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PST Migration with Enterprise Vault 8.0: Part 2 - The Tools In Depth

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Date: April, 2009

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PST Migration with Enterprise Vault 8.0: Part 2 - The Tools In Depth

Introduction

This whitepaper is part of a series about the various tools available for PST migration with Symantec Enterprise Vault 8.0. The series comprises the following whitepapers:

- PST Migration with Enterprise Vault 8.0: Part 1 - Solution Overview
- PST Migration with Enterprise Vault 8.0: Part 2 – The Tools in Depth
- PST Migration with Enterprise Vault 8.0: Part 3 – Planning, Tech Tips and Best Practice

This whitepaper looks at the various Enterprise Vault tools in detail, including how each of them use settings from PST migration and Mailbox policies, and how each tool works.

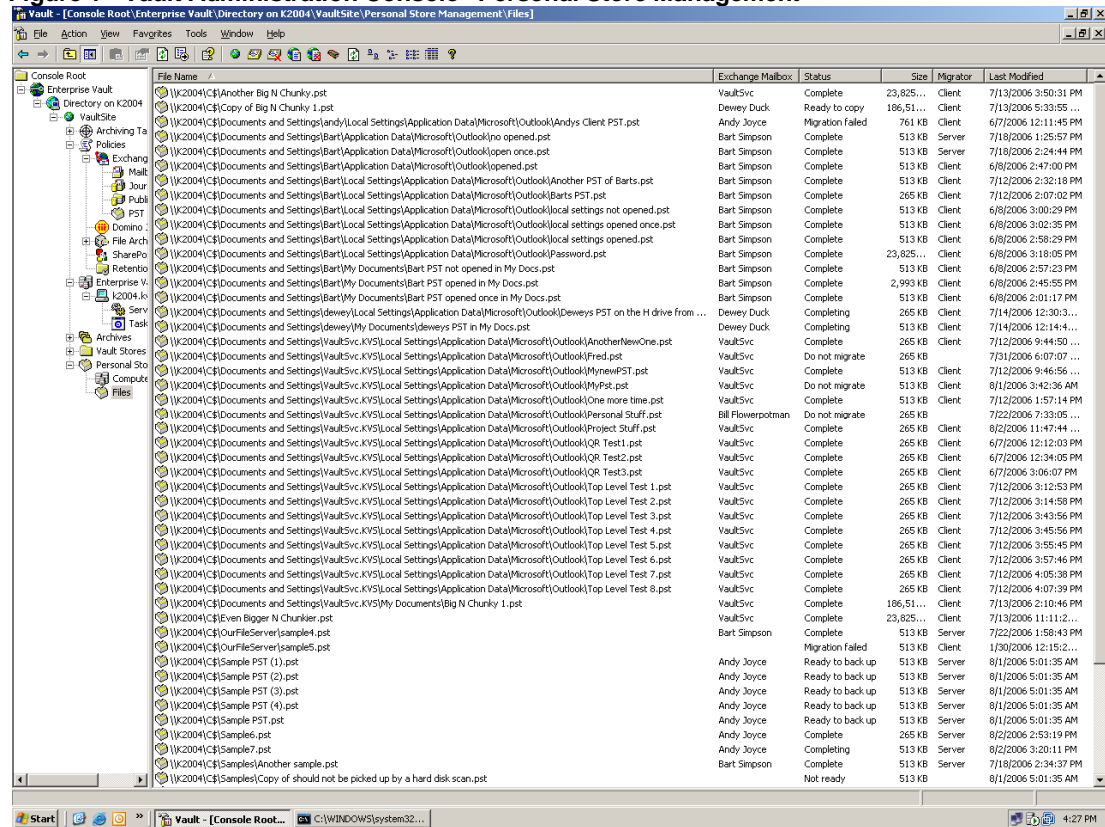
The whitepaper is intended primarily for Symantec and partner System Engineers and Consultants.

It is assumed that the reader will be familiar with the concepts of PST files, and have some familiarity with general Enterprise Vault concepts and terminology. It is also recommended that this whitepaper is read *after* reading Part 1 of this series.

PST migration management

For server- and client-driven migrations, details of all PST files “located” and at various stages of migration are recorded in an SQL table and displayed through the Enterprise Vault Administration Console as shown in Figure 1. This interface allows the list to be filtered so that all PST files with a particular status, or for a certain user, can be viewed. It also allows certain settings to be overridden on individual or multiple PST files, and passwords to be specified for “located” password-protected PST files. In some cases, the migration status can be changed, for example, to prevent the migration of particular PST files or to retry previously failed migrations.

Figure 1 - Vault Administration Console “Personal Store Management”



In Enterprise Vault 8.0, the PST migration container (“Personal Store Management”), management objects, and options are displayed only for administrators who have been granted either the PST Administrator or

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Power Administrator roles (or the Enterprise Vault Service Account, which has access to all objects and functions within the Enterprise Vault Administration Console). Objects and functions are:

- Manage PST Migration Policies
- Manage Enterprise Vault Retention Categories
- Manage the Task Controller Service
- Manage Mailbox Archiving Tasks
- Manage PST Locator, PST Collector, and PST Migrator Tasks
- Manage the General and Site Schedule properties of the Site Settings
- Import and export archives
- Access advanced features (such as tracing)
- Manage the message classes that will be enabled for archived

Note: Throughout this paper, the term “Enterprise Vault administrator” will be used to refer to administrators configuring or performing PST migration.

PST Migration Policies

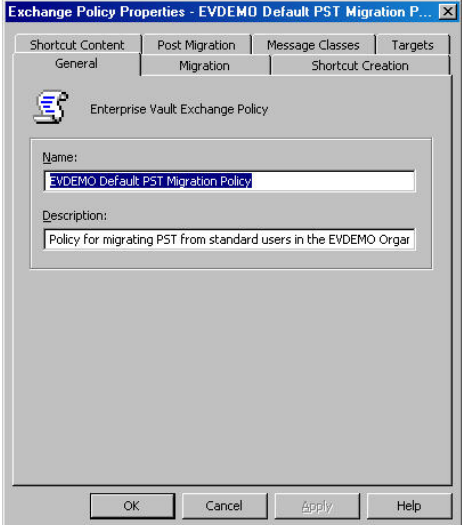
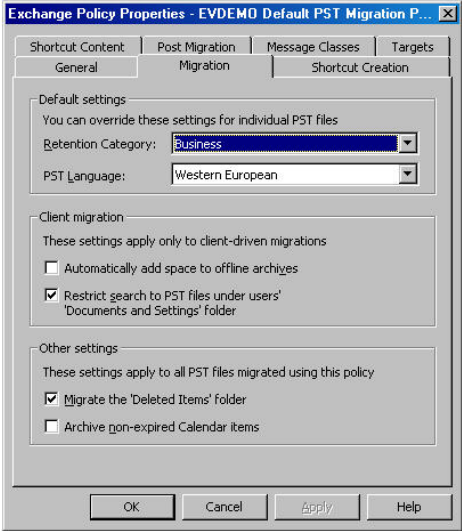
PST Migration Policies control characteristics of the PST migration, including whether to create shortcuts to migrated items, what type of shortcuts to create, what the default Retention Category is, and how to process PST files after successful migration. PST Migration Policies are listed under the Policies—Exchange container in the Administration Console.

PST Migration Policies are applied to users via Provisioning Groups, any number of which can be created, based on combinations of the following:

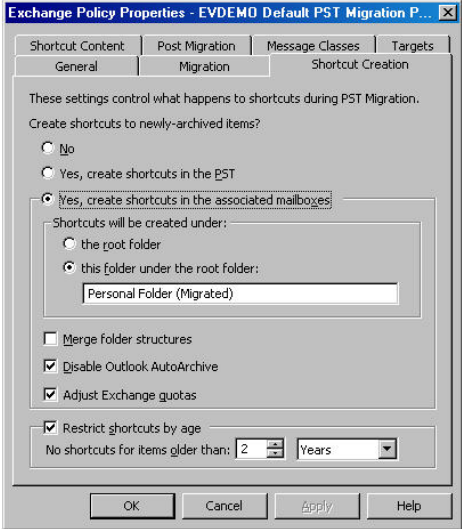
- Specific named mailboxes
- Windows security groups
- Distribution groups
- Active Directory organizational units
- LDAP queries
- The whole Exchange organization

Provisioning Groups are ranked, and each mailbox (and its associated user) is assigned to the highest ranking Provisioning Group it matches. Each Provisioning Group has a mailbox and PST Migration Policy associated with it. The server- and client-driven PST migration use the PST Migration Policy associated with the user/mailbox (see Table 1).

Table 1 - PST Migration Policy properties

PST Policy Properties Tab	Settings	Purpose/Explanation
<p>General</p> 	<p>Name Description</p>	<p>This is for administrative use only; end-users do not see these names.</p>
<p>Migration</p> 	<p>Retention Category</p> <p>PST Language</p> <p>Client migration settings: Automatically add space to offline archives</p>	<p>Retention Category to tag migrated items with—can be different from the Retention Category used for mailbox archiving if the organization wants to differentiate items imported from PST files from items archived from mailboxes.</p> <p>Used to select the Windows code page if the PST Migrator is going to create folders in users' mailboxes.</p> <p>If a user is configured with an Vault Cache, the client-driven migration can populate it directly, as well as migrate the items in the user's archive—rather than migrating and then later relying on Vault Cache's background synchronization to fetch them from the server into Vault Cache. However, a Vault Cache may be near or close to its configured size limit, so this setting makes it possible to automatically increase the size of Vault Cache to accommodate items being migrated from PST files.</p>

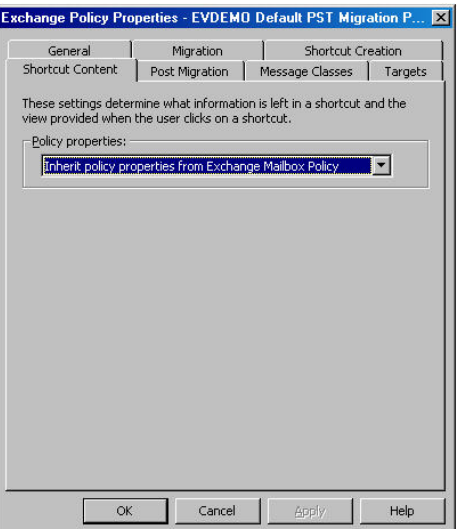
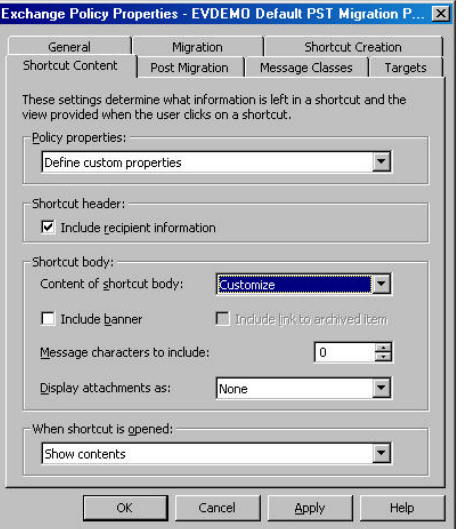
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	<p>Client migration settings: Restrict search to PST files under users' Documents and Settings folder</p>	<p>The client-driven migration will search computer hard drives for PST files to migrate, with the exception of system folders. This setting allows the search to be restricted to the current user's Documents and Settings folders, under which users typically create and store local PST files.</p>
	<p>Migrate the Deleted Items folder</p>	<p>This controls whether the contents of the Deleted Items folder in each PST file are migrated into the archive.</p>
	<p>Archive non-expired calendar items</p>	<p>If Enterprise Vault has been configured to archive calendar items, then this setting controls whether non-expired calendar items are migrated from PST files. A non-expired calendar item is one for which the date of the event has not yet passed, including the last occurrence of a recurring item. Because archived content cannot be modified, many companies do not select this option.</p>
<p>Shortcut Creation</p> 	<p>Create shortcuts to newly archived items?</p> <ul style="list-style-type: none"> • No • Yes, create shortcuts in the PST • Yes, create shortcuts in the associated mailboxes 	<p>Shortcuts are rarely created in PST files to newly archived items, as most organizations want to eliminate PST files. While the most user-friendly option, placing such shortcuts is also sometimes discouraged as it can add about 10 percent of the size of the PST files into the Exchange mailbox. However restricting the number of shortcuts to be created by age makes leaving shortcuts in mailboxes—at least for the most recent messages—a more viable option.</p>
	<p>Shortcuts will be created under:</p> <ul style="list-style-type: none"> • The root folder • A specified folder that will be created under the root folder 	<p>This option is grayed-out if shortcut creation in mailboxes has not been selected. However, it is still used to create the folder structure within the archive (visible via Archive Explorer), so it should be set to the desired value, and <i>then</i> shortcut creation in the mailbox should be deselected. The resulting folder structure in the mailbox (and the archive)</p>

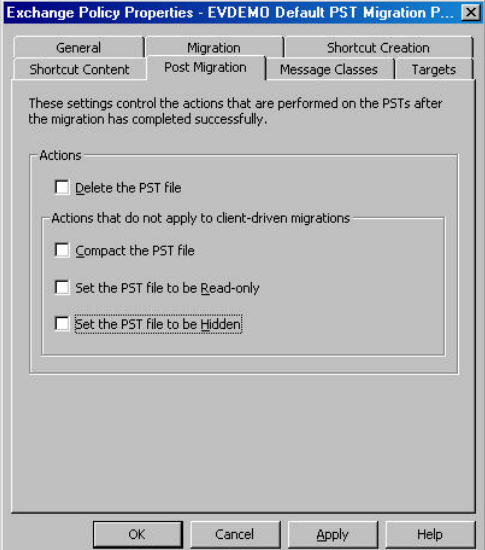
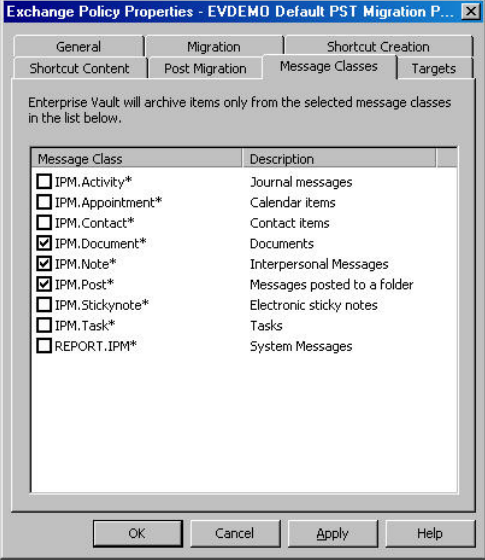
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		varies depending on this setting and the Merge setting.
	Merge folder structures	Determines whether folders with the same name, migrated from multiple PST files, are merged when re-created in the mailbox (for shortcuts) and in the archive. See an example later in "Defining folder structures for mailbox shortcuts and Archive Explorer"
	Disable Outlook AutoArchive	If shortcuts are being left in the mailbox, then Outlook AutoArchive can also be switched off at the same time.
	Adjust Exchange quotas	If shortcuts are being left in the mailbox, then it may be necessary to increase the user's mailbox quotas to make room for them.
	Restrict shortcuts by age	Limits the number of shortcuts added to the mailbox, potentially preventing the mailbox from filling with shortcuts, by making it possible to create shortcuts only for archived messages less than a specified age (based on the message's original date). Selecting this option aligns well with the shortcut deletion setting chosen for mailbox archiving.

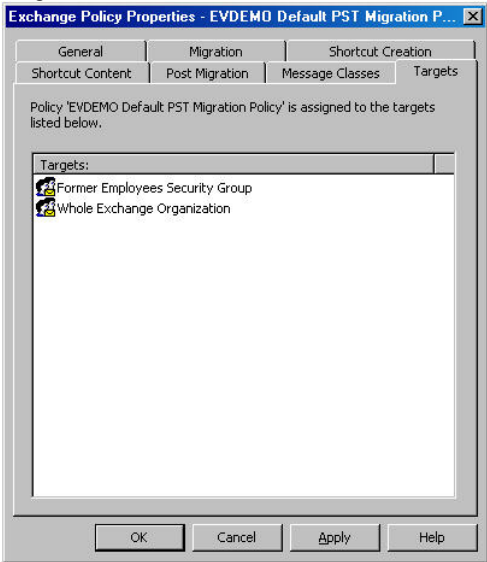
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Shortcut Content	Policy properties	
 <p>Exchange Policy Properties - EVDEMO Default PST Migration P...</p> <p>General Migration Shortcut Creation Shortcut Content Post Migration Message Classes Targets</p> <p>These settings determine what information is left in a shortcut and the view provided when the user clicks on a shortcut.</p> <p>Policy properties: Inherit policy properties from Exchange Mailbox Policy</p> <p>Shortcut body: Content of shortcut body: None <input type="checkbox"/> Include banner</p>  <p>Exchange Policy Properties - EVDEMO Default PST Migration P...</p> <p>General Migration Shortcut Creation Shortcut Content Post Migration Message Classes Targets</p> <p>These settings determine what information is left in a shortcut and the view provided when the user clicks on a shortcut.</p> <p>Policy properties: Define custom properties</p> <p>Shortcut header: <input checked="" type="checkbox"/> Include recipient information</p> <p>Shortcut body: Content of shortcut body: Customize <input type="checkbox"/> Include banner <input type="checkbox"/> Include link to archived item Message characters to include: 0 Display attachments as: None</p> <p>When shortcut is opened: Show contents</p>	<p>Either:</p> <ul style="list-style-type: none"> Inherit policy properties from Exchange Mailbox Policy <p>or</p> <ul style="list-style-type: none"> Define custom properties 	<p>This option allows a different style of shortcuts to be generated for PST-migrated items, or the same style as defined for mailbox archiving to be used. If "Define custom properties" is selected from the drop-down then a number of other fields are shown, including whether to include the recipient information (To and CC) in the shortcut, and a choice of three options regarding the content of the shortcut body; None, Use Message Body, and Customize. "Use Message Body" results in the shortcuts containing the full text of the archived message, minus any attachments. "Customize" presents a number of additional configuration options: Whether to include a "banner" in the body of the shortcut that indicates the message has been archived (this is particularly useful when dealing with non-Outlook clients where the full shortcut retrieval functionality will not be available), whether to include HTTP hyperlinks to retrieve the HTML version of the archives message and/or attachments (again, most useful for non-Outlook clients), the number of characters of the message body to include, and how to display the list of attachments (no list, text or links).</p>

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<p>Post Migration</p> 	<p>Actions:</p> <ul style="list-style-type: none"> • Delete the PST file <p>or a combination of:</p> <ul style="list-style-type: none"> • Compact the PST file • Set the PST file to be read-only • Set the PST file to be hidden 	<p>Once a PST file has been migrated successfully, it can be automatically deleted or compacted, set to read-only, and/or hidden. With the client- and server-driven methods, the final deletion of a PST file may be deferred until the archived items have been backed up in the Vault Store(s).</p> <p>Note that the options to compact the PST file—set to read-only or hidden—are not valid for client-driven migrations and are ignored, even if set. Client-driven migration will set the PST file to read-only automatically, if not deleted.</p>																				
<p>Message Classes</p>  <table border="1" data-bbox="175 1092 604 1438"> <thead> <tr> <th>Message Class</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> IPM.Activity*</td> <td>Journal messages</td> </tr> <tr> <td><input type="checkbox"/> IPM.Appointment*</td> <td>Calendar items</td> </tr> <tr> <td><input type="checkbox"/> IPM.Contact*</td> <td>Contact items</td> </tr> <tr> <td><input checked="" type="checkbox"/> IPM.Document*</td> <td>Documents</td> </tr> <tr> <td><input checked="" type="checkbox"/> IPM.Note*</td> <td>Interpersonal Messages</td> </tr> <tr> <td><input checked="" type="checkbox"/> IPM.Post*</td> <td>Messages posted to a folder</td> </tr> <tr> <td><input type="checkbox"/> IPM.Stickynote*</td> <td>Electronic sticky notes</td> </tr> <tr> <td><input type="checkbox"/> IPM.Task*</td> <td>Tasks</td> </tr> <tr> <td><input type="checkbox"/> REPORT.IP*</td> <td>System Messages</td> </tr> </tbody> </table>	Message Class	Description	<input type="checkbox"/> IPM.Activity*	Journal messages	<input type="checkbox"/> IPM.Appointment*	Calendar items	<input type="checkbox"/> IPM.Contact*	Contact items	<input checked="" type="checkbox"/> IPM.Document*	Documents	<input checked="" type="checkbox"/> IPM.Note*	Interpersonal Messages	<input checked="" type="checkbox"/> IPM.Post*	Messages posted to a folder	<input type="checkbox"/> IPM.Stickynote*	Electronic sticky notes	<input type="checkbox"/> IPM.Task*	Tasks	<input type="checkbox"/> REPORT.IP*	System Messages	<p>Select/deselect specific message classes for archiving</p>	<p>By default, only messages, documents, and posted items are archivable. However, additional types of messages and other Outlook objects (such as calendar items) can be included on a per-policy basis. For example, for normal mailbox archiving, calendar items may not be archived but may be archived from PST files to help ensure that PST files are completely migrated.</p> <p>To add message classes (e.g., third-party message types, like fax or voice mail), they must first be added to a master list via the properties of the Enterprise Vault Directory object.</p>
Message Class	Description																					
<input type="checkbox"/> IPM.Activity*	Journal messages																					
<input type="checkbox"/> IPM.Appointment*	Calendar items																					
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<p>Targets</p>  <p>The screenshot shows the 'Exchange Policy Properties - EVDEMO Default PST Migration P...' dialog box with the 'Targets' tab selected. The 'Targets' list contains two entries: 'Former Employees Security Group' and 'Whole Exchange Organization'. The dialog also includes 'OK', 'Cancel', 'Apply', and 'Help' buttons at the bottom.</p>	<p>Read-only</p>	<p>Shows the Provisioning Groups to which the policy has been applied, if any.</p>
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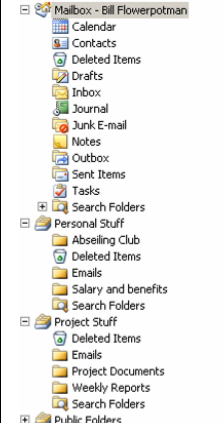
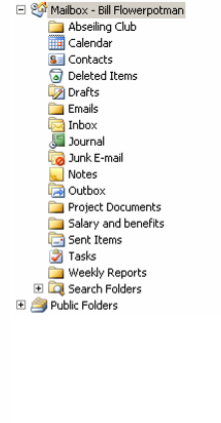
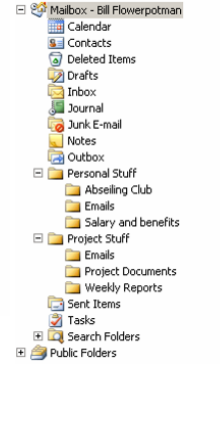
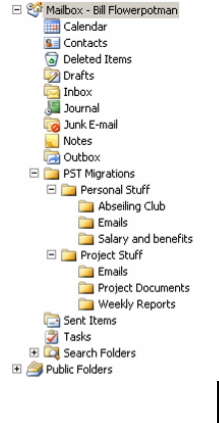
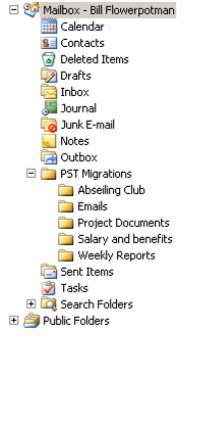
Defining folder structures for mailbox shortcuts and Archive Explorer

As described previously, it is possible to create shortcuts in the associated mailbox for all, or some (limited by age), messages migrated from PST files. A couple of options can be chosen:

- Create a folder within the mailbox under which the shortcuts will be created (with subfolders re-created to reflect the original folders from the PST file[s]). This folder could be named "PST Migrations," "Migrated PST Files," "Old Messages," or any other name thought suitable. If this option is not chosen, then the PST folder structures are created directly under the root of the mailbox, so top-level folders in the PST files are created as top-level folders in the mailbox.
- Merge the folder structures of multiple PST files. For example, if two PST files had a folder called "Emails," then this option would result in a single folder called "Emails" being created. If this option is not chosen, then a folder will be created for each PST file, and each top-level folder of that PST file will be re-created as a subfolder of that folder.

Table 2 shows examples of each combination of settings.

Table 2 - Example settings for creating mailbox shortcuts

Example 1: Before Migration	Example 2: Merged Under Root Folder	Example 3: Not Merged, Under Root Folder	Example 4: Not Merged, Under PST Migrations Folder	Example 5: Merged, Under PST Migrations Folder
				
<p>User has two PST files, "Personal Stuff" and "Project Stuff," and each has several top-level folders. Note that both PST files have a top-level folder called "Emails."</p>	<p>Each top-level folder from the PST files is now a top-level folder in the mailbox. Folders with the same name, such as "Emails," have been merged into one.</p> <p>Useful when PST files have been used as the primary storage for users, especially if they had an Inbox folder in their PST file; this will place those shortcuts into the Inbox of their mailbox.</p>	<p>A top-level folder has been created for each PST file in the mailbox, under which the original folder structures of each PST file are preserved. The two "Emails" folders have not been merged.</p> <p>This most closely resembles the original appearance of the PST files before migration (compare with Example 1).</p>	<p>A top-level folder called "PST Migrations" has been created. Under this folder is a folder for each PST file, under which the original folder structures have been preserved.</p> <p>Resembles original PST structures but also identifies that the shortcuts are the result of PST migration.</p>	<p>A top-level folder called "PST Migrations" has been created. Under this folder are folders for all of the top-level folders from the two PST files. The "Emails" folders have been merged into one.</p> <p>Identifies that items have been migrated from PST files, but also merges duplicate folders. This could be seen as a plus or minus, depending on how users have managed their PST files.</p>

These settings are configured via the Shortcuts tab of the PST Migration Policy, the PST Migration Wizard, or in an Enterprise Vault Policy Manager initialization file for a scripted PST migration.

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Note: Even if it is decided not to leave shortcuts in the mailboxes, these settings are still used to create the folder structure within the archive (as observed via Archive Explorer). So when configuring, it is important to set these settings as required, regardless of whether or not shortcuts will be left in the mailbox.

PST "marking"

The Enterprise Vault client (an Outlook add-in) may be configured so that when a user starts Outlook, the client writes a hidden message into each PST file that is listed in their Outlook profile. The hidden message indicates the Enterprise Vault site, the default Archive for that user, and their default Retention Category. All of the Enterprise Vault PST migration tools can read this information and use it during the migration.

Once PST marking is enabled, and after Outlook is opened again by each user, the Enterprise Vault client add-in does the following:

- Attempts to open every PST file that is listed in the user's Outlook profile. The user will be prompted for passwords to any password-protected PST files and will receive error messages for any PST files that are inaccessible.
- Does not update the PST file marker again except when a different Outlook profile is used that also lists that PST file. This means that an assumption is made that the PST file is owned by the last profile that was used to access the file.
- Marks any PST files that are subsequently added to the mail profile. The marking happens when Outlook is started, so merely opening a PST file and then closing it again is not sufficient to mark that file.

Dealing with non-archivable items in PST files

In addition to messages and documents, PST files can store other types of Outlook items, such as contacts and calendar items. If these types of items have been enabled for archiving by Enterprise Vault (using the Message Classes tab in the PST Migration Policy properties), then they will be migrated into the archive. However, if they are not enabled for archiving, then these items will either be moved to the mailbox or left in the PST file, depending on whether or not the option to create shortcuts in mailboxes has been selected. If the items are left in the PST file, the file will not be deleted on completion but will be copied back to replace the original PST file. Similarly, if shortcuts are to be left in the PST file (which is done rarely), or no shortcuts are to be created at all, then any PST files that are left with non-archivable items are not deleted on completion, but are copied back over the original version. Finally, if shortcuts are to be created in the mailboxes, the "Limit shortcuts by age" setting has no effect on non-archivable items being moved into the mailbox; all non-archivable items are copied into the mailbox regardless of age. Table 3 summarizes this process.

Table 3 - Non-archivable items in PST files

	Shortcuts into Mailbox	Shortcuts into PST File	No Shortcuts
Non-archivable items	<ul style="list-style-type: none">• Moved into mailbox• PST file is deleted or copied back over original, depending on configuration settings	<ul style="list-style-type: none">• Left in PST file• PST file is copied back over original	<ul style="list-style-type: none">• Left in PST file• PST file is copied back over original

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How it works: Server-driven “Locate, Collect and Migrate”

Server-driven PST migration partially automates the process of migrating the contents of PST files into Enterprise Vault. It can automatically search for PST files on file servers and users' computers and move them to a central holding area, from which they can be automatically migrated. Depending on the configuration options selected, some manual intervention may be required to approve PST file migration; for example, migration may only be started once the PST files have been backed up, or the ownership of particular PST files may need to be verified. Additionally, passwords may need to be provided for password-protected PST files.

Server-driven migration is comprised of three types of Enterprise Vault tasks:

- **PST Locator Task.** This task searches the network for computers and PST files. There can be only one PST Locator Task in each Enterprise Vault site.
- **PST Collector Task.** This task moves PST files that the PST Locator Task has found to a central holding folder, where they are stored until eventually migrated. There can be many PST Collector Tasks in each Enterprise Vault site, but only one per Enterprise Vault server. There must be a PST Collector Task on each Enterprise Vault server that has a Storage Service managing archives into which PST contents will be migrated using server-driven migration. Note that the PST Collector Task is not required for client-driven migration.
- **PST Migrator Task.** This task migrates the contents of PST files that are in the holding folder to Enterprise Vault archives. There can be many PST Migrator Tasks in each Enterprise Vault site, but only one per Enterprise Vault server. There must be a PST Migrator Task on each Enterprise Vault server that has a Storage Service managing Archives into which PST contents will be migrated (using both server- and client-driven migration).

The PST Locator, PST Collector and PST Migrator Tasks run according to defined schedules, although there is also a “Run Now” option for each task so that it can be run immediately if required.

The PST migration process, using the server-driven tasks is as follows.

Step1 – Locate the PST files

1. The PST Locator Task is created and configured to use either NETBIOS or Active Directory lookups to locate Windows domains in the organization's network. An initial run is scheduled or kicked off immediately using the Run Now option, which returns the names of any domains found. Multiple runs may be done using the different search methods to locate additional domains.
 2. In the properties of the PST Locator Task, Enterprise Vault administrators select which domains they want to search. They then initiate or schedule another run of the PST Locator Task—this time to search for computers in the selected domains. Again, NETBIOS or Active Directory methods may be specified to find the computers, and multiple runs may be done to build up a list of computers.
 3. Once a list of computers has been built, all computers may be automatically selected for searching for PST files, or the Enterprise Vault administrator may choose which computers are to be searched.
 4. The PST Locator Task will be scheduled or run now to search those computers for PST files, performing a hard disk and/or registry search, as specified by the Enterprise Vault administrator. The PST Locator Task can be scheduled to run during normal office hours. This is recommended so that it finds the maximum possible number of computers and PST files (when users' computers are switched on and connected to the internal network).
- For a hard disk search, the thread scans all the local hard disks on the designated computer for files with an extension of .pst. It does not search the holding folder or the temporary migration folders of any computer running a PST Migrator Task. On all computers, the Recycle Bin folder is not searched.
 - A registry search uses remote registry calls to search the Outlook profile records for PST file names. If a PST file is found in a profile, the Exchange mailbox in the profile is noted. If an Exchange mailbox is found, lookups will be made to try to determine the ArchiveID and SiteID associated with the primary mailbox referenced in the profile. If the PST file is stored

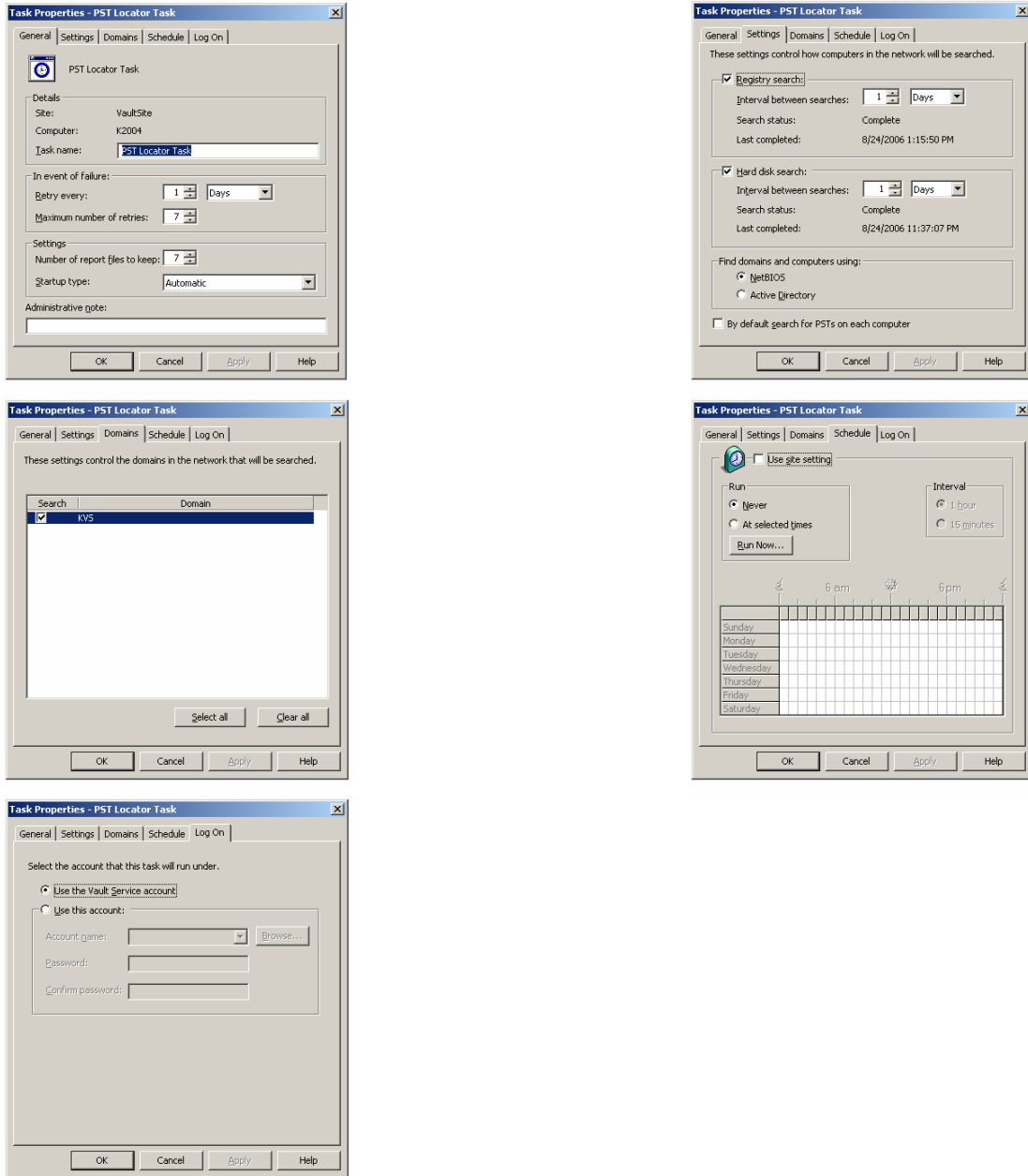
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on a mapped network drive, then the path will be translated to the actual location in a UNC format.

- Note that the account under which the PST Locator Task is configured to run (usually the Enterprise Vault Service Account) must have access to the computers and their drives to be able to search them for PST files—and access to scan the registry remotely if that option has been selected in the PST Locator Task's settings. Generally, it is not advised to make the Enterprise Vault Service Account a member of the Domain Administrators group, but there may be other groups that have access to the computers and the Enterprise Vault Service Account could be made a member of those groups (with caution as it possible that group membership may cause the Enterprise Vault Service Account to inherit Deny permissions from Active Directory that prevent it from performing other archiving functions). Alternatively, the PST Locator Task could be configured to run under an account that already has access to all the computers or may safely be added into a group that has such access.
5. If the PST Locator Task has been able to determine the ownership of the PST file, the associated mailbox, and its corresponding Archive, then the PST file will have a status of "Ready to copy" in the "PSTfiles" SQL table. Otherwise, it will have a status of "Not ready," and administrator intervention will be required to set the associated mailbox and change the status to "Ready to copy." This is done via the Administration Console.

Figure 2 shows the properties of the PST Locator Task.

Figure 2 - PST Locator Task properties



Step 2 – Collect the PST files

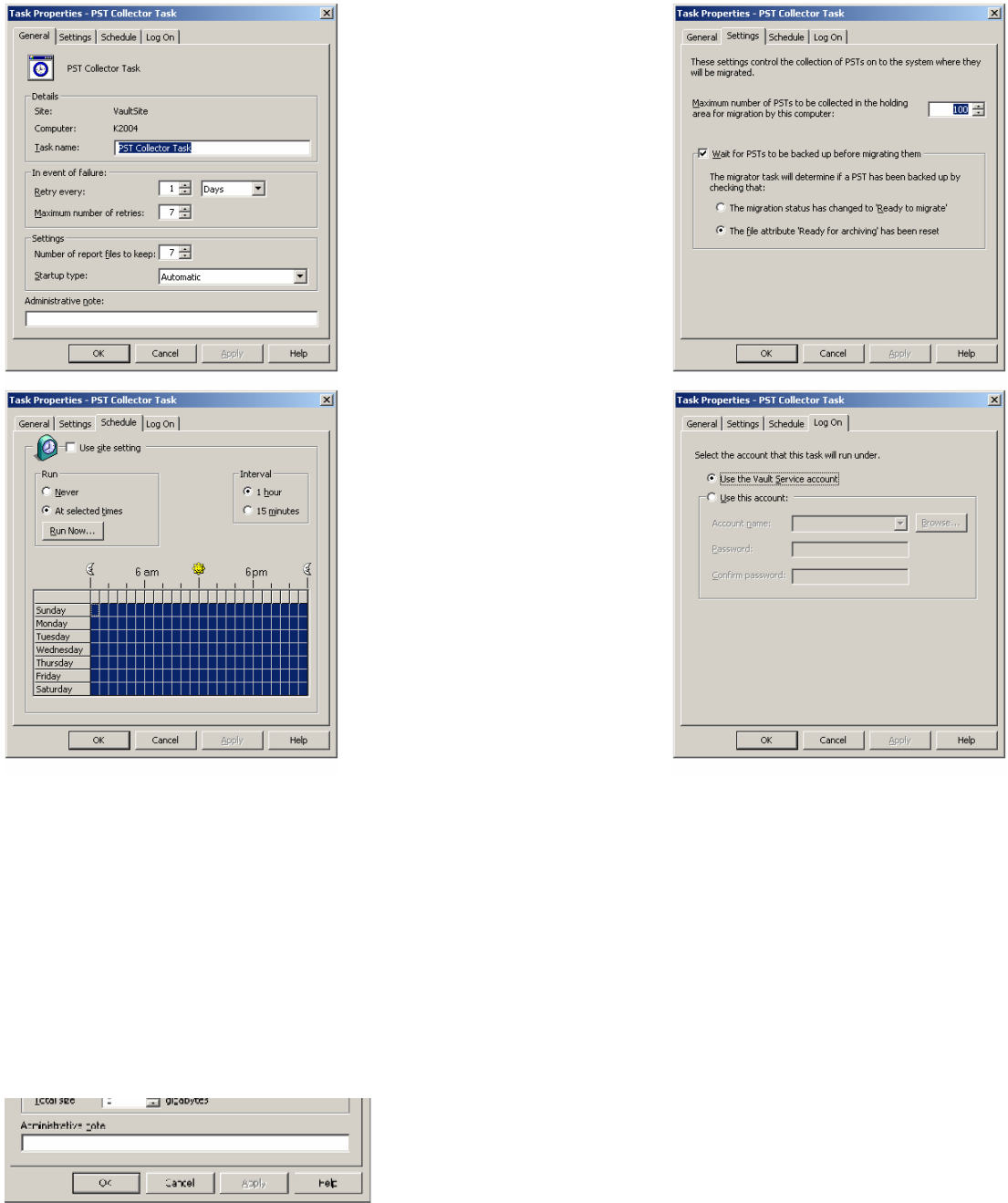
1. PST Collector Tasks are created and configured on all Enterprise Vault servers that have a Storage Service managing the Archives into which items will be migrated. A PST Holding Area is created and defined in the General properties page of the Enterprise Vault Site Settings. The holding area is a shared folder accessible by the Enterprise Vault Service Account from all the Enterprise Vault servers running PST Collector and PST Migrator Tasks.
2. On schedule, or when run manually by the Enterprise Vault administrator, the PST Collector Task copies PST files with a status of "Ready to copy" to the holding area. It is possible to restrict the number of files in the holding area so that they can all be processed by the PST Migrator Task during its next scheduled run. This minimizes the time that the contents of the PST files are unavailable to users (as the original PST will have been set to read-only before it is copied to the holding area, which prevents it from being opened in Outlook). There are three ways to manage the number of files stored in the holding area:

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- In the properties of the Enterprise Vault site object, set a suitable maximum holding area size (in gigabytes) so the PST Migrator Task can empty the holding area during its scheduled daily time window. This maximum applies to each individual PST Collector Task. For example, if you have two PST Collector Tasks with a maximum of 5 gigabytes, then the total maximum size of the holding area is 10 gigabytes.
 - Set a small maximum holding area size and then schedule the PST Collector Task so that it keeps the holding area full. Schedule the task to end before the end of the PST Migrator Task schedule, so that the PST Migrator Task has time to empty the holding area within its scheduled run. Otherwise, the PST files remaining will not be migrated until the next scheduled window starts, and users will not have access to them in the meantime.
 - In the properties of the PST Collector Task, define a maximum number of PST files that will be stored in the holding area.
3. When a PST file is ready to be copied, it will be changed to read-only so that it is not changed during the migration cycle. The status in the PstFile SQL record will be changed and the copy attempted. If the copy fails, then the retry count and last copied time fields will be updated. If the maximum retry count has not been reached, then the status will be reset to "Ready to copy," but the copy will not be reattempted until the configured time delay interval has passed. By default, the PST Collector Task will retry up to seven times at one-day intervals, but this may be configured via the PST Collector Task's properties.
 4. When a PST file has been copied, the status will be updated to "Ready for backup" or "Ready to migrate," depending on the configuration. It is possible to set the PST Migrator Task so that it will not start migrating a PST file until it has been backed up in the holding area. This setting can be found in the properties of the PST Collector Task, as this task changes the file status to either of the two values identified previously.
 5. At this point, organizations can add their own procedures. Some possibilities are:
 - Make a backup copy of the PST file and then manually change the migration status to "Ready to migrate."
 - Make a backup copy of the PST file and rely on the change of backup file attribute ("archive bit") to indicate that the PST file is ready for migration.
 - Run a procedure to call a third-party PST file password cracker. The result of this procedure might be to remove the password protection or to change the password. The migration status would then need to be changed manually or programmatically to "Ready to migrate."
 - Run a procedure to repair a PST file that is corrupt. The migration status would then be changed manually or programmatically to "Ready to migrate."
 - Run a procedure to do an antivirus scan across the PST files before migration. The migration status would then be changed manually or programmatically to "Ready to migrate."

Figure 3 shows the properties of the PST Collector Task. Also shown is the Enterprise Vault Site Properties page where the PST Holding Folder is defined.

Figure 3 - PST Collector Task properties



Step 3 – Migrate the PST files

1. On a schedule, or initiated manually with a "Run Now," the PST Migrator Tasks scan the PST file's SQL table looking for PST files that have the status of "Ready to migrate," and the target Archive is managed by the Storage Service on the same Enterprise Vault server as the PST Migrator Task. By default, each PST Migrator Task can process up to five PST files concurrently, but this may be changed. In fact, it has been found that changing it to 10 concurrent migrations gives the optimal ingest rate. A lock prevents two threads from trying to select the same PST file simultaneously.
2. The PST Migration Policy for the associated mailbox is determined, which contains all the PST migration settings that will be used to migrate that PST file. A special case is made for the Retention Category, which is obtained in the following priority order:

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- Highest. If not null, use the Retention Category specified for this PST file by the administrator via the Administration Console. Generally, this will have been done to override the Retention Category set by "marking" or obtained from the PST Migration Policy.
 - Next. If the PST file has been marked by the Enterprise Vault client (Outlook add-in), use the Retention Category stored in the PST file through that marking process.
 - Lowest. The Retention Category from the applicable PST Migration Policy is used.
3. The status of the PST file is changed from "Ready to migrate" to "Migrating." A migrator server process is launched, and PST migration commences.

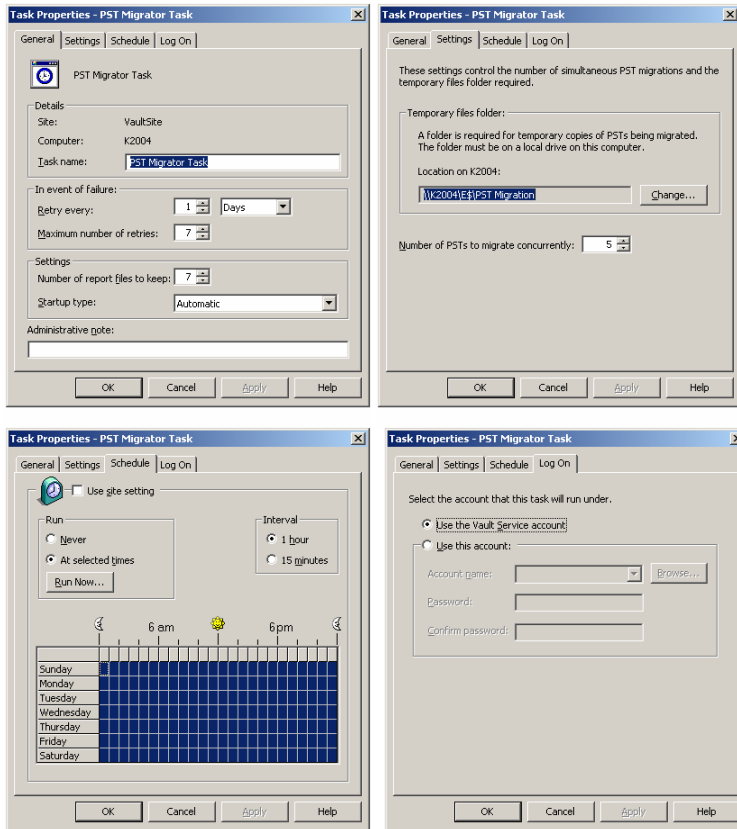
On successful completion of the migration, the status of the PST file is changed to "Ready for post-processing." The PST Migrator Task is also responsible for post-migration cleanup. When a PST file has been migrated and is in a state to be copied back, then a copy-back thread does the following:

- If the PST file is to be deleted, then the original PST file on the user's computer or the file server will be deleted.
 - If the PST file is to be preserved, then the migrated PST file will be copied over the original PST file and compressed, set hidden, and/or set read-only as configured in the PST Migration Policy.
 - If the PST file is to be removed from the user's Outlook profile, then the Enterprise Vault client add-in will be responsible for this action.
4. If the PST Migration Policy specifies that shortcuts are to be left in the mailbox, an email message can optionally be sent to the mailbox. If the policy is set so that no shortcuts are created, or shortcuts are to be created in the PST file, then no email message is sent.
5. It is possible that network problems may prevent successful completion of the post-processing. Consequently, the same rules as for the PST Collector Task are applied about maximum number of retries and interval between retries. Note that the original PST file will still have the read-only flag set until this action is completed.
6. When post-processing has been completed successfully, the status is changed to "Migration Complete."

Figure 4 shows the PST Migrator Task properties.

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Figure 4 - PST Migrator Task properties



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How it works: Client-driven PST migration

It is possible to configure the Enterprise Vault client (both the full and light versions) so that PST files are located and migrated automatically. The underlying mechanism used is a combination of the client (a "PSTimporter" thread in the Enterprise Vault User Extensions) doing the locating and the server-based PST Migrator Task doing the migrating. This can be useful in the following cases:

- Most of the users' PST files are continuously locked and therefore inaccessible for server-driven migration because Outlook is always open while the workstation is powered on.
- The Enterprise Vault Service Account, or the account being used to run the PST Locator Task and/or PST Collector Task, does not have permission to scan the users' computers or to access any PST files found.
- The users' computers are available on the network only occasionally, for example, a user with a laptop computer who rarely visits the office.

Note: Client-driven migration does not allow the user to instigate PST migration or to choose which PST files get migrated. This possible enhancement is under consideration for a future release.

The client-driven PST migration process is as follows:

1. Mailboxes are selected and enabled for client-driven PST migration. This is done via the Administration Console. Note that a mailbox must already have been enabled for archiving so that it has an Archive associated with it.
2. Optionally, an explanatory mail message can be immediately sent to the newly enabled mailboxes (for client-driven migration). This message is customizable and would typically contain some explanation of the process, any changes a user might perceive after the migration, and who to contact if there are questions.
3. The next time a user starts Outlook, the computer is scanned for PST files. By default, this scan starts approximately one minute after Outlook starts, but this can be configured via the Advanced—Desktop settings in the Exchange Mailbox Policy.
4. The scan looks first for PST files in the user's Outlook profile. Note that if the user has multiple profiles configured, then *all* of these will be checked for PST files. The scan then looks for PST files on the hard drives of the user's computer. This scan does not search system folders and can also be restricted to folders under the Documents and Settings folder for that user, which is configured in the migration settings of the PST Migration Policy. The scan does not search for PST files across drives mapped to file shares on other computers, but the client-driven method will migrate PST files located on mapped drives if the PST file is listed in the user's Outlook profile.
5. As each PST file is identified, the client sends the details to the Enterprise Vault server, which adds an entry to the "PSTfiles" SQL table. In a site with multiple Enterprise Vault servers, the client contacts the server that has the Storage Service managing the Vault Store in which the user's Archive resides. This server, therefore, should have a PST Migrator Task configured and running.
6. The client PSTimporter thread then retrieves the entire list of PST files for that user/computer combination from the Enterprise Vault server. Besides the PST files it has just found, this list may also include other PST files that are already partially migrated or ready for post-processing.
7. Each PST file, one at a time, is broken into a series of approximately 10-megabyte chunks, each of which is copied to the PST holding folder as a DB file, with a unique file name based on the number of the PST file from the PSTfiles table and the chunk number. Only one chunk per user is created and sent at one time—the next chunk (for the same PST file or the next one in the list) will be created and sent only after the previous chunk has been successfully migrated. Once a chunk has been copied to the server, the client PSTimporter thread waits one minute before checking on the migration status of that chunk. If the chunk has not yet been migrated, then the client waits another minute before checking again. If the chunk has been migrated, then the next chunk is created and copied to the server.
8. As the PST Migrator Task starts to process the chunk, it first copies it from the site PST Holding Folder to a temporary folder local to the PST Migrator Task, as defined in the PST Migrator Task properties. It then starts to migrate the contents of the chunk file into the appropriate Archive unless the PST file has been "marked." Otherwise, the target archive will have been determined by the client, based on the primary mailbox configured in the Outlook profile being used.

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9. By default, each PST Migrator Task can process five PST files/chunks concurrently, although this is configurable, and optimal performance has been found to occur when 10 concurrent PST files or chunks are being migrated concurrently.
10. As the contents of the chunk are migrated into the Archive, shortcuts are created as defined in the PST Migration Policy in effect for the associated mailbox.
11. Once the last chunk of each PST file has been successfully migrated, checks are made to make sure that no more items have been added to the PST file. If items have been added, then an additional chunk is created and the process continues.
12. Provided that there are no more items, the PST file is removed from the user's profile and optionally deleted or hidden, compressed, and/or set as read-only as defined in the PST Migration Policy. Note that if the Vault Store is set to remove safety copies "After Backup," the PST file will not be deleted until after all the save sets have been backed up. Therefore, there may be some delay between a PST migration completion and it being shown as "Complete."
13. When a PST file has completed migrating, an optional email message can be sent to users informing them of this fact. This can occur regardless of which shortcut creation option is configured (none, PST, or mailbox), as long as the template email message has been configured on the Enterprise Vault server.

Table 4 shows the most common migration statuses for client-driven migration.

Table 4- Migration statuses for client-driven migration

Migration Status	Meaning for Client-Driven Migrations
Read to copy	The PST file has been located and added to the PSTfiles SQL table. However, no chunks have been copied to the server because either the PST Migrator Task is still migrating a chunk from another PST file from that user, or the PST Holding folder is full (default is 5 gigabytes).
Migrating	A chunk has been copied and is in the process of being migrated into the archive.
Completing	All chunks for that PST file have been migrated, and now post-processing is being done, including waiting for the backup of the Vault Store to be completed.
Complete	The PST file has been fully migrated, and post-processing is completed.

Client-driven migration and Vault Cache

One of the major benefits of the client-driven migration is the way it interacts with Vault Cache. Vault Cache stores a "cache" of the users' archives locally on their laptop (or, in some cases, their desktop), which is used when a user is trying to access an archived item—via a shortcut or Archive Explorer—when they are working offline or using Outlook in Cache Mode. The Vault Cache cache is normally populated by a pre-fetch routine in the Enterprise Vault client that looks ahead to what will soon be archived and makes a copy of it in the Vault Cache. If the pre-fetch has missed items (such as when archiving is first enabled, or Vault Cache is first enabled), there is a second phase that looks at shortcuts and the offline Archive Explorer index and makes sure that every item is in the cache. If not, then it will download all those missing items. However, with PST migration this would mean downloading a lot of messages from the archive into Vault Cache, so the client-driven PST migration copies items it is loading into chunks into the Vault Cache as well, avoiding the extra downloads.

Usually, when the preconfigured maximum size of Vault Cache is reached, older items will be purged to make way for new items (remembering this is only a cache of the user's archive). However, it is possible to configure the client-driven PST migration to automatically expand the size of Vault Cache to fit everything being migrated from the PST file(s). This is configured via the PST Migration Policy.

How it works: PST Migration Wizard

The PST Migration Wizard enables the Enterprise Vault administrator to manually migrate the contents of one or more PST files to Enterprise Vault. In common with all methods of PST migration within Enterprise Vault, the actual migration of the items from the PST files is done by a component of the Storage Service called a PSTMigratorServer. However, using the PST Migration Wizard allows the administrator to choose the PST files to migrate, specify the target archive(s), and set all other migration settings (such as whether or not to leave shortcuts in mailboxes). The settings in the PST Migration Policy are not used; however, the Vault ID and other information written into the PST file by PST marking may be used to simplify the process of correlating the PST file to a mailbox and its associated Archive. As such, this method gives the administrator a quick and flexible way to specify different settings for a number of PST files. However, it

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does not *locate* the PST files; another method must be used for that (for example, Microsoft SMS, logon scripts, Windows Search, and, potentially, the PST Locator Task).

As with all PST migrations, to optimize performance it is better to have the PST files copied to a folder local to the Storage Service. Unlike the client-driven or server-driven PST migration methods, however, the wizard-driven migration does not delete the PST file or copy it back to its original location after migration. Wizard-based migration also does not check that the PST file has been backed up prior to migration, nor does it wait for the newly migrated items to be backed up in the Vault Store before deleting the PST file.

Another feature of the PST Migration Wizard is automatic correlation to determine ownership of the PST file based on the NTFS folder and/or share permissions. However, this only works if the PST file is left in its original location, and it is generally recommended that the PST file be moved locally if large numbers of PST files are being migrated. The Enterprise Vault administrator must also ensure that the PST file is not accessed by the user while it is being migrated. Generally this is done by setting the PST file to read-only, or by renaming or moving it.

The PST Migration Wizard is single-threaded (that is, it will work sequentially through the list of PST files supplied and migrate one PST file at a time), but multiple instances of the PST Migration Wizard may be run concurrently, with each instance given its own exclusive list of PST files though which to work.

The following sections detail the migration process using the PST Migration Wizard.

Step 1.- Preparation

1. The Enterprise Vault administrator locates the PST files. This can be done using various methods including using the PST Locator Task. Generally, the PST Migration Wizard is used for small numbers of "exception" PST files and when their location is known.
2. The Enterprise Vault administrator decides whether or not to use PST marking to determine PST file ownership. If so, the PST Marking option should be turned on well in advance of doing the migration to ensure that as many PST files as possible are marked.
3. The PST files must not be in use at the time of migration, so the Enterprise Vault administrator needs to make sure that users do not have them open. They may find that it is better to copy PST files to a centralized location to set the original copies to read-only, which prevents users from accessing them but leaves the original copy intact.
4. The Enterprise Vault Service Account must have full-control access to the PST files being migrated.
5. The PST Migration Wizard's automatic correlation (based on NTFS and/or share permissions) skips any PST file that has more than one user account with write permission, leaving the Enterprise Vault administrator to do the correlation manually within the wizard.
6. The PST Migration Wizard cannot migrate PST files that are password-protected. The Enterprise Vault administrator must remove such protection before running the PST Migration Wizard.
7. If PST files are scattered in different locations, it is easier (and better for performance) to move them all to a central location before running the PST Migration Wizard. However, this means that automatic correlation will not work, so either PST marking, manual correlation, or a combination of both will be necessary.

Step 2 - . Run the PST Migration Wizard

From the Administration Console, the Enterprise Vault administrator runs the PST Migration Wizard using the Import menu option from the Archives container context menu. Within the wizard, the administrator does the following:

1. Selects which Vault Store contains the archives for the PST files being imported. Note: Only one Vault Store can be processed in each run of the wizard. Run the wizard multiple times when importing PST files into multiple Vault Stores.
2. Selects the PST files to migrate to Enterprise Vault; PST files can be selected from multiple mapped drives or network drives and can be dragged and dropped into the wizard from another window (for example, Windows Search results).
3. Correlates the PST files to Archives using either an automatic correlation, based on NTFS/share permissions and/or PST marking, or manually. PST files that cannot be automatically correlated must be manually correlated within the wizard or removed from the batch.
4. Specifies which Retention Category to use for items from each PST file (a default is specified that can be overridden for individual PST files).

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5. Specifies whether the PST Migrator Task is to create shortcuts to the items it migrates. The options are:
 - No shortcuts
 - Shortcuts in the PST files
 - Shortcuts in the associated mailboxes
6. Specifies what to do with the Deleted Items folder. The administrator can choose to leave deleted items in the PST files or migrate them.
7. Specifies what to do with the PST files after they have been processed. The options are:
 - Leave them as they are.
 - Delete them.
 - Compact them to free up disk space.
 - Set them to be read-only. This prevents users from accessing the files.
 - Hide them. This can help in seeing how many PST files are left to migrate.
8. Starts the migration.

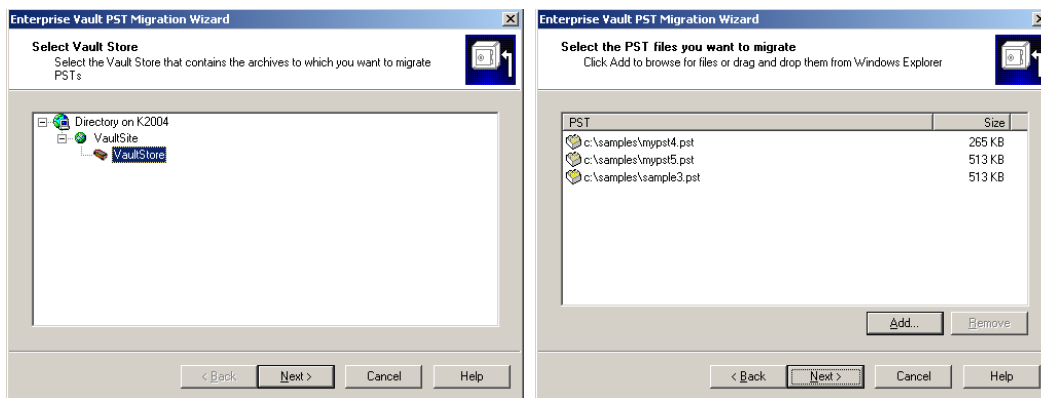
Note that the PST Migration Wizard does not use any of the settings from the PST Migration Policy. All settings must be specified manually when running the PST Migration Wizard. The previous settings are stored in the registry and loaded as default values for subsequent runs of the PST Migration Wizard on that Enterprise Vault server.

At the end of the migration process, the PST Migrator Task writes a short report to the Enterprise Vault event.

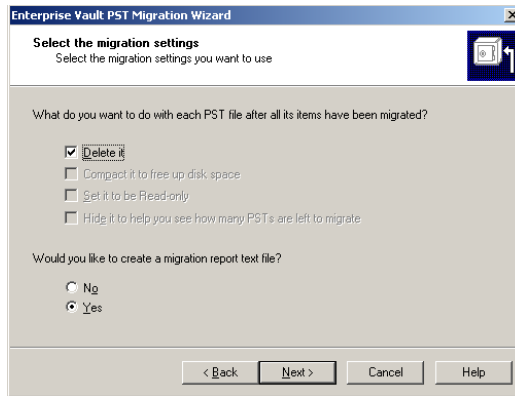
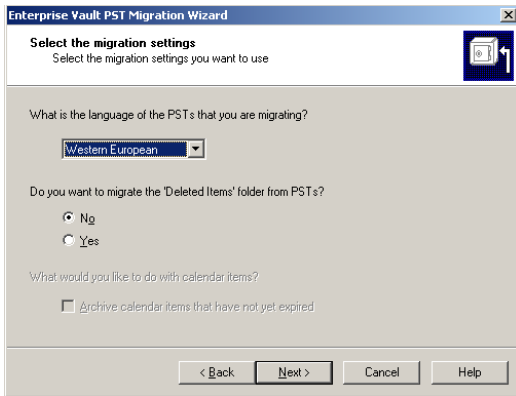
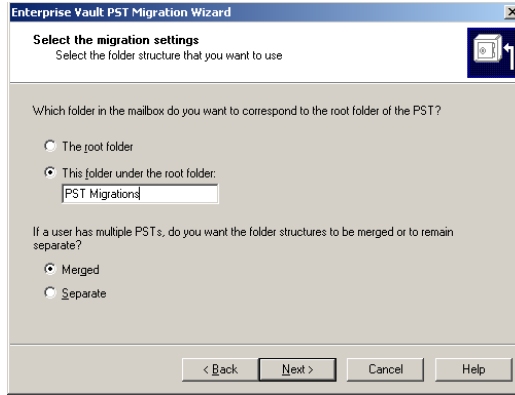
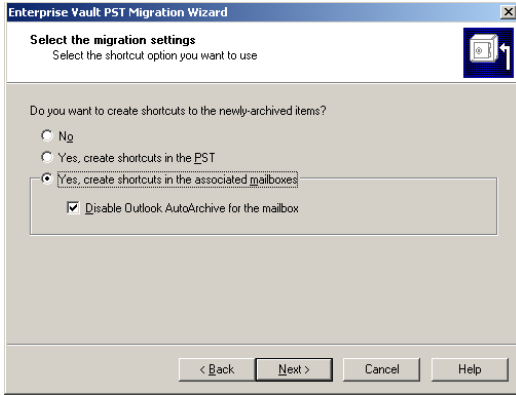
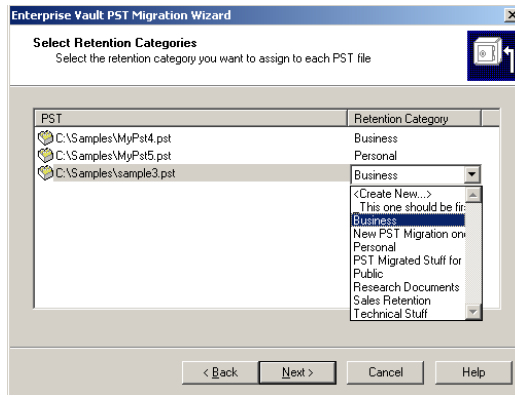
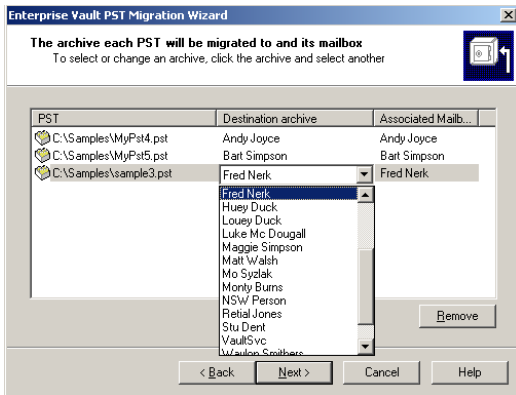
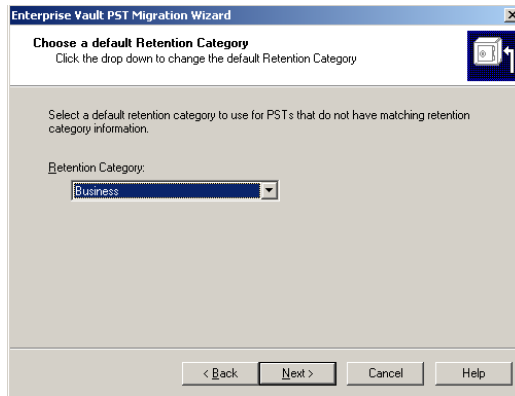
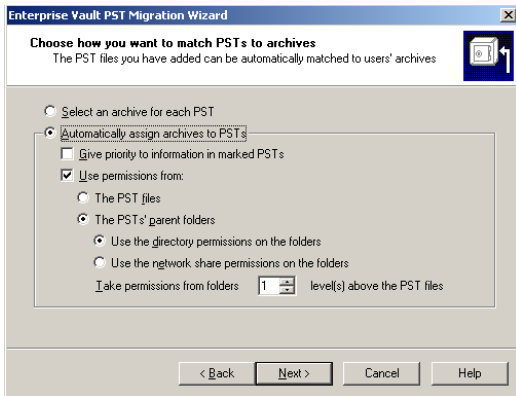
If the migration is configured to leave shortcuts in the mailbox, then an optional email message can be sent to the mailbox when the PST file has been successfully migrated.

Figure 5 steps through the PST Migration Wizard.

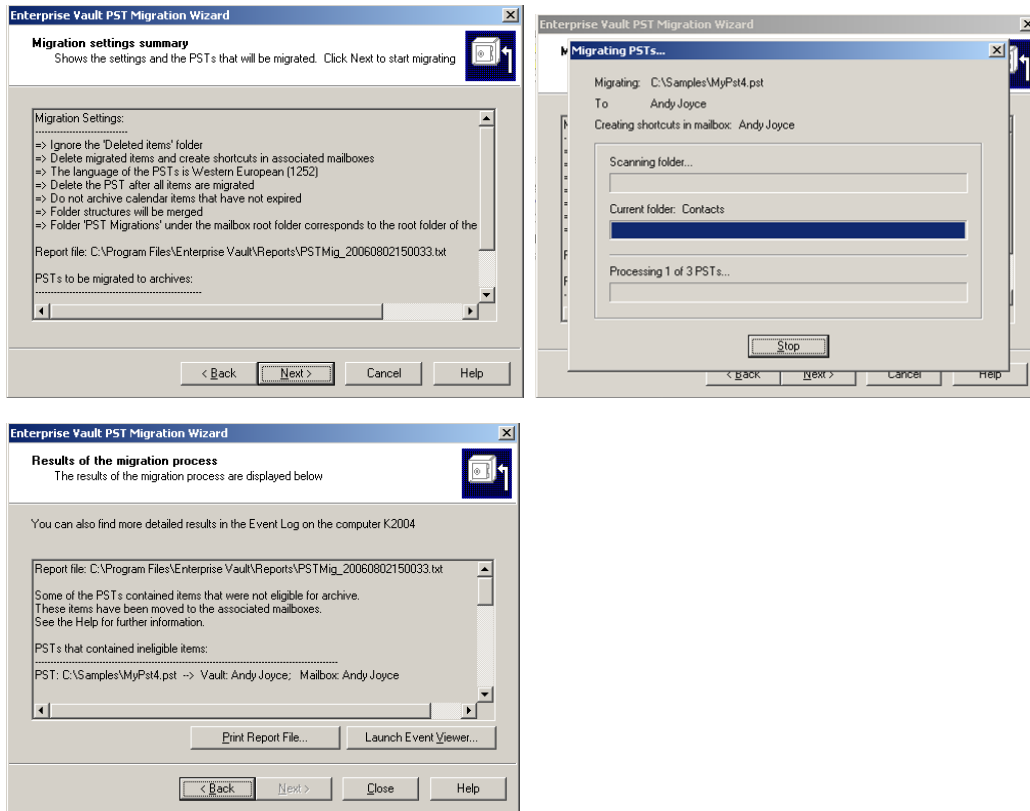
Figure 5 - PST Migration Wizard



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Step 3- Manual Post-Processing

1. Once the PST migration has been completed, the Enterprise Vault administrator checks the report and takes any corrective action for PST files that have failed migration, including rerunning them through the PST Migration Wizard.
2. The Enterprise Vault administrator then either deletes the migrated and original PST files or copies the migrated PST files over the originals (if the migration was configured to leave shortcuts in the PST files).

In conclusion, migrating PST files using the PST Migration Wizard may appear to be a manually intensive process for the Enterprise Vault administrator. However, note that this migration method is best suited for small numbers of "exceptions," for which manual intervention would be required anyway.

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How it works: "Scripted" PST Migration using EVPM

Prior to the introduction of the server-driven and client-driven PST migration methods in Enterprise Vault, organizations had to devise their own methods of automating large-scale PST migrations. As noted previously, the manual process using the PST Migration Wizard provides a great deal of flexibility but is best suited to organizations with a small number of PST files or for exception handling. Scripted PST migration, using Enterprise Vault Policy Manager (EVPM), was the method used to automate the migration of large numbers of PST files. Enterprise Vault Policy Manager is the interface to initiate the migration; the migration itself is performed by the PST migration process, which is a part of the Storage Service. This is important to remember if PST migration is being run overnight; if the Storage Service is stopped or set into read-only mode for backups, this will affect all methods of PST migration.

Although "scripted PST migration" is a phrase used to describe the process, it is not strictly accurate. The process consists of creating an EVPM initialization file that contains the PST migration settings and the details of the PST files to migrate, and then running EVPM with this initialization file as its input. Any "scripting" is usually confined to generating the initialization file; for example, some organizations have written Visual Basic scripts to read lists of PST files and then generated the initialization file from them. Others have gone further by wrapping the whole process in batch files, which have then been scheduled in the Windows Task Scheduler. Most of this is now superfluous since the introduction of the server- and client-driven PST migration methods, but that option is still available. However, the time and effort required to develop and test the scripting should be compared with the time required to process the PST files using the PST Migration Wizard.

As with the PST Migration Wizard, no settings are taken from the PST Migration Policies, but PST Marking can be used to correlate PST files to Archives. The following sections detail the steps involved in scripted PST migration.

Step 1.- Preparation

The initial preparation for a scripted PST migration is very similar to that for a wizard-driven migration.

1. The Enterprise Vault administrator locates the PST files. This can be done using a variety of methods.
2. The Enterprise Vault administrator decides whether or not to use PST Marking to determine PST file ownership. If so, the PST Marking option should be turned on well in advance of doing the migration to ensure that as many PST files as possible are marked.
3. The PST files must not be in use at the time of migration, so the Enterprise Vault administrator needs to make sure that users do not have them open. They may find that it is better to copy the PST files to a centralized location and to set the original copies to read-only, which prevents the users from accessing them but leaves the original copy intact.
4. The Enterprise Vault Service Account must have full-control access to the PST files.
5. Scripted PST migration cannot migrate PST files that are password-protected. The Enterprise Vault administrator must remove such protection before running the PST Migration Wizard.
6. If PST files are scattered in different locations, it is easier (and better for performance) to move them all to a central location before running the PST Migration Wizard. However, this means that automatic correlation will not work, so either PST marking, manual correlation, or a combination of both will be necessary.

Step 2 – Creation of an EVPM Initialization File

An EVPM initialization file is written (by hand or programmatically by a custom program or script) and saved with Unicode encoding (using a text editor such as Windows Notepad). A typical EVPM initialization file for PST migration will contain the following:

- Mandatory section specifying the Enterprise Vault directory server and site.
- PSTDefaults section containing all the settings to control the PST migration. These are essentially the same settings as can be configured via the PST Migration Wizard.
- Multiple PST sections, each specifying one PST file (the full path relative to the Enterprise Vault server doing the migration), and optional settings overriding the default settings or values stored in the PST file as a result of PST marking.

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Following is an example Enterprise Vault Policy Manager initialization file for PST migration.

```
[Directory]

directorycomputername = K2004
sitename = VaultSite

[PSTDefaults]

MigrationMode = Report
ServerComputerName = K2004
PSTLanguage = Western European
MailboxFolder = PST Migrations
ShortcutMode = MailboxShortcuts
IncludeDeletedItems = false
SetPstHidden = false
SetPstReadOnly = false
CompactPst = false
DeletePst = true
CancelMbxAutoArchive = false

[PST]

Filename = C:\EVPM Scripted PST Migration Staging Folder\Migrate with EVPM
again.pst

[PST]

Filename = C:\EVPM Scripted PST Migration Staging Folder\Another test.pst

[PST]

Filename = C:\EVPM Scripted PST Migration Staging Folder\Financial.pst
RetentionCategory = Finance
ArchiveName = Finance Archive
```

For the sake of brevity, this is a very simple example to migrate only three PST files. The PST Migration Wizard would be a more appropriate choice to migrate this number of files. Also, in this example, the third PST file has a specific Retention Category and target Archive specified, which will override the values found in the hidden message written to the PST file by marking.

Step 3 – Run EVPM in report mode

It is recommended that Enterprise Vault Policy Manager be run first in report mode, which does the following:

- Verifies that all the PST files listed are accessible.
- Creates a new initialization file that shows any problems with the listed PST files, such as files that could not be accessed or are password-protected. The new initialization file has the same name as the original, with a number added to make it unique. For example, if the original script was called PSTMigration.ini, then the new script would be called PSTMigration_1.ini.
- Creates a log file with the same name as the original initialization file and a file type of .log. For example, if the original script was called PSTMigration.ini, then the log would be called PSTMigration.log.

The Enterprise Vault administrator would fix any problems listed in the new initialization file or could leave them for later as PST files with problems are commented out in the initialization file, so they would not be included in the subsequent process mode run.

Following is an example of an automatically rewritten Enterprise Vault Policy Manager initialization file, following a report mode run. Note how one PST file, "Another test.pst," could not be found and so has been flagged with a "DONOTPROCESS = TRUE" keyword. This means that the initialization file can be used immediately to migrate those PST files that have been found correctly, but it will not attempt to process the missing PST file.

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[DIRECTORY]

DIRECTORYCOMPUTERNAME = K2004
SITENAME = 15FA3271AFAAE7F408D6C4548759408DE1d10000vault

[PSTCHECKPOINT]

GENERATION = 1
CREATED = 23Aug2006 03:48:27 PM
SOURCE = C:\EVPM PST Migration.ini
PSTPROCESSEDCOUNT = 3
PSTNOTREADYCOUNT = 1
PSTWARNINGCOUNT = 1

[PSTDEFAULTS]

MIGRATIONMODE = REPORT
SERVERCOMPUTERNAME = K2004
MAILBOXFOLDER = PST Migrations
INCLUDEDELETEDITEMS = FALSE
SETPSTHIDDEN = FALSE
SETPSTREADONLY = FALSE
COMPACTPST = FALSE
DELETEPST = TRUE
CANCELMBXAUTOARCHIVE = FALSE
SHORTCUTMODE = MAILBOXSHORTCUTS
PSTLANGUAGE = WESTERN EUROPEAN

[PST]

```
;-----  
; Report_Status: PST cannot be migrated  
; Report_Error: The system cannot find the file specified. [ C:\EVPM  
Scripted PST Migration Staging Folder\Another test.pst ]  
;-----
```

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```
DONOTPROCESS = TRUE
FILENAME = C:\EVPM Scripted PST Migration Staging Folder\Another test.pst

[PST]

;-----
; Settings extracted from marked PST
;-----
; Report_Status: PST is ready for migration
; Report_Status: Warning - All marked PST settings are being overridden
; VaultName = 171A53DBFEE90FC4B8AC1856BAF36DA381110000vault
; VaultName = Andy Joyce
; MailboxDN = /o=First Organization/ou=First Administrative
Group/cn=Recipients/cn=andy
; RetentionCategory = 159C60CC08AE88747BA543E39B4212D311b10000vault
; RetentionCategory = Business
;-----

FILENAME = C:\EVPM Scripted PST Migration Staging Folder\Financial.pst
VAULTNAME = Finance Archive
RETENTIONCATEGORY = 18451E6D36C08D94181206ECB684C7E171b10000vault

[PST]

;-----
; Settings extracted from marked PST
;-----
; Report_Status: PST is ready for migration
; VaultName = 171A53DBFEE90FC4B8AC1856BAF36DA381110000vault
; VaultName = Andy Joyce
; MailboxDN = /o=First Organization/ou=First Administrative
Group/cn=Recipients/cn=andy
; RetentionCategory = 159C60CC08AE88747BA543E39B4212D311b10000vault
; RetentionCategory = Business
;-----

FILENAME = C:\EVPM Scripted PST Migration Staging Folder\Migrate with EVPM
again.pst
```

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Step 4 – Run EVPM in process mode

Enterprise Vault Policy Manager is run with the new initialization file and migrates the PST file contents and writes a log file with the same name as the initialization file and a file type of .log.

If any PST files fail the migration process, Policy Manager automatically writes a new initialization file that can be used to process only those failed files once the problem has been resolved.

Following is an example of an Enterprise Vault Policy Manager log file.

```
Below is an example log file from an EVPM PST Migration, using the above
example initialization file.
Start Time : 23-Aug-06 03:54:31 PM

Initialization File: C:\EVPM PST Migration_1.INI

=====
==

03:54:31 Processing PST file: C:\EVPM Scripted PST Migration Staging
Folder\Financial.pst

    PST migration option settings:

    PST File: C:\EVPM Scripted PST Migration Staging Folder\Financial.pst
    Vault: 131A87B68D8343D439CD8E09C9DC540811110000vault
    Exchange Mailbox: Not specified in ini file.  Obtain from PST, if
    marked.
    Retention Category: 18451E6D36C08D94181206ECB684C7E171b10000vault
    Mailbox Folder: PST Migrations
    Server Computer Name: K2004
    Shortcut Mode: MAILBOXSHORTCUTS
    Merge PST Folders: 1
    Include Deleted Items: 0
    Set PST Hidden: 0
    Set PST ReadOnly: 0
    Compact PST: 0
    Delete PST: 1
    Cancel Mailbox AutoArchive: 0
    PST Language: WESTERN EUROPEAN

03:54:34 PST Migration completed successfully

    PST migration summary:

    PST File: C:\EVPM Scripted PST Migration Staging Folder\Financial.pst
    Number of folders processed: 4
    Number of items archived to vault: 0 of 7
        - Number of items not eligible for archiving: 7
    Number of items moved to mailbox: 0 of 7
    PST file NOT deleted as it contains non-archive eligible items.

=====
==

03:54:35 Processing PST file: C:\EVPM Scripted PST Migration Staging
Folder\Migrate with EVPM again.pst

    PST migration option settings:

    PST File: C:\EVPM Scripted PST Migration Staging Folder\Migrate with
    EVPM again.pst
    Vault: Not specified in ini file.  Obtain from PST, if marked.
    Exchange Mailbox: Not specified in ini file.  Obtain from PST, if
    marked.
    Retention Category: Not specified in ini file.  Obtain from PST, if
    marked.
    Mailbox Folder: PST Migrations
    Server Computer Name: K2004
    Shortcut Mode: MAILBOXSHORTCUTS
    Merge PST Folders: 1
```

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```
Include Deleted Items: 0
Set PST Hidden: 0
Set PST ReadOnly: 0
Compact PST: 0
Delete PST: 1
Cancel Mailbox AutoArchive: 0
PST Language: WESTERN EUROPEAN

03:54:48 PST Migration completed successfully

PST migration summary:

PST File: C:\EVPM Scripted PST Migration Staging Folder\Migrate with
EVPM again.pst
Number of folders processed: 4
Number of items archived to vault: 0 of 7
  - Number of items not eligible for archiving: 7
Number of items moved to mailbox: 7 of 7
  - Number of archived items moved to mailbox: 0
  - Number of other items moved to mailbox: 7

=====
==
=====
==

Summary:

Number of PST migrations performed: 3
Number of PST migrations completed successfully: 0
Number of PSTs partially processed: 2
Number of PST migrations failed: 0
Number of PST migrations unprocessed: 1
Number of PST migrations processing incomplete: 0

New initialization file generated: C:\EVPM PST Migration_2.INI

Review the new file, fix any problems and run Policy Manager with this new
initialization file.

End Time : 23-Aug-06 03:54:50 PM
```

Note that another version of the initialization file is created automatically—in this case, EVPM PST Migration_2.INI—which can be used for any subsequent migrations to target PST files that failed previous migration attempts once the administrator has resolved the issue that caused the PST file to fail (for example, password protection, file name incorrect in initialization file, incorrect permissions). This process can be repeated until all PST files are successfully migrated.

If the migration is configured to leave shortcuts in the mailbox, then an optional email message can be sent to the mailbox when the PST file has been successfully migrated.

Step 5- Manual Post-Processing

1. Once the scripted PST migration has been completed, the Enterprise Vault administrator checks the logs and takes remedial action for PST files that have failed migration, including rerunning them through another scripted PST migration or manually through the PST Migration Wizard.
2. The Enterprise Vault administrator then copies the migrated PST files over the original PST files (if shortcuts have been left in the PST file) or deletes the migrated and original PST files.

As can be seen, the process of preparing for and running a scripted PST migration is complex, so one of the other PST migration methods may be more suitable. However, for situations in which a bulk import of a large number of PST files needs to be automated, this method can be quite effective.

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More information

The standard Enterprise Vault documentation includes a long section on PST migration and Enterprise Vault Policy Manager. For more information, refer to the following documents from the standard Enterprise Vault documentation set:

For PST migration:

Symantec Enterprise Vault™ Administrator's Guide
Administrators_Guide.pdf or *Administrators_Guide.chm* (compiled HTML help file)

For Enterprise Vault Policy Manager (for scripted PST migration):

Symantec Enterprise Vault™ Utilities
Utilities.pdf or *Utilities.chm*

These documents can be found in the Documentation folder on the Enterprise Vault distribution CD, or in the Enterprise Vault installation folder (usually C:\Program Files\Enterprise Vault) once the software has been installed.

About Symantec

Symantec is a global leader in providing security, storage and systems management solutions to help businesses and consumers secure and manage their information. Headquartered in Cupertino, Calif., Symantec has operations in 40 countries. More information is available at www.symantec.com.

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