Enterprise Vault Whitepaper

Migrating Enterprise Vault to a Virtual Environment

This whitepaper will discuss options to move Enterprise Vault configurations to a virtual environment. This includes both clustered and non-clustered EV servers, as well as configurations using EV "building blocks".

If you have any feedback or questions about this document please email them to IIG-TFE@symantec.com stating the document title.

This document applies to the following version(s) of Enterprise Vault: 7, 2007, 8, 9, & 10.0

Document Control

Contributors

Who	Contribution
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Revision History

Version	Date	Changes
1.0	June 2012	Initial release
2.0	June 2012	Additional information for 3rd Party Virtual Server providers

Related Documents

Title	Version	Date
Enterprise Vault Best Practice Guide – Implementing Enterprise Vault on VMware **http://www.symantec.com/docs/TECH180094**	1.0	January 2012
Enterprise Vault Server Settings Migration Wizard **http://www.symantec.com/docs/HOWTO42445**	1.0.0.1235	March 2012
Enterprise Vault Compatibility charts **http://www.symantec.com/docs/TECH38537**	n/a	Continuously updated
Video overview of the Enterprise Vault Server Settings Migration Wizard **https://www-secure.symantec.com/connect/videos/enterprise-vault-server-settings-migration-wizard**	1.0	July 2011
Microsoft SQL Server on VMware **http://www.vmware.com/files/pdf/sql_server_best_practices_guide.pdf**	n/a	2010
Migrating Enterprise Vault 9.0 to 64-bit Hardware http://www.symantec.com/business/support/index?page=content&id=TECH141481		April 2012

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Introduction

The trend to move enterprise applications to virtualized environments, in order to reduce hardware and operations costs, has been on the rise over the past few years. In addition, VMware ESX, Microsoft Hyper-V, and other virtualization software offerings provide a wide range of features to keep these enterprise applications highly available.

Many Enterprise Vault customers currently use Microsoft Cluster Server (MSCS), Microsoft Failover Clustering, Veritas Cluster Server (VCS) for clustering Enterprise Vault instances. Other customers use Enterprise Vault's built-in "building blocks" feature for manual failover of Enterprise Vault instances. In either case, customers may be looking to migrate these installations to virtual environments (see **http://www.symantec.com/docs/TECH180094** for more information on EV in virtual environments).

This whitepaper will detail best practices for the following migration scenarios:

- Enterprise Vault installations on 32-bit operating systems running Enterprise Vault versions older than 9.0.1
- Enterprise Vault installations on 32-bit operating systems running Enterprise Vault 9.0.1 or later (excluding EV 10 or later)
  Enterprise Vault installations on 64-bit operating systems running Enterprise Vault 9.0.1 or later (including EV 10 or later)

There are two main methods that can be used to migrate Enterprise Vault to virtual environments. The first method is to use the Server Settings Migration Wizard which can automate the migration process by exporting all settings for Enterprise Vault from an old server which can then be imported into a new, virtual server. The second method is to use tools available from 3rd party virtual machine providers.

The Server Settings Migration Wizard will greatly simplify the migration process when the installed version of Enterprise Vault is 9.0.1 or later. This whitepaper will describe how to ensure that the Enterprise Vault environment is in state to use this tool and assumes that the environment will be upgraded to at least Enterprise Vault 9.0.1 or later, prior to the migration. A demonstration video of the Enterprise Vault Server Settings Migration Wizard can be viewed here:

https://www-secure.symantec.com/connect/videos/enterprise-vault-server-settings-migration-wizard

Alternatively, if the migration process will involve upgrading to Enterprise Vault 10 and the current environment is running on 32-bit versions of Microsoft Windows, settings can be manually migrated to the new 64-bit hardware. More details on this can be found in the following technote:

http://www.symantec.com/docs/HOWTO42430

The second method will utilize tools that are available from 3rd party virtual machine providers. This process may be the preferred method based on the following scenarios:

- The current Enterprise Vault Environment is running on 32-bit versions of Windows and there are no current plans to upgrade to Enterprise Vault 10
- The current Enterprise Vault Environment is already running on Windows 2008 R2 (or later)

The process detailed in this whitepaper outlines the migration of a single instance of Enterprise Vault. An instance refers to a standalone configuration (using building blocks) or a clustered configuration where the instance can reside in an Active/Passive cluster or N+1 cluster. More details on migrating from clustered configurations can be found in Appendix A.

Many Enterprise Vault environments will have more than one instance of Enterprise Vault. Symantec does not have a recommended order of migration as each environment is unique. Therefore, the order of migration should be decided by the Enterprise Vault administrator.

If migrating from a clustered Enterprise Vault environment to a non-clustered configuration, it is recommended that the methods outlined in the Pre-Migration Steps – Using the Server Settings Migration Wizard and Migration Process – Using Enterprise Vault Server Settings Migration Wizard sections be used. This method will simplify the overall migration process.

The process outlined in this whitepaper has five main stages (when using the Server Settings Migration Wizard):

1. If not already at EV 9.0.1 as a minimum, upgrade all instance of EV to 9.0.1 or later. Note, if not already at EV 10.0.x, it is recommended to upgrade to EV 10.0.x after the migration process. However, upgrading to EV 10 before the migration is supported.
2. Create new VM instances and install and configure prerequisites for EV, then install EV
3. Use the Server Settings Migration Wizard to export settings from source EV instance
4. Use the Server Settings Migration Wizard to import settings to target VM, then test new VM instance
5. If required, upgrade to EV 10.0.x
6. Repeat as needed for additional instances of Enterprise Vault.

Migration Tools Available from 3rd Party Virtual Machine Providers

VMware

Enterprise Vault is VMware Ready certified.

VMware offers a utility named vCenter Converter. This utility assists converting physical machines to virtual. More information can be found here: **http://www.vmware.com/products/converter/**.

Please see the Pre-Migration Steps – 3rd Party Virtual Machine Providers section for more details on items that need attention before migrating.

Microsoft

Microsoft provides utilities to convert physical machines to a virtual environment using Hyper-V. More details can be found here: **http://technet.microsoft.com/en-us/library/cc764232.aspx**.

Please see the Pre-Migration Steps – 3rd Party Virtual Machine Providers section for more details on items that need attention before migrating.

Citrix

Citrix offers a utility named XenConvert that can be used to convert physical machines to virtual. More information on this utility can be found here:

http://www.citrix.com/English/ss/downloads/details.asp?downloadId=2306318&productId=683148

Please see the Pre-Migration Steps – 3rd Party Virtual Machine Providers section for more details on items that need attention before migrating.

Pre-Migration Steps – Using the Server Settings Migration Wizard

This section will detail items that require attention before starting the migration process.

Steps	32-bit, older than EV 9.0.1	32-bit running EV 9.0.1 or later(not EV 10)	64-bit running EV9.0.1 or later (including EV 10)
Backup	Required – see Note A below	Required – see Note A below	Required – see Note A below
Upgrade EV to 9.0.x (9.0.1 or later, but not EV 10)	Required – see Note B below	Not required	Not required
Create new VM for each EV instance	Required – see Note C below	Required – see Note C below	Required – see Note C below
Install EV pre-reqs on new VM and run Deployment Scanner	Required – see Note D below	Required – see Note D below	Required – see Note D below
Install EV but do not perform EV Configuration	Required – see Note E below	Required – see Note E below	Required – see Note E below
SQL Server access	Required – see Note F below	Required – see Note F below	Required – see Note F below
Storage mapping	Required – see Note G below	Required – see Note G below	Required – see Note G below
DNS Aliases	Required – see Note H below	Required – see Note H below	Required – see Note H below

Table 1 - Pre-Migration Steps

Note A - Backup

- Perform a full backup of all Enterprise Vault resources including all EV-related Microsoft SQL databases (Enterprise Vault Directory, Monitoring, Auditing, FSA Reporting, Fingerprint and Vault Store), index locations, and Vault Store partitions.

Note B - Upgrade to EV 9.0.1 or later

- Upgrade the existing environment to EV 9.0.x (9.0.1 or later). If the Enterprise Vault version is older than 8.0, Enterprise Vault cannot be upgraded directly to 9.0.x.
- For example, if the environment is at Enterprise Vault 7.0, the upgrade process would be the following: 7.0 -> 2007 (7.5) -> 8.0.x -> 9.0.x.
- There are detailed upgrade instructions which are located on the Enterprise Vault installation media (UpgradeInstructions_EN.xxx) for each version of Enterprise Vault.
- If upgrading to EV 10, Symantec recommends performing the upgrade to 10 **after** the migration. However, performing the migration after an upgrade to EV 10 is still supported.

Note C - Create new VM for each EV instance

- Set up a new virtualized server for each Enterprise Vault instance in the environment that will be migrated.
- If Enterprise Vault will be upgraded to version 10, install Windows 2008 R2 (or later), otherwise Windows 2003 SP2 or later can be used. Refer to the Enterprise Vault compatibility charts for all supported versions of Windows; http://www.symantec.com/docs/TECH38537
- The CPU and memory settings will vary depending on the final version of Enterprise Vault that will be used. If 9.0.x is the final version, 4 CPU cores (or more) and 8GB of memory is recommended. If Enterprise Vault 10.0.x will be the final version, it is recommended that a minimum of 8 CPU cores and 16GB of RAM be used (32 or more is recommended for larger environments) see **http://www.symantec.com/docs/TECH180094** for more information.

Note D - Install and configure prerequisites

- Ensure that all prerequisites for Enterprise Vault have been installed and configured (such as IIS and MSMQ) before installing Enterprise Vault
- Run the EV Deployment Scanner and ensure all relevant tests have passed

Note E - Install EV

- The installation location of Enterprise Vault should match the location of the existing non-virtualized installation (such as E:\Program Files\Enterprise Vault).
- Install Enterprise Vault 9.0.x (9.0.1 or later) on the new virtualized machines.
- The version of EV to be installed must match the upgraded version of EV in the environment (e.g. 9.0.2) on each new virtualized installation.
- **Do NOT** run the Enterprise Vault Configuration Wizard.

Note F - Ensure SQL Server access

- It is absolutely critical for the new virtual server to have access to the Microsoft SQL Server(s) that house(s) the Enterprise Vault databases. Low latency (10 ms or less) is highly recommended for best performance

Note G - Storage location mapping

- Each virtual image that will replace a clustered or standalone Enterprise Vault instance will need to have access to all index and Vault Store partition locations of the instance. Refer to the notes in Table 2).

Index locations	If it is not physically possible to attach the existing index volumes to the new virtual machine, it may be necessary to create a new virtual disk and copy all index locations from the non-virtual environment. Ensure that all Enterprise Vault services are stopped during this copy process. It is not necessary to use the same drive letters for index locations on the new virtual server.
Vault store partitions	For Vault Store partitions, the virtual machine will also require access (via UNC pathname, drive letter, or other means such as using devices like Centera or Caringo-based storage devices). Ensure that the virtual image can access the storage locations. It may be necessary to set up virtual disks on the virtual machine and copy data if direct access cannot be achieved (ensure all Enterprise Vault services are stopped before copying). If the storage is accessed via drive letters, it is not necessary to use the same drive letters that are being used in the non-virtual environment, but updates are required in the EnterpriseVaultDirectory database to reflect the new driver letters.
Temporary files	Ensure that there is sufficient disk space for temporary storage that would be used by Enterprise Vault such as for PST migrations and cache. Storage for the cache and PST Migrator Tasks must be mapped to local drives for the Enterprise Vault instance. Also ensure there is sufficient disk space for MSMQ. See **http://www.symantec.com/docs/TECH180094** for more information
Shopping baskets	Ensure that the directory for the Enterprise Vault Shopping Service has been created on the virtual image. By default, this directory is located in X:\Program Files\Enterprise Vault\Shopping or X:\Program Files (x86)\Enterprise Vault\Shopping where X: is the installation drive letter

Table 2 - Storage location mappings

Note H - DNS Alias changes

- It is important to update the CNAME record for each EV instance that will be migrated to a virtual machine using the virtual machine's physical name or the virtual name of the new cluster in the virtual environment. This should be done **right after** settings have been exported from the non-virtualized instance of EV.

Pre-Migration Steps – 3rd Party Virtual Machine Providers

This section will detail activities that need to be performed before migrating a physical box to virtual using tools from VMware, Microsoft Hyper-V, or Citrix XenServer.

Steps	32-bit OS, not planning upgrade to EV 10	32-bit OS, planning upgrade to EV 10	64-bit OS running EV 9.0 or later (including EV 10)
Backup	Required – see Note I below	Required – see Note I below	Required – see Note I below
Upgrade EV to 9.0.x (9.0.1 or later, but not EV 10)	Not required	Required – see Note J below	Optional – see Note J below
Stage new Windows 2008 R2 (or later) server	Not required	Required – see Note K below	Not required
Install EV pre-reqs on new server and run Deployment Scanner	Not required	Required – see Note L below	Not required
Install EV but do not perform EV Configuration	Not required	Required – see Note M below	Not required
SQL Server access	Not required	Required – see Note N below	Not required
Storage mapping	Not required	Required – see Note O below	Not required
DNS Aliases	Not required	Required – see Note P below	Not required
Migrate EV settings from 32-bit OS to 64-bit OS	Not required	Required – see Note Q below	Not required
Migrate to virtual	Required – see note J	May be required – see Note K & Note R below	Required – see Note R

Table 3 – Pre-Migration Steps for 3rd Party Virtual Machine Providers

Note I - Backup

- Perform a full backup of all Enterprise Vault resources including all EV-related Microsoft SQL databases (Enterprise Vault Directory, Monitoring, Auditing, FSA Reporting, Fingerprint and Vault Store), index locations, and Vault Store partitions.

Note J - Upgrade to EV 9.0.1 or later

- Upgrade the existing environment to EV 9.0.x (9.0.1 or later) or 10.0.x. If the Enterprise Vault version is older than 8.0, Enterprise Vault cannot be upgraded directly to 9.0.x or 10.0.x.
- For example, if the environment is at Enterprise Vault 7.0, the upgrade process would be the following: 7.0 -> 2007 (7.5) -> 8.0.x -> 9.0.x -> 10.0.x
- There are detailed upgrade instructions which are located on the Enterprise Vault installation media (UpgradeInstructions_EN.xxx) for each version of Enterprise Vault.

Note K - Create new VM for each EV instance

- As the ultimate goal is to go to a virtual environment, set up a new virtual server for each Enterprise Vault instance in the environment that will be migrated.
- A physical box can be used, but will require an additional step to migrate the physical box to virtual (as described in Note J).
- Install Windows 2008 R2 (or later). Refer to the Enterprise Vault compatibility charts for all supported versions of Windows; http://www.symantec.com/docs/TECH38537
- The CPU and memory settings will vary depending on the final version of Enterprise Vault that will be used. It is recommended that a minimum of 8 CPU cores and 16GB of RAM be used (32 or more is recommended for larger environments).

Note L - Install and configure prerequisites

- Ensure that all prerequisites for Enterprise Vault have been installed and configured (such as IIS and MSMQ) before installing Enterprise Vault.
- Run the EV Deployment Scanner and ensure all relevant tests have passed

Note M - Install EV

- The installation location of Enterprise Vault should match the location of the existing non-virtualized installation (such as E:\Program Files\Enterprise Vault).
- Install Enterprise Vault 9.0 (or later) on the new virtualized machines.
- The version of EV to be installed must match the upgraded version of EV in the environment (e.g. 9.0.2) on each new virtualized installation.
- **Do NOT** run the Enterprise Vault Configuration Wizard.

Note N - Ensure SQL Server access

- It is absolutely critical for the new virtual server to have access to the Microsoft SQL Server(s) that house(s) the Enterprise Vault databases. Low latency (10 ms or less) is highly recommended for best performance

Note O - Storage location mapping

- Each virtual image that will replace a clustered or standalone Enterprise Vault instance will need to have access to all index and Vault Store partition locations of the instance. Refer to the notes in Table 2).

Note P - DNS Alias changes

- It is important to update the CNAME record for each EV instance that will be migrated to a virtual machine using the virtual machine's physical name or the virtual name of the new cluster in the virtual environment. This should be done **right after** settings have been exported from the non-virtualized instance of EV.

Note Q - Migrate EV settings from 32-bit to 64-bit

- Migrate the Enterprise Vault configuration and settings from the old 32-bit instance to the new 64-bit instance. Refer to **http://www.symantec.com/business/support/index?page=content&id=TECH141481** or use the Enterprise Vault Server Settings migration Wizard (see Migration Process – Using Enterprise Vault Server Settings Migration Wizard).

Note R - Migrate to virtual

- Use the recommended utilities (as described in Migration Tools Available from 3rd Party Virtual Machine Providers section) to migrate the physical box to virtual

Migration Process – Using Enterprise Vault Server Settings Migration Wizard

Before starting the Server Settings Migration Wizard (SSMW), ensure the following have been completed:

- Download the Enterprise Vault Server Settings Migration Wizard (**http://www.symantec.com/docs/HOWTO42445**)
- Install the SSMW on the source EV instance and the target VM
- Ensure that the virtual machine has access to all index and Vault Store partition locations for the EV instance

Important Notes

If the Server Settings Migration Wizard will be used to migrate from a clustered configuration (using MSCS or VCS) to a standalone virtual image, there will be a warning that the clustering configuration of the source and target configurations are different. This warning can be ignored.

If the migration to the virtual environment will be clustered, refer to the Enterprise Vault documentation which contains the information you need to configure prerequisites and install Enterprise Vault in a cluster.

During the deployment of the new cluster, you can attach to the target servers the data locations that were used by the source servers, with the following exceptions:

- In both Microsoft Cluster Services and Veritas Cluster Services, a new data location for the MSMQ queues must be created. Do not attempt to use the MSMQ data location that was attached to the source servers.
- In Veritas Cluster Services, a new data location for the RegRep resource must be created. Do not attempt to use the RegRep data location that was attached to the source servers.

Update the DNS CNAME record for the Enterprise Vault instance to point to the virtual machine's physical (or virtual cluster) name **after** the settings have been exported from the non-virtualized instance. For example, the CNAME entry for the instance name is EV1 and is currently pointed to EVCLUSTER1. Update this record to point to EVVM1 which is the physical name of the virtualized server. If this step is not performed, the Server Settings Migration Wizard will notify the administrator.

Migrating from clustered Enterprise Vault environments

Appendix A has additional information when migrating from clustered configurations to virtual environments.

Export Settings from the Active Enterprise Vault Server

Start the Server Settings Migration Wizard on the active Enterprise Vault Server while logged in using the Enterprise Vault Service Account (VSA). The wizard will check for some basic settings as shown in Figure 1.

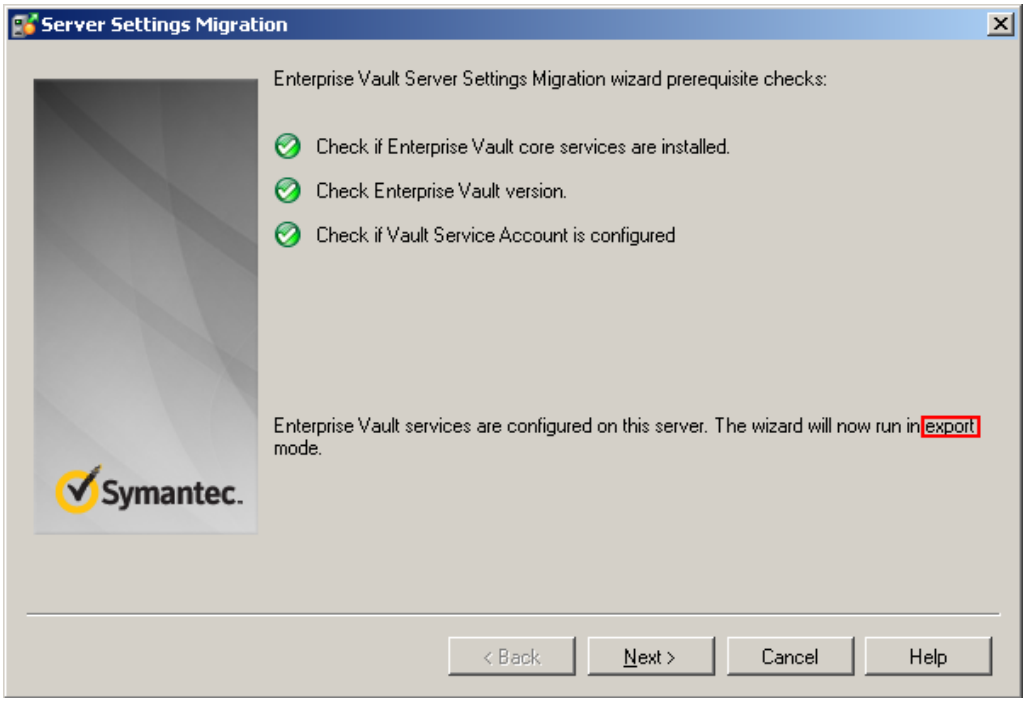

Figure 1 - Checking Services

The wizard will ask for a folder to where settings will be saved (see Figure 2). This folder must be a location that the new virtual server can access and must be empty.

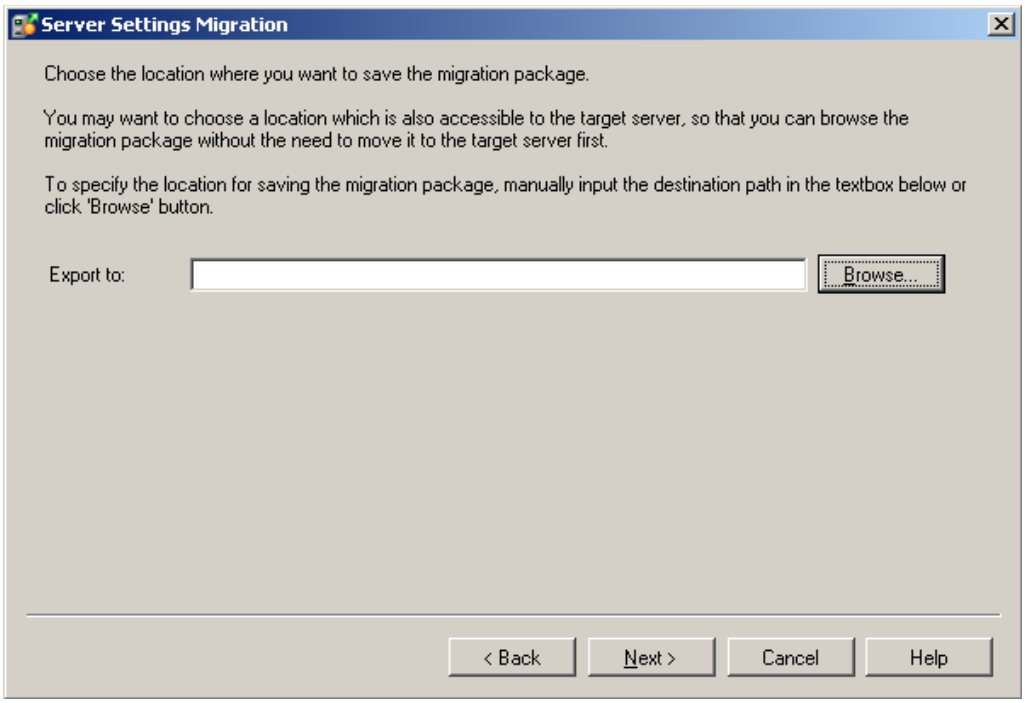

Figure 2 - Specify export location

The wizard will allow the administrator to view which settings will be exported before the export process start, as in Figure 3 and Figure 4.

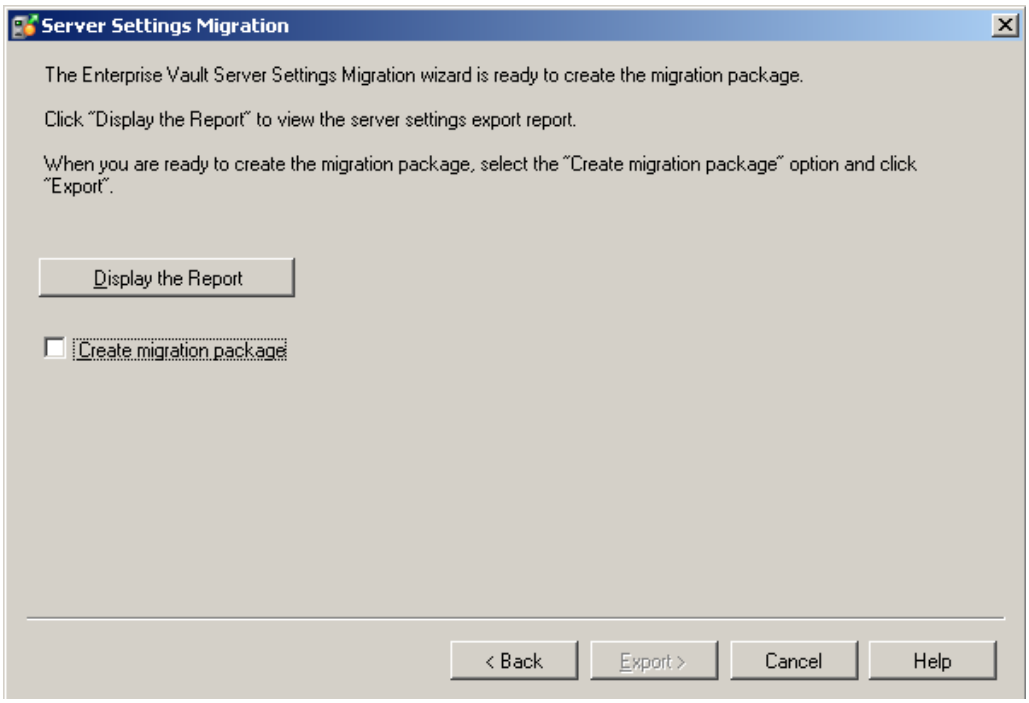

Figure 3 - Confirm settings

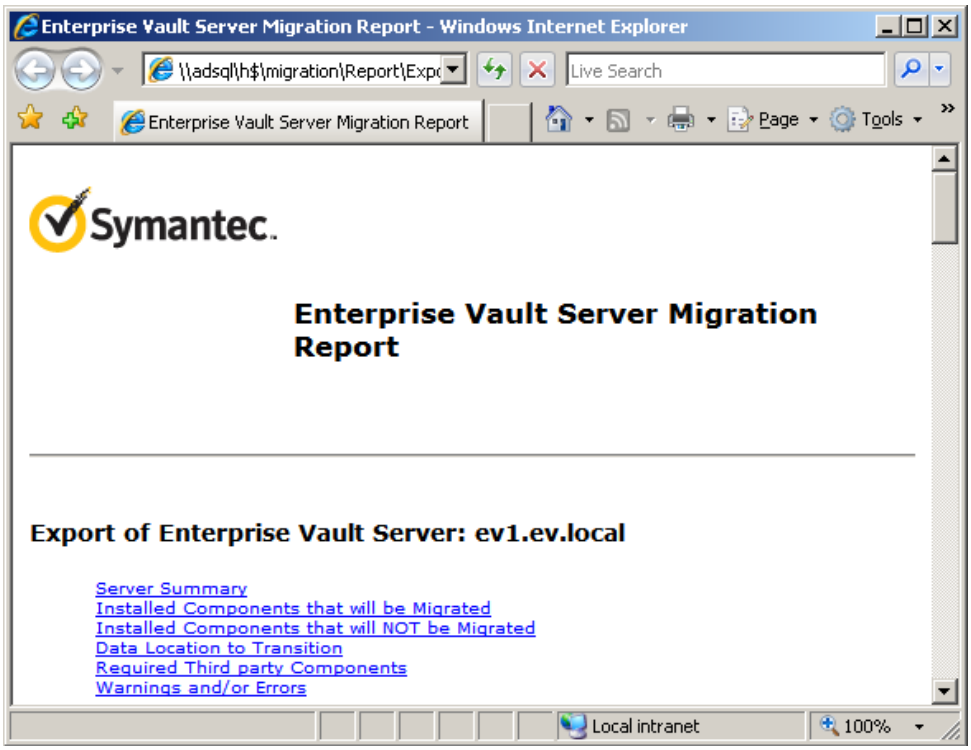

Figure 4 - Display settings

After reviewing the report and there are no warnings or errors, click on the "Create migration package" button and click on Export. Once the export process has completed, click on Next.

The final screen will allow the administrator to view the report. It should be noted that once the wizard has completed (and there were no errors during the export), **all Enterprise Vault services will be disabled on the old server.**

Import Settings to the Virtual Machine

The next step in the process is to import the settings to the new virtual server. Before running the wizard, ensure that the DNS alias for the EV instance has been updated to point to the new server (or cluster name), cache and Shopping Service data locations have been configured, FSA data locations (if applicable), and that the new server has access to all Vault Store partitions and index locations. It is very important to be logged in using the Enterprise Vault Service Account (VSA).

Upon starting the wizard, it will check basic settings on the target server, as shown in Figure 5.

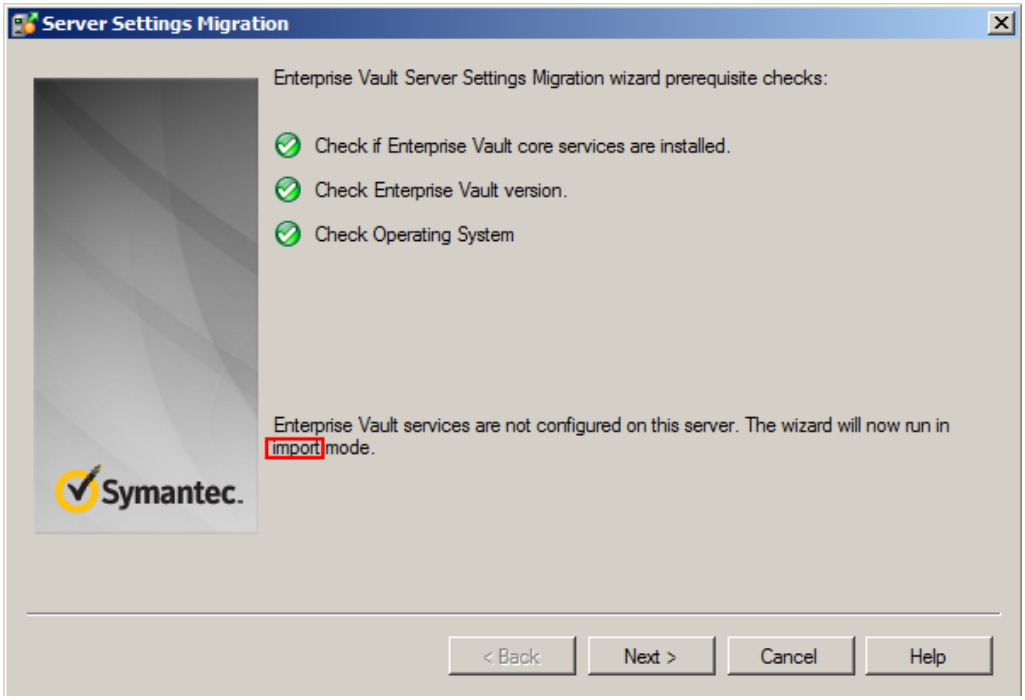

Figure 5 - Checking services on target server

The wizard will prompt the administrator for the folder location containing the export package as shown in Figure 6, and will verify that there is sufficient disk space on the target server, as shown in Figure 7.

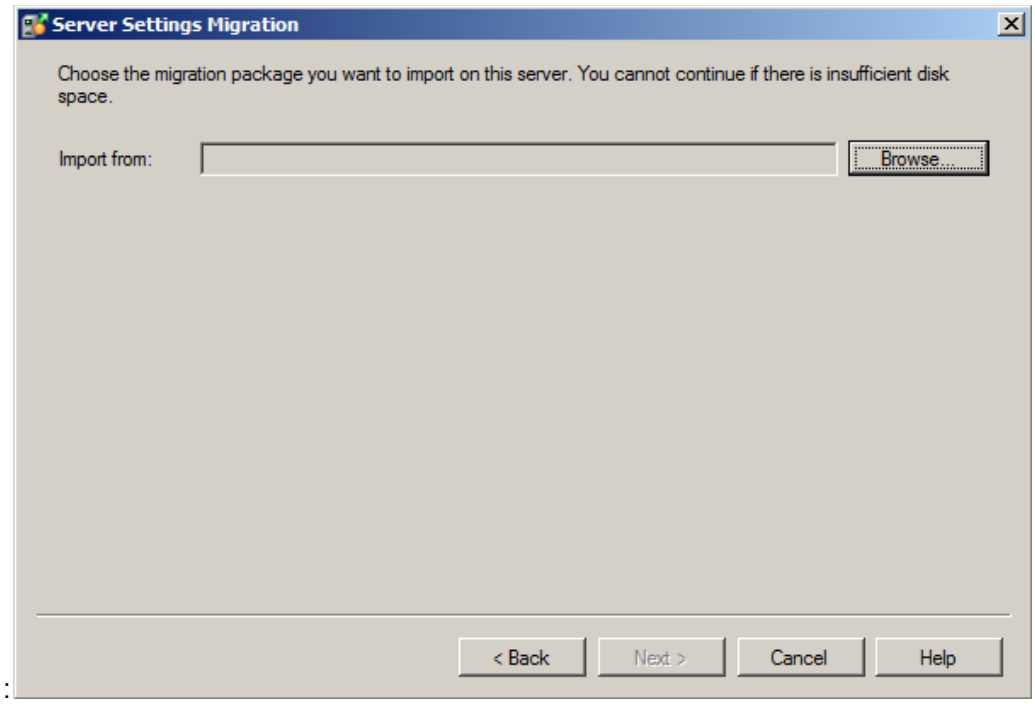

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Figure 6 - Prompting for migration package

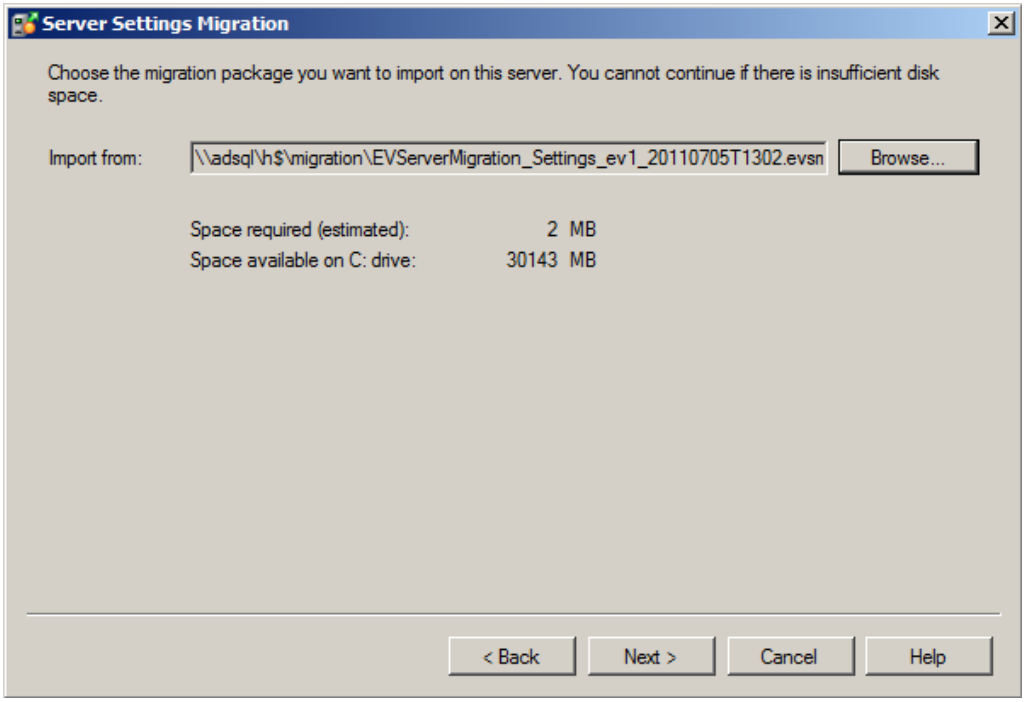

Figure 7 - Checking for available space

The wizard will then prompt for the Enterprise Vault Service Account (VSA) password. Enter the password and click on Next. If the DNS alias for the EV instance has not been updated, the administrator will be prompted as shown in Figure 8.

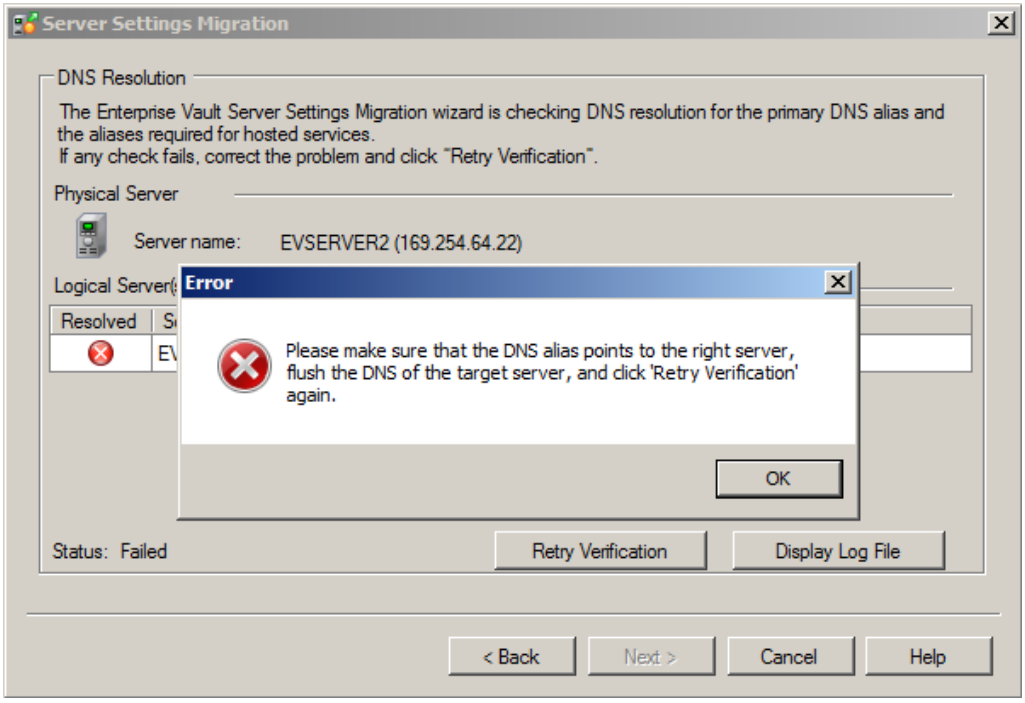

Figure 8 - DNS Alias checks failed

If there were no DNS issues found, the administrator will be shown the screen shown in Figure 9. Also note how the log file can be displayed as well.

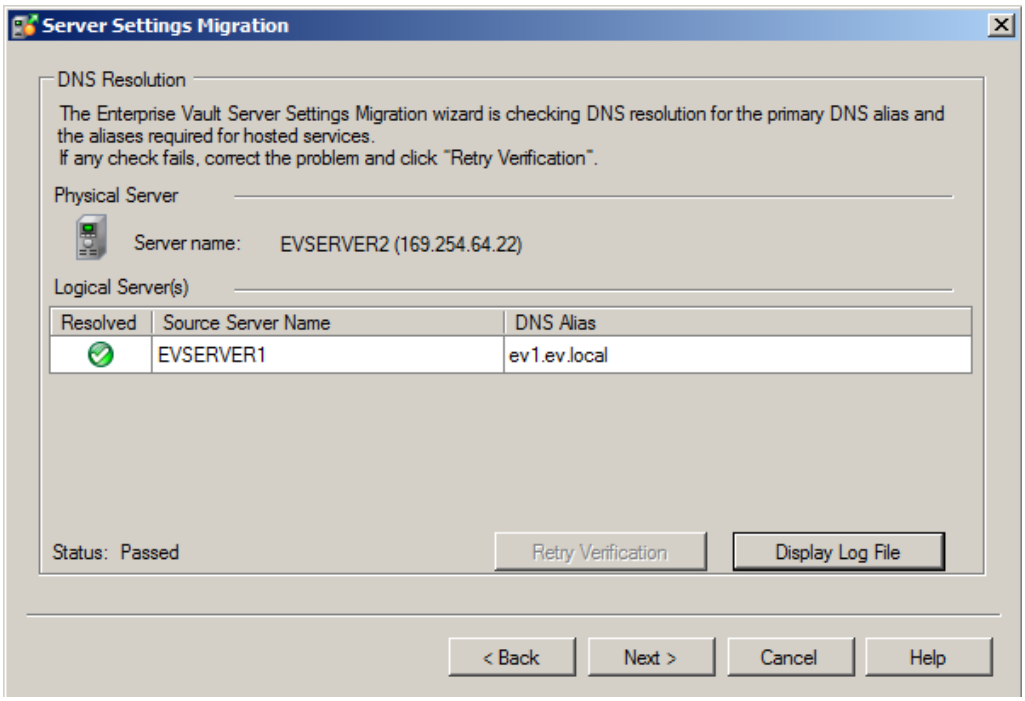

Figure 9 - DNS Checks passed

The next part of the wizard will validate connectivity to the SQL server. If there are any issues, the administrator will be prompted with any corrective step required. Otherwise, the screen shown in Figure 10 will be displayed.

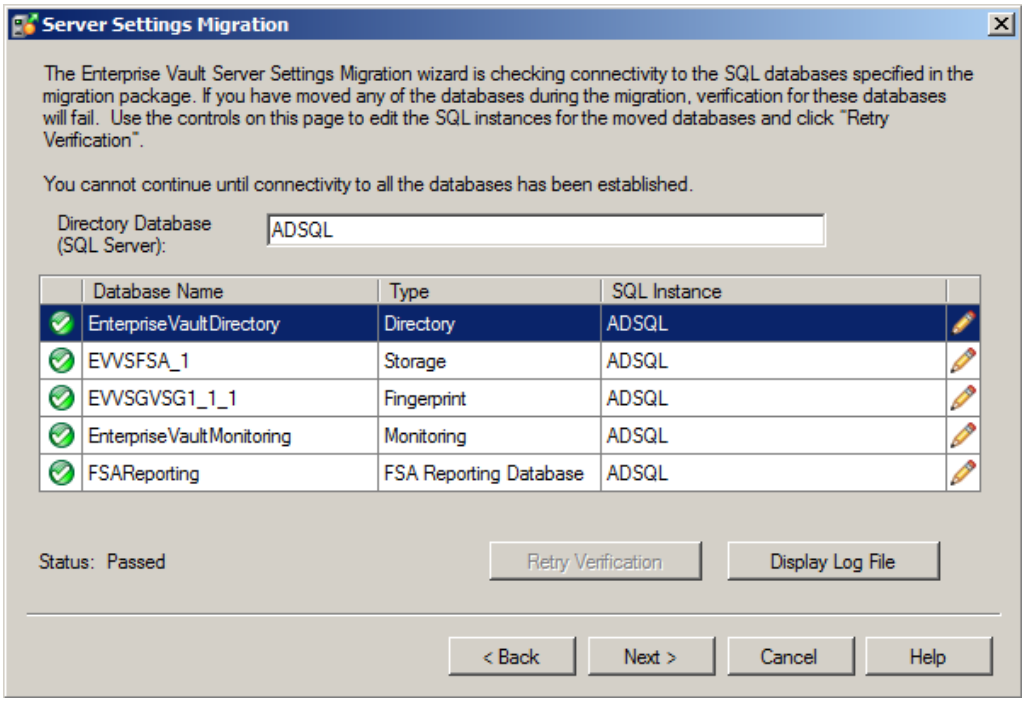

Figure 10 - Database checks

The wizard will then validate that all Vault Store partitions and index locations are accessible (see Figure 11). If the wizard cannot detect a partition or index location, the administrator will be notified, allowed to correct, and retry the verification.

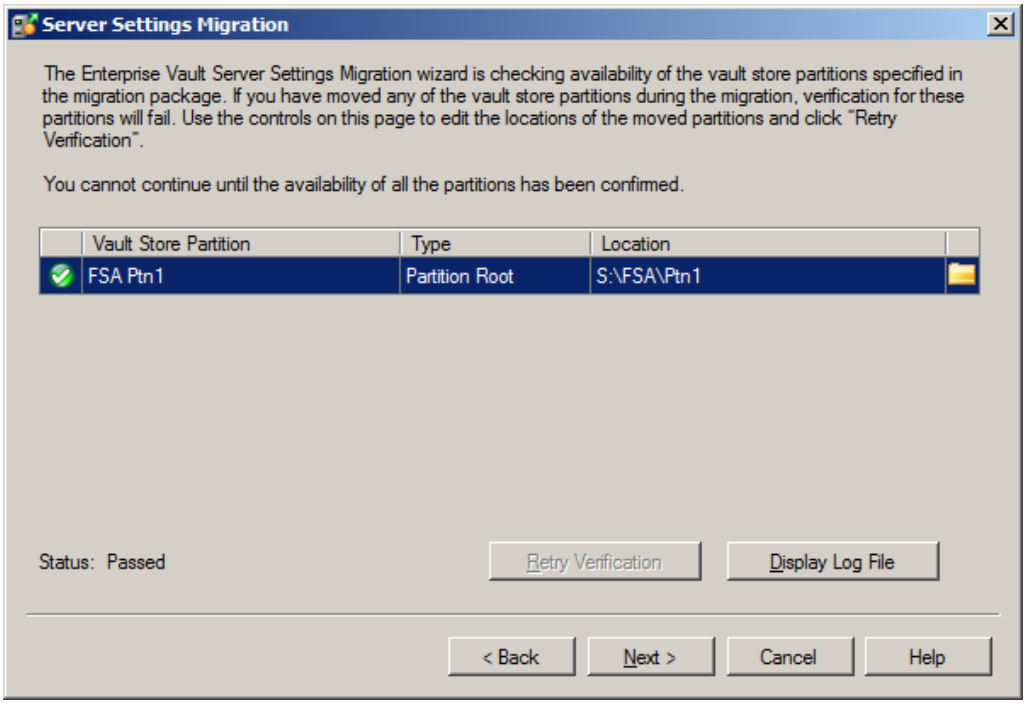

Figure 11 - Partition checks

Next, the wizard will validate cache, Shopping Service data locations, and FSA data locations (if applicable). If the wizard cannot validate locations, the administrator will be notified, allowed to correct, and retry the verification.

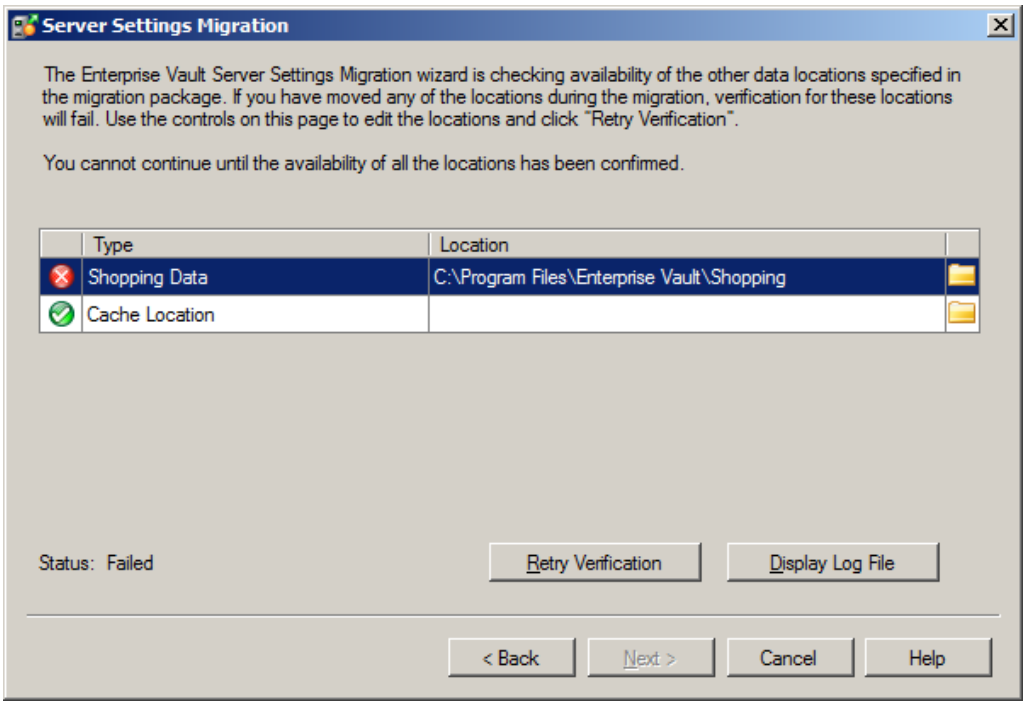

Figure 12 - Cache and Shopping Data checks

Once all locations have been validated, the wizard will import the settings from the export package. Clicking on the "Import the migration package" checkbox will allow the import process to take place.

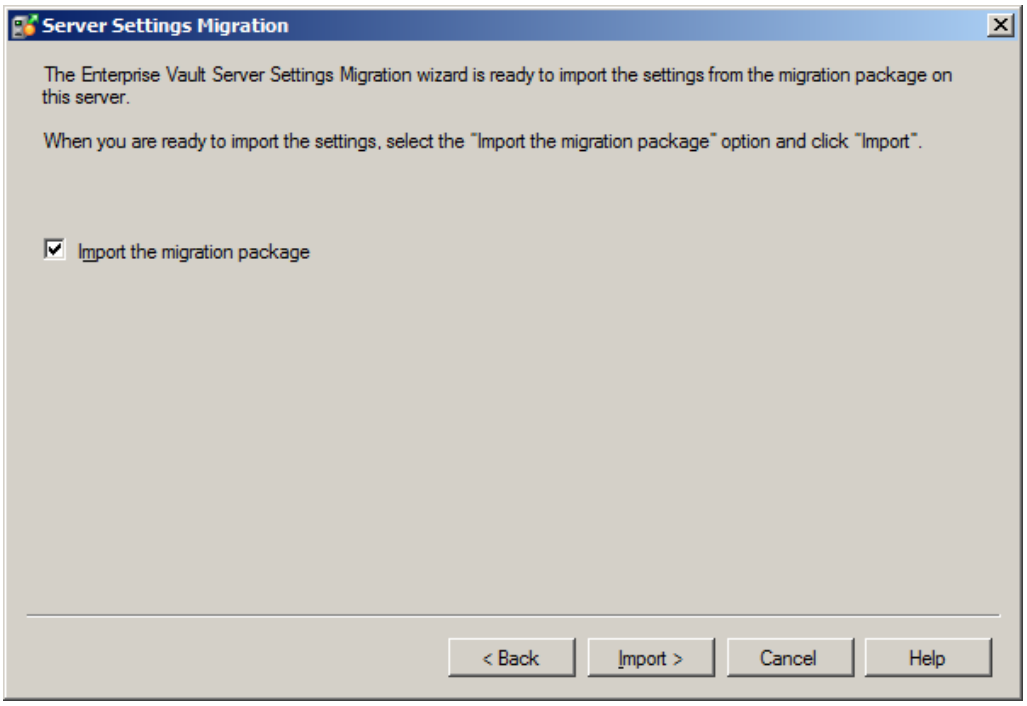

Figure 13 - Import settings

The wizard will then start the import process as shown in Figure 14.

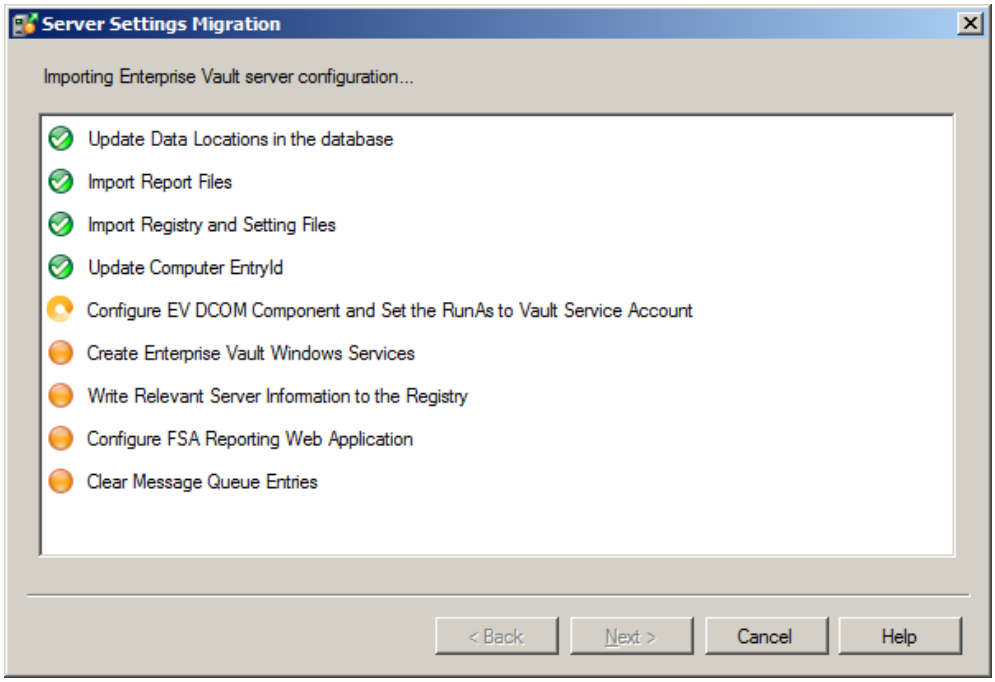

Figure 14 - Importing server configuration

The final screen of the wizard (Figure 15) will allow the administrator to view a detail report of the import process, as shown in Figure 16.

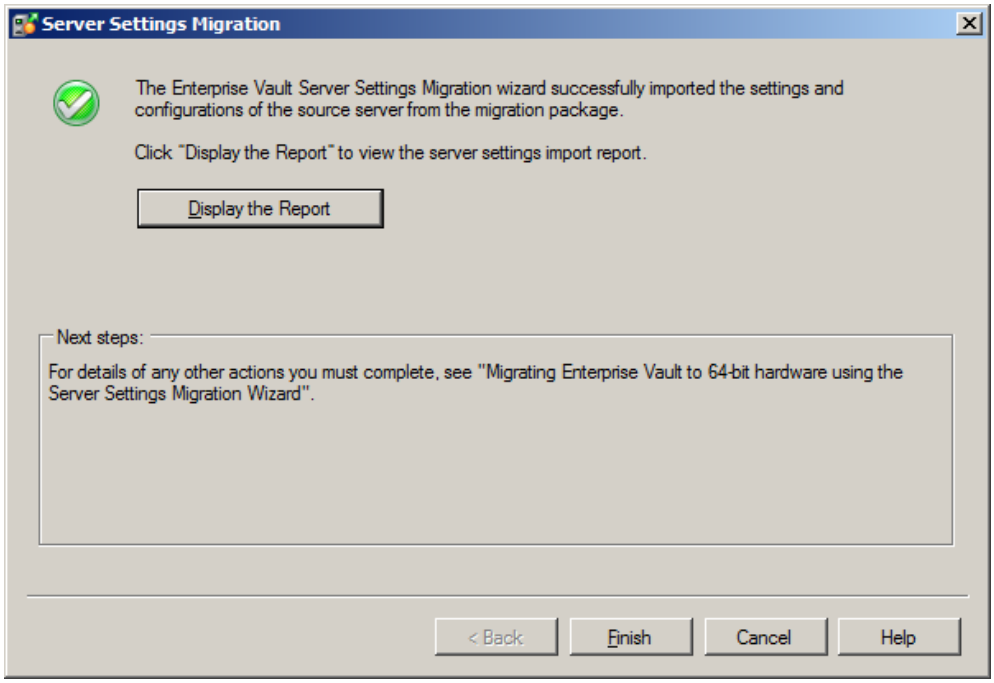

Figure 15 - Finishing the migration

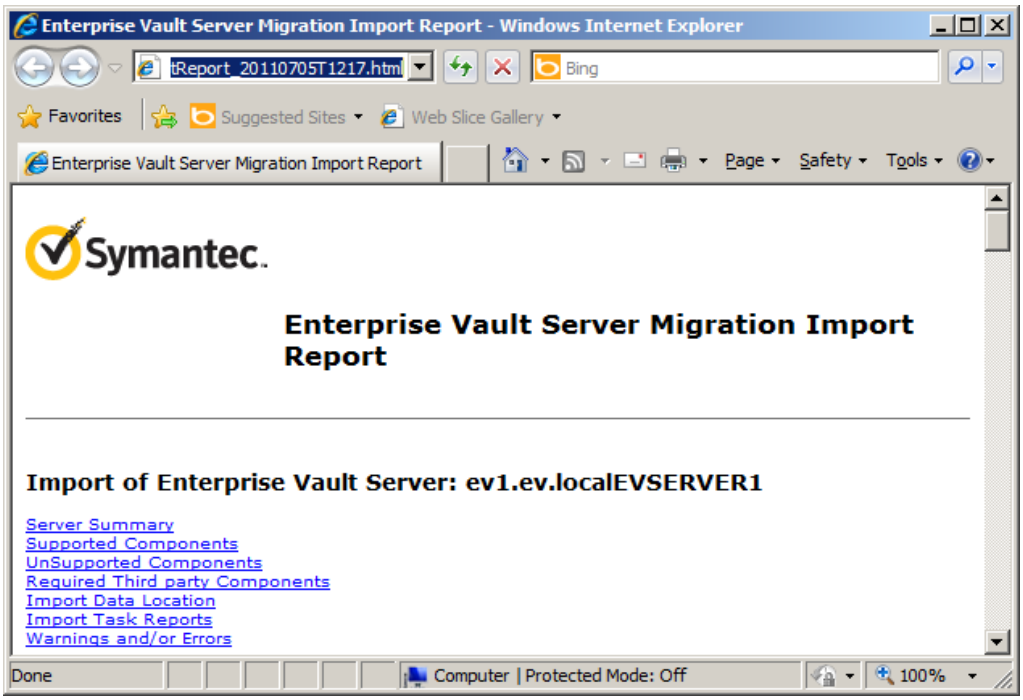

Figure 16 - Final report

Post-Migration

After the migration has been completed, perform the following steps:

- If the IP address of the new virtual machine has changed and Microsoft Exchange 2000 or 2003 OWA is being used, ensure that the new IP addresses are reflected in the EVServers.txt files on each front and backend OWA server.
- Verify access to Microsoft SQL Server(s) that house(s) Enterprise Vault databases
- Verify access to all storage locations (indexing, Vault Store partitions, temporary EV locations, and Shopping Service storage)
- Verify the EV configuration in the Enterprise Vault Administration Console (VAC)
    - Check that archiving policies have been correctly migrated
    - Check that archiving targets have been correctly migrated
    - Check that index locations have been correctly migrated
    - Check that Vault Store partitions have been correctly migrated
    - Check that archiving tasks have been correctly migrated
    - Check that cache settings and PST migration locations (if applicable) have been configured properly
- Recall a few archived items using a test user account (not the Vault Service Account)
- Test Archive Explorer and Browser Search using a test user account
- Archive new content using a test user account
- Test Vault Cache/Virtual Vault synchronization (if enabled)

If upgrading from Enterprise Vault 9.0.x (9.0.1 or later) to 10.0.x after the migration, perform the following steps:

- Perform a full backup of all Enterprise Vault resources including all EV-related Microsoft SQL databases (Enterprise Vault Directory, Monitoring, Auditing, FSA Reporting, fingerprint and Vault Store), index locations, and Vault Store partitions
- Upgrade to Enterprise Vault 10.0.x. Detailed upgrade instructions (UpgradeInstructions.pdf) are available on the Enterprise Vault 10.0.x installation media.

Additional information on migrating from clusters can be found in Appendix A.

APPENDIX A – Migrating from Clustered Configurations

Cluster Types

A clustered instance of Enterprise Vault may be associated with two or more nodes depending on the cluster configuration. There are two main types of clusters,

Active/Passive and N+N. In an Active/Passive configuration, there is one dedicated hot standby server for each active Enterprise Vault instance. In the event of a failure of the active Enterprise Vault node, the dedicated standby server will take over all functionality for the failed node. This standby node will not be configured to hand the failover of other Enterprise Vault instances.

In an N+1 configuration, the environment will have N amount of active instances of Enterprise Vault (where N is one or more). Additionally, at least one standby node can handle the failover of any one of the active instances of Enterprise Vault. An example of this would be an environment that has three active instances of Enterprise Vault and one standby server.

Before Migrating

Using the Server Settings Migration Wizard will attempt to stop and disable all Enterprise Vault services on the source instance. The stopping of services may trigger a failover event. As the Enterprise Vault services are under cluster control, disabling of these Enterprise Vault services may fail as well. Therefore, it is necessary to perform certain steps before starting the migration.

For Microsoft Cluster Server (MSCS) or Microsoft Failover Clustering:

Stop all services related to Microsoft clustering. This will prevent the failover of an Enterprise Vault instance during the migration process.

For Veritas Cluster Server (VCS):

Set the cluster group for Enterprise Vault to a persistent frozen state. This can be done in the VCS administration console (ensure to open the configuration, freeze the group, and close the configuration) or from the command line issuing the following commands:

```
haconf -makerw
hagrp -freeze <group_name>
haconf -dump -makero
```

where <group_name> is the name of the Enterprise Vault group

For other types of clustering software

Ensure to take steps to prevent the failover of an Enterprise Vault instance. Refer the clustering software documentation.

Post Migration

Once the migration has taken place and the configuration of the virtual instance has been validated, it is safe to delete clustered resources and groups of the source instance. Refer to MSCS, MFC, or VCS documentation on how to properly remove the cluster configuration.

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