

Exchange Brick-level Backup and Restore



WHITEPAPER

BackupAssist Version 4
Exchange Mailbox Add-on
www.BackupAssist.com

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1. Introduction and Overview

1.1 What does the Exchange Mailbox Add-on do?

The BackupAssist Exchange Mailbox Add-on is used to achieve brick-level backups of your Microsoft Exchange Server. The add-on extracts Exchange Server mail data to separate .PST files, which can be read using Microsoft Outlook, or re-imported to your Exchange Server to retrieve mail items. The extracted .PST files can be copied to your intended backup device: tape, CD/DVD, hard disk, and so on, for redundancy and permanent storage offsite.

A separate .PST file is created for each Exchange user’s mailbox, making for simple and rapid restoration of user’s individual or group emails, calendars, tasks, notes, contacts or entire mailboxes. As mailboxes are stored in Microsoft’s PST format, they can be easily opened with Outlook and are not locked into any vendor’s proprietary formats.

The add-on provides automatic grouping of emails by date, allowing you to sort your mail into separate folders by year, quarter, or month. This is especially useful for compliance and legal scenarios where you may be required to produce separate archives of your mail data for specific time periods.

The best part of the Exchange Mailbox Add-on? It’s all automated for you. Input your mail server settings, configure a few simple options, perform an initial export of your mail data and BackupAssist will take care of the rest, automatically appending incremental backups of new mail data for each day specified within your backup schedule.

1.2 Who needs the Exchange Mailbox Add-on?

The following table describes where the add-on is best utilized:

Where to use the add-on	Where not to use the add-on
<ul style="list-style-type: none"> To restore individual mailbox items that have been accidentally changed or deleted. To bulk-restore messages, with filtering options such as date, mailbox, message subject, etc. To retain a historical library of your emails, which can also be stored offsite or viewed offline. 	<ul style="list-style-type: none"> To restore a complete exchange server. Instead, restore the entire Information Store from your main Exchange backup (see the Exchange Server Backup and Restore whitepaper on our website). To restore public folders – only private mailboxes are backed up using the Exchange Mailbox add-on.
<p>Supported platforms for this add-on: Microsoft Exchange Server 2000 and 2003.</p>	










1.3 Comparison matrix

The following table highlights the different configurations of BackupAssist that are available:

	BackupAssist	BackupAssist + Exchange Mailbox add-on
Information Store Backup	✓	✓
Private Mailbox	✗	✓
	<p>Restore Options</p> <ul style="list-style-type: none"> Fully restore your Exchange Server 	<p>Restore Options</p> <ul style="list-style-type: none"> Individual item restore Forensic archiving

1.4 Key features and benefits

The following table highlights the key features and benefits of the Exchange Mailbox add-on:

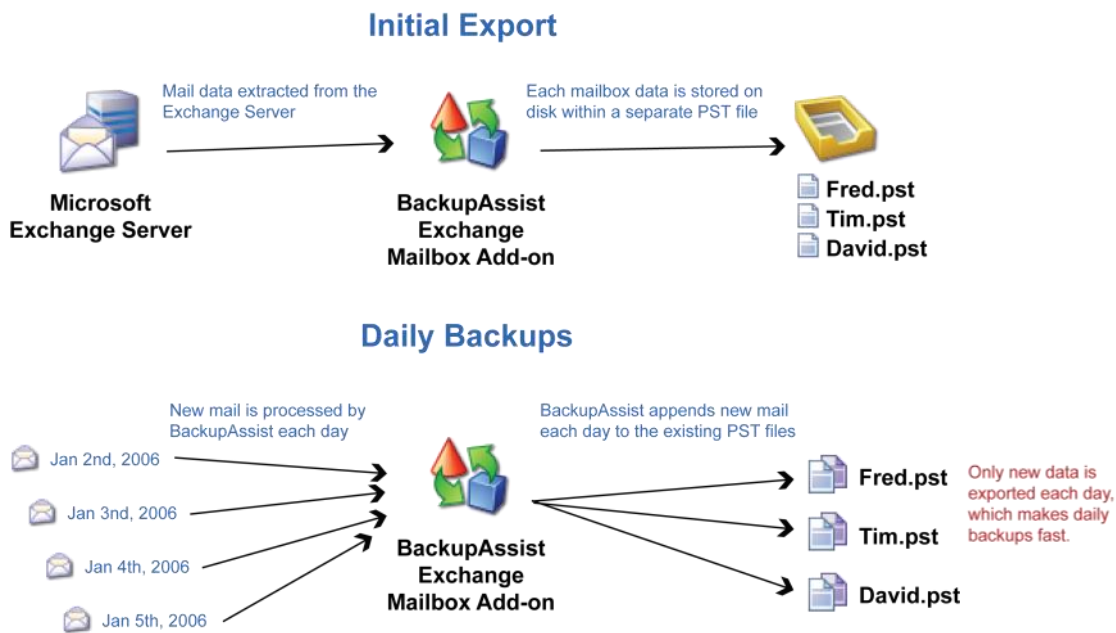
Feature	Benefits
 Brick-level backup of Exchange data	Achieve automated brick-level backup of Exchange data to backup user's individual mailboxes.
 Smarter implementation makes daily backups fast	After an initial export of existing mail data to separate PST files (one per mailbox), BackupAssist will automatically schedule daily exports that intelligently merge or append only new mail data into these files. This is similar to a daily incremental and is much faster than traditional backup methods.
 Simple and rapid restoration of Exchange data	A separate .PST file is created for each Exchange user's mailbox, making for simple and rapid restoration of user's individual or group emails, calendars, tasks, notes, contacts or entire mailboxes.
 No proprietary formats	PST is a well recognized file format, and users can open the files easily in Outlook. Email data is not locked within a vendors' proprietary format.
 Easy grouping and storage of emails	PST files of mail data can be easily stored within separate folders and sorted by either year, quarter or month. This is useful for compliance and in legal scenarios where forensic archiving is required.
 Extra protection for deleted items	<p>Mailbox backups go beyond the standard 'snapshot' backup. Each separate PST file is the cumulative total of all emails sent and received over a given time period.</p> <p>This prevents problems arising when a user discovers they deleted an email weeks or even months later.</p>
 External storage of mail data	Exchange mailbox PST files can be backed up to External Storage media such as tape, optical, or hard disk.
 Archive mail data to writeable media or FTP	PST files can be written to CD/DVDs or transferred to remote servers, such as a FTP server or NAS device for permanent offsite storage.
 A range of recovery options	<ul style="list-style-type: none"> • Automated recovery: administrators can use the Microsoft Mailbox Merge Wizard (ExMerge) to re-import deleted emails with powerful filters (by date, attachment, subject, and so on). • Manual recovery: individual users can open PST files in Outlook and drag-and-drop items back into the relevant folders.

2. How the Exchange Mailbox Add-on Works

2.1 How the export of mail data is achieved

The Exchange Mailbox add-on uses the Microsoft Mailbox Merge Wizard, ExMerge, to perform brick-level backups of users' mailboxes. We recommend that you perform an initial manual export of your selected mailboxes (see **section 3.4**). After this export, BackupAssist will merge new mail data to existing PST files according to your backup schedule.

The below diagram provides an overview of how the add-on works:



2.2 The grouping of mailbox data

A **grouping method** can be selected to determine how your mail data is stored on disk, with different options to store mail data within separate folders according to different time periods. PST files can be grouped by either month, quarter, year, or simply stored as a single set. The grouping method option makes it easier to locate mail data from specific dates.

The following diagram illustrates how mail data is stored:



2.3 More than just a simple 'snapshot' backup of mailboxes

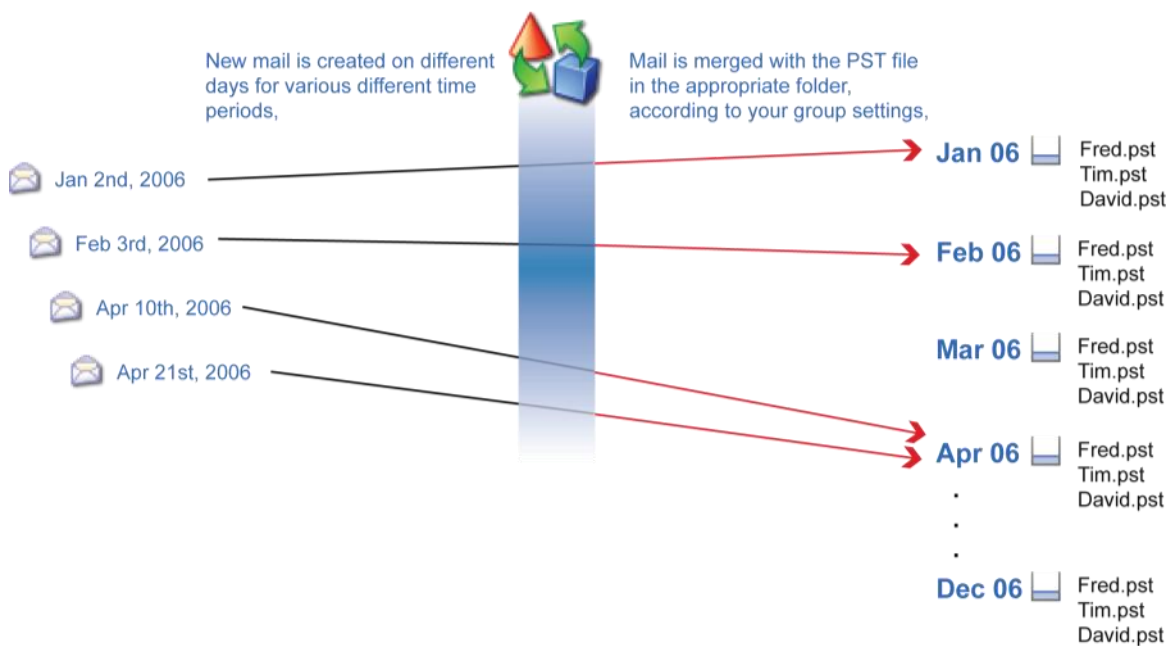
The BackupAssist mailbox backup process goes beyond a standard 'snapshot' type backup. Each separate PST file for each user is the cumulative total of all emails sent or received over a given time period, and **not** just a 'snapshot' of each individual user's mailbox at particular point in time. Performing the backup of Exchange mailbox data in this manner prevents problems when a user requires an email that they deleted weeks or months ago, but only has a recent backup of their mailbox that does not include the deleted item.

For example, given these events:

1. An email is received on the 1st of May 2006.
2. The user deletes this email on the 3rd of May 2006.
3. On the 5th of June 2005, the user needs to retrieve this previously deleted email.

With BackupAssist's Exchange Mailbox add-on, the original email would be backed up in the relevant year, quarter, month, or single folder, depending on your group settings, as a separate PST file on the night of the 1st of May. Even though the user deleted the email on the 3rd of May, the PST file would still contain the original message. When you need to recover the email, you can open the relevant user's PST file and the original email will be available.

The following diagram demonstrates how the sorting process works, assuming that the mail data is being sorted by month:



2.4 Benefits over standard ExMerge scripts

The Exchange Mailbox add-on offers a number of key benefits over using standard Microsoft ExMerge scripts to extract Exchange mail data:

- ✓ BackupAssist will manage the mailbox security rights, so no further administrative work is required.
- ✓ BackupAssist will automate the export process in accordance to your grouping settings, automatically merging new emails into the appropriate PST file(s).
- ✓ When you choose to backup all mailboxes, any new users' mailboxes will be backed up without you needing to update your settings or scripts manually.
- ✓ Disabled or hidden Exchange users can be deselected so that they are never backed up.

3. Usage Directions

3.1 Requirements

To backup individual mailboxes using BackupAssist and the Exchange Mailbox Add-on you need the following:

- BackupAssist v4 or later
- Windows 2000, XP or 2003 Server (or any SBS version)
- Microsoft Exchange Server 2000, 2003, or 2007†
- Exchange System Management Tools and ExMerge (see **section 3.2** for instructions).

†Conditions and setup for Exchange 2007 mailbox backup are specified in the following developer blog article on our website: <http://www.backupassist.com/blog/dev/exchange-mailbox-backups-on-exchange-2007/>

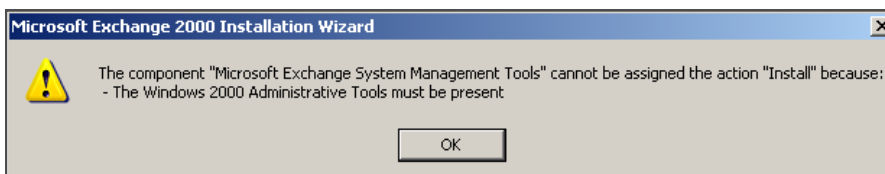
3.2 Preparation: installing the Exchange System Tools and ExMerge

The BackupAssist Exchange Mailbox add-on requires the presence of two Microsoft applications in order to extract mail data from your Exchange Server: (1) the Exchange System Management Tools and (2) the Microsoft Mailbox Merge Wizard. If you attempt to enable the export of individual mailboxes in BackupAssist before installing these prerequisites, you will receive a prompt indicating which prerequisites are required.

3.2.1 Installing the Exchange Server System Management Tools (for non-Exchange Servers)

Note: if you have installed BackupAssist on the actual Exchange Server itself, this step is not required.

1. Insert your Exchange Server installation CD and run the setup program.
2. This will identify any prerequisites, including **adminpak.msi**. If you receive a prompt similar to the following you will need to install the Windows Administrative Tools:



More information here:

- Windows 2000: <http://support.microsoft.com/kb/216999/EN-US/>
- Windows 2003: <http://www.microsoft.com/downloads/details.aspx?FamilyID=C16AE515-C8F4-47EF-A1E4-A8DCBACFF8E3&displaylang=en>

3. Now install the **Microsoft Exchange System Management Tools** by choosing **Install** to the left of the component named **Microsoft Exchange System Management Tools**.

Note: you may need to set the **Microsoft Exchange** option to **Custom** first before you are able to select the **System Management Tools** for installation.

3.2.2 Installing the Microsoft Mailbox Merge Wizard (ExMerge)

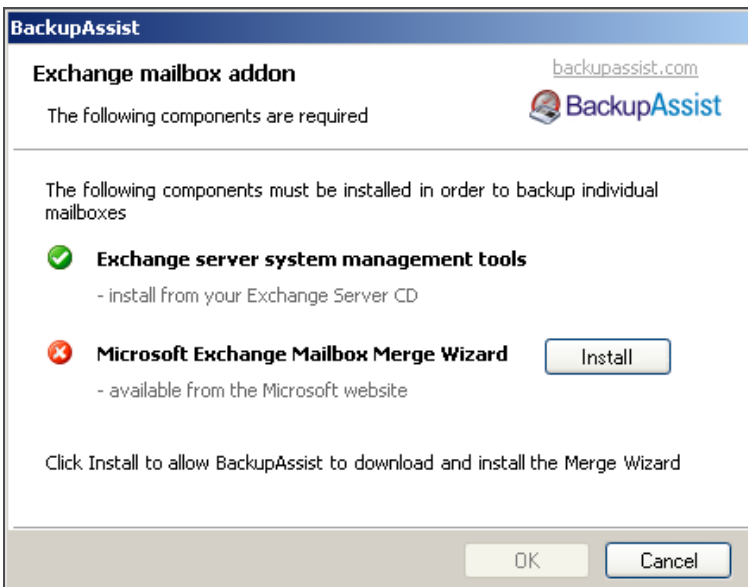
Once you have installed the Exchange System Management Tools, you need to install ExMerge. There are two different methods available for achieving this:

Method 1: Automatic installation

BackupAssist can automatically install ExMerge for you. This method is recommended. To perform the install you will first need to add your Exchange Server to the Exchange selections window for your job. See **section 3.3** on how to create a BackupAssist job and add your Exchange Server as a backup selection.

To install ExMerge automatically:

1. In the Exchange selections window check **Backup individual mailboxes** and BackupAssist will detect whether ExMerge is installed.
2. Click **Install** to the right of **Microsoft Exchange Mailbox Merge Wizard** and BackupAssist will download and install ExMerge:



Method 2: Manual installation

You can also install ExMerge manually:

1. Download the executable here: <http://download.microsoft.com/download/d/a/d/dadf18f9-bb61-4cac-8849-5017412a8163/Exmerge.EXE> and select **Run** rather than **Save As**.
2. Choose a temporary directory when prompted (the files will be unzipped here temporarily).
3. Copy these extracted files to your Exchange Server bin directory (typically C:\Program Files\Exchsrvr\bin).

Please note: do not simply copy the downloaded **Exmerge.exe** file to your Exchange Server bin directory because it is a self-extracting ZIP file. You must extract the contents of the ZIP file, and then copy the contents into the Exchange Server bin directory.

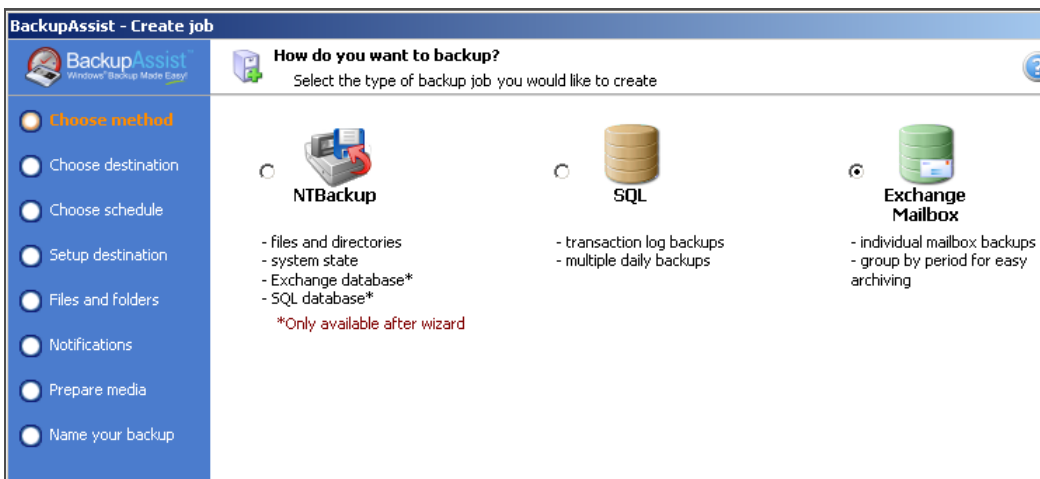
3.3 Creating a job to backup Exchange mailboxes

BackupAssist provides two different **Backup Methods** for backing up Exchange mailboxes. Jobs created using the **NTBackup Method** can backup both Exchange Server storage groups as well as Exchange mailboxes to separate PST files. Jobs created using the **Exchange Mailbox Method** are designed to specifically write mailbox data to PST files on disk only. You would typically create several backup jobs with this method and schedule each one to run at different intervals during the day. This setup would give you multiple copies of your mailbox data throughout the day that can be easily restored from. Extracted .PST files using this method can also be copied to your intended backup device (tape, CD/DVD, hard disk, etc) by setting up an additional NTBackup Method job.

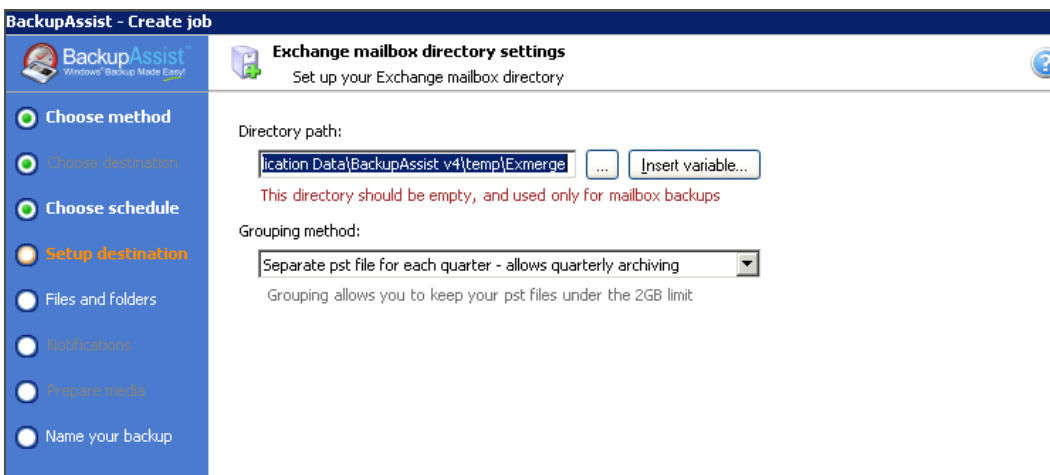
You can read more about Backup Methods in the BackupAssist help file by going to **Help > Help...** in the menu.

The following steps outline how to create an Exchange Mailbox Method backup job:

1. Select **File** in the menu of BackupAssist and choose **New backup job**.
2. Select **Exchange Mailbox** and click **Next**.

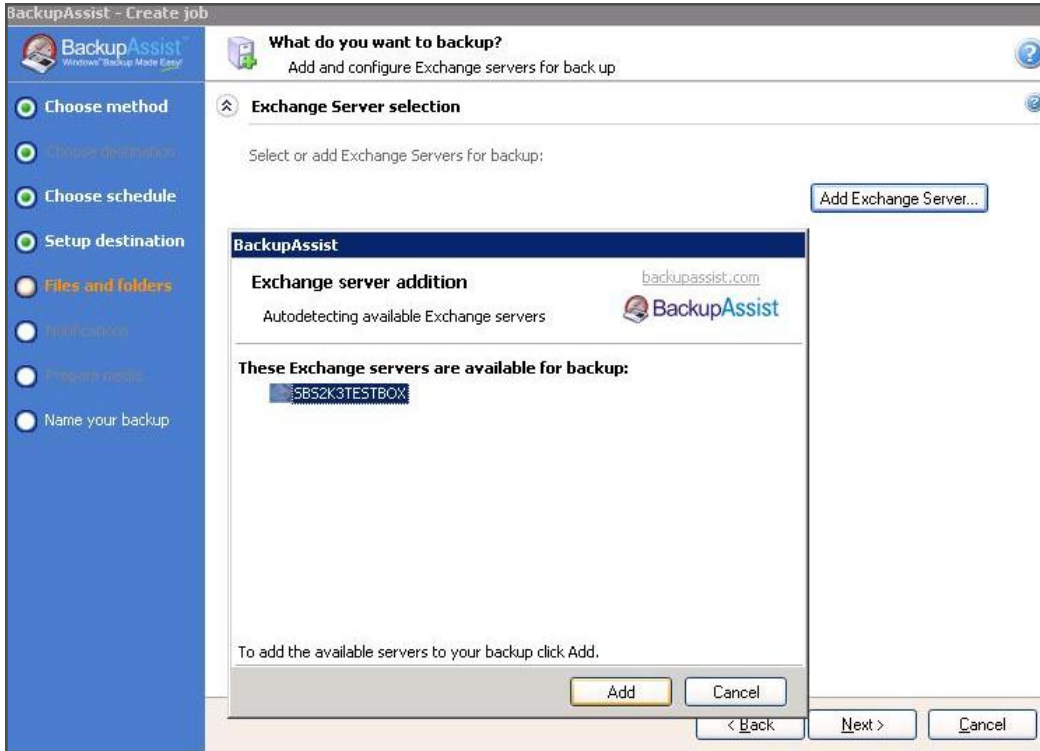


3. Select a time for when you want the backup to run each day and click **Next**.
4. Specify a **Directory path**. This is the directory where BackupAssist will extract mailbox data to in the form of PST files. BackupAssist can extract PST files to either a local or network share destination.



5. Below **Directory path** choose a **Grouping method** to specify how mail data is sorted and stored within the mailbox directory. Refer to **section 2.2** for more details on grouping methods.
6. Click **Next** once you have finished configuring the destination settings for the Exchange Mailbox backup.

7. Click **Add Exchange Server**. A window will appear that displays all of the available Exchange Servers on the network.
 - **Note:** Exchange Servers residing on a different domain to that of the machine where BackupAssist is installed will not be detected and cannot be backed up.
8. Click **Add** to add all of the available Exchange servers to your backup selections:



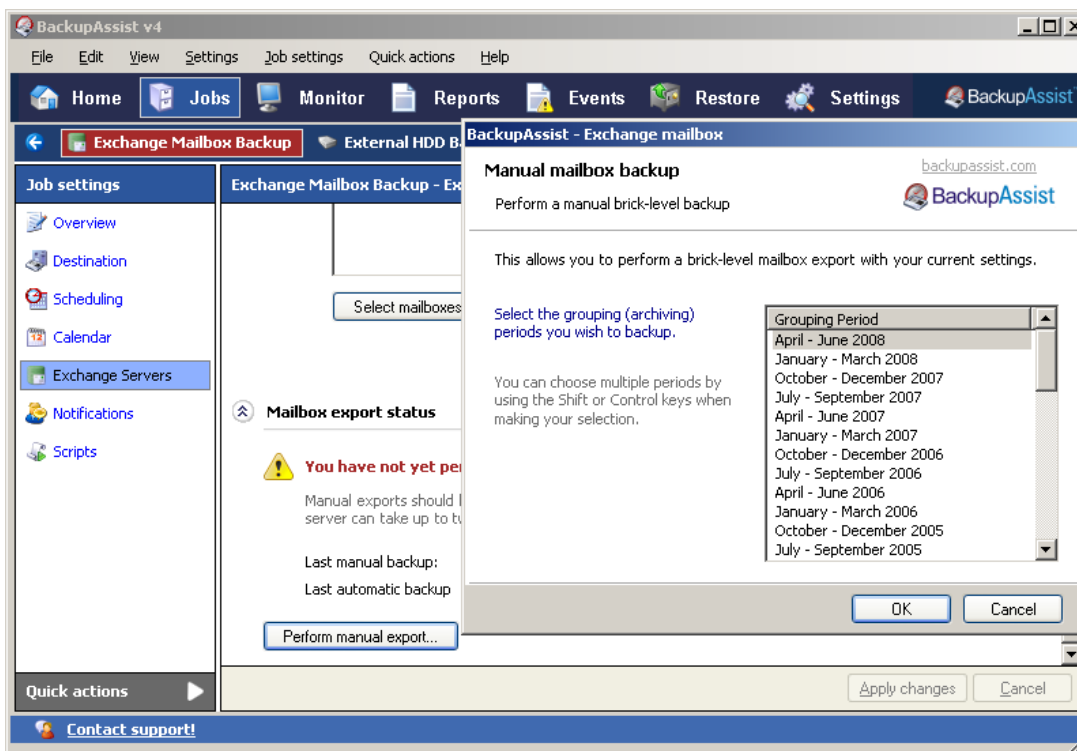
9. Check **Backup individual mailboxes** for each Exchange Server that you want to backup mailboxes from.
10. Select which mailboxes to backup by clicking **Select mailboxes to backup**.
 1. Leave **Select all mailboxes checked** if you wish to backup all mailboxes and any future mailboxes that are created. You can exclude specific mailboxes if required by unchecking them; all new mailboxes will still be backed up.
 2. Or, uncheck **Select all mailboxes** and check each mailbox to backup individually. No new mailboxes will be backed up, only those selected.
 3. Click **Apply changes** when you have finished making your selections.
11. Click **Next** and complete the remaining steps to create your backup job.

3.4 Performing a manual export of Exchange mailbox data

After you have created your backup job we recommended that you perform a manual export of the selected mailboxes. Depending on the size of your Exchange server and the mailboxes you have selected to backup, the initial export may take some time to complete which is why we recommend performing it manually, at a time when the server is not being heavily utilized. Refer to **section 2.1** for more information about the initial export.

To perform a manual export of your mailboxes:

1. Select **Exchange Servers** from the left menu.
2. Scroll to the **Mailbox export status** section and click **Perform manual export**. A new window will appear where you can select what periods of mail data you would like to export. The periods available for selection are sorted according to the grouping method defined in the **Destination** tab (available from the left menu).



- **Note:** if you had selected the 'separate PST for each month' grouping method and chose to export **May 2006** mail, only mail data created during May of 2006 would be exported, and not any mail sent or received prior to this.

3. After you have selected the appropriate periods click **OK** and you will be taken to the **Monitor Window** where BackupAssist will begin the export of mailbox data to PST files.
4. If the mailbox export fails click **Report** at the bottom of the Monitor Window to determine what errors occurred.
5. Once you have completed a successful export of all mailbox data, BackupAssist will keep PST files up to date by automatically scheduling exports each time your backup job is scheduled to run. New mail data is merged into the existing PST files on disk.

4. Restoring Mailbox Data

4.1 Restore options available

There are two options available for restoring individual mailboxes and individual mail items: (1) manually opening the PST files in Outlook, or (2) mass-importing items with the Microsoft Mailbox Merge Wizard. Both options are quick, easy and do not require any additional software.

The following table describes the purpose and benefits of each method:

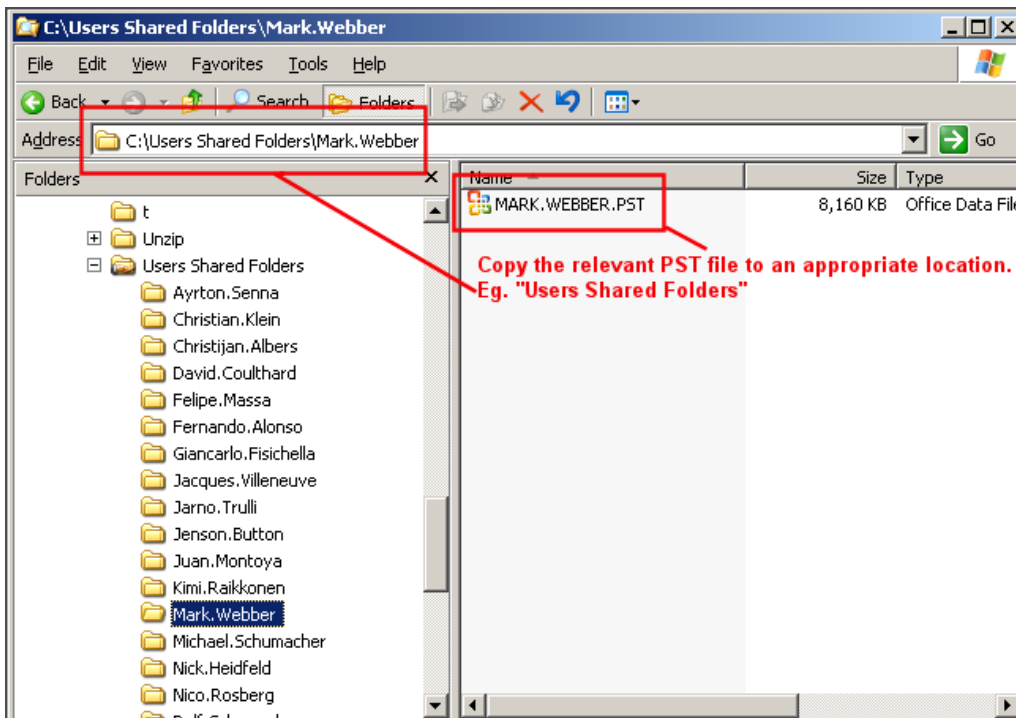
Using the Microsoft Mailbox Merge Wizard	Manually opening PST files in Outlook
<p>Use this for when you need an automated way of importing data, such as:</p> <ul style="list-style-type: none"> • Importing multiple mailboxes. • Importing messages using filters – such as between two dates, subject lines, attachments, folders, etc. <p>For example: Exchange corruption occurs, and a user has lost their entire 'Sent Items' folder.</p>	<p>Use this method for simple scenarios where a user has deleted one or more items, and needs to retrieve the information quickly.</p>

4.2 Manually opening PST files in Outlook

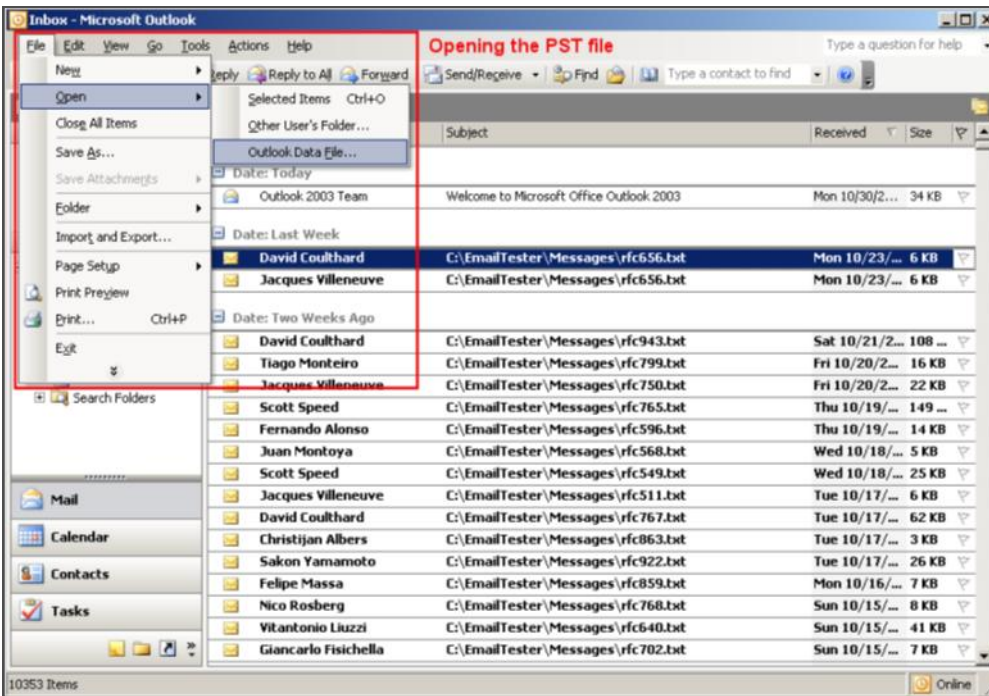
To manually open PST mailbox backups in Microsoft Outlook:

1. Copy the appropriate PST file to a location that is accessible to the relevant user's computer.

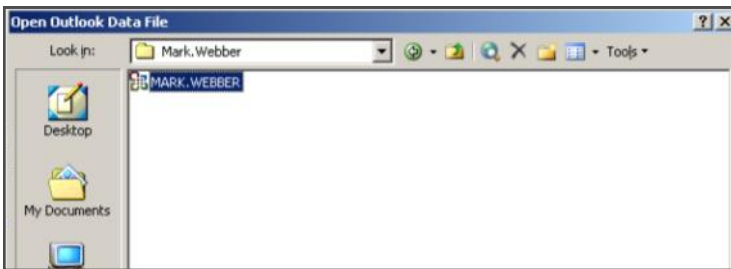
For example: copy the PST temporarily to 'Users Shared Folders', another network share or an external hard drive:



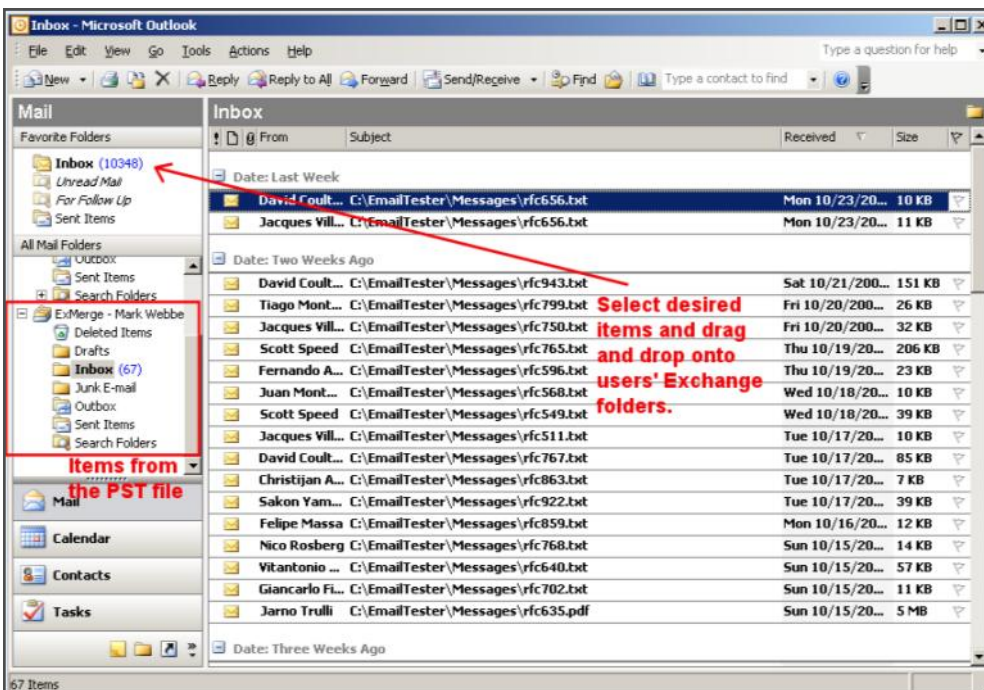
2. From the relevant user's computer, run Microsoft Outlook and select File menu > Open > Outlook Data File:



3. Browse for the PST file in the location it was copied to in **Step 1**:

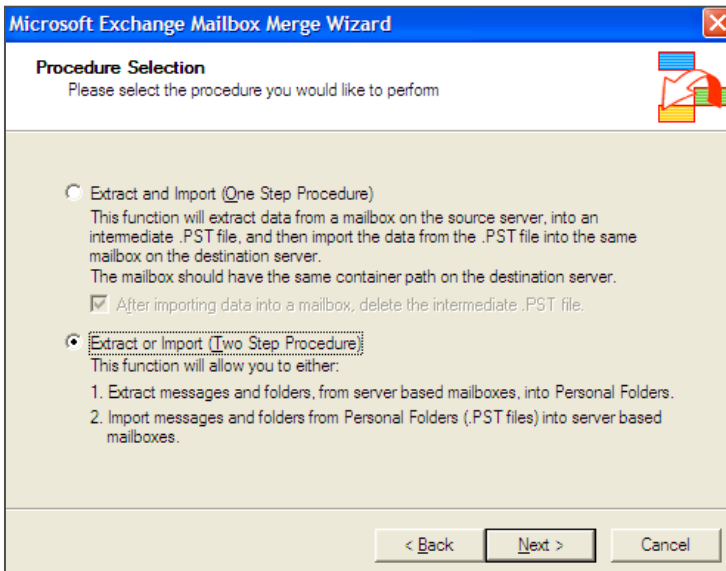


4. From this PST file you can view the email messages and drag-and-drop the mail items back into the original folders:

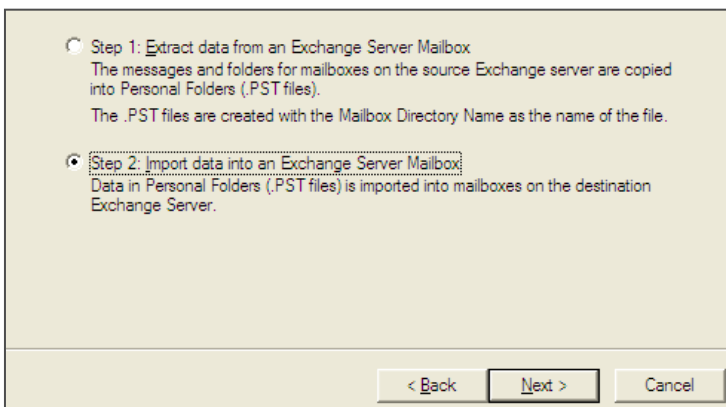


4.3 Using the Microsoft Mailbox Merge Wizard to mass-import items

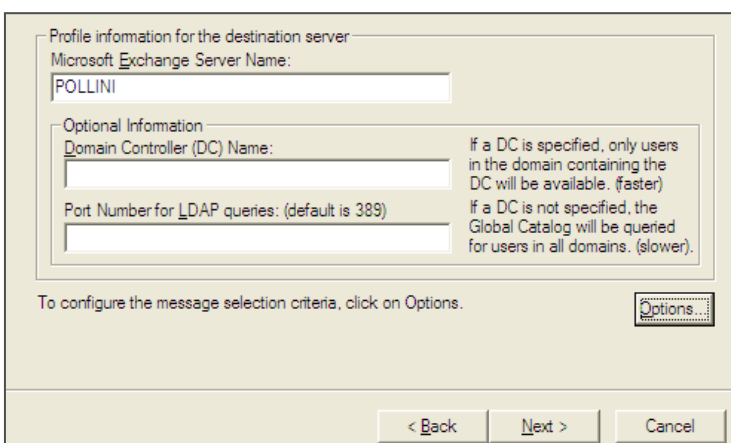
1. Run the Exmerge.exe program from the /bin folder in your Exchange Server installation directory. This program was downloaded and installed for use with the BackupAssist Exchange Mailbox Add-on and gives you powerful options for importing lost mail data.
2. When the Wizard first runs, choose **Extract or Import (Two Step Procedure)**:



3. Now choose **Step 2** to import your mailbox data back into your Exchange Server:



4. Input the details of your Exchange Server:



5. To bring up advanced options such as filtering, click **Options** on the right hand side of the window.

6. On the **Data** tab you can define what types of mail data you want to import from your Mailboxes:

Data Selection Criteria

Data | Import Procedure | Folders | Dates | Message Details

Extract the following data from the source store and import into the target store

- User messages and folders**
 If this option is selected, the program will copy all user data. This includes mail messages, folders, calendar, contacts, tasks, journal items and notes.
 Note: The program will not extract Schedule+ data.
- Associated folder messages**
 If this option is selected, the program will copy associated messages in each folder. Associated messages are special messages that are not visible through a client and are used to store folder rules, views etc in Exch. Server 5.0 and later. If a range of dates has been specified, the program will extract only those associated messages that meet the specified criteria.
- Folder permissions**
 If this option is selected, the program will **OVERWRITE** the permissions for each folder copied to the target store, with the permissions of the folder in the source store, regardless of the Import Procedure selected.
- Items from Dumpster**
 If this option is selected, the program will copy items that have been deleted by the user, but are available for recovery.
 This option is only available on Microsoft Exchange Server 5.5 and later.

7. On the **Import Procedure** tab you can select your import method. The **Merge** method is recommended for most cases as this option will only restore messages that do not already exist within your Exchange Server:

Data | Import Procedure | Folders | Dates | Message Details

How should data be imported into the target store ?

- Copy data into the target store**
 The program will not check whether a message being copied exists in the target store. This can result in duplicate messages in the target store.
- Merge data into the target store**
 Before copying a message, the program will check whether that message already exists in the target store. If so, the message will not be copied.
- Replace existing data in target store**
 Before copying a message, the program will check whether that message already exists in the target store. If so, the message is first deleted from the **TARGET** store and then copied from the source store.
 Replace data only if item in source store is more recent.
 The last modification time message attribute is used to compare the items.
- Archive data to target store**
 The program will copy data from the source store to the target store and then delete the data from the **SOURCE** store. This option will result in the loss of data in the source store and should be used with care.
 To avoid irrecoverable data loss, this option is only available when extracting data from a Microsoft Exchange Server.

8. On the **Folders** tab you can select which folders you wish to import. Leave this blank if you wish to import all folders.

Data | Import Procedure | Folders | Dates | Message Details

Select the folders to be processed

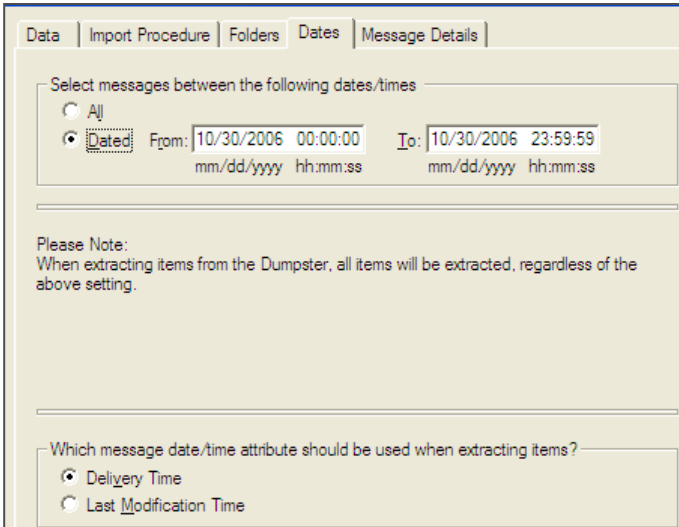
- Ignore these folders**
 The selected folders will be ignored. All other folders will be processed.
- Process only these folders**
 Only the selected folders will be processed. All other folders will be ignored.

\Inbox
\ProductRelease

Modify... Modify...

Apply action to sub folders of the selected folders
 If this setting is not selected, sub folders of the selected folders will not be affected. To apply the desired action to sub folders as well, select this setting.

9. On the **Dates** tab you can optionally choose the date range of messages you want to restore. Otherwise, simply choose **All** to import messages from all date ranges:



Select messages between the following dates/times

All

Dated From: 10/30/2006 00:00:00 To: 10/30/2006 23:59:59
mm/dd/yyyy hh:mm:ss mm/dd/yyyy hh:mm:ss

Please Note:
 When extracting items from the Dumpster, all items will be extracted, regardless of the above setting.

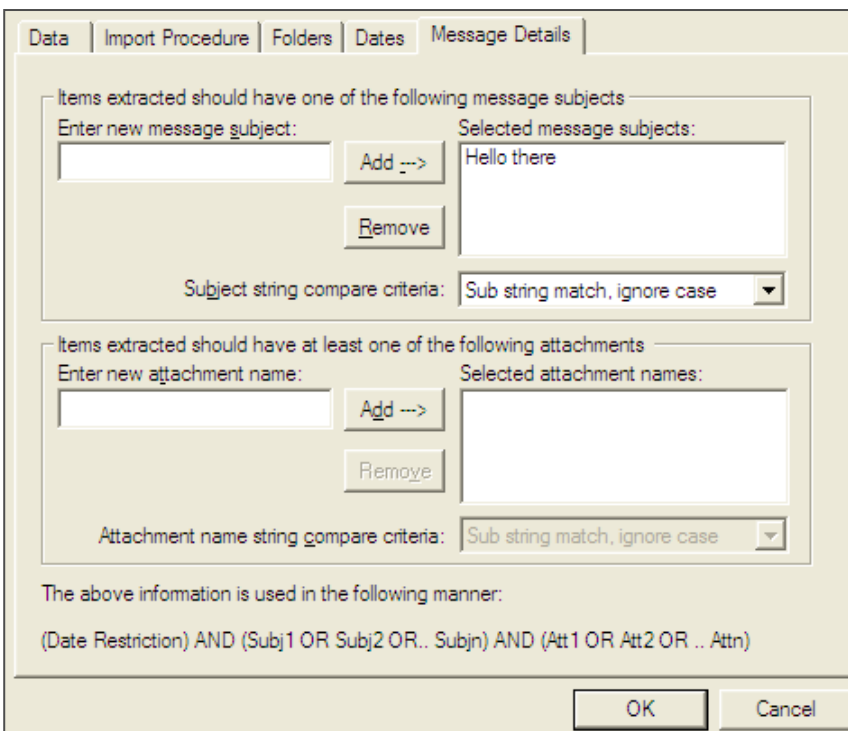
Which message date/time attribute should be used when extracting items?

Delivery Time

Last Modification Time

Note: dates are in American format, as the ExMerge utility provided by Microsoft is not localized.

10. On the **Message Details** tab you can input subject or attachment filters for the restore (e.g. only import messages with the subject line "Hello there"):



Items extracted should have one of the following message subjects

Enter new message subject: Add -->

Selected message subjects:
 Hello there

Remove

Subject string compare criteria: Sub string match, ignore case

Items extracted should have at least one of the following attachments

Enter new attachment name: Add -->

Selected attachment names:

Remove

Attachment name string compare criteria: Sub string match, ignore case

The above information is used in the following manner:
 (Date Restriction) AND (Subj1 OR Subj2 OR.. Subjn) AND (Att1 OR Att2 OR .. Attn)

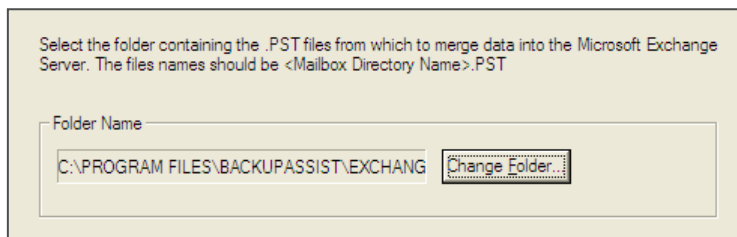
OK Cancel

11. Click **OK** to close this window, and then **Next** to proceed with the restore.

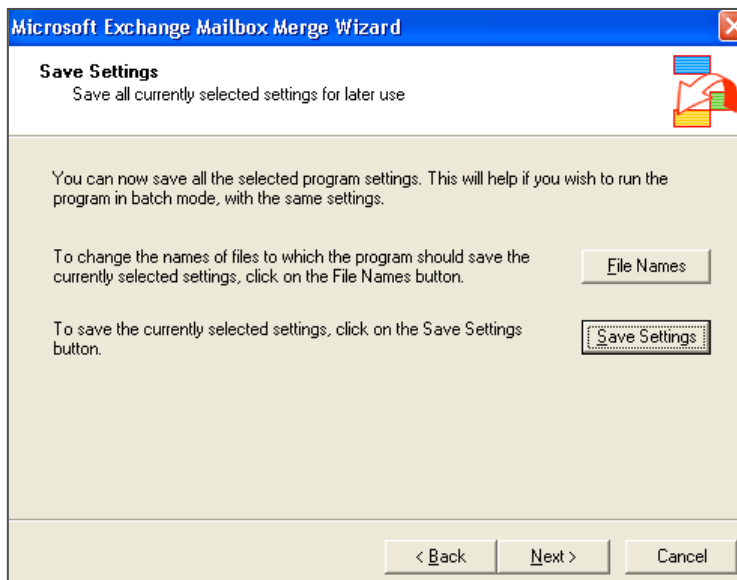
12. You can now select the mailboxes you wish to restore to:



13. Select the **Default locale**, click **Next** and then specify a directory where your PST mailbox backups are located:



15. You can speed up the import process by saving your settings as default settings that can be later loaded and re-run next time you need to complete a restore of mailbox data:



16. Click **Next** to begin the mailbox restore. Once complete, a report will indicate the status of the ExMerge restore process.

5. Resources and Support

5.1 Useful resources

You may find the following resources useful:

- Microsoft Exchange Server information:
<http://www.microsoft.com/exchange/default.mspx>
- Microsoft Exchange Mailbox Merge (Exmerge.exe) information:
<http://support.microsoft.com/kb/174197>
- BackupAssist Education Center (whitepapers, videos, tutorials, etc):
<http://backupassist.com/education>

5.2 Contacting support

Should you have any questions regarding either BackupAssist or the Exchange Mailbox add-on specifically, please email such queries to 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 such feedback to support@backupassist.com