WHITE PAPER: TECHNICAL

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Migrating NSF Files using Symantec Enterprise Vault 8.0™

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White Paper: Symantec Technical

Contents

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Introduction

This paper is intended as an introduction to and discussion of the NSF Migrator functionality within Symantec Enterprise Vault 8.0 or later. It assumes the reader has some experience in using and configuring Enterprise Vault for Domino archiving.

The Problem

End-user created NSF files, used perhaps as an overflow to their primary mail file or as a local Notes "Archive", can be the source of a series of problems within organizations of any size. Many users move mail data between their primary mail file and other NSF files in order to retain the data for a longer period of time than perhaps a relatively small mail file quota will allow. This practice, however, often results in more problems and is often the reason an organization will seek to install and make use of a messaging archiving solution such as Enterprise Vault.

Common use cases behind end users creating and using local NSF files containing mail data include:

Use Case 1

A user is hitting their quota limit in their primary mail file. They therefore create a new local copy of their mail file on their workstation and use this as a backup. The user can then delete older messages from their primary mail file to adhere to the quota restrictions, safe in the knowledge that they can access older data in the local copy.

Use Case 2

A user makes use of the Notes 'Archive' functionality where the Notes client can be configured to move mail documents based on a selection criteria between the users primary mail file and an "Archive" NSF file either stored locally on the workstation or on a file server / Domino mail server. This "Archive" function can be configured to run on a regular basis.

Use Case 3

A user creates a local empty NSF file and then moves documents into the file manually on a regular basis as a form of backup or perhaps to retain the documents for a longer period than perhaps their mail file quota will allow.

Allowing users to perform any of the actions above can lead to a number of common problems including:

- Lack of centralized management – How many of these end user created NSF files exist ? Where are they stored ? What information do they contain? How much space do they utilize ?

- Data Corruption – There are limited data backup and recovery options when users store information locally, and corruption of this type of data can easily result in data loss.
- Impact of nightly backups – Storing user created NSF files on file servers and / or Domino mail servers can result in longer more protracted backup windows. Even when using incremental or differential backup routines, a single change in a large NSF file will result in the entire file requiring backup the following night.
- Increased storage requirements – There is no single instance saving when multiple copies of the same mail document exist in multiple NSF files.
- Lack of content retention enforcement – Companies who adhere to industry rules and regulations are often required to retain data for specific periods of time. This is very difficult to enforce when the data is not centrally managed and controlled.
- Difficulty in searching – A user can only search a single NSF file at one time, and it is virtually impossible for an organization to locate and search all user created NSF files.
- Data Loss – A user's laptop is stolen or becomes unusable. Intellectual property is lost to the organization and confidential data is potentially exposed.
- Liability – Many organizations today employ some form of Records Management or ECM solution that ensures that data is not maintained longer than necessary for liability reasons. NSF files, and the data they contain, are commonly not a part of the data management process, which could lead to undesired disclosure during a legal discovery request.

The Solution

Symantec Enterprise Vault helps organizations solve the problems outlined above by migrating user created NSF files into an archiving repository where the data can be managed and administered centrally, while still giving end users access to search and retrieve their information. The key benefits of undertaking an NSF file migration include:

- Eliminating multiple copies of documents and their attachments using Enterprise Vault's single instance storage platform
- Reducing the load on the regular backup schedules
- Bringing all the data under a centralized management structure where it can be properly managed, retained and expired when necessary.
- Provide end users and administrative (HR or Legal) with an easy to use search and access mechanism to easily find data in the archive for personal or e-Discovery purposes.

Wizard Driven Migration Tool

The Enterprise Vault NSF Migrator wizard consists of a workflow which collects specifics around which NSF files to migrate, migration options, reporting options and then performs the migration.

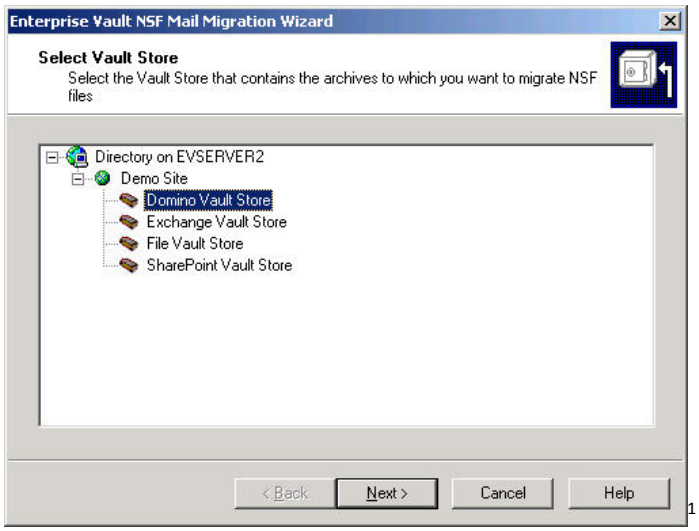
The NSF Migration wizard is only available to members of the following roles in Enterprise Vault Administration Roles; NSF Administrator, Messaging Administrator, Domino Administrator and Power Administrator.

Migration Workflow

The following steps, descriptions and screenshots show how to use the tool and provide an understanding of the options available:

1. Start the NSF Migration wizard from the Enterprise Vault program group on the start menu. It can also be started from within the Enterprise Vault administration console by right clicking on the 'Archives' container and selecting 'Import NSF…'.

2. Select a Vault Store into which you wish to migrate NSF file data into:



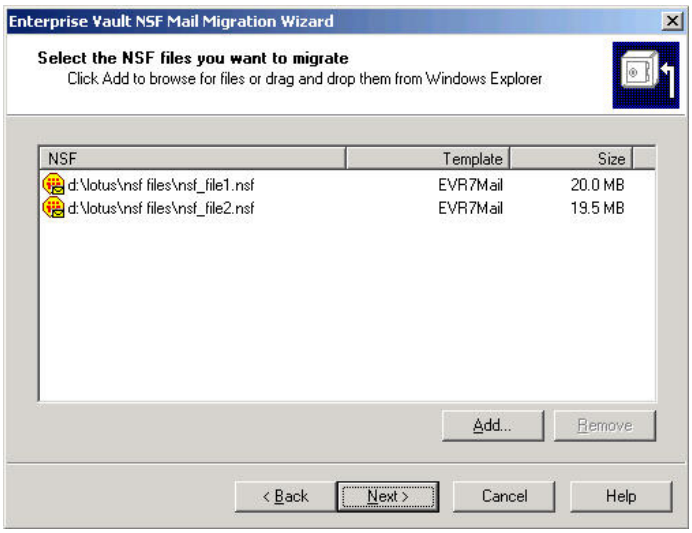
[1]

[1] Note that the Vault Store names shown above are used for illustration purposes only. Enterprise Vault does not require target specific Vault Stores.

3. Select the NSF files that require migrating. You can use local or UNC paths[2] to files but not mapped drives.

   Note that the migrator shows the template used by each NSF file. The migrator will allow migration of NSF files using standard mail templates by default[3]. Any other template type will cause a prompt to be displayed asking if the administrator is sure that file should be migrated[4].

   By default the EV Domino Archiving ID (specified at the Domino Domain level within the Enterprise Vault administration console) is used to access the listed NSF file. For Domino server targets configured to use a different ID, then this ID is used instead.
   Whichever ID is eventually used will require "Manager" access over the appropriate NSF files.

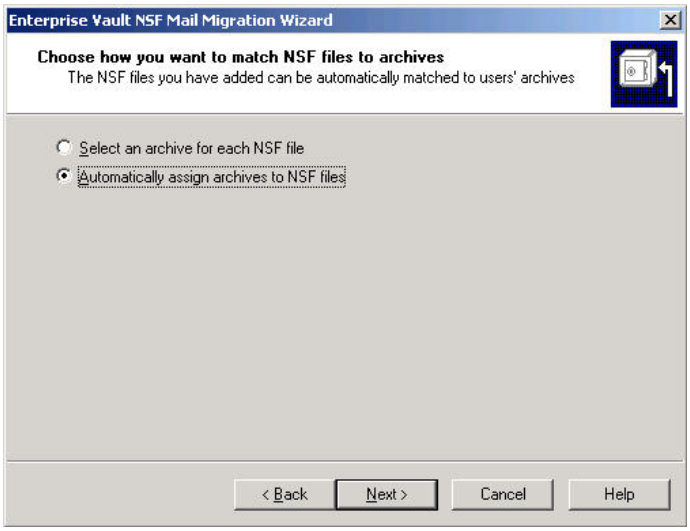


[2] NSF files stored in the data path on a Domino server will be locked by the Domino application. Therefore migrating these files will require that Domino on that server is shutdown or the files are moved out of the servers data path.

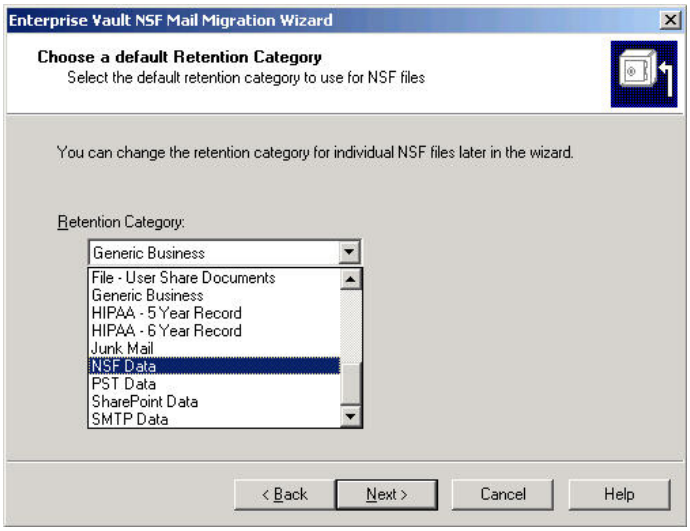
[3] These are the Mail, EV_Mail, DWA, EV_DWA and Journal templates for Domino 5, 6, 7 and 8.

[4] The list of templates allowed can be adjusted using a registry value, however any changes to the values will not be supported. Only the template types specified by default are supported. See **Appendix A** for details.

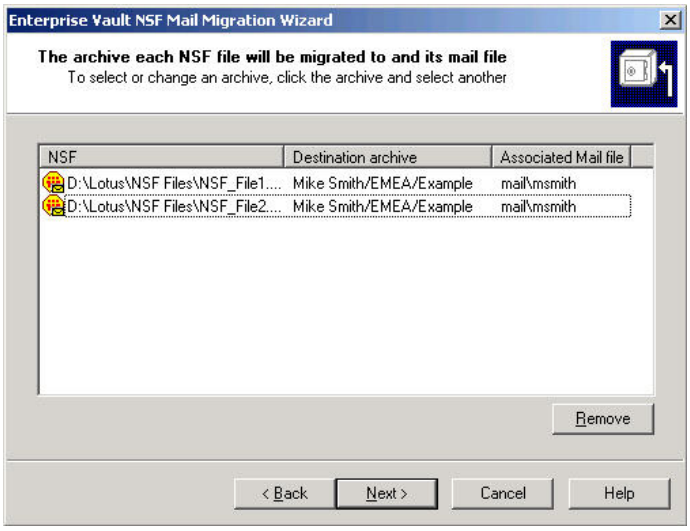
4. Select manual or auto correlation. Auto correlation will use the owner field in the calendar profile document in each NSF file to identify the file owner. This information is then cross referenced against the list of known Domino archiving users in the Enterprise Vault database. If a match is found then that user's mail file and archive is automatically populated in step 6 below. Manual correlation expects that the administrator will manually select a mail file and archive for each NSF file requiring migration.



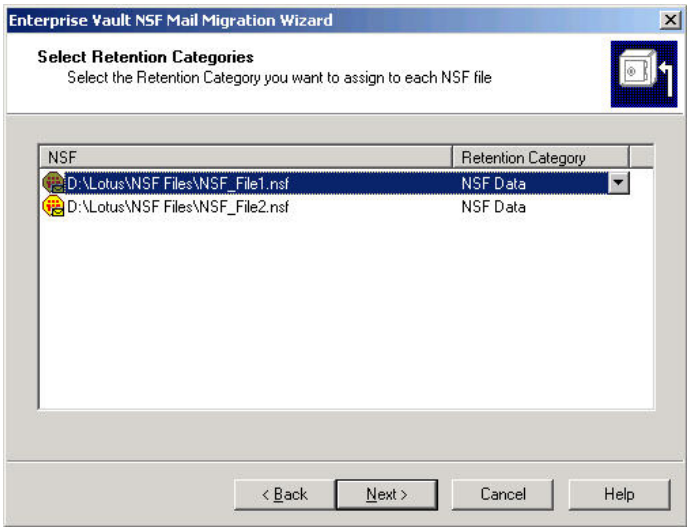
5. Select a default Retention Category to be associated with all data to be migrated from the NSF files. This can be overridden on a per NSF file basis later on in the wizard.



6. If using auto correlation, and the correct information is present in the NSF file, each NSF will be automatically assigned to the correct associated mail file and archive. Otherwise change the destination archive for each NSF file (using the drop down list) as necessary.



7. Select a different Retention Category for each NSF file if necessary. The default is the category chosen in step 5.

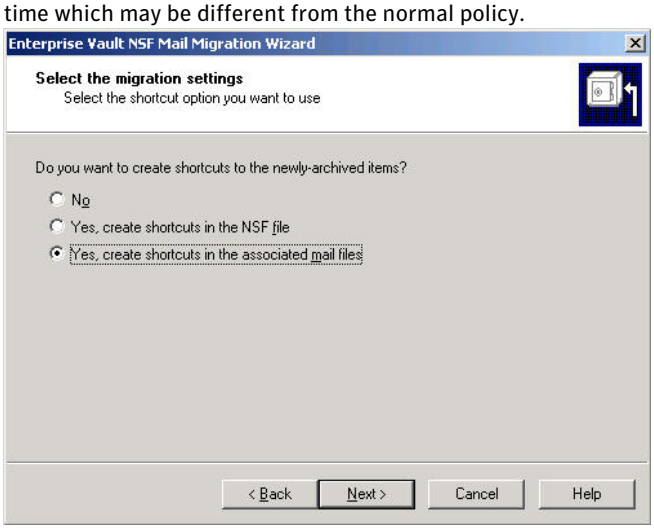


8. Choose to either leave shortcuts in the NSF file or in the user's mail file. There is also the option to not create shortcuts at all which means that end users will be reliant on the Enterprise Vault search applications to view and retrieve their migrated data.

   Shortcut creation in the user's mail file can also be restricted based on the age of the document being migrated. So it is possible to migrate all documents from the NSF but only return shortcuts to the user's mail file if the document being migrated is younger than 60 days for example. This can help avoid the situation where an NSF file migration causes a mail file to hit its quota limits because the shortcuts created as a result of the migration take up too much space (see Appendix A for more information on this functionality).

   The type of Enterprise Vault shortcuts (no message body, custom or full message body) created in the users mail file during the NSF migration is controlled by the Domino mailbox policy assigned to each user. The policy assigned to each user is controlled by the provisioning group function of Enterprise Vault. For normal day to day mailbox archiving a particular type of shortcut content may be suitable, but for items migrated to the user's archive via NSF Migrator a different type of shortcut may be more appropriate e.g. a "no message body" shortcut for NSF Migrations as opposed to a custom or "full message body" shortcut during normal mailbox archiving operation.
   It is possible to switch shortcut content types by changing the mailbox policy (to one that has a suitable shortcut content configuration) being applied to a users mail file for the duration of the NSF Migration by changing the user's provisioning group. Once the NSF migration is complete then

the user can be switched back to their normal day to day provisioning group and therefore Domino Mailbox Policy and shortcut content. Be aware however than any Domino Mailbox Archiving runs that occur during this period will utilize the shortcut policy assigned to the user at that point in time which may be different from the normal policy.



9. Select a root folder name for all migrated items. All migrated shortcuts will appear under this folder in the user's mail file. Any failed[5] or ineligible[6] items can also be moved to this folder in their entirety and not archived (see Appendix A for more information). This can help ensure that the NSF file is empty post migration, and can therefore be deleted.

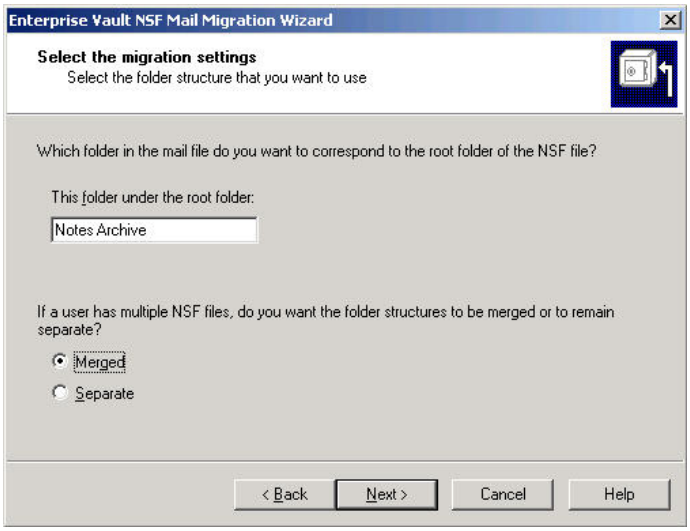
   Also choose whether to merge the folder structures found in each NSF file together or keep them separate. This setting is only used when more than one NSF file is being migrated to the same mail file and archive (see screen shot below).

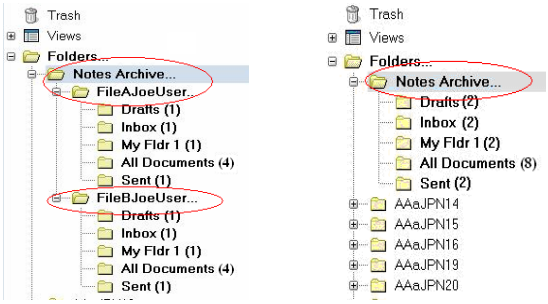
   Note - Standard system folders & views (such as Inbox, Drafts, Sent Items and Junk Mail) and shared user created folders will all be migrated and created in the target user's mail file. Other folders and views such as supplementary system folders (e.g. Follow Up), user created views and private user created folders will not be migrated or re-created, however documents appearing in these views will get archived. If these documents do not appear in any other standard folder or

[5] A failed item is a document that has failed archiving for whatever reason.

[6] An ineligible item is a document in the NSF file that does not appear in the Enterprise Vault 'Lotus Notes Mailbox Policy' used for that particular user as an item that should be archived. See the 'Forms' tab under each policy.

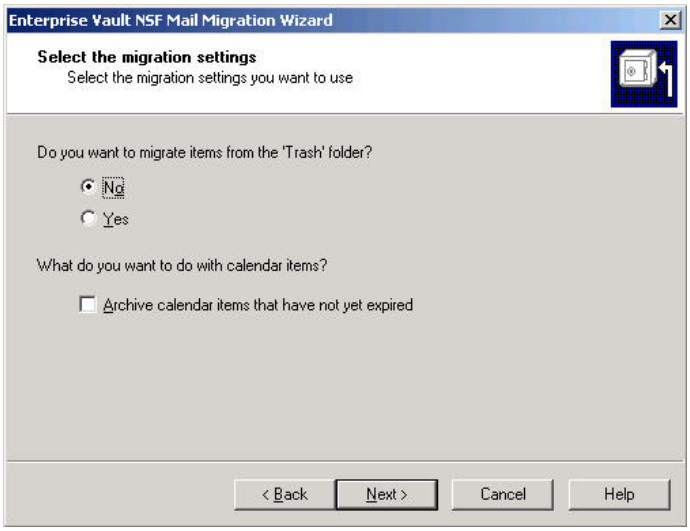
view (listed above) then they will always appear in the "All Documents" folder created, as standard, as part of the migration.



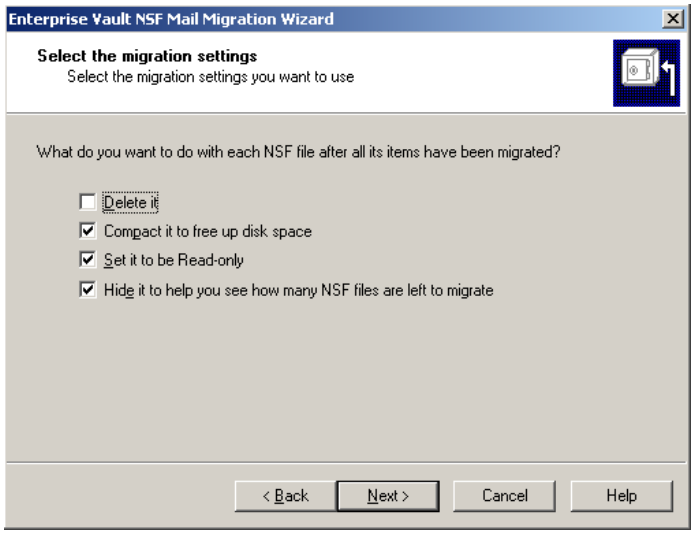


Separate **Merged**

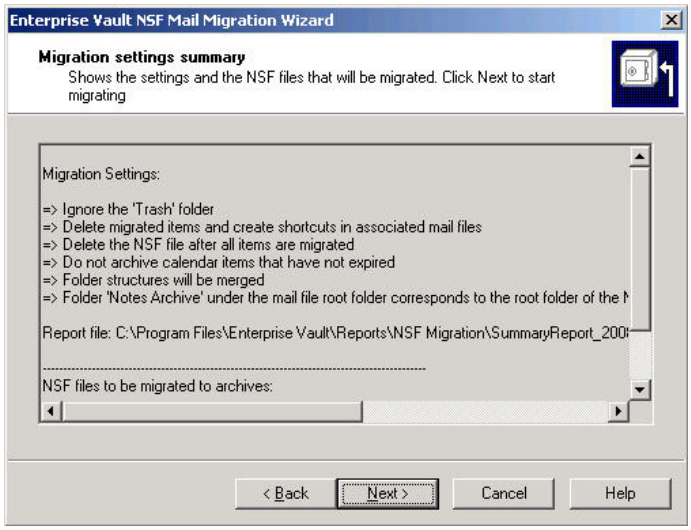
10. Select whether to migrate the contents of the Trash folder. Also select whether to migrate non-expired calendar items e.g. calendar appointments that have yet to occur.



11. Choose what to do with each NSF file after migration.

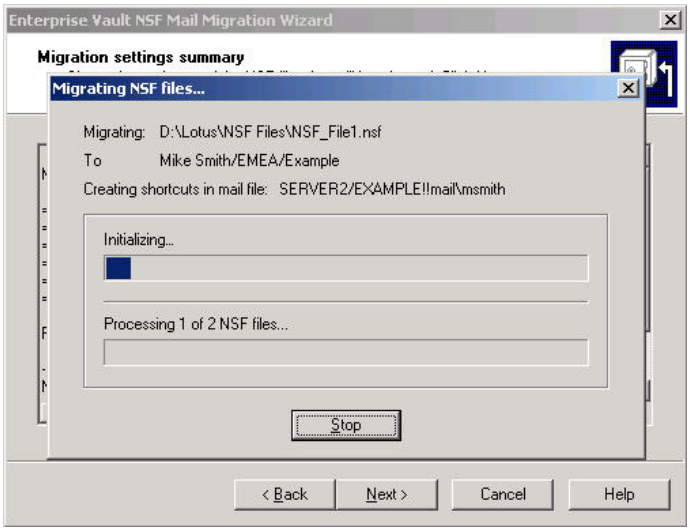


12. Read the summary of settings for the migration



13. Begin migration. The NSF Migration wizard will process each NSF file from the list provided in Step 3 in order, however note the migration will be multi threaded and many worker threads (5 by default) will process the NSF in parallel[7].

[7] The number of worker threads available during migration is configurable. See **Appendix A** for more information.



14. Finish.

Post Migration

The migration wizard will take a post migration action on each NSF file depending on the configuration chosen in Step 11. In most cases, providing the options to move all failed and ineligible items to the mail file are used, deleting the NSF file would be the most suitable option as the file would be empty.

The migration wizard also generates two reports for the migration; a summary report containing a high level information of what was migrated and a per NSF file report containing more detailed (item by item) information.

Scripted Migration Tool (EVPM)

The Enterprise Vault Policy Manager (EVPM) NSF migration method allows the Enterprise Vault Administrator to define a number of EVPM initialization files which contain lists of NSF files for migration including the various migration options. These scripts can then be run using the EVPM tool to initiate the actual migrations.

EVPM in this case is a CLI based solution for migration of NSF files but can offer advantages over the wizard GUI method:

- Performs concurrent NSF file migrations within a single script to optimize usage of storage servers
- Command line driven, and is therefore possible to provide code based wrapper scripts to drive the migrations.
- Allows the specification of per file migration parameters unlike the wizard driven interface.
- Supports check pointing for the resumption of failed or partially processed files.

- Supports report mode run where the inputs are validated but the actual migration does not happen.

Migration Workflow

The following steps, descriptions and screenshots show how to use the CLI tool and provide an understanding of the options available:

1. Before using the tool the administrator must first identify the NSF files for migration. In some cases this may be easy i.e. they may be all located in user shares hosted on file servers, but they may also be spread over users' workstations. In nearly all cases, however, the NSF migration tool will operate most efficiently if the NSF files to be targeted for migration are collected into a central, local (to the EV servers) holding folder.

2. Once the NSF files have been identified (and optionally collected), then the Administrator must define initialization input files[8] for the EVPM migration tool. These input files contain information such as where the NSF files for migration are located and a number of migration switches and parameters. There are 3 key sections to include in these initialization files (and these sections must be formatted and used as shown)[9]:

   [Directory]

   This section contains parameters defining:

   - Where the Enterprise Vault services are located
   - How to contact the Enterprise Vault directory

   [NSFDefaults]

   This section is used to define default migration settings. These settings are applied to all NSF files specified in the file unless they are overridden using the [NSF] section. The parameters are:

   - Migration mode (normal / report)
   - Number of concurrent migrations
   - Default retention category
   - Name of the folder to be created in the Domino mail file
   - Shortcut creation options

[8] For more information on creating Enterprise Vault Policy Manager (EVPM) initialization files, please refer to the official Enterprise Vault documentation – **Utilities.pdf**.

[9] Refer to the product documentation for a definitive list of sections, parameters and their uses.

- Archive data from trash.
- Archive unexpired calendar items.
- Post migration options (delete the file, compact the file, set to read-only or set to hidden).

These options closely match the migration wizard's options (in the GUI) as explained earlier in this paper.

[NSF]

Finally this section is used repeatedly (if necessary) to specific the location of each NSF file and any custom parameters for that specific file, including overriding the [NSFDefaults] section. The parameters are

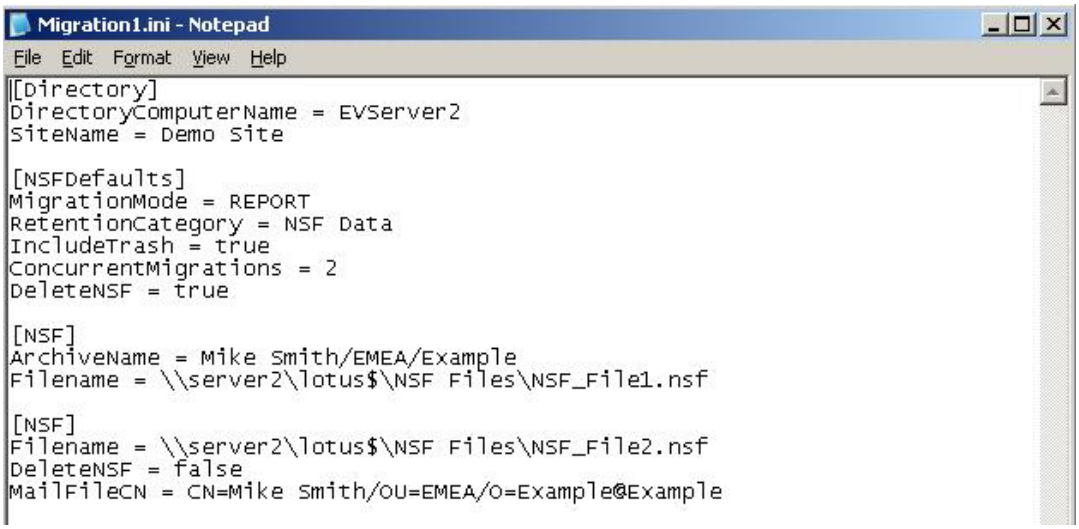
- NSF file name and location
- Destination archive
- Mail file reference
- Override settings for
    - Retention Category
    - Name of the folder to be created in the mail file
    - Shortcut options
    - Archive data from trash
    - Archive unexpired calendar items
    - Post migration options

Note - The initialization file must be saved in Unicode format. Using ANSI encoding will cause the EVPM tool to reject the file as invalid.

3. Once the initialization file is complete then the Administrator can run the EVPM tool using the initialization script as an input. This could also be done as part of a "wrapper" script or batch file to run the tool at scheduled times of the day. Initially the tool can be run in report mode which validates all the input parameters in the initialization file and then produces a new initialization file with any necessary corrections based on the validation. For example if the tool finds that one of the NSF files specified is actually not available using the path specified then the newly created initialization file will specify not to migrate that NSF file.

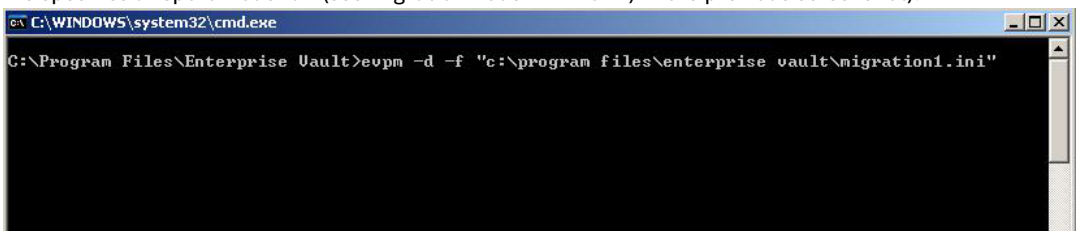
Below are a series of screen shots which show these steps in action:

Create the initialization file as required

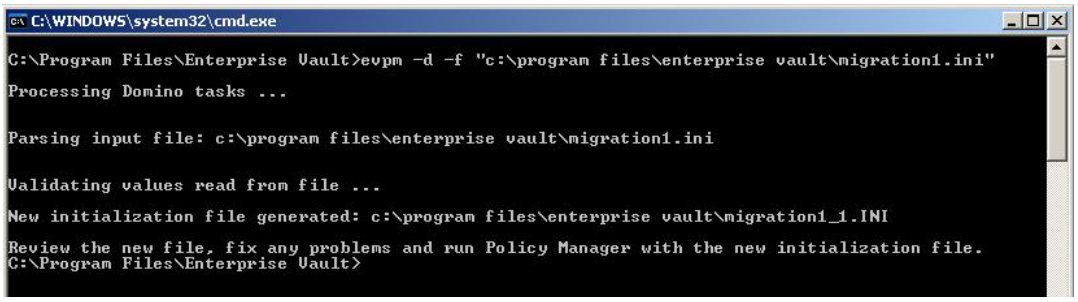


Note that in the [NSF] sections the owner of each NSF can be specified in a number of ways; **ArchiveName** specifies the name of the EV archive and **MailFileCN** specifies the common name of the users Domino mail file.

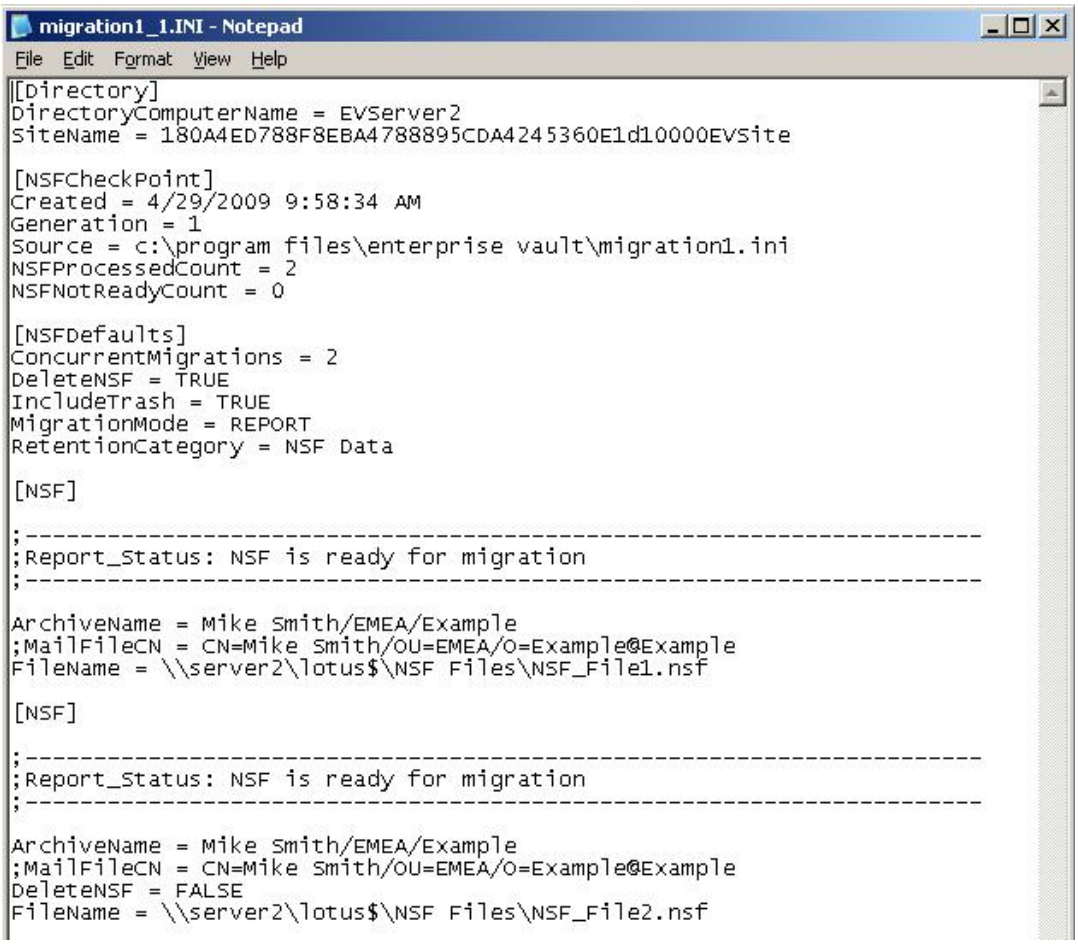
Now the administrator must run the EVPM tool using the initialization file as an input. In this case the file specifies a report mode run (see MigrationMode = REPORT) in the previous screenshot).



The result of which look like this

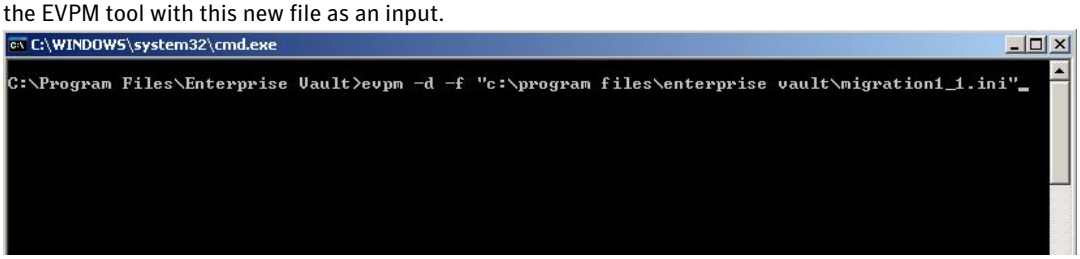


So EVPM has, in report mode, validated the input file and produced a new version of the file, in this case called **migration1_1.ini**. If the administrator reviews this new input file then they will see any corrections made by the tool

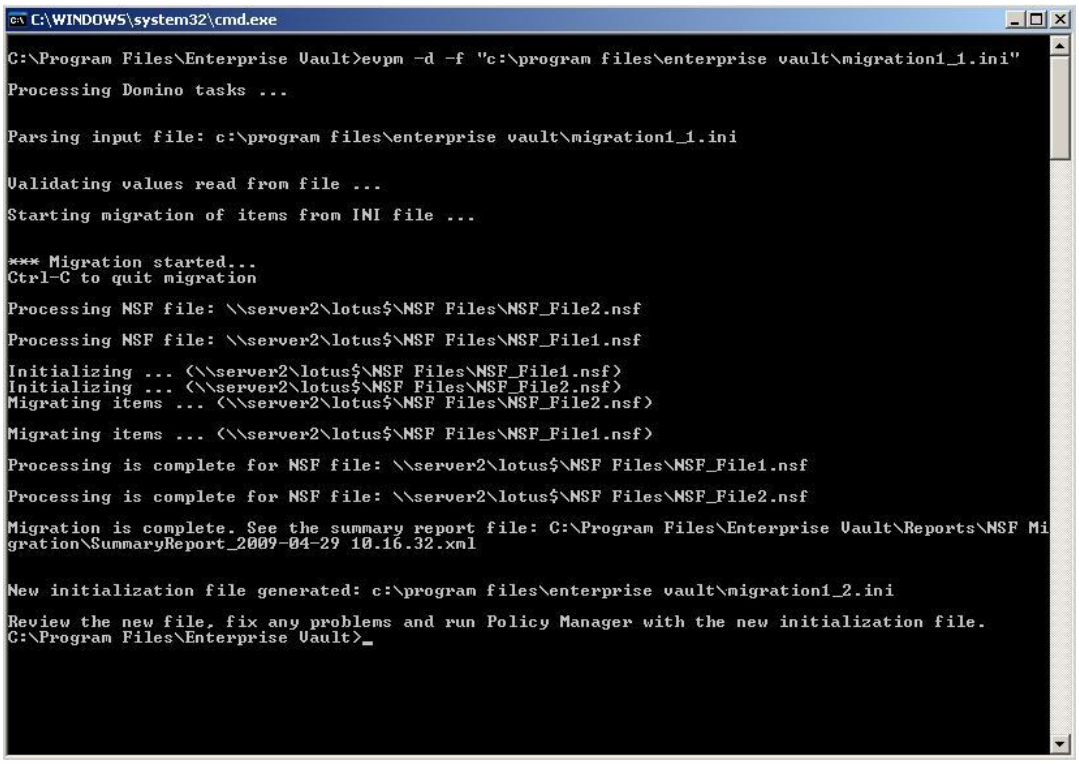


Note that EVPM has validated each NSF section and determined whether that file is ready for migration as well as creating a checkpoint. Note also that for the second NSF file EV has resolved the MailFileCN (common name) to an EV archive name and therefore inserted this information as a parameter and commented out the original MailFileCN parameter.

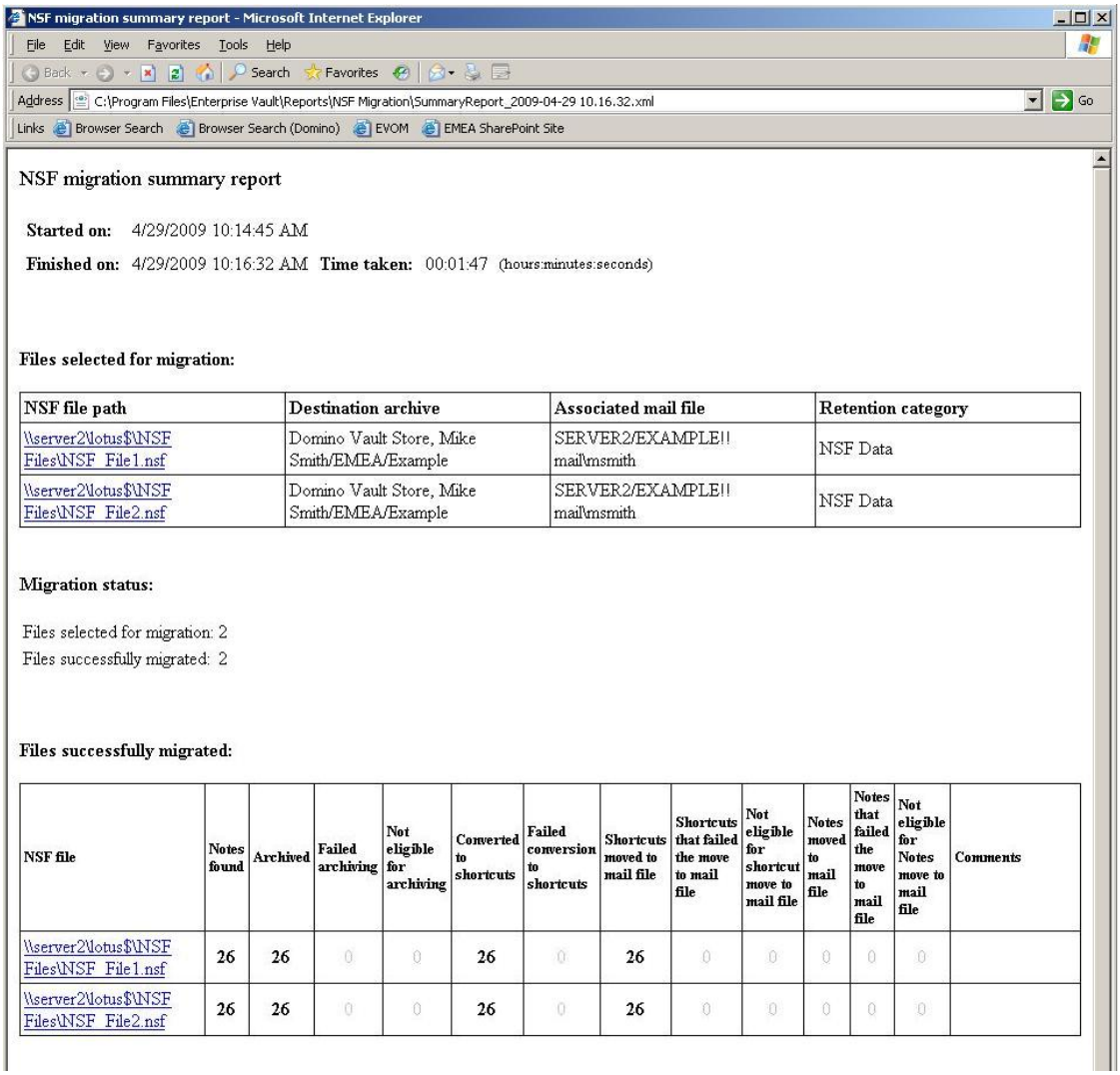
Now the administrator can change the MigrationMode to PROCESS (normal migration mode) and re-run the EVPM tool with this new file as an input.



The result of which looks like this



Notice how both NSF files were processed in parallel as specified by the input file (ConcurrentMigrations = 2). The tool also generates a summary report for the migration.



NSF migration summary report - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address C:\Program Files\Enterprise Vault\Reports\NSF Migration\SummaryReport_2009-04-29 10.16.32.xml Go

Links Browser Search Browser Search (Domino) EVOM EMEA SharePoint Site

NSF migration summary report

Started on: 4/29/2009 10:14:45 AM

Finished on: 4/29/2009 10:16:32 AM **Time taken:** 00:01:47 (hours:minutes:seconds)

Files selected for migration:

NSF file path	Destination archive	Associated mail file	Retention category
\\server2\lotus$\NSF Files\NSF_File1.nsf	Domino Vault Store, Mike Smith/EMEA/Example	SERVER2/EXAMPLE!! mail\msmith	NSF Data
\\server2\lotus$\NSF Files\NSF_File2.nsf	Domino Vault Store, Mike Smith/EMEA/Example	SERVER2/EXAMPLE!! mail\msmith	NSF Data

Migration status:

Files selected for migration: 2

Files successfully migrated: 2

Files successfully migrated:

NSF file	Notes found	Archived	Failed archiving	Not eligible for archiving	Converted to shortcuts	Failed conversion to shortcuts	Shortcuts moved to mail file	Shortcuts that failed the move to mail file	Not eligible for shortcut move to mail file	Notes moved to mail file	Notes that failed the move to mail file	Not eligible for Notes move to mail file	Comments
\\server2\lotus$\NSF Files\NSF_File1.nsf	26	26	0	0	26	0	26	0	0	0	0	0	
\\server2\lotus$\NSF Files\NSF_File2.nsf	26	26	0	0	26	0	26	0	0	0	0	0	

Note that the report gives details on, amongst other things, migration times; start and stop, total time taken, files successfully migrated and number of items archived, failed or not eligible for archiving.

Post Migration

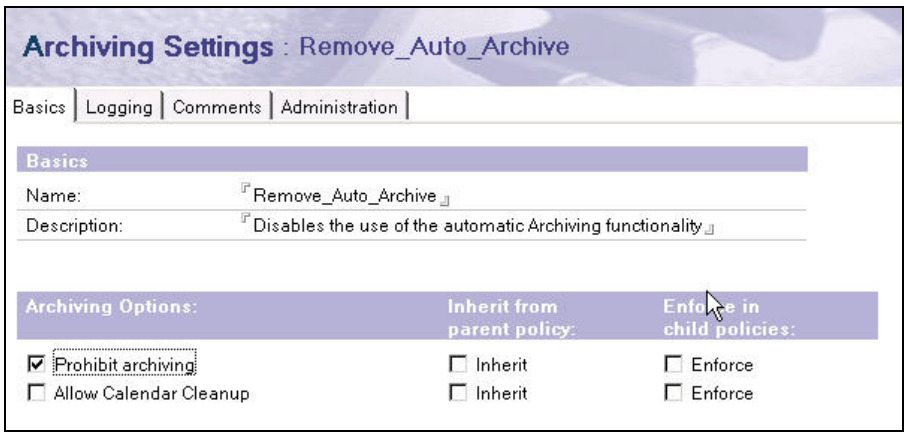
The EVPM tool will take a post migration action on each NSF file depending on the parameters set in the [NSFDefaults] or [NSF] sections of the initialization file. In most cases, providing the options to move all failed and ineligible items to the mail file are used, deleting the NSF file would be the most suitable option as the file would be empty.

Notification Message and Disable Lotus Notes Auto Archive

Once each NSF file migration is complete, providing Enterprise Vault has been configured to send end users informational emails[10], the Wizard or EVPM migrator will email each mail file receiving migrated content with a customizable message notifying the user that the migration of their specific NSF file is complete.

If users have been creating local NSF files due to the use of the Lotus Notes "Archive" functionality then after the migration of their NSF files is complete the users may still be left with the Archive option under the Tools container in their mail file view. This functionality will not be altered by NSF Migrator as Domino provides the ability to prohibit users from using this function via a policy in the Domino Directory.

It is therefore the responsibility of the Domino Administrator to disable Lotus Notes auto archive functionality via a suitable Archive Settings policy (see screen shot below), and then apply this policy to all necessary user databases.



[10] To enable this functionality you must ensure that the EVMessages.nsf database exists in the \Program Files\Enterprise Vault installation directory. See the **Administrators Guide** for more information.

Appendix A – Registry Values

Restricting Migration Parameters by Age

NSF migrator, by default, processes all items in NSF files irrespective of their age. This applies both to items converted to shortcuts, and to other items that are moved to mail files, such as items that are not eligible for migration or failed items.

It is possible to change this behavior by specifying an age threshold, as a number of days, and two registry values:

Path: **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **ShortcutMoveRestrictDays**
Type: **DWORD**
Value: When set to a non-zero value, NSF migrator migrates all eligible items, but does not create shortcuts for items older than the number of days specified.

Path: **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **NotesMoveRestrictDays**
Type: **DWORD**
Value: When set to a non-zero value, other items, such as those ineligible for migration or failed others, are moved to mail files only if they are within the number of days specified. Otherwise, they remain in the NSF files.

Multi-threaded migration setting

The NSF migration process is multi-threaded and the number of worker threads processing an NSF file is configurable. The default limit is 5 threads however this can be changed using the following registry key:

Path: **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **MaxNSFNoteMigrationThreads**
Type: **DWORD**
Value: **5** (Default)

Failed or Ineligible items

By default, NSF migrator leaves failed and ineligible items in the NSF files. This behavior can be changed to move these items to the mail file instead. The following registry keys need to be altered to control this functionality:

Path: **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **MoveFailedArchivalNotes**
Type: **DWORD**
Value: **0** (Default) - NSF migrator will not move failed items
1 - NSF migrator will move failed items to users' mail files

Path: **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **MoveNotEligibleForArchiveNotes**
Type: **DWORD**
Value: **0** (Default) - NSF migrator will not move ineligible items
1 - NSF migrator will move ineligible items to users' mail files

Adding additional template types

To extend the template types that the NSF migrator automatically accepts, the following registry key needs to be altered to list the template type you wish to allow. Altering this list is not supported without first consulting a Symantec technical support representative.

Path : **HKLM\Software\KVS\Enterprise Vault\Agents**
Name: **DominoMailTemplates**
Type: **REG_SZ**
Value: A comma separated list of all allowed template names

Disabling NSF Migrations during an Enterprise Vault Backup

There is an additional registry value to use when setting Enterprise Vault into read-only mode for the purposes of backup. This ensures that no further items can be ingested into Enterprise Vault using the NSF Migrator during the backup period. The registry value is as follows:

Path: **HKLM\Software\KVS\Enterprise Vault\Storage**
Name: **EnableNSFMigrations**
Type: **DWORD**
Value: **0** - NSF migrations are disabled.
1 (Default) - NSF migrations are enabled.

Further Reading

The standard Enterprise Vault documentation includes informative and detailed sections on both Enterprise Vault Domino Mailbox Archiving and NSF Migrations. For more information refer to the following documents:

Administrators_Guide.pdf

Utilities.pdf

Also check the Symantec Support web site for any recent documentation updates and Tech notes :

http://www.symantec.com/business/support/index.jsp

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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