

BackupAssist™

BackupAssist v7

Exchange Protection Whitepaper

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1. Introduction



BackupAssist provides comprehensive Exchange Protection by creating backups that can be used to restore an Exchange Server, an Exchange information store database, Exchange storage groups, mailboxes and individual mail items like emails, contacts and appointments.

BackupAssist *Exchange Protection* uses the three standard backup types: File Protection, File Archiving and System Protection. These backups can be used to:

- Restore your Exchange Server and databases using the **BackupAssist Restore Console**.
- Restore individual mail items using the **Exchange Granular Restore console**.

Exchange Granular Restore (Exchange Granular Restore Add-on) supersedes the older *Exchange Mailbox Protection (Exchange Mail Add-on)*, although both solutions are still supported. A comparison of these mail restore add-ons can be found in the [Exchange Granular Restore Overview](#) section below.

Remember: It is important to maintain both *daily* and *archive* (historical) backups as part of your backup strategy. The backup type and destination selected will effect what options you have, and both should be considered when planning a schedule. To learn more, see the Backup tab whitepaper's section on [scheduling](#)

Documentation

This whitepaper provides a comprehensive guide to Exchange Protection and can be used in conjunction with other BackupAssist guides.

- For a quickstart to Exchange Server protection: [Exchange Server Protection QuickStart guide](#).
- To protect individual Exchange mailboxes, see the: [Exchange Granular Restore QuickStart guide](#).
- For information on the Exchange Mail Add-on, see the [Exchange Mailbox Protection Whitepaper](#).
- For information on the BackupAssist Backup tab, see the [BackupAssist Backup Tab Whitepaper](#).

Licensing

Exchange Server Protection uses standard VSS backups with the BackupAssist Restore Console. These features require a BackupAssist license, once the initial trial period has expired.

Exchange Granular Restore requires the *Exchange Granular Restore Add-on* license.

- The *Exchange Granular Restore Add-on* license includes an *Exchange Mail Add-on* license (you get both).
- The original **Exchange Mail Add-on** license can still be used by customers who have it. This license includes the *Exchange Granular Restore Add-on*.

Please contact your local BackupAssist reseller or distributor for pricing information, or visit www.BackupAssist.com.

For instructions on how to activate / deactivate license keys, visit our [Licensing BackupAssist page](#).

2. Exchange Server Protection overview

BackupAssist *File Protection*, *File Archiving* and *System Protection* backups use the Microsoft Volume Shadow Copy service (VSS) to back up your Exchange Server while it is running. BackupAssist can use these backups to perform a complete restore of your Microsoft Exchange Server or individual storage groups.

Supported platforms

To back up and restore your Exchange Server databases using BackupAssist you need:

- Windows Server 2003, 2008/R2 or 2012/R2
- Windows Small Business Server (SBS) 2003, 2008 or 2011
- Microsoft Exchange Server 2003, 2007, 2010 and 2013

Requirements by platform

The tables below are a reference for the combinations of Windows operating systems and Exchange Servers that can be used to provide Exchange Server Protection using BackupAssist.

Windows Server VSS support for BackupAssist backup types: required for Exchange database backups.

	Windows XP, Vista, 7 and 8	Windows Server 2003	Windows Server 2008/R2	Windows Server 2012/R2
File Protection	✘	✔	✔	✔
File Archiving	✘	✔	✔	✔
System Protection	✘	✘	✔	✔

Windows 2003 uses NT backup to back up Exchange 2003/2007

Remote back up support

Backing up the Exchange Information Store of a remote server is not supported on Windows Server 2008/R2 and 2012/R2 (includes no remote streaming support on 2012 R2 via ntbackup). You must install BackupAssist locally on the Exchange Server and purchase a separate BackupAssist license.

Due to their support for streaming backups, Windows Server 2003 and Windows XP can remotely back up Exchange Server 2007. If you are attempting to back up an Exchange 2007 Server you will need to install the Exchange Server Management Tools on the machine where BackupAssist is installed (Windows XP or Server 2003 machine). NTBackup will be used to back up the remote Exchange information store. This method cannot be used to back up Exchange 2010 and 2013 remotely.

To learn more, see the article <http://technet.microsoft.com/en-us/library/aa998870.aspx>

3. Exchange Granular Restore Add-on overview

The Exchange Granular Restore (EGR) console allows you to restore mail items using *Direct Exchange Injection*. The backups used can be created by *System Protection*, *File Protection* or *File Archiving*. This means the backup you use to protect your Exchange Server can also be used to restore mail items.

Note: Exchange Granular Restore is the recommended BackupAssist tool for restoring mailboxes and mail items for Exchange 2013, 2010 and 2007. It is enabled in BackupAssist when you purchase the *Exchange Granular Restore Add-on* and supersedes the backup-based *Exchange Mailbox Protection* solution. This earlier technology was purchased as the *Exchange Mailbox Add-on*, and is now bundled with the *Exchange Granular Restore Add-on* license. Both solutions are supported.

Exchange add-on comparison

Feature	Exchange Mailbox Add-on	Exchange Granular Restore Add-on
Exchange version support	2003, 2007, 2010	2007, 2010, <u>2013</u>
Exchange Server authentication	Required	Not required
Special backup type	Required	Not required
Mail Preview (before restore)	No	Yes
Backup size	Requires additional PST file backup	Part of Exchange Server backup
Backup destination	Local disks only	As supported by backup type

EGR support for backup types - by server version

Backups	Windows 2003	Windows 2008	Windows 2012
System Protection	✘	✔	✔
File Protection & File Archiving	✔	✔	✔

The Exchange Granular Restore Add-on can restore:

- Mailboxes, mail folders and emails (cannot be encrypted)
- Folders
- File attachments
- Contacts, Notes, Tasks and appointments

Journals, emails attached in other emails and embedded email objects are currently not supported.

Requirements

- BackupAssist 7.2 or later must be installed on the Exchange Server.
- Operating systems: Windows Server 2012/R2, 2008/R2, 2003.
- RAM: 256-1024 MB, depends on mail store size and OS version
- May require free space on disk 1.5x the size of mail data being processed.

Exchange Granular Restore is tested for optimal performance up to the following dataset sizes.

- Database size: 500 Gb / Mailbox size: 100 Gb
- Number of messages in one mailbox - 100,000, in the database - 2,000,000.
- Number of mailboxes in the database: 2,000

4. Backup considerations



Before creating a backup job, it is important to understand what backup and restore options are available. This section provides guidance on some key considerations.

Exchange VM Detection

If your backup job contains a Hyper-V guest with an Exchange Server, the authentication information for that guest should be entered into the **Exchange VM Detection** tab on the **Selection** screen when you create the backup job. With these credentials, BackupAssist can detect what guests have an Exchange Server, and list the EDB file available for each guest when you perform a restore using the Exchange Granular Restore console

The Exchange VM Detection tab will appear when the Hyper-V role is installed and running on the server. If you are backing up multiple Exchange guests, each one should have the same username and password.

The Hyper-V process is automated but the restore requires both the *Exchange Granular Restore Add-on* and the *Hyper-V Granular Restore Add-on* licenses.

VSS Application backups

The Volume Shadow Copy Service (VSS) is a Microsoft Windows Service that creates a copy of an application's data so the data can be backed up while the application is running. This means the data will not change or be locked while a backup is taking place. BackupAssist is VSS-aware, so File Protection, File Archiving and System Protection backups can detect VSS applications such as Exchange, SQL, Hyper-V and SharePoint. BackupAssist will display a VSS application as an application container during the *Destination* step of the backup job's creation. You can select the container or individual components and BackupAssist will select the files that need to be backed up.

In some cases, only applications that are running will be detected. If an application is not listed, try re-starting the application and the VSS service and then click the *Refresh* button in BackupAssist.

For Windows Small Business Server 2003, a registry entry modification is needed to see an Exchange Server. See our online blog post, [Backing up Exchange with SBS 2003](#), for more information.

Restore vs. Recovery

A restore is the process of accessing a backup and restoring it to the original (or a new) location, if your data is lost, corrupted or if you want an earlier version of that data. However, if your computer cannot start itself, you may need to perform a recovery.

A recovery is the process by which a computer is recovered after hardware has been replaced or an operating system failure has occurred, and your computer can no longer start itself. To perform a recovery you need a bootable media to start your computer, and an image backup that the bootable media can use to recover your operating system, data and applications.

For more information on data recovery, see the [Recover tab & RecoverAssist Whitepaper](#).

Windows SystemState

Overview

In previous versions of BackupAssist, Windows SystemState was called System State and it was available during the creation of a backup job. The Windows SystemState option is now selected by editing a backup job after it has been created. There are exceptions, as shown in the table below.

A Windows SystemState backup contains some of the important files, registry values and settings that are used by the Windows operating system. It does NOT back up the operating system itself. This means a Windows SystemState backup can be used to restore the settings your computer had at an earlier point in time, but it will not allow you to recover your computer. A Windows SystemState backup can be helpful if your computer is encountering errors and you want to restore your settings to an earlier point in time, before the errors occurred.

Because Windows SystemState requires a functioning computer, and can only *restore* Windows settings, we recommend that a bare-metal backup is used. A bare-metal backup can restore Windows SystemState data, and it can ALSO be used to perform a *recovery* of your computer, when used with a Windows recovery environment, like RecoverAssist.

Selecting Windows SystemState

Windows SystemState can be selected after a backup job has been created, if you have enabled the *Windows settings*. The exceptions, considerations and steps required are explained below:

This table shows what backup jobs can include Windows SystemState.

	NTBackup (Windows 2003)	File Archiving, File Protection and System Protection backup jobs	File Archiving zip-to-tape backup jobs	File Protection Rsync backup jobs
During the creation of a new backup job	YES	NO	NO	NO
By editing an existing backup job	YES	YES, if enabled	YES	NO

To enable Windows SystemState:

1. Select the BackupAssist *Settings tab*.
 2. Select *Windows settings*.
 3. Tick *Enable v6 compatible Windows SystemState selection*.
- ❖ Backup jobs created in earlier versions of BackupAssist (that included System State) will have the setting enabled by default in BackupAssist v7.
 - ❖ Zip-to-tape backup jobs will not need to enable this setting, to select Windows SystemState.

To select Windows SystemState:

1. Select the BackupAssist *Backup tab*, and then select the *Manage* menu.
2. Select the *backup job* that you want to modify, and then select *Edit* from the menu.
3. Select *Files and applications* from the left pane.
4. Select *Windows SystemState* at the top of the data selection pane.

5. BackupAssist settings



When creating a backup job, there are some global settings that should be configured in BackupAssist. If they are not configured, you will be prompted to complete them during the creation of your first backup. It is recommended that this is done in advance.

BackupAssist's settings can be entered and modified using the selections available in the **Settings tab**. Clicking on the *Settings tab* will display the selections as icons. Four of these are used when creating new a backup job and each one is described below:

Backup user identity

Backup jobs require an administrator account with read access to the data source, and full read-write access to the backup's destination. It is recommended that a dedicated backup account is created for this purpose. The account's details are entered here and your backup jobs will be launched using these credentials. The account's permissions will be validated both when the backup user identity is entered and when the job is executed. If no account is specified or the account has insufficient permissions, the backup job will fail and note the error in the backup report.

A video explaining the creation of a backup user identity can be found on our, [Videos Webpage](#).

Email server settings

This menu item is used to enter the details of the SMTP server used by BackupAssist to send email notifications. The SMTP server must be configured if you want to have an email *Notifications* step enabled when you create a backup job.

Email address list

This menu item is used to define and store the email addresses of potential notification recipients. The list will be used to populate the recipient selection screen when configuring an email notification for a backup job. Any email addresses entered during the creation of a new notification are automatically added to the *Email address list*.

Network paths

This option allows you to enter access credentials for networks, domains and drives that the default account (specified in the *Backup user identity*) does not have access to. Enter or browse to the location and add it to the *Path list*. The *Edit* option will allow you to enter an authentication account, specifically for that path. When you create a backup job to a remote location, that location will be automatically added here.

Having multiple connections to a resource using the same logon credentials can generate a Windows error, such as the [BA260 NAS error](#). It is therefore recommended that you avoid having mapped shares on the computer running BackupAssist that are the same as the paths configured in BackupAssist.

6. Creating an Exchange backup



The following instructions describe how to create an Exchange Server backup job, using BackupAssist. These backups can be used to restore your Exchange Server as explained in [section 7](#), and to restore individual mail items as explained in [section 8](#).

This section explains how to back up Exchange on a Windows Server 2008, SBS 2008 or later O/S. To back up Exchange on Windows Server 2003, refer to the [Exchange Server Protection Whitepaper](#).

To **enable the Exchange 2003 or 2007 VSS writer**, please refer to this [blog article](#).

To **back up Exchange on a Hyper-V guest for EGR**, review the [Exchange VM Detection section](#)

Launch BackupAssist and follow the steps outlined below:

1. Select the **Backup** tab, and click **Create a new backup Job**
2. Select **System Protection**, **File Protection** or **File Archiving**.

The following instructions use *System Protection* to explain the Exchange VSS back up process.

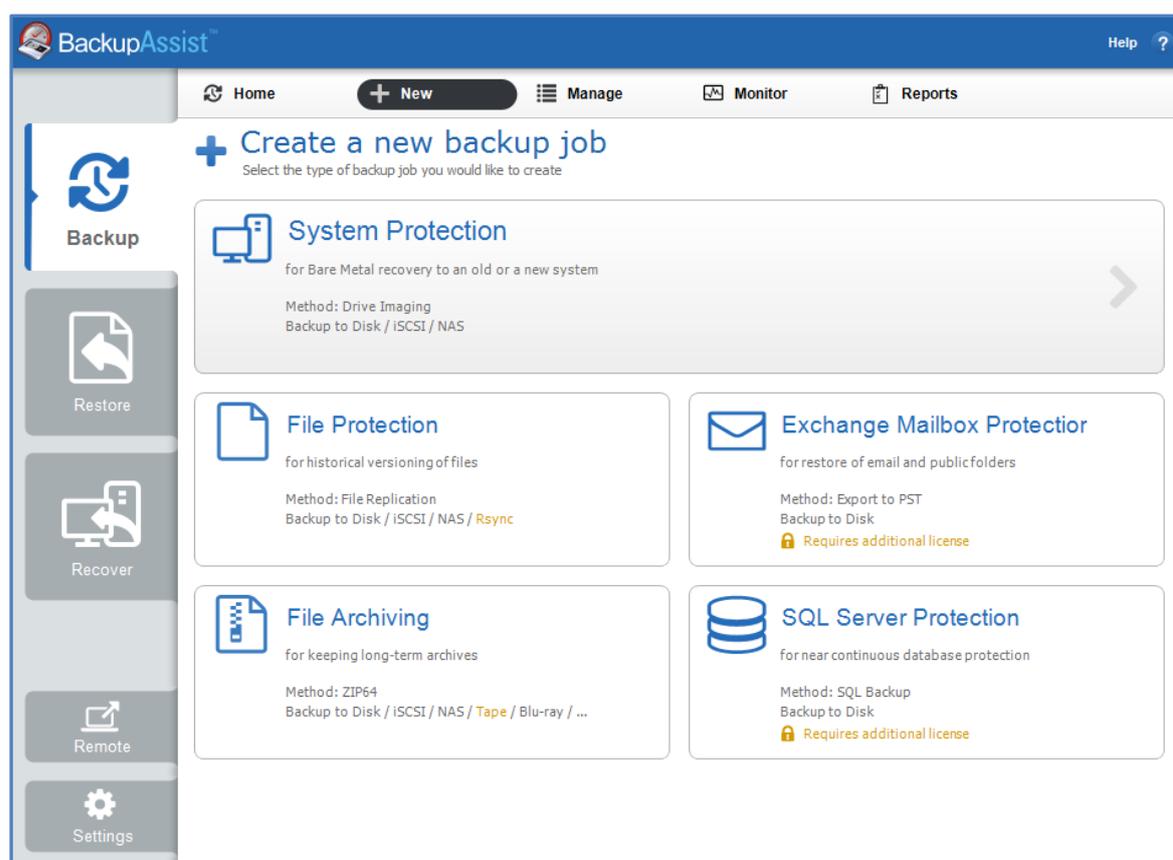


Figure 1: New backup job – backup type selection screen

Back up instructions specific to each backup type, can be found in these whitepapers:

- BackupAssist System Protection [BackupAssist System Protection whitepaper](#)
- BackupAssist File Protection [BackupAssist File Protection whitepaper](#)
- BackupAssist File Archiving [BackupAssist File Archiving whitepaper](#)

3. **Selections:** The selections screen is used to select the data and applications that you would like to back up. Any local Exchange Servers detected will be displayed here as application containers.

An [Exchange VM Detection](#) tab will be available if you are backing up an Exchange VM guest.

You can select an entire VSS application or choose individual components. To back up your Exchange Server, select the Microsoft Exchange container.

If your local Exchange Server is not listed in the *Selections* screen, try restarting Exchange and the VSS service and click the *Refresh* button in BackupAssist.

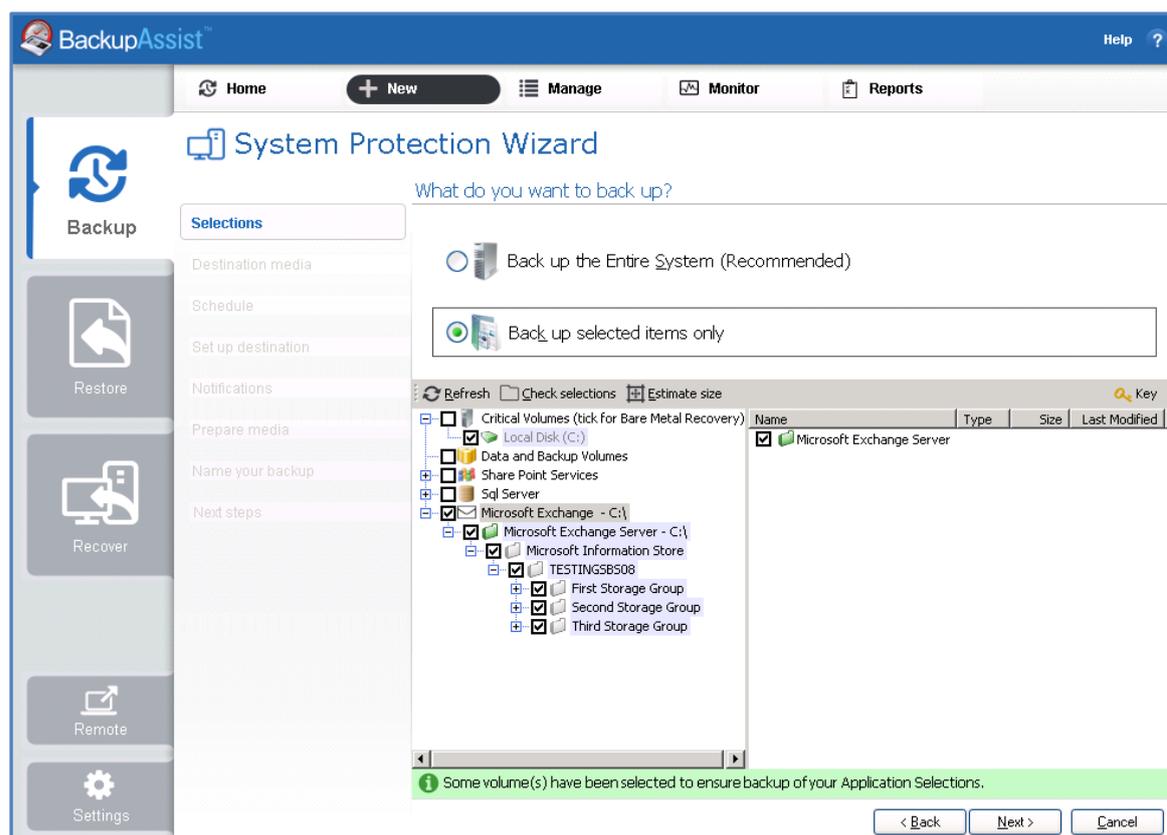


Figure 2: New backup job – Exchange Server VSS selection

- For System Protection backups, VSS applications will be backed up as part of a *Backup up the Entire System* selection. In the example above, *Back up selected items only*, was chosen and the Exchange Server application container was selected.
 - To learn how to create a bare-metal backup using System Protection (for use in a recovery), see the [BackupAssist System Protection whitepaper](#).
 - For File Protection, File Archiving and System Protection backups, the top level *Microsoft Exchange* and *Exchange Server* application containers should be selected.
4. **Destination media:** The destination screen is used to select the type of media that you want to back your data up to. This step's name will change to the media type selected, when you click next. Select a device for your backup destination, and click **Next**.

5. **Schedule:** This screen is used to select when and how you would like the backup job to run, and how long you would like the backup to be retained for. A selection of pre-configured schedules, called schemes, will be displayed.
 - The schemes available will depend on the type of destination media selected in step 4.
 - Clicking on a scheme will display information about the schedule used.
 - The schedule can be customized after the backup job has been created.

Select an appropriate scheme, and click **Next**.

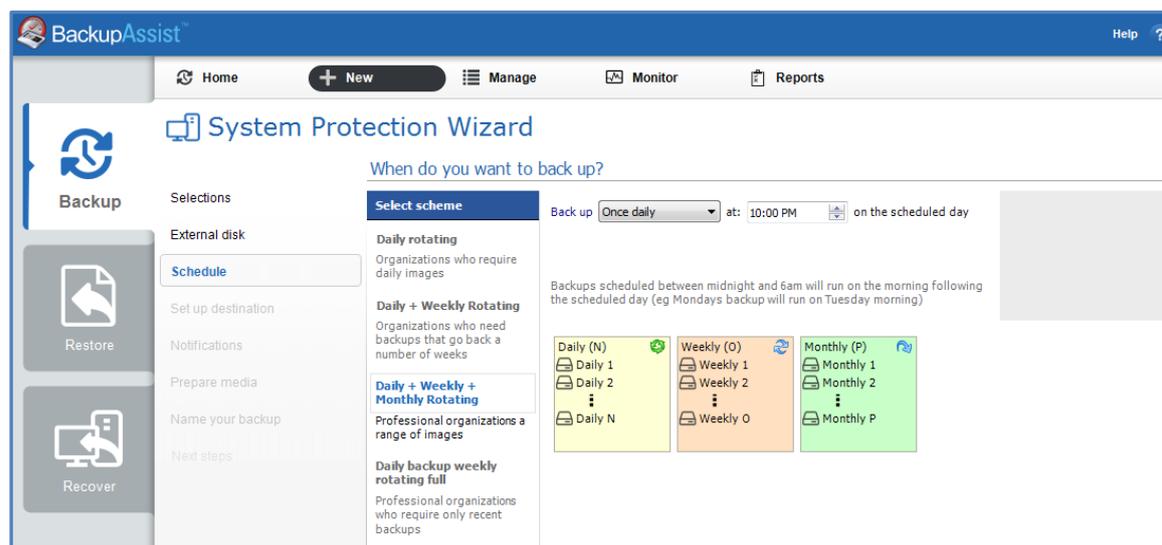


Figure 3: New backup job – Schedule selection

For more information about creating custom schedules, refer to the [Backup tab whitepaper](#).

6. **Set up destination:** This screen is used to configure the location of the media selected in step 4. The options presented will change with the type of media selected. Configure your backup destination, and click **Next**.
 - **Mail Server:** If you have not configured an SMTP mail server for BackupAssist, you will be prompted to provide those details after the backup destination step has been completed. See the [BackupAssist settings](#) section for guidance.
7. **Notifications:** Once a backup job has completed, BackupAssist can send an email to inform selected recipients of the result. This email notification can be enabled during the creation of a backup job, if the mail server has been configured.

To enable email notifications:

- a. Select, **Add an email report notification**.
- b. Enter recipients into the **Send reports to this email address** field.
- c. Enter recipients into the **Also send reports to this email address** field. You can then select the condition under which the email should be sent, using the drop-down box.

After the backup job has been created, you can modify the notifications by adding and removing recipients, setting additional notification conditions and including print and file notification types.

To learn more about notification options, see the [BackupAssist Backup tab whitepaper](#).

8. **Prepare media:** If you selected a portable media device as your backup destination (such as an external HDD or a RDX drive) you will be given the option to prepare the media for BackupAssist. BackupAssist will write a label onto the media so that it can recognise what media has been attached, and determine if it is the correct media for your backup schedule.

To enable media detection:

- a. Select, **Let BackupAssist keep track of your media.**
- b. Select what you would like BackupAssist to do, *if the wrong media is inserted.*
- c. Select what you would like BackupAssist to do, *if new or unrecognized media is inserted.*

BackupAssist will display all removable media that are currently attached, along with a text field and drive designation drop-down box, which can be used to provide a label for the media.

To prepare your media:

- d. Enter the name and drive designation to be used for each media device listed.
- e. Select **Prepare** for each media device listed.

BackupAssist will now write the label to the media so that it is able to recognize the media and ensure that the correct media is being used on the correct day. For example, if you put an RDX drive in on Tuesday but it was labeled Wednesday, BackupAssist will warn you that the incorrect media has been detected.

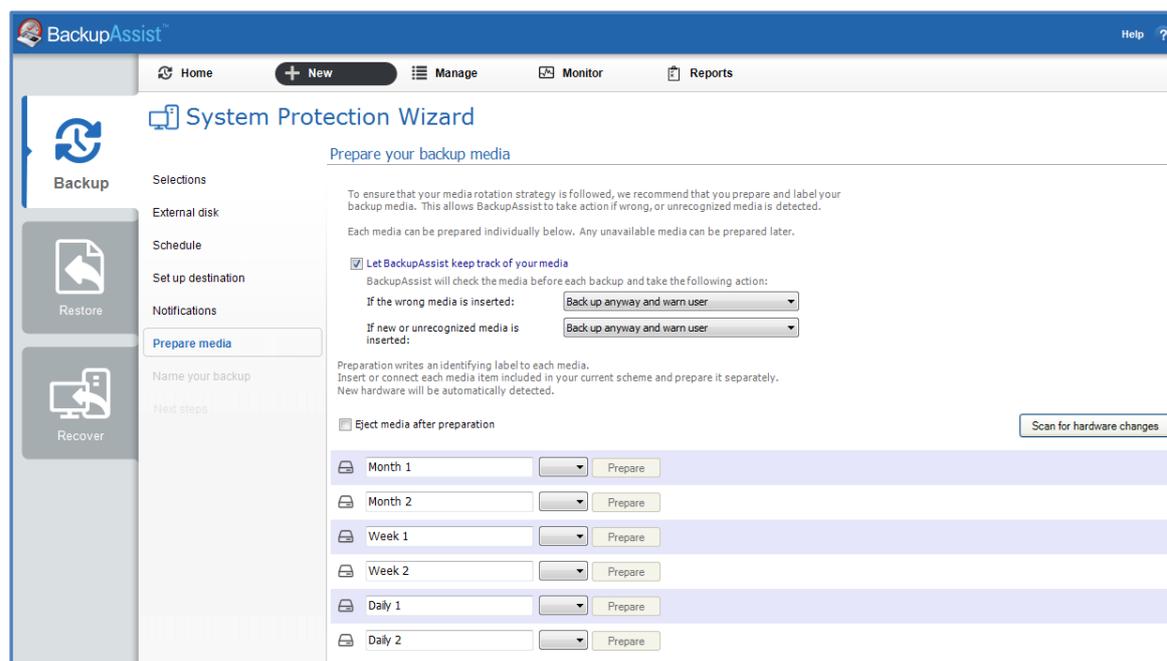


Figure 4: New backup job – Prepare media

9. **Name your backup:** Provide a name for your backup job, and click **Finish**.

► **Your Exchange Server (VSS) backup job has now been created.**

Important: Once a backup job has been created, it should be reviewed and run using the *Manage* menu. This menu provides additional options to configure your backup. See the section, [Exchange Server backup management](#), for more information.

Important: Once a backup job has been run and a backup created, a MANUAL test restore should be performed to ensure the backup is working as intended. To perform a test restore, refer to the section, [Restoring Exchange Server backups](#).

7. Exchange Server restore



This section describes the process of restoring an Exchange Server that was backed up using *System Protection*, *File Protection* or *File Archiving*. A full Exchange Server or individual storage groups can be restored using this process.

In this section a File Protection backup is used as the restore example.

To restore an Exchange Server or database, follow the steps below:

1. Start **BackupAssist**

2. Select the **Restore** tab

The *Restore* tab has a *Home* page and a *Tools* menu. The *Home* page is the default screen and the recommended starting point for performing a restore. The *Tools* menu should only be used by experienced administrators or users being assisted by technical support.

3. From the **Home** page, select the type of restore you want to perform. When you select one of the restore categories provided, BackupAssist will locate the corresponding backups for you.

For an Exchange Server restore, you should select **Exchange**.

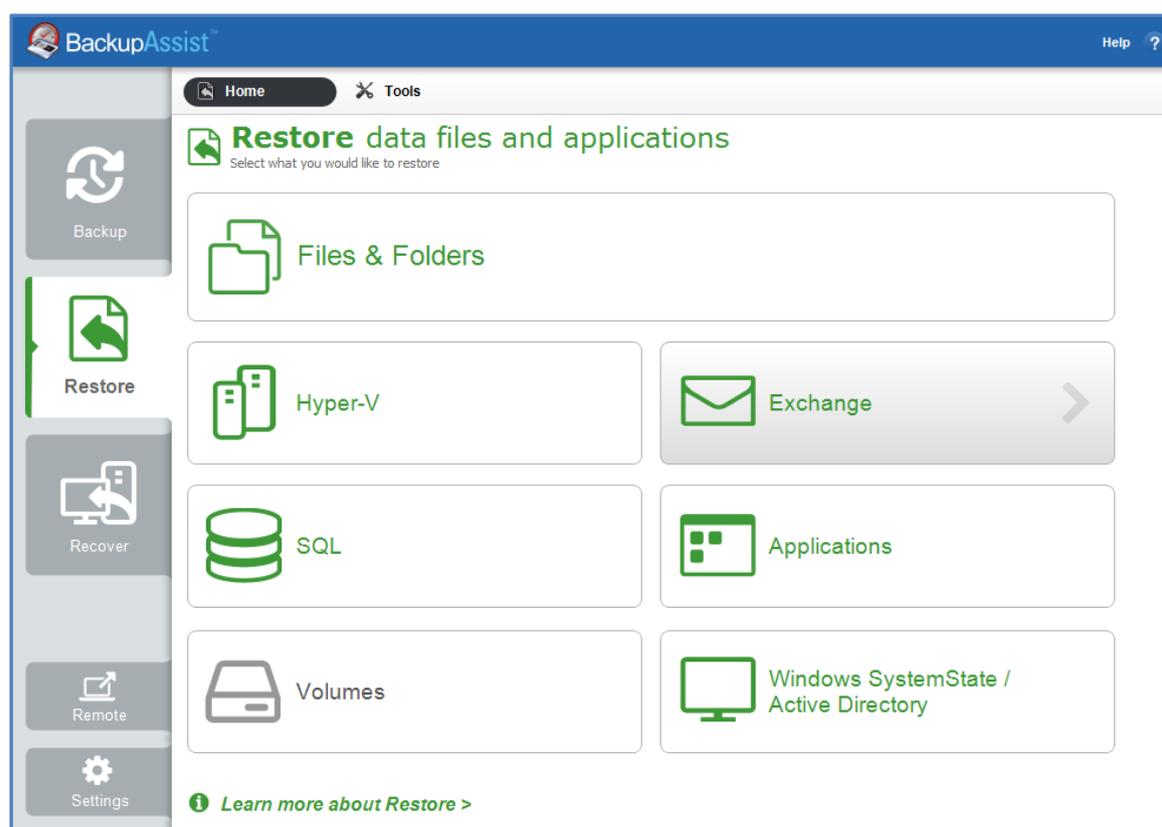


Figure 5: Restore tab - Home page

This will open the *Restore > Exchange* screen and display the restore options available.

4. From the **Restore > Exchange** screen, select **Exchange Server Restore**

The next screen, will display a list of all Exchange VSS backups.

5. Select the Backup to restore from

The backups can be filtered using the following time period tabs:

- *Last 7 days* tab, displays backups created in the last 7 days.
- *Last 30 days* tab, displays backups created in the last 30 days.
- *All* tab, displays all Exchange Server backups catalogued by BackupAssist.
- *Custom* tab, displays backups made between the dates specified in *show backups between*.

Click on the backup you want to restore from. The *Restore Console* will open and load that backup.

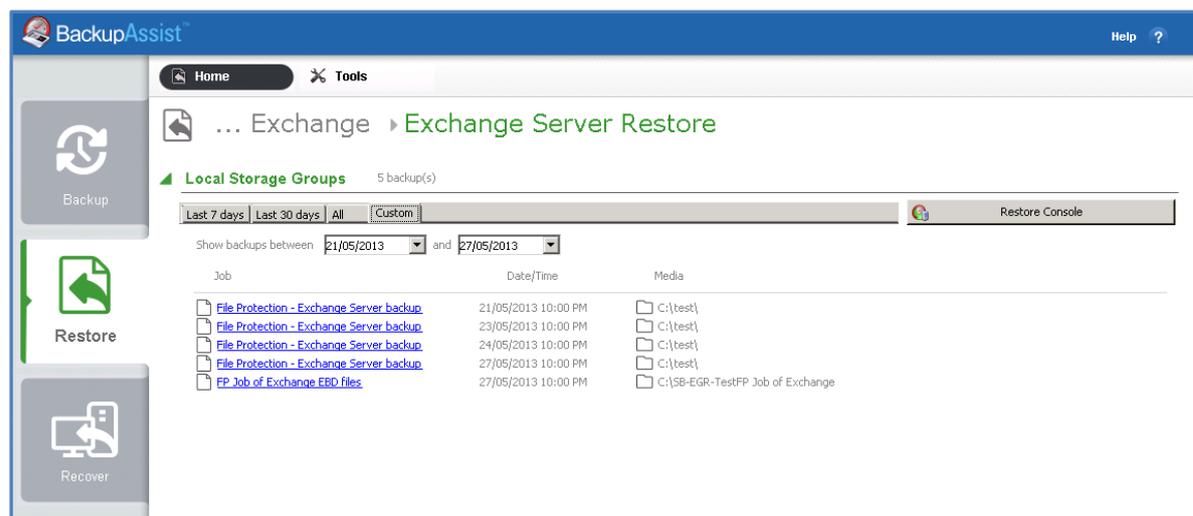


Figure 6: Restore Home page – Exchange Server Restore screen

6. Restore Console – backup selection

The *Restore Console* provides two tools to help you locate the data that you want to restore:

- The **Browse** tab. This tab is used to browse the contents of the backup. You can also select a different backup using the *Select a backup to browse* drop down box. The backups available will be the ones displayed on the *Exchange Server Restore* screen.

The *Browse* tab is ideal if you know the backup and date that you want to restore from, or if you want to restore an entire backup set.

- Use the drop-down menu to choose the backup that you want to restore from.
 - Use the calendar to select the date you want to restore from.
 - Use the middle panes to expand the backup set.
 - Select the data to restore.
 - Click **Restore to** at the bottom right of the window.
- The **Search** tab. Select this tab to search all of the loaded backups for the data you want to restore. You can display data filtered by name, date, size and type, for all backups. The results can be compared (e.g. the dates of two files) to identify the correct data selection.
 - Enter your search term (The search accepts wild card searches, such as **.log* or **.doc*).
 - Select a filter/s if required.
 - Click the *Search* button.
 - Select the data to restore.
 - Click **Restore to** at the bottom right of the window.

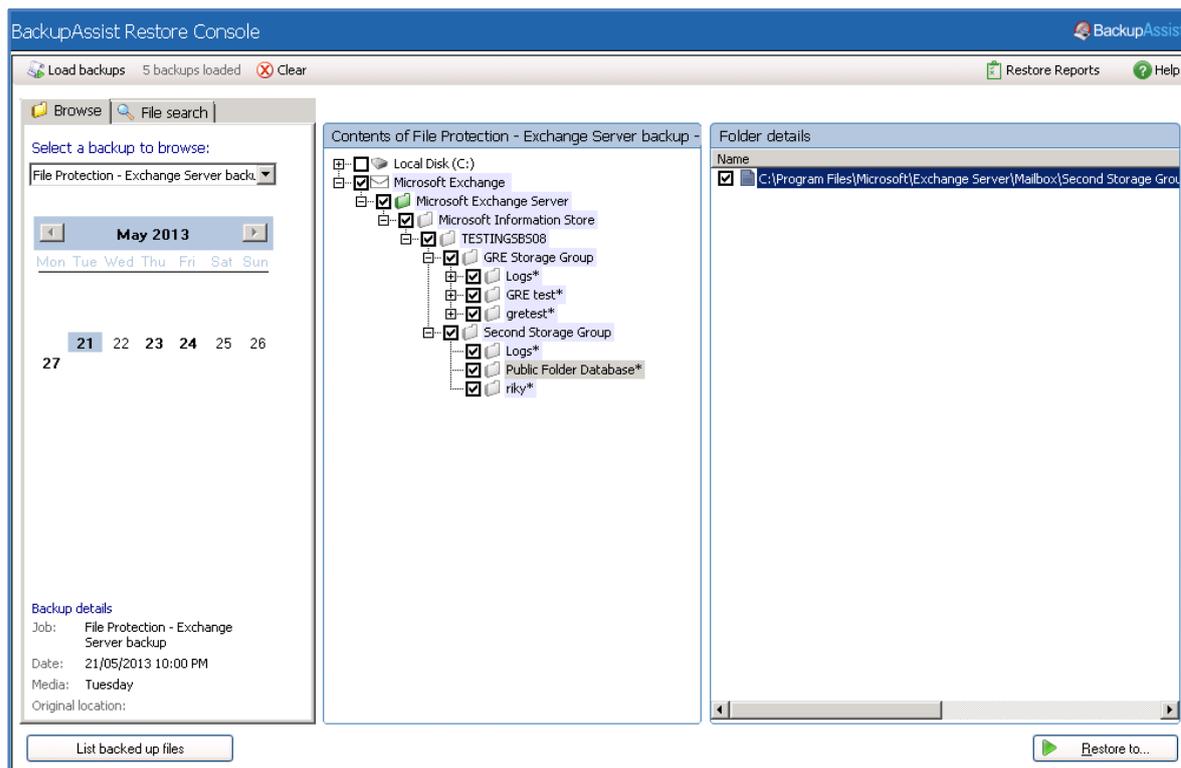


Figure 7: BackupAssist Restore Console – backup selection

If the backup is not present, or if you wish to load additional backups, select the **Load backups** option. Click **Load all known backups** to load all backup catalogues.

For more information about data selection, refer to the [Restore tab whitepaper](#).

7. Restore Console – restore destination selection

When you select *Restore to*, a window will open showing the *Backup location*, the *Restore to* destination and the *Restore options*.

- a. Review **Backup location**: Change the selection if the backup was moved after it was created.
- b. Review **Restore to**: Leave the *Original location* selected.
- c. **Restore options**: *Select Overwrite existing files*.
- d. Select, *Create a log file listing all processed files*, if you want to create a file that lists the success or failure of every file. The log can be opened by selecting the file's link in the backup report.
- e. *Queue all backup jobs when a restore is running*, is selected by default.
- f. Click the **Restore** button to restore your data.
 - If BackupAssist cannot access the backup location you will be prompted to either connect the appropriate media or specify an alternate location where the backup can be found.
 - The restore will run from the destination window and a **Report** link will appear once the restore has finished.
- g. Select **Done**.

▶ **Your Exchange Server restore has now been completed.**

To restore Exchange backups on a Windows 2003 Server, refer to the section [Windows Server 2003 Exchange backups](#).

8. Exchange Granular Restore



Exchange Granular Restore (EGR) is enabled with the purchase of the Exchange Granular Restore Add-on. This *restore-based* solution allows you to use *System Protection*, *File Protection* and *File Archiving* backups to restore individual mail items.

Note: BackupAssist's restore Home page can display backups of Exchange databases inside Hyper-V guests so that mail items can be restored using the Exchange Granular Restore console. The Hyper-V process is automated but the restore requires both the *Exchange Granular Restore Add-on* and the *Hyper-V Granular Restore Add-on* licenses. Please refer to the [Exchange VM Detection](#) section to learn more about this feature.

Note: If you launch the EGR console from the Tools menu, you will need to manually mount the Data container to locate an EDB file inside it. To mount a data container, please refer to the steps outlined in our [blog article](#).

To restore individual mail items, follow the steps below:

Step 1 - Locate the Exchange backup

1. Start **BackupAssist** and select the **Restore** tab

The *Restore* tab has a *Home* page and a *Tools* menu. The *Home* page is the default screen and the recommended starting point for performing a restore. The *Tools* menu should only be used by experienced administrators or users being assisted by technical support.

2. From the Restore **Home** page, select **Exchange**

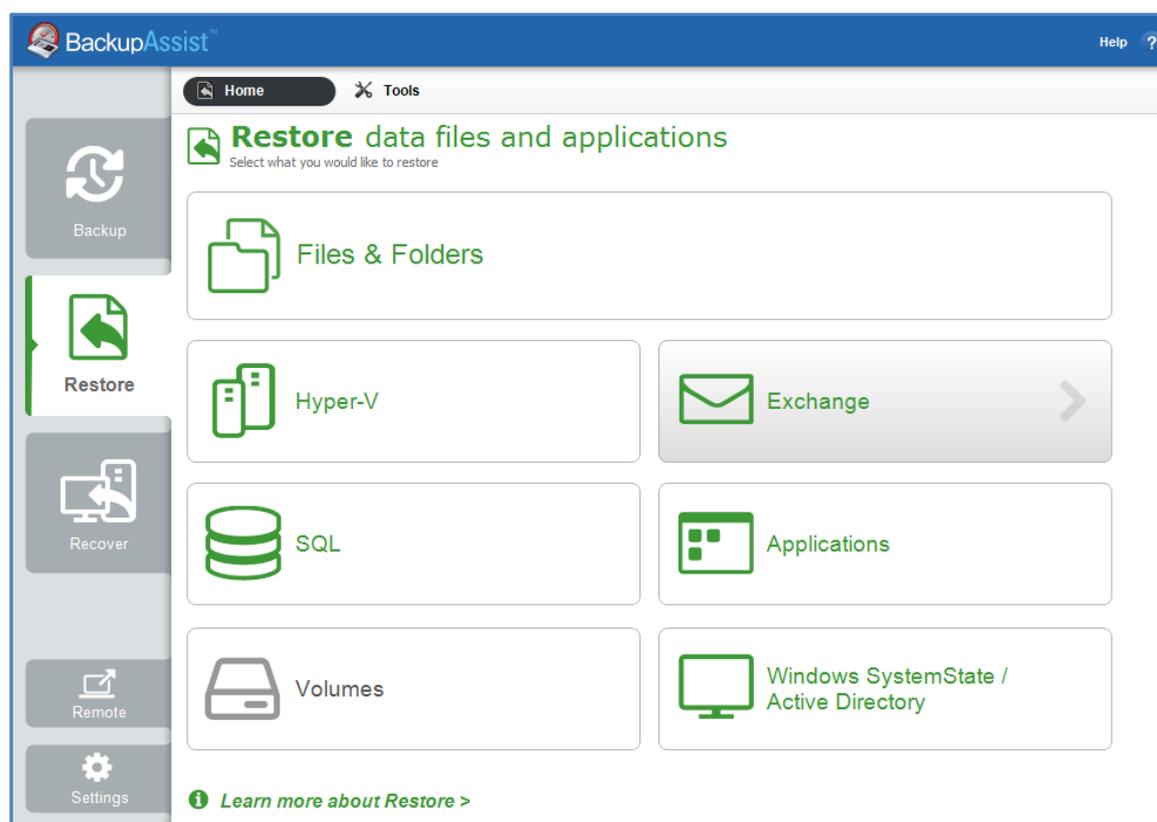


Figure 8: Restore tab - Home page

This will open the *Restore > Exchange* screen and display the restore options available.

- From the **Restore > Exchange** screen, select **Exchange Granular Restore (.edb)**

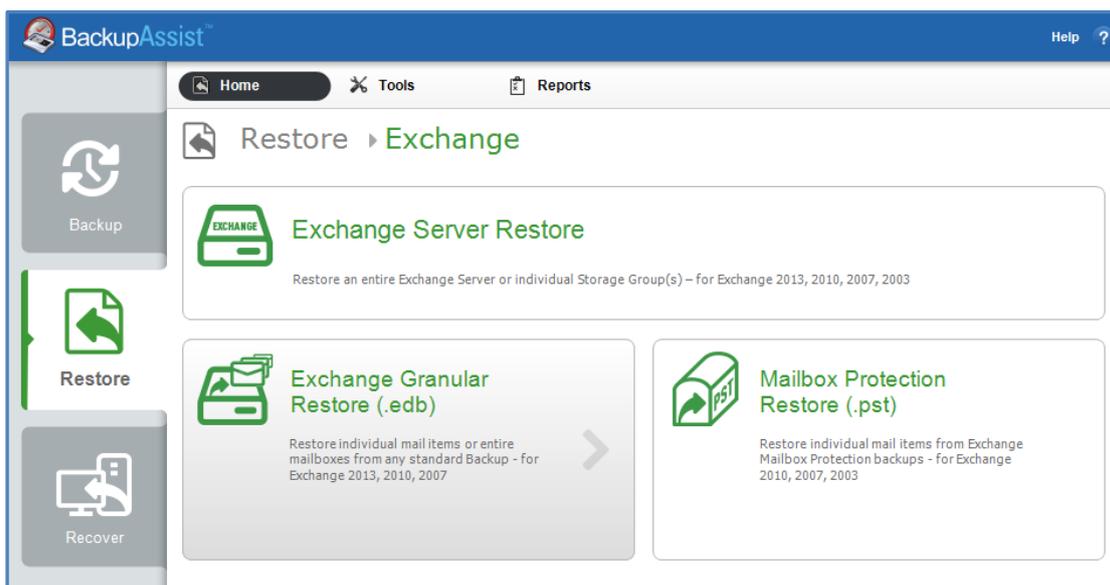


Figure 9: Restore Exchange page - selection screen

Backups made with BackupAssist 7.1 and later, that contain Exchange databases, will be displayed.

- Select the database file to restore from**

- The backups displayed can be filtered using the time period tabs.
- Selecting a backup will expand its contents and display each .edb database inside the backup.

When you select the required database file, the *Exchange Granular Restore* console will start and open the .edb file. A progress window will appear while the database is opening.

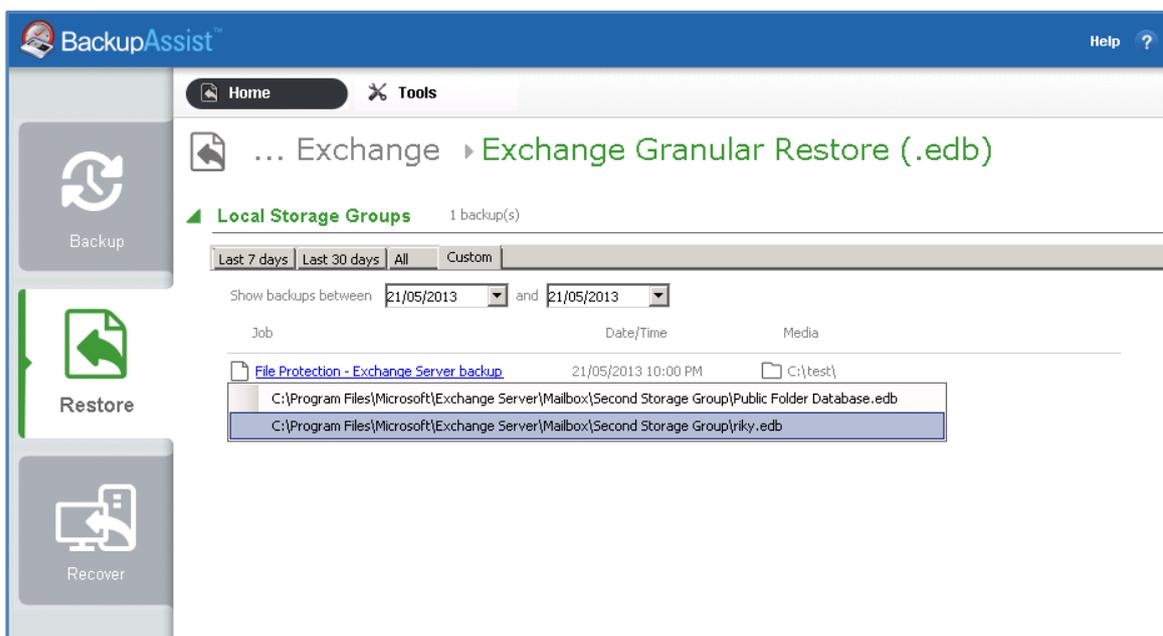


Figure 10: Exchange Restore - backup and database selection

Once the .edb file has been opened, you will be able to view the mail items inside it.

Step 2 - Locate the mail items

The *Exchange Granular Restore (EGR)* console has a *Browse mail tree* and a *Search field* to help locate, preview and select the mail items that you want to restore.

If you open EGR from the Restore > Tools menu, you can open a database using the *Open Exchange DB* button.

Console options

Both the *Browse* and *Search* functions can use the following options.

- **Display filter:** Press CTL+F and a Filter field will appear under the list of currently displayed mail items. Select the *Subject, From, To, Attachments, Created* or *All* filter, and enter the text to filter by.
- **Restore Deleted items:** *Display hidden deleted items*, is available in the *Options* menu, and selecting it will give access to previously deleted mail items. This is not mail from the delete items folder but mail items that are no longer present. The database will reload when a selection is made and the deleted items will have a flag to indicate that they are a deleted item.
 - Deleted items from Exchange Server 2007 are stored in their original folders.
 - Deleted items from Exchange 2010 and 2013 are stored in the folder *Deletions*. These items cannot be restored to live Exchange Server database. It is recommended that these items are exported to a PST file and then imported into the live Exchange Server.
- **Display time:** Select *Display time*, from the *Options* menu and select Local or GMT. This applies to the date in the properties tab of a mail item. The database will reload when the format is changed.

Using Browse

The Browse mail tree is displayed in the console's left pane. Browsing for the items you want to restore is ideal when you know their location.

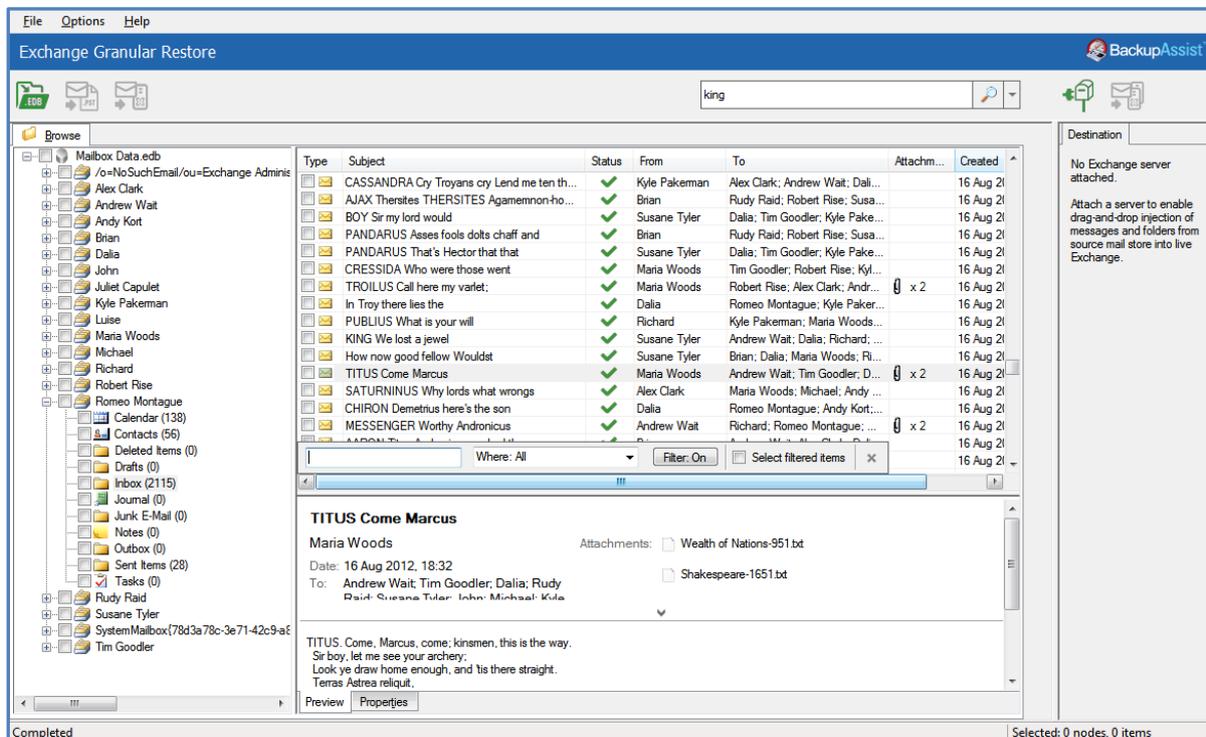


Figure 11: The Exchange Granular Restore console

- Selecting a folder will display the individual mail items inside it, on the pane to the right.
- Selecting a mail item will preview its contents in the pane below it.

Using Search

The Search field is ideal when the location of a mail item or the number of items to restore is unknown. When a keyword search is performed, a new tab with a browse tree will open containing only the mailboxes, folders and mail items that match your search criteria.

The search word must be a whole word.

To perform a simple Search, enter the search word into the field, click the search icon and the Search tab will open in the console. This *Search tab* will contain all items in the database that contains the word you entered.

To perform an advanced Search, select the arrow by the Search field to display the advanced search options. The *Search in* field will default to the entire database. To search inside specific mailboxes or folders, select the *Search in* field and use the dialogue window to select the required containers.

The following search options are available:

- *Has words*, searches for mail items that have words or phrases entered into the field.
- *Doesn't have*, searches for items that do not have words or phrases entered into the field.
- *Has attachments*, will search for items with attachments.
- *From*, will search for keywords in the *From:* field.
- *To*, will search for keywords in the *To:* field.
- *Subject*, will search for keywords in the *Subject:* field.
- *Date range*, can be used to set a specific date range. A beginning and end dates must be set.

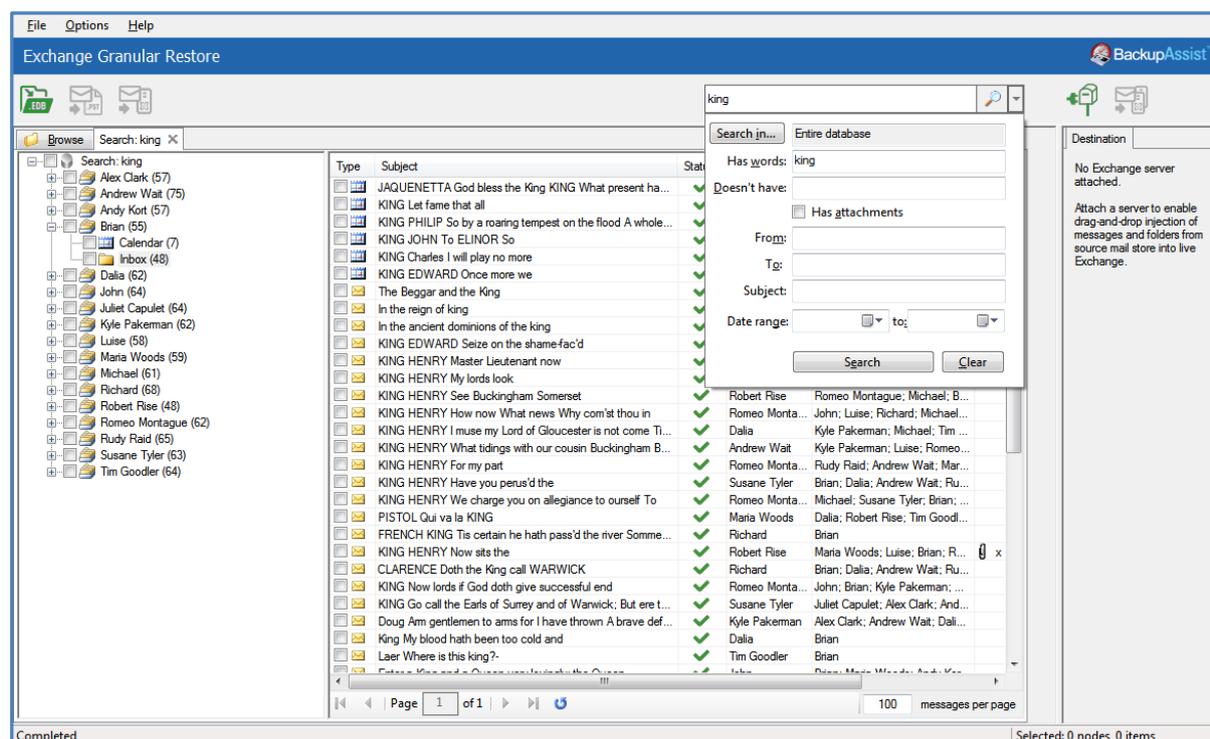


Figure 12: Exchange Granular Restore console - Search tab

If a search does not match any items, review your search parameters and run another search.

Once you have located the mail items that you want to restore, select them using the tick box. Once you have selected an item to restore, the restore type icons in the menu will become active.

Indexing Modes

Database indexing can be disabled or cancelled via the *Options* menu. If indexing is disabled, a database search will not be possible. Two indexing modes are supported: Light and Full.

- Light indexing (default): Limits the searchable information to the following fields: *From, To, Subject, Date range*. A *To* field with a long recipients list and message bodies will not be indexed.
- Full indexing: This mode will take longer to index as it allows a search across the entire database.

Step 3 - Perform the restore

Once you have located the required mail items, there are three ways they can be restored using Exchange Granular Restore: *Restore to original location*, *Restore to alternate location* and *Export to PST*.

Option 1: Restore to original location



This option will restore the selected mail items back into their respective mailboxes on the original Exchange Server.

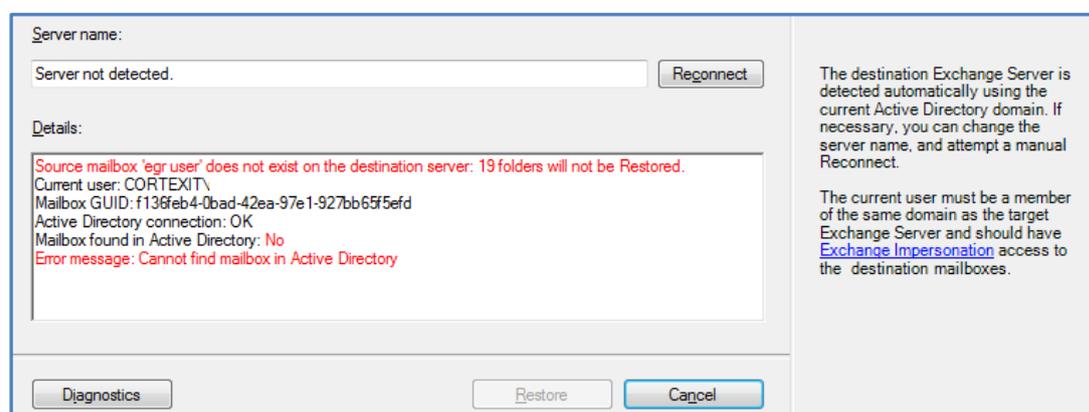
To perform the restore, follow the steps below:

- Select the **Restore to original location** button.

A *Restore to original location* window will open. The domain name of the server running Exchange will be automatically detected if you are on the same domain.

- If no Exchange Server was detected, manually fill in the *Server name* field and click *Reconnect*.

It is possible to restore data to someone else's mailbox using [Exchange Impersonation](#). To do this, the current user credentials must have Exchange Impersonation access to the destination mailbox.



- Select *Restore*, to begin the restore process.

A progress window will be displayed during the restore. The window shows the number of folders, messages and errors. You can enable and disable the progress window in the *Options* menu.

- The restore can be cancelled by clicking the *Cancel restore* button.
- The progress window can be reopened by clicking *Progress bar* on the status panel.
- Selected items will be copied into their original locations on the live Exchange Server. If selected items cannot be matched to a destination mailbox, they will not be restored.
- The destination Exchange Server is detected automatically using the current Active Directory domain. If necessary, you can change the server name and attempt a reconnect.

Option 2: Restore to alternate location



This option will restore the emails and mail items from the offline backup to a live Exchange database that is different to the one they were backed up from.

To perform the restore, follow the steps below:

- a) Select the **Connect to Exchange Mailbox** button.

The *Connect to Exchange Mailbox* button will open the connection dialog box, which is used to provide the Exchange Server name and the authentication details (User logon) for a specific mailbox on that server. This authentication process can be repeated for additional mailboxes.

The *Restore to alternate location* button will become active when a connection has been made.

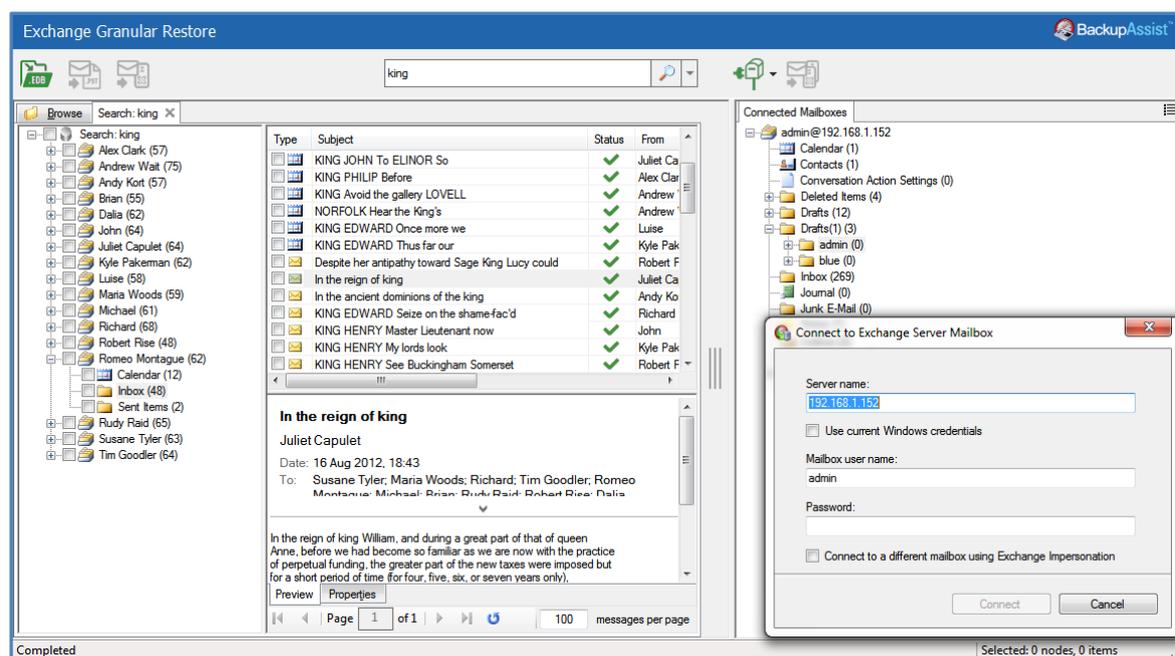


Figure 13: Restore to alternate location – connection authentication

Enter the following details into the connection dialog box:

- Server name - Domain name Exchange Server or IP address
- Mailbox user name - This will identify, authenticate and open the applicable mailbox.
- Password- The password for the applicable mailbox.

If *Use current Windows credentials* is selected, the existing user's Windows password will be used.

If [Exchange Impersonation](#) is selected, enter the SMTP address of the mailbox that you want to connect to. Exchange impersonation must also be configured on the Exchange Server.

Once the connection has been made, the mailbox you have authenticated to will appear as a mailbox tree in a new pane called *Connected Mailboxes*. You can open a preview pane for the destination mailbox tree by selecting the *Show item list and preview* icon (CTL+R), to the right of the *Connected Mailboxes* pane.

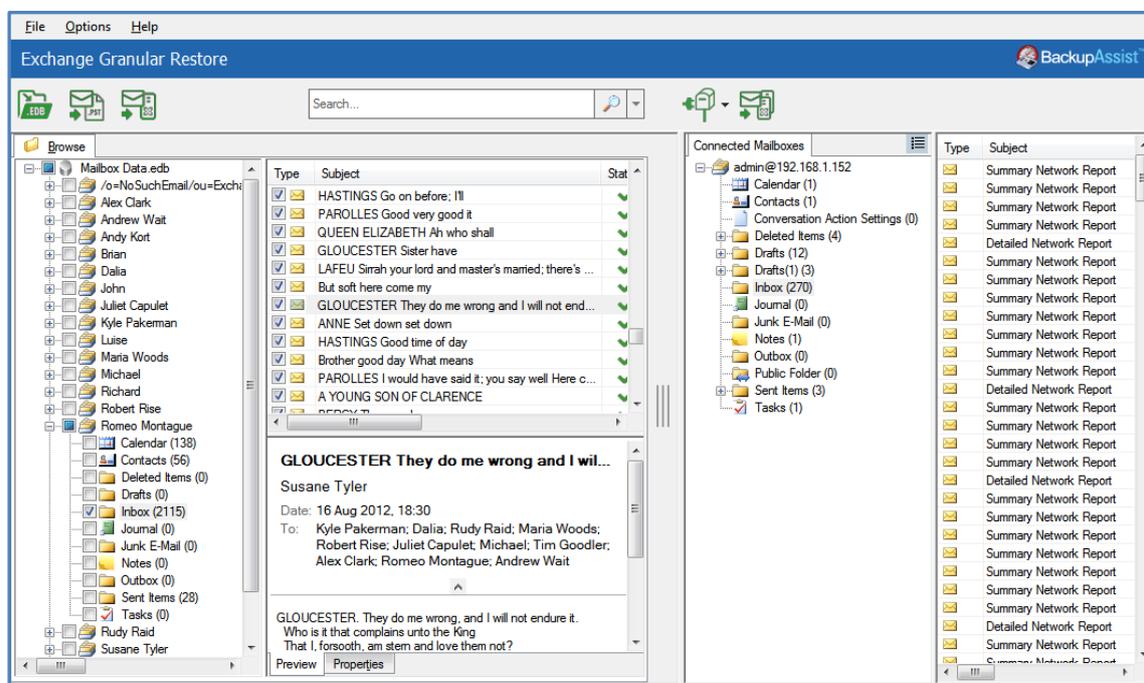
- b) **Restore mail items to an alternate location**

There are two ways to restore mail items to the alternate location: drag and drop and the *Restore to alternate location* button.

Drag and drop

Drag and drop mail items from the EDB database backup, into the live Exchange mailbox that you have connected to.

- The hierarchy of the data being dragged will be recreated inside the destination folder.
- You can create a new folder in the live mailbox by right clicking the mailbox or a folder. Note, you cannot delete or rename a folder once it has been created.



Restore to alternate location button

Click the check-box next to items that you want to restore and select the *Restore to alternate location* button. A dialog box will open and allow you to select a destination folder on one of the connected mailboxes. Make your destination selection and select OK to begin the restore

- The data hierarchy will be restored automatically.
- The root of hierarchy is the closest common parent item.

Source mail items and destination folder compatibility

Not all types of mail items can be restore to all types of destinations folders. The following table shows the compatibility matrix of source mail item types and destination directories.

Item type	*Mail folder	Journals	Notes	Contacts	Calendar	Tasks
Message	Y	Y	Y	Y	Y	Y
Journal	Y	Y	Y	Y	Y	Y
Sticky Note	Y	Y	Y	Y	Y	Y
Contact	N	N	N	Y	N	N
Calendar	N	N	N	N	Y	N
Task	N	N	N	N	N	Y

* The *Mail folder* includes Deleted Items, Drafts, Inbox, Junk, Outbox and Sent.

If some or all of the selected items cannot be restored (using drag and drop or clicking the *Restore to alternate location* button) to the destination folder, then an error message will be displayed.

Option 3: Export to PST



Export to PST will save your selected data in a PST file, which can be opened by Outlook to access the mail items.

To perform the export, follow the steps below:

a) **Confirm the Personal Storage Table (PST) format**

You can choose *Unicode* or *ANSI* encoding for the PST output file using the *Options* menu.

The *Exchange Granular Restore* console exports each mailbox into a separate .pst file named: "Restore NNN <Mailbox Name>[VVV]. pst", where NNN is the current recovery session identifier and VVV is the volume number, in case the PST file has to be written in more than one volume.

With large exports, there can be more than one PST file. Additional files are created automatically when the file size limit is reached. The size limit depends on the output file encoding.

- For ANSI PST files, the size limit is 1 GB.
- For Unicode PST files, the size limit is 10 GB.
- A maximum of 15,000 messages can be restored into the PST file.
- When this limit is reached, an additional PST file is created.

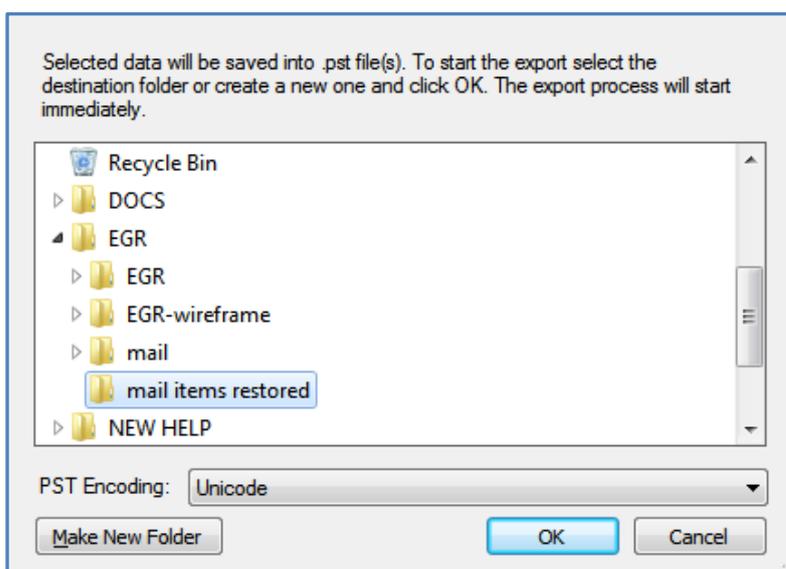
b) **Select the , *Export to PST* button**

This button will become active once the mail items have been selected.

c) **Select the destination.**

You will be asked to select a folder or create a new folder. After selecting the new or existing folder, the export will begin.

You will be shown a progress window during the export. The window shows the number of saved mailboxes, folders and messages. The export can be cancelled by clicking the *Stop Export* button. If you close the progress window, it can be opened again by clicking the status panel's progress bar.



The items selected (even if you only selected one item) will be exported as a PST file.

d) **Open the exported mail items in Outlook.**

1. Click *File > Open* and choose *Open Outlook Data File*.
2. Browse to the PST file that was exported, then select it and click *OK*.
3. The PST file will appear in Outlook as a container.

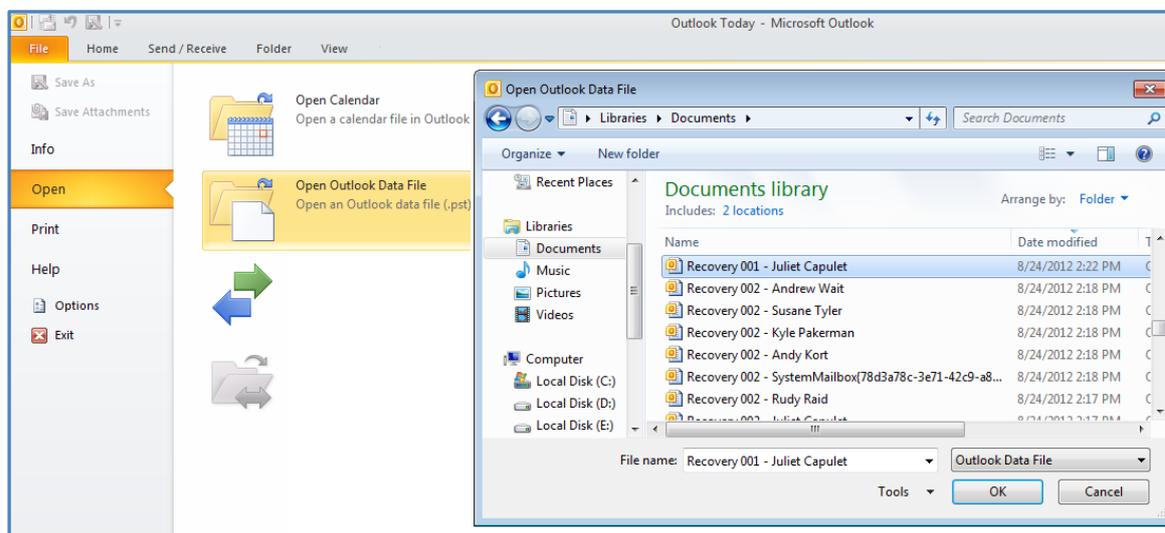


Figure 14: Opening an exported PST file in outlook

e) **Restore the exported items to the Exchange Server.**

Items extracted from an offline Exchange mail store can be restored to a live server. Make sure you have Microsoft Outlook and access to the mailbox that you want to restore the mail items into.

1. Open the PST file that contains the exported mail items.
2. Open the mailbox that you need to import the data into.
3. Drag-and-drop the item them back into their original folders. They will be automatically synchronized with the live Exchange Server database.

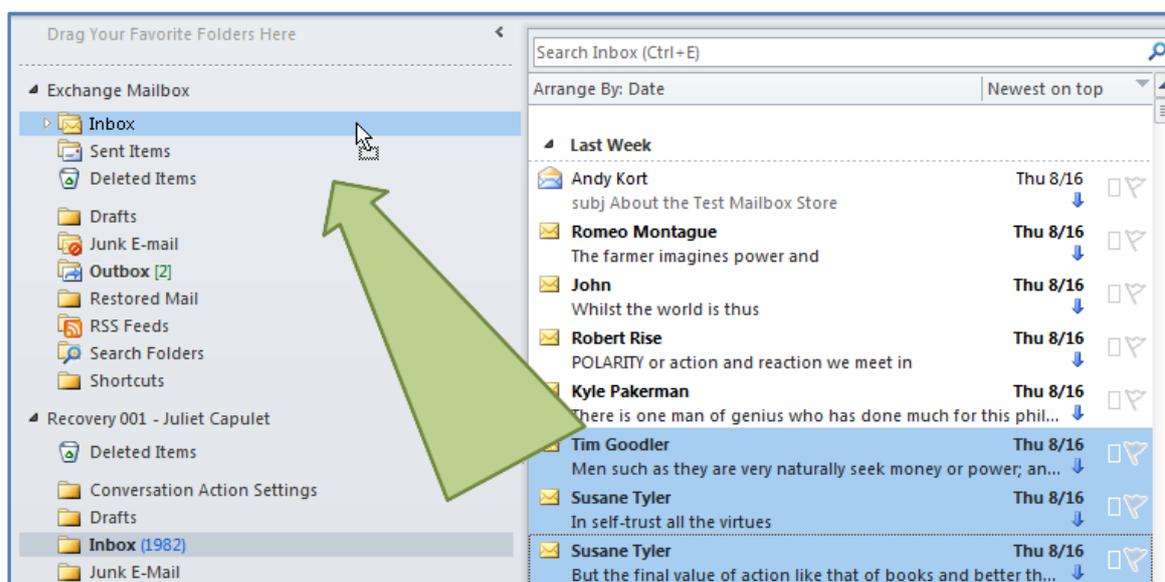


Figure 15: Restoring a PST file to an Exchange Server.

9. Exchange backups on Windows Server 2003

Windows Server 2003, SBS 2003 and Windows XP use NTBackup. This means that some Exchange Server backup settings must be manually enabled. For this reason, the process of creating an Exchange Server backup is different for a Windows 2003 Server.

Creating a System Protection (NTBackup) job

Launch BackupAssist and follow the steps outlined below:

1. Select the **Backup** tab, and click **Create a new backup Job**
2. Select **System Protection**: This will create an NTBackup and not an image backup.
3. **Create the backup job**: Continue configuring the back job, using the [Creating an Exchange backup](#) section for guidance.

Adding the Exchange Server to your backup selections

To back up the Information Store using NTBackup you must add it to the Exchange Server using the *Manage* menu. Once the server has been added:

1. Select the BackupAssist, *Backup tab*.
2. Select *Manage* from the top menu. A list of all backup jobs will be displayed.
3. Select the backup job, and click *Edit*.
4. Select *Exchange Servers*, from the menu on the left.
5. The Exchange Server selection screen will appear.
 - a. *Specify a Backup user identity*. Select the link and enter the account you will use to backup the Exchange Server.
 - b. *Add Exchange Server*. The servers that your Backup user identity can access will appear in a popup window. Tick the Exchange Server that you backed up and select *Add*.
6. Check *Backup storage groups* for each Exchange Server you want to back up.
7. Now select which storage groups to back up on the Exchange Server:
 - Check *Select all storage groups* if you wish to back up all storage groups and any future storage groups that are created (recommended). You can exclude specific storage groups if required by unchecking them, but all future storage groups created will still be backed up.
 - Or, leave *Select all storage groups* unchecked and individually check each storage group to back up. No storage groups created in the future will be backed up, only those selected.
8. Click *Apply changes* when you have finished making your selections.

Restoring Exchange with NTBackup

The following process explains how to restore a Windows Server 2003 or XP, Exchange Server backup. This restore process uses NTBackup and consists of the follow steps:

Dismounting Exchange Server stores

Before restoring the Exchange Server database, you need to dismount the stores you are restoring to:

1. Launch the *Exchange System Manager* from the *Start menu*.
2. Expand the *Servers* tree, and locate the appropriate server and storage group.
3. Right-click each store individually (typically *Mailbox Store* and *Public Folder Store*) and select *Dismount Store*.
4. Your stores should have an icon with a red arrow to indicate that they have been dismounted.

Performing the Exchange restore using NTBackup

Run Windows Backup (NTBackup) to restore your Exchange Server database:

1. Go to *Start Menu > All Programs > Accessories > System Tools > Backup*.
2. If Windows Backup launches in *Wizard Mode* click the *Advanced Mode* link.
3. Now click the *Restore and manage media* tab.
4. Locate the backup file or tape you wish to restore from and expand this tree until you locate the *Exchange Server Information Store*. If the backup required is not listed click *Tools > Catalog backup file* to locate the appropriate backup.
5. Select each storage group you wish to restore.
6. Click *Start Restore*. You will be prompted with several choices:
 - Fill in the *Restore To* field with the name of the local machine.
 - The *Temporary location for log and patch files* should be any directory with enough free space for the restore. Windows Backup will create the directory if it does not already exist.
 - If you are restoring a full backup of Exchange, ensure that the last two options are checked.
7. Click *OK* to begin the restore of your Exchange Server.
8. Once the restore is complete, a confirmation will be displayed in the *Restore Progress* window.

Click *Report* to view the logs, which will show the results of the Exchange Server restore operation. If the logs do not indicate errors, it is recommended that you reboot the server. Your Exchange information store should then be restored, mounted and operational.

10. Exchange Server backup management



Once you have created a backup job, you can modify the settings and access advanced configuration options using the *Manage* menu.

To access the backup management screen:

1. Select the BackupAssist, **Backup tab**.
2. Select **Manage** from the top menu. A list of all backup jobs will be displayed.
3. Select the backup job you want to modify, and select **Edit**.
4. Select the required configuration item on the left. Key configurations are described below.

To learn more about the backup management options, see the [Backup tab whitepaper](#).

Manually running a backup job

All new and modified backup jobs should be manually run to ensure they work as intended.

1. Select the backup job, and select *Run*.
2. You will be prompted to *Rerun a past backup* or to *Run a future backup now*.
3. When the backup job starts, the screen will change to the *Monitor* view.
4. Once the backup has been completed, select the *Report* button and review the results.

When a System Protection, File Protection or File Archiving job runs, BackupAssist will automatically perform a consistency check on your Exchange Server and truncate log files to correctly back up the Exchange Information Store. If, however, the VSS backup mode is set to 'Copy' in the open files tab, the Exchange logs will not be truncated.

Scheduling

Selecting *Scheduling* will display the **Scheduling options**. You can use this screen to change the default time and days of your scheme's daily backups. If you selected a scheme with archive backups (e.g. weekly, monthly), you can specify when each archive backup will run. Some backup types will have additional configuration options. The current scheme is shown, along with two pop-up menus: *Select a new schedule* and *Customize schedule*.

Select a new Schedule: This will display the pre-configured backup schemes that you chose from during the creation of your backup job. You can select a different scheme using this option.

Customize schedule: This selection can be used to modify each backup within your current schedule. The customizations available will depend on the type of backup and the type of backup media used.

For additional information on *Scheduling*, please refer to the whitepaper for the type of backup you are using (e.g. System Protection), and the [Backup tab whitepaper](#).

Examining backup logs

Once the backup completes, you should examine the backup report to make sure your Exchange Server was backed up successfully.

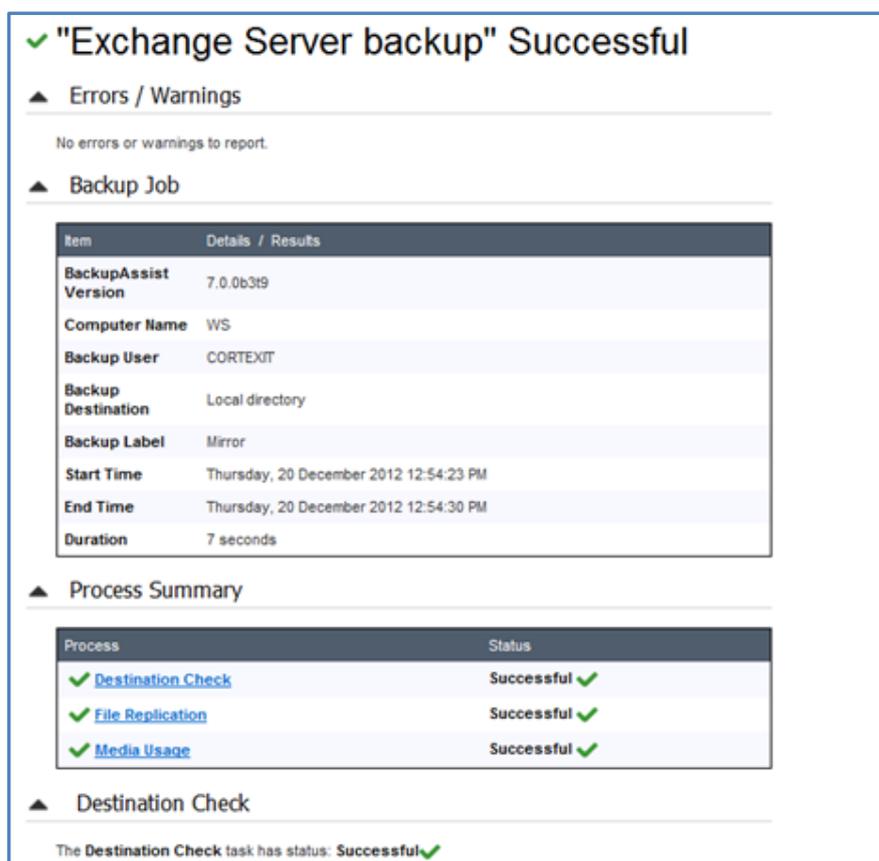
1. Select *Reports* from the Backup tab menu and double-click the applicable report in the list.

OR

Select the *Report* button displayed on the *Monitor* screen once the backup has completed.

2. Once the report has been opened, scroll down to the Exchange Server backup report section.

For VSS application backup jobs, the report will include a VSS application backup report. When backing up Exchange databases using the VSS writers option, a section within the backup report will outline whether BackupAssist was able to backup the databases consistently. Any errors that relate to the Exchange database integrity check will be listed in this section of the report.



✓ "Exchange Server backup" Successful

▲ Errors / Warnings

No errors or warnings to report.

▲ Backup Job

Item	Details / Results
BackupAssist Version	7.0.0b319
Computer Name	WS
Backup User	CORTEXT
Backup Destination	Local directory
Backup Label	Mirror
Start Time	Thursday, 20 December 2012 12:54:23 PM
End Time	Thursday, 20 December 2012 12:54:30 PM
Duration	7 seconds

▲ Process Summary

Process	Status
✓ Destination Check	Successful ✓
✓ File Replication	Successful ✓
✓ Media Usage	Successful ✓

▲ Destination Check

The Destination Check task has status: Successful ✓

Figure 16: Exchange Server backup report

The Exchange System Manager will also indicate when the last full backup occurred on Exchange. This can be viewed in the general tab of the mailbox data properties.

Windows Server 2003 backup logs

For NTBackup jobs, BackupAssist backs up your Exchange Server during the second phase of the backup process, after the selected data files and Windows SystemState (both optional) have been backed up. (This helps to eliminate an issue with NTBackup where a backup of both the Windows SystemState and Exchange Server information store in the same pass fails.) For NTBackup jobs (backups run on Microsoft Server 2003) the report will include the backup and verify status of each storage group selected.

Files and applications

The Volume Shadow Copy Service (VSS) is a Microsoft Service that allows data to be backed up consistently while the data is in use. BackupAssist is a VSS-aware backup client, so it can backup application data using the VSS copy. BackupAssist will automatically detect *locally* running VSS applications and list them for selection during the **Destination** step of the backup job creation.

If your backup job contains a Hyper-V guest with an Exchange Server, the authentication information for the guest should be entered into the **Exchange VM Detection** tab.

Select the **File and applications** > **Exchange VM Detection** tab.

With these credentials, BackupAssist can detect what guests have an Exchange Server, and list the EDB file available for each guest when you perform a restore using the Exchange Granular Restore console

The Hyper-V process is automated but the restore requires both the *Exchange Granular Restore Add-on and the Hyper-V Granular Restore Add-on* licenses.

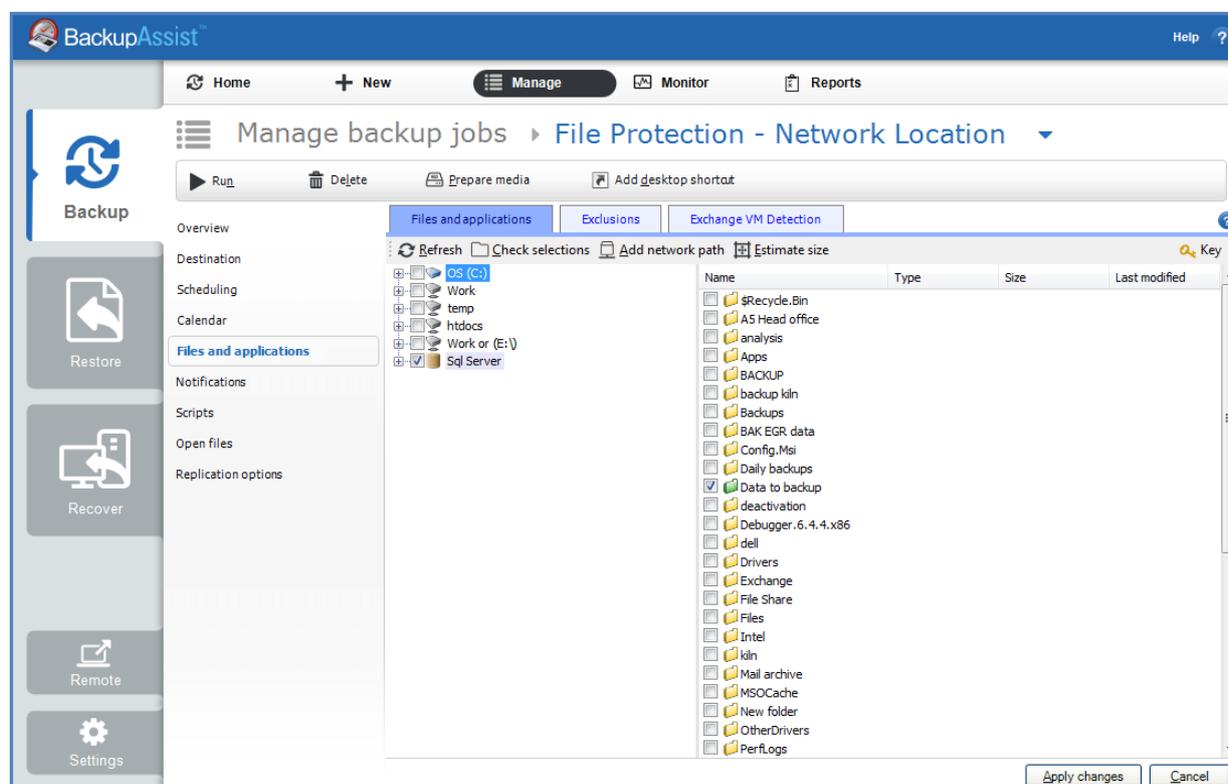


Figure 17: Manage backup jobs screen – File and applications option

11. Support and Resources

Contacting Technical Support

Should you have any questions regarding either BackupAssist or File Protection, please email support@backupassist.com and we will respond to you as soon as possible.

Similarly, if you have any suggestions for additional functionality in BackupAssist, or new products or add-ons, please also forward your feedback to support@backupassist.com

Additional Resources

Microsoft TechNet has some detailed articles on Exchange. For more information visit these sites:

Resource	Web address
Exchange 2003 Disaster Recovery	http://technet.microsoft.com/en-us/library/bb125070.aspx
Exchange 2003 Admin Guide	http://www.microsoft.com/downloads/details.aspx?FamilyId=98E45481-1458-4809-97D6-50D8AEEDB8A1&displaylang=en
Exchange Server Resources	http://technet.microsoft.com/en-us/exchange/default.aspx

BackupAssist disclaims any responsibility for the content or accuracy of these articles.

Learn more – The Welcome Screen

Each tab in BackupAssist includes a “Learn More” link on the tab’s **Home** page.

For example, selecting the **Learn more about Backup** link will open the **Welcome Screen** with the Backup introduction selected. This screen provides an overview of the tab’s functions and features, and links to documentation and resources.

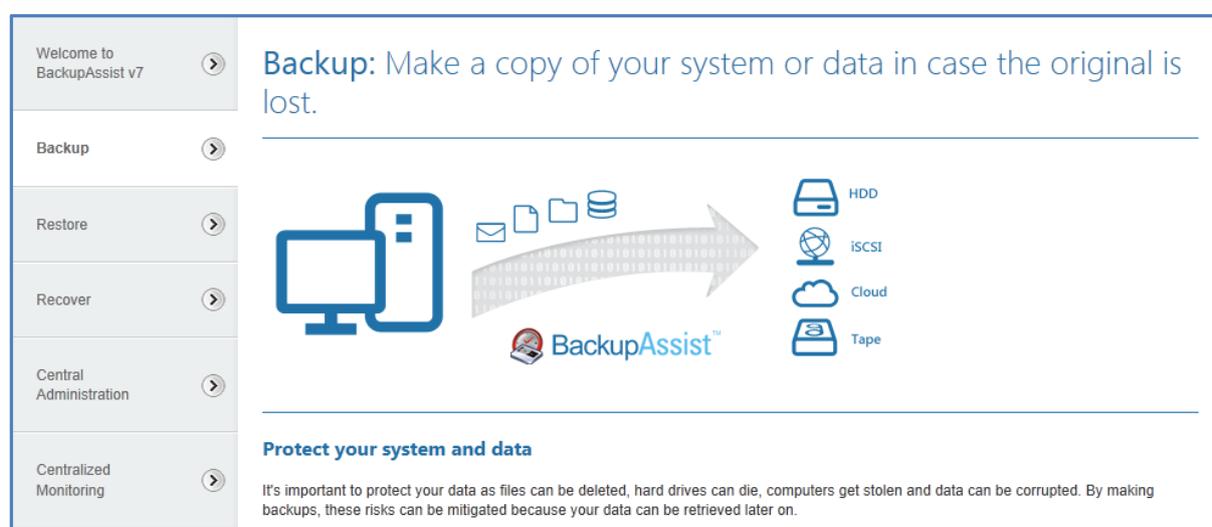


Figure 18: Backup tab – Welcome Screen