

BrightStor® ARCserve® Backup for Windows

Agent for Microsoft Exchange Guide

r11.5



This documentation and any related computer software help programs (hereinafter referred to as the "Documentation") is for the end user's informational purposes only and is subject to change or withdrawal by CA at any time.

This Documentation may not be copied, transferred, reproduced, disclosed, modified or duplicated, in whole or in part, without the prior written consent of CA. This Documentation is confidential and proprietary information of CA and protected by the copyright laws of the United States and international treaties.

Notwithstanding the foregoing, licensed users may print a reasonable number of copies of the Documentation for their own internal use, and may make one copy of the related software as reasonably required for back-up and disaster recovery purposes, provided that all CA copyright notices and legends are affixed to each reproduced copy. Only authorized employees, consultants, or agents of the user who are bound by the provisions of the license for the product are permitted to have access to such copies.

The right to print copies of the Documentation and to make a copy of the related software is limited to the period during which the applicable license for the product remains in full force and effect. Should the license terminate for any reason, it shall be the user's responsibility to certify in writing to CA that all copies and partial copies of the Documentation have been returned to CA or destroyed.

EXCEPT AS OTHERWISE STATED IN THE APPLICABLE LICENSE AGREEMENT, TO THE EXTENT PERMITTED BY APPLICABLE LAW, CA PROVIDES THIS DOCUMENTATION "AS IS" WITHOUT WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IN NO EVENT WILL CA BE LIABLE TO THE END USER OR ANY THIRD PARTY FOR ANY LOSS OR DAMAGE, DIRECT OR INDIRECT, FROM THE USE OF THIS DOCUMENTATION, INCLUDING WITHOUT LIMITATION, LOST PROFITS, BUSINESS INTERRUPTION, GOODWILL, OR LOST DATA, EVEN IF CA IS EXPRESSLY ADVISED OF SUCH LOSS OR DAMAGE.

The use of any product referenced in the Documentation is governed by the end user's applicable license agreement.

The manufacturer of this Documentation is CA.

Provided with "Restricted Rights." Use, duplication or disclosure by the United States Government is subject to the restrictions set forth in FAR Sections 12.212, 52.227-14, and 52.227-19(c)(1) - (2) and DFARS Section 252.227-7014(b)(3), as applicable, or their successors.

All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

Copyright © 2007 CA. All rights reserved.

CA Product References

This documentation set references the following CA products:

- Advantage™ Ingres®
- BrightStor® ARCserve® Backup Agent for Novell Open Enterprise Server for Linux
- BrightStor® ARCserve® Backup Agent for Open Files on NetWare
- BrightStor® ARCserve® Backup Agent for Open Files on Windows
- BrightStor® ARCserve® Backup Client Agent for FreeBSD
- BrightStor® ARCserve® Backup Client Agent for Linux
- BrightStor® ARCserve® Backup Client Agent for Mainframe Linux
- BrightStor® ARCserve® Backup Client Agent for NetWare
- BrightStor® ARCserve® Backup Client Agent for UNIX
- BrightStor® ARCserve® Backup Client Agent for Windows
- BrightStor® ARCserve® Backup Enterprise Option for AS/400
- BrightStor® ARCserve® Backup Enterprise Option for Open VMS
- BrightStor® ARCserve® Backup for Laptops and Desktops
- BrightStor® ARCserve® Backup for Linux
- BrightStor® ARCserve® Backup for Linux Agent for Apache Web Server
- BrightStor® ARCserve® Backup for Linux Agent for Lotus Domino
- BrightStor® ARCserve® Backup for Linux Agent for MySQL
- BrightStor® ARCserve® Backup for Linux Agent for Oracle
- BrightStor® ARCserve® Backup for Linux Disaster Recovery Option
- BrightStor® ARCserve® Backup for Linux Disk Staging Option
- BrightStor® ARCserve® Backup for Linux Enterprise Option for Ingres®
- BrightStor® ARCserve® Backup for Linux Enterprise Option for SAP R/3 for Oracle
- BrightStor® ARCserve® Backup for Linux NDMP NAS Option
- BrightStor® ARCserve® Backup for Linux Storage Area Network (SAN) Option
- BrightStor® ARCserve® Backup for Linux Tape Library Option
- BrightStor® ARCserve® Backup for NetWare
- BrightStor® ARCserve® Backup for NetWare Agent for GroupWise

- BrightStor® ARCserve® Backup for NetWare Agent for MySQL
- BrightStor® ARCserve® Backup for NetWare Disaster Recovery Option
- BrightStor® ARCserve® Backup for NetWare Image Option
- BrightStor® ARCserve® Backup for NetWare Storage Area Network (SAN) Option
- BrightStor® ARCserve® Backup for NetWare Tape Library Option
- BrightStor® ARCserve® Backup for NetWare Tape RAID Option
- BrightStor® ARCserve® Backup for UNIX
- BrightStor® ARCserve® Backup for UNIX Agent for IBM Informix
- BrightStor® ARCserve® Backup for UNIX Agent for Lotus Domino
- BrightStor® ARCserve® Backup for UNIX Agent for Oracle
- BrightStor® ARCserve® Backup for UNIX Agent for Sybase
- BrightStor® ARCserve® Backup for UNIX Disaster Recovery Option
- BrightStor® ARCserve® Backup for UNIX Disk Staging Option
- BrightStor® ARCserve® Backup for UNIX Enterprise Option for DB2 UDB
- BrightStor® ARCserve® Backup for UNIX Enterprise Option for IBM 3494
- BrightStor® ARCserve® Backup for UNIX Enterprise Option for Ingres®
- BrightStor® ARCserve® Backup for UNIX Enterprise Option for SAP R/3 for Oracle
- BrightStor® ARCserve® Backup for UNIX Enterprise Option for StorageTek ACSLS
- BrightStor® ARCserve® Backup for UNIX NDMP NAS Option
- BrightStor® ARCserve® Backup for UNIX Storage Area Network (SAN) Option
- BrightStor® ARCserve® Backup for UNIX Tape Library Option
- BrightStor® ARCserve® Backup for Windows
- BrightStor® ARCserve® Backup for Windows Agent for IBM Informix
- BrightStor® ARCserve® Backup for Windows Agent for Lotus Domino
- BrightStor® ARCserve® Backup for Windows Agent for Microsoft Data Protection Manager
- BrightStor® ARCserve® Backup for Windows Agent for Microsoft Exchange
- BrightStor® ARCserve® Backup for Windows Agent for Microsoft Exchange Premium Add-on
- BrightStor® ARCserve® Backup for Windows Agent for Microsoft SharePoint

- BrightStor® ARCserve® Backup for Windows Agent for Microsoft SQL Server
- BrightStor® ARCserve® Backup for Windows Agent for Oracle
- BrightStor® ARCserve® Backup for Windows Agent for Sybase
- BrightStor® ARCserve® Backup for Windows Client for VSS Software Snap-Shot
- BrightStor® ARCserve® Backup for Windows Disaster Recovery Option
- BrightStor® ARCserve® Backup for Windows Disk Staging Option
- BrightStor® ARCserve® Backup for Windows Enterprise Module
- BrightStor® ARCserve® Backup for Windows Enterprise Option for IBM 3494
- BrightStor® ARCserve® Backup for Windows Enterprise Option for Ingres®
- BrightStor® ARCserve® Backup for Windows Enterprise Option for SAP R/3 for Oracle
- BrightStor® ARCserve® Backup for Windows Enterprise Option for StorageTek ACSLS
- BrightStor® ARCserve® Backup for Windows Enterprise Option for VSS Hardware Snap-Shot
- BrightStor® ARCserve® Backup for Windows Image Option
- BrightStor® ARCserve® Backup for Windows NDMP NAS Option
- BrightStor® ARCserve® Backup for Windows Optical Library Option
- BrightStor® ARCserve® Backup for Windows Serverless Backup Option
- BrightStor® ARCserve® Backup for Windows Storage Area Network (SAN) Option
- BrightStor® ARCserve® Backup for Windows Tape Library Option
- BrightStor® ARCserve® Backup for Windows Tape RAID Option
- BrightStor® CA-1® Tape Management
- BrightStor® CA-Dynam®/B Backup for VM
- BrightStor® CA-Dynam®/TLMS Tape Management
- BrightStor® CA-Vtape™ Virtual Tape System
- BrightStor® Enterprise Backup
- BrightStor® High Availability
- BrightStor® Portal
- BrightStor® Storage Resource Manager
- BrightStor® VM:Tape®

- CA XOssoft™ Assured Recovery™
- CA XOssoft™ WANSync™
- Common Services™
- eTrust® Antivirus
- eTrust® Firewall
- Unicenter® Network and Systems Management
- Unicenter® Software Delivery
- Unicenter® VM:Operator®

Contact Technical Support

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Technical Support at <http://ca.com/support>.

Contents

Chapter 1: Introducing the Agent	11
Introduction	11
Microsoft Exchange Server Description	12
Exchange Server Organization	12
How the Agent Backs Up and Restores Exchange Server Data	13
How You Can Use the Agent to Perform Database Level Backups and Restores	14
How You Can Use the Agent to Perform Document Level Backups and Restores	14
How the Agent Communicates With BrightStor ARCserve Backup	15
 Chapter 2: Installing the Agent	 17
System Requirements	17
Installation Prerequisites	17
Install the Agent for Microsoft Exchange	18
Configure the Agent to Run on a Cluster	18
Post-installation Tasks on Exchange Server 2000 and 2003 Systems	20
Configure Database Level and Brick Level Backup and Restore	20
Create a Brick Level Account	23
Verify a Brick Level Account	24
Configure the Agent for Document Level Backup and Restore	24
Post-installation Tasks on Exchange Server 2007 Systems	28
Configure the Agent for Database Level Backup and Restore	29
Configure the Agent for Document Level Backup and Restore	30
Remote Server Views in the Backup Manager	34
Exchange Organization View	35
Add Remote Servers to the Systems Object	36
 Chapter 3: Performing Database Level Backups and Restores	 39
How Database Level Backup Works	39
Database Level Backup and Restore for Exchange Server 2000 and 2003	39
Database Level Views in the Backup Manager	40
Backup Agent Service Account Requirements for Database Level Backup and Restore	41
Database Level Backup Features	41
Database Level Data Restore	46
Database Level Disaster Recovery	56
Database Level Backup and Restore for Exchange Server 2007	56
Database Level Views in the Backup Manager	57

Backup Agent Service Account Requirements for Database Level Backup and Restore	57
Database Level Backup Features	57
Database Level Data Restore	63
Features Supported on Exchange 2000, 2003, and 2007 Systems.....	81
Multiplexing During Database Level Backups	81
Multi Stream Backup Options	82
Database Level Data Encryption	83
Database Level Data Compression	83
Database Level Backup Scan Utility	83

Chapter 4: Performing Document Level Backups and Restores **87**

How Document Level Backup Works	87
Document Level Backup and Restore Benefits	88
Document Level Views in the Backup Manager.....	89
Backup Agent Service Account Requirements for Document Level Backup and Restore	90
Document Level Backup Features	91
Complete Messaging Single Instance Storage	91
Browsing Filter	91
Document Level Backup Methods	93
Specify Document Level Backup Filters	95
Document Level Compression and Encryption Options	98
Multiplexing During Document Level Backups	98
Multi Stream Option.....	99
Perform a Document Level Backup	100
Activity Log Messages	102
Document Level Backup Scan Utility	103
Document Level Scan Media Options	104
Scan Media	106
Document Level Data Restore	106
Document Level Restore Sets	106
Document Level Restore Prerequisites.....	107
Document Level Restore Options.....	108
Document Level Restore Locations	110
Perform a Document Level Restore.....	116

Chapter 5: Using Best Practices **119**

General Recommendations	119
Technical Resources.....	119
Logs in the Event Viewer	119
Installation Recommendations	119
Product Recommendations	120

Load Reduction	120
Exchange Server Configuration Recommendations	120
Circular Logging	121
Transaction Log Space	121
Backup Recommendations	121
Online Backup Use	121
Media Integrity	122
Database Level Backup Strategies	122
Document Level Backup Strategies	123
Database Management Strategies for Document Level Backup Jobs	124
Document Level Backup and Restore Performance Tuning	125
Restore Recommendations	126
General Restore Strategies	126
Document Level Restore Strategies	126
Backup and Restore Test Strategies	127

Appendix A: Troubleshooting **129**

Activity Log	129
Exchange Server Errors	129
Information for Customer Support	161

Appendix B: Frequently Asked Questions **165**

General Questions	165
Database Level Backup and Restore Questions	167
Document Level Backup and Restore Questions	169

Appendix C: Setting Up a Backup Agent Service Account **173**

How to Set Up Your Backup Agent Service Account	173
Backup Agent Service Account Requirements Overview	174
Task Requirements	174
Environment Requirements	174
Add Groups for all Versions of Exchange Server on a Windows Member Server	175
Set Up Your Backup Agent Service Account	176
Create a Domain User on a Windows 2000 and 2003 Server	177
Create a Mailbox for Exchange 2000 and Exchange 2003 Server	178
Create a Domain User With a Mailbox for Exchange 2007 Server	181
Group Setup	183
Add Groups for all Versions of Exchange Server on a Domain Controller	183
Delegate Roles	184
Delegate Roles for Exchange 2000 and 2003 Server on a Domain Controller or Member Server	185

Delegate Roles for Exchange 2007 Server on a Domain Controller or Member Server	187
Additional Configuration Considerations	188
Member Server Considerations	188
Multiple Domain Considerations	188
Grant Additional Rights in Exchange Server 2000	188
 Appendix D: Registering Cluster Resources	191
Register the Cluster Resources Manually	191
 Appendix E: Using the Server Configuration Worksheet - Exchange 2000 and 2003 Server Systems	199
Worksheet	199
 Index	201

Chapter 1: Introducing the Agent

This section contains the following topics:

[Introduction](#) (see page 11)

[Microsoft Exchange Server Description](#) (see page 12)

[Exchange Server Organization](#) (see page 12)

[How the Agent Backs Up and Restores Exchange Server Data](#) (see page 13)

[How You Can Use the Agent to Perform Database Level Backups and Restores](#)
(see page 14)

[How You Can Use the Agent to Perform Document Level Backups and Restores](#) (see page 14)

[How the Agent Communicates With BrightStor ARCserve Backup](#) (see page 15)

Introduction

BrightStor 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 BrightStor ARCserve Backup offers is the BrightStor ARCserve Backup Agent for Microsoft Exchange.

The agent works with BrightStor 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

More information:

[How the Agent Backs Up and Restores Exchange Server Data](#) (see page 13)

[How the Agent Communicates With BrightStor ARCserve Backup](#) (see page 15)

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.

Exchange Server Organization

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 2000 and 2003**--In Exchange Server 2000 and 2003, the organization hierarchy includes organizations, administrative groups, servers, and storage groups. The organization is the highest level in the hierarchy and includes the entire enterprise. An administrative group is a set of servers that share an administrative security context. Each server in the administrative group can have up to four storage groups. Each storage group includes up to five database stores that can be mounted and dismounted independently. For more information on the Exchange Server 2000 and 2003 organization hierarchy, see your Microsoft Exchange Server documentation.

Note: If you are using Exchange Server 2003 and want information on performing Volume Shadow Copy Service backups, see the *Microsoft Volume Shadow Copy Service Guide*.

- **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.

How the Agent Backs Up and Restores Exchange Server Data

The Agent for Microsoft Exchange integrates with BrightStor 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 function, 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 using Exchange Server's backup and restore APIs.
Note: For Exchange Server 2000 and Exchange Server 2003, Exchange Server streaming backup APIs are used. For Exchange Server 2007, 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

The agent offers the following types of Exchange Server backup and restore capabilities:

- Database level
- Document level

More information:

[How You Can Use the Agent to Perform Database Level Backups and Restores](#) (see page 14)

[How You Can Use the Agent to Perform Document Level Backups and Restores](#) (see page 14)

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:

- Perform online database backups using Exchange Server's backup and restore APIs.

Note: For Exchange Server 2000 and Exchange Server 2003, Exchange Server streaming backup APIs is used. For Exchange Server 2007, Volume Shadow Copy Service (VSS) APIs are used.

- Restore the system in disaster recovery scenarios.
- Backup an Exchange server on storage groups 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 individual databases and restore logs files only.
- 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 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.

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, restore individual messages, and 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.
- Schedule Exchange Server backups using the Backup Manager.

The agent provides you additional capabilities such as:

- Migration support.
- Job continuation.

How the Agent Communicates With BrightStor ARCserve Backup

The agent uses the following methodology to communicate with the BrightStor ARCserve Backup:

- The agent is installed on the Exchange Server and handles all communication between BrightStor ARCserve Backup and the Exchange Server database during backup and restore operations.

This includes preparing, retrieving, transmitting, interpreting, and processing data packets that are sent back and forth across the network.
- When BrightStor 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 BrightStor 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 BrightStor ARCserve Backup Agent for Microsoft Exchange can be installed locally or remotely on a BrightStor ARCserve Backup client machine.

This section contains the following topics:

[System Requirements](#) (see page 17)

[Installation Prerequisites](#) (see page 17)

[Install the Agent for Microsoft Exchange](#) (see page 18)

[Configure the Agent to Run on a Cluster](#) (see page 18)

[Post-installation Tasks on Exchange Server 2000 and 2003 Systems](#) (see page 20)

[Post-installation Tasks on Exchange Server 2007 Systems](#) (see page 28)

[Remote Server Views in the Backup Manager](#) (see page 34)

System Requirements

See the readme file on the installation CD-ROM for hardware and software requirements for installing and running the agent. Check <http://ca.com> for any updates to these requirements.

Installation Prerequisites

Before installing the agent, you must satisfy the following prerequisites:

- Ensure your system requirements meet the minimum requirements needed to install the agent. For a list of requirements, see the readme file.
- Ensure that you have Administrator privileges.
- Ensure that you know the name and password of the machine you are installing the agent on.
- If you will be performing remote backups on Exchange Server 2000 and Exchange Server 2003 systems, ensure that File and Printer Sharing for Microsoft Networks is enabled on the agent machine that you will be backing up.
- The NetLogon service must be started to support pass-through authentication of account logon events for computers in a domain.

- If you are installing the BrightStor ARCserve Backup Agent for Microsoft Exchange Server Premium Add-on on an Exchange 2007 Server system, ensure that Microsoft Exchange Server MAPI Client and Collaboration Data Objects 1.2.1 is installed before you install the Add-on. This step is required because the Add-on requires the Messaging API (MAPI) client libraries to run properly; however, they are not included with the Exchange Server 2007 installation.

Install the Agent for Microsoft Exchange

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.
- 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 CA BrightStor Universal Agent is installed. Because the agent uses push technology and shares the transport layer with the Client Agent for Windows, see the *Client Agents Guide* for more information about configuring network communication.

After you have reviewed the installation considerations, you can install the agent using the standard installation procedure for all BrightStor ARCserve Backup system components, agents, and options. For the detailed steps in this procedure, see the *Getting Started*.

Configure the Agent to Run on a Cluster

For the agent to properly perform document level backups on a cluster, the cluster resource type BrightStor ARCserve Backup **Exchange Agent Notifier** must be registered and the resource instance type BrightStor ARCserve Backup **Exchange 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 one of the following registry keys:

Exchange Server 2000 and Exchange Server 2003 Systems

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

Exchange Server 2007 Systems

```
HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\ComputerAssociates\BrightStor  
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 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

More information:

[Register the Cluster Resources Manually](#) (see page 191)

Post-installation Tasks on Exchange Server 2000 and 2003 Systems

If you did not configure the agent during the installation process, you can configure it now. The following sections explain how to perform these post-installation tasks.

Configure Database Level and Brick Level Backup and Restore

The Exchange Agent Configuration Utility lets you configure Database Level and Brick Level backup. Database Level configuration includes selecting a TCP/IP port number and selecting the number of 64 KB blocks of data that are sent per data transfer. Brick Level configuration includes creating or verifying the mandatory backup agent service account.

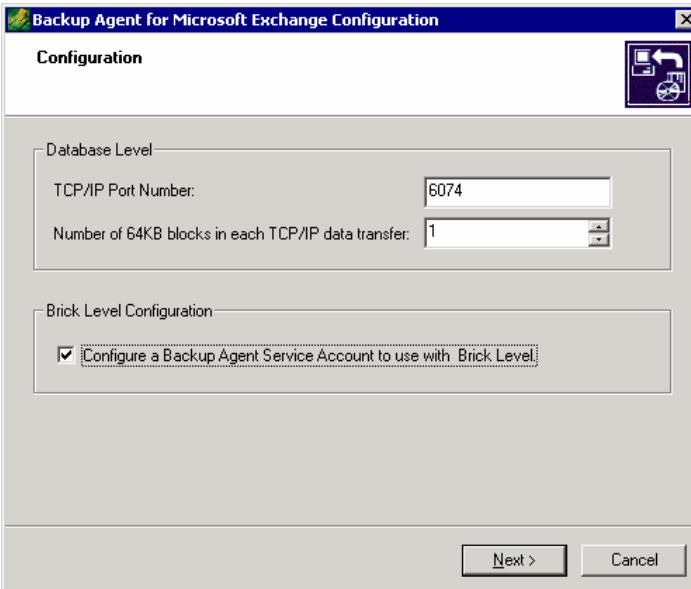
Note: You should use the Exchange Agent Configuration Utility to create a backup agent service account for Brick Level backup and restore. However, if because of the setup of your environment it is better for you to manually create a backup agent service account, see the appendix "Setting Configuring the Backup Agent Service Account" for information on how to do so.

To configure database level and brick level backup and restore

1. Log on to the Windows server where the Exchange Server is installed and verify that the Exchange Server database containing the service account mailbox is mounted.

Note: If you are configuring the agent on a cluster node, make sure that the virtual server containing the service account mailbox is online on the local cluster node.

2. Choose Start, All Programs, Computer Associates, BrightStor, ARCserve, Backup Agents, and Exchange Agent Configuration.
3. When the Configuration dialog opens, you can set up Database Level configuration and Brick Level configuration.



The screenshot shows the 'Backup Agent for Microsoft Exchange Configuration' dialog box. The title bar is blue with the text 'Backup Agent for Microsoft Exchange Configuration'. The main window has a light gray background. At the top, there is a 'Configuration' section with a small icon of a document and a circular arrow. Below this, there are two main configuration areas. The first is 'Database Level', which contains two input fields: 'TCP/IP Port Number' with the value '6074' and 'Number of 64KB blocks in each TCP/IP data transfer' with the value '1'. The second is 'Brick Level Configuration', which contains a single checked checkbox labeled 'Configure a Backup Agent Service Account to use with Brick Level'. At the bottom right of the dialog, there are two buttons: 'Next >' and 'Cancel'.

- **Database Level**--These options apply only to Exchange Server Database Level backups. The TCP/IP port number and number of 64 KB blocks in each TCP/IP data transfer field apply to the DBAEXCHR.EXE process that is launched by the CA BrightStor ARCserve Backup RPC service when you perform a remote Database Level backup using the TCP socket protocol. Although you can configure this information, you should use the defaults:
 - TCP/IP Port Number--The default is 6074. To change this, you must enter a new port number. You must also modify the PortsConfig.cfg file on each Backup Manager you will be using to back up your Exchange Server. For more information on how to modify the PortsConfig.cfg file and configuring ports for firewalls, see the Administrator Guide.
 - Number of 64 KB blocks in each TCP/IP data transfer- Specifies the number of 64 KB blocks of data that are sent per data transfer. The default is 1. Other recommended numbers are 2, 4, 8, and 16.
- **Brick Level Configuration**--If you want to configure for Brick Level backup and restore, check the Configure Exchange Agent to do a Brick Level Backup box.

4. After you finish configuring, click Next.
5. When the Brick Level Configuration dialog opens, either create a new account or verify an existing account to ensure that it meets the backup agent service account requirements, and then click Finish. For more information about creating a new Brick Level account and verifying an existing Brick Level account, see Create a Brick Level Account.

The screenshot shows a Windows-style dialog box titled "Backup Agent for Microsoft Exchange Configuration". Inside, the "Brick Level Configuration" tab is active. Below the title bar, there is a subtitle: "Enter the mailbox name, account name and password information for the Backup agent Service Account." The dialog contains several input fields: "Mailbox (alias):" with the value "dbagent", "Service Account:" with the value "dbagent", "Password:" and "Confirm Password:" both masked with "XXXXXXXXXX", and "Domain of Account:" with the value "E2K3". At the bottom, there is a section labeled "Create Account" with a checked checkbox "Create a new account:". At the very bottom of the dialog are three buttons: "< Back", "Finish", and "Cancel".

6. When the dialog opens confirming that you successfully created your account, click OK.

Note: If you have problems verifying an existing account or creating a new account, see the appendix "Setting Up a Backup Agent Service Account."

More information:

[Create a Brick Level Account](#) (see page 23)

Create a Brick Level Account

To create a new brick level account

1. In the Mailbox field, enter a unique name for your mailbox. A unique name is a name that does not exist in the organization as a subset of characters in another mailbox name. For example, you cannot use the name Admin, if there is a mailbox named Administrator in your organization.
2. In the Service Account field, enter a unique name for your Service Account.
3. In the Password field, enter a password. When entering the password, ensure that it meets the length, complexity, and history requirements of the domain and server you are restoring to.
4. In the Confirm Password field, reenter your password.
5. In the Domain of Account field, confirm your local domain name.
6. Place a check mark in the Create a new account box.
7. Click Finish to create and verify the account.

Note: For Exchange Server 2000 and 2003, the mailbox is automatically created in the first database of the first storage group on the local machine. You can move this mailbox to any mailbox database on the local server.

8. For Exchange Server 2000 and 2003, when the dialog opens confirming that your account has been added as a member to the Administrators, Backup Operators, and Domain Admins groups, click Yes, and then click OK.

Verify a Brick Level Account

To verify an existing brick level account

1. In the Mailbox field, enter the name of your mailbox.
2. In the Service Account field, enter the name of your Service Account.
3. In the Password field, enter your password.
4. In the Confirm Password field, reenter your password.
5. In the Domain of Account field, confirm your local domain name.
6. Click Finish.

Configure the Agent for Document Level Backup and Restore

After you install the BrightStor ARCserve Backup Agent for Microsoft Exchange, you must configure performance and file location settings.

To configure the agent for document level backup and restore

1. Choose Start, All Programs, Computer Associates, BrightStor, ARCserve Backup Agents, Backup Agent Admin.
2. When the BrightStor Backup Agent Admin dialog opens, select **Agent for Exchange-for Microsoft Exchange Premium Add-on** from the drop-down list and click the Configuration button.
3. When the Configuration dialog opens, select the following settings as required for your environment:
 - **Complete Messaging Single Instance Storage**--This option 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. This can significantly decrease the size of your backups.
 - **Backup Only Local Public Folder Documents**--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 10.

- **Log Detail Level**--Do not change this value unless directed by a trained Computer Associates Customer Support technician. This sets 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.
- **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 2000 or 2003, 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.

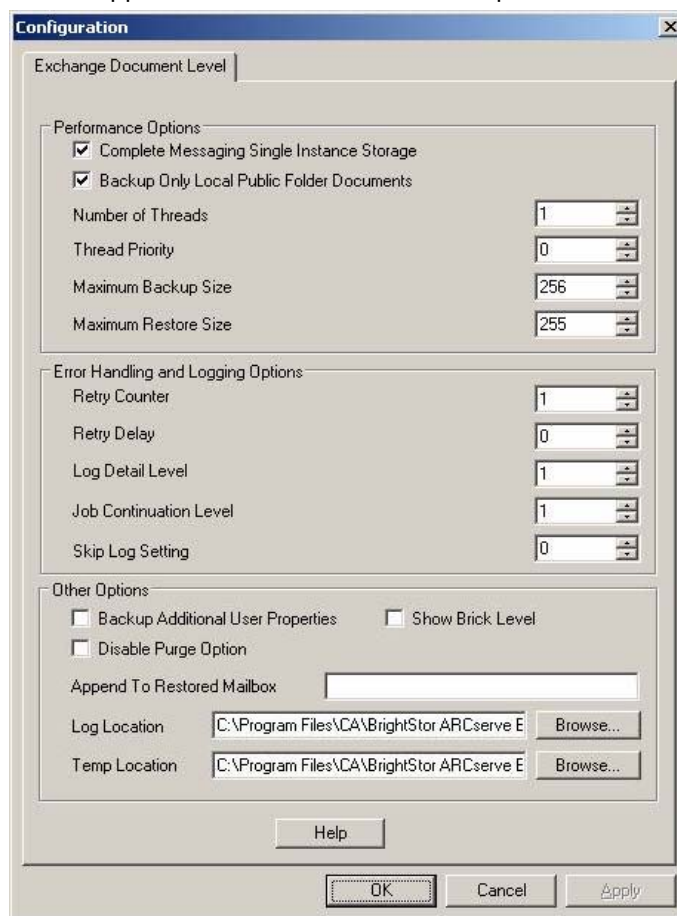
Note: For more information on restore options, see Document Level Restore Options.

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.
- **Show Brick Level**--This option displays Brick Level in the Backup Manager and Restore Manager.

Note: If you previously used Brick Level and want to restore a Brick Level backup to an alternative location, enable this option so you can select the correct location on the Destination tab in the Backup Manager.
- **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.
- **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.

The following diagram illustrates the Configuration dialog with the default values applied for document level backup and restore.



4. Click OK.

The document level backup and restore options are saved.

More information:

[Document Level Restore Options](#) (see page 108)

Post-installation Tasks on Exchange Server 2007 Systems

The following sections describe post-installation tasks that you must perform to enable the agent to perform database level and document level backup and restore.

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 installations.

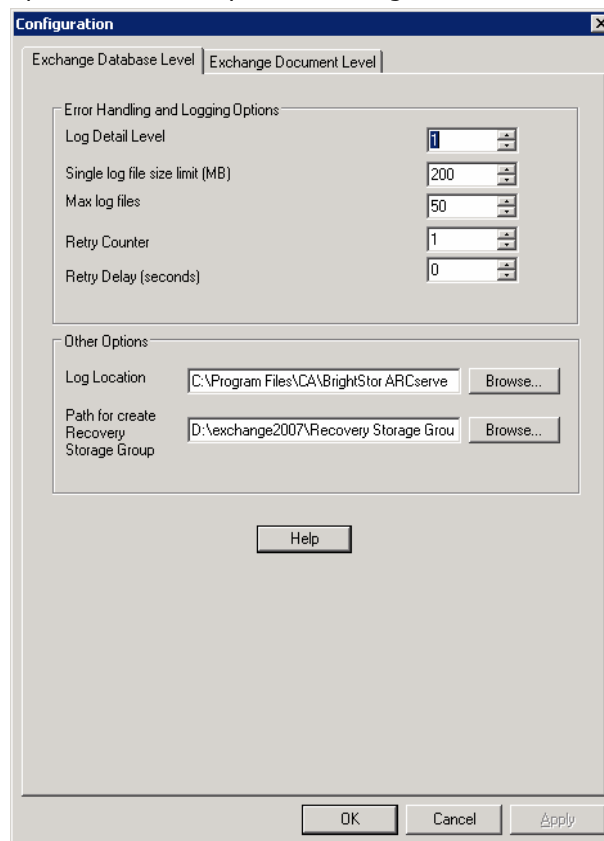
To configure the agent for database level backup and restore

1. From the Start menu, select All Programs, CA, BrightStor, ARCserve Backup Agents, and Backup Agent Admin.

The BrightStor Backup Agent Admin dialog opens.

2. From the drop-down list, select **BrightStor ARCserve Backup Exchange Agent**.

The Configuration dialog with the Exchange Database Level tab selected opens as shown by the following illustration:



3. Specify the following options as necessary:
 - **Log Detail Level**--Do not change this value unless directed by a trained CA Customer Support technician. This sets 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**--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**--The maximum number of log files. After the maximum number of log file 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 MB.
 - **Retry Counter**--If an Exchange backup API error or time out occurs while trying to retrieve data from Exchange Server, this setting lets you control the number of times you want to retry. The default Retry counter value is 1 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 Exchange Server, this setting lets you control the delay between retries. The default Retry Delay value is 0 and the supported range is between 0 and 10.
 - **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.
 4. Click OK
- The database level options are saved.

Configure the Agent for Document Level Backup and Restore

After you configure the agent for Database Level backup and restore, you must configure performance and file location settings. This section describes how to do this.

To configure the agent for document level backup and restore

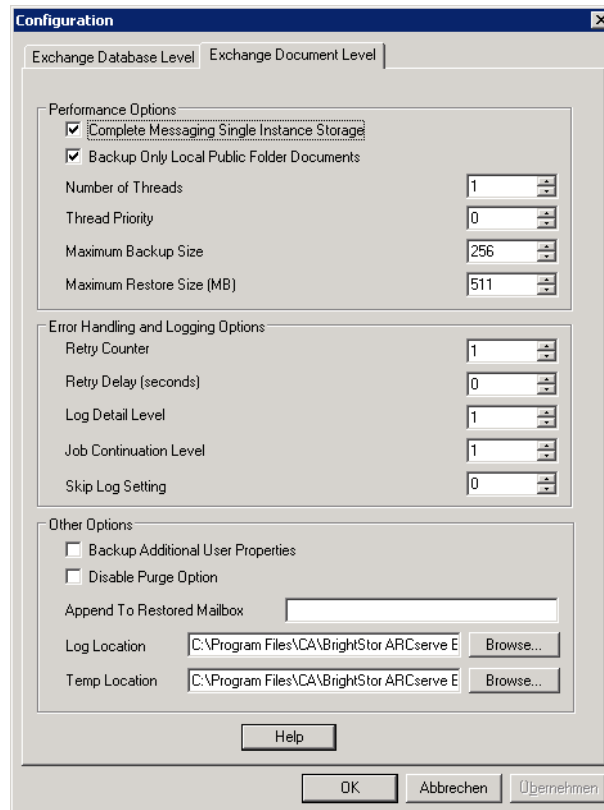
1. From the Start menu, select All Programs, CA, BrightStor, ARCserve Backup Agents, and Backup Agent Admin.

The BrightStor Backup Agent Admin dialog opens.

2. From the drop-down list, select Agent for Microsoft Exchange.

The Exchange Document Level configuration dialog opens.

The following diagram illustrates the Configuration dialog with the Exchange Document Level tab selected and the default values are specified for document level backups.



3. On the Configuration dialog, specify the following options to suit your environment:

- **Complete Messaging Single Instance Storage**--This option 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. This can significantly decrease the size of your backups.
- **Backup Only Local Public Folder Documents**--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 10.
- **Log Detail Level**--Do not change this value unless directed by a trained CA Customer Support technician. This sets 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.

- **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 2000 or 2003, 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.

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.
- **Log Location**--If you want to change your log location from the default, 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.

4. Click OK.

The Configuration dialog closes and the agent is now configured to perform Document Level backup and restore operations.

More information:

[Document Level Restore Options](#) (see page 108)

Remote Server Views in the Backup Manager

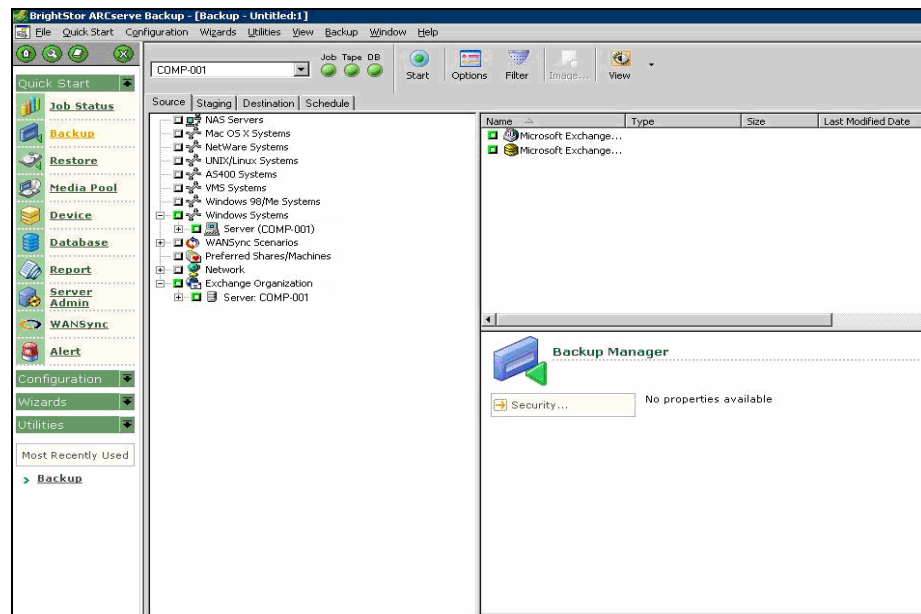
Depending on the configuration of the server on which BrightStor ARCserve Backup is installed, you can view remote Exchange servers from:

- The Exchange Organization View.
- The Windows Systems object.
- The Preferred Shares/Machine object.

Note: This view option applies Exchange Server 2000 and Exchange Server 2003 systems only.

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.



To use the Exchange Organization View, the BrightStor ARCserve Backup Manager and the Agent for Microsoft Exchange must be installed on the same machine as your Exchange server.

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

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 *Getting Started*.

Add Remote Servers to the Systems Object

To view and manage remote Exchange Server systems, you must add them to the Windows Systems object in the Backup Manager.

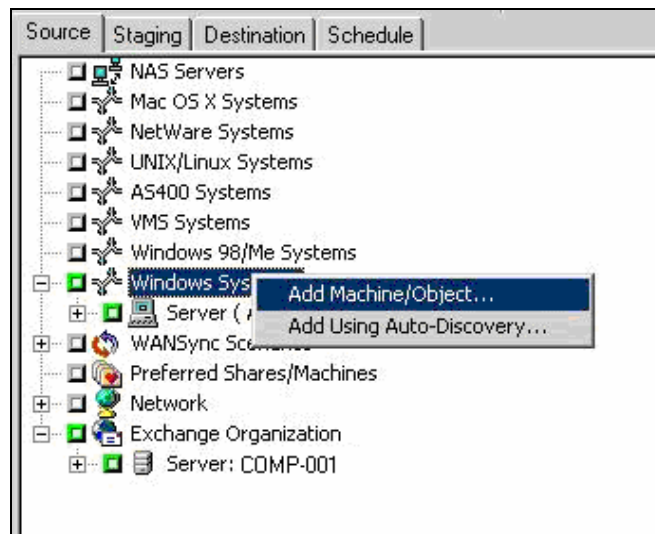
To add a remote server to the Windows Systems object

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

The Backup Manager window opens.

2. From the BrightStor ARCserve Backup Manager window select the Source tab.

Right-click the **Windows Systems** object and select **Add Machine/Object** from the pop-up menu as shown in the following illustration:



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 as shown in the following illustration:



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 Steps 3 and 4 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 3: Performing Database Level Backups and Restores

This section contains the following topics:

[How Database Level Backup Works](#) (see page 39)

[Database Level Backup and Restore for Exchange Server 2000 and 2003](#) (see page 39)

[Database Level Backup and Restore for Exchange Server 2007](#) (see page 56)

[Features Supported on Exchange 2000, 2003, and 2007 Systems](#) (see page 81)

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 in the event of a system failure, database corruption, or disaster recovery scenario.

Database Level Backup and Restore for Exchange Server 2000 and 2003

For Exchange 2003, using the Database Level backup, you can back up the following types of databases:

- Information Store (IS)
- Site Replication Service (SRS)

For Exchange 2000, using the Database Level backup, you can back up the following types of databases:

- Information Store (IS)
- Key Management Service (KMS)
- Site Replication Service (SRS)

Database Level Views in the Backup Manager

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

- Windows Systems
- Preferred Shares/Machines
- Exchange Organization

When you expand the Microsoft Exchange Server - Database Level(IS) 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:



Note: Microsoft Key Management Service (Exchange Server 2000 only) and Microsoft Site Replication Service are optional and appear in the Backup Manager only if you have them installed.

In BrightStor ARCserve Backup, the Microsoft Exchange Server - Database Level (IS) object, Microsoft Site Replication Service object, and Microsoft Key Management Service object includes up to four storages groups. Each storage group includes up to five database stores.

Note: In a cluster environment, Exchange servers appear under the Exchange virtual server objects.

More information:

[Database Level Backup Methods](#) (see page 41)

Backup Agent Service Account Requirements for Database Level Backup and Restore

To perform a database level backup and restore job, your backup agent service account must be a member of the following groups on the Exchange Server:

- Administrators
- Backup operators

Database Level Backup Features

The following sections include information on the features that the BrightStor ARCserve Backup Agent for Microsoft Exchange offers when performing database level backups.

Database Level Backup Methods

When you submit a backup job, you must select a backup method. The backup method tells BrightStor ARCserve Backup how you want your data to be backed up. When you use the agent, you can select a backup method for your Database Level backup job at the storage group level or you can use a globally scheduled backup method.

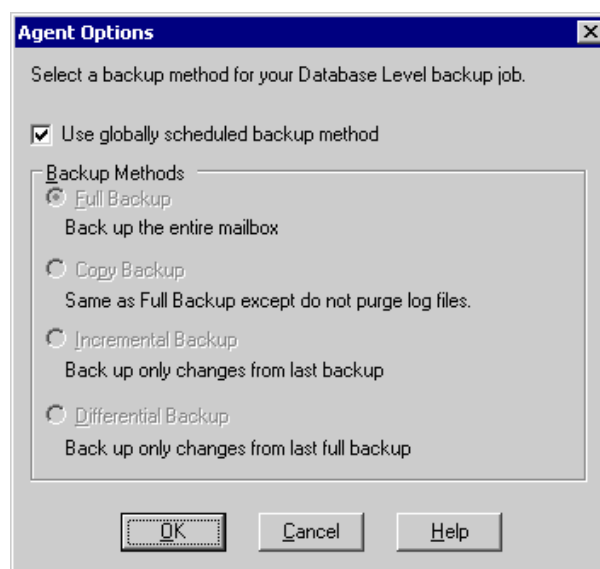
Important! If you select to back up only a mailbox store or public folder store without dynamically selecting the entire storage group, the copy backup method is automatically used so that the storage group's logs are not affected.

To select a backup method at the storage group level, explicitly select the storage group's parent database object (Microsoft Exchange Server – Database Level (IS), Microsoft Site Replication Service, or Microsoft Key Management Service object), right-click the storage group, and select **Agent Option** as illustrated by the following:



Note: For more information on explicit job packaging, see the *Getting Started*.

The **Agent Options** dialog opens as shown in the following illustration:



The advantage of selecting a backup method at the storage group level is that it gives you the flexibility to use a different method for different storage groups. You can select from the following backup methods:

- **Use globally scheduled backup method**—Enabled by default. You must disable this option if you want to set a backup method at the storage group 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.

- **Full Backup**—This is the default. It backs up the entire database, including the log files, and marks all of the files that have been backed up in preparation for a subsequent incremental or differential backup. The log files are also truncated during a full backup. The backup operation then purges, from the Exchange Server, the committed log files it no longer needs. While the backup is taking place, new database changes can occur, so a patch file (.pat) is created to log these late changes. The patch file is backed up at the end of the process along with the log files. These backed up .pat files are restored automatically with the 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**—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.

- **Incremental Backup**—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 recreate the database at the time of backup.

Note: Microsoft does not support incremental backups when the Circular Logging feature is enabled. If you do not disable Circular Logging and submit an incremental backup, the agent automatically converts the backup to full.

- **Differential Backup**—Backs up the log files that have changed since the last backup. The log files are not truncated. It does not, however, mark them as backed up. When restored, the log files are applied to recreate the database at the time of backup.

Note: Microsoft does not support differential backups when the Circular Logging feature is enabled. If you do not disable Circular Logging and submit a differential backup, the agent automatically converts the backup to full.

Specify Database Level Backup Options for an Exchange Storage Group

This section describes how to specify Database Level backup options for an Exchange storage group.

To specify database level backup options for an Exchange storage group

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

Browse to and expand the **Microsoft Exchange Server - Database Level** object directory tree.

Right-click any storage group in the directory tree and select **Agent Option** from the pop-up menu.

The Agent Option dialog opens.

2. From the list of Exchange storage groups, select **Default**.

Clear the check mark from the Use globally scheduled backup method option.

The options under Backup Methods and Backup Source on Agent Options dialog become accessible.

3. Specify a Backup Method option and a Backup Source option.

Note: For more information about Backup Method and Backup Source options, see Database Level Backup Methods.

Click Apply.

The database level backup options for the selected Exchange storage group are saved.

4. Click OK.

The Agent Options dialog closes.

Note: To apply the default backup options to the selected Exchange storage group, click the Reset All button.

More information:

[Database Level Backup Methods](#) (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 CA BrightStor Backup Agent RPC Server service are running on your server.

To perform a database level backup on an Exchange Server 2000 or 2003 database

1. From the BrightStor ARCserve Backup Home Page, select the Backup Manager from the Quick Start menu.
2. When the Backup Manager opens, select the Database Level objects you want to back up (Microsoft Exchange Server - Database Level (IS), Microsoft Site Replication Service, and Microsoft Key Management Service). If you want to back up only certain storage groups or database stores within certain storage groups, expand a database object and select specific groups and database stores.

Note: You should back up an entire storage group rather than individual database stores. Individual database stores can be restored from a backup of an entire storage group.

3. Right-click the Database Level object you selected to back up and select **Remote Protocol**.
4. When the Remote Protocol dialog opens, select one of the following remote protocols to use for the job, and then click OK:
 - **TCP/IP**--The default. Establishes a connection using sockets over TCP/IP. To configure what port the socket uses, see the chapter "Installing the Agent."
 - **VI (Virtual Interfaces)**--Works with specific VI hardware environments.
 - **Named Pipes**--An alternative transport protocol used for legacy support.

Note: By default, the agent uses the TCP/IP protocol when performing backups. If a problem occurs with this protocol, it automatically fails over to the Named Pipes protocol.

5. If you are not planning to schedule your job to use a rotation scheme, right-click each storage group object you are including in this job and select **Agent Option** to select a backup method to use. If you do this, the storage group's database parent object must be explicitly selected. For more information, see Database Level Backup Methods.

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.

6. If you want to enable CRC checking so that you can verify the integrity of your data using the Scan utility after the backup job is performed, click the Options button, click the Operation tab, enable the **Calculate and Store CRC Value on Backup Media** option, and then click OK.

Note: For more information on CRC checking and using the Scan utility, see Database Level Scan Media Options.

7. Click the Destination tab and select a backup destination.
8. 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 and the *Administrator Guide*.

Note: If you use a Custom Schedule, the Backup Method section on the Schedule tab does not apply. For more information, see Database Level Backup Methods.

9. Click Start.
10. When the Security and Agent Information dialog opens, make sure 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: The security for a Database Level backup is determined from the security supplied for the server listed in the Object column. The security on that server must be a part of the Administrators and Backup Operators groups.

11. Click OK.
12. 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.
13. Enter a description for your job.

14. 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.
15. On the Submit Job page, click OK to submit your job.

More information:

[Database Level Backup Methods](#) (see page 41)

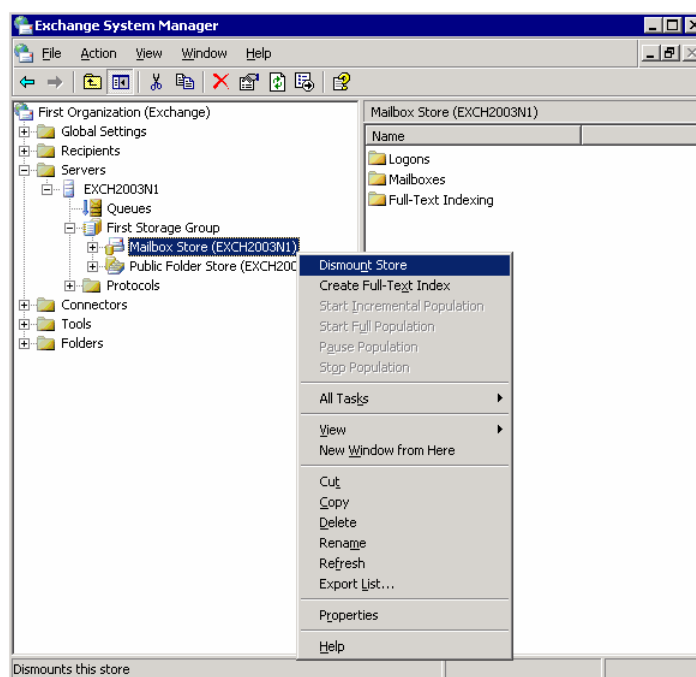
[Database Level Scan Media Options](#) (see page 84)

Database Level Data Restore

The following sections include information on the prerequisites you must meet before you perform a restore, the features that the BrightStor ARCserve Backup Agent for Microsoft Exchange offers when restoring from a database level backup, and the procedure for how to perform a restore.

Database Level Restore Prerequisites

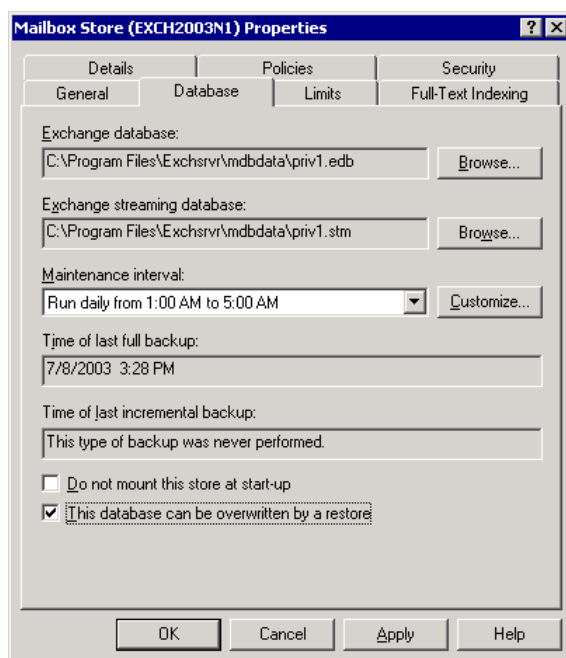
Before you restore, to prepare your Exchange Server, you must dismount the database stores within all storage groups you want to restore. To do this, open the Exchange System Manager, navigate to, and expand, the storage group you want to restore, right-click each database store and select **Dismount Store**:



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

Enable the feature **This database can be overwritten by a restore** for each of the database stores in the Storage Groups you want to restore. To do this, open the Exchange System Manager, navigate to, and expand, the Storage Group you want to restore, right-click each database store and select Properties, click the Database tab, enable the feature **This database can be overwritten by a restore**, and then click OK.

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



- Ensure that all of your necessary Exchange Server services are running.
- Ensure that the agent is installed on the same machine that has the Exchange Server installed and that the Backup Agent RPC Server service is running.

- Ensure that the server you are restoring to is configured exactly the same as the original server you backed up from. If you are restoring to the original location, the configuration is typically the same. Otherwise, use the worksheet in the appendix "Server Configuration Worksheet" to determine what needs to be identical. All fields in the worksheet except the Server Name field must be the same when restoring to an alternate location.

More information:

[Database Level Restore Options](#) (see page 50)

Database Level Restore Sets

When you back up an Exchange Server, the Directory and Information Store that you select to back up are 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 Directory and Information Store. 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 Directory or Information Store using only the full backup method, your restore set includes only this full session.
- If you backed up your Directory or Information Store 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 your Directory or Information Store 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:

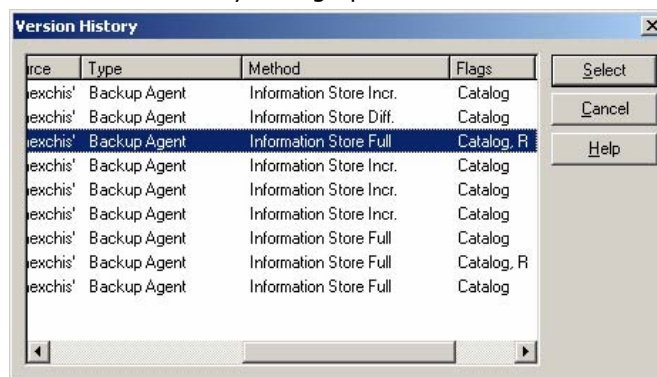
Full	Differential 1	Differential 2	Differential 3	Differential 4
------	----------------	----------------	----------------	----------------

After you determine your restore set, you must make sure that you select the entire set when submitting your restore job. If you use the Restore by Tree method when scheduling your restore job, the agent simplifies this task for you. When using Restore by Tree, all you must do is select the last incremental or differential session in your restore set and the agent will automatically include the full session for you.

To select your restore set in the Restore Manager

1. From the BrightStor 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 underneath the Source tab.
3. Expand the server that has the Directory or Information Store you backed up and select the Directory or Information Store object.
4. Click Version History.

The Version History dialog opens as shown in the following illustration:

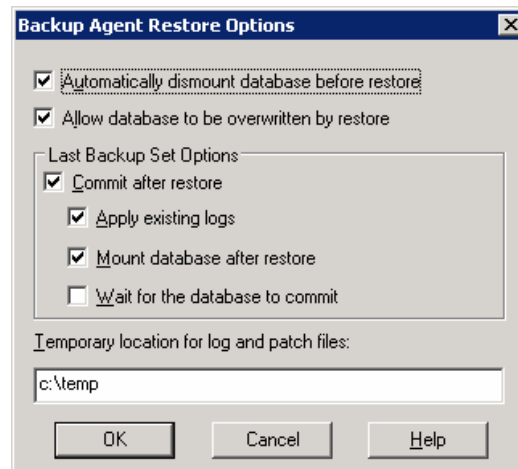


5. When the Version History dialog opens, highlight a session in your restore set and click Select. If your restore set includes incrementals and differentials, simply select the last incremental or differential in the set and the agent will automatically include the full backup for you (applies to Restore by Tree only).
6. The most recent backups are displayed at the top of the Version History dialog.
7. Set your restore options, select a destination, and submit the job.

Note: If you use Restore by Session rather than Restore by Tree, you must repeat Steps 1 to 6 for each session in your restore set.

Database Level Restore Options

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



The following list describes each of the restore options. When to use these options depends on your restore set. To determine when to use each option, see Database Level Restore Options Selection.

- **Automatically dismount database 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 database to be overwritten by restore**—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.

- **Commit after restore**—Commits the database 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 subsequent differential or incremental restores.

- **Apply existing logs**—If you enable this, both the existing logs and any new logs that will be restored are applied together in sequential order when the database is committed. If you do not select this, only the new logs will be applied (existing logs are not applied).

Important! Do not use Apply existing logs if the Exchange Server you are restoring to is not the Exchange Server you backed up from, if the existing database is corrupt, or if the new logs that will be restored are out of sequence with the existing logs. If you enable this option and the agent detects that logs are out of sequence, the agent automatically disables the option so that the job does not fail.

- **Mount database after restore**—Instructs the Exchange Server to mount the database after the restore is completed. If you would rather manually mount your database, disable this option.

Note: If the Exchange Server fails to mount the database, check the event log for details. If you think the Exchange Server failed to mount because of existing logs on the server, repackage and run the restore without the Apply existing logs option enabled.

- **Wait for the database to commit**—If you enable this, the agent waits for the Exchange Server to return the commit result before finishing the restore. This may take a long time depending on the number of logs the Exchange Server is attempting to commit.

- **Temporary location for log and patch files**—Sets a temporary location on the Exchange Server machine to restore logs and patch files during the restore process. The temporary location you select must be empty before you restore and must have enough space for all the log files being restored. After the database commits the logs and patch files, they are deleted.

Note: If you are restoring a series of full backups, incremental backups, or differential backups, you **must** use the same temporary location for all restore jobs.

More information:

[Database Level Restore Prerequisites](#) (see page 46)

Database Level Restore Options Selection

When to use these 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, correct restore options are automatically applied for you. If you restore data using Restore by Session on Exchange 2000 Server and Exchange 2003 Server systems, use the following information to determine when to use each option.

If your restore set contains incremental backups:

Type	Full	Intermediate Incremental	Last Incremental
Apply	N	N	Y/N
Commit	N	N	Y
Mount	N	N	Y/N

If your restore set contains differential backups:

Type	Full	Differential
Apply	N	Y/N
Commit	N	Y
Mount	N	Y/N

If your restore set is a full backup:

Type	Full
Apply	Y/N
Commit	Y
Mount	Y/N

Perform a Database Level Restore

To restore an Exchange Server database

1. From the BrightStor 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 underneath the Source tab.

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

3. If the backup you want to restore is local, expand the Server object, expand the server that has the database you backed up, and select the database object. If the backup you want to restore is remote, expand the Microsoft Windows Network object, expand the server that has the database you backed up, and select the database object.
4. If the most recent backup is not the backup you want to restore, click Version History, select the version you want to restore, and click Select.

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 incrementals and differentials, simply select the last incremental or differential 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 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 2003, 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 your Exchange Server documentation.

7. If you want to restore to an alternative location and have the BrightStor ARCserve Backup Agent for Windows installed, clear the **Restore files to their original locations** check box, expand the **Windows Systems** object, expand the server you want to restore to, and select the Microsoft Exchange Server – Database Level (IS) object. If you want to restore to an alternative location and do not have the BrightStor ARCserve Backup Agent for Windows installed, clear the **Restore files to their original locations** check box, expand the Microsoft Windows Network object, expand the appropriate domain, expand the server you want to restore to, and select the Microsoft Exchange Server – Database Level (IS) object.

Note: For information about restoring to an alternative location, see the *Disaster Recovery for Microsoft Exchange 2000 Server* and *Disaster Recovery for Microsoft Exchange 2003 Server* white papers on the Microsoft web site.

8. Click Start.
9. 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.
10. 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:

DOMAIN\USERNAME

11. Click OK.
12. 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.
13. Enter a description for your job and click OK.

More information:

[Database Level Restore Sets](#) (see page 48)

[Database Level Restore Options](#) (see page 50)

Perform a Database Level Test Restore to an Alternative Location

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.

Before you can restore an Exchange Server database backup to an alternative location, you must ensure that the server you are restoring to is configured exactly the same as the original server you backed up from. To determine what needs to be identical, use the worksheet in the appendix "Server Configuration Worksheet." Information in all fields in this worksheet except the Server Name field must be the same on the server you are restoring to.

To perform a test restore to an alternative location

1. Ensure that the test server you are restoring to meets the following criteria:
 - Microsoft Exchange is installed and is configured exactly the same as the original server you backed up from.
 - BrightStor ARCserve Backup and the agent are installed.
 - The server is in a different domain than the domain of the server you backed up from and it has its own Active Directory.
2. Open the Restore Manager and select the Source tab.
Browse to and select the session that you want to restore.
3. Click the Destination tab.
Disable the **Restore files to their original location(s)** option.
4. Expand the server object for your test server and select the **Microsoft Exchange Server - Database Level** object.
5. Click Start to submit the job.

Note: For information about restoring to an alternative location, see the *Disaster Recovery for Microsoft Exchange 2000 Server* or *Microsoft Exchange 2003 Server Disaster Recovery* white paper on the Microsoft web site.

Access an Individual Mailbox from a Database Level Test Restore

If you do not perform a document level or brick level backup in addition to your database level backup and need to restore an individual mailbox, do the following:

1. Follow the procedure for performing a test restore to an alternative location. For more information, see *Perform a Database Level Test Restore to an Alternative Location*.
2. Open the Exchange System Manager, expand the Mailbox Store, right-click the Mailboxes object and select Run Cleanup Agent. Because the new domain's Active Directory does not contain the same users as the original domain, mailboxes appear as disconnected.

3. Open the Active Directory Users and Computers dialog and create a new account to attach the mailbox to. While creating the new account, disable the Create an Exchange mailbox option because you must connect the user to the restored mailbox rather than a new mailbox.
4. In the Exchange System Manager, right-click the name of the disabled mailbox, select Reconnect, and then select the appropriate domain account to link with the mailbox. This connects the mailbox to the user.
5. When the Reconnect dialog opens, click OK.
6. When the warning replication message appears, click OK.

After you connect the mailbox to the user, the information replicates and the restore mailbox is available in the new domain.

More information:

[Perform a Database Level Test Restore to an Alternative Location](#) (see page 54)

Database Level Disaster Recovery

If a disaster occurs, you must perform the following steps to restore the Exchange Server:

- For information about disaster recovery, see the Disaster Recovery for Microsoft Exchange 2000 Server and Disaster Recovery for Microsoft Exchange 2003 Server white papers on the Microsoft web site.
- Restore the operating system on your Exchange Server and your domain controller and ensure that the System State with Active Directory is in a consistent state with the backup you intend to restore. The BrightStor ARCserve Backup Disaster Recovery Option provides an automated and efficient way for you to complete these tasks. For more information, see the *Disaster Recovery Option Guide*.
- Ensure that the Exchange Server application is operational and that you have the same Service Pack you had prior to the disaster.
- Restore the databases to the Exchange Server. For instructions on how to restore the databases to the Exchange Server, see Perform a Database Level Restore.

Database Level Backup and Restore for Exchange Server 2007

The following sections describe how to use database level backup and restore data on Exchange 2007 Server systems.

Database Level Views in the Backup Manager

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.



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

Backup Agent Service Account Requirements for Database Level Backup and Restore

To perform a Database-Level backup and restore job, your backup agent service account must satisfy the requirements listed below. The backup agent service account must be:

- A domain account.
- A member of the Administrator group on the Exchange Server.
- A member of the Backup Operators group on the Exchange Server.
- Assigned the Exchange Organization Administrator Role.

Note: If you don't want to use the "Restore to Recovery Storage Group" and the "Allow databases of destination storage group to be overwritten" restore options, the service account only needs to be assigned the "Exchange View-Only Administrators" role.

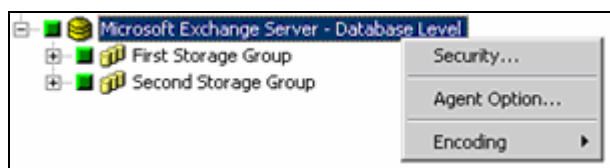
Database Level Backup Features

The following sections include information on the features that the BrightStor ARCserve Backup Agent for Microsoft Exchange offers when performing database level backups.

Database Level Backup Options

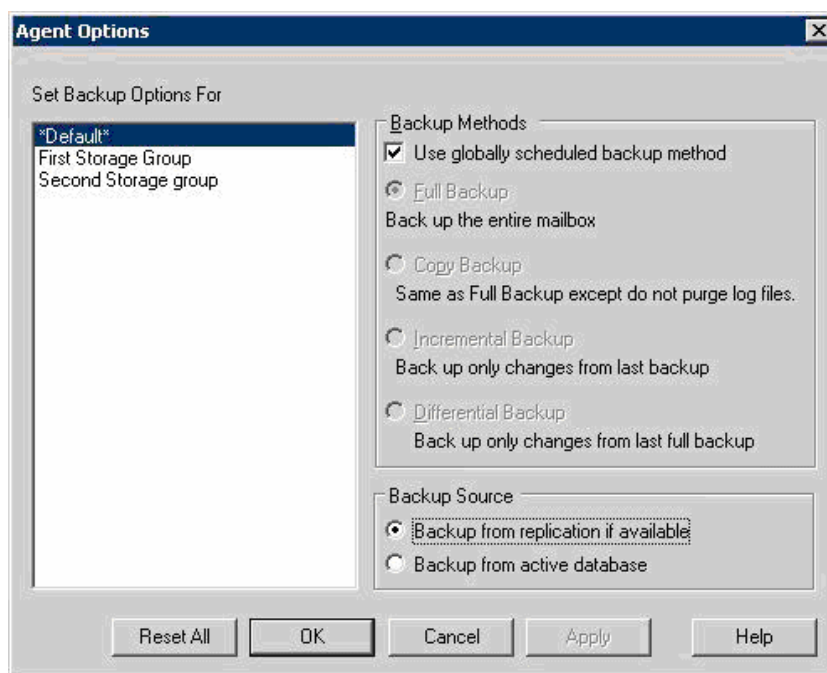
When you submit a backup job, you must select a backup option. The backup option tells BrightStor ARCserve Backup how you want your data to be backed up. When you use the agent, you can select a backup method for your Database Level backup job at the storage group level or you can use a globally scheduled backup method.

To select a backup method at the storage group level, right-click the **Microsoft Exchange Server - Database Level** object and select **Agent Option** as shown in the following illustration:



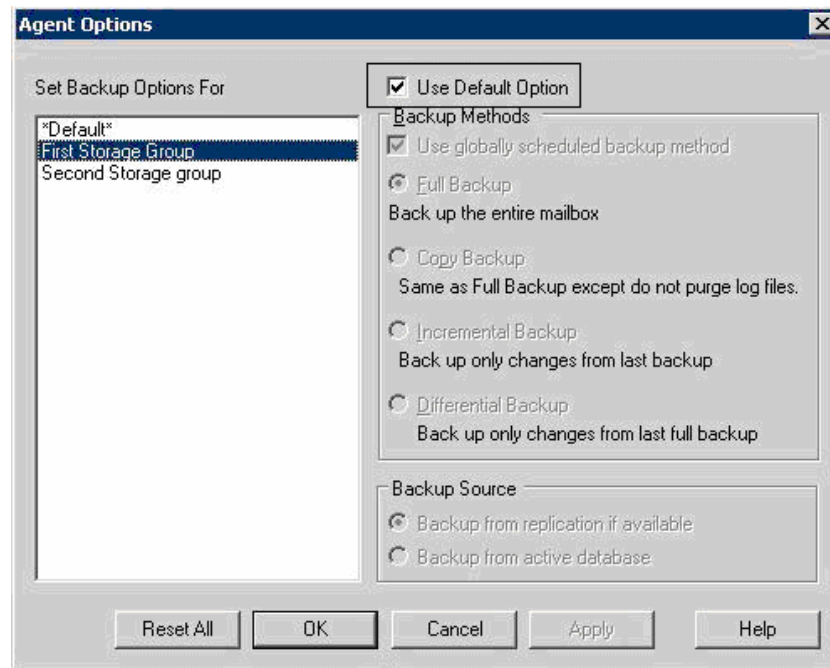
The following diagram illustrates that the globally scheduled backup method will be used for all storage groups.

Note: The options corresponding with ***Default*** represent the default options for all storage groups. When necessary, you can specify options that are unique to the selected storage group.



The following diagram illustrates that for the storage group selected, the **Use Default Option** check box is selected.

Note: To overwrite the default options for the selected storage group, you must clear the check mark from the **Use Default Option** check box.



Important! The advantage of selecting a backup method at the storage group level is that it gives you the flexibility to use a different method for different storage groups.

You can select from the following backup methods:

- **Use globally scheduled backup method**--Enabled by default. You must disable this option if you want to set a backup method at the storage group 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.

- **Full Backup**--This is the default. It backs up the entire database, including the log files, and marks all of the files that have been backed up in preparation for a subsequent incremental or differential backup. The log files are also truncated during a full backup. The backup operation then purges, from the Exchange Server, the committed log files it no longer needs.

If you dismount one or more databases in a storage group during the backup operation, the agent does not truncate the transaction logs. The final result will be equivalent to that of a copy backup operation - not a full backup operation. A full backup is required to run incremental or differential backups.

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**--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.

- **Incremental Backup**--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 recreate the database at the time of backup.

Notes:

- Microsoft Exchange does not support incremental backups when the Circular Logging option is enabled. If you do not disable the Circular Logging option and submit an incremental backup job, the agent automatically converts the incremental backup to a full backup. For more information about Circular Logging, see the *Administrator Guide*.
- If you submit an incremental backup job without first performing a full backup of the storage group, the agent automatically converts the incremental backup job to a full backup job.

- **Differential Backup**--Backs up the log files that have changed since the last backup. The log files are not truncated. It does not, however, mark them as backed up. When restored, the log files are applied to recreate the database at the time of backup.

Notes:

- Microsoft Exchange does not support differential backups when the Circular Logging option is enabled. If you do not disable the Circular Logging option and submit a differential backup job, the agent automatically converts the differential backup to a copy backup. For more information about Circular Logging, see the *Administrator Guide*.
- If you submit a differential backup job without first performing a full backup of the storage group, the agent automatically converts the differential backup job to a full backup job.

- **Reset All**--Reset the options selected back to the default settings for all or your Exchange storage groups.

You can specify one of the following Backup Sources:

- **Back up from replication if available**--If the storage group has a healthy replication, then the backup will be done from the replication. Otherwise, the backup will be done from the active databases.
- **Back up from active databases**--The backup is always performed from active databases.

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 CA BrightStor Backup Universal Agent service are running on your server.

To back up an Exchange Server database

1. From the BrightStor ARCserve Backup Home Page, select the Backup Manager from the Quick Start menu.

The Backup Manager Window opens.

2. From the Backup Manager window, select the storage groups that you want to back up.

Note: Individual database stores can be restored from a backup of an entire storage group.

3. Right-click the Database Level object you selected to back up and select **Agent 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. To enable CRC checking so that you can verify the integrity of your data using the Scan utility after the backup job is performed, click the Options button, click the Operation tab, enable the **Calculate and Store CRC Value on Backup Media** option, and then click OK.

Note: For more information on CRC checking and using the Scan utility, see Database Level Scan Media Options.

5. To enable data encryption, compression, or both, click the Options button (on the Backup Manager window), select the Backup Media tab and check one or both of the following options:

- **Compress Files Before Backup Using Software Compression**
- **Encrypt Files Before Backup**

6. Click the Destination tab and select a backup destination.

Click the Schedule tab.

7. 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 and the *Administrator Guide*.

Note: If you use a Custom Schedule, the Backup Method section on the Schedule tab does not apply. For more information, see Database Level Backup Options.

8. Click Start.

The Security and Agent Information dialog opens.

9. From the Security and Agent Information dialog, make sure 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.

10. Click OK.

The Submit Job dialog opens.

11. 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.

12. Enter a description for your job.

13. 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.

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

Note: Before data is backed up, the agent uses the Microsoft Volume Shadow Copy Service (VSS) to create a snapshot of the entire storage group and to perform an integrity check on its files. The time required for this process will vary, depending upon the amount of data that you are backing up. During this process, the **Status** field in the Job Properties dialog box displays **Calculate Session**.

More information:

[Database Level Backup Options](#) (see page 58)

[Database Level Scan Media Options](#) (see page 84)

Database Level Data Restore

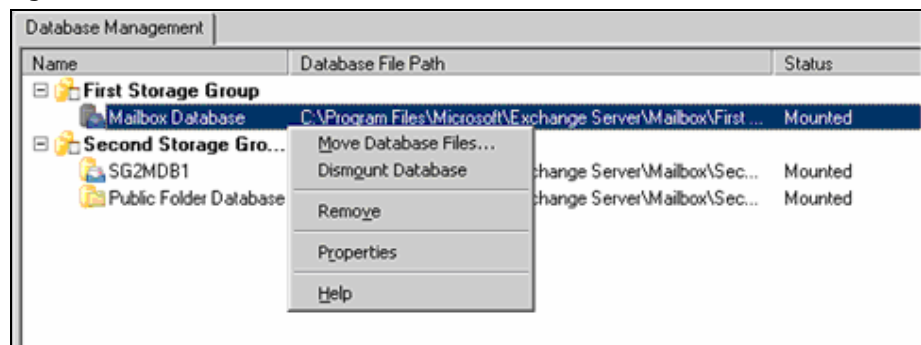
The following sections include information on the prerequisites you must meet before you perform a restore, the features that the agent offers when restoring from a Database Level backup, and the procedure for how to perform a restore.

Database Level Restore Prerequisites

Before you can restore database level backups on Exchange Server 2007 platforms, you must perform the following prerequisite tasks:

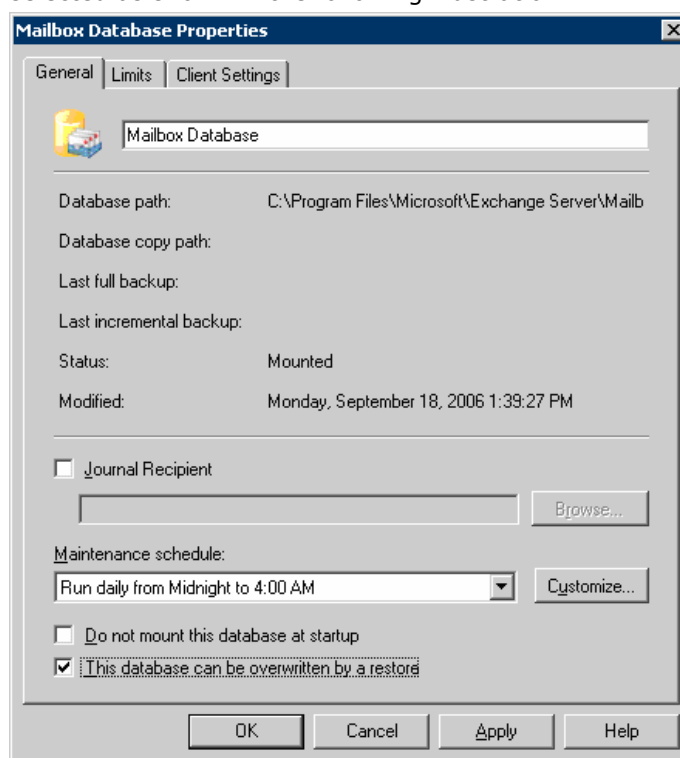
- Dismount the database stores within all storage groups you want to restore.

To dismount the database stores, open the Exchange Management Console, navigate to, and expand, the storage group you want to restore, right-click each database store and select Dismount Database:



Note: You can dismount databases automatically using the option **Automatically dismount databases of destination storage group before restore**. For more information on this option, see Database Level Restore Options.

After you click the **Dismount Database** option from the right-click menu, the **Mailbox Database Properties** dialog opens and the **General** tab is selected as shown in the following illustration:



On the this dialog, you must enable the feature **This database can be overwritten by a restore** for each of the database stores in the Storage Groups you want to restore.

Note: You can also use the option **Allow databases of destination storage group to be overwritten** to automatically overwrite databases during the restore operation. For more information on this option, see Database Level Restore Options.

- Ensure that all of your required Exchange Server services are running.
- Ensure that the agent is installed on the same machine that has the Exchange Server installed and that the CA BrightStor Universal Agent service is running.

More information:

[Database Level Restore Options](#) (see page 67)

Database Level Restore Sets

When you back up an Exchange Server, each storage group that you select 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 storage group. 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 using only the full backup method, your restore set includes only this full session.
- If you backed up your storage group 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 your storage group 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
------	----------------	----------------	----------------	----------------

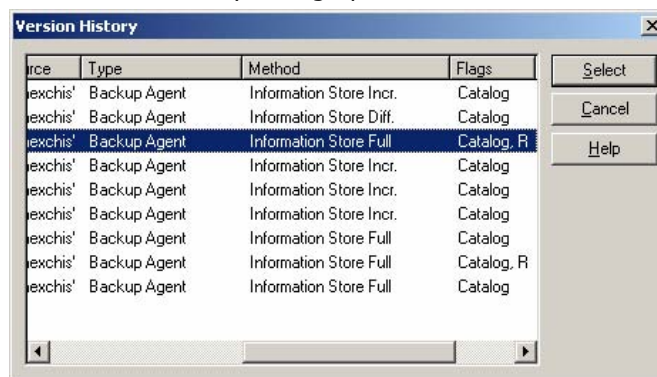
After you determine your restore set, you must make sure that you select the entire set when submitting your restore job. If you use the Restore by Tree method when scheduling your restore job, the agent simplifies this task for you. When using Restore by Tree, all you must do is select the last incremental or differential session in your restore set and the agent will automatically include the full session for you.

To select your restore set in the Restore Manager

1. From the BrightStor 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 underneath the Source tab.

- Expand the server that has the storage group you backed up and select the storage group object.
- Click Version History.

The Version History dialog opens as shown in the following illustration:



- When the Version History dialog opens, highlight a session in your restore set and click Select. If your restore set includes incrementals and differentials, simply select the last incremental or differential in the set and the agent will automatically include the full backup for you (applies to Restore by Tree only).

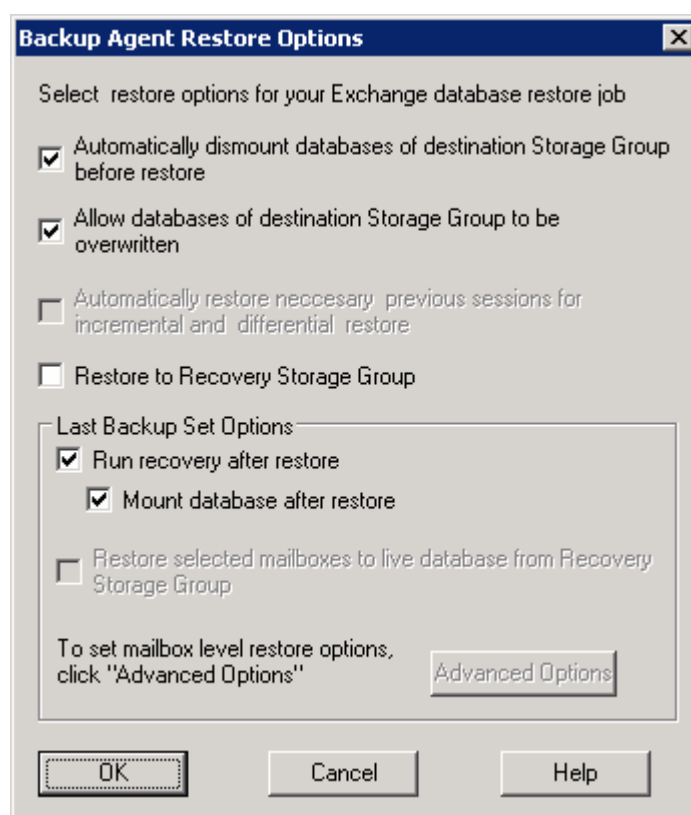
Note: The most recent backups are displayed at the top of the Version History dialog.

- Set your restore options, select a destination, and submit the job.

Database Level Restore Options

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

The following diagram illustrates the Backup Agent Restore Options dialog. The options selected are 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.

The following list describes each of the restore options. When to use these options depends on your restore set. To determine when to use each option, see Database Level Restore Options Selection.

- **Automatically dismount destination database 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 destination database to be overwritten by restore**--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.
- **Mount database after restore**--Instructs the 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 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.

For more information, see How to Select Restore Source Objects.

- **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 BrightStor 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**--The MaxThreads parameter specifies the maximum number of threads to use for the restore. The default value is 4.
- **Target Folder**--Identifies the mailbox folder that all data will be restored to.

Note: If you specify a target folder, all other folders remain unchanged. If you do not specify a target folder, all data is restored to its original location.

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 the **Add** button 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 the **Remove** button.

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 the **Add** button to add the keyword to the keyword list. To remove a keyword, select the keyword and then click the **Remove** button.

- **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 criteria 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.

More information:

[Post-installation Tasks on Exchange Server 2007 Systems](#) (see page 28)

[Database Level Restore Prerequisites](#) (see page 63)

[Database Level Restore Options Selection](#) (see page 72)

[How to Select Restore Source Objects](#) (see page 73)

Database Level Restore Options Selection

When to use these 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, correct restore options are automatically applied for you. If you restore data using Restore by Session on Exchange 2007 Server systems, use the following information to determine when to use each option.

If your restore set contains incremental backups:

Type	Full	Intermediate Incremental	Last Incremental
Apply	N	N	Y/N
Run Recovery	N	N	Y
Mount	N	N	Y/N

If your restore set contains differential backups:

Type	Full	Differential
Apply	N	Y/N
Run Recovery	N	Y

Type	Full	Differential
Mount	N	Y/N

If your restore set is a full backup:

Type	Full
Apply	Y/N
Run Recovery	Y
Mount	Y/N

More information:

[Database Level Restore Options Selection](#) (see page 52)

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.

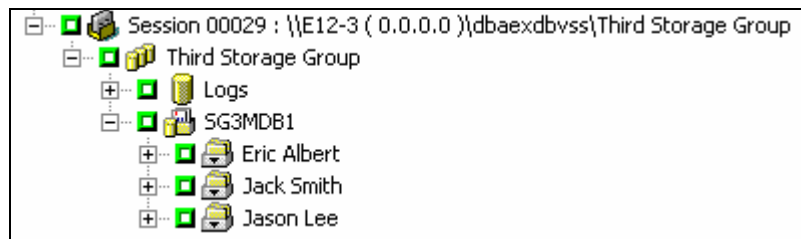
Full and Copy Backups

If 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 will be automatically selected as illustrated by the following graphic:



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.

If the [Restore selected mailboxes to live database from Recovery Storage Group is selected](#) (see page 67), you can browse the restore source down to the mailbox level, and select individual mailboxes as restore source as illustrated in the following graphic:



Incremental and Differential Backups

If you are restoring an incremental or differential backup session, you can only select the whole storage group to restore since the incremental and differential backup sessions only contain log files.

More information:

[Database Level Restore Options](#) (see page 67)

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 **Restore files to their original location** option 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. The alternative locations can be different server, storage group, database, or to a windows file system.

Note: The restore target must be on an Exchange 2007 server.

How You Can Browse Restore Targets

The following list describes how you can browse Exchange objects:

- If you need to restore data to an alternate destination, the Restore manager must communicate with the Exchange 2007 agent on the target server so that it can browse for Exchange objects.
- The agent backup account can be entered by right clicking on Microsoft Exchange Server – Database Level. On the agent side, if the agent backup account is not provided, it should use the machine user account instead of the agent backup account.
- The restore destination browsing can be done down to the database level.

Supported Restore Destinations

When restoring to an alternative location, the destination you select depends on the source you select. The following chart lists the source objects you can select, and their supported destinations:

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. Otherwise, the restore will fail.</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. Otherwise, the restore will fail.</p> <p>A storage group. In this case, the databases with the same names as the source have to already exist at run time. Otherwise, the restore will fail.</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. Otherwise, the restore will fail.</p> <p>A storage group. In this case, the databases with the same names as the source have to already exist at run time. Otherwise, the restore will fail.</p> <p>A database. If a mailbox is restored to a public folder database or vice versa, the restore 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>A Windows File System.</p>

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

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

If you want to restore data to 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.

The following procedure describes how to perform this task.

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

1. Open the Restore Manager and select the destination tab.

Clear the checkmark from the **Restore files to their original location(s)** option.

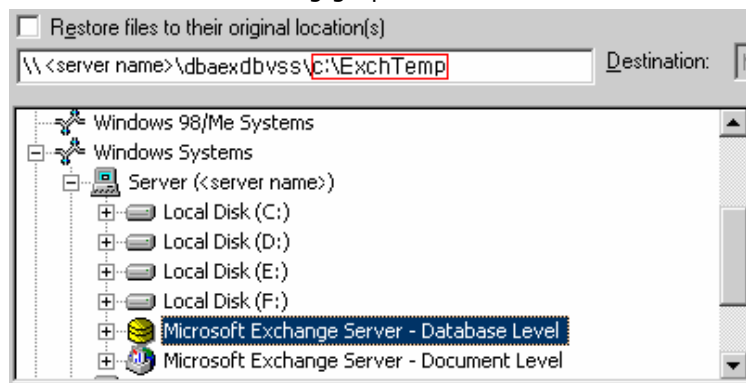
Expand the **Windows Systems** object and browse to the target system that you want to restore the data to.

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

BrightStor ARCserve Backup automatically populates the Destination field with the following:

\\<server name>\dbaexdbvss

2. Enter path to the file system directory, for example c:\ExchTemp, as illustrated in the following graphic:



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

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 backup 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:\ExchTemp\First Storage Group

After you specify the file system as the restore destination, BrightStor 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: BrightStor ARCserve Backup ignores all other restore options at run time when restoring data to a Windows file system.

More information:

[Database Level Restore Options](#) (see page 67)

Perform a Database Level Restore

To restore an Exchange Server database

1. From the BrightStor 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 underneath the Source tab.

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

3. Expand the **Windows Systems** object, expand the server you are restoring from, and then expand the server object to select the objects you want to restore. See Selecting restore source objects.
4. If the most recent backup is not the backup you want to restore, click Version History, select the version you want to restore, and click Select.
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, simply select the last incremental or differential in the set and the agent will automatically include the full backup for you. For more information, see Database Level Restore Sets.
5. Right-click each storage group object 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.
7. If you want to restore to an alternative, clear the **Restore files to their original locations** check box, expand the **Windows Systems** object, expand the server you want to restore to, and select the Exchange destination object. For more information, see How You Can Select Restore Destinations.
8. Click Start.
9. If you are restoring to an alternative location, when the Security dialog appears, enter the user name and password for the destination server and the Exchange agent account on the destination server and click OK.
10. 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:
DOMAIN\USERNAME
11. Click OK.
12. 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.
13. Enter a description for your job and click OK.

More information:

[Database Level Restore Sets](#) (see page 65)

[Database Level Restore Options](#) (see page 67)

[How to Select Restore Destinations](#) (see page 74)

Perform a Database Level Test Restore to an Alternative Location

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.

To perform a test restore to an alternative location

1. Ensure that the test server you are restoring to meets the following criteria:
 - Microsoft Exchange is installed and is configured exactly the same as the original server you backed up from.
 - BrightStor ARCserve Backup and the agent are installed.
 - The server is in a different domain than the domain of the server you backed up from and it has its own Active Directory.
2. Open the Restore Manager and select the Source tab.
Browse to and select the session that you want to restore.
3. Click the Destination tab.
Disable the **Restore files to their original location(s)** option.
4. Expand the server object for your test server and select the **Microsoft Exchange Server - Database Level** object.
5. Click Start to submit the job.

Access an Individual Mailbox from a Database Level Test Restore

If you do not perform a document level backup in addition to your database level backup and need to restore an individual mailbox, do the following:

1. Follow the procedure for performing a test restore to an alternative location. For more information, see Perform a Database Level Test Restore to an Alternative Location.
2. Open the Exchange Management Shell and run the following command:

```
Clean-MailboxDatabase <Mailbox Database>
```

Where the <Mailbox Database> represents the name of the mailbox database containing the mailbox that you want to access.

3. Open the Exchange Management Console and find the mailbox that appears in the **Disconnected Mailbox** folder.

Note: The mailbox appears in the Disconnected Mailbox folder because the active directory of the new domain does not contain the same user as the active directory of the original domain.

Open the Active Directory Users and Computers dialog and create a new user account to attach the mailbox to.

4. From the Exchange Management Console, right-click the name of the disconnected mailbox and select Connect from the pop-up menu.

The **Connect Mailbox** dialog opens.

5. From the Connect Mailbox dialog, select the domain account that you want to link to the disconnected mailbox.

The user is connected to the mailbox.

After you connect the mailbox to the user, the information replicates and the restore mailbox is available in the new domain.

More information:

[Perform a Database Level Test Restore to an Alternative Location](#) (see page 79)

Database Level Disaster Recovery

If a disaster occurs, you must perform the following steps to restore the Exchange Server:

- For information about disaster recovery, see the *Disaster Recovery for Microsoft Exchange 2007* white papers on the Microsoft web site.
- Restore the operating system on your Exchange Server and your domain controller and ensure that the System State with Active Directory is in a consistent state with the backup you intend to restore. The BrightStor ARCserve Backup Disaster Recovery Option provides an automated and efficient way for you to complete these tasks. For more information, see the *Disaster Recovery Option Guide*.
- Ensure that the Exchange Server application is operational and that you have the same Service Pack you had prior to the disaster.
- Restore the databases to the Exchange Server. For instructions on how to restore the databases to the Exchange Server, see Perform a Database Level Restore.

Features Supported on Exchange 2000, 2003, and 2007 Systems

The following BrightStor ARCserve Backup features and capabilities are supported database level backup and restore on Exchange Server 2000, 2003, and 2007 systems.

- Multiplexing during database level backups
- Multi Streaming
- Database level data encryption
- Database level data compression
- Database level Scan Utility

More information:

[Multiplexing During Database Level Backups](#) (see page 81)

[Multi Stream Backup Options](#) (see page 82)

[Database Level Data Encryption](#) (see page 83)

[Database Level Data Compression](#) (see page 83)

[Database Level Backup Scan Utility](#) (see page 83)

Multiplexing During Database Level Backups

Multiplexing is a process in which data from multiple sources are 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—one for each remote node and additional streams for each local Exchange Server storage groups. These child jobs write data to the same media simultaneously.

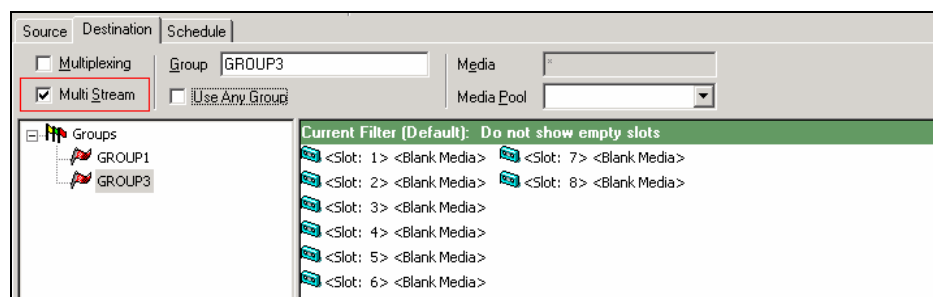
For more information on multiplexing, see the *Administrator Guide*.

Multi Stream Backup Options

If your BrightStor ARCserve Backup server is equipped with multiple devices in two or more groups, or multiple devices in one or more groups with the BrightStor ARCserve Backup Enterprise Module and BrightStor ARCserve Backup Tape Library Option installed, you can take advantage of the Multi Stream option.

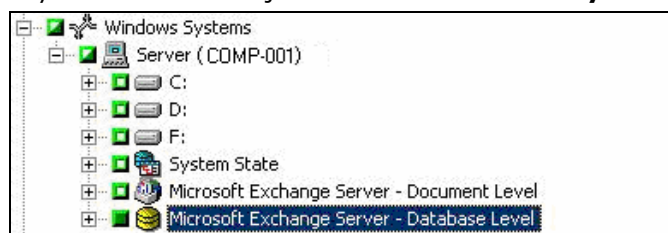
This option divides your backup jobs into several sub-jobs that run simultaneously to different devices. You can have as many jobs running simultaneously as you have devices or groups on your system.

Database Level backup provides one stream per storage group for simultaneous backup. The number of available tapes, drives, and storage groups determines the number of streams that are run simultaneously during backup. You can enable the Multi Stream option on the Destination tab in the Backup Manager:

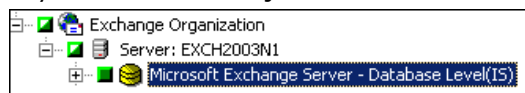


If you enable the Multi Stream option when you submit a Database Level backup job, the data is multi-streamed at the **storage group level** in two circumstances:

- If you submit a local job under the **Windows Systems** object:



- If you submit a local job under the Exchange Organization object:



In all other circumstances, data is multi-streamed at the server level.

For more information on the Multi Stream option, see the *Administrator Guide*.

Database Level Data Encryption

With intelligent client-to-server data encryption capabilities, BrightStor ARCserve Backup lets you encrypt data packets transported during a backup job with a session password to enhance network security. This capability ensures that transported or archived data is secure and password protected, and ensures both the privacy of data transmitted over the network and the security of your backup media.

Tapes cannot be misused or restored by users who do not have the encryption key. When you choose this feature, your backup data is encrypted, including data packets that are transported between the client and the server, data that resides on the local server and data that has been moved to backup media.

Database Level Data Compression

When you perform Database Level backups, the Exchange Agent lets you compress data that is transmitted through the Transmission Control Protocol/Internet Protocol (TCP/IP) network. Compression is the reduction in size of data and is advantageous when you need to save space and improve transmission time.

Note: When this option is configured, the Exchange agent compresses all data packets before it transmits the data to the backup server.

Database Level Backup Scan Utility

After you back up your Exchange Server database, you can use the BrightStor ARCserve Backup Scan utility to find out what is on your media, to view information about your media backup sessions, and, if you enabled **CRC checking during backup**, to verify the integrity of the data that was written to the media.

Note: For more information on how to enable CRC checking during backup, see Perform a Database Level Backup.

Each source that you select to back up is saved on media as an individual session. You can scan a single session or an entire media. To view the results of the Scan job in the Job Queue, click the Log tab.

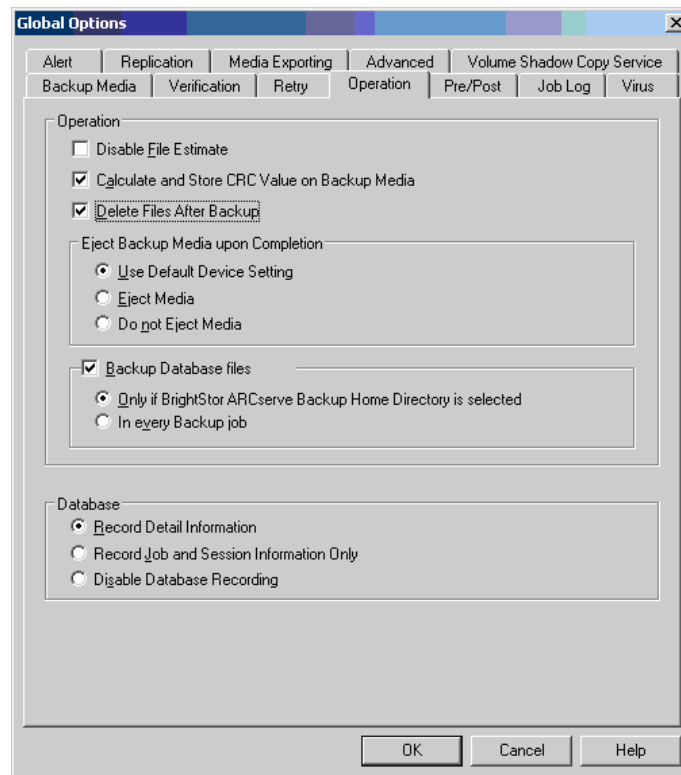
Use the Log tab in the Options dialog to select the level of detail you see in the Job Queue Log. You can select to see just summary information and any errors that occurred during the scan or you can select to see each file that was backed up, summary information, and any errors that may have occurred.

More information:

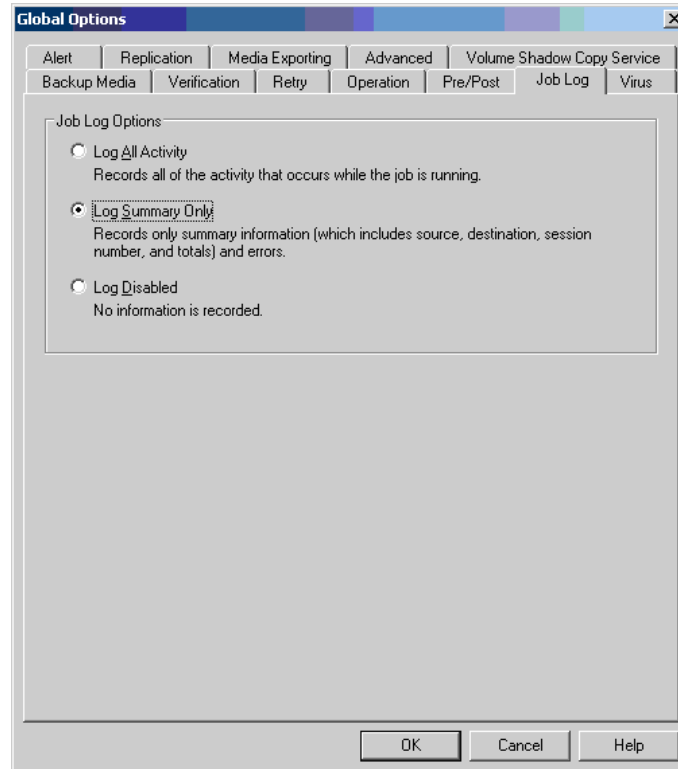
[Perform a Database Level Backup](#) (see page 61)

Database Level Scan Media Options

If you enable CRC checking during backup, the following scan media options apply to your Exchange Server backup job.



On the Operation tab, enable **Calculate and Store CRC Value on Backup Media** if you want to scan files with a CRC check to verify the integrity of the data that was written to the media.



On the Job Log tab, select the level of detail you want to include in the log report:

- **Log All Activity**—Record all of the activity that occurs while the job is running in the Job Log.
- **Log Summary Only**—Record summary information of the job (including source, destination, session number, and totals) and errors.
- **Log Disabled**—Do not record any information about this job in the Job Log.

Note: You can view the log report in the Job Queue or Database Manager (Job Records).

Scan Media

To scan media

1. Open the Scan utility.
2. Select the media you want to scan. If the media you want to scan is not currently in a storage device, you must enter the information into the Group and Media fields.

3. Enter a specific session to scan or select to scan all sessions on the media.
4. Click Options to specify scan options for the job.

Note: If you enabled **CRC checking during backup**, you must enable the **Calculate and Store CRC Value on Backup Media** option if you want to verify the integrity of the data.

5. Click Filter to specify filters for the job.
6. Click Start to submit the job.

Chapter 4: Performing Document Level Backups and Restores

This section contains the following topics:

[How Document Level Backup Works](#) (see page 87)

[Document Level Backup and Restore Benefits](#) (see page 88)

[Document Level Views in the Backup Manager](#) (see page 89)

[Backup Agent Service Account Requirements for Document Level Backup and Restore](#) (see page 90)

[Document Level Backup Features](#) (see page 91)

[Document Level Backup Scan Utility](#) (see page 103)

[Document Level Data Restore](#) (see page 106)

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 even a single message. Document Level backup and restore can also be used to simplify many administrative tasks, such as auditing, migration, pruning, and aging. Using 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.

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 BrightStor ARCserve Backup host server. This off loads the system resources from the BrightStor 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 the chapter "Installing the Agent."
- **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, folder, 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 2000, 2003 and 2007. For more information about the guidelines on how you can restore from different versions of Exchange Server, see Document Level Restore Locations.
- **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 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, under certain circumstances, Document Level backup can automatically continue where the first job left off. For information on how to configure job continuation, see the chapter "Installing the Agent."

More information:

[Configure the Agent to Run on a Cluster](#) (see page 18)
[Document Level Restore Locations](#) (see page 110)

Document Level Views in the Backup Manager

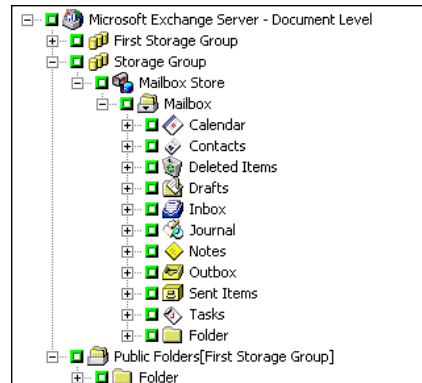
Depending on your system configuration, Microsoft Exchange Server – Document Level appears in the Backup Manager under the following objects:

- Windows Systems
- Exchange Organization

When you expand the Document Level object, you can view its storage groups. For Exchange 2000 and 2003 Server systems, each server can include up to five storage groups. For Exchange 2007 Server systems, each server can include up to 50 storage groups.

For document level backup and restore, the **Public Folders** object is treated as a storage group.

When you expand a storage group you can view its containing folders:



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

Example: Character Substitution

A folder named a\b\c is displayed as follows in the Backup Manager:



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 on the Exchange Server to which you plan to back up or restore to. This mailbox must be operational, initialized, and must have the same name as the backup agent service account.
- It must be a member of the Administrator group.
- It must be a member of the Backup Operators group.
- It must be assigned the Exchange Full Administrator Role (Exchange 2000 and Exchange 2003 only).
- It must be assigned the Exchange Organization Administrator Role (Exchange 2007 only).

- 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 2000 and Exchange 2003

To assign this role, open the Exchange System Manager, right-click the public folder you want to back up or restore, and select Properties. When the Properties dialog opens, click the Permissions tab, click the Client permissions button, either add a new client with the Owner role or modify an existing client to assign the Owner role, and then click OK.

Exchange 2007

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

Document Level Backup Features

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

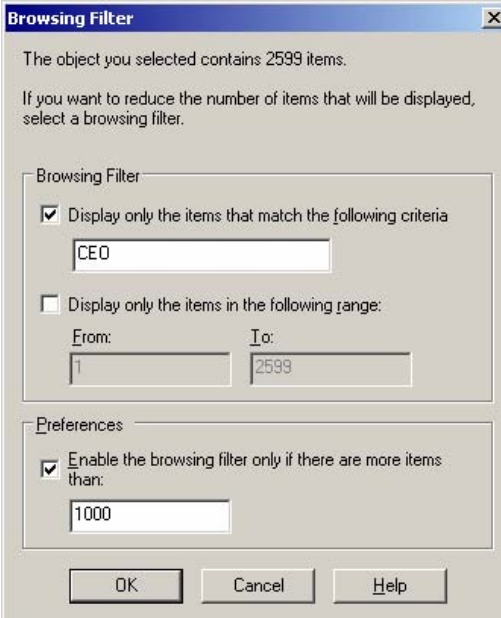
To maximize performance during backup, enable the option: **Complete Messaging Single Instance Storage**. If you enable this, the agent checks to see if attachments and messages have already been backed up and then backs up only one copy. This eliminates the need to back up each time the attachment and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

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.

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".



The screenshot shows a dialog box titled "Browsing Filter". It contains the following elements:

- A message: "The object you selected contains 2599 items. If you want to reduce the number of items that will be displayed, select a browsing filter."
- A section labeled "Browsing Filter" with two options:
 - ☒ Display only the items that match the following criteria: A text box below contains "CEO".
 - ☐ Display only the items in the following range: Two text boxes labeled "From:" and "To:" are shown. "From:" contains "1" and "To:" contains "2599".
- A section labeled "Preferences" with one option:
 - ☒ Enable the browsing filter only if there are more items than: A text box below contains "1000".
- Buttons at the bottom: "OK", "Cancel", and "Help".

You can select from the following filters:

- **Display the items that match the following pattern**—Enable this to only display the items that match the criteria you specify.
- **Display 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\BrightStor ARCserve
Backup\Base\ASMgr\DBAEXSIS
Value Name: MaxItemsDisplayed
Value Type: REG_DWORD
Value Data (Base Decimal):Desired threshold
```

Document Level Backup Methods

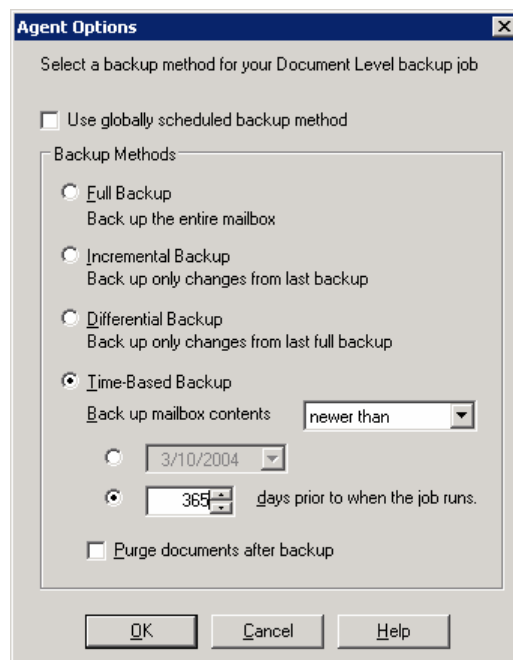
When you submit a backup job, you must select a backup method. The backup method tells BrightStor ARCserve Backup how you want your data to be backed up. The agent provides you with the flexibility to select a backup method for your Document Level backup job at the Microsoft Exchange Server – Document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

Note: If you want to perform a Document Level backup job and include disaster recovery information, you must submit both a whole node backup job to generate the disaster recovery information and a separate Document Level backup job.

To select a backup method at the Document Level, right-click Microsoft Exchange Server – Document Level and select **Agent Options**:



The Agent Options dialog opens as illustrated by the following example:



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 globally scheduled backup method**—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.

- **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. BrightStor ARCserve Backup automatically adjusts for daylight savings when there is a time zone difference between the server that is running the BrightStor 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 the chapter "Installing the Agent."

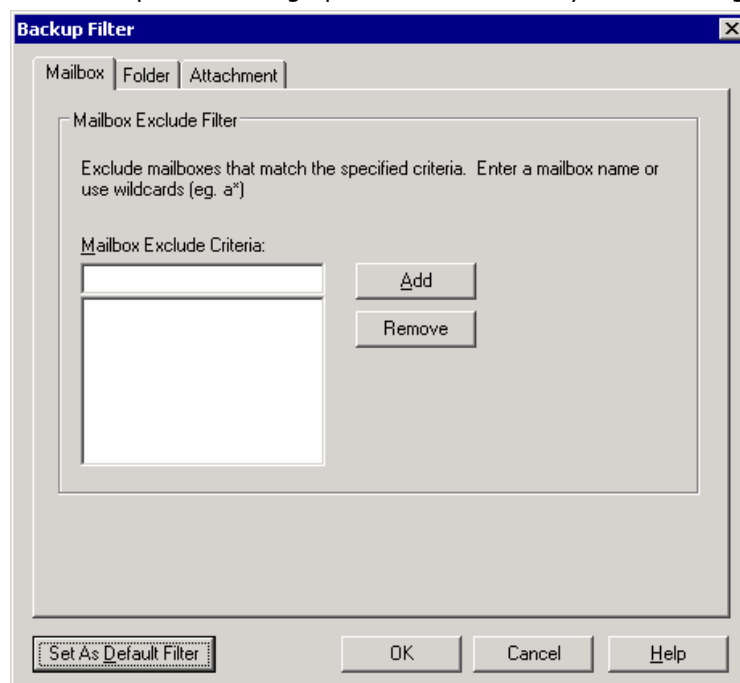
Specify Document Level Backup Filters

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, which is 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

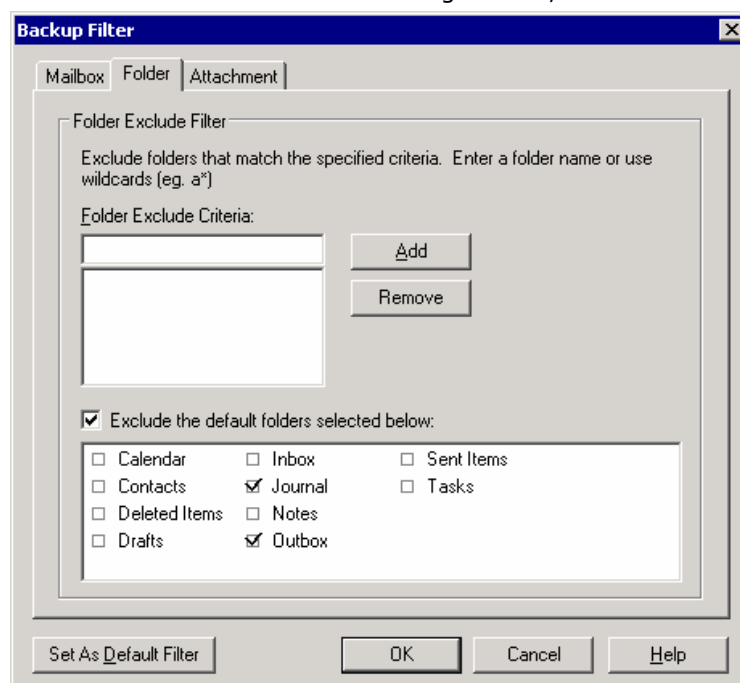
1. To select a backup filter, right-click Microsoft Exchange Server – Document Level and select Filter.

The Backup Filter dialog opens as illustrated by the following diagram.



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.

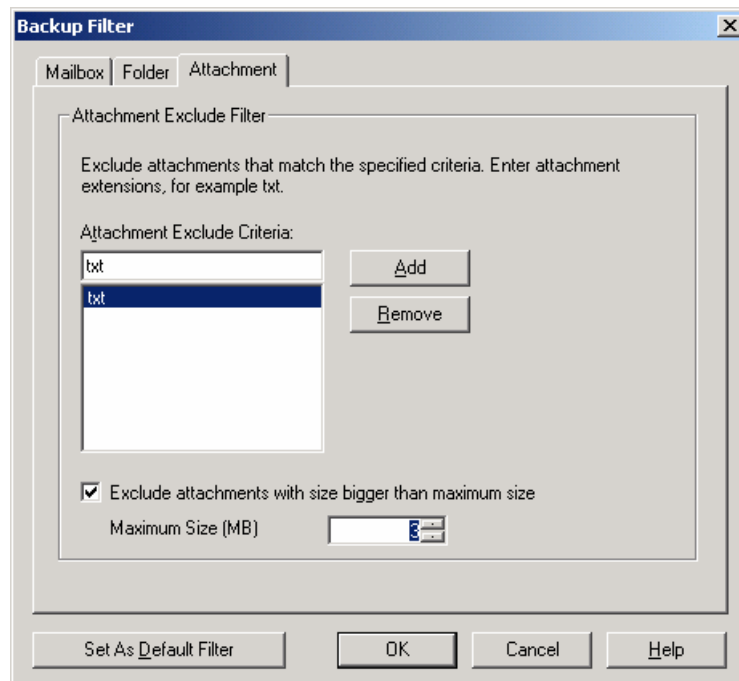
Note: For information about filtering criteria, see Filter Criteria.



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.

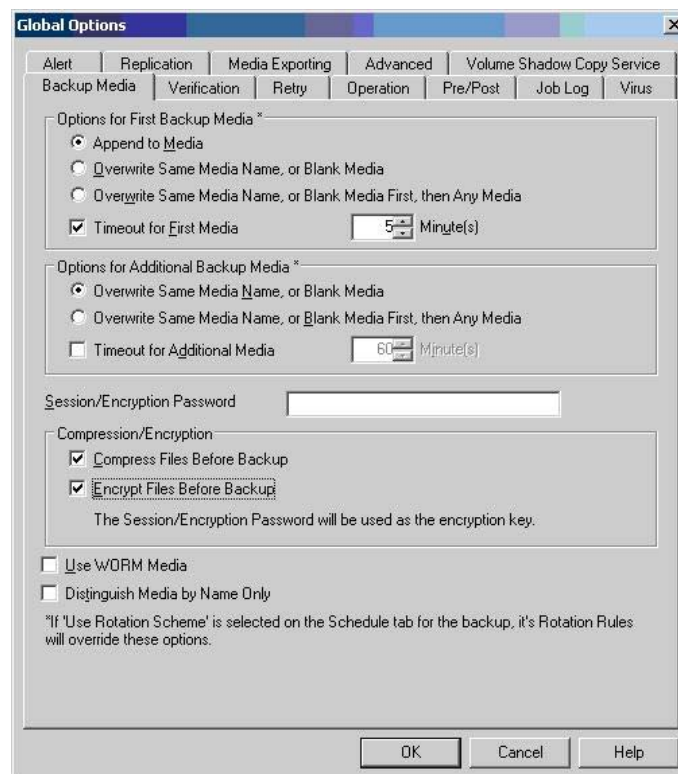
More information:

[Filter Criteria](#) (see page 92)

Document Level Compression and Encryption Options

To increase data speed and the effectiveness of your media, and to enhance network security, document level backup supports the BrightStor ARCserve Backup compression and encryption global options.

If you want your document level data to be compressed or encrypted before sending it to the backup server, enable the **Compress Files Before Backup** and **Encrypt File Before Backup** options, and then enter the password for the encryption in the Session/Encryption Password field.



Multiplexing During Document Level Backups

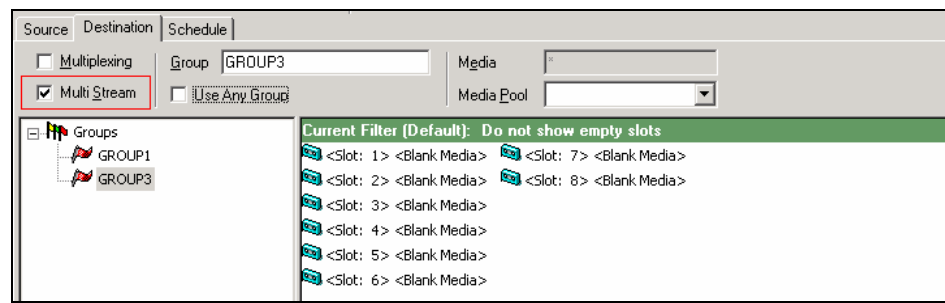
Multiplexing is a process in which data from multiple sources is written to the same media simultaneously. When a job that has multiple sources is submitted with the multiplexing option enabled, it is broken into child jobs—one for each storage group. These child jobs write data to the same media simultaneously. 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 *Administrator Guide*.

Multi Stream Option

If your BrightStor ARCserve Backup server is equipped with multiple devices in two or more groups or multiple devices in one or more groups with the BrightStor ARCserve Backup Enterprise Module and BrightStor ARCserve Backup Tape Library Option installed, you can take advantage of the Multi Stream 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.

You can enable the Multi Stream option on the Destination tab in the Backup Manager as shown in the following illustration:



For more information on the Multi Stream option, see the *Administrator Guide*.

Note: If you enable the Multi Stream option when you submit a local or remote Document Level backup job, the data is multi-streamed at the storage group level. For example, if your Exchange Server has two storage groups and you enable the Multi Stream option during backup, one subordinate job is created for each storage group.

Perform a Document Level Backup

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

To back up an Exchange Server using document level backup

1. From the BrightStor ARCserve Backup Home Page, select the Backup Manager from the Quick Start menu.
2. When the Backup Manager opens, 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 is automatically displayed 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 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.
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.
7. If you want to enable CRC checking so that you can verify the integrity of your data by using the Scan utility after the backup job is performed, click the Options button, click the Operation tab, enable the **Calculate and Store CRC Value on Backup Media** option, and then click OK.
Note: For more information on CRC checking and using the Scan utility, see Document Level Scan Media Options.
8. If you want to enable compression and encryption, click the Options button, click the Backup Media tab, enable the Compress Files Before Backup and the Encrypt Files Before Backup options, enter the password for the encryption in the Session/Encryption Password field, and then click OK.

9. Click the Destination tab and select a backup destination.
10. 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 and the *Administrator Guide*.
11. Click Start.
12. When the Security and Agent Information dialog opens, make sure 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.
13. Click OK.
14. 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.
15. Enter a description for your job.
16. 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.
17. 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:

[Document Level Backup Methods](#) (see page 93)

[Filter Criteria](#) (see page 92)

[Document Level Scan Media Options](#) (see page 104)

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 the chapter “Installing the Agent.” 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

Document Level Backup Scan Utility

After you back up your Exchange Server database, you can use the BrightStor ARCserve Backup Scan utility to find out what is on your media, to view information about your media backup sessions, and, if you enabled CRC checking during backup, to verify the integrity of the data that was written to the media.

Note: For more information on how to enable CRC checking during backup, see [Perform a Document Level Backup](#).

Each source that you select to back up is saved on media as an individual session. You can scan a single session or an entire media. You can view the results of the Scan job in the Job Queue by clicking the Log tab.

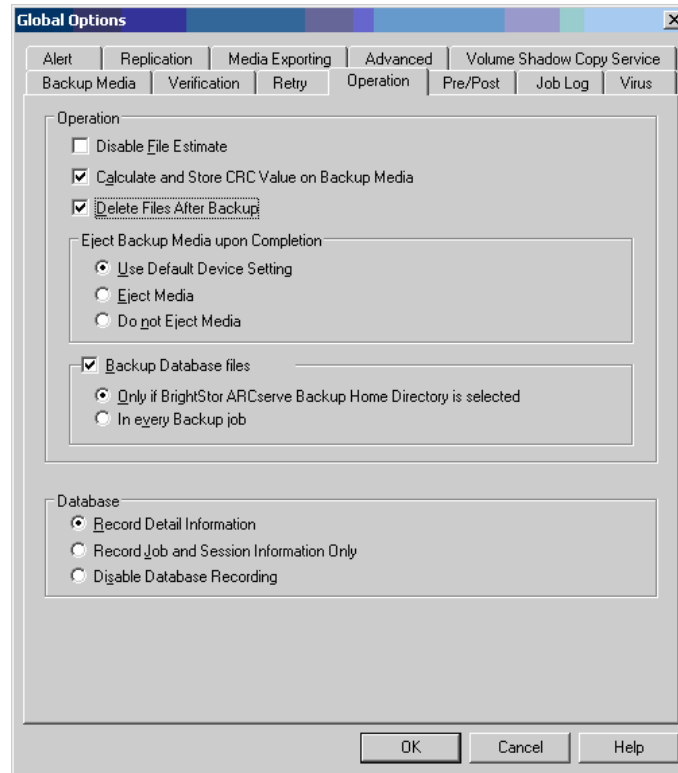
Use the Log tab in the Options dialog to select the level of detail you see in the Job Queue Log. You can choose to see just summary information and any errors that occurred during the scan or you can choose to see each file that was backed up, summary information, and any errors that may have occurred.

More information:

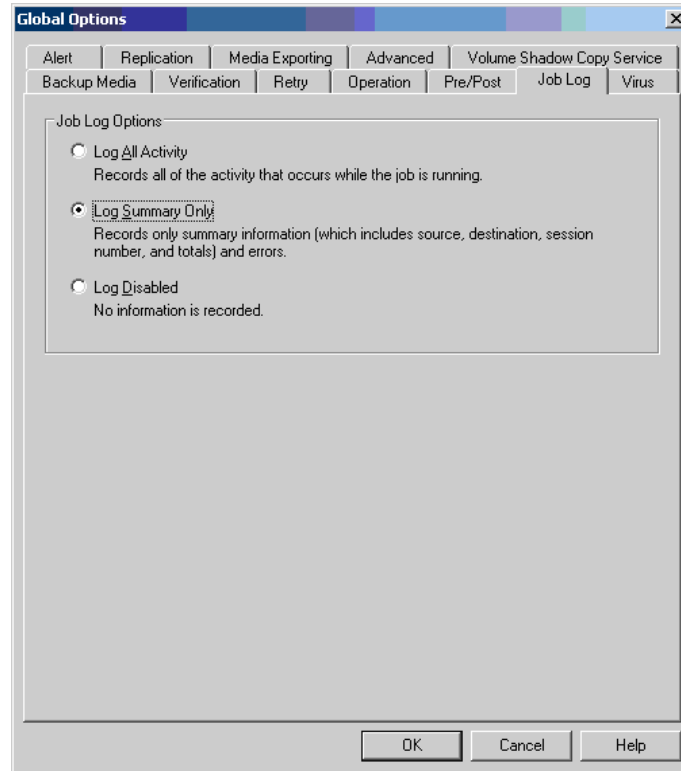
[Perform a Document Level Backup](#) (see page 100)

Document Level Scan Media Options

If you enable CRC checking during backup, the following scan media options apply to your Exchange Server backup job:



On the Operation tab, enable **Calculate and Store CRC Value on Backup Media** if you want to scan files with a CRC check to verify the integrity of the data that was written to the media.



On the Job Log tab, select the level of detail you want to include in the log report:

- **Log All Activity**—Record all of the activity that occurs while the job is running in the Job Log.
- **Log Summary Only**—Record summary information of the job (including source, destination, session number, and totals) and errors.
- **Log Disabled**—Do not record any information about this job in the Job Log.

Note: You can view the log report in the Job Queue or Database Manager (Job Records).

Scan Media

To scan media

1. Open the Scan utility.
2. Select the media you want to scan. If the media you want to scan is not currently in a storage device, you must enter the information into the Group and Media fields.
3. Enter a specific session to scan or select to scan all sessions on the media.
4. Click Options to specify scan options for the job.

Note: If you enabled **CRC checking during backup**, you must enable the **Calculate and Store CRC Value on Backup Media** option if you want to verify the integrity of the data.

5. Click Filter to specify filters for the job.
6. Click Start to submit the job.

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 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 using only the full backup method, your restore set includes only this session.
- If you backed up your storage group 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 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, you must make sure that you select the entire set when submitting your 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 restore, you must satisfy the following prerequisites:

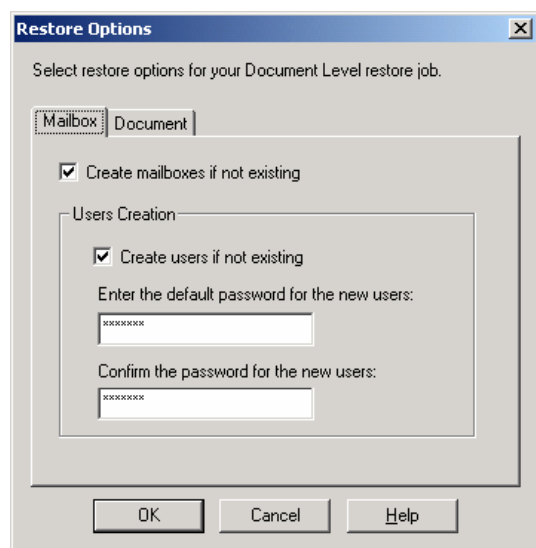
- The Exchange Server must be running and the storage groups and mailbox stores that you are restoring to must already exist (they are not created at restore time).
- The account you are using to restore must meet the backup agent service account requirements for the machine you are restoring to. For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

More information:

[Backup Agent Service Account Requirements for Document Level Backup and Restore](#) (see page 90)

Document Level Restore Options

When you create a restore job, you can choose restore options to customize the job. To select restore options, right-click a storage group and select **Agent Option**:



On the Mailbox tab, you can select the following:

- **Create mailbox if not existing**—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 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, an email is sent to the new mailbox to finalize it and notify you that the mailbox is ready for use. If you want to customize the contents of this email, you can create a new message and save it as an RTF file in the BrightStor 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\BrightStor ARCserve  
Backup\ExchangeDocumentAgent\Parameters
```

```
Value Name:FirstMailSubject
```

```
Value Type: REG_SZ
```

```
Value Data:The desired subject line
```

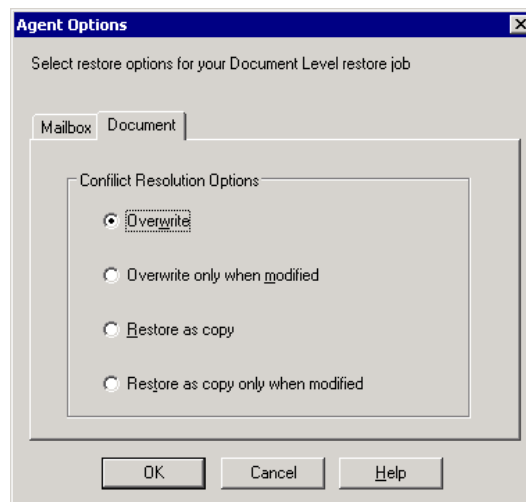
- **Create user if not existing**—If you selected the **Create mailbox if not existing** option and do not have an existing user to associate with the mailbox, you must use this option and enter a password because every mailbox must have a user associated with it. When entering the password, ensure that 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 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 the chapter “Installing the Agent.”

Notes:

- 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 the chapter “Installing the Agent.”

If you have trouble with mailbox or user creation, see the section on failing to create the user account, to create the mailbox, or to finalize the mailbox in the appendix “Troubleshooting.”



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.

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

Alternate 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.

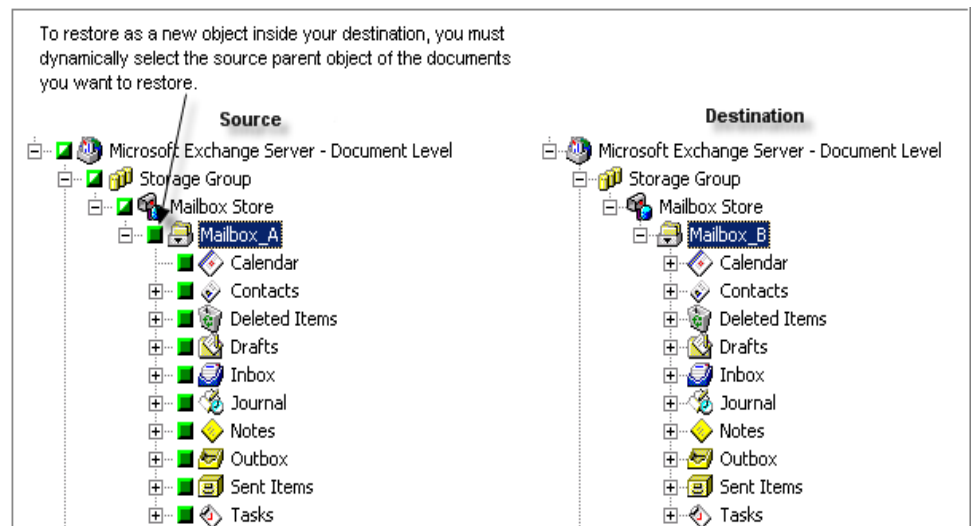
The following sections include more information on selecting a source and destination.

Source Selection Considerations

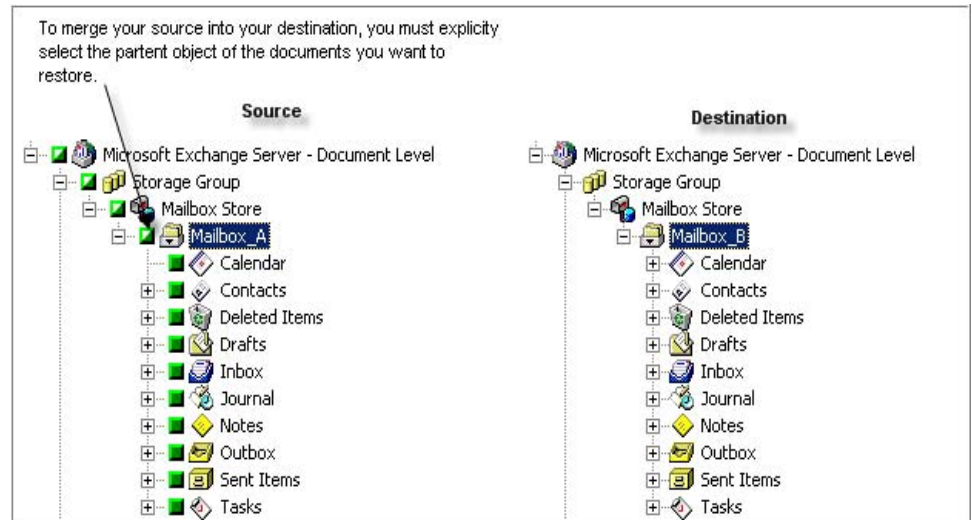
When you restore to an alternative location, the objects you restore are either restored as new objects inside or merged into, the destination you select, depending on how you select your source.

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 within Mailbox_B.



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



For more information on dynamic and explicit job packaging, see the *Getting Started*.

Destination Selection Considerations

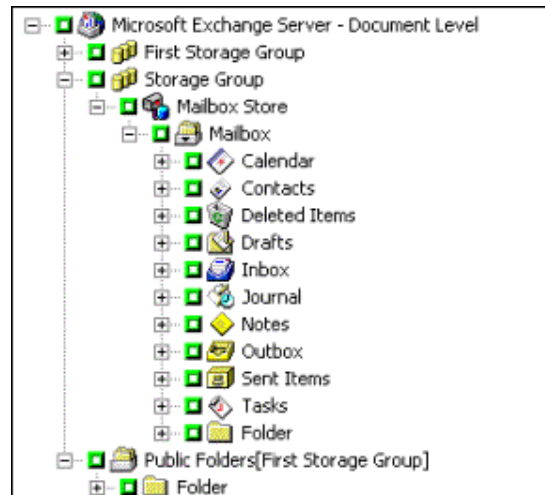
When restoring to an alternative location, there are certain rules that apply to the destination you select, depending on what you selected to restore and what version of Exchange Server you are restoring to.

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 BrightStor 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 2000 and 2003 Objects

The following diagram illustrates the source objects that you can restore for Exchange Server 2000 and 2003 using the BrightStor ARCserve Backup Agent for Microsoft Exchange:



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 BrightStor ARCserve Backup Agent for Microsoft Exchange:

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

Supported Destinations When Restoring Exchange Server 5.5 Data to Exchange Server 2000, 2003, and 2007 Systems

The following chart lists the source objects you can select, and their supported destinations, when restoring Exchange Server 5.5 to Exchange Server 2000, 2003, 2007 systems using the BrightStor ARCserve Backup Agent for Microsoft Exchange:

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

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

Note: When restoring from Exchange Server 5.5 to Exchange Server 2000 or 2003, you cannot select the Individual Mailboxes parent object as a source because of the ambiguity of the child mailbox locations. You can, however, select a child mailbox as a source or the mailbox store (and select the option Create mailbox if not existing) if you need to migrate or restore mailboxes.

Supported Destinations When Restoring Exchange Server 2000, 2003, or 2007, to Exchange Server 2000, 2003, 2007 Systems

The following table describes the source objects that you can select, and their supported destinations, when restoring Exchange Server 2000, 2003, or 2007 data to Exchange Server 2000, 2003, and 2007 systems using the BrightStor ARCserve Backup Agent for Microsoft Exchange:

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

*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

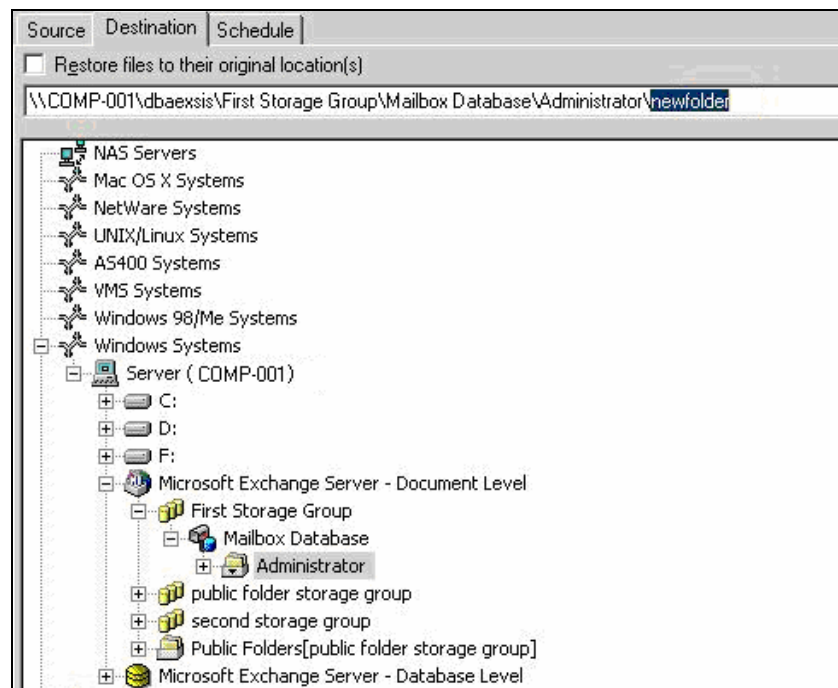
If you want to create a new folder to restore to within the mailbox or folder you selected as your destination, you can manually extend the destination path on the Destination tab in the Restore Manager.

Example: Extending the Destination Path

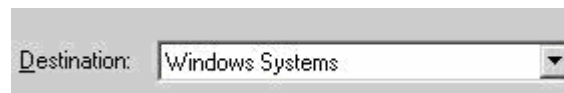
If you select Mailbox_A as your destination and want to add a new folder within Mailbox_A to restore to, add the name of your new folder at the end of the destination path at the top of the page.

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.



Important! Because Document Level restore uses push agent technology, you must always have **Windows Systems** selected in the Destination field next to the destination path as shown in the following illustration:



Perform a Document Level Restore

To restore using Document Level restore

1. From the BrightStor 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 underneath the Source tab.
Note: Both Restore by Tree and Restore by Session are supported for Document Level restore.
3. Expand the **Windows Systems** 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. Click Version History, select a backup version for this session, and click Select.
Note: Version History is supported at the storage group level only.
5. To select restore options, right-click a storage group, 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** 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 Start.
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.
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.

More information:

[Document Level Restore Options](#) (see page 108)
[Alternate Restore Locations](#) (see page 111)

Chapter 5: Using Best Practices

This section recommends best practices for using BrightStor ARCserve Backup Agent for Microsoft Exchange so that you can take full advantage of the powerful features these products offer.

This section contains the following topics:

[General Recommendations](#) (see page 119)

[Installation Recommendations](#) (see page 119)

[Exchange Server Configuration Recommendations](#) (see page 120)

[Backup Recommendations](#) (see page 121)

[Restore Recommendations](#) (see page 126)

[Backup and Restore Test Strategies](#) (see page 127)

General Recommendations

Consider the following best practices when using the agent.

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 BrightStor 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

BrightStor 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:

- **BrightStor ARCserve Backup Agent for Microsoft Exchange--**
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.
- **BrightStor ARCserve Backup Agent for Windows--**Protects files and system state, including Active Directory. It is important to protect Active Directory when using Exchange 2000, 2003, and 2007 Server because it stores mailbox and user information.

Note: In addition to using the BrightStor ARCserve Backup Agent for Windows on all of your Exchange Servers, also use it to protect all of your domain controllers.
- **BrightStor ARCserve Backup Disaster Recovery Option--**In the event of a disaster, the BrightStor ARCserve Backup Disaster Recovery Option recovers the machine to the last full backup state. Install the BrightStor ARCserve Backup Disaster Recovery Option on all Backup Managers you will use to back up your Exchange Servers and domain controllers.

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

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.

For more information about Circular Logging, see the *Administrator Guide*.

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 Brick 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

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.

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
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

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. 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.

Database Management Strategies for Document Level Backup Jobs

By default, BrightStor ARCserve Backup merges all job, session, and detail information into the database from the catalog file at the end of backup jobs, which can quickly increase the size of the database. To reduce the size and increase the performance of the database when performing Document Level backups, you can use the following features:

- **Record Job and Session Information Only**--You can enable this feature from the Backup Manager while creating your backup job. To do this, click the Options button and select the Operation tab.

When you use this feature, only job and session information is logged in the database, thereby reducing the size of the database.

Note: This feature does **not** automatically merge details after a backup job, so you must manually merge the details. When you merge the details, BrightStor ARCserve Backup checks to see if the CATALOG.DB exists. If it does not exist, a request is sent to merge from tape.

- **Enable Catalog Database**--You can enable this feature from the Server Admin Manager. To do this, click the Config button and select the Database Engine tab.

When you use this feature, BrightStor ARCserve Backup automatically provides transparent catalog database management functions (gets catalog file names, deletes catalog files, prunes catalog files using the preset database pruning cutoff date, purges catalog files, copies catalog files, and renames catalog files), and stores a copy of the catalog locally in a CATALOG.DB folder so that, if needed, it can be merged directly from this location rather than from tape.

When to use these features depends on your environment. Use the following scenarios to determine when to use them:

- If you require the fastest merge performance, do not use either of the Enable Catalog Database or Record Job and Session Information Only features and let all of the information merge all of the time.
- If merging is a problem because of time or disk space, use **both** the Enable Catalog Database and Record Job and Session Information Only features. This reduces the size of the data, and reduces the merge time because of the cached local copy of the catalog.

- If you have very little disk space available, use only the Record Job and Session Information Only feature and do **not** use the Enable Catalog Database feature.
- Under no circumstances should you use **only** the Enable Catalog Database feature. Instead, use the Enable Catalog database feature only if you also enabled the Record Job and Session Information Only feature. Otherwise, there is no benefit in creating a catalog file on disk because all information is merged into the database.

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 you want to reduce the disk space usage on your backup server, enable the Disable Database Recording global option when creating your backup job so that detail logs of every document are not recorded in the BrightStor ARCserve Backup database. If you use this option and later want to restore, you must first submit a Merge Media operation.
- 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

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 2000 and 2003 Server systems, see [Perform a Database Level Test Restore to an Alternative Location](#) (see page 54). For more information about how to perform test restores on Exchange 2007 Server systems, see [Perform a Database Level Test Restore to an Alternative Location](#) (see page 79).

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 more information about how to perform test restores on Exchange 2000 and 2003 Server systems, see [Perform a Database Level Test Restore to an Alternative Location](#) (see page 54). For more information about how to perform test restores on Exchange 2007 Server systems, see [Perform a Database Level Test Restore to an Alternative Location](#) (see page 79).

Note: Exchange Server 2003 has a recovery storage group, which can be used to test restores of a particular storage group. However, you should still practice restoring your entire Exchange Server to a test server.

Appendix A: Troubleshooting

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

This section contains the following topics:

[Activity Log](#) (see page 129)

[Exchange Server Errors](#) (see page 129)

[Information for Customer Support](#) (see page 161)

Activity Log

Many of the actions to resolve error conditions advise you to check the BrightStor ARCserve Backup Activity log. The Activity log contains comprehensive information about the operations performed by BrightStor ARCserve Backup. It provides an audit trail of all BrightStor 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 *Administrator Guide*.

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.

Exchange agent does not display

Exchange agent doesn't show up when browsing the Exchange server

Module:

Agent for Microsoft Exchange

Reason:

The Agent service is not running.

Action:

Start the Universal Agent service. For Exchange 2000 and 2003, you should also start the Backup Agent RPC service.

Failed to Configure your Server or Authentication Failure

Failed to Configure your Server or Authentication Failure

Module:

Agent for Microsoft Exchange

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

Reason 1:

The account you are trying to verify does not have all of the necessary privileges, groups, and rights.

Action 1:

Ensure that all of the requirements for the Backup Agent service account are satisfied. For Exchange 2000 and Exchange 2003 you can use the Exchange Agent Configuration utility to create the backup agent service account and mailbox account automatically by enabling the Create a new account feature. When you use this utility, all of the necessary privileges, groups, and rights are applied.

Reason 2:

The account you are trying to verify does not have a mailbox on the Exchange Server you are trying to configure.

Action 2:

Create a new account and specify the mailbox location as the local Exchange Server. For Exchange 2000 and Exchange 2003 you can use the Exchange Agent Configuration utility to create this account automatically by enabling the Create a new account feature.

Reason 3:

Your mailbox name is not 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, you cannot use the name Admin, if there is a mailbox named Administrator in your organization.

Action 3:

Create a new user with a unique mailbox name.

Reason 4:

The Windows API that is called during verification requires that the account used to run the Exchange Agent Configuration has the "act as part of the operating system" privilege assigned to it.

Action 4:

Log on to the machine as the account you want to verify and run the configuration.

Reason 5:

The Windows Active Directory and Exchange Server caches may not have propagated a newly created user.

Action 5:

Propagating a newly created user can take minutes or hours depending on your domain configuration and traffic.

Reason 6:

The mailbox is not finalized and ready for use. On Exchange Server 2000, this may be because the Recipient Update Service (RUS) has not completed the mailbox.

Action 6:

Log into the mailbox or send mail to it to complete a newly created mailbox. On Exchange Server 2000, you can force the RUS to update the mailbox so it can be used immediately. To do this, open the Microsoft Exchange System Manager, expand the Recipients object in the left pane, and select Recipient Update Services. When you select this, your organization's recipient update services are displayed in the right pane. Right-click each service and select **Update Now**.

Reason 7:

The user or mailbox information that you entered is incorrect.

Action 7:

Make sure that you enter the correct user name, password, and alias name for your mailbox.

Reason 8:

A conflicting or incomplete MapiSvc.inf exists on the Exchange Server. This can occur if you have a messaging client installed that is creating its own version of MapiSvc.inf.

Action 8:

Find all copies of MapiSvc.inf on your Exchange Server and ensure that the most complete and accurate version is in the winnt\System32 folder. If you need to make changes to MapiSvc.inf, first back up all copies of the file and see the Microsoft Q Article 294470 on the Microsoft web site for information on adding entries for Exchange Services.

Failed to create the user account '<MAILBOX ALIAS>', Failed to create the mailbox '<MAILBOX ALIAS>', or Failed to finalized the mailbox '<MAILBOX ALIAS>'

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

Reason 1:

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

Action 1:

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 (see page 90). 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.

Reason 2:

The user account or mailbox creation failed because the global catalog server could not be contacted or a Windows application or system error occurred.

Action 2:

Check the Event Viewer Application Log and System Log for recent errors. Also, check the agent logs DBAEXCUserSummary.log and WinUserUpd.log.

Reason 3:

The mailbox creation failed because a disabled mailbox with the same name already exists.

Action 3:

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.

Reason 4:

The mailbox finalization failed because the Recipient Update Service failed to update the mailbox.

Action 4:

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.

Reason 5:

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.

Action 5:

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.

Error 8601

Failed to connect agent. (AGENT=agent name, EC=error message/code)

Module:

Agent for Microsoft Exchange

Reason 1:

The Backup Agent RPC Server service is not running on the target server.

Action 1:

Verify that the Universal Agent Service is running on the target server. On Exchange 2000 and Exchange 2003 systems, you should also verify that the Backup Agent RPC Server service is running on the target server.

Reason 2:

The target database server may be stopped or inaccessible.

Action 2:

Verify that the target database server is running on the target server.

Reason 3:

The target server may be unreachable over the network.

Action 3:

Check network connections.

Reason 4:

(Windows error 1326) Machine authentication failure may have occurred because an incorrect user name or password was entered, or the user name was specified without a domain or machine name qualifier, and this qualifier is needed for this particular user on the target machine.

Action 4:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 5:

(Windows error 1385) Machine authentication failure may have occurred because the specified user does not have sufficient rights to perform a backup.

Action 5:

Check that the user either has the "Backup files & Directories" right in the Local Security Policies of the database server machine or is a member of a group that has this right. This right is typically held by the Administrators group and the Backup Operators group.

Reason 6:

(Windows error 1387) Machine authentication failure may have occurred because the user name or password is missing.

Actions 6:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 7:

(Windows error 1314) Machine authentication failure may have occurred because the Backup Agent RPC Server service is running as a user who does not have sufficient privileges to log in to Windows.

Action 7:

In the control panel, under Services (Windows NT) or Administrative Tools, Services (Windows 2000, XP, or 2003), check that the Backup Agent RPC Server is running as LocalSystem, or as a user that is a member of the Backup Operators group.

If the Backup Agent RPC Server is running as a user that is a member of the Backup Operators group, make sure that the Backup Operators group has the "Act as part of the Operating System" right in the Local Security Policies of the database server computer.

Reason 8:

A failure to load the agent DLL into memory may have occurred because there is insufficient memory available, the agent DLL does not exist in the agent home directory, or the DLL path is incorrect in the registry.

Action 8:

Verify that the target server has sufficient free memory available.

Error 8602

Failed to read from database. (DBNAME=object name, EC=error message/code)

Module:

Agent for Microsoft Exchange

Reason 1:

An internal or communication error occurred when the agent attempted to read a backup object from the Database server or from the Database server to BrightStor ARCserve Backup.

Action 1:

Perform the following steps on the server that is running the agent:

1. Confirm that the database agent is running.
2. Confirm that the database is running.
3. Make certain no other backup or restore jobs are running on the database you are attempting to back up.
4. Restart the Backup Agent RPC Server service.
5. Resubmit the backup job.

If the problem reoccurs, check the network connections. If the problem persists, contact Technical Support at <http://ca.com/support> (<http://www.ca.com/support>) for online technical assistance and a complete list of locations, primary service hours, and telephone numbers.

Reason 2:

A network error has occurred.

Action 2:

Check all possible network related issues, such as inconsistent communication, time-outs, drivers, and settings on all networking related hardware.

Reason 3:

Two BrightStor ARCserve Backup Managers are attempting to back up the same Exchange Server database simultaneously.

Action 3:

Reschedule one of the backup jobs to avoid the conflict.

Reason 4:

There is insufficient space on the hard disk on which the agent is installed for your Database Level backup.

Action 4:

Increase the free disk space on the drive where the agent is installed or reinstall the agent to a drive that has more space.

Error 8603

Failed to write to database. (DBNAME=object name, EC=error message/code)

Module:

Agent for Microsoft Exchange

Reason 1:

This error occurs when the agent writes data streams from BrightStor ARCserve Backup to a target object (DBNAME=object name) in the Database server.

Action 1:

Check the agent log file for details.

Reason 2:

An Exchange Server Database Level incremental or differential backup failed to restore.

Action 2:

Restore the latest full backup or copy session before you restore an incremental or differential backup.

Reason 3:

An Exchange Server Database Level restore is missing a log or a log is corrupt.

Action 3:

Restore an incremental or differential backup that includes the missing logs if they are available. If there are logs missing from the server, do not select the Commit existing logs option when restoring. For more information on how to manually restore partial log sequences, see the Microsoft web site.

Error 8604

Failed to start backup. (DBNAME=object name, EC=error message/code)

Module:

Agent for Microsoft Exchange

Reason 1:

(Windows error 1326) Machine authentication failure may have occurred because an incorrect user name or password was entered, or the user name was specified without a domain or machine name qualifier and this qualifier is needed for this particular user on the target machine.

Action 1:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 2:

(Windows error 1385) Machine authentication failure may have occurred because the specified user does not have sufficient rights to perform a backup.

Action 2:

Check that the user either has the "Backup files & Directories" right in the Local Security Policies of the database server machine, or is a member of a group that has this right. This right is typically held by the Administrators group and the Backup Operators group.

Reason 3:

(Windows error 1387) Machine authentication failure may have occurred because the user name or password is missing.

Action 3:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 4:

(Windows error 1314) Machine authentication failure may have occurred because the Backup Agent RPC Server service or the Universal Agent service is running as a user that does not have sufficient privileges to perform a Windows login.

Action 4:

- In the control panel, under Services (Windows NT) or Administrative Tools, Services (Windows 2000, XP, or 2003), check that the Backup Agent RPC Server (Exchange 2000 and Exchange 2003 platforms only) and the Universal Agent service is running as "LocalSystem", or as a user that is a member of the Backup Operators group.
- On Exchange Server 2000 and Exchange Server 2003 platforms, if the Backup Agent RPC Server is running as a user that is a member of the Backup Operators group, ensure that the Backup Operators group has the "Act as part of the Operating System" right in the Local Security Policies of the database server computer.

Reason 5:

Database authentication failure may have occurred because an incorrect user name or password was entered, or the user name was specified without a domain or machine name qualifier and this qualifier is needed for this particular user on the target machine.

Action 5:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 6:

Database authentication failure may have occurred because the necessary database services are not started.

Action 6:

- Verify that the database you are trying to back up is mounted and the necessary services are running.
- On Exchange 2000 and Exchange 2003 systems, verify that the Backup Agent RPC Server service is started.

Reason 7:

(Backup Agent Error 116) The version of the agent is newer than the version of the BrightStor ARCserve Backup that is installed.

Action 7:

Install the latest version of BrightStor ARCserve Backup.

Error 8605**Failed to start restore. (DBNAME=object name, EC=error message/code)****Module:**

Agent for Microsoft Exchange

Reason 1:

(Windows error 1326) Machine authentication failure may have occurred because an incorrect user name or password was entered, or the user name was specified without a domain or machine name qualifier and this qualifier is needed for this particular user on the target machine.

Action 1:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 2:

(Windows error 1385) Machine authentication failure may have occurred because the specified user does not have sufficient rights to perform a backup.

Action 2:

Check that the user either has the "Backup files & Directories" right in the Local Security Policies of the database server machine, or is a member of a group which has this right. This right is typically held by the Administrators and Backup Operators groups.

Reason 3:

(Windows error 1387) Machine authentication failure may have occurred because the user name or password is missing.

Action 3:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 4:

(Windows error 1314) Machine authentication failure may have occurred because the Backup Agent RPC Server service or the Universal Agent service is running as a user that does not have sufficient privileges to perform a Windows login.

Action 4:

- In the control panel, under Services (Windows NT) or Administrative Tools, Services (Windows 2000, XP, or 2003), check that the Backup Agent RPC Server (Exchange 2000 and Exchange 2003 platforms only) and the Universal Agent service is running as "LocalSystem", or as a user that is a member of the Backup Operators group.
- On Exchange Server 2000 and Exchange Server 2003 platforms, if the Backup Agent RPC Server is running as a user that is a member of the Backup Operators group, ensure that the Backup Operators group has the "Act as part of the Operating System" right in the Local Security Policies of the database server computer.

Reason 5:

Database authentication failure may have occurred because an incorrect user name or password was entered, or the user name was specified without a domain or machine name qualifier and this qualifier is needed for this particular user on the target machine.

Action 5:

- Check user name and password for machine login.
- Specify a domain qualifier for the user name used to log in to the database.

For a domain user, use the following format:

Domain\User name

Reason 6:

Database authentication failure may have occurred because the necessary database services are not started.

Action 6:

- Verify that the database you are trying to back up is mounted and the necessary services are running.
- On Exchange 2000 and Exchange 2003 systems, verify that the Backup Agent RPC Server service is started.

Reason 7:

When restoring a Database Level backup, the Erase All Data Before Restoring option was selected together with either the Public **or** the Private Information Store.

Action 7:

When using the Erase All Data Before Restoring option, select the Public **and** the Private Information Store.

Reason 8:

On Exchange 2000, 2003, and 2007 Server systems, the Information Store service is not running, or the database you want to restore does not exist or is not dismounted.

Action 8:

- Verify that the database you intend to restore exists.
- Dismount the database you intend to restore.
- Enable the database to be overwritten by a restore.

Reason 9:

On Exchange 2000, 2003, and 2007 Server systems, an invalid target was specified for your database level restore.

Action 9:

If you filled out your server configuration worksheet in this guide for each of your Exchange Servers, use the worksheets to verify the destination server parameters and make sure they match the parameters on the sever that you are restoring from.

Error 8617

Failed to end restore. (DBNAME=object name, EC=error message/code)

Module:

Agent for Microsoft Exchange

Reason 1:

The agent failed to recover the Database server after a restore job. An internal error occurred in either the agent or the Database server.

Action 1:

Check agent log file for details.

Reason 2:

An Exchange service cannot mount the restored databases in a specified time interval after the restore operation was completed.

Action 2:

Check the Event Log on the Exchange Server or see the Microsoft web site.

Error AE9617

Failed to restore <number> mailboxes.

Module:

Agent for Microsoft Exchange

Reason:

Several mailboxes failed to restore.

Action:

Check the Exchange Event Viewer and check exchange agent log for more detail.

Error AE9650

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

Module:

Agent for Microsoft Exchange

Reason 1:

A full backup was not performed before an incremental or differential backup was performed.

Action 1:

Perform the full backup first.

Reason 2:

The Exchange server recovery failed because the existing Exchange log files were not in sequence after restoring the last backup session of a backup set.

Action 2:

Check the event viewer, and delete or move the out of sequence log files to a different location.

Reason 3:

You are restoring a full backup set followed by several incremental backup sets or a differential backup set, and the subsequent incremental or differential backup sets are not consistent with the full backup set.

Action 3:

You should always perform a full backup after you restore data. This ensures that subsequent incremental and differential backups are consistent with the full backup.

Error AE9681

Circular logging is enabled, change the backup type from incremental or differential to full or copy backup.

Module:

Agent for Microsoft Exchange

Reason:

The storage group cannot perform incremental or differential backups when circular logging is enabled. As a result, the agent converts and processes these types of backups as full backups.

Action:

None.

Error AE9683

All databases are dismounted, or the database does not exist.

Module:

Agent for Microsoft Exchange

Reason:

When you back up Exchange databases, at least one database must be mounted.

Action:

Mount the databases.

Error AE9685

Your CA license has expired.

Module:

Agent for Microsoft Exchange

Reason:

The license for the Agent for Microsoft Exchange is expired.

Action:

Contact CA and obtain a license for the agent.

Error AE9687

The session password is invalid and the restore job failed. Or, an invalid user ID or password was submitted.

Module:

Agent for Microsoft Exchange

Reason:

The user name or password is not correct. If you are restoring data, the session password may not be correct.

Action:

Provide the correct user name, password, and session password as required.

Error AE9689

The Exchange agent was not able to create a recovery storage group.

Module:

Agent for Microsoft Exchange

Reason 1:

The path to the recovery storage group is not accessible.

Action 1:

You can set the valid path to the recovery storage group using the Exchange agent configuration tool.

Reason 2:

The folder for the recovery storage group is not empty.

Action 2:

Empty the folder.

Error AE9699

A full backup was not performed. Change the incremental or differential backup to a full backup.

Module:

Agent for Microsoft Exchange

Reason:

You must perform a full backup of a storage group before you can perform an incremental or differential backup on the storage group.

Action:

The agent automatically converts the incremental or the differential backup without a previous full backup to a full backup. No user intervention is required.

Error AE9705

An attempt to mount database %s failed, hr=0x%x.

Module:

Agent for Microsoft Exchange

Reason:

The Log consistency check failed.

Action:

Ensure that the log files in the log file folder for the target storage group are in sequence.

Error AE9707

The storage group is still in restore mode.

Module:

Agent for Microsoft Exchange

Reason:

You are attempting to restore a storage group that is currently being restored. Multiple restores on a single storage group cannot run simultaneously.

Action:

Allow the restore in progress to complete.

Error AE9708

Check integrity failed. Check the Exchange server status.

Module:

Agent for Microsoft Exchange

Reason:

The integrity check process failed during backup.

Action:

Check the windows event viewer to determine the corrective action.

Error AE9709

Open file failed (err = %d).

Module:

Agent for Microsoft Exchange

Reason:

The windows API failed to open a file.

Action:

Check the error code and perform the required corrective actions.

Error AE9710

Write file failed (err = %d).

Module:

Agent for Microsoft Exchange

Reason:

The windows API failed when it attempted to write data to a file.

Action:

Check the error code and perform the required corrective actions.

Error AE9711

Create Folder "%s" failed (err = %d).

Module:

Agent for Microsoft Exchange

Reason:

The windows API failed when it attempted to create a folder.

Action:

Check the error code and perform the required corrective actions.

Error AE9712

The folder specified to restore to file system is empty.

Module:

Agent for Microsoft Exchange

Reason:

The folder name specified for restoring a file system to is empty.

Action:

Provide the correct folder name when restoring to a file system and ensure that the agent account can access the folder.

Error AE9713

Read Exchange hierarchy from active directory failed (err=error code)> Ensure that your account has permission to access the active directory and the active directory is now available.

Module:

Agent for Microsoft Exchange

Reason 1:

The Active Directory server is not available.

Action 1:

Ensure the Active Directory is accessible.

Reason 2:

The account used has insufficient privileges to read Exchange organization information from the Active Directory.

Action 2:

Ensure that the account satisfies the privilege requirements.

Error AE9714

The storage group "%s" was not found in the Exchange hierarchy.

Module:

Agent for Microsoft Exchange

Reason 1:

The storage group that you want to back up does not exist.

Action 1:

Repackage the backup job to update the job script.

Reason 2:

The target storage group that you want to restore data to does not exist.

Action 2:

Repackage the restore job to update the job script.

Error AE9715

Dismount database "%s" failed.

Module:

Agent for Microsoft Exchange

Reason:

The database you restored is in a bad state; it cannot be dismounted during the restore.

Action:

There are three remedies for this problem.

- If the database you specified to dismount is already offline, do not enable the **Automatically dismount database before restore** option when performing the restore.

Note: For more information about restore options for Exchange 2000 and 2003 Server databases, see Database Level Restore Options (see page 50). For more information about restore options for Exchange 2007 Server databases, see Database Level Restore Options (see page 67).

- If the database is still online, you can try to dismount it using the Exchange Management console.
- If you still cannot dismount the database, you must restart the "Store" service.

Error AE9716

Failed to remove database "%s". Ensure that your account has permission to remove the database.

Module:

Agent for Microsoft Exchange

Reason:

The restore operation failed due to insufficient access privileges.

Note: During a restore operation to a recovery storage group, the agent checks if the recovery storage group exists. If it exists, but it is not for the storage group that you want to restore, the restore operation deletes the recovery storage group and then recreates it for the desired storage group.

Action:

To perform this task, your backup account must have **Exchange Organization Administrator** privileges. Ensure that your backup account contains sufficient privileges. Otherwise, you must delete the recovery storage group manually before performing the restore.

Error AE9717

Failed to remove storage group "%s", ensure that has sufficient privileges.

Module:

Agent for Microsoft Exchange

Reason:

The restore operation failed due to insufficient access privileges.

Note: During a restore operation to a recovery storage group, the agent checks if the recovery storage group exists. If it exists, but it is not for the storage group that you want to restore, the restore operation deletes the recovery storage group and then recreates it for the desired storage group.

Action:

To perform this task, you must have Exchange Organization Administrator privileges. Ensure that your backup account contains sufficient privileges. Otherwise, you must delete the recovery storage group manually before performing the restore.

Error AE9718

Failed to create database "%s".

Module:

Agent for Microsoft Exchange

Reason:

The restore operation failed due to insufficient access privileges.

Note: During a restore operation to a recovery storage group, the agent checks if the recovery storage group exists. If it exists, but it is not for the storage group that you want to restore, the restore operation deletes the recovery storage group and then recreates it for the desired storage group.

Action:

To perform this task, you must have Exchange Organization Administrator privileges. Ensure that the backup account contains sufficient privileges. Otherwise, you must delete the recovery storage group manually before performing the restore.

Error AE9719

The path to the recovery storage was not provided. Use the Exchange configuration tool to specify the correct path.

Module:

Agent for Microsoft Exchange

Reason:

The path for the recovery storage group is empty.

Action:

Use the Exchange configuration tool to specify the correct path to the recovery storage group.

Error AE9720

The database "%s" is not dismounted. To complete the restore, the database must be dismounted.

Module:

Agent for Microsoft Exchange

Reason:

To complete a restore operation, all databases must be dismounted.

Note: During the restore operation, the agent checks for mounted databases. If the agent detects one or more mounted databases, the restore will fail.

Action:

There are two remedies for this problem.

- Dismount all the databases manually before you start the restore.
- Enable the **Automatically dismount database before restore** option.

Note: For more information about restore options for Exchange 2000 and 2003 Server databases, see Database Level Restore Options (see page 50). For more information about restore options for Exchange 2007 Server databases, see Database Level Restore Options (see page 67).

Error AE9721

The Exchange agent cannot overwrite the database "%s". To complete the restore, the agent must be able to overwrite the database.

Module:

Agent for Microsoft Exchange

Reason:

To complete a restore operation, the agent must be able to overwrite all databases.

Note: During the restore operation, the agent checks if the **This database can be overwritten by a restore** property for the database is enabled. If the agent detects that it is not enabled, the restore operation will fail.

Action:

There are two remedies for this problem.

- For a single database, enable the **This database can be overwritten by a restore** option.
- For all databases, enable the **Allow databases to be overwritten by restore** option.

Note: For more information about restore options for Exchange 2000 and 2003 Server databases, see Database Level Restore Options (see page 50). For more information about restore options for Exchange 2007 Server databases, see Database Level Restore Options (see page 67).

Error AE9722

Enable database "%s" overwritten failed.

Module:

Agent for Microsoft Exchange

Reason:

To complete a restore operation, the agent must be able to overwrite all databases, and the backup account must have sufficient privileges to overwrite the database.

Action:

There are two remedies for this problem.

- Manually enable all databases for overwrite capabilities.
- Grant the backup account **Exchange Organization Full Administrator** privileges.

Error AE9723

The message filter start time is after the end time.

Module:

Agent for Microsoft Exchange

Reason:

The message filter Start Time is after the End Time.

Action:

Change the Start Time to before the End Time.

Error AE9724

Read data failed (err=%d).

Module:

Agent for Microsoft Exchange

Reason:

During a backup, the Microsoft read file API failed.

Action:

Check the failed code for details and perform the required corrective actions.

Error AE9725

Create snapshot failed (err=error code).

Module:

Agent for Microsoft Exchange

Reason 1:

The exchange writer is having a problem.

Action 1:

Check the windows event viewer to determine the corrective action. Then do one of the following:

- If you are backing up from an active database, ensure that the **Microsoft Exchange Information Store** service is running.
- If you are backing up from a replica in a Local Continuous Replication (LCR) environment, ensure that the **Microsoft Exchange Information Store** service and the **Microsoft Exchange Replication** service are running.
- If you are backing up from a replica in a Cluster Continuous Replication (CCR) environment, ensure that the **Microsoft Exchange Information Store** service is running on the active node, and the **Microsoft Exchange Replication** service is running on both the active and passive nodes.

Reason 2:

The create snapshot timed out.

Action 2:

Check the Windows Event Viewer to determine the corrective action.

Error AE9726

The session does not contain metadata; ensure that it is not corrupt.

Module:

Agent for Microsoft Exchange

Reason:

The agent did not receive metadata during the restore operation. The backup session on the tape or the session database may be corrupt.

Action:

If you believe the backup session on the tape is not corrupt, merge the session database from the tape using the BrightStor ARCserve Backup Merge utility.

Error AE9728

Failed to restore mailbox "%s".

Module:

Agent for Microsoft Exchange

Reason:

The agent failed to restore a mailbox.

Action:

Check the Exchange server migration log for details and perform corrective action, as necessary. You can find the migration logs under the following directory:

<Exchange server install path>\Logging\MigrationLogs

where

<Exchange server install path>

represents the path of the Exchange server installation directory.

Error AE9729

The global catalog server is invalid. The agent will use default global catalog server.

Module:

Agent for Microsoft Exchange

Reason:

The global catalog server name is not a valid global catalog server name.

Action:

There are two remedies for this problem.

- Specify a valid global catalog server in the restore options dialog.
- Leave the global catalog server name blank in the restore options dialog. The agent will use the default global catalog server.

Error AE9730

A public database cannot be restored to mailbox database and vice versa. You cannot restore a public database or mailbox database to a recovery storage group.

Module:

Agent for Microsoft Exchange

Reason:

You cannot restore a public database to a mailbox database or a mailbox database to a public database. You cannot restore a public database and mailbox database to a recovery storage group.

Action:

Change the restore target to the correct target.

Error AE9731

Database "%s" not found in target storage group.

Module:

Agent for Microsoft Exchange

Reason:

The database restored was not found in the target storage group.

Action:

There are two remedies for this problem.

- If you are restoring an entire storage group to another storage group, you must ensure that all of the database names in the source storage group exist in the target storage group.
- Select a single database in the source storage group and select one database in the target storage group.

Error AE9732

The database <Database name> is still in backup mode.

Module:

Agent for Microsoft Exchange

Reason:

Another backup of the same database is in progress.

Action:

Attempt the backup after the current backup is complete.

Error AE9733

-* /A critical Exchange service is not running. Start the service.

Module:

Agent for Microsoft Exchange

Reason:

To back up from an active database, the **MSEExchangeIS** service must be running. To back up from replica location, the **MSEExchangeRepl** service must be running.

Action:

There are two remedies for this problem.

- If you are backing up from an active database, restart the **MSEExchangeIS** service.
- If you are backing up from replica location and in an LCR, restart the **MSEExchangeRepl** service.

Note: If you are backing up from a replica location and in a CCR, ensure that the Microsoft Exchange Replication Service (**MSEExchangeRepl**) is running on the passive node.

Error AE9734

The folder filter "%s" is incorrect. The filter path should be in the following format: \Parent Folder\Sub Folder.

Module:

Agent for Microsoft Exchange

Reason:

The folder filter for restoring mailboxes is invalid.

Action:

Ensure that the folder filter for restoring mailboxes starts with a backslash. For example, \Inbox, \Inbox\Inbox1.

Information for Customer Support

If you need to contact CA support for additional assistance, use the following registry keys to gather the information Customer Support will need to help resolve your issues:

Exchange 2000 and 2003 Database Level Backup and Restore

HKEY_LOCAL_MACHINE\SOFTWARE\ComputerAssociates\BrightStor ARCserve
Backup\DSAgent\CurrentVersion\agent\dbaexch

Value Name:	Debug
Value Type:	REG_DWORD
Value Data:	0(off) or 1(on)
Results:	Dbaexch.log & dbaexch*.trc, in Exchange agent directory

Note: Restart the Backup Agent RPC Server service.

Exchange 2007 Database Level Backup and Restore

HKEY_LOCAL_MACHINE\SOFTWARE \ComputerAssociates\BrightStor 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 debug level using the Exchange agent configuration utility. You do not need to restart the Universal Agent service.

Exchange 2000, 2003, and 2007 Document Level Backup and Restore

For Exchange 2000 and 2003, the registry path is as follows:

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

For Exchange 2007, the registry path is as follows:

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

Value Name: Debug
Value Type: REG_DWORD
Value Data: 0(off), 1(default), 4(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 use 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.

Appendix B: Frequently Asked Questions

This section includes frequently asked questions to help you resolve issues that may arise when using the BrightStor ARCserve Backup Agent for Microsoft Exchange.

This section contains the following topics:

[General Questions](#) (see page 165)

[Database Level Backup and Restore Questions](#) (see page 167)

[Document Level Backup and Restore Questions](#) (see page 169)

General Questions

The following questions are general questions.

Question:

What BrightStor ARCserve Backup agents and options do I need to protect my Exchange Server?

Answer:

The following agents and options can be used to protect different parts of your Exchange Organization:

- **BrightStor ARCserve Backup Agent for Microsoft Exchange--** 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.
- **BrightStor ARCserve Backup Agent for Windows--**Protects files and system state, including Active Directory. It is important to protect Active Directory when using Exchange Server 2000, 2003, and 2007 because it stores mailbox and user information. BrightStor ARCserve Backup Agent for Windows also protects your domain controllers, which are equally as important to protect as your Exchange Server.
- **BrightStor ARCserve Backup Disaster Recovery Option--**In the event of a disaster, the BrightStor ARCserve Backup Disaster Recovery Option recovers the machine to the last full backup state.

Question:

Do I need BrightStor ARCserve Backup Agent for Open Files to protect my Exchange Server if I am using the BrightStor ARCserve Backup Agent for Microsoft Exchange?

Answer:

No. BrightStor 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 BrightStor ARCserve Backup Agent for Microsoft Exchange is an application-specific agent, dedicated to protecting Microsoft Exchange, it offers a complete and robust solution that encompasses all the features offered by BrightStor ARCserve Backup Agent for Open Files.

Question:

Do I need an email client like Microsoft Outlook installed on the Exchange Server I am backing up?

Answer:

No, it is not a requirement that you have an email client on the Exchange Server you are backing up.

Question:

If I add new objects that I want to back up, like a mailbox, to my Exchange Organization after I submit a backup job, do I need to resubmit the job to include the new objects?

Answer:

It depends on how you originally packaged the job. 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. For more information on dynamic and explicit job packaging, see the *Getting Started*.

Question:

What is the M drive (ExIFS) and do I need to back it up?

Answer:

The M drive is a virtual drive that exposes Exchange Server 2000 mailboxes and public folders. It is simply a view of Exchange Server 2000 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.

Question:

Why are the names of the standard folders in my mailbox displayed in a different language?

Answer:

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. For more information about controlling the language that is used, see the **Create mailbox if not existing** option in the section Document Level Restore Options.

More information:

[Document Level Restore Options](#) (see page 108)

Database Level Backup and Restore Questions

The following questions relate to database backup and restore.

Question:

When performing a Database Level restore on an Exchange 2000 or Exchange 2003 system, when should I use the **Apply existing logs** option?

Answer:

You should use the Apply existing logs option if you are restoring to the original server you backed up from and you believe the transaction logs are all sequentially present and not corrupt. Do not use this option if you are restoring to a different server or if have a reason to believe that any of the existing transaction logs on the server you are restoring to are missing or corrupt. If you enable this option and the agent detects that logs are out of sequence, the agent automatically disables it so that the job does not fail.

Question:

When performing a database level restore on an Exchange 2007 system, when should I use the **Restore selected mailboxes to live database from Recovery Storage Group** option?

Answer:

The Restore selected mailboxes to live database from Recovery Storage Group option lets you perform mailbox level restores, with advance filters, from a database level backup. With this option enabled you can restore the entire database to the Recovery Storage Group, and then merge the selected mailboxes into the live database. You can also use this option with respect to Dial Tone restore strategies for disaster recovery on Exchange systems.

Note: 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.

Question:

If I perform a document level backup, do I need to perform a database level backup?

Answer:

Yes. 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.

Question:

When should I perform full database backups?

Answer:

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

Question:

Can I restore to the Recovery Storage Group?

Answer:

Yes, but only when using Database Level Restore with Exchange Server 2003. For more information on the Recovery Storage Group, see your Exchange Server documentation

Document Level Backup and Restore Questions

The following questions relate to document level backup and restore.

Question:

What is Single Instance Storage?

Answer:

Single Instance Storage is the method Exchange Server uses to process messages. This method stores only one copy of a message, links it to multiple recipients in the Information Store, and uses references to the message in each recipient's mailbox. Single Instance Storage applies to individual attachments and other message components.

The backup and restore products that you can use to protect your Exchange Server support varying levels of Exchange Server's Single Instance Storage:

- **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.
- **Partial Single Instance Storage**--Partial Single Instance Storage support backs up attachments only once, but continues to back up other message components, like message bodies, every time they are referenced. This translates into large amounts of unnecessary backup duplication because most messages do not include attachments, but all messages include message bodies and other message components.
- **Complete Single Instance Storage**--Complete Single Instance Storage checks to see whether each attachment, message body, and other single instance components of a message have been backed up already, and backs up only one copy. This is the fastest and most efficient solution because it removes unnecessary backup duplication and maximizes performance.

Document Level backup and restore supports Complete Single Instance Storage. Brick Level backup and restore does not support Single Instance Storage.

Question:

What setting should I select for the log level detail when I am configuring for Document Level backup and restore?

Answer:

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 BrightStor ARCserve Backup Manager. The default log detail level value is 1 and the supported range is between 0 and 4. If you want to disable agent side logging, use 0. Otherwise, you should always use level 1 unless you are instructed to raise the level by a trained CA Customer Support technician for troubleshooting purposes.

Question:

When I restore a document to the same location using the **Overwrite conflict** resolution option, why do I sometimes see duplicated messages?

Answer:

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 duplicated messages.

Question:

Can I perform a Database Level backup at the same time as a Document Level backup?

Answer:

Yes, 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.

Question:

If I perform a Document Level backup, is there any benefit in also performing a Brick Level backup?

Answer:

No.

Question:

How can I tell how much space is saved by backing up with Complete Single Instance Storage enabled?

Answer:

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".

Appendix C: Setting Up a Backup Agent Service Account

After you install the BrightStor 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 173)

[Add Groups for all Versions of Exchange Server on a Windows Member Server](#) (see page 175)

[Set Up Your Backup Agent Service Account](#) (see page 176)

[Group Setup](#) (see page 183)

[Delegate Roles](#) (see page 184)

[Additional Configuration Considerations](#) (see page 188)

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 (see page 174).
2. Determine your tasks (see page 174).
3. Determine your environment (see page 174).
4. Use the procedures in this appendix to set up your account (see page 176).

Backup Agent Service Account Requirements Overview

The requirements for your backup agent service account depend on the type of backup and restore (database level backup and restore or document level backup and restore) you will be using. 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
- Create a mailbox
- Add groups
- Delegate roles

Environment Requirements

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

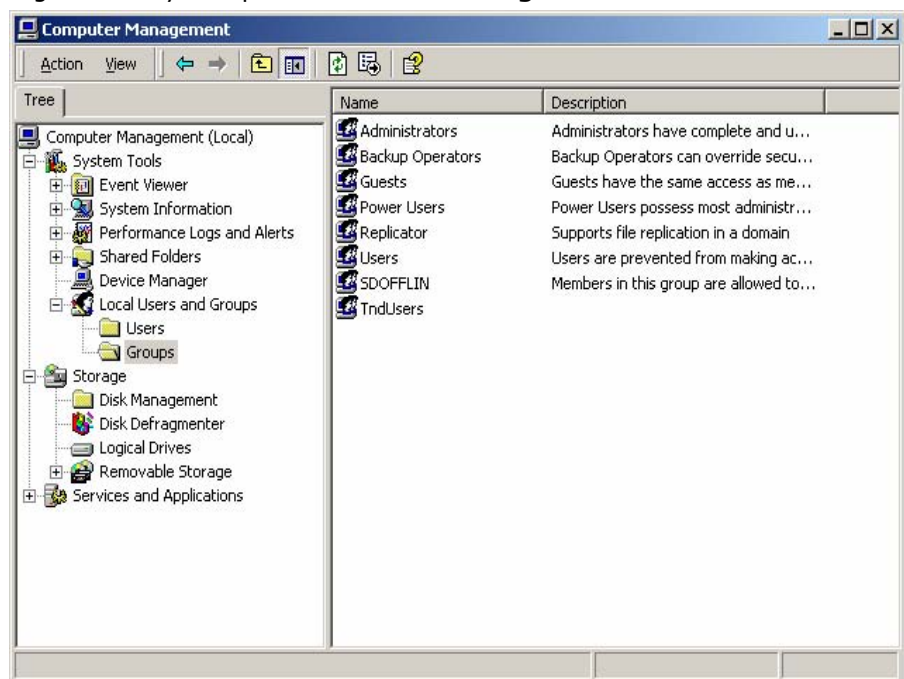
- The version of Exchange Server you are using:
 - Exchange Server 2000
 - Exchange Server 2003
 - Exchange Server 2007
- The version of Windows you are using:
 - Windows 2000
 - Windows 2003

- The type of server you are using:
 - Domain controller
 - Member server

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 through 6.

Set Up Your Backup Agent Service Account

To set up your Backup Agent Service Account, you must perform the following tasks:

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 a Windows 2000 and 2003 Server](#) (see page 177)

[Create a Mailbox for Exchange 2000 and Exchange 2003 Server](#) (see page 178)

[Group Setup](#) (see page 183)

[Delegate Roles for Exchange 2000 and 2003 Server on a Domain Controller or Member Server](#) (see page 185)

[Additional Configuration Considerations](#) (see page 188)

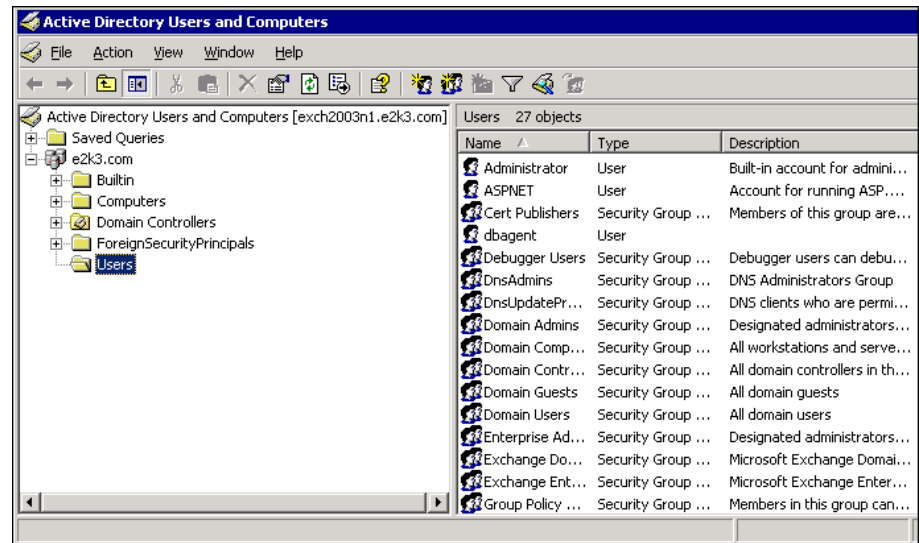
Create a Domain User on a Windows 2000 and 2003 Server

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.

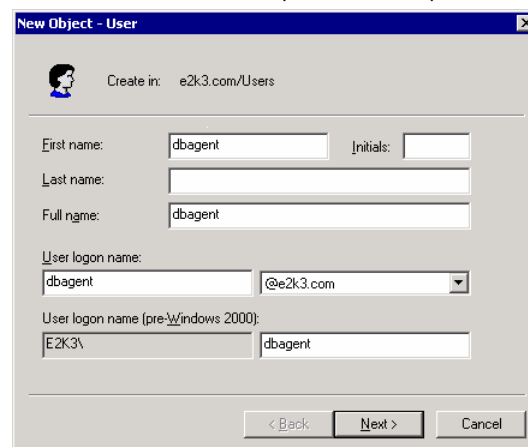
To create the backup agent service account

1. On your domain controller, from the Start menu, select All Programs, Administrative Tools, and select Active Directory Users and Computers.

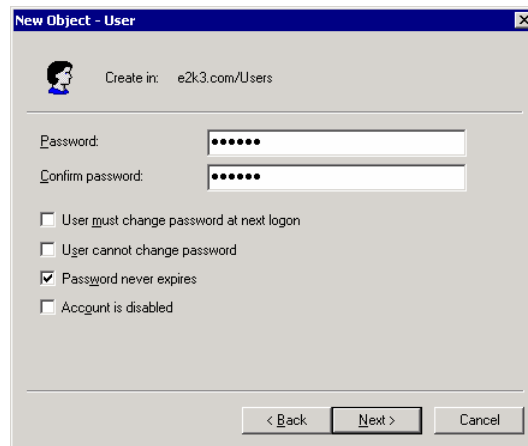
The **Active Directory Users and Computers** window opens.



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.



- When the New Object - User dialog opens, in the First name field, enter a name for your backup agent service account, enter a User logon name, and then click Next.



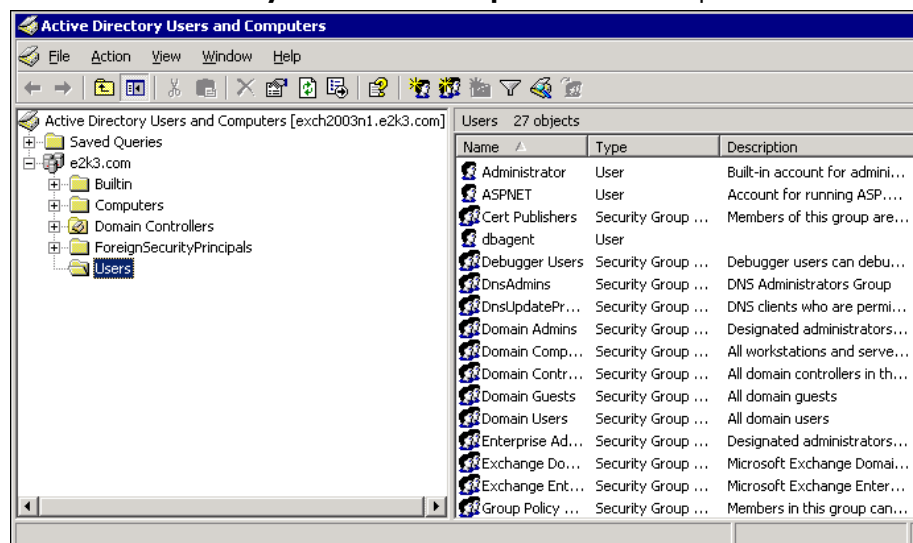
- Enter a password, confirm the password, enable the **Password never expires** option, and then click Next.
- Click Finish.

Create a Mailbox for Exchange 2000 and Exchange 2003 Server

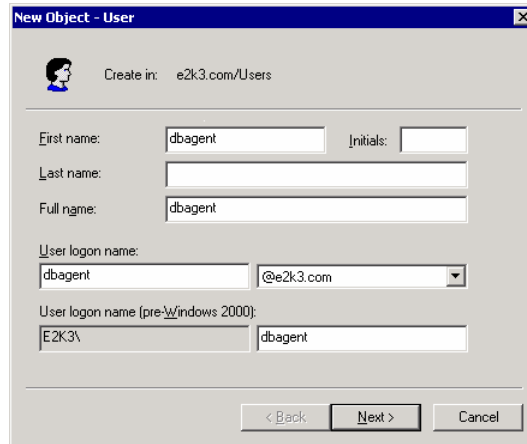
To create an Exchange Server mailbox for the backup agent service account

- On your domain controller, from the Start menu, select All Programs, Administrative Tools, and select Active Directory Users and Computers.

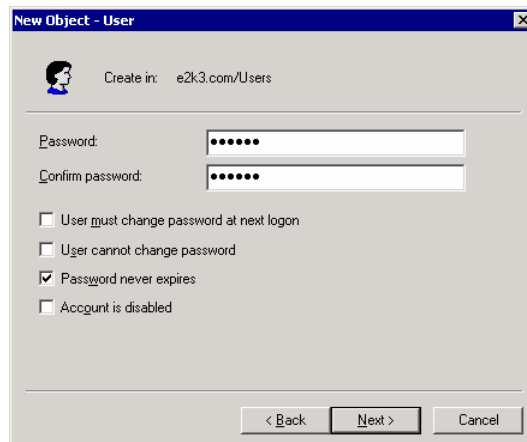
The **Active Directory Users and Computers** window opens.



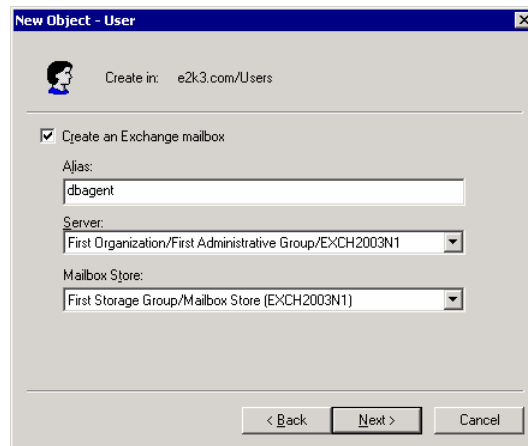
2. When the Active Directory dialog opens, expand the Active Directory Users and Computer tree and click Users.
3. From the Action menu, select New, User.

The image shows the 'New Object - User' dialog box in Active Directory. The title bar is 'New Object - User'. Below the title bar, there is a user icon and the text 'Create in: e2k3.com/Users'. The dialog contains several input fields: 'First name:' with 'dbagent', 'Initials:' (empty), 'Last name:' (empty), 'Full name:' with 'dbagent', 'User logon name:' with 'dbagent' and a dropdown menu showing '@e2k3.com', and 'User logon name (pre-Windows 2000):' with 'E2K3\'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

4. When the New Object - User dialog opens, in the First name field, enter a name for your backup agent service account, enter a User logon name, and then click Next.

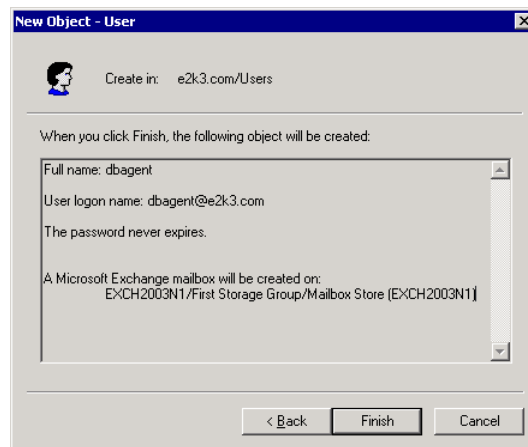
The image shows the 'New Object - User' dialog box in Active Directory, showing the password setup section. The title bar is 'New Object - User'. Below the title bar, there is a user icon and the text 'Create in: e2k3.com/Users'. The dialog contains two password input fields: 'Password:' and 'Confirm password:', both filled with dots. Below these fields are four checkboxes: 'User must change password at next logon' (unchecked), 'User cannot change password' (unchecked), 'Password never expires' (checked), and 'Account is disabled' (unchecked). At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

5. Enter a password, confirm the password, enable the Password never expires option, and then click Next. If you have Exchange Server installed, the following dialog opens.



The 'New Object - User' dialog box is shown. It has a title bar with a close button. Below the title bar is a small icon of a person and the text 'Create in: e2k3.com/Users'. A checkbox labeled 'Create an Exchange mailbox' is checked. Below this are three fields: 'Alias:' with the text 'dbagent', 'Server:' with a dropdown menu showing 'First Organization/First Administrative Group/EXCH2003N1', and 'Mailbox Store:' with a dropdown menu showing 'First Storage Group/Mailbox Store (EXCH2003N1)'. At the bottom are three buttons: '< Back', 'Next >', and 'Cancel'.

6. Make sure the **Create an Exchange mailbox** option is enabled. In the Alias field, the User Logon name is automatically displayed. If you want to change it, enter a new name. In the Server field, select the server you are going to install on. In the Mailbox Store field, select a mailbox store. Click Next.



The 'New Object - User' dialog box is shown again, but now it displays a summary of the object to be created. The title bar and 'Create in' text are the same. Below the checkbox, the text 'When you click Finish, the following object will be created:' is displayed. Below this is a large text box containing the following information: 'Full name: dbagent', 'User logon name: dbagent@e2k3.com', 'The password never expires.', and 'A Microsoft Exchange mailbox will be created on: EXCH2003N1/First Storage Group/Mailbox Store (EXCH2003N1)'. At the bottom are three buttons: '< Back', 'Finish', and 'Cancel'.

7. Confirm your selections and click Finish.

Note: After you finish creating your backup agent service account and mailbox, you should log into this account by using Outlook or by sending an email to the account to finalize the mailbox.

Create a Domain User With a Mailbox for Exchange 2007 Server

To create domain user with a mailbox for Exchange 2007 Server

1. From the Windows Start menu on your Exchange server system, select Programs, Microsoft Exchange Server 2007, 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 fields on this dialog as illustrated by the following example:

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 fields on this dialog as illustrated by the following example:

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 2007 Server 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.

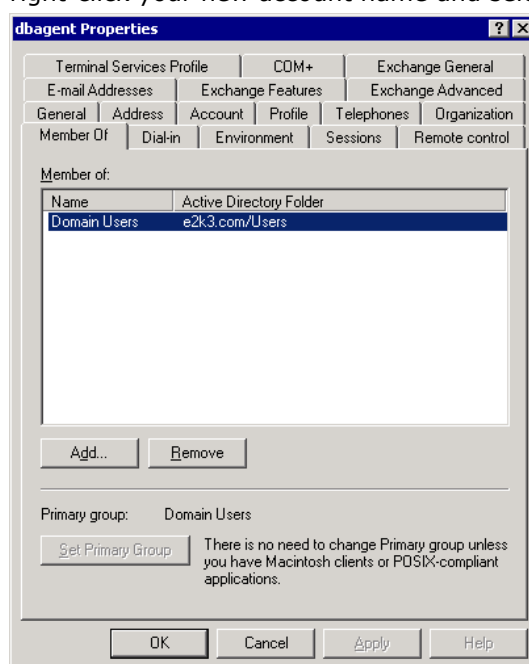
Group Setup

Use one of the following procedures to add groups.

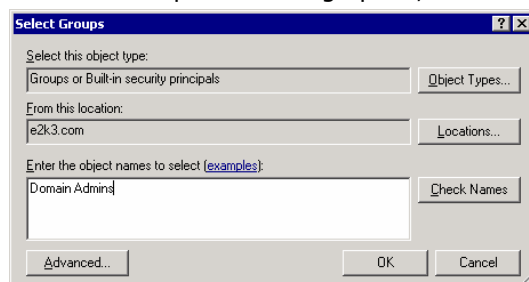
Add Groups for all Versions of Exchange Server on a Domain Controller

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**.

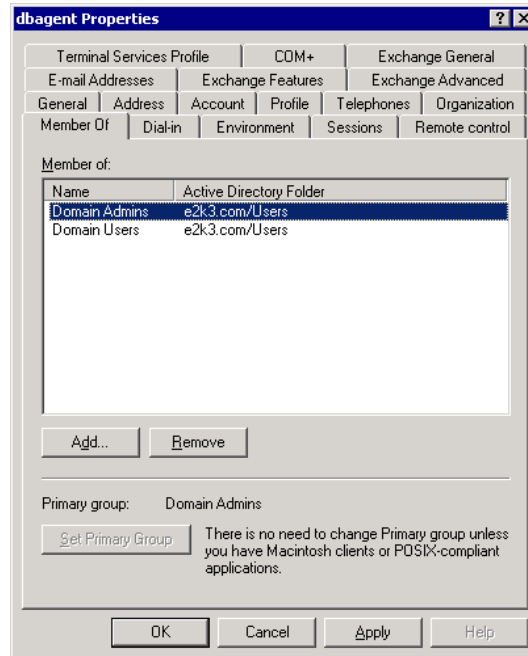


2. When the Properties dialog opens, click the Member Of tab and click Add.



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.



4. 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.

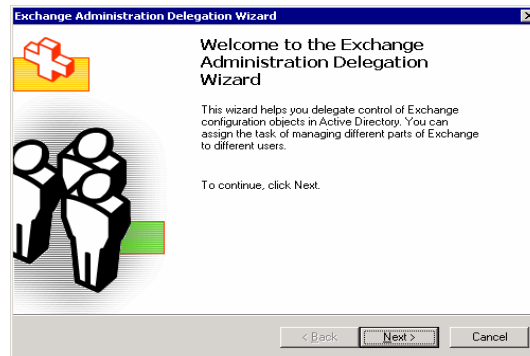
Delegate Roles

Use one of the following procedures to delegate roles.

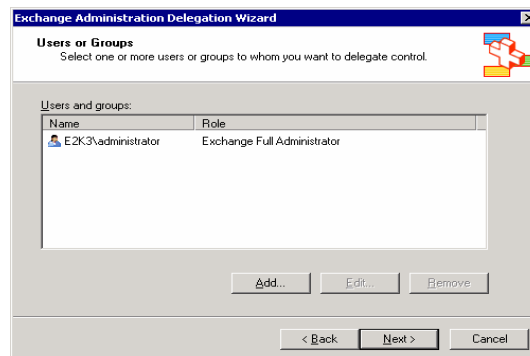
Delegate Roles for Exchange 2000 and 2003 Server on a Domain Controller or Member Server

To assign permissions for the backup agent service account

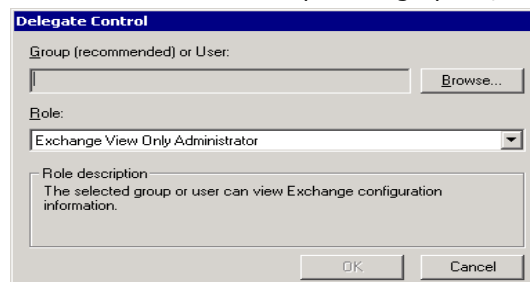
1. On the Exchange Server, from the Start menu, select All Programs, Microsoft Exchange, System Manager.
2. When the Exchange System Manager dialog opens, right-click the name of your organization and select **Delegate control**.



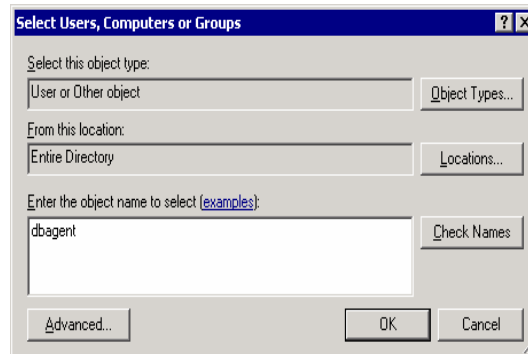
3. When the Exchange Administration Delegation Wizard opens, click Next.



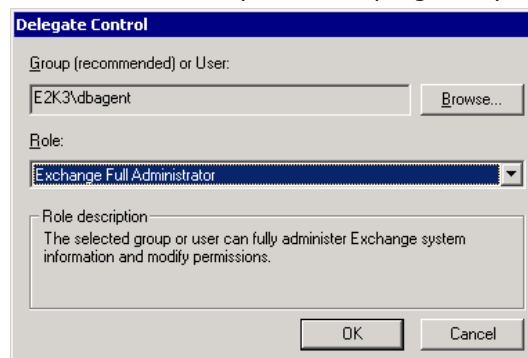
4. When the Users or Groups dialog opens, click Add.



- When the Delegate Control dialog opens, in the Group field, click Browse.

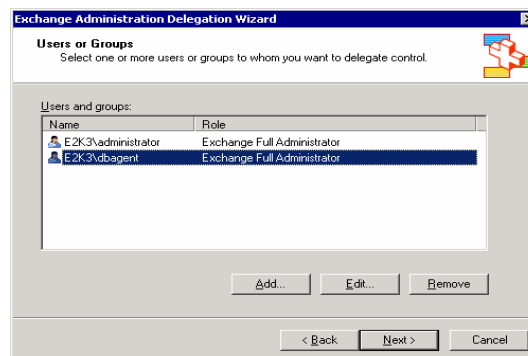


- Enter the name of your Backup Agent System Account and click OK.



- When the Delegate Control dialog reopens, in the Role field, select **Exchange Full Administrator** and click OK.

The name of your account opens in the Users and groups field.



- Click Next and then click Finish.

You have successfully assigned permissions for the backup agent service account.

Delegate Roles for Exchange 2007 Server on a Domain Controller or Member Server

To assign permissions for the backup agent service account

1. On your Exchange server, from the Start menu, select Programs, Microsoft Exchange Server 2007, 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 as illustrated by the following example:



3. Click the Browse button to browse to and select the user or group to which you want to assign the role.

Select the role you want to delegate, click Add, and then click Finish.

You have successfully assigned permissions for the backup agent service account.

Additional Configuration Considerations

The following sections include additional configuration considerations, depending on your environment.

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.

Grant Additional Rights in Exchange Server 2000

Exchange Server 5.5 included a Service Account that allowed unrestricted access to all mailboxes. To enhance security, Exchange Server 2000 did not include this Service Account. As a result, if you need unrestricted access to all mailboxes in Exchange Server 2000, your account is a member of Domain Admins, and your other security settings do not give you this access, use the following procedure:

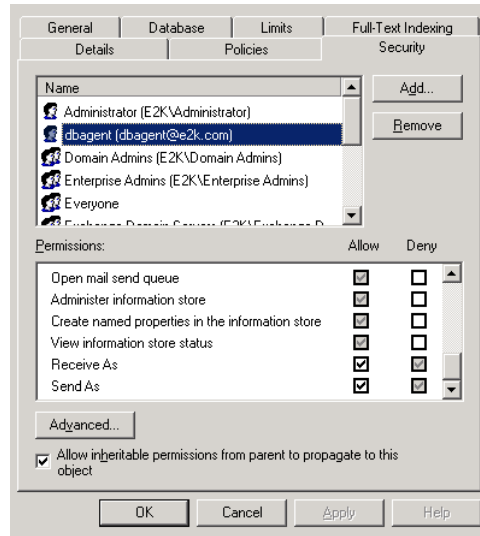
Note: If your account is not a member of Domain Admins, see the Microsoft web site for Microsoft Knowledge Base Article 262054, XADM: *How to Get Service Account Access to All Mailboxes in Exchange 2000*.

To grant additional rights in Exchange Server 2000

1. Go to Start, All Programs, Microsoft Exchange, System Manager, and select **System Manager**.
2. When the Exchange System Manager dialog opens, in the left pane, expand Administrative Groups until you find the mailbox store or public folder store for which you want to have full mailbox access.

- Right-click mailbox store or public store and select **Properties**. When the properties dialog opens, click the Security tab.

Note: If you do not see the Security tab, see the Microsoft web site for Microsoft Knowledge Base Article 259221, *XADM: Security Tab Not Available on All Objects in System Manager*.



- In the Name column, select the name of your backup agent service account. Next, in the Permissions box, place a check mark in the Allow box next to the Receive As and Send As permissions, and then click OK.

Note: When you place a check mark in the Allow box, it overrides the Deny box, but only at the level where you are granting permission. For example, if you are granting permission for a mailbox store, the permission applies only to the mailbox store and not to its parent or children objects.

- Repeat steps 2 through 4 for each database object you want to have full mailbox access to.

Appendix D: Registering Cluster Resources

This section contains the following topics:

[Register the Cluster Resources Manually](#) (see page 191)

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.

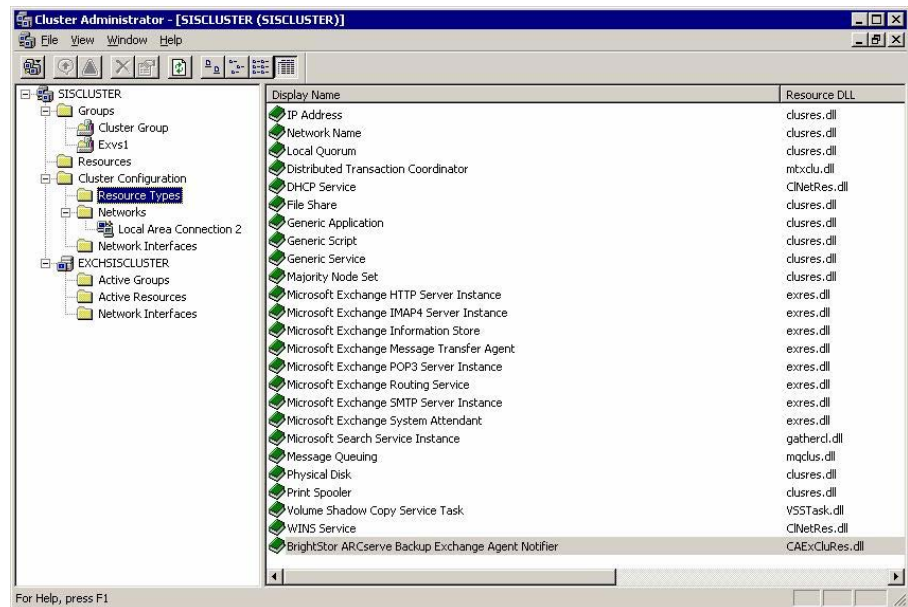
To register the cluster resources manually

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 "BrightStor ARCserve Backup Exchange Agent Notifier"  
/create /dll: CaExCluRes.dll /type:"BrightStor ARCserve Backup Exchange Agent  
Notifier"
```

Note: If your resource type is already registered, BrightStor ARCserve Backup Exchange Agent Notifier is displayed under the Cluster Configuration\Resource Types branch in the Cluster Administrator.

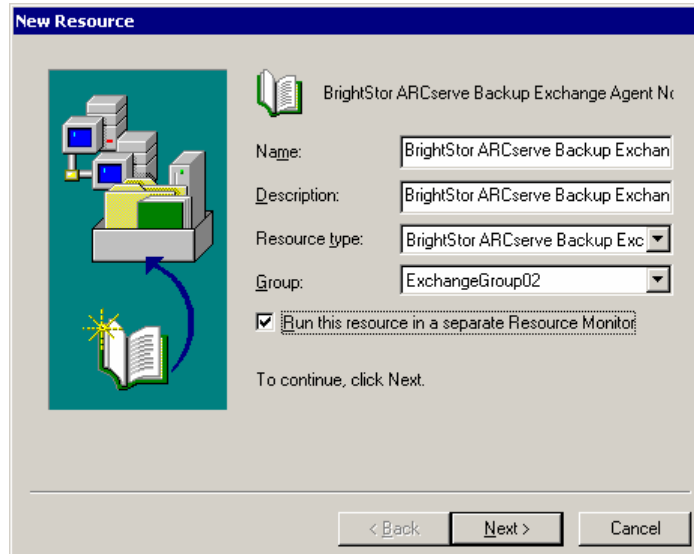
The following diagram illustrates that the BrightStor ARCserve Backup Exchange Agent Notifier is displayed under the Cluster Configuration\Resource Types branch in the Cluster Administrator.



3. Run the following command to register the extension dll:

```
Cluster.exe/REGEXT:"C:\WINNT\cluster\CAExCluResEx.dll"
```

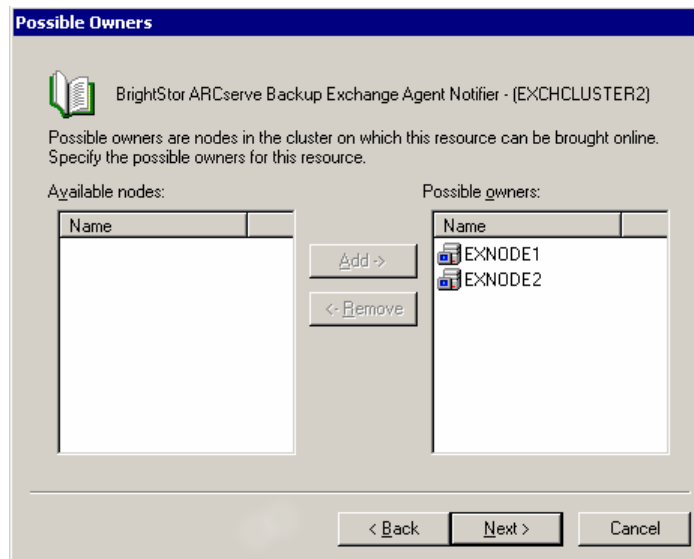

4. Use the Cluster Administrator to create the BrightStor ARCserve Backup Exchange Agent Notifier cluster resource instance in the Exchange Virtual Server group. As a best practice, append the Exchange Server name to the cluster resource instance name. For example, BrightStor ARCserve Backup Exchange 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 BrightStor 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.

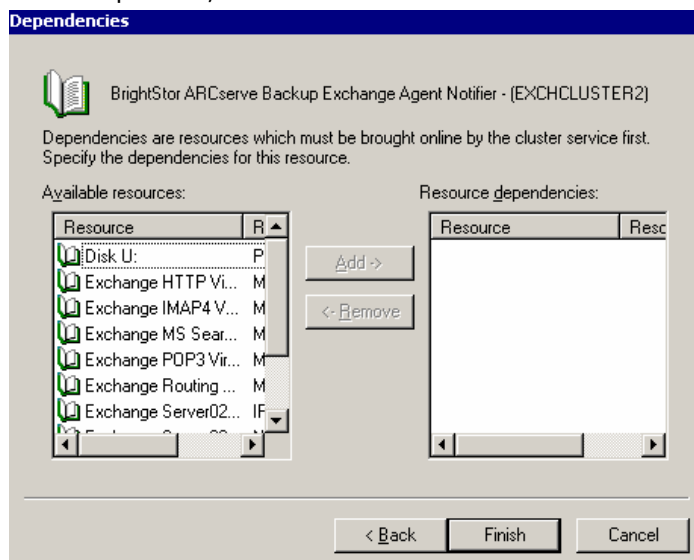
As illustrated by the following diagram, when the Possible Owners dialog opens, the nodes in the cluster on which the resource can be brought online are automatically displayed in the Possible owners box.



5. Click Next.

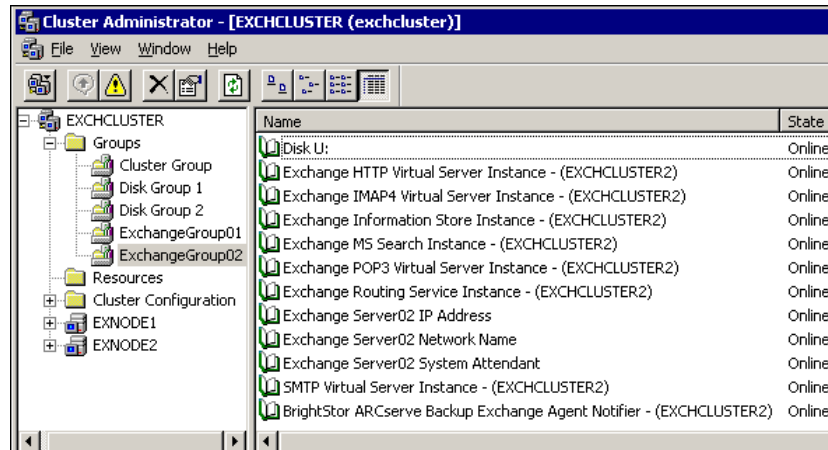
The Dependencies dialog opens.

6. When the Dependencies dialog opens, click Finish to end the resource creation process, and then click OK.



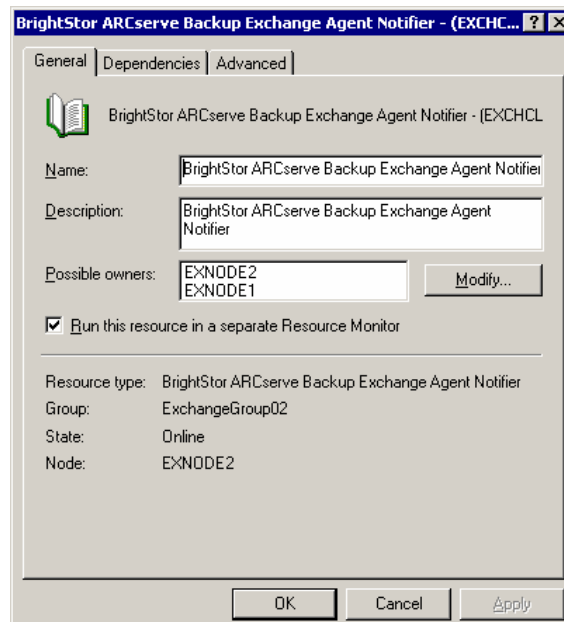
- Open the Cluster Administrator and confirm that the BrightStor ARCserve Backup Exchange Agent Notifier resource is displayed.

The following diagram illustrates that the BrightStor ARCserve Backup Exchange Agent Notifier resource is displayed:

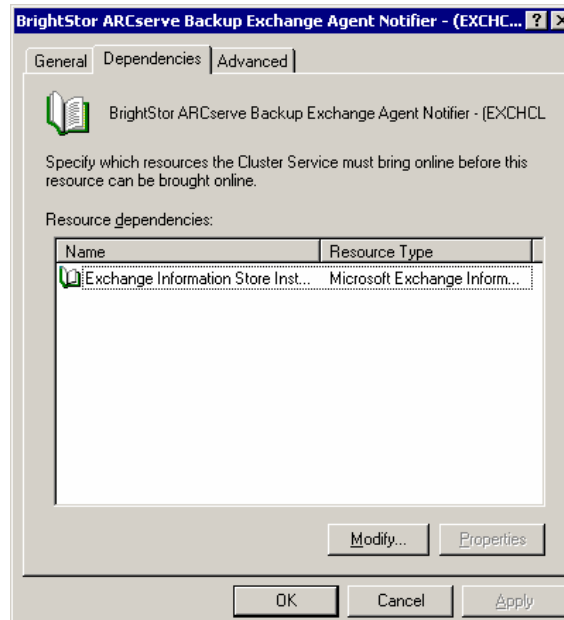


- Right-click the BrightStor ARCserve Backup Exchange Agent Notifier resource to verify the General, Dependencies, and Advanced options.

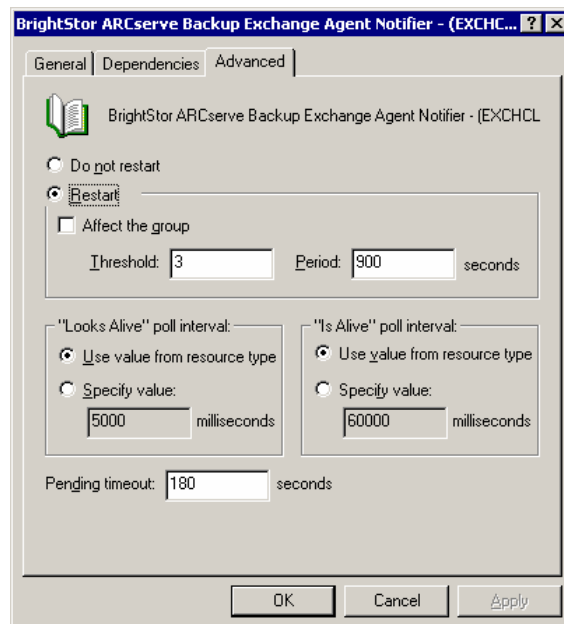
The following diagram illustrates how the options should appear on the BrightStor ARCserve Backup Exchange Agent Notifier, General tab:



The following diagram illustrates how the options should appear on the BrightStor ARCserve Backup Exchange Agent Notifier, Dependencies tab:



The following diagram illustrates how the options should appear on the BrightStor 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.

More information:

[Configure the Agent to Run on a Cluster](#) (see page 18)

Appendix E: Using the Server Configuration Worksheet - Exchange 2000 and 2003 Server Systems

To limit the amount of time you spend troubleshooting restore issues when you are recovering from a disaster on an Exchange 2000 and 2003 Server system, consult the Exchange System Manager to gather information and complete the following worksheet for each Exchange server in your Exchange organization.

This section contains the following topics:

[Worksheet](#) (see page 199)

Worksheet

When restoring an Exchange 2000 and 2003 Server system to an alternative location, information in all fields in this worksheet except the Server Name field must be the same on the server you are restoring to.

Note: The information you enter into the worksheet is case sensitive.

Server Name

Exchange Server Version, Service Pack, and Patches:

Exchange Organization Name:

Administrative Group Name:

Storage Group Name:

Database Store Names:

Storage Group Name:

Database Store Names:

Server Name

Storage Group Name:

Database Store Names:

Storage Group Name:

Database Store Names:

LegacyExchangeDN Value:

Note: See the Microsoft web site for information on how to determine the LegacyExchangeDN value.

Index

A

- activity log
 - messages • 102
 - troubleshooting • 129
- adding remote servers • 36
- agent option • 41, 43, 44, 53, 58, 61, 67, 77, 93, 100, 108
- allow database to be overwritten by restore (option) • 50, 67
- append to restored mailbox • 24, 30
- automatically dismount database before restore (option) • 50, 67

B

- back up additional user properties • 24, 30, 108
- back up from replication if available (option) • 58
- backing up data
 - multiple streaming • 82, 99
 - perform a database level backup (Exchange 2000/2003 Server) • 44
 - perform a database level backup (Exchange 2007 Server) • 61
 - perform a document level backup • 100
- backup agent service account
 - adding groups on a domain controller • 183
 - creating domain user • 177
 - creating domain users with a mailbox (Exchange 2007 Server) • 181
 - creating mailboxes (Exchange 2000/2003 Server) • 178
 - delegating roles (Exchange 2000/2003 Server) • 185
 - delegating roles (Exchange 2007 Server) • 185
 - document level backup and restore • 90
 - manual configuration • 173
- backup and restore types to use with Agent • 13
- Backup Manager
 - browsing (Exchange 2000/2003 Server) • 40
 - browsing (Exchange 2007 Server) • 57

- backup method
 - Database Level (Exchange Server 2000 and 2003) • 41
 - Document Level backup • 93
- best practices
 - database level backup strategies • 122
 - database management strategies for document level backups • 124
 - document level backup strategies • 123
 - ensuring media integrity • 122
 - Exchange Server configuration • 121
 - installation • 120
 - performance tuning document level backups • 125
 - strategies for restoring data • 126
 - technical resources • 119
 - test strategies • 127
 - using the Windows Event Viewer • 119
 - using online backups • 121
- Brick Level • 23, 24
 - configuration • 20
 - create an account • 23
 - show brick level option • 24
 - verify a brick level account • 24
- browsing filters • 91

C

- circular logging • 121
- cluster configuration • 18, 191
- cluster resource type • 18
- commit after restore (option) • 50
- Complete Messaging Single Instance Storage • 30, 88, 91
- configuring
 - Brick Level backup and restore • 29
 - Database Level backup and restore • 29
 - Document Level backup and restore • 30
- conflict resolution options for document level restores • 108
- contacting technical support • vi
 - information required - Exchange 2000/2003 Server • 161
 - information required - Exchange 2007 Server • 161
- copy backup (option) • 41, 58, 73
- create mailbox if not existing (option) • 108

create user if not existing (option) • 24, 30, 108

customer support, contacting • vi

D

data

- compression • 83, 98

- encryption • 83, 98

Database Level

- backup • 39

- backup and restore types to use with Agent • 13

- restore • 39

database level backup (Exchange 2000/2003 Server)

- agent service account requirements • 41

- configuration • 20

- data compression • 83

- data encryption • 83

- Exchange server organization • 12

- features • 41

- global backup options • 41

- methods • 41

- multiplexing • 81

- multistreaming • 82

- perform a backup • 44

- scan media • 83

- specify backup options for a storage group • 43

- strategies (best practices) • 122

- supported databases • 39

database level backup (Exchange 2007 Server)

- about • 13

- agent service account requirements • 57

- configuration • 29

- data compression • 83

- data encryption • 83

- Exchange server organization • 12

- features • 57

- methods • 14

- multiplexing • 81

- multistreaming • 82

- options, global backup options • 58

- perform a backup • 61

- scan media • 83

- strategies (best practices) • 122

database level restore (Exchange 2000/2003 Server)

- access an alternate mailbox • 55

- disaster recovery • 56

- options • 50

- perform a restore • 53

- prerequisites • 46

- restore data to an alternate location • 54

- restore options selection • 52

- restore sets • 48

database level restore (Exchange 2007 Server)

- disaster recovery • 80

- options • 67

- perform a restore • 77

- prerequisites • 63

- restore mailbox folder filters • 67

- restore options selection • 72

- restore sets • 65

- select restore destinations • 74

- select restore source objects • 73

- setting the system path • 76

- supported destinations • 75

- target browsing • 74

- debugging data • 161, 170

- differential backup • 41, 58, 93

Directory

- database in exchange server • 12

- for database level backup • 40

- disable purge option • 24, 30, 93

disaster recovery

- database level (Exchange 2000/2003 Server) • 56

- database level (Exchange 2007 Server) • 80

- dismounting for restore • 46

document level backup

- about • 87

- activity log messages • 102

- agent service account requirements • 90

- Backup Manager views • 89

- compression • 98

- database management (best practices) • 124

- encryption • 98

- features • 88

- methods • 93

- multiplexing • 98

- multistreaming • 99

- perform a backup • 100

- performance tuning • 125

- scan media • 103

- specify filters • 95

- strategies (best practices) • 123

- document level restore
 - extending a destination path manually • 115
 - perform a restore • 116
 - prerequisites • 107
 - restore destination considerations • 112
 - restore locations • 110, 111
 - restore options • 108
 - restore source considerations • 111
 - source views • 113
 - strategies (best practices) • 126
 - supported restore destinations (Exchange 2000/2003/2007 Server) • 114
 - supported restore destinations (Exchange Server 5.5) • 113

E

- error messages - Exchange Server errors • 129
- Exchange Agent Notifier • 18, 191
- exchange organization • 35
- Exchange Server configuration, best practices • 121

F

- filtering • 67, 92, 95
- full backup (option) • 41, 58, 93

I

- incremental backup (option) • 41, 58, 93
- Information Store • 39
 - backup files • 40
 - database in Exchange server • 12
 - private • 12
 - public • 12
- installation
 - best practices • 120
 - cluster installation • 18
 - post installation - Exchange 2000/2003 Server • 20
 - post installation - Exchange 2007 Server • 24
 - prerequisites • 17
 - system requirements • 17

J

- job continuation level • 24, 30

K

- Key Management Service • 39, 57
- keywords • 67
- KMS See Key Management Service • 39, 57

L

- log detail level • 24, 29, 30, 170
- log location • 24, 30

M

- M drive (ExIFX) • 167
- maximum backup size • 24, 30
- maximum restore size • 24, 30
- Messaging Application Programming Interface • 13
- Microsoft Key Management Service • 39, 41
- mount database after restore (option) • 50, 67
- multiple streaming • 81, 82, 98, 99
- multi-threading • 88

N

- number of threads • 67, 125

O

- online backups • 121

R

- restore options
 - database level restore • 50, 67
 - document level restore • 108
 - restore sets • 48, 65, 106
- restoring data
 - perform a database level restore (Exchange 2000/2003 Server) • 53
 - perform a database level restore (Exchange 2007 Server) • 77
 - perform a document level restore • 116
 - restoring data to a Windows file system • 76
- retry counter • 24, 29
- retry delay • 24, 30
- run recovery after restore (option) • 67, 76

S

- scanning media
 - database level backups • 84
 - document level backups • 104

- Single Instance Storage • 13
- Site Replication Service • 39, 57
- skip log setting • 24, 30, 102
- support, contacting • vi
- system requirements • 17

T

- technical resources • 119
- technical support, contacting • vi
 - information required - Exchange 2000/2003 Server • 161
 - information required - Exchange 2007 Server • 161
- temp location • 24, 30
- temporatrtry location for log and patch files (option) • 50
- thread priority • 24, 125
- time-based backup (option) • 93
- troubleshooting
 - activity logs • 129
 - error messages • 129

U

- use globally scheduled backup method (option)
 - 41, 43, 58, 93
- using the Windows Event Viewer • 119