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Windows® and Linux® operating systems

HP Storage Essentials Configuration Migration Guide

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Acknowledgements

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This product uses the j-Interop library to interoperate with COM servers.
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Chapter 1: Introduction

HP Storage Operations Manager (SOM) is HP's next generation storage resource management product. SOM is intended to replace HP Storage Essentials.

This guide describes the procedure for migrating the Storage Essentials configuration to SOM. It applies to the following versions of Storage Essentials:

- Storage Essentials 9.6.1
- Storage Essentials 9.70

Migration Tools

SOM provides a set of command line utilities for exporting the Storage Essentials configuration data and importing this data into the SOM database.

For export, the commands are included in the SOM 10.01 (or later) patch bundle. These commands must be run on the Storage Essentials management server. They are available in the `Utilities\scripts` directory in the extracted patch bundle.

For import, the commands are installed on the SOM management server as part of the SOM 10.01 (or later) patch installation. These commands must be run on the SOM management server. They are available in the following location:

- *Windows:* `<SomInstallDir>\bin`
- *Linux:* `/opt/OV/bin`

For a list of the migration tools, see "[Configuration Export and Import Commands](#)" on page 19.

Note: All export and import commands run during the migration process must be from the same version of SOM.

Migrated Configuration

This section describes the configuration data that can be migrated from Storage Essentials to SOM. Note the special considerations described here.

Custom properties

The custom property export command collects the following Storage Essentials custom properties files:

- `customProperties.properties`
- `customProperties.sample`
- `mergedProperties.properties`
- `securityProperties.properties_sample`
- `customJBossVMSettings.properties`

The custom property import command adds the exported custom properties to the `custom.properties` file in SOM. If the same property exists in both Storage Essentials and SOM, the Storage Essentials value takes precedence and is retained.

View the SOM custom properties in the following file:

- *Windows:* `<SomDataDir>\conf\som\custom.properties`
- *Linux:* `/var/opt/OV/conf/som/custom.properties`

Discovery configuration

The discovery configuration export process collects the following Storage Essentials discovery configuration data:

- Discovery addresses
- Discovery credentials
- Discovery address ranges
- Host inference rules

The discovery configuration import command merges the Storage Essentials discovery configuration data with the existing SOM discovery configuration.

View the SOM discovery configuration and discovery status in the views available from the Discovery area of the Configuration workspace in the SOM console.

To run a discovery rule, right-click that rule, and then click **Start Discovery**.

Host containers (named generic hosts)

In Storage Essentials, host containers, also called named generic hosts) are created by grouping generic hosts.

The host container configuration export command exports the host container definitions from Storage Essentials.

The host container configuration import command merges the Storage Essentials host container configuration with the existing SOM host container configuration. The host container import command groups the world wide names (WWNs) into hosts. If a WWN is not discovered, the host container import command creates a new port object for that WWN.

View the SOM host container configuration in the Created Host view in the SOM console (**Inventory > Hosts > Created Hosts**).

Hierarchical groups

Hierarchical groups are a mechanism to group related elements. A hierarchical group can include discovered elements, inferred hosts, and named generic hosts. The hierarchical groups in Storage Essentials map to node groups in SOM. After a successful migration of the Storage Essentials hierarchical group configuration, the same hierarchy is available in the SOM node group configuration.

In SOM, only top-level elements (hosts, virtual machines, inferred hosts, created hosts, switches, storage systems, and fabrics) can be included in a node group. Storage Essentials supports the use of groups for a larger data set. The migration process imports the node groups for the top-level elements only.

In Storage Essentials, group names can be re-used at different levels of the hierarchy. In SOM, all node group names must be unique across the entire group structure. The hierarchical group migration process uses the full path of the Storage Essentials group name (for example, `Group 1->Group 1`) as the SOM node group name.

The hierarchical group export process collects the Storage Essentials hierarchical group configuration and maps elements to the exported groups for storage systems, hosts, and switches.

The node group import command merges the Storage Essentials hierarchical group configuration data with the existing SOM node group configuration. The node group import creates a new node group in SOM for each group in the supplied data file. Note the following:

- The imported node groups are not rule-based. The node group import process adds each element in a Storage Essentials hierarchical group to the equivalent SOM node group as an additional node. Storage elements discovered after node group import are not automatically added to any

of the imported node groups.

- If a custom property value exceeds 255 characters, the hierarchical groups import process trims the value to 255 characters.
- If any of the groups being imported already exists in SOM, the entire group import fails. In this case, delete or change the name of the existing SOM node group, and re-run the import command.
- If the group name, including all levels in the hierarchy, exceeds 255 characters, the entire group import fails. In this case, manually edit the individual hierarchical group names in Storage Essentials so that the total group path length does not exceed 255 characters, and then re-export the hierarchical group configuration from Storage Essentials.
- If some of the elements associated with a node group are not discovered on the SOM management server, the import command displays a warning message similar to the following:

```
Not able to find element :{element_name} by unique key :  
{unique_key} and element type: {element_type}. Skipping the  
element and continuing with finding the next element
```

The import process imports the node group into the SOM database without creating the association to the named element.

View the SOM host container configuration in the Node Groups view in the SOM console (**Configuration > Object Groups > Node Groups**).

Asset records

In SOM, asset records are visible only for the following top-level elements:

- Discovered hosts
- Virtual servers
- Storage systems
- Physical switches

Storage Essentials supports the use of asset records for a larger data set.

The asset record export command collects data for the top-level **Asset Record** page under **Asset Management** in Storage Essentials. The command ignores any other child asset pages (for example, Staff or Custom).

The asset record import command overwrites the existing SOM asset record configuration. The asset record import command imports asset records into the SOM database and attaches each imported asset record to the applicable storage element. Note the following:

- If the storage element has not been discovered in SOM, the import command reports a missing element error and ignores the associated asset record. View the error in the command window and the `som.log` file.
- If the storage element type does not support asset records in SOM, the asset record exists in the SOM database but is not visible in the SOM console.

View asset records for the supported storage elements in the SOM console as follows:

1. In the Inventory workspace, open any of the following views:
 - Discovered Hosts
 - Virtual Servers
 - Physical Switches
 - Top Level Storage Systems
 - All Storage Systems
2. Double-click a row to open that storage element.
3. In the right-hand tab group, click the Asset Record tab.

Storage tier definitions

The storage tier definition export command collects all Storage Essentials tier rules and manual tier dynamic rules and manually added elements.

Note: The storage tier migration process does not migrate NAS volumes that were manually added to a storage tier in Storage Essentials.

The storage tier definition import command overwrites the existing SOM storage tier definitions. The import command creates the storage tier definitions in the SOM database. During import, SOM matches discovered storage elements to the storage tier definitions.

The storage tier definition import command identifies the elements that are included in the import set but are not currently in the SOM database. After import completes, manually add these storage elements to the applicable storage tier.

View the SOM storage tier configuration in the Storage Tiers view in the SOM console (**Configuration > Storage Tiers > Storage Tiers**).

Tip: By default storage tiers are not visible in the SOM console. For more information, see "Enable Storage Tier Configuration" in the *SOM Deployment Guide*.

To run a storage tier rule, right-click that rule, and then click **Run Rule**.

Tip: SOM runs the storage tier rules that apply to a storage device at the end of each data collection for that device.

Chapter 2: Migrating the Storage Essentials Configuration Data

The process of migrating the Storage Essentials configuration to the SOM database consists of the following tasks:

- ["Task 1: Export the Storage Essentials Configuration Data "](#) below

Perform this task on the Storage Essentials management server.

- ["Task 2: Copy the Exported Files to the SOM Management Server"](#) on page 14
- ["Task 3: Import Storage Essentials Configuration Data into the SOM Database"](#) on page 14

Perform this task on the SOM management server.

For information about the data that can be migrated from Storage Essentials and where that content appears in SOM, see ["Migrated Configuration" on page 6](#).

The migration process overwrites some of the configurations in the SOM database. For this reason, it is not recommended to migrate the configuration from more than one Storage Essentials server into a single SOM database.

Task 1: Export the Storage Essentials Configuration Data

To export the Storage Essentials configuration data, follow these steps:

1. Access the export scripts.
 - a. Obtain the SOM 10.01 (or later) patch bundle from the HP Support web site (softwaresupport.hp.com).

Note: All export and import commands run during the migration process must be from

the same version of SOM.

b. Extract the patch bundle to a known location.

2. Prepare the Storage Essentials system.

a. Log on to the Storage Essentials management server as an operating system user with administrative privileges.

b. Add `%JBOSS_DIST%\server\appiq\remoteScripts\perl\bin` to the `%PATH%` environment variable for the current user.

c. Copy the `Utilities` directory from the extracted patch bundle to any known location on the Storage Essentials management server. For example, `C:\SE_export`.

d. Change to the directory containing the export scripts. For example, `C:\SE_export\Utilities\scripts`.

During the export process, run all commands from this location.

e. Create a directory to hold the exported data. For example, `C:\SE_data`.

f. Log on to the Storage Essentials console as a Storage Essentials administrator.

3. Export the Storage Essentials custom properties.

At a command prompt, run the following command:

```
perl exportcustomprops.pl <file_path>
```

Replace `<file_path>` with the absolute path of the output file. For example, `C:\SE_data\CustomProperties.zip`.

4. Export the Storage Essentials discovery configuration.

a. In the Storage Essentials console, on the Discovery Setup page (**Discovery > Setup**), click **Save Settings to File**.

b. *Optional.* In the **Save Settings to File** dialog box, specify a password for the export file.

To save the export file with no password, close the **Save Settings to File** dialog box.

c. Use the web browser functionality to save the export file to the data directory. For example, `C:\SE_data\DiscoverySettings.xml`.

5. Export the Storage Essentials host containers (named generic hosts).

At a command prompt, run the following command:

```
perl exporthostcontainers.pl <file_path>
```

Replace *<file_path>* with the absolute path of the output file. For example, C:\SE_data\Containers.xml.

6. Export the Storage Essentials hierarchical groups.

- a. In the Storage Essentials console, on the Groups tab of the Element Manager right-click the **All Groups** node, and then click **Export Groups**.
- b. Use the web browser functionality to save the groups file to the data directory. For example, C:\SE_data\Elementgroups_Hierarchy_12345.xml.
- c. At a command prompt, run the following command:

```
perl exporthierarchicalgroup.pl <groups_file_path> <file_path>
```

Replace *<groups_file_path>* with the absolute path of the file saved from the Storage Essentials console. For example, C:\SE_data\Elementgroups_Hierarchy_12345.xml.

Replace *<file_path>* with the absolute path of the output file. For example, C:\SE_data\Groups.xml.

7. Export the Storage Essentials asset records.

At a command prompt, run the following command:

```
perl exportassetrecords.pl <file_path>
```

Replace *<file_path>* with the absolute path of the output file. For example, C:\SE_data\AssetRecords.xml.

8. Export the Storage Essentials storage tier definitions.

At a command prompt, run the following command:

```
perl exportstoragetier.pl <file_path>
```

Replace *<file_path>* with the absolute path of the output file. For example, C:\SE_data\StorageTiers.xml.

Task 2: Copy the Exported Files to the SOM Management Server

The steps in Task 1 created several data files in a directory on the Storage Essentials management server, for example `C:\SE_data`. Some files are of type XML (.xml). Others are compressed (.zip) files. Copy these data files to a directory on the SOM management server, for example `C:\SE_data` or `/tmp/SE_data`.

Task 3: Import Storage Essentials Configuration Data into the SOM Database

For information about how to view the imported data in SOM, see ["Migrated Configuration" on page 6](#).

To import the Storage Essentials configuration data into the SOM database, follow these steps:

Note: All export and import commands run during the migration process must be from the same version of SOM.

1. Prepare the SOM system.
 - a. Log on to the SOM management server as an operating system user with administrative privileges.
 - b. Log on to the SOM console as an SOM administrator.
2. Import the Storage Essentials custom properties.

At a command prompt, run the following command:

```
somcustomproperties.ovpl -import <file_path>
```

Replace `<file_path>` with the absolute path of the file containing the data to import. For example, `C:\SE_data\CustomProperties.zip` or `/tmp/SE_data/CustomProperties.zip`.

When prompted, restart the SOM services so that the new custom property configuration takes effect.

3. Import the Storage Essentials discovery configuration.

At a command prompt, run one of the following commands:

- If you specified a password for the discovery configuration file during export, use the following command:

```
somdiscoveryconfigexportimport.ovpl -import <file_path>  
-filepassword <file_password>
```

- If you did not specify a password for the discovery configuration file during export, use the following command:

```
somdiscoveryconfigexportimport.ovpl -import <file_path>
```

Replace `<file_path>` with the absolute path of the file containing the data to import. For example, `C:\SE_data\DiscoverySettings.xml` or `/tmp/SE_data/DiscoverySettings.xml`.

Replace `file_password` with the password specified while exporting the data from Storage Essentials.

4. Discover and collect data for the configured devices.

- a. Discover devices and perform the first round of data collection for each device.
 - If automatic discovery is enabled, wait for discovery and data collection to complete.

Note: If you used the `-i` option to the `somdiscoveryconfigexportimport.ovpl` command, start discovery for the imported devices manually as though automatic discovery were disabled.

- If automatic discovery is disabled, start discovery manually. In the SOM console, in the Discovery Addresses view (**Configuration > Discovery > Discovery Addresses**), select all rows, right-click, and then click **Start Discovery**.

Note: Ensure that one iteration of data collection completes for all defined storage elements before importing further configuration data. The discovered data in SOM must match that in Storage Essentials.

- View discovery progress in the Discovery Addresses view (**Configuration > Discovery > Discovery Addresses**).
- View data collection progress on the Collection Status Dashboard (**Analytics and Dashboards > Collection Status Dashboard**).

- b. Install the available device bundles for any devices in your storage environment.
 - Obtain device bundles from the SOM page on to the HP Live Network web site (<https://hpln.hp.com/group/storage-operations-manager-som>).
 - Follow the installation instructions in the included Readme file.
- c. Re-run data collection for all devices supported by the newly installed device bundles.

In each inventory view, right-click a row, and then click **Start Collection**.

5. Run host inference rules.

In the SOM console, in the Host Inference Rules view (**Configuration > Rule Based Host Inference > Host Inference Rules**), select all rows, right-click, and then click **Run Rule**.

Tip: Each host inference rule includes a **Run After Data Collection** check box. The migration process maintains the value of this check box from Storage Essentials. If the check box is selected, you do not need to run the host inference rules manually.

View the results of the host inference rules in the Inferred Hosts view (**Inventory > Hosts > Inferred Hosts**).

6. Import the Storage Essentials host containers (named generic hosts).

At a command prompt, run the following command:

```
somhostcontainerconfigexportimport.ovpl -import <file_path>
```

Replace *<file_path>* with the absolute path of the file containing the data to import. For example, `C:\SE_data\Containers.xml` or `/tmp/SE_data/Containers.xml`.

7. Import the Storage Essentials hierarchical groups.

a. Ensure that all of the following import steps have been completed:

- All storage elements have been discovered and all data has been collected for all storage elements. See [step 4 of this procedure](#).
- All host inference rules have been run, and storage hosts have been successfully inferred. See [step 5 of this procedure](#).
- All host containers defined in Storage Essentials have been imported into SOM. See [step 6 of this procedure](#).

b. At a command prompt, run the following command:

```
somnodegroupsconfigexportimport.ovpl -import <file_path>
```

Replace *<file_path>* with the absolute path of the file containing the data to import. For example, `C:\SE_data\Groups.xml` or `/tmp/SE_data/Groups.xml`.

8. Import the Storage Essentials asset records.

At a command prompt, run the following command:

```
somassetrecordsconfigexportimport.ovpl -import <file_path>
```

Replace *<file_path>* with the absolute path of the file containing the data to import. For example, `C:\SE_data\AssetRecords.xml` or `/tmp/SE_data/AssetRecords.xml`.

9. Import the Storage Essentials storage tier definitions.

a. Ensure the following:

- The storage elements that have been manually assigned to storage tiers in Storage Essentials have been discovered in SOM. See [step 4 of this procedure](#).
- The asset records in Storage Essentials have been imported into SOM. See [step 8 of this procedure](#).
- All XP arrays whose discovery configuration was imported from Storage Essentials have been discovered in SOM using the same provider as that used in Storage Essentials.

b. At a command prompt, run the following command:

```
somstoragetiERSconfigexportimport.ovpl-import <file_path>
```

Replace `<file_path>` with the absolute path of the file containing the data to import. For example, `C:\SE_data\StorageTiers.xml` or `/tmp/SE_data/StorageTiers.xml`.

- c. Run the storage tier rules to compute storage tier membership.

In the SOM console, in the Storage Tiers view (**Configuration > Storage Tiers > Storage Tiers**), select all rows, right-click, and then click **Run Rule**.

Appendix A: Configuration Export and Import Commands

The following table lists the command names for exporting data from Storage Essentials and importing data to SOM. For command usage, see the relevant content in this manual.

Configuration Area	Export Command Name (Run on the Storage Essentials management server)	Import Command Name (Run on the SOM management server)
Custom properties	exportcustomprops.pl	somcustomproperties.ovpl
Discovery configuration	Run from the Discovery Setup page	somdiscoveryconfigexportimport.ovpl
Host containers and generic hosts	exporthostcontainers.pl	somhostcontainerconfigexportimport.ovpl
Hierarchical groups	exporthierarchicalgroup.pl (run against the groups saved in the Element Manager)	somnodegroupsconfigexportimport.ovpl
Asset records	exportassetrecords.pl	somassetrecordsconfigexportimport.ovpl
Storage tier definitions	exportstorage-tier.pl	somstorage-tierconfigexportimport.ovpl

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