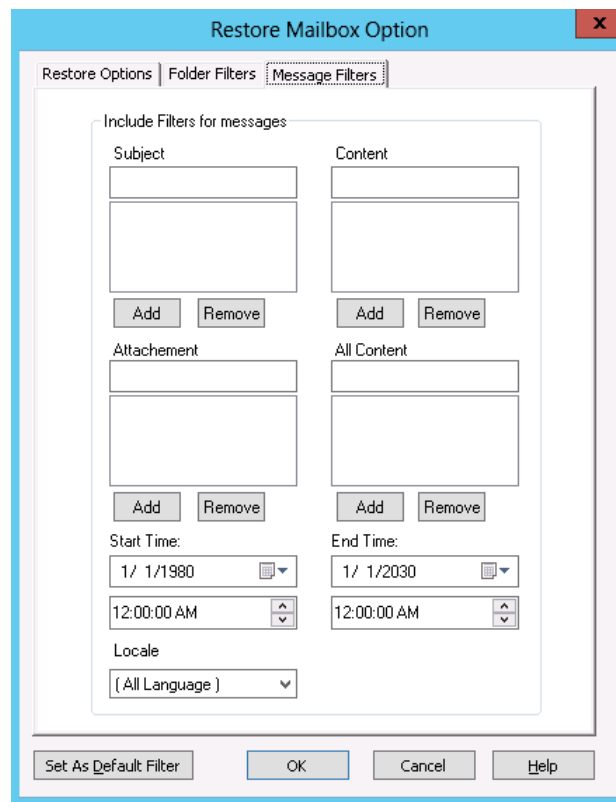


- **Add a path**--Click **Add** to add the specified folder to the folder list.

Note: To remove a folder from the folder list, select the folder from the list and then click Remove.

Message Filters

The Message Filters properties sheet contains the following fields and buttons:



Keywords

You can filter messages using a keyword contained in the subject, content, and the attachment file name. Click Add to add the keyword to the keyword list. To remove a keyword, select the keyword and then click Remove.

- **Subject filters**--Specifies the keyword filters for subjects of items in the source mailbox. This filter will find the search string even if it is part of a word.

Note: This filter is not a whole-word search.

- **Content filters**--Specifies the keyword filters for the message bodies of items in the source mailbox. This filter will find the search string if it is part of a word.

Note: This filter is not a whole-word search.

- **Attachment filters**--Specifies the keyword filters for attachment file names of messages in the source mailbox. If an Attachment filter string matches a word or part of a word in one of the message attachment file names, the message will be restored.

Note: Keyword filters for messages can be classified as include filters. Filters of this type let you restore only the messages that satisfy the filter search criteria. Therefore, if the filter search criterions for subject, content, and attachment filters are all satisfied, the message will be restored.

Start Time and End Time

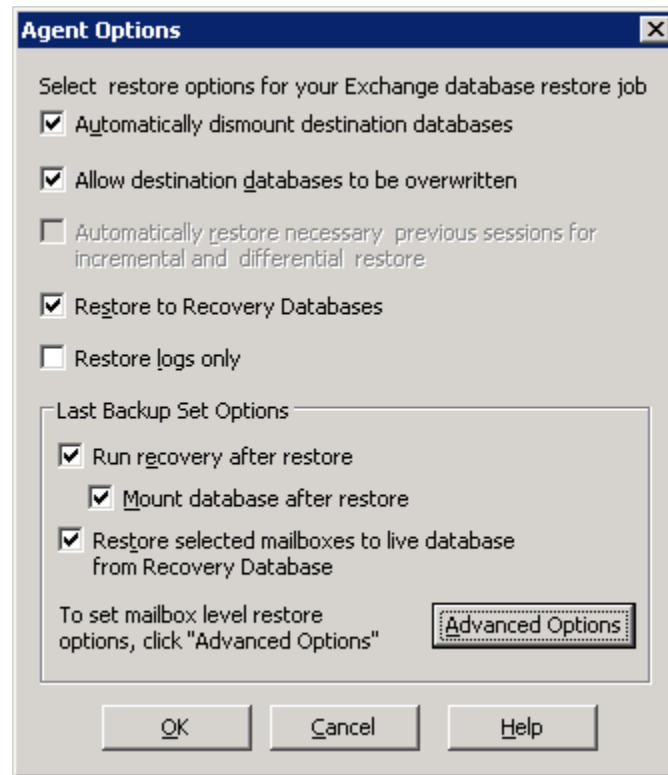
Specifies the start date (and time) and end date (and time) of messages that you want to filter and export from the source mailbox. Only messages in the mailbox with received dates that are after the start date and before the end date will be exported. The start date must precede the end date.

Locale

Use the Locale filters to specify source message locale. Only messages with the specified locale are restored.

Exchange Server 2010 Database Level Restore Options

The Agent Options dialog displays additional options for Exchange Server 2010. The options selected on the dialog are the default options for a full backup session.



The options are similar to those for Exchange Server 2007, with the following differences to support Exchange Server 2010:

Restore to Recovery Database

This option lets you restore data to the recovery database. It is disabled when restoring public folders because public folders cannot be restored to the recovery database. If you enable this option, you are prompted at job submission to create a new recovery database or select an existing one.

When the Restore to Recovery Database option is enabled, you can choose to restore to existing Recovery Databases or let the Agent create Recovery Databases at the location you specify.

When you are restoring a mailbox database to a Recovery Database in Database Availability Group (DAG) environments, you are prompted to choose a physical node, and to choose whether to create or overwrite an existing RDB.

Restore log files only

This option is available for full and copy backup sessions only. It is not selected by default.

Advanced Options -- Message Filters

The Message Filters tab contains the following fields:

The screenshot shows the 'Restore Mailbox Option' dialog box with the 'Message Filters' tab selected. The dialog has three tabs: 'Restore Options', 'Folder Filters', and 'Message Filters'. The 'Message Filters' tab contains a section titled 'Include Filters for messages' with four filter categories: 'Subject', 'Content', 'Attachment', and 'All Content'. Each category has a text input field and a list box below it, with 'Add' and 'Remove' buttons. Below these are 'Start Time' and 'End Time' fields with date and time pickers. The 'Start Time' is set to '1/ 1/1980' and '12:00:00 AM'. The 'End Time' is set to '1/ 1/2030' and '12:00:00 AM'. There is also a 'Locale' dropdown menu set to '{ All Language }'. At the bottom are buttons for 'Set As Default Filter', 'OK', 'Cancel', and 'Help'.

Subject filters

Use Subject filters to specify the keyword filters for subjects of items in the source mailbox. This filter finds the search string if it is part of a word. Subject filters are not whole-word searches.

Content filters

Content filters specify the keywords for message bodies and attachments of items in the source mailbox. This filter finds the search string if it is part of a word. Content filters are not whole-word searches.

Sender filters

Use the Sender filters to specify the keyword for messages in the source mailbox sent by a specific person.

Attachment filters

Use Attachment filters to specify the keywords for attachment file names of messages in the source mailbox. If an Attachment filter string matches a word or part of a word in one of the message attachment file names, the message is restored.

All Content filters

All Content filters specify the keywords for the subject, message bodies and attachments of items in the source mailbox and finds search strings if they are part of words.

Recipient filters

Use the Recipient filters to specify keywords for messages in the source mailbox sent to a specific individual.

Start and End Times

Use the Start and End Time filters to specify the start date or time and end date or time of messages that you want to export from the source mailbox. Only messages in the mailbox received after the start date and before the end date are exported. Start dates must precede end dates.

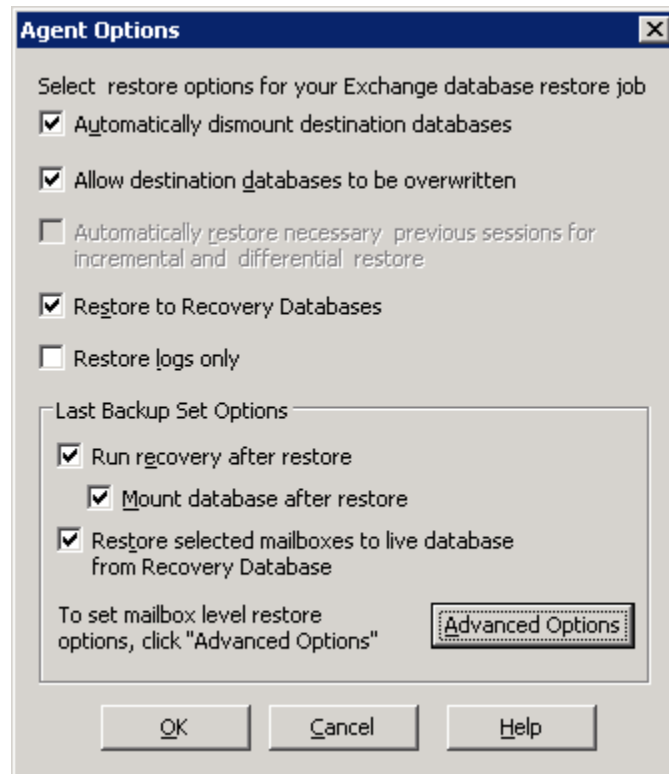
Locale

Use the Locale filters to specify source message locale. Only messages with the specified locale are restored.

These filters can be classified as Include filters. Include filters let you restore only the messages that satisfy the filter search criteria.

Exchange Server 2013/2016 Database Level Restore Options

The Agent Options dialog displays additional options for Exchange Server 2013/2016. The options that are selected on the dialog are the default options for a full backup session.



The options are similar to the Exchange Server 2010 options, with the following differences to support Exchange Server 2013/2016:

Advanced Options

When you click the Advanced Options button, the Restore Mailbox Option dialog opens. The Restore Mailbox Option dialog contains two tabs that let you configure advanced options on how Arcserve Backup restores mailboxes.

- Restore Options
- Folder Filters

Note: For a detailed description, refer to the Exchange Server 2013/2016 New-MailboxRestoreRequest article from the <http://technet.microsoft.com> website.

Restore Mailbox Option -- Restore Options

The Restore Options tab contains the following fields:

Source root folder

Specifies the root folder of the mailbox from where the data is restored.

Note: If this field is left blank, then all folders are restored.

Target root folder

Specifies the top-level folder where the data is restored.

Note: If this field is left blank, then all folders are restored to the top of the folder structure in the target mailbox or archive. The content is merged under the existing folders and the new folders are created when they do not exist in the target folder structure.

Conflict resolution

Specifies the following values for the Microsoft Exchange Server 2013/2016 Mailbox Replication Service (MRS) to select from when there are multiple matching messages in the target:

- KeepSourceItem (default)
- KeepLatestItem
- KeepAll

Copy associated message

Specifies whether associated messages are copied when a request is processed. Associated messages are special messages that contain hidden data with information about rules, views, and forms. This parameter accepts the following values:

- DoNotCopy (default)
- MapByMessageClass--This option lets you search for the corresponding associated message with the MessageClass attribute of the source message. If the associated message contains the MessageClass attribute in both source and target folders, then the associated message in the target is overwritten. If the associated message is not in the target, then a copy of the message is created in the target.
- Copy--This option copies associated messages from the source to the target. If the same message type exists in both the source and the target location, then the associated messages are duplicated.

Note: Content filtering does not apply to associated messages.

Target is archive

Specifies that the content is restored to the target mailbox archive.

Exclude dumpster

Specifies whether to exclude the Recoverable Items folder or not. You do not have to include a value with this parameter. If you do not specify this parameter, the Recoverable Items folder is copied with the following subfolders:

- Deletions

- Versions
- Purges

Bad item limit

Specifies the number of bad items skipped when the request encounters corruption in the mailbox. When not skipping bad items, use value 0. The valid input range for this parameter is from 0 through 2147483647. The default value is 0.

Note: Keeping the default value 0 is recommended. Only change this parameter value if the request fails. When you set this parameter to 50 or higher, the command fails and you receive a warning message:

"Please confirm your intention to accept a large amount of data loss by specifying AcceptLargeDataLoss."

If you receive this warning message, run the command again and use the AcceptLargeDataLoss parameter. Any corrupted items become unavailable after the process is complete and no other warnings appear.

Large item limit

Specifies the number of items skipped in the mailbox because these items exceed the item size limit for the target mailbox database. When not skipping any large items, use the value 0.

Note: If you set the LargeItemLimit parameter to 51 or higher, it is required to include the AcceptLargeDataLoss parameter.

Accept large data loss

Specifies that a large amount of data loss is acceptable if the BadItemLimit is set to 51 or higher. Items are considered corrupted if the item cannot be read from the source database or the item cannot be written to the target database. The corrupted items results to being unavailable in the destination mailbox or .pst file.

Priority

Specifies the priority of the mailbox restore request. Select one of the following values:

- Emergency
- Highest
- Higher
- High
- Normal
- Low
- Lower
- Lowest

Workload type

Specifies the type of restore request that is based on the type of Exchange deployment or the purpose of the restore request. Select one of the following values:

- None
- Local
- Onboarding
- Offboarding
- TenantUpgrade
- LoadBalancing
- Emergency

Name prefix

Specifies the prefix of the restore request for tracking and display purposes.

Note: If you do not specify a name prefix, then Microsoft Exchange Agent automatically generates a default name (Timestamp + Mailbox GUID).

Restore Mailbox Option -- Folder Filters

The Folder Filters tab lets you exclude or include specific folders during a restore request by clicking Add or Remove.

Database Level Restore Options Selection

When to use Database Level Restore options depends on your restore set. The following tables describe when to use each restore option. If you restore using the Restore by Tree method, the correct restore options are automatically applied for you. If you restore data using Restore by Session, use the following information to determine when to use each option.

Table legend

- N -- You are not required to enable the option
- Y -- You must use the option
- Y/N -- You may, but are not required to enable the option

To read the tables, consider the heading first, and then the column headings for each option.

If your restore set contains incremental backups:

Type	Full	Intermediate Incremental	Last Incremental
Run Recovery after restore (2007/2010/2013/2016)	N	N	N
Mount database after restore	N	N	Y/N

If your restore set contains differential backups:

Type	Full	Differential
Run Recovery after restore (2007/2010/2013/2016)	N	N
Mount database after restore	N	Y/N

If your restore set is a full backup:

Type	Full
Apply existing logs	Y/N
Run Recovery after restore (2007/2010/2013/2016)	N

Type	Full
Mount database after restore	Y/N

Selecting Database Restore Sources and Destinations

This section contains the following topics:

[How to Select Restore Source Objects](#) (see page 69)

[How to Select Restore Destinations](#) (see page 70)

[Supported Database Restore Destinations by Version](#) (see page 71)

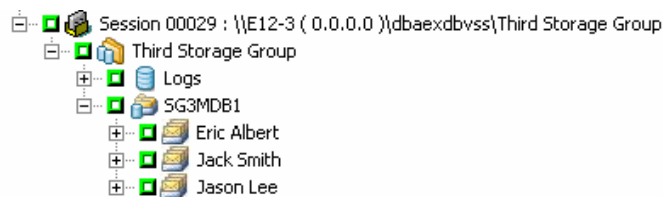
[Set the File System Path Manually When Restoring Data to a Windows File System](#) (see page 73)

How to Select Restore Source Objects

The method that you use to select the source that you want to restore depends on the methods used to back up the sessions.

- **Select individual mailboxes from Full and Copy Backups (only Exchange Server 2007, 2010, 2013, and 2016), and Incremental and Differential Backups (only Exchange Server 2010, 2013, and 2016)**

When the options Restore selected mailboxes to live database from Recovery Storage Group or Restore selected mailboxes to live database from Recovery Database is selected, you can browse the restore source down to the mailbox level and select the individual mailboxes as the restore source, as illustrated by the following screen:



■ Select Partial Storage Group (only Exchange Server 2007)

When you are restoring the full or copy session, the default restore options let you select a storage group, database, or logs to restore. If at least one database is selected, the logs are selected automatically, as illustrated by the following screen:



Note: Even if you only select some databases of the storage group to restore, all the databases of the storage group will have to be dismounted before restore.

■ Select Incremental and Differential sessions

When you are restoring incremental or differential backup sessions of Exchange Server 2007, you can select only the entire storage group because the incremental and differential backup sessions contain only log files. When you are restoring incremental or differential backup sessions of Exchange Server 2010, 2013, or 2016, you can select the entire database to restore or select the individual mailboxes.

How to Select Restore Destinations

When restoring a database level backup, you can restore data to its original location (default) or you can restore data to an alternative location.

Use the option, Restore files to their original location, only when you want to restore data to the exact location that you backed up from and the hierarchy of the server has not changed.

For all other scenarios, you must restore data to an alternative location.

Note: The restore target Exchange Server must be the same version as the source Exchange Server.

- **For Exchange Server 2007, 2010, 2013, and 2016** -- To restore data to an alternate destination, the Restore Manager must communicate with the Exchange agent on the target server so that it can browse for Exchange objects. You can enter the agent backup account by right-clicking the Microsoft Exchange Server - Database Level. On the agent side, if the agent backup account is not provided, the machine user account is used instead. Restore destination browsing can be down to the database level.

Supported Database Restore Destinations by Version

You can restore to alternative locations such as a different server, storage group, database or Windows file system. When you restore to an alternative location, the destination you can select depends on the source you select. The following chart lists the source objects you can select and their supported destinations.

For Exchange Server 2007

Source Objects	Supported Destinations
More than one storage group	<p>Microsoft Exchange Server - Database Level. In this case, the storage groups and databases with the same names as the sources must exist at run time on the destination server or the restore job fails.</p> <p>Windows File System</p>
One entire storage group, or more than one database in a storage group	<p>Microsoft Exchange Server - Database Level. In this case, the storage groups and databases with the same names as the sources must exist at run time on the destination server or the restore job fails.</p> <p>A storage group -- In this case, the databases with the same names as the source must exist at run time or the restore job fails.</p> <p>Windows File System</p>
One database	<p>Microsoft Exchange Server - Database Level. In this case, the storage groups and databases with the same names as the sources must exist at run time on the destination server or the restore job fails.</p> <p>A storage group -- In this case, the databases with the same names as the source must exist at run time or the restore job fails.</p> <p>A database -- If a mailbox is restored to a public folder database or a public folder database is restored to a mailbox, the restore job may fail at run time.</p> <p>Windows File System</p>
Logs	<p>Microsoft Exchange Server - Database Level. In this case, the storage groups and databases with the same names as the sources must exist at run time on the destination server.</p> <p>A storage group.</p> <p>Windows File System</p>

Note: If you select multiple sources to restore, you must select a destination that supports all sources.

For Exchange Server 2010/2013/2016

Alternative locations can be a different server or database. It can also be a Windows file system. When restoring to an alternate location, the destination you can select depends on the source you select.

Source Objects	Supported Destinations
More than one database	Microsoft Exchange Server - Database Level - In this case, the databases with the same names as the sources must exist at run time on the destination server, or the restore job fails. A Windows File System.
One database	Microsoft Exchange Server - Database Level - In this case, the database with the same name as the source must exist at run time on the destination server or the restore job fails. A database - If a mailbox is restored to a public folder database or a public folder database is restored to a mailbox, the restore job may fail at run time. A Windows File System.
Logs	Microsoft Exchange Server - Database Level - In this case, the databases with the same names as the sources must exist at run time on the destination server. A database. A Windows File System.

Set the File System Path Manually When Restoring Data to a Windows File System

(For Exchange Server 2007, 2010, 2013, and 2016) -- If you want to restore data to a Windows file system, you must select the Exchange database level agent in the Restore Manager Window. When you select this agent, the path to the target system appears in the Destination field. To complete the path to the Windows file system, enter the path to the file system into the Destination field immediately after the name of the target system.

To set the path manually when restoring data to a Windows file system

1. Open the Restore Manager and select the destination tab.
2. Clear the check mark from the **Restore files to their original location(s)** option.
3. Expand the Windows Systems or Exchange Organization object and browse to the target system that you want to restore the data to.

Expand the target system and select the **Microsoft Exchange Server - Database Level** object.

Arcserve Backup automatically populates the Destination field with the following:

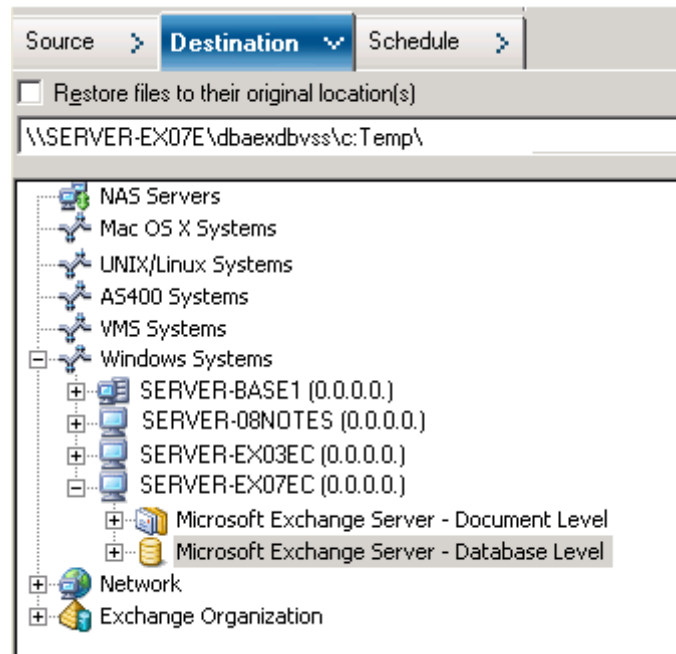
For Exchange Server 2007, use:

```
\\<server name>\dbaexdbvss
```

For Exchange Server 2010/2013/2016, use:

```
\\<server name>\dbaedbvss
```

4. Enter path to the file system directory, for example c:\Temp.



Note: If the file system directory does not exist on the target system, Arcserve Backup creates the directory that you specified for you (for example, c:\Temp).

When restoring Exchange Server 2007, the agent creates one subdirectory for each storage group under the specified destination at restore time labeled as follows:

\<original storage group>

Where <original storage group> represents the name of the source storage group.

For example, the path to restore the storage group named "First Storage Group" is as follows:

c:\ExchTemp\First Storage Group

When you restore a full or copy backup to a file system, the agent empties the contents of the target folder before the restore operation starts. For example, when you restore a full backup or copy backup of a storage group named "First Storage Group," the agent empties the following directory:

c:\Temp\First Storage Group

When restoring Exchange Server 2010/2013/2016, the agent creates one subdirectory for each database under the specified destination at the restore time, labeled as follows:

\<original database>

Where <original database> represents the name of the source database. For example, the path to restore the database named "mailbox database 123" is as follows:

c:\Temp\mailbox database 123

When you restore a full or copy backup to a file system, the agent empties the contents of the target folder before the restore operation starts. For example, when you restore a full or copy backup of a database named "mailbox database 123", the agent empties the following directory:

c:\Temp\mailbox database 123

After you specify the file system as the restore destination, Arcserve Backup applies the following options at run time to the restore operation (if specified):

- Run recovery after restore.
- Automatically restore necessary previous sessions for incremental and differential restore.

Note: Arcserve Backup ignores all other restore options at run time when restoring data to a Windows file system.

Perform a Database Level Data Restore

To perform a database level data restore on an Exchange Server database

1. From the Arcserve Backup Home Page, select Restore from the Quick Start menu.
The Restore Manager window opens.

2. From the Restore Manager window, select Restore by Tree in the drop-down box below the Source tab.

Note: Both Restore by Tree and Restore by Session restore methods are supported for Database Level restores.

3. From the directory tree, do one of the following, depending on the version of Exchange Server you are running:
 - For Exchange Server 2007, expand the Windows System or Exchange Organization objects.
 - For Exchange Server 2010/2013/2016, expand the Exchange Organization object.

Further expand the server that contains the database you backed up and select the database object.

4. If the most recent backup is not the backup you want to restore, select a Recovery Point session to restore. Select a date and then choose a recovery point from that date.

Note: If you are using a restore set, you must restore the entire set in the order that it was backed up. If your restore set includes incremental and differential backups, select the last incremental or differential backup in the set and the agent will automatically include the full backup for you (applies to Restore by Tree only). For more information on restore sets, see Database Level Restore Sets.

5. Right-click each storage group object (For Exchange Server 2007) or Database object (Exchange Server 2010/2013/2016) you are including in this job and select Agent Option to select backup options. For more information about restore options, see Database Level Restore Options.
6. Click the Destination tab. You can restore the database objects to their original location (default) or you can restore the database objects to an alternative location.

Note: For Exchange Server 2007, you can select to restore to the Recovery Storage Group, a specialized storage group you can use in addition to the regular storage groups in Exchange Server. For more information on the Recovery Storage Group, see [Exchange Server 2007 Database Level Restore Option](#) (see page 55).

7. If you want to restore to an alternative location, clear the check mark from the Restore files to their original locations check box, expand the server you want to restore to, and select the destination object.

8. Click the Submit toolbar button.

If you are restoring to an alternative location, when the Security dialog appears, enter the user name and password for the destination server and click OK.

Note: Arcserve Backup does not support logging in to systems with passwords that are greater than 23 characters. If the password on the system you are attempting to log in to is greater than 23 characters, you must modify the password on the agent system such that it is 23 characters or less, and then you can log in to the agent system.

9. When the Session User Name and Password dialog opens, verify or change the user name and password for the destination Exchange Server. To change the user name or password, select the session, click Edit, make your changes, and then click OK.

Note: The user name must be entered in the following format:

DOMAINUSERNAME

10. Click OK.

11. When the Submit Job dialog opens, select Run Now to run the job immediately, or select Run On and select a future date and time when you want the job to run.

Enter a description for your job and click OK.

Chapter 5: Performing Document Level Backups and Restores

This section contains the following topics:

[How Document Level Backup Works](#) (see page 77)

[Document Level Backup and Restore Benefits](#) (see page 78)

[Document Level Views in the Backup Manager](#) (see page 80)

[Backup Agent Service Account Requirements for Document Level Backup and Restore](#) (see page 81)

[Document Level Backup](#) (see page 82)

[Exchange Granular Restore Utility](#) (see page 97)

[Document Level Data Restore](#) (see page 98)

How Document Level Backup Works

Document level backup is the most powerful and flexible backup type. It offers advanced configuration options, performs folder level backups and message level restores, and supports advanced filtering during backup. It also maximizes performance and flexibility by supporting complete messaging single instance storage (SIS), multi-threading, and by offering the most granular level of restore.

You should use document level backup and restore when you want the flexibility to restore individual objects, such as a mailbox, folder, or a single message. Document level backup and restore can also be used to simplify many administrative tasks, such as auditing, migration, pruning, and aging. With document level backup and restore, you can back up many messaging objects including posts, tasks, notes, journal entries, mail messages, events, appointments, meeting requests, and contacts.

Note: The agent does not support backing up Microsoft Exchange Online Archiving data and Microsoft Personal Archives at document level granularity. Microsoft Exchange Online Archiving is a process of archiving Exchange Server 2010 SP1 and later mailbox data to cloud-based storage locations. Personal Archives is Microsoft Exchange Server 2010 and later functionality that lets Exchange users create personal archives of their Exchange Server data. For more information about Microsoft Exchange Online Archiving and Personal Archiving, see the Microsoft website.

In addition to document level backups, you should perform database level backups. Database level backup is the fundamental backup for your Exchange Server, and you should always use it regardless of whether you use one of the other granular backup types. You can use database level backups to restore Exchange Server in the event of a system failure, database corruption, or disaster recovery situation.

Document Level Backup and Restore Benefits

Document level backup and restore offers many benefits, including:

- **Complete Messaging Single Instance Storage**--Traditional Brick level backups scan an Exchange Server mailbox-by-mailbox. They back up copies of individual message bodies and attachments as they arrive, without any regard for data that may have been backed up already and without accounting for the Exchange Server's ability to store only one copy of an attachment when it is sent to multiple people. This results in decreased speed and performance.

Document level backup and restore solves this problem by providing complete single instance storage backups of attachments and message bodies. Document level backup checks to see whether each attachment and message body has already been backed up and backs up only one copy.

- **Push Agent Technology**--Document level backup uses push agent technology to increase the efficiency of your backup jobs by processing the data at the remote client workstations rather than processing it all from the Arcserve Backup host server. This offloads the system resources from the Arcserve Backup host server and minimizes network traffic.

Push agent technology operates on a "per job" request, which means the host server sends an entire list of files to the remote client at one time. The push agent then enables the remote client to take an active role in the process by pushing all of the requested files to the host server. (Without push agent technology, backup jobs for remote clients operate on a series of "per file" requests—the host server has to request files from the remote client one file at a time.)

- **Multi Threading**--Document level backup lets you take advantage of the full capacity of multi CPU machines capable of concurrent operations. It does this by supporting up to 64 threads per storage group and an additional 64 threads in the public folder store for a maximum of 320 threads. This lets you make the most of your resources and increases performance. For information on how to configure the multi-threading settings number of threads and thread priority, see [Configure the Agent For Document Level Backup and Restore](#) (see page 20).
- **Multi Streaming Support**--Document level backup lets you take advantage of the full capacity of multiple drives and high-speed RAID arrays capable of fast concurrent backups to multiple tapes. It does this by partitioning information into concurrent streams for parallel backups.
- **Document Level Restore**--Document level restore lets you select a storage group, mailbox database, public folder database, or even a particular document for restore.
- **Migration Support**--Document level backup lets you seamlessly back up and restore documents, folders, and mailboxes between different versions of Exchange Server, including Exchange Server 2007, and 2010. For more information about the guidelines on how you can restore from different versions of Exchange Server, see [Document Level Restore Locations](#) (see page 102).

- **Enhanced Cluster Support**--Document level backup offers Active/Active and Active/Passive cluster support with cross cluster node failover.

For document level operations on Exchange Server 2007 platforms, the agent supports Cluster Continuous Replication (CCR), Local Continuous Replication (LCR), and Single Copy Cluster (SCC) environments. For Exchange Server 2010, the agent supports backing up and restoring Database Availability Groups.

Note: For more information about installing the agent on a cluster, see [Configure the Agent to Run on a Cluster](#) (see page 24).

- **Job Continuation**--If a job fails to complete, under certain circumstances, document level backup can automatically continue where the first job left off. For information on how to configure job continuation, see [Configure the Agent For Document Level Backup and Restore](#) (see page 20).

Note: The agent does not support backing up Microsoft Exchange Online Archiving data and Microsoft Personal Archives at document level granularity. Microsoft Exchange Online Archiving is a process of archiving Exchange Server 2010 SP1 and later mailbox data to cloud-based storage locations. Personal Archives is Microsoft Exchange Server 2010 and later functionality that lets Exchange users create personal archives of their Exchange Server data. For more information about Microsoft Exchange Online Archiving and Personal Archiving, see the Microsoft website.

More information:

[Document Level Restore Locations](#) (see page 102)

Document Level Views in the Backup Manager

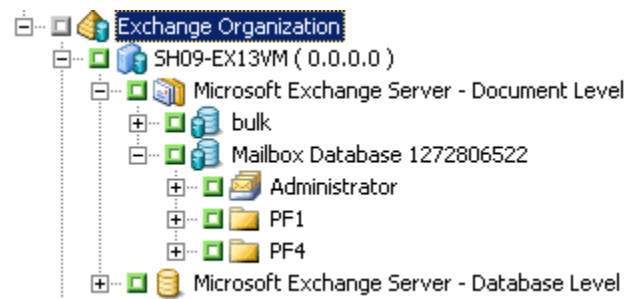
Depending on your Exchange Server version, Microsoft Exchange Server – Document Level appears in the Backup Manager under the following objects:

- Windows Systems - for Exchange Server 2007 systems
- Exchange Organization - All Exchange Server versions

For Exchange Server 2007 systems, each server can include up to 50 storage groups. The Public Folders object is treated as a storage group.

For Exchange Server 2010/2013 systems, the storage group object is removed. Server and Database Availability Group (DAG) objects appear only under the Exchange Organization.

Note: For Exchange Server 2013, public folder databases no longer exist. Exchange Server 2013 public folders are now created under the public folder mailboxes which can reside in one or more mailbox databases.



Note: If a mailbox or folder has the character “\” in its name, the character is substituted with another character in the Backup Manager only for display purposes (restored data will have the “\” character).

Example: Character Substitution

A folder named a\b\c displays with the character substitution in the Backup Manager.



Note: Exchange Server 2016 Document Level Backups are not supported because Exchange 2016 does not support connectivity through the MAPI/CDO library.

Backup Agent Service Account Requirements for Document Level Backup and Restore

To perform a document level backup and restore job, your backup agent service account must meet the following criteria on the Exchange server:

- It must be a domain account.
- There must be a mailbox. For Exchange Server 2007, this mailbox must be on the Exchange server which you plan to back up or restore to. Only users who have a mailbox on the Exchange Server have access to the document level operation.

The name of the mailbox must be unique. A unique name is a name that does not exist in the organization as a subset of characters in another mailbox name. For example, if there is a mailbox named Administrator in your organization, you cannot use the name Admin.

- It must be a member of the Administrator group.
- It must be a member of the Backup Operators group.
- On Exchange Server 2007 systems, it must be assigned either the Exchange Organization Administrator Role or the Exchange Server Administrator Role.
- On Exchange Server 2010/2013 systems, it must be assigned the Exchange Organization Management Role.
- If you selected the agent option, Backup Additional User Properties, and then restore the mailbox with user properties using the options, Create mailboxes if specified mailboxes do not exist and Create user if not existing, it must be assigned the Exchange and Domain Admins Roles.
- It must be assigned the Exchange Server MAPI Owner role on every public folder you intend to back up and restore because permissions for public folders can vary. If a lower permission level is assigned, back up or restore may fail or duplicate items may be restored because the backup agent service account does not have the permission to delete original documents. The method that you use to assign Exchange Server MAPI Owner role varies depending on the version of Exchange in your environment:

Exchange Server 2007 and Exchange Server 2010

To assign this role, use the Exchange Management Shell command **add-publicfolderclientpermission** to grant the user Owner access rights.

Note: If Exchange Server 2010 co-exists in an organization with other Exchange Server versions, make sure the designated user backup account has a mailbox that resides on the same version of the Exchange mailbox that is being backed up.

Document Level Backup

The following sections describe the features that are available when using document level backup and restore and describes how to perform a document level backup and restore.

Complete Messaging Single Instance Storage

To maximize performance during backup, enable the option: **Complete Messaging Single Instance Storage**. If you enable this, the agent checks to see if attachments and messages have already been backed up and then backs up only one copy. This eliminates the need to back up each time the attachment and message are referenced and can significantly decrease the size of your backups. For information on how to enable Complete Single Instance Storage, see [Configure the Agent For Document Level Backup and Restore](#) (see page 20).

Browsing Filter

To minimize the amount of time it may take and the impact on system resources when browsing extremely large amounts of data, document level backup includes a browsing filter that lets you reduce the number of items you want to search through.

More information:

[Filter Criteria](#) (see page 82)

Filter Criteria

The criteria you enter can be any combination of letters and numbers, with or without a wildcard at the end. If you do not enter a wildcard, the agent performs a substring search and finds all folders that have the criteria you entered somewhere in the file name. For example, if you enter “min”, all folders that contain the letters “min” somewhere in the file name are displayed, such as “Minutes”, “Administrator”, and “Admin”. If you enter a wildcard at the end of your criteria, the agent performs a prefix string search and finds only the folders that have the criteria you entered as the prefix of the file name. For example, if you enter “Admin*”, only the files that begin with “Admin” are displayed, such as “Administrator” and “Admin26”.

You can select from the following filters:

- **Display only the items that match the following pattern**--Enable this to only display the items that match the criteria you specify.
- **Display only the items in the following range**--Enable this to select a numeric range of items to be returned.

- **Enable the browsing filter only if there are more items than--**The browsing filter is automatically displayed when there are more than 500 items. Enter a new number in this field if you want to adjust this numeric threshold.

Note: You can also adjust the numeric threshold by creating a value under the following registry key:

```
HKEY_CURRENT_USER\Software\ComputerAssociates\CA ARCserve Backup\Base\ASMgr\DBAEXSIS
Value Name:    MaxItemsDisplayed
Value Type:    REG_DWORD
Value Data (Base Decimal):Desired threshold
```

More information:

[Browsing Filter](#) (see page 82)

Document Level Backup Methods

When you submit a backup job, you must specify a backup method. The backup method tells Arcserve Backup how you want your data to be backed up. The agent provides you with the flexibility to select a backup method for your document level backup job at the Microsoft Exchange Server – Document Level or use a globally scheduled backup method.

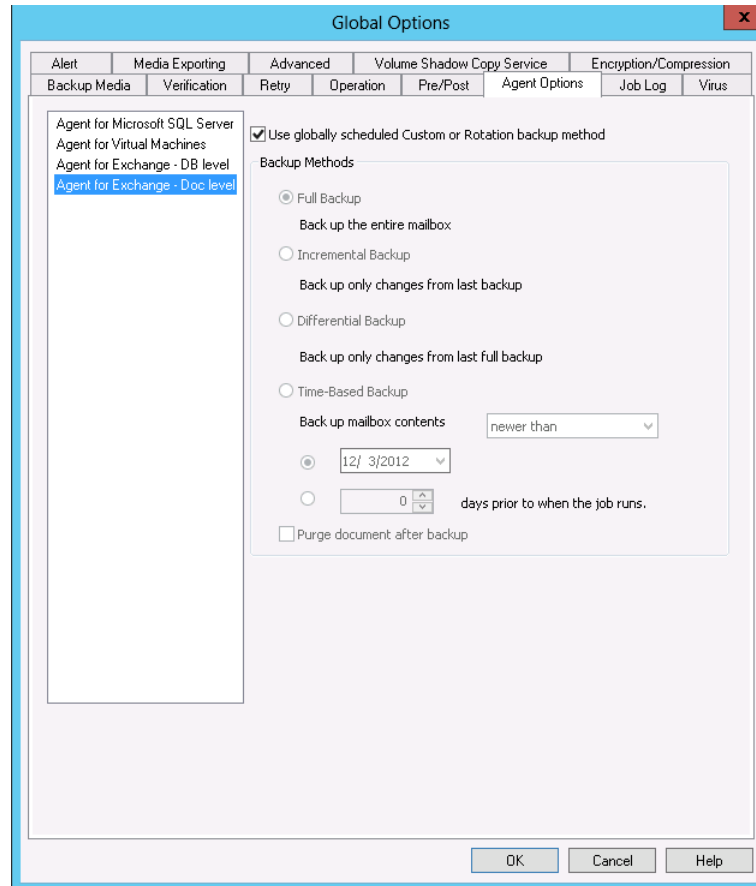
More Information:

[Specify Backup Options for a Document Level Backup Job](#) (see page 86)

Document Level Backup Global Options

You may set default backup options for all Exchange Document Level backup jobs using the Arcserve Backup global backup options.

Global options let you define default settings for bulk jobs and apply to all Exchange Server versions. However, these options do not take effect if you are using a version of the Agent for Microsoft Exchange Server earlier than the current release.



The advantage of selecting a backup method at the document level is that it gives you the flexibility to use a separate method for the document level backup portion of your job. You can select from the following backup methods:

Use backup method specified in Global Agent Options

Enabled by default. You must disable this option if you want to set a backup method at the Document Level. If you do not disable this, you must select a backup method on the Schedule tab.

Note: If you do not disable this and select Custom Schedule on the Schedule tab, there is no difference between the full (Keep Archive Bit) and full (Clear Archive Bit) backup methods, they both function as full backups.

Full Backup

Backs up all documents.

Incremental Backup

Backs up all documents created or modified since the last full or incremental backup. If no full backup has been performed, all documents are backed up.

Differential Backup

Backs up all documents created or modified since the last full backup. If no full backup has been performed, all documents are backed up.

Time-Based Backup

Backs up all documents newer than or older than a certain point in time. This point in time can either be a specific date or a number of days prior to when the job runs. If you select a number of days prior to when the job runs, the backup period is a moving window that stays relative to the time at which the job runs.

Note: If you select a specific date, 12:00 AM is the default time used. Arcserve Backup automatically adjusts for daylight savings when there is a time zone difference between the server that is running the Arcserve Backup Manager and the server that has the agent installed.

- **Purge documents after backup**--Automatically deletes documents after they are backed up. This is useful for pruning and aging an Exchange server. For example, you can use this option to back up and delete documents older than three years, thus reducing the size of your Exchange Server.

Important! This option should be used with caution since it will delete all documents that were backed up.

As an additional safety feature, you can prevent an agent from pruning an Exchange server by enabling the Disable Purge Option. For more information on this option, see [Configure the Agent for Document Level Backup and Restore](#) (see page 20).

More Information:

[Document Level Backup Methods](#) (see page 83)

[Specify Backup Options for a Document Level Backup Job](#) (see page 86)

Specify Backup Options for a Document Level Backup Job

When you submit a backup job, it uses Global Options by default. You can override global options and set unique options for a specific Exchange Server object using local agent options.

To select a backup method for the Document Level backup job, right-click Microsoft Exchange Server - Document Level and select Agent Option from the shortcut menu. The Agent Option dialog opens.

The following are the Document Level Backup Global Options:

- Use globally scheduled backup method
- Full Backup
- Incremental Backup
- Differential Backup
- Time-Based Backup

More Information:

[Document Level Backup Methods](#) (see page 83)

Configure Agent Settings for Document Level Backups

Before you perform document level backups, you should decrease the maximum number of threads used by the agent to avoid jobs failing with the AE9609 error. To do this, change the Arcserve Backup Agent configuration settings on the Exchange Server.

To configure agent settings

1. From the Start menu, launch the Arcserve Backup Agent Admin.
2. Switch to the Agent for Microsoft Exchange. The default view is Client Agent for Windows. Use the drop-down control on the right to switch to the Agent for Microsoft Exchange.
3. Open the Configuration tab.
4. Click the Document level Agent tab.
5. Set the Maximum Number of Threads value to 4 or 6.
6. Save your changes and close tabs.
7. Restart the Universal Agent service. Click the button on the far left side of the Backup Agent Admin screen that resembles two gears.
8. Close the service window.
9. Close the Backup Agent Admin Window.

You may now perform a backup job.

Specify Document Level Backup Filters

Document Level backup includes backup filters that give you the flexibility to exclude specific mailboxes, folders, or attachments from your backup job. In addition, you can set default filters, useful if you consistently use the same filters and do not want to have to set them every time you run a Document Level backup job.

To specify document level backup filters

1. To select a backup filter, right-click Microsoft Exchange Server – Document Level and select Filter.

The Backup Filter dialog opens.

2. On the Mailbox tab, in the Mailbox Exclude Criteria field, enter the name of the mailbox that you want to exclude or the criteria that you want the agent to use to exclude certain mailboxes, and then click Add.

Note: For information about filtering criteria, see [Filter Criteria](#) (see page 82).

3. On the Folder tab, in the Folder Exclude Criteria field, enter the name of the folder that you want to exclude or the criteria that you want the agent to use to exclude certain folders, and then click Add.

Note: For information about filtering criteria, see Filter Criteria.

If you want to exclude default folders, enable the Exclude the Default Folders selected below option and place a check mark next to the particular folder you want to exclude.

4. On the Attachment tab, in the Attachment Exclude Criteria field, enter the extension type of the attachments that you want to exclude, and then click Add. For example, if you want to exclude text file attachments, enter txt and click Add.

If you want to exclude attachments that exceed a certain size limit, enable the Exclude attachments with size bigger than maximum size option and select the maximum size. When selecting the maximum size, allow a small margin of leeway since the size displayed by some email clients may slightly differ from the size read from the Exchange Server.

Note: The settings on the Attachment tab do not apply to embedded messages.

More information:

[Filter Criteria](#) (see page 82)

Multiplexing During Document Level Backups

Multiplexing is a process in which data from multiple sources is written to the same media simultaneously. When a job that has multiple sources is submitted with the multiplexing option enabled, it is broken into child jobs as follows:

- For Exchange Server 2007, the job is broken into one child job for each storage group
- For Exchange Server 2010, the job is broken into one child for each database

These child jobs write data to the same media simultaneously. If you enable multiplexing, Document Level backups from one or more storage groups on one or more machines can be backed up simultaneously in a single job to one device.

For more information on multiplexing, see the *Administration Guide*.

Multistream Option

If your Arcserve Backup server is equipped with multiple devices in two or more groups or multiple devices in one or more groups with the Arcserve Backup Enterprise Module and Arcserve Backup Tape Library Option installed, you can take advantage of the Multistream option. This option divides your backup jobs into several sub-jobs that run simultaneously to different devices. You can have as many jobs running simultaneously as you have devices or groups on your system. Document Level backup provides one to five streams for simultaneous backup. The available number of tapes, drives, and storage groups determines the number of streams that are run simultaneously during backup.

Note: You can enable the Multistream option on the Destination tab in the Backup Manager.

For more information on the Multistream option, see the *Administration Guide*.

Note: If you enable the Multistream option when you submit a Document Level backup job, the data is multistreamed at the storage group level for Microsoft Exchange Server 2007. For example, if your Exchange Server has two storage groups and you enable the Multistream option during backup, one subordinate job is created for each storage group. For Exchange Server 2010, the number of streams is determined by the database.

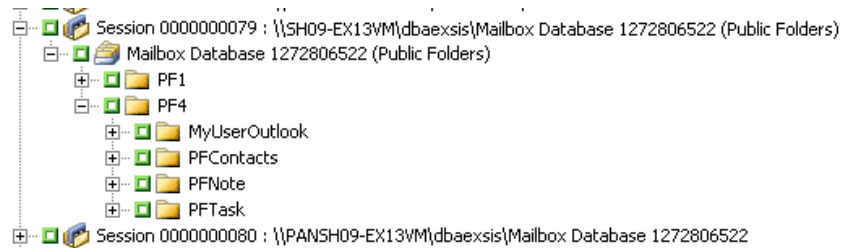
Perform a Document Level Backup

Before you submit a document level backup job, ensure that the Exchange Server services are started on your Exchange server and that the Arcserve Universal Agent is started.

Note: The following procedure applies to all versions of the Arcserve Backup Agent for Microsoft Exchange Server, however be aware of the following considerations:

- For Microsoft Exchange 2010, there is no Storage Group layer in the Server Tree.
- For Microsoft Exchange 2013, Arcserve Backup will back up the public folders and the mailboxes to different sessions even though they both exist in the same database.

Note: Be aware that the session created for the public folder will contain the name of the session and (Public folders) appended to the database name.



To perform a document level backup

1. From the Arcserve Backup Home Page, select Backup from the Quick Start menu.
The Backup Manager window opens.

2. From the Backup Manager window, expand the Microsoft Exchange Server -- Document Level object to select the items that you want to back up.

Note: Special mailboxes, such as Mail Connectors, System Attendant, Internet Mail Service, and MS Schedule+, cannot be selected for backup. These are special system mailboxes and should not be backed up. Hidden mailboxes also cannot be backed up.

3. If the Browsing Filter opens (the browsing filter displays automatically when there are more than 500 items), set filters to specify the items you want to search through and click OK.
4. Select the items that you want to back up.

5. To select a backup method at the document level, right-click Microsoft Exchange Server -- Document Level, select Agent Option, select a backup method, and then click OK.

For more information about backup methods, see [Document Level Backup Methods](#) (see page 83).

6. If you want to exclude mailboxes, folders, or attachments from your backup job, right-click Microsoft Exchange Server -- Document Level, select Filter, set up your filters, and then click OK. For more information on filters, see [Filter Criteria](#) (see page 82).
7. (Optional) Enable server-side features such as CRC checking, data encryption, or data compression, if desired. See the *Arcserve Backup Administration Guide* for more information.
8. Click the Destination tab and select a backup destination.
9. Click the Schedule tab. If you want to use a custom schedule, select a Repeat Method and, if you did not select a backup method at the document level, select a backup method. If you want to use a rotation scheme, select the Use Rotation Scheme option and set up your scheme.

For more information on scheduling jobs and rotation schemes, see the online help or the *Arcserve Backup Administration Guide*.

10. Click the Submit toolbar button.

The Security and Agent Information dialog opens.

11. From the Security and Agent Information dialog, ensure that the correct user name and password are filled in for each object. If you need to enter or modify a user name or password, click the Security button, make your changes, and then click OK.
12. Click OK.

The Submit Job dialog opens.

13. From the Submit Job dialog, select Run Now to run the job immediately, or select Run On and select a future date and time when you want the job to run.

Enter a description for your job.

If you selected multiple sources to back up and want to set the priority in which the job sessions initiate, click Source Priority. Use the Top, Up, Down, and Bottom buttons to change the order in which the jobs are processed. When you finish setting priorities, click OK.

On the Submit Job page, click OK to submit your job.

After you submit your backup job, you can go to the Job Status Manager and double-click the active job to view real-time job properties. If you have Complete Messaging Single Instance Storage enabled, all of the fields related to size will reflect the size prior to single instance storage optimization. The actual size of the backup after single instance storage optimization opens in the Activity Log and is labeled “(xx)MB Written to Media”.

More information:

[Filter Criteria](#) (see page 82)

[Specify Backup Options for a Document Level Backup Job](#) (see page 86)

Activity Log Messages

At the end of each backup job, a summary of each session is displayed in the Activity Log. Depending on what occurs during backup, the summary includes messages with the following information:

- The status of the job. Depending on what you selected to back up and what occurred during the backup job, you will receive one of three statuses:
 - **Successful**--All selected mailboxes and root public folders were backed up.
 - **Incomplete**--One or more of the selected mailboxes and root public folders were backed up. At least one mailbox or root public folder failed to back up.
 - **Failed**--No selected mailboxes and root public folders were backed up.

Note: Individual folders, messages, and attachments do not affect the status of the job. If these items are not backed up, the details will be listed in the skip log in the agent log directory. If you would rather view the skip log information in the Activity Log or if you want to view it in the Activity Log in addition to the skip log, you can change the value of the Skip Log Setting. For more information on the Skip Log Setting, see [Configure the Agent For Document Level Backup and Restore](#) (see page 20). This skip log is also useful for tracking corrupt messages in an Exchange Server.

- The number of root public folders, mailboxes, folders, and documents that were backed up successfully
- The amount of data that was backed up
- The amount of data that was written to media
- The amount of size reduction achieved through Complete Messaging Single Instance
- The number of items that were skipped
- The number of mailboxes that failed to back up
- The number of root public folders that failed to back up
- The status of the session has changed
- Instructions on how to resolve an issue

Configure the Agent for Document Level Backup and Restore

After you install the Arcserve Backup Agent for Microsoft Exchange Server, you can configure performance and file location settings.

To configure the agent for document level backup and restore

1. From the Windows Start menu, select All Programs, Arcserve, Arcserve Backup, and Backup Agent Admin.

The Arcserve Backup Agent Admin dialog opens.

2. From the drop-down list, select Arcserve Backup Exchange Server Agent and then click Configuration.

The Configuration dialog with the Exchange Database Level tab selected opens.

3. Click the Document Level tab.

Note: The options displayed on the Configuration dialog vary based on the version of Exchange Server that you are using in your environment.

4. When the Configuration dialog opens, select the following settings as required for your environment:

Note: The options listed below apply to Exchange Server 2007, Exchange Server 2010, and Exchange Server 2013 systems unless otherwise noted.

- **Complete Messaging Single Instance Storage (Exchange Server 2007)** --This option checks to see if attachments, message bodies and other components of messages have already been backed up and then backs up only one copy. This eliminates the need to back up each time the attachment and message are referenced. This can significantly decrease the size of your backups.

No Single Instance Storage - Without Single Instance Storage, an Exchange Server is scanned mailbox by mailbox, and copies of individual message bodies and attachments are backed up as they arrive, without any regard for data that may have been backed up already.

- **Back up Only Local Public Folder Documents (Exchange Server 2007, and 2010)**--In Exchange Server, public folders can include multiple public folder stores on many servers across the organization. As a result, when you select to back up a public folder, you could be backing up many public folder stores. To save time and maximize performance, this option lets you exclude remote public folder documents during public folder backups.

- **Number of Threads**--This is the number of threads you want to use to connect to MAPI per session. If you increase this number, it increases performance, but also increases CPU utilization. The default Number of threads value is 1.5 multiplied by the number of CPUs rounded down and the supported range is between 1 and 64.
- **Thread Priority**--This is the priority you want to set for your threads: low, medium, or high. If you increase the priority, the operating system increases the CPU cycles to the thread. If you increase the number of threads in the Number of threads field, you should decrease the thread priority to lessen the impact on your server.
- **Maximum Backup Size**--To allow an efficient flow of information during backup, data is stored in a transition queue. This setting lets you configure the size of this queue. The default Max queue depth value is 256 items and the supported range is between 32 and 1024.
- **Maximum Restore Size**--This sets the threshold for memory that SIS restores will use before saving objects to the temporary location you specify. If the amount of cached SIS data exceeds this value, you can increase the value to gain better performance. If the amount of cached SIS data exceeds the value you select, the restore is not affected, but a notification message appears in the activity log. The default Max Restore memory value is half of your system RAM and the supported range is between 32 and 1024.
- **Retry Counter**--If a MAPI error or time out occurs while trying to retrieve an object from Exchange Server, this setting lets you control the number of times you want to retry. This is useful for when your backups are competing with third-party applications or during periods of high volume activity. If a MAPI error or time out occurs, the object is skipped, but the backup continues and a notification message is displayed in the log location you specify. The default Retry counter value is 1 and the supported range is between 0 and 10.
- **Retry Delay**--If a MAPI error or time out occurs while trying to retrieve an object from Exchange Server, this setting lets you control the delay between retries. This is useful when your backups are competing with third-party applications or during periods of high volume activity. If a MAPI error or time out occurs, the object is skipped, but the backup continues and a notification message is displayed in the Log location you specify. The default Retry Delay value is 0 and the supported range is between 0 and 60.

- **Log Detail Level**--This sets the level of detail on the debug trace and log in the log location you specify. The log detail level determines the level of detail in the debug trace and log. This does not affect the level of detail in the Activity Log in the Arcserve Backup Manager window. The default log detail level value is 1 and the supported range is between 0 and 5. If you want to disable agent side logging, use 0. Otherwise, you should always use level 1.

Important! Do not change this value unless directed by a trained Arcserve Customer Support technician.

- **Job Continuation Level**--If a job fails to complete, this setting lets you skip mailboxes and root public folders that already have been backed up and continue the job from the point of interruption. This is especially useful for continuing jobs in the case of a cluster failover. The default Job Continuation Level value is 1 and the supported range is between 0 and 2. 0 disables job continuation, 1 continues makeup jobs only, 2 continues any interrupted jobs.

Note: Because job continuation begins the job at the point of interruption and skips items that were already backed up in the original job, you should ensure that the skipped items were backed up properly in the original job and that they can be browsed from a restore view.

- **Skip Log Setting**--At the end of each backup job, a summary of each session is displayed in the Activity Log. If individual folders, messages, and attachments are not backed up, by default, the details will be listed in the skip log in the agent log directory. If you would rather view the skip log information in the Activity Log or if you want to view it in the Activity Log in addition to the skip log, this setting lets you configure the location. The default Skip Log Setting value is 0 and the supported range is between 0 and 2. 0 logs information to the skip log only, 1 logs information to the Activity Log only, 2 logs information to both the skip log and Activity Log.

Note: This skip log is also useful for tracking corrupt messages in an Exchange Server.

- **Backup Additional User Properties**--If you are using Exchange Server 2007, Exchange Server 2010, or Exchange Server 2013, this setting lets you back up a greater level of user properties detail and determines what is restored when using the Create user if not existing restore option.

Note: For more information on restore options, see [Document Level Restore Options](#). (see page 99)

If you do not enable this option, only the display name that is associated with the mailbox is backed up. This is useful if you will be using this user as a placeholder to perform an audit or test restore. If you do enable this option, most additional properties, such as first name, last name, fax number, and address information are backed up. This is useful for migration, but will increase the backup time.

- **Disable Purge Option**--When a backup job is created using the time based backup method, the Purge documents after backup option can be enabled so that documents are automatically deleted after they are backed up. However, since this option should be used with caution, you can enable the Disable Purge Option as a safety feature to override the purge and prevent an agent from pruning an Exchange Server.
- **Append To Restored Mailbox**--During restore, if you want to create duplicates of existing users and mailboxes in the same organization, you must append a string to the user and mailbox names. Enter the string you want to append in this field. Since the maximum character limit for user and mailbox names on some systems is 20 characters, try to keep the string short. If you do not want to create duplicates, leave this field blank.

Note: This option must be used in conjunction with the Create mailbox if not existing options. For information about Create mailbox if not existing, see [Configure Document Level Restore Options](#) (see page 99).

- **Log Location**--If you want to change your log location from the default location, click Browse and select a new location.
- **Temp Location**--If you want to change your temp location from the default, click Browse and select a new location.

5. Click OK.

The document level backup and restore options are saved.

Exchange Granular Restore Utility

Important! With this release, Arcserve Backup offers the use of an Exchange Granular Restore utility to restore Microsoft Exchange email and non-email objects.

The utility includes the injection capability for items, such as emails from offline databases (*.EDB) and log files to the original live Exchange databases, as well as granular data extraction to Personal Storage File (.pst) files.

This utility includes the following key benefits:

- Supports non-email items (for example, tasks) and public folders.
- Works with just a database file as well. Logs are not mandatory, but having them will ensure more recent data available for restore.
- Requires a minimum amount of time to restore a mailbox level item from a database or user mailbox of any size.

Note: For more details on the supported specifications, functionalities, and other features, see the Exchange Granular Restore user guide (esr.pdf), located at: http://documentation.arcserve.com/Arcserve-UDP/Available/V6/ENU/Bookshelf_Files/PDF/udp_esr_guide.pdf.

Once the utility is installed, you can also find the user guide (esr.pdf) located at **%ProgramFiles\CA\ARCserve Backup Agent for Microsoft Exchange Server\Exchange GRT**.

Perform the following tasks to restore Microsoft Exchange email, using the Exchange Granular Restore utility:

1. From the Arcserve Restore Manager, select a file system as the destination on the Exchange Server to restore the database.

For detailed instructions, see Selecting Database Restore Sources and Destination from the Agent for Microsoft Exchange Server Guide.

Note: The Exchange Granular Restore Utility is installed with the Microsoft Exchange Agent installation. The Exchange Granular Restore Utility is installed by default to **%ProgramFiles\CA\ARCserve Backup Agent for Microsoft Exchange Server\Exchange GRT**.

2. Launch the utility tool and open the Exchange database and logs that was restored in step 1.
3. Find and select the mailboxes, folders, and messages.

Note: The utility provides two mutually complimentary modes of finding, previewing, and selecting items: **Browsing the mailbox tree** and **Search**.

4. Select and restore the individual items to one of the following locations:
 - Original location

- Alternate location
- .PST files

Notes:

- By default, the utility uses the current user who is logged on to Windows to establish the connection. If the current user does not have permissions to impersonate the selected user, the following message appears: *"Exchange impersonation lets you connect to a mailbox other than the default one for your credentials. To use the feature, access permissions need to be configured at the Exchange Server."*
 - You can connect to the selected mailbox using one of the following options:
 - Use credentials of the selected mailbox.
 - Specify the user that has impersonation rights.
5. (Optional) Use the command line to process several databases.

Usage: esr.exe <source> <destination>

Document Level Data Restore

The following sections include information about the prerequisites you must meet before you perform a restore, the features that the Exchange agent offers when restoring from a Document Level backup, and the procedure for how to perform a restore.

Document Level Restore Sets

When you back up an Exchange Server, each storage group (Exchange Server 2007) or mailbox database (Exchange Server 2010) that you select to back up is saved on media as an individual session. To restore an object, you should restore all of the sessions that, when combined, give you the most up-to-date version. These sessions are called your restore set.

The number of sessions in your restore set depends on the backup methods you used:

- If you backed up your storage group or database using only the full backup method, your restore set includes only this session.
- If you backed up your storage group or database using both full and incremental backups, your restore set includes the session from the full backup and at least one, but up to as many sessions from the incremental backup as you want to include. For example, in the following backup scenario, your restore set can be full and incremental 1, full and incremental 1 and 2, full and incremental 1, 2, and 3, or full and incremental 1, 2, 3, and 4:

Full	Incremental 1	Incremental 2	Incremental 3	Incremental 4
------	---------------	---------------	---------------	---------------

- If you backed up your storage group or database using both full and differential backups, your restore set includes the session from the full backup and one differential backup session. For example, in the following backup scenario, your restore set can be full and differential 1, full and differential 2, full and differential 3, or full and differential 4:

Full	Differential 1	Differential 2	Differential 3	Differential 4
------	----------------	----------------	----------------	----------------

After you determine your restore set, the entire set must be selected when you submit the restore job.

Note: Since Document Level backups are independent, you can restore an incremental backup or differential backup by itself (you do not have to restore it along with a full backup). As a result, if you want to restore your entire restore set, make sure you select the full backup because it is not automatically selected for you.

Document Level Restore Prerequisites

Before you can restore document level backups, you must satisfy the following prerequisites:

- The Exchange server must be running and the storage groups and mailbox stores that you are restoring to must already exist (they are not created at restore time), and the mailbox store must be mounted.
- The account you are using to restore must meet the backup agent service account requirements for the machine you are restoring to. For information on these requirements, see Backup Agent Service Account Requirements for Document Level Backup and Restore.

Configure Document Level Restore Options

When you create a restore job, you can choose restore options to customize the job.

To configure document level restore options

1. Open the Backup Manager and the select the Source tab.

The backup source tree appears.

2. Right-click a storage group (Exchange Server 2007) or a database (Exchange Server 2010) and select Agent Option from the shortcut menu.

The Agent Options dialog opens.

3. Click the Mailbox tab and specify the options that follow, as required, for your environment.

- **Create mailboxes if specified mailboxes do not exist**--Use this option if you want to restore your data to a different Exchange Organization or if you want to restore to the same server you backed up from, but the mailbox you want to restore has been deleted.

Important! If you create the mailbox in a different organization, the mailbox or mailbox folder permission may be lost, or the owner of the permission may no longer exist in the organization.

Most standard folders are created and named using the language of the first client to access them. For example, if the first client you use to access a new mailbox is a French client, standard folders like the Inbox or Sent Items are given French names. For more information, see the Microsoft Q Article 188856 on the Microsoft web site.

Note: Use this option in conjunction with the Append to Restored Mailbox option. For more information about the Append to Restored Mailbox option, see [Configure the Agent for Document Level Backup and Restore](#) (see page 20).

Important! If the mailbox you want to restore has been deleted but the user associated with this mailbox still exists and has the same properties, associate this user with the new mailbox. If both the mailbox you want to restore and the user associated with the mailbox have been deleted, you must create a new user.

If you use this option in Exchange Server 2007 and 2010 environments, no email is sent to the newly-created mailbox. If you want to customize the contents of the email, you can create a new message and save it as an RTF file in the Arcserve Backup Agent for Exchange directory to replace the default MailboxInitialize.rtf. In addition, you can also customize the subject line of this email by using the following registry key:

HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\CA ARCserve
Backup\ExchangeDocumentAgent\Parameters

Value Name:FirstMailSubject

Value Type: REG_SZ

Value Data:The desired subject line

- **Create user if not existing**--If you selected the Create mailbox if not existing option and do not have an existing user to associate with the mailbox, you must use this option and enter a password because every mailbox must have a user associated with it. When entering the password, ensure that it meets the length, complexity, and history requirements of the domain and server you are restoring to.

This option is useful if you want to perform a test restore of a mailbox to the backup server, if you want to audit a mailbox, or if you need a placeholder user because you plan on connecting the mailbox to a different user. When you use this option, the amount of properties that are assigned to the user during restore is determined by what setting you used for the Backup Additional User Properties configuration option during your backup job. For more information on the Backup Additional User Properties configuration option, see [Configure the Agent for Document Level Backup and Restore](#) (see page 20).

Be aware of the following:

- After the user is created, regardless of what you selected for the Backup Additional User Properties configuration option, you should still adjust the properties to set group memberships, to set up rights, and to reflect organizational policies.
- If you want to create duplicates of existing users and mailboxes in the same organization, you must append a string to the user and mailbox names. For information on how to configure this, see [Configure the Agent for Document Level Backup and Restore](#) (see page 20).

If you have trouble with mailbox or user creation, see [Unable to Create the User Account, Create the Mailbox, or Finalize the Mailbox](#).

4. Click the Document tab and specify the options that follow, as required, for your environment.

When restoring documents, a conflict may occur if a version of what you are restoring already exists on your destination. To prepare for this situation, select one of the following conflict resolution options:

- **Overwrite**--Delete original documents.
- **Overwrite only when Modified**--Delete only the original documents that have been modified since they were backed up. Because documents that have not been modified are skipped, this option is faster than the Overwrite option.

- **Restore as Copy**--Do not delete original documents and restore as copies. Use this option if you are restoring to an empty folder in the original location or an alternative location.
- **Restore as Copy only when Modified**--Do not delete original documents and restore as copies for documents that have been modified since they were backed up. Because documents that have not been modified are skipped, this option is faster than the Restore as Copy option.

Note: When a message is restored, a new message ID is created and assigned to it. Consequently, if you restore from one backup multiple times, you will see message duplicates even if you selected to overwrite the original.

5. Click OK.

The document level restore options are saved.

Document Level Restore Locations

When restoring a Document Level backup, you can restore the files to their original location (default) or you can restore the files to an alternative location. Use the Restore files to their original location option only when you want to restore the exact location you backed up from and the hierarchy of the server has not changed. For all other scenarios, you must restore files to an alternative location.

Examples: When You Can Restore to an Alternative Location

Some examples of when to restore to an alternative location include:

- If you want to restore a document to a different folder or mailbox on the same server that you backed up from
- If you want to restore a document to a different folder or mailbox on a different server than the server you backed up from
- If you want to merge a mailbox
- If you want to migrate a mailbox
- If you renamed storage groups or mailbox stores

Alternative Restore Locations

When you restore to an alternative location, there are certain rules that apply when selecting your source and destination:

- **Source**--When you select your source, you can either select to restore it as a new object inside your destination or to merge it into your destination.
- **Destination**--When you select your destination, you must consider what you selected to restore and what version of Exchange Server you are restoring to.

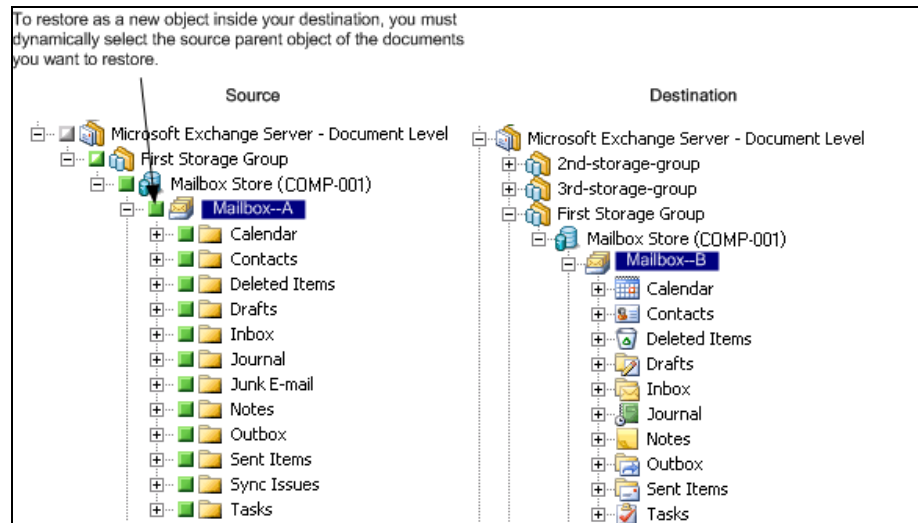
The following sections include more information on selecting a source and destination.

Source Selection Considerations

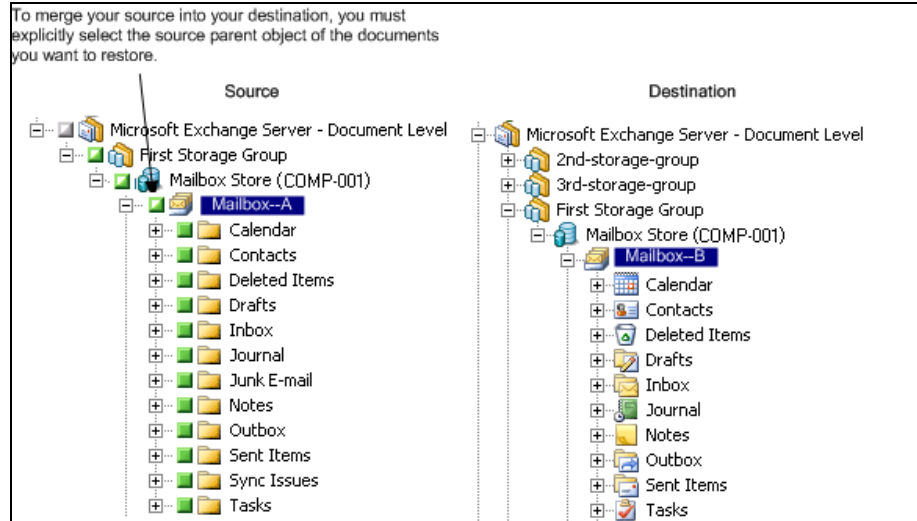
When you restore to an alternative location, the objects you restore are either restored as new objects inside or merged into, the destination you select, depending on how you select your source.

Examples: How Your Source Selection Affects Restore Operations

- Restoring inside your destination--This means that if you select Mailbox_A as your source and Mailbox_B as your destination, Mailbox_A is restored as a new object, a folder named Mailbox_A within Mailbox_B.



- Merging into your destination--This means that if you select the Mailbox_A subfolder as your source, such as Inbox or Calendar, and Mailbox_B as your destination, the contents of Mailbox_A will be merged into the existing contents of Mailbox_B.



Example: How Job Packaging Affects Jobs

You want to add new objects, like a mailbox, to your Exchange Organization after you submit a backup job. Do you need to resubmit the job to include the new objects?

There are two possible solutions:

- If you used dynamic job packaging, your new objects will be included because the contents of what you selected are determined when the job runs.
- If you used explicit job packaging, you must resubmit the job to include your new objects because the contents of what you selected are determined at the time the job is packaged.

Note: For more information on dynamic and explicit job packaging, see the *Administration Guide*.

Destination Selection Considerations

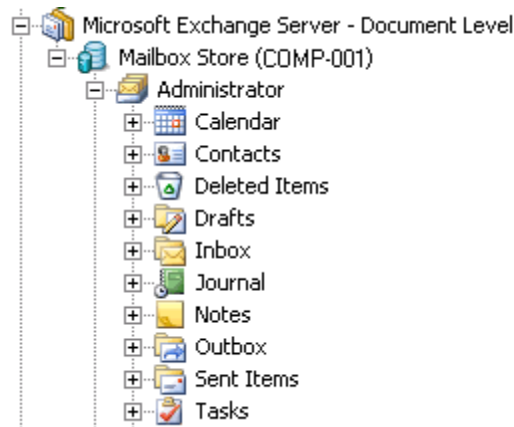
When restoring to an alternative location, there are certain rules that apply to the destination you select, depending on what you selected to restore and what version of Exchange Server you are restoring to.

Note: If you select multiple sources to restore, you must select a destination that supports all sources.

Because the destination you select depends on the source you select, the following diagrams display the Arcserve Backup source view for each version of Exchange Server. The charts that follow each diagram include information about each destination that is supported, depending on the source and version of Exchange Server.

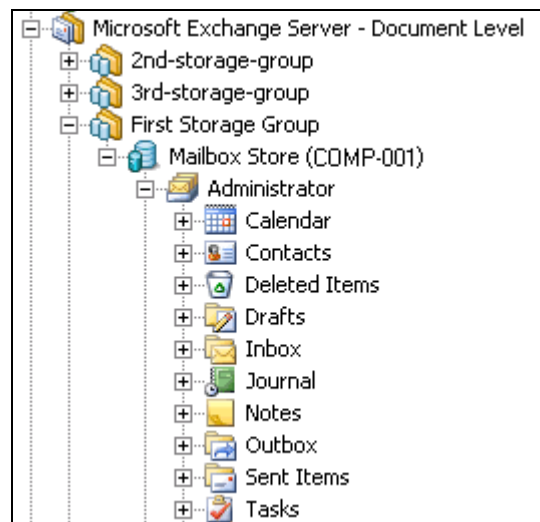
Source View for Exchange Server 2010/2013 Objects

The Arcserve Backup Agent for Exchange Server 2010/2013 displays objects you can restore beneath the Mailbox Store object.





Source View for Exchange Server 2007 Objects

In Microsoft Exchange Server 2007, the objects you can restore are displayed differently than for Exchange Server 2010.



Source View of Document Objects for all Versions of Exchange Server

The following diagram displays the source document objects you can restore for all versions of Exchange Server using the Arcserve Backup Agent for Microsoft Exchange Server:

Subject	From	Received
 Document	Administrator	6/25/03 12:28 PM
 Document With Attachment	Administrator	6/25/03 12:27 PM

How You Can Restore Exchange Server Data to Exchange Server Systems

The following table describes the source objects that you can select, and their supported destinations, when restoring Exchange Server 2007, 2010, or 2013. data to Exchange Server 2007, 2010, or 2013 systems using the Arcserve Backup Agent for Microsoft Exchange:

When destination is Exchange Server 2007

Source Objects	Supported Destinations
Storage Group	Microsoft Exchange Server - Document Level
Public Folders [Storage Group]	Microsoft Exchange Server - Document Level
Mailbox Store	Storage Group
Mailbox*	Public Folders, [Storage Group], Mailbox Store, Mailbox, Folder
Folder	Public Folders [Storage Group], Mailbox, Folder
Document	Folder

When destination is Exchange Server 2010/2013

Source Objects	Supported Destinations
Database	Microsoft Exchange Server - Document Level
Public Folders	Microsoft Exchange Server - Document Level
Mailbox*	Public Folders, Mailbox Store, Mailbox, Folder

Source Objects	Supported Destinations
Folder	Public Folders, Mailbox, Folder
Document	Folder

*Mailbox is converted into a folder if it is not restored to a Mailbox Store.

Manually Extending Your Destination Path to Create a New Folder

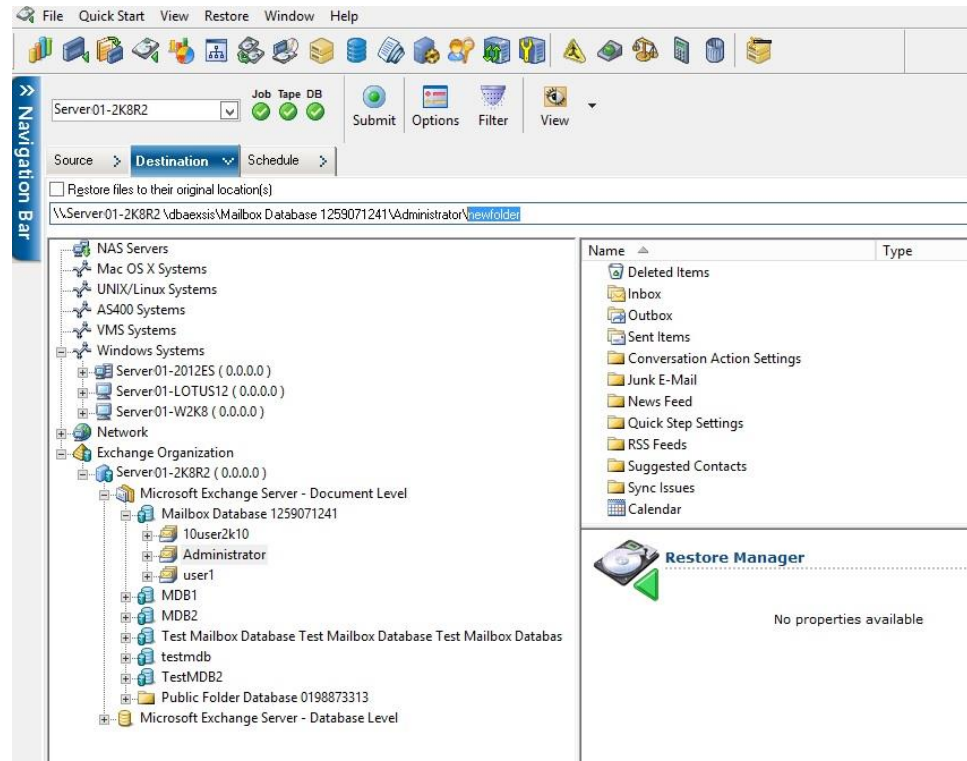
If you want to create a new folder to restore to within the mailbox or folder you selected as your destination, you can manually extend the destination path on the Destination tab in the Restore Manager.

Example: Extending the Destination Path

If you select Mailbox_A as your destination and want to add a new folder within Mailbox_A to restore to, add the name of your new folder at the end of the destination path at the top of the page.

The following graphic illustrates how to extend the destination path to a new folder labeled "newfolder."

Note: Do not enter a backslash (\) at the end of your new folder name.



Perform a Document Level Restore

Performing Document Level restore jobs follows the same process regardless of your Exchange Server version, though the selections you make in certain steps may vary. The differences are noted in the following procedure.

To restore using Document Level restore

1. From the Arcserve Backup Home Page, select Restore from the Quick Start menu.

The Restore Manager window opens.

2. From the Restore Manager window, select Restore by Tree in the drop-down box underneath the Source tab.

Note: Both Restore by Tree and Restore by Session are supported for Document Level restore.

3. Expand the Windows Systems or Exchange Organization object, expand the server you are restoring from, and then expand the server object to select the documents you want to restore—storage groups, mailbox stores, public folder stores, public folders, folders, or even individual documents.

Note: Special mailboxes, such as Mail Connectors, System Attendant, Internet Mail Service, and MS Schedule+, cannot be selected for restore. These are special system mailboxes and should not be restored.

4. Select a Recovery Point session to restore.
5. To select restore options, right-click a storage group or database, select Agent Option, select restore options, and then click OK.

For more information about restore options, see Document Level Restore Options.

6. Click the Destination tab. You can restore the database objects to their original location (default) or you can restore the database objects to an alternative location.
7. If you want to restore to an alternative location, clear the Restore files to their original locations check box, expand the Windows Systems or Exchange Organization object, expand the server you want to restore to, expand the Microsoft Exchange Server – Document Level object, and select where you want to restore to.

Note: When restoring to an alternative location, there are certain rules that apply to the destination you select, depending on what you selected to restore and what version of Exchange Server you are restoring to. For more information, see Alternate Restore Locations.

8. Click Submit.

9. If you are restoring to an alternative location, when the Security dialog opens, enter the user name and password for the destination server and click OK.

Note: Arcserve Backup does not support logging in to systems with passwords that are greater than 23 characters. If the password on the system you are attempting to log in to is greater than 23 characters, you must modify the password on the agent system such that it is 23 characters or less, and then you can log in to the agent system.

10. When the Session User Name and Password dialog opens, on the Machine tab, verify or change the user name and password for the destination Exchange Server. To change the user name or password, select the session, click Edit, make your changes, and then click OK.
11. Click the DBAgent tab and verify or change the user name and password for the backup agent service account. This account must meet the requirements for the Exchange Server you are restoring to. For information on these requirements, see Backup Agent Service Account Requirements for Document Level Backup and Restore.
12. Click OK.
13. When the Submit Job dialog appears, select Run Now to run the job immediately, or select Run On and select a future date and time when you want the job to run.
14. Enter a description for your job and click OK.

Note: Use the [Exchange Granular Restore Utility](#) (see page 97) tool to perform document level restore of the Exchange Server 2016.

More information:

[Alternative Restore Locations](#) (see page 103)

[Configure Document Level Restore Options](#) (see page 99)

Chapter 6: Using Best Practices

This section recommends best practices for using Arcserve Backup Agent for Microsoft Exchange Server.

This section contains the following topics:

[General Recommendations](#) (see page 111)

[Installation Recommendations](#) (see page 112)

[Exchange Server Configuration Recommendations](#) (see page 113)

[Backup Recommendations](#) (see page 114)

[Restore Recommendations](#) (see page 117)

[Backup and Restore Test Strategies](#) (see page 118)

[Using the Disaster Recovery Option with the Agent](#) (see page 119)

General Recommendations

Consider the following best practices when using the agent.

- [Technical Resources](#) (see page 111)
- [Logs in the Event Viewer](#) (see page 111)

Technical Resources

The Microsoft web site offers numerous technical resources for Exchange Server, including books, downloadable Help files, and software development kits. You should read these documents, especially white papers about disaster recovery for Microsoft Exchange Server. The more informed you are about Exchange Server, the more you can apply your knowledge to maximize data protection when using the agent.

Logs in the Event Viewer

In addition to monitoring the Arcserve Backup Activity log for events that may occur when using the agent, you should also monitor the logs in your Windows Event Viewer, especially the Application log and System log. The Application log includes internal Exchange Server events and the System log includes Windows events.

Installation Recommendations

Consider the following best practices when installing the agent.

- [Product Recommendations](#) (see page 112)
- [Load Reduction](#) (see page 113)

Product Recommendations

Arcserve Backup offers agents and options that let you protect all of the servers in your Exchange Organization. These servers include your Exchange Servers and domain controllers.

Note: It is important to protect your domain controllers since they include the Active Directory containers, which hold user, mailbox, and public folder information.

To maximize your Exchange Server protection, use all of the following solutions on each of your Exchange Servers:

- **Arcserve Backup Agent for Microsoft Exchange Server**--Includes Database Level and Document Level backup and restore. Database Level backup and restore protects the Exchange Server database and logs. Document Level backup and restore, which is only available with this agent, eases and expedites many administrative tasks and maximizes flexibility by offering the most granular level of restore.

- **Arcserve Backup Client Agent for Windows**--Protects files and system state, including Active Directory. It is important to protect the Active Directory because it stores mailbox and user information.

Note: In addition to using the Arcserve Backup Client Agent for Windows on all of your Exchange Servers, also use it to protect all of your domain controllers.

- **Arcserve Backup Disaster Recovery Option**--In the event of a disaster, the Arcserve Backup Disaster Recovery Option recovers the machine to the last full backup state. Install the Arcserve Backup Disaster Recovery Option on all servers you will use to back up your Exchange Servers and domain controllers.

You do not need to install the following application to effectively protect Exchange Server data:

- **Arcserve Backup Agent for Open Files**--Arcserve Backup Agent for Open Files is beneficial when you want to protect files that are open or in use by active applications. Because the Arcserve Backup Agent for Microsoft Exchange Server is an application-specific agent, dedicated to protecting Microsoft Exchange, it offers a complete and robust solution that encompasses all the features offered by Arcserve Backup Agent for Open Files.

Load Reduction

If you have the network infrastructure to support high performance remote backups, install the Backup Manager on a different server than your Exchange Server. This reduces the load on the Exchange Server.

Exchange Server Configuration Recommendations

Consider the following best practices for configuring your Exchange Server.

- [Circular Logging](#) (see page 113)
- [Transaction Log Space](#) (see page 113)

Circular Logging

Circular Logging must be disabled to take advantage of incremental and differential backups. If Circular Logging is not disabled and you submit an incremental or differential backup, the agent automatically converts the backup to full.

Although Circular Logging decreases the amount of disk space you use, it does not let you recover all changes since your last backup because it only maintains a small number of log files. Consequently, you cannot take advantage of the benefits of using a transaction-based system and you cannot completely recover if something goes wrong with the system. If you want to conserve disk space, perform regular backups rather than using Circular Logging because backups automatically remove transaction log files.

You cannot restore individual databases if circular logging is enabled during the backup operation or during the recovery operation.

Transaction Log Space

Make sure that you have enough space on your Exchange Server in case you want to restore transaction logs. Leave at least twice the amount of space that you expect your transaction logs to use. In addition, if you intend to restore Database or Document Level backups, you should leave enough space to accommodate the size of the backups because the size of the database file may increase during the restore.

Backup Recommendations

Consider the following best practices for backing up your Exchange Server.

- [Online Backup Use](#) (see page 114)
- [Media Integrity](#) (see page 114)
- Database Level Backup Strategies
- [Document Level Backup Strategies](#) (see page 116)
- [Document Level Backup and Restore Performance](#) (see page 116)

Online Backup Use

Always perform online backups. This lets you back up Exchange Server databases without shutting them down and losing work time. If you do not perform online backups, not only do you lose valuable work time, but you also run the risk of making costly errors since offline backups are detailed and labor-intensive. When you perform online backups, the agent manages files for you. When you perform offline backups, you must do all of the work yourself. In addition, if you perform offline backups, there is no process for validating the checksum on each page of the database so you cannot detect corruptions and check the integrity of the database.

Media Integrity

Use the global option Calculate and Store CRC Value on Backup Media when creating your backup job. Afterwards, scan your media with CRC verification to ensure the media integrity.

Database Level Backup Strategies

There are many factors that contribute to your backup strategy--backup window size, restore window size, server and storage hardware, the amount of available media, media retention time, network bandwidth, server load, and the size of your databases. Consequently, the backup strategy that you should use depends on your environment and physical hardware.

When determining a backup strategy, you must first assess the amount of time your organization has available each week for backing up your Exchange Server. When doing so, remember that the most time-consuming aspect of performing a restore is replaying the log files. Depending on how often you perform full backups, it can take several hours to replay log files on large servers during a restore because every transaction that has occurred since the last backup must be scanned. In addition, the speed at which transaction log replay occurs varies, depending on the type of transactions that must be replayed. Perform a test restore of your log files to get a more accurate estimate of how long it will take.

After you determine the size of your restore window, you must consider the affect that your environment and resources will have on your backup strategy:

- In an environment that has mission-critical data with minimal restore windows, you should perform full backups nightly (or during the hours your server is least active) and incremental backups at mid-day (or during a low production period during the day that is evenly spaced from your full backups).
- If media usage is a major factor in your backup strategy, either perform full backups daily or full alternating with differential backups daily.
- In an environment that has non mission-critical data with less aggressive restore windows, you should perform a full backup at least once a week and perform incremental or differential backups on the other days.

In Exchange Server 2007 CCR and Exchange Server 2010/2013/2016 Database Availability Group (DAG) environments, you should use the default backup source to avoid affecting the performance of live databases. By default, the database is backed up from the replica, and the agent backs up from the active database only if no healthy replica is available. In Exchange Server 2010/2013/2016 environments, if more than one replica for a database exists, the default order for replica selection is based on the database copy activation preference. The first copy is used first.

The following chart includes examples of a few backup strategies and their advantages and disadvantages. Although, for maximum protection, you should perform daily full and incremental backups, for maximum protection, you can customize your backup strategy to suit your organization's needs. The only requirement is that you minimally perform daily backups on work days with a full backup once a week.

Backup Strategy	Advantages	Disadvantages
Daily full and incremental backups*	High frequency of protection Short restore window	High media usage

Backup Strategy	Advantages	Disadvantages
Daily full backups	Good frequency of protection Short restore window	High media usage
Daily backups with a full at least once a week	Good frequency of protection Less media usage	Varying restore window

* Schedule full and incremental backups approximately 12 hours apart.

Document Level Backup Strategies

Although it is important to consider all of these factors, for Document Level backups, the two most important factors are typically tape usage and the amount of time available for your backups. The following recommendations are based on these two factors. If other factors are more important in your environment, adjust your backup strategy accordingly.

The first task you must perform when determining a backup strategy is to assess the amount of time your organization has available each week for backing up your Exchange Server. Next, perform a backup of your Exchange Server using Document Level backup to ascertain how long the backup job will take. Finally, use this information to determine the most efficient way of backing up your Exchange Server within the time available to you.

If your organization's backup schedule allows you to perform a full backup at least one day a week, perform daily differential backups with one full backup a week.

If you want to distribute the full backup throughout the week, perform a full backup of only one storage group per day and rotate which storage group gets the full backup. Back up all other storage groups using differential backups.

Document Level Backup and Restore Performance Tuning

To maximize performance when using Document Level backup and restore:

- Increase the value of the Number of Threads configuration setting and decrease the value of the Thread Priority configuration setting. This combination increases performance and minimizes the impact on your server.

- Enable multiplexing to take advantage of high performance devices. Because destination devices are faster than a single Document Level backup stream, multiplexing decreases backup time by dividing your backup jobs into several sub-jobs that run simultaneously to the same device.

If you enable multiplexing and also want to increase the value of the Number of Threads configuration setting, keep in mind that the Number of Threads value is per each backup stream. Therefore, the actual number of threads running on a system is the number of streams multiplied by the number of threads. As a result, leveraging multiplexing before leveraging the Number of Threads is optimal. For example, on a four processor machine with four storage groups, a total of six to eight threads is recommended. These threads should be configured as two threads per each storage group, resulting in four multiplexing streams. Because storage groups are independent resources, it is better to increase the level of streams with multiplexing than to increase the Number of Threads and sequentially back up one storage group at a time.

- Enable the Complete Messaging Single Instance Storage configuration option. This option checks to see if attachments and messages have already been backed up and backs up only one copy, eliminating the need to back up an attachment or message each time it is referenced. This can significantly decrease the size of your backups.
- If you are creating a short backup job or do not need an estimate of how long the job will take, enable the Disable File Estimate global option to save time.
- Use incremental and differential backup methods to back up only the data that has changed since your last full or incremental backup. This saves time by backing up only changed data rather than backing up all of your data.
- Use backup filters. This lets you exclude unwanted and large amounts of data from your backup jobs.
- If media usage is a major factor in your backup strategy, either perform full backups daily or full alternating with differential backups daily.
- In an environment that has non mission-critical data with less aggressive restore schedules, you should perform a full backup at least once a week and perform incremental or differential backups on the other days.

Restore Recommendations

Consider the following best practices for restoring the Exchange Server.

- General Restore Strategies
- [Document Level Restore Strategies](#) (see page 118)

General Restore Strategies

Perform a test restore to a backup server **at least once a month** and make sure the restored database is functioning properly.

For more information about how to perform test restores on Exchange Server 2007 and 2010 systems, see [Perform a Database Level Test Restore to an Alternative Location](#).

Document Level Restore Strategies

If you are restoring to an original location that contains existing data, select the conflict resolution option, **Overwrite only when modified**. If you are restoring to an original location in an empty folder or an alternative location, select the conflict resolution option, **Restore as copy**.

Backup and Restore Test Strategies

After you have developed backup and restore strategies, you need to test them to ensure that they work satisfactorily. You can perform backup tests on a production system; however, you should perform recovery tests on a test system that closely mimics the production system before applying your backup and restore strategies to the product system.

You should perform a test restore to a backup server at least **once a month** and make sure the restored database is functioning properly. This lets you test your backup and restore strategies to assess whether you are backing up your system accurately and to prepare for a possible disaster.

For information about how to perform test restores on Exchange Server 2007 and 2010/2013/2016 systems, see [Database Level Data Restore](#) (see page 52).

Note: Exchange Server 2007 have a recovery storage group and Exchange Server 2010/2013/2016 has a recovery database, both of which can be used to test restores. However, you should still practice restoring your entire Exchange Server to a test server.

Using the Disaster Recovery Option with the Agent

Planning your backup methodology is critical for protecting your Exchange Server 2007 and 2010/2013/2016 systems against failures, and for quick recovery of your server in case of disaster.

The following process assumes you have a Windows server running Exchange Server 2007 or 2010/2013/2016 and some Exchange Server Databases are running. A disaster occurs and it is necessary to rebuild the entire server.

Important! Before performing disaster recovery, ensure you have the most recent full backup of the Exchange Mailbox Server and the most recent database level full backups for all mailbox databases and public folder databases.

1. If the Active Directory server was destroyed, perform disaster recovery of AD server first. For more information, see the Arcserve Backup Disaster Recovery Option Guide.
2. Perform disaster recovery of the Exchange Server.
3. Perform database level restores of all mailbox databases and public folder databases. For more information, see the section, [Performing Database Level Backups and Restores](#) (see page 35).

Note: If you are running Exchange Servers in cluster environments, perform database level restores of mailbox and public folder databases according to your particular configuration.

You may receive the following error:

AE9650 The volume shadow service provider has reported a bad state for the operation.

If so, perform the following steps using the Arcserve Backup Disaster Recovery Option Wizard

1. Perform Disaster Recovery to recover the Exchange 2007 Server.
2. Use the Arcserve Backup Agent for Microsoft Exchange to restore all storage group database data to an alternate location. Make sure the option, Run recovery after restore is disabled.
3. Log in to the Exchange Server with the Mailbox role installed and stop the IS (Information Store) service.
4. Navigate to the Storage Group folder, delete the *.chk, *.log, and *.edb files. If your Exchange server has more than one storage group, repeat the delete operation for all storage groups.

5. On the alternate location used in Step 2, copy the *.chk, *.log, and *.edb files restored there to their original location.
6. Restart the IS service.

Appendix A: Troubleshooting

This section provides troubleshooting information to help you identify and resolve problems that you may encounter when using the Arcserve Backup Agent for Microsoft Exchange Server. To help you quickly find the information you need, this section lists some error messages and possible reasons and solutions for these messages.

This section contains the following topics:

[Activity Log](#) (see page 121)

[I Cannot Determine How Much Space is Saved Using Complete Single Instance Storage](#) (see page 122)

[I Cannot Determine if I Need to Perform a Database Level Backup](#) (see page 122)

[I Cannot Determine if I Can Perform a Database Level Backup at the Same Time as a Document Level Backup](#) (see page 123)

[I Cannot Determine the Purpose of the M Drive](#) (see page 123)

[I Cannot Browse Mailboxes Under Document Level](#) (see page 124)

[I Cannot Reply to eMails Sent from a Restored Mailbox](#) (see page 124)

[Exchange Server Errors](#) (see page 125)

[Information for Customer Support](#) (see page 129)

[Document Level Backup or Browse for Exchange Server 2013 Does Not Work When the CAS Server Name is Inaccessible](#) (see page 131)

Activity Log

Many of the actions to resolve error conditions advise you to check the Arcserve Backup Activity log. The Activity log contains comprehensive information about the operations performed by Arcserve Backup. It provides an audit trail of all Arcserve Backup activity for every job that is run. You can scan this log whenever necessary to see if any errors have occurred. The log is available from the Job Status Manager. For more information about using the Activity log, see the *Administration Guide*.

I Cannot Determine How Much Space is Saved Using Complete Single Instance Storage

Valid on all Exchange Server systems.

Symptom

After I back up data using Single Instance Storage, I cannot determine how much space is saved.

Solution

After you submit your backup job, you can go to the Job Status Manager and double-click the active job to view real-time job properties. If you have Complete Messaging Single Instance Storage enabled, all of the fields related to size will reflect the size prior to single instance storage optimization. The actual size of the backup after single instance storage optimization opens in the Activity Log and is labeled "{xx}MB Written to Media."

I Cannot Determine if I Need to Perform a Database Level Backup

Valid in all Exchange Server systems.

Symptom

I cannot determine if I need to perform database level backups when I perform document level backups.

Solution

You should perform a perform database level backups before you perform document level backups. Database level backup is the fundamental backup for your Exchange Server, and you should always use it regardless of whether you use one of the other granular backup types. You can use database level backups to restore Exchange Server in the event of a system failure, database corruption, or disaster recovery situation.

I Cannot Determine if I Can Perform a Database Level Backup at the Same Time as a Document Level Backup

Valid in all Exchange Server systems.

Symptom

I cannot determine if I can perform database level backups at the same time as document level backups.

Solution

You can perform a Database Level and Document Level backup at the same time. You can also perform multiple Document Level backups at the same time, and you can perform multiple Database Level backups at the same time by running up to one job for each storage group.

I Cannot Determine the Purpose of the M Drive

Valid in all Exchange Server systems.

Symptom

I cannot determine the purpose of the M drive and do not know if it needs to be backed up.

Solution

The M drive (ExIFS) is a virtual drive that exposes mailboxes and public folders. It is simply a view of the Exchange Server and not a physical drive, so you do **not** need to back it up, which is why it is skipped when you perform a backup job using the Client Agent for Windows.

I Cannot Browse Mailboxes Under Document Level

Symptom

I cannot browse mailboxes under document level.

Valid on Exchange Server 2010 systems running on Windows Server 2008 R2

Solution

Do the following:

1. Log in to the Exchange Server 2010 server.
2. Install the latest MAPI package.
3. Open the Windows Registry Editor.
4. Locate the following key:
HKEY_LOCAL_MACHINE/Software/Wow6432Node/Microsoft/Windows Messaging Subsystem
5. Add the following values:
String Value: ProfileDirectory
Value Data: Path to a normal directory that exists on file system, such as C:\Temporary
6. Restart the Exchange Server 2010 server.

I Cannot Reply to eMails Sent from a Restored Mailbox

Valid on Microsoft Exchange Server 2010

Symptom

Unable to reply to emails sent from a restored mailbox.

If a mailbox was removed from the Exchange Server and restored using the Document Level Agent Options, "Create mailboxes if specified mailboxes do not exist" and "Create user if not existing", users cannot reply to emails sent from the restored user.

Solution:

Create new emails instead of replying to old ones.

Exchange Server Errors

For additional information on any Exchange Server error, check the Event Log on the Exchange Server or see the Microsoft web site.

This section contains the following topics:

[Exchange Agent Does Not Display When You Browse the Server](#) (see page 125)
[Unable to Create the User Account, Create the Mailbox, or Finalize the Mailbox](#) (see page 126)
[VSS Errors Occur on Windows Server 2008 Systems](#) (see page 128)
[Arcserve Backup Creates Duplicate Messages When Restoring Data](#) (see page 129)

Exchange Agent Does Not Display When You Browse the Server

Valid on Exchange Server 2007 and 2010 systems.

Symptom

When you attempt to browse the Exchange Server system, the Exchange Agent object does not display in either the Backup Manager or Restore Manager window.

Solution

The Agent service is not running. Start the Universal Agent service.

Unable to Create the User Account, Create the Mailbox, or Finalize the Mailbox

Valid on Exchange Server 2007 and 2010 systems.

Symptom

When performing a Document Level restore with a new user and mailbox creation, the agent:

- Creates a basic user with minimal rights in the Users container of Active Directory.
- Creates a mailbox for the user.
- Sends a request to the recipient update service and sends a message to the mailbox to finalize it.

If all three of these steps are successful, you can view the mailbox in the Exchange System Manager. If any of these steps fail, the mailbox will not restore.

Solution

There are several reasons why these steps may fail. Each reason, and the action you can take to resolve the error, is described below.

- The user account creation failed because the backup agent service account does not have enough rights to create a new account.

Ensure that your backup agent service account has the appropriate rights assigned to it. For information on these requirements, see [Backup Agent Service Account Requirements for Document Level Backup and Restore](#). Also, make sure that the backup agent service account is assigned membership to a group that has permissions over the Users container in Active Directory. For example the Account Operators group has these permissions by default.
- The user account or mailbox creation failed because the global catalog server could not be contacted or a Windows application or system error occurred.

Check the Event Viewer Application Log and System Log for recent errors. Also, check the agent logs DBAEXCUserSummary.log and WinUserUpd.log.
- The mailbox creation failed because a disabled mailbox with the same name already exists.

Check the Exchange System Manager to determine if there is a disabled mailbox with the same name. If you recently deleted a user account associated with the mailbox you are trying to restore, use the Run Cleanup Agent feature in the Exchange System Manager and purge the mailbox.
- The mailbox finalization failed because the Recipient Update Service failed to update the mailbox.

Make sure that the Recipient Update Service is able to finalize mailboxes when an update is called. You may have to rebuild the Recipient Update Service if it is not performing properly. For more information on the Recipient Update Service, see the Microsoft documentation.

- The mailbox finalization failed because of Active Directory replication delays or Exchange Server cache delays. This failure can occur even if the user or mailbox was successfully created.

In multi-domain controller environments or large Exchange Organizations, there may be delays before you can use the mailbox. If mailbox finalization fails, verify that the account appears in the Global Address List. If it appears in this list, repackage the failed mailbox with user and mailbox creation selected and run the job when the mailbox appears in the Exchange System Manager.

VSS Errors Occur on Windows Server 2008 Systems

Valid on Windows Server 2008 platforms.

Symptom

Database level backup jobs complete successfully and Windows Event ID 8194 appears in Windows Event Viewer.

Environment:

Microsoft Exchange Server 2007 is installed on a Windows Server 2008 x64 system.

Solution

Event ID 8194 relates to Volume Shadow Copy Service errors.

For more information, see the Microsoft support website. You can eliminate the error condition by adding the access permissions for the Network Service account to the COM Security of the affected server. To add the access permissions for the Network Service account, do the following:

1. From the Start Menu, select Run
The Run dialog opens.
2. In the Open field, input dcomcnfg and click OK.
The Component Services dialog opens.
3. Expand Component Services, Computers, and My Computer.
Right-click My Computer and click Properties on the pop-up menu.
The My Computer Properties dialog opens.
4. Click the COM Security tab.
Under Access Permission click Edit Default.
The Access Permissions dialog opens.
5. From the Access Permissions dialog, add the Network Service account with Local Access allowed.
6. Close all open dialogs.
7. Restart the computer.

Arcserve Backup Creates Duplicate Messages When Restoring Data

Valid on all Exchange Server systems.

Symptom

Arcserve Backup duplicates messages when you restore a document to the same location using the **Overwrite conflict resolution** option.

Solution

This is expected behavior. When you restore a message, a new message ID is created and assigned to the message. Consequently, if you restore data from on backup multiple times, you will see duplicated messages.

Information for Customer Support

If you need to contact Arcserve support for assistance with Exchange Server 2007 and Exchange Server 2010, use the following registry keys to gather the information that Customer Support will need to help resolve your issues:

Database Level Backup and Restore

HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\CA ARCserve Backup\
ExchangeDBAgent\Parameters

Value Name: Debug
Value Type: REG_DWORD
Value Data: 0(off), 1(default), 5(verbose)
Results: dbaexdb*.log & dbaexdb*.trc, in Exchange agent DBLOG directory

If the trace files grow too large or too many, you can use the following registry values to reduce the size and file count:

Value Name: MaxLogSize
Value Type: REG_DWORD
Value Data: size of each trace file in MB
Result: As soon as the size is reached, a new trace file will be generated.

Value Name: MaxLogCount
Value Type: REG_DWORD
Value Data: Number of log files
Results: After the maximum number of log file reaches this value, the oldest log file is deleted and a new log file is created.

Note: You can change the registry values listed above using the Exchange agent configuration utility. You do not need to restart the Universal Agent service.

Document Level Backup and Restore

For Exchange Server 2007 and 2010, the registry path is as follows:

HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\CA ARCserve
Backup\ExchangeDocumentAgent\Parameters

Value Name: Debug
Value Type: REG_DWORD
Value Data: 0(off), 1(default), 5(verbose)
Results: Expaadp*.log & expaadp*.trc, in Exchange agent LOG directory

Note: You can change the debug level using the Exchange agent configuration utility. You do not need to restart the Universal Agent service.

If the size of the trace files grows too large, you can create and configure the following registry values to reduce the size:

Value Name: MaxLogSize
Value Type: REG_DWORD
Value Data: size of each trace file in MB
Result: As soon as the size is reached, a new trace file will be generated.

Value Name: DeleteLogFile
Value Type: REG_DWORD
Value Data: 0, 1
Results: 0: When a new trace file is generated, the previous trace file will NOT be deleted. 1: When a new trace file is generated, the previous trace file will be deleted.

Document Level Backup or Browse for Exchange Server 2013 Does Not Work When the CAS Server Name is Inaccessible

Valid on Windows platform

Symptom

The document level backup or browse for Exchange Server 2013 may not work if the CAS server name that is returned from the Outlook Autodiscover becomes inaccessible or is not functioning correctly.

Solution:

To correct this problem, you need to provide a working CAS server name in the configuration section of the Autodiscover.ini file.

For more details on the Autodiscover.ini file, see

<http://www.arcserve-knowledgebase.com/index.php?View=login&EntryID=5545&Msg=entry>.

Appendix B: Setting Up a Backup Agent Service Account

After you install the Arcserve Backup Agent for Microsoft Exchange, you must set up a backup agent service account on your Exchange Server. The backup agent service account grants the agent the authority to communicate with the Exchange Server.

This section contains the following topics:

[How to Set Up Your Backup Agent Service Account](#) (see page 133)

[Set Up Your Backup Agent Service Account](#) (see page 135)

[Set Up Groups](#) (see page 138)

[Delegate Roles](#) (see page 141)

[Additional Configuration Considerations](#) (see page 143)

How to Set Up Your Backup Agent Service Account

Before you can set up your backup agent service account, you must perform the following tasks:

1. Determine your backup agent service account requirements.

Note: For more information, see [Backup Agent Service Account Requirements Overview](#) (see page 134).

2. Determine your tasks.

Note: For more information, see [Task Requirements](#) (see page 134).

3. Determine your environment.

Note: For more information, see [Implementation Considerations](#) (see page 134).

4. Set Up Your Backup Agent Service Account.

Backup Agent Service Account Requirements Overview

The requirements for your backup agent service account depend on the type of backup and restore you will be using (database level, document level, or both). To determine these requirements, see information about backup agent service account requirements in the chapters “Performing Database Level Backups and Restores,” or “Performing Document Level Backups and Restores.”

Note: If you plan on using more than one type of backup and restore (for example, both database level and document level), your backup agent service account must meet the requirements for all types. Document level backup and restore requirements include all of the requirements for database level backup and restore.

Task Requirements

After you decide on your backup agent service account requirements, you must determine your tasks.

Depending on your requirements, you must perform one or more of the following tasks:

- Create a user account
- Create a mailbox
- Create groups
- Delegate roles

Implementation Considerations

Each task you must perform to manually set up your backup agent service account depends on one or more of the following factors:

- The version of Exchange Server you are using:
 - Exchange Server 2007
 - Exchange Server 2010/2013/2016
- The version of Windows you are using:
 - Windows Server 2008
 - Windows Server 2008 R2
 - Windows Server 2012
- The type of server you are using:
 - Domain controller
 - Member server

Set Up Your Backup Agent Service Account

To set up your Backup Agent Service Account

1. Set up user accounts.
2. Set up mailboxes.
3. Set up groups.
4. Set up roles.

Important! Each task includes different procedures based on the environment. Select the tasks and environments that match your needs and use the corresponding procedures to manually set up your backup agent service account.

Note: For additional configuration considerations, see Additional Configuration Considerations.

More information:

[Create a Domain User on Windows Server 2008](#) (see page 135)

[Set Up Groups](#) (see page 138)

Create a Domain User on Windows Server 2008

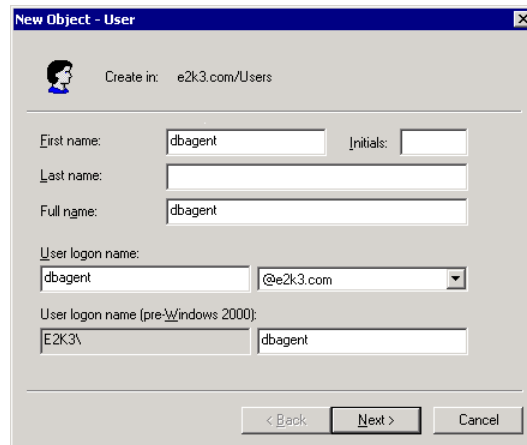
If you already have a domain account, you do not have to create a user. You can use the domain account as your backup agent service account. To do this, simply use your domain account to set up a mailbox, add groups, add rights, and delegate roles.

To create a backup agent service account

1. On your domain controller, from the Start menu, select All Programs, Administrative Tools, and select Active Directory Users and Computers.

The Active Directory Users and Computers window opens.

2. When the Active Directory dialog opens, expand the Active Directory Users and Computer tree and click Users.
3. From the Action menu, select New, User.
4. When the New Object - User dialog opens, enter a first, last and full name for the user. Also enter Initials. Enter a User logon name, and then click Next.



New Object - User

Create in: e2k3.com/Users

First name: dbagent Initials:

Last name:

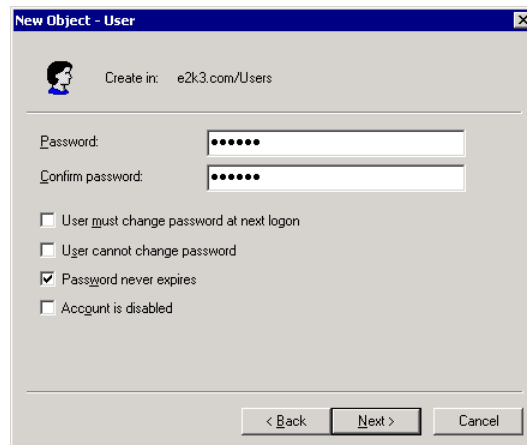
Full name: dbagent

User logon name: dbagent @e2k3.com

User logon name (pre-Windows 2000): E2K3\ dbagent

< Back Next > Cancel

5. Enter a password, confirm the password, enable the Password never expires option, and then click Next.



New Object - User

Create in: e2k3.com/Users

Password:

Confirm password:

☐ User must change password at next logon

☐ User cannot change password

☒ Password never expires

☐ Account is disabled

< Back Next > Cancel

6. Click Finish.

Create a Domain User with a Mailbox for Exchange Server 2007, 2010, 2013, and 2016

Follow these steps:

1. From the Windows Start menu on your Exchange server system, select Programs, Microsoft Exchange Server, and Exchange Management Console.

The **Exchange Management Console** opens.

2. Expand the Recipient Configuration object, select and right-click the Mailbox object.

From the pop-up menu, select New Mailbox.

The **New Mailbox - Introduction** dialog opens.

3. From the section **Choose mailbox type**, select the **User Mailbox** option and click Next.

The **New Mailbox - User Type** dialog opens.

4. From the section **New user**, select New user and click Next.

The **New Mailbox - User Information** dialog opens.

5. Complete the following fields:

New Mailbox

- ☒ Introduction
- ☒ User Type
- ☒ **User Information**
- ☐ Mailbox Settings
- ☐ New Mailbox
- ☐ Completion

User Information
Enter the user name and account information.

Organizational unit: E12Dom.com/Users Browse...

First name: exchagent Initials: Last name:

Name: exchagent

User logon name (User Principal Name): exchagent @e12dom.com

User logon name (pre-Windows 2000): exchagent

Password: Confirm password:

☐ User must change password at next logon

Help < Back Next > Cancel

In the First name field, enter a name for your backup agent service account, enter a User logon name and password, and then click Next.

The **New Mailbox - Mailbox Settings** dialog opens.

6. Complete the following fields:

New Mailbox

Introduction
User Type
User Information
Mailbox Settings
New Mailbox
Completion

Mailbox Settings
Enter the alias for the mailbox user, and then select the mailbox location and policy settings.

Alias:
exchagent

Server:
E12-3

Storage group:
First Storage Group

Mailbox database:
Mailbox Database

☐ Managed folder mailbox policy:
Browse...

☐ Exchange ActiveSync mailbox policy:
Browse...

Messaging Records Management is a premium feature and requires an enterprise client access license to enable on a mailbox.

Help < Back Next > Cancel

Select a Storage Group and a Database for the mailbox, and then click Next.

The **New Mailbox - Configuration Summary** dialog opens.

7. Verify the configuration summary and click the **Back** button if you need to make changes.
8. To complete the configuration, click New and then click Finish.

You have successfully created a domain user with a mailbox on an Exchange Server 2007, 2010, 2013, or 2016 system.

Note: After you finish creating your backup agent service account and mailbox, you should log into this account using Outlook or by sending an email to the account to verify that the mailbox functions properly.

Set Up Groups

Based on the type of Microsoft Exchange Server that is running in your environment (member server or domain controller), use one of the following procedures to set up groups.

Add Groups for all Versions of Exchange Server on a Windows Member Server

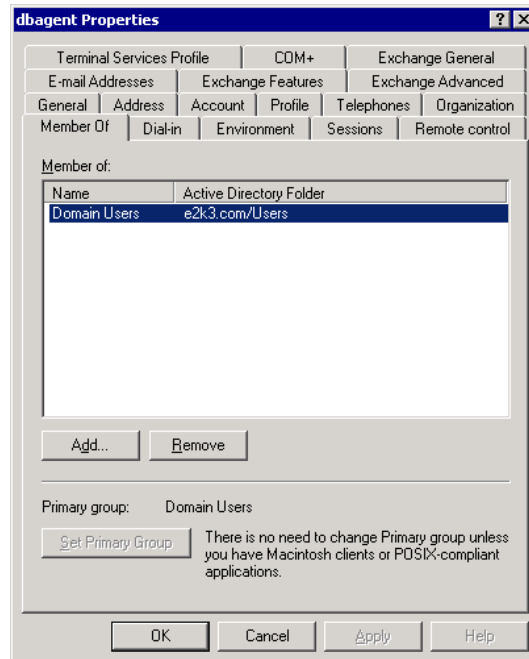
To add groups

1. Right-click My Computer and select **Manage**.
2. When the **Computer Management** dialog opens, expand the **Local Users and Groups** object and click **Groups**.
3. In the right-pane, double-click **Administrators**.
4. When the Properties dialog opens, click **Add**.
5. When the **Select Users or Groups** dialog opens, in the **Look in** field, select the appropriate domain. Next, in the **Name** column, select the name of your backup agent service account, click **Add**, and then click **OK**.
6. When the Properties dialog reopens, the name of your backup agent service account is displayed in the **Members** list. Click **OK**.
7. When the Computer Management dialog reopens, in the right-pane, double-click **Backup Operators** and repeat Steps 4 to 6.

Add Groups for all Versions of Exchange Server on a Domain Controller

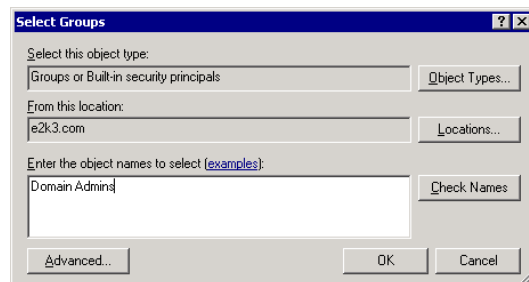
To add groups

1. On your domain controller, from the Start menu, select All Programs, Administrative Tools, and select Active Directory Users and Computers. From the Active Directory Users and Computers dialog, in the right pane, right-click your new account name and select Properties.
2. When the Properties dialog opens, click the Member Of tab and click Add.

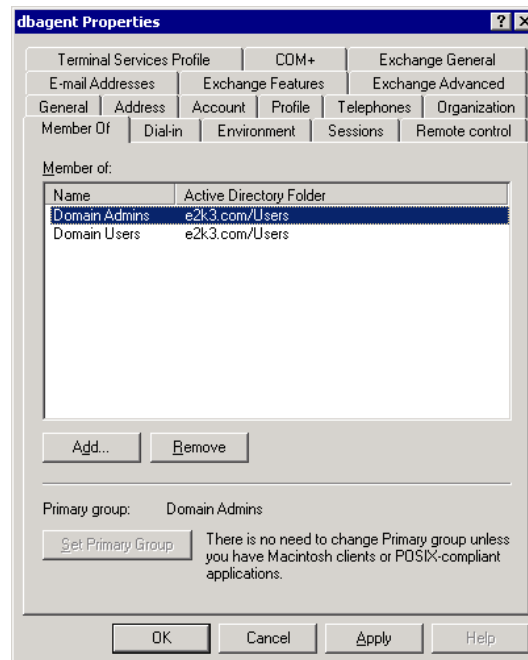


3. When the Select Groups dialog opens, type Domain Admins in the Enter the object names to select field and click OK.

Note: If your Exchange Server is your domain controller, you must also select Administrators and Backup Operators.



- When the Properties dialog reappears, select Domain Admins and click Set Primary Group. Next, select Domain Users, click Remove, click Yes, and then click OK.



Delegate Roles

Use one of the following procedures to delegate roles.

- [Delegate Roles for Exchange Server 2007 on a Domain Controller or Member Server](#) (see page 141)
- [Delegate Roles for Exchange Server 2010/2013/2016 on a Domain Controller or Member Server](#) (see page 143)

Delegate Roles for Exchange Server 2007 on a Domain Controller or Member Server-MSExchW

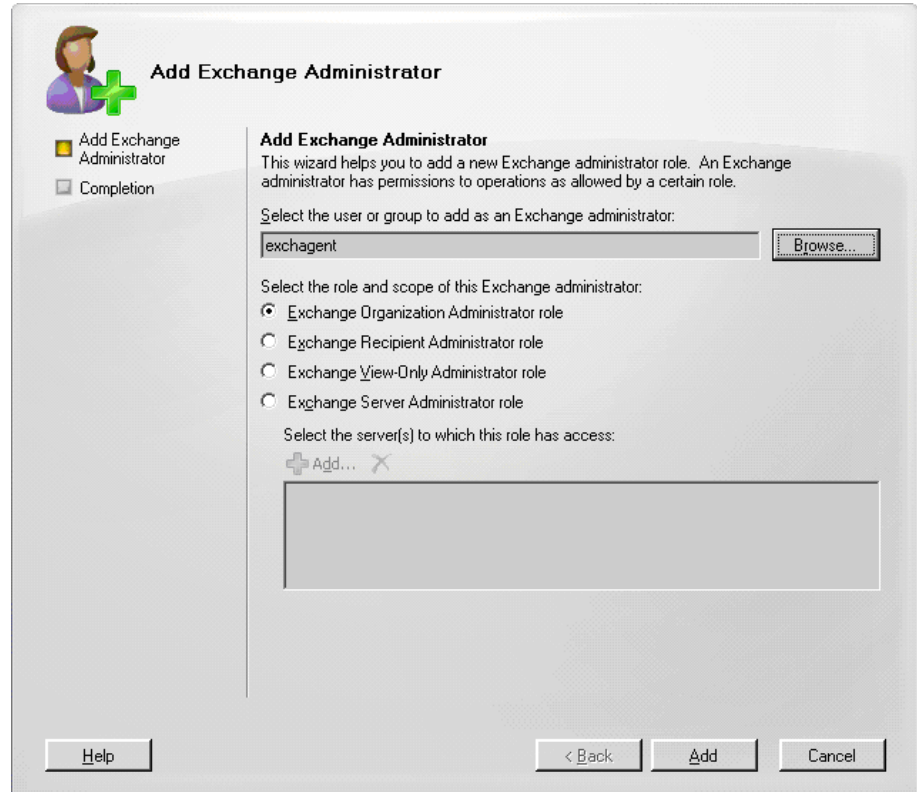
To assign permissions for the backup agent service account

- On your Exchange server, from the Start menu, select Programs, Microsoft Exchange Server, and Exchange Management Console.

The Exchange Management Console opens.

2. Select and right-click the Organization Configuration object. From the pop-up menu, select Add Exchange Administrator.

The Add Exchange Administrator dialog opens.



3. Click the Browse button to browse to and select the user or group to which you want to assign the role.
4. Select one of the following options:
 - Exchange Organization Administrator role
 - Exchange Server Administrative role

Click Add, and then click Finish.

The permissions are assigned to the backup agent service account.

Delegate Roles for Exchange Server 2010/2013/2016 on a Domain Controller or Member Server

In Exchange Server 2010/2013/2016, the procedure is not supported by the interface and must be performed using the Management Shell. Using the Management Shell, you must use the Role Based Access Control (RBAC) authorization system to assign permissions for the backup agent service account.

Follow these steps:

1. From the Exchange Server machine, click Start, Programs, Microsoft Exchange Server 2010/2013/2016, Exchange Management Shell.

The Exchange Management Shell opens.

2. Type the following command to add a mailbox as a member of a role group:

```
Add-RoleGroupMember <"role group name"> -Member <"member">
```

The permissions are assigned to the backup agent service account.

Example

In the following command, the mailbox, "exchagent" is added to the role group, "Organization Management", and inherits all access rights associated to that group.

```
Add-RoleGroupMember "Organization Management" -member "exchagent"
```

Additional Configuration Considerations

The following sections include additional configuration considerations, depending on your environment.

- [Member Server Considerations](#) (see page 143)
- [Multiple Domain Considerations](#) (see page 144)

Member Server Considerations

If your Exchange Server is on a member server, you may need to add the backup agent service account to the same groups and rights on the domain controller, depending on the domain controller security policies and security settings.

Multiple Domain Considerations

If your Exchange Server is running on a network that has multiple domains and you want to create the backup agent service account in a different domain than the domain where your Exchange Server is located, add the groups and rights in both domains.

Appendix C: Registering Cluster Resources

This section contains the following topics:

[Register the Cluster Resources Manually](#) (see page 145)

Register the Cluster Resources Manually

When you install the agent on local nodes, the installation procedure registers and creates the cluster resources for you automatically. This section describes how to register and create the cluster resources manually.

To register the cluster resources manually

1. Ensure that the agent is installed on all nodes on which Exchange Virtual Server could potentially run and the agent installation directory is the same on all nodes.

2. If the resource type is not already registered, run the following command:

```
Cluster.exe restype "Arcserve Backup Exchange Agent Notifier" /create /dll: CaExCluRes.dll /type:"Arcserve Backup Exchange Agent Notifier"
```

Note: If your resource type is already registered, Arcserve Backup Exchange Agent Notifier displays under the Cluster Configuration\Resource Types branch in the Cluster Administrator.

3. Run the following command to register the extension dll:

```
Cluster.exe/REGEXT:"C:\WINDOWS\cluster\CAExCluResEx.dll"
```

4. Use the Cluster Administrator to create the Arcserve Backup Exchange Agent Notifier cluster resource instance in the Exchange Virtual Server group. As a best practice, append the Exchange Server name to the cluster resource instance name. For example, Arcserve Backup Exchange Agent Notifier – (VS1) is the cluster resource instance name and VS1 is the Exchange Server name. When the New Resource dialog opens, enter the name and description of the resource instance, select **Arcserve Backup Exchange Agent Notifier** in the Resource type field, select the name of your Exchange Server virtual group in the Group field.

Click Next.

The **Possible Owners** dialog opens. The nodes in the cluster on which the resource can be brought online display in the Possible owners box.

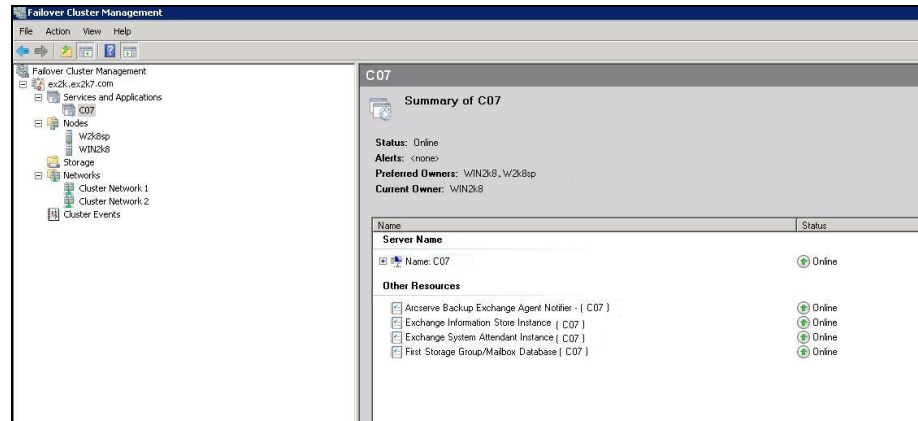
5. Click Next.

The **Dependencies** dialog opens.

6. When the Dependencies dialog opens, click Finish to end the resource creation process, and then click OK.

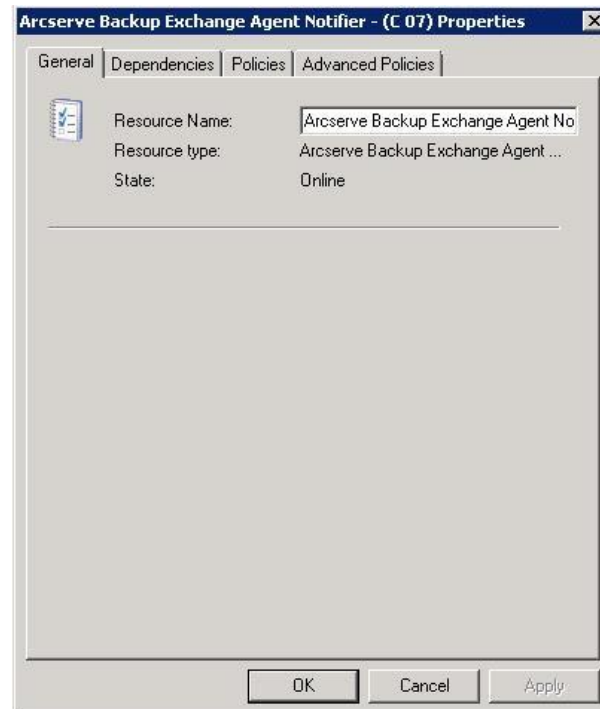
7. Open the Cluster Administrator and confirm that the Arcserve Backup Exchange Agent Notifier resource is displayed.

The following diagram illustrates that the Arcserve Backup Exchange Agent Notifier resource is displayed:

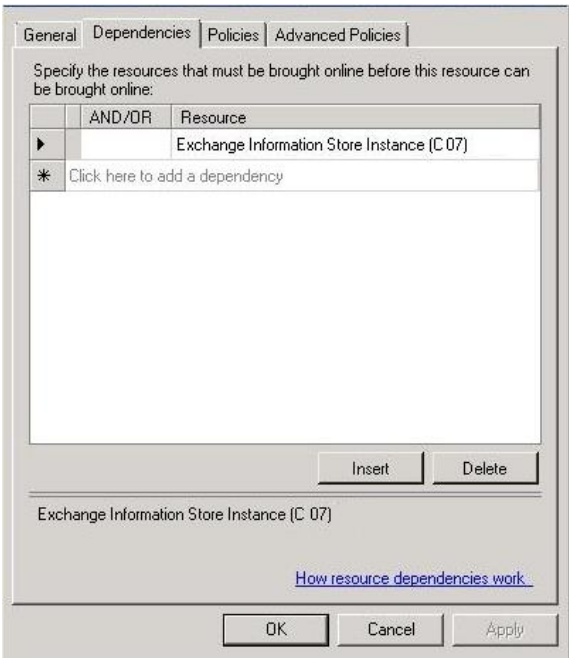


8. Right-click the Arcserve Backup Exchange Agent Notifier resource to verify the General, Dependencies, and Advanced options.

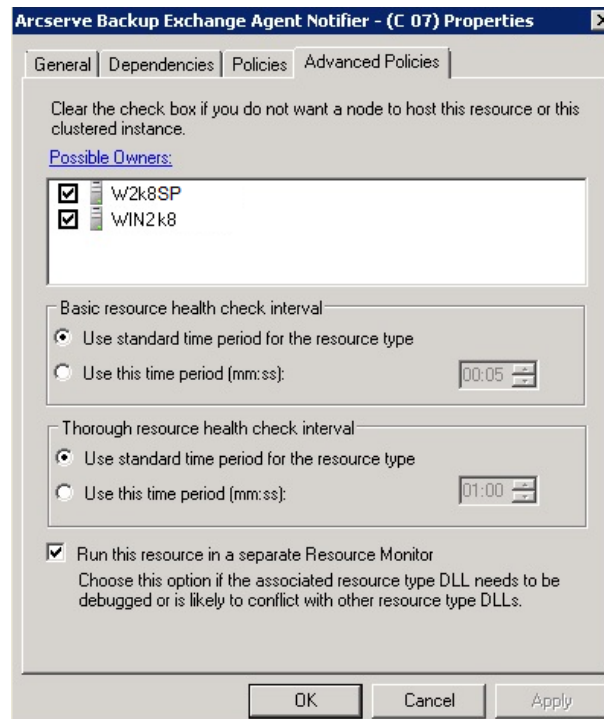
The following diagram illustrates how the options should appear on the Arcserve Backup Exchange Agent Notifier, General tab:



The following diagram illustrates how the options should appear on the Arcserve Backup Exchange Agent Notifier, Dependencies tab:



The following diagram illustrates how the options should appear on the Arcserve Backup Exchange Agent Notifier, Advanced tab:



Note: On the Advanced tab, make sure the **Affect the group** check box is **not** selected. This ensures that the state of the resource does not affect the Exchange Server virtual group.

9. Repeat Steps 2 to 6 on each node that has an Exchange Server virtual group where you need to create the resource.

Glossary

Database Availability Group (DAG)

A Database Availability Group (DAG) is a concept introduced in Exchange Server 2010. It is a collection of up to 16 mailbox servers, where each server stores up to 100 mailbox databases.

Database Level Backups

Database Level Backups let you protect the system and supports restoring the Exchange Server in its entirety.

Document Level Backup

Document Level backup lets you back up folders and messages and a granular level of restore.

Multiplexing

Multiplexing is a process in which data from multiple sources is written to the same media simultaneously. In Arcserve Backup, jobs with multiple sources submitted with this option are broken into child jobs, which write data at the same time.

Multistreaming

Multistreaming is a process that divides backup jobs into several sub-jobs that run simultaneously to different devices.

Organization View

Organization View provides a central display of the entire Exchange Server organization, so you can quickly find remote Exchange servers.

Restore Set

A restore set is the set of all sessions needed to restore your Exchange Server, storage group, or mailbox database. The number of sessions in a restore set depends on the backup method used.

Storage Group

Each Exchange mailbox server in the organization can have up to 50 storage groups. A storage group can have up to 5 database stores (except for replicated environments which can have one), which can be mounted and dismounted independently.

Trace Log Files

Trace Log Files are files created by Arcserve Backup. They provide data you can use to debug problems that may occur when performing document level and database level backups and restores.

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