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Enterprise

HPE VM Explorer

HPE VM Explorer

Software Version 6.2
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USER GUIDE

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1 What is HPE VM Explorer?

HPE VM Explorer is a low-cost, easy-to-use and reliable backup solution for VMware vSphere and Microsoft Hyper-V environments. Within minutes you can start centrally managing your backups to disk, tape and cloud through an intuitive and easy-to-navigate web interface.

Advanced backup capabilities include incremental backups and replication, snapshot integration and native cloud support for leading Cloud platforms. With instant VM recovery, direct file level restore from the cloud, encryption, and verification, HPE VM Explorer delivers resiliency, efficiency and agility in your virtual environments.

You can find all the information about downloading, installing, configuring, using and administrating HPE VM Explorer in this publication. All services hereinafter are brought to you by Hewlett-Packard Enterprise (HPE).

For more information on which HPE VM Explorer version is best suited to your needs, consult our data sheet, available [here](#).

1.1 Installation prerequisites

In order to download, install and operate HPE VM Explorer, you need to have certain systems installed on your computer.

1.1.1 Browser prerequisites

You need to have one of these browsers installed on your system to download and run HPE VM Explorer:

- Mozilla Firefox
- Google Chrome
- Microsoft Edge
- Opera
- Internet Explorer 11

1.1.2 Operating system and .Net version prerequisites

HPE VM Explorer has been designed to work with the following operation systems:

- Windows Server 2016
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2

The supported Microsoft .NET Framework version is 4.0 or later.

1.1.3 ESXi Versions

HPE VM Explorer supports the following versions of ESXi:

- VMware ESXi 6.0
- VMware ESXi 5.5
- VMware ESXi 5.1
- VMware ESXi 5.0

- VMware ESX/ESXi 4.1
- VMware ESX/ESXi 4.0

1.1.4 Hyper-V versions

HPE VM Explorer supports the following Hyper-V versions:

- Hyper-V Server 2016
- Hyper-V Server 2012 R2
- Hyper-V Server 2012
- Hyper-V Server 2008 R2 (SP1)

1.1.5 Tape Libraries / Autoloaders

Supported Tape Libraries/Autoloaders:

- HPE StoreEver 1/8 G2 Tape Autoloader
- HPE StoreEver MSL2024
- HPE StoreEver MSL4048
- HPE StoreEver MSL6480
- HPE StoreEver MSL8096
- HPE StoreOnce VTL
- Dell PowerVault 124T

Note:

- HPE VM Explorer requires barcodes on every tape (which means, no support for standalone tape drives, or libraries without labeled media)
- HPE VM Explorer does not currently work with mixed media partitions
- HPE VM Explorer does not support WORM media
- HPE VM Explorer does not currently support Cleaning tapes

1.1.6 Virtual storage systems

Supported Virtual storage systems

- EMC ScaleIO V1.32

2 Installing and Configuring HPE VM Explorer

You need to install and then configure HPE VM Explorer before using it.

2.1 Installing HPE VM Explorer

After downloading HPE VM Explorer, we recommend that you go to your browser's download folder and transfer the *HPE-VMExplorer-6.2.xxx.msi* file to a folder of your convenience. Then:

1. Run *HPE-VMExplorer-6.2.xxx.msi*. **Step Result:** The **HPE VM Explorer Setup** wizard screen is displayed.
2. In the **Welcome to the HPE VM Explorer Setup** wizard screen, click **Next**.
3. In the **End User License Agreement** wizard screen, read the terms and conditions, select the **I accept the terms in the License Agreement** checkbox and click **Next**.
4. In the **Destination Folder** wizard screen, click **Change** if you want to select a different destination folder than the default one, or click **Next**.
5. Click **Install**.
6. In the **Completed the HPE VM Explorer Setup Wizard** screen, the **Launch HPE VM Explorer now** checkbox is selected by default, but you can clear it if you want to run HPE VM Explorer at a later date. Click **Finish** to exit the installation wizard and start HPE VM Explorer.

Important! You need to have SSL 3.0 or earlier deactivated on the computer on which you are installing HPE VM Explorer. See the Microsoft Knowledge Base Article dedicated to restricting the use of certain cryptographic algorithms and protocols in this respect, available [here](#).

2.2 Starting HPE VM Explorer

If the **Launch HPE VM Explorer now** checkbox is selected by default in the **Completed the HPE VM Explorer Setup Wizard** screen of the installation process, HPE VM Explorer will start as soon as the installation is complete.

To start HPE VM Explorer independently from the installation process, go to **Start > All Programs > HP Enterprise > HPE VM Explorer** or double-click the HPE VM Explorer icon on your desktop.

- If this is your first time using HPE VM Explorer, the **HPE VM Explorer - WebServer Settings** window is displayed, where you can configure the web settings for the application. For more information, see **Configuring HPE VM Explorer** on page 9.
- If this is not your first HPE VM Explorer installation and you want to preserve your previous settings (and your previous installation directory is intact), click the green Earth icon in the **HPW HPE VM Explorer® - Starter** screen. To modify your previously saved configurations, click **Web Settings**. For more information, see **Configuring HPE VM Explorer** on page 9.



Figure 1: HPE VM Explorer Starter screen

Next, you need to log on to the application. For more information, see **Accessing the HPE VM Explorer Web Interface** on page 13.

2.3 Configuring HPE VM Explorer

If you have not configured the HPE VM Explorer web server or if the HPE VM Explorer web server is not running, once you run HPE VM Explorer for the first time, you need to configure the web server settings. To do so, click **WebServer Settings** in the **HPE VM Explorer@ – Starter** screen. For more information on how to get to this stage, see **Starting HPE VM Explorer** on page 8.

1. In the **HPE VM Explorer – WebServer Settings** window, configure the boxes, as follows:

In the Web Interface Address section:

Hostname or IP

Change your local computer hostname or IP, if different from the default one.

Listening Port

Change the listening port, if different from the default one.

Enable https

Select this checkbox to make the web interface accessible using the HTTPS protocol. This causes the web address to change accordingly. Not enabling HTTPS will require you to change the listening port from the default 443. Also, depending on your selection, the UI options available to you at this stage may vary.

Certificate

Displays the HTTPS certificate. A self-signed HTTPS certificate for HPE VM Explorer is automatically installed on your local computer, in the **Personal** store. To find out more information about your certificate, click the hyperlink and then read the **Certificate** dialog box.

Important! When using your personal certificate, make sure it is valid (not expired), that it has a private key and that the Enhanced Key Usage has already been set. The Enhanced Key Usage is an option you need to add in your Personal Certificate to make it valid for HPE VM Explorer.

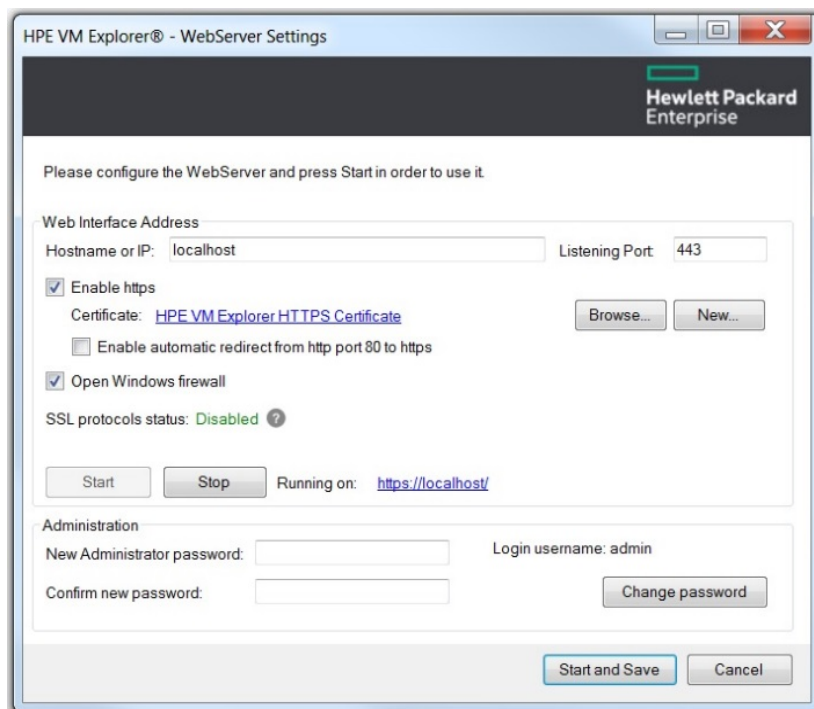


Figure 2: WebServer Settings

The **Friendly Name** (or the **Issuer By** name, if the first is not available) of the current HTTPS certificate is displayed in the **Details** tab, otherwise HPE VM Explorer will display *Certificate not found*.

Note: You can use only certificates already installed in the following folders of your local computer:

- Personal
- Trusted Root Certification Authorities
- Intermediate Certification Authorities
- Trusted Publishers
- Untrusted Certificates
- Third-Party Root Certification Authorities
- Trusted People
- Other People

When finished, click **OK** to return to **HPE VM Explorer - WebServer Settings** window.

Browse...

Click this button to add a new certificate. If you already have one available on your computer, select the desired certificate in the **Windows Security** dialog box and then click **OK**.

New

Click this button to generate and install a new HPE VM Explorer HTTPS certificate after clicking **OK** in the **Create new https certificate** confirmation dialog box.

Enable automatic redirect from http port 80 to https

Select this checkbox to enable automatic redirection from the default HTTP port 80.

Open Windows firewall

Select this checkbox to enable Windows Firewall to allow access for HPE VM Explorer.

SSL protocols status: Disabled/Enabled

HPE VM Explorer needs all SSL protocols (3.0, 2.0) to be disabled to function properly. For more information, see Microsoft KB Article 187498.

Start

Click to start the web server, if not started already.

Stop

Click to stop the web server, if needed (see Figure 2: WebServer Settings).

Running on:

Displays the localhost. **Note:** Depending on the settings, your browser could display a warning message when opening HTTPS links, as the HTTPS certificate is self-signed and not issued by a trusted certificate authority. To select a user trusted certificate, click **Browse...** See earlier in this publication for the options available to you at this stage.

In the Administration section:

New Administrator password

Type your administrator password before entering the web interface for the first time. The default login user name is *admin*. Your password must comply with the HPE VM Explorer security policy and must observe the following requirements whenever you create or modify a user:

- A minimum of 10 and a maximum of 20 characters
- At least one lower case letter [a-z]
- At least one upper case letter [A-Z]
- 2 digits (0-9)
- At least 1 special character (such as: % & ? ; : ! - . _ * @ # + \$ =)

To recover a lost password, see **Recovering your password** on page 69.

Confirm new password

Confirm your administrator password.

Change password

Click if you need to change your existing password.

2. When finished, click **Start and Save**. **Step Result:** If you have correctly configured all settings, HPE VM Explorer opens in your default browser. For the list of supported browsers, see **Browser prerequisites** on page 6.

2.3.1 Disabling SSL protocols

For security purposes, we recommend that you disable SSL protocols versions 2.0 and 3.0 when using HPE VM Explorer.

To disable SSL protocol 2.0:

1. Go to **Start > regedit.exe**, right-click it and point to **Run as administrator** on the shortcut menu.
2. In the **Registry Editor** window, expand the tree to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\Schannel\Protocols\SSL 2.0**.
3. If, under **Protocols**, the keys from the subpaths **SSL 2.0/Server/Enabled** and **SSL 2.0/Client/DisabledByDefault** do not exist, create them, as follows:
 - a. Right-click **Protocols** and, in the shortcut menu, click **New > Key**, name the key **SSL 2.0**.
 - b. Right-click the **SSL 2.0** key, point to **New > Key** and then name the key **Client**.
 - c. Under **SSL 2.0**, right-click **Client**, point to **New > DWORD (32-bit) Value**, name the value **DisabledByDefault**.
 - d. Right-click the **SSL 2.0** key, point to **New > Key** and name the key **Server**.
 - e. Under **SSL 2.0**, right-click **Server**, point to **New > DWORD (32-bit) Value** and name the value **Enabled**.
4. Under **SSL 2.0**, select **Client** and then, in the right pane, double-click the **DisabledByDefault REG_DWORD** value.
5. In the **Edit DWORD (32-bit) Value** dialog box, in the **Value Data** box, change the value to **1** and click **OK**.
6. Under **SSL 2.0**, select **Server** and then, in the right pane, double-click the **Enabled REG_DWORD** value.
7. In the **Edit DWORD (32-bit) Value** dialog box, in the **Value Data** box, leave the value at **0** and then click **OK**.
8. Restart your Windows server.

To disable SSL protocol 3.0:

1. Go to **Start > regedit.exe**, right-click it and point to **Run as administrator** on the shortcut menu.
2. In the **Registry Editor** window, expand the tree to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\SecurityProviders\Schannel\Protocols\SSL 3.0**.
3. If, under **Protocols**, the keys from the subpath **SSL 3.0/Server/Enabled** do not exist, create them, as follows:
 - a. Right-click **Protocols** and, on the shortcut menu, point to **New > Key** and name the key **SSL 3.0**.
 - b. Right-click the **SSL 3.0** key, point to **New > Key** and name the key **Server**.
 - c. Under **SSL 3.0**, right-click **Server**, click **New > DWORD (32-bit) Value** and name the value **Enabled**.
4. Under **SSL 3.0**, select **Server** and then, in the right pane, double-click the **Enabled DWORD** value.
5. In the **Edit DWORD (32-bit) Value** dialog box, in the **Value Data** box, leave the value at **0** and then click **OK**.
6. **Restart** your Windows server.

For more information, visit the Microsoft support page: <https://support.microsoft.com/en-us/kb/245030>.

2.4 Configuring TCP ports

HPE VM Explorer uses different TCP ports to communicate with hosts or enable communication between hosts:

Server	Required Port Number	Observations
ESXi Servers	443 (HTTPS)	Enabling Use HPE VM Explorer Agent on ESXi requires ports 22 (SSH), 443 (HTTPS) and 62000-65000. Using VDDK requires port 902.
vCenter	443 (HTTPS)	-
Hyper-V Servers	9000, 9001, 62000-65000	-
Linux and FreeBSD	22 (SSH), 2500-3000 and 62000-65000	-

3 Accessing the HPE VM Explorer Web Interface

After you have finished configuring HPE VM Explorer, you need to log on using the credentials you selected during the configuration stage. For more information, see **Configuring HPE VM Explorer** on page 9.

To run HPE VM Explorer, go to **Start > RUN > HPE VM Explorer** and then, in the HPE VM Explorer® - Starter window, click the green Earth icon and then enter your login credentials.

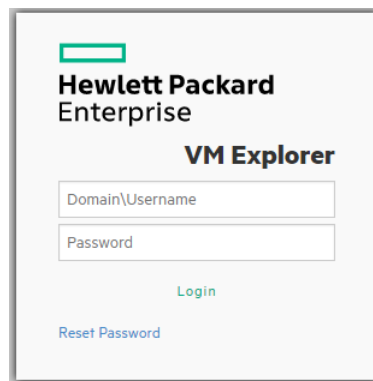


Figure 3: Web login field

If you have not selected your language of choice yet, you can choose which localization to use in the **HPE VM Explorer language selection** screen.

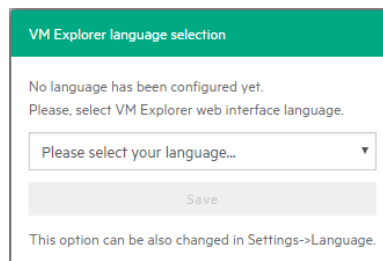


Figure 4: Language selection for the first time access

The languages currently available to you at this stage are:

- English
- French
- German
- Italian
- Spanish
- Japanese
- Russian
- Chinese – simplified
- Portuguese – Brazilian

The Web Interface of HPE VM Explorer consists of the following menus and submenus:

Menu	Datacenter		Management	Storage System	User Menu (on the right side)
Submenus	–	Scheduler Tasks Task History	Backup Explorer Replication Explorer Instant Recovery Service File Explorer	SAN Infrastructure Tape Infrastructure	User options Settings Manuals About... Logout

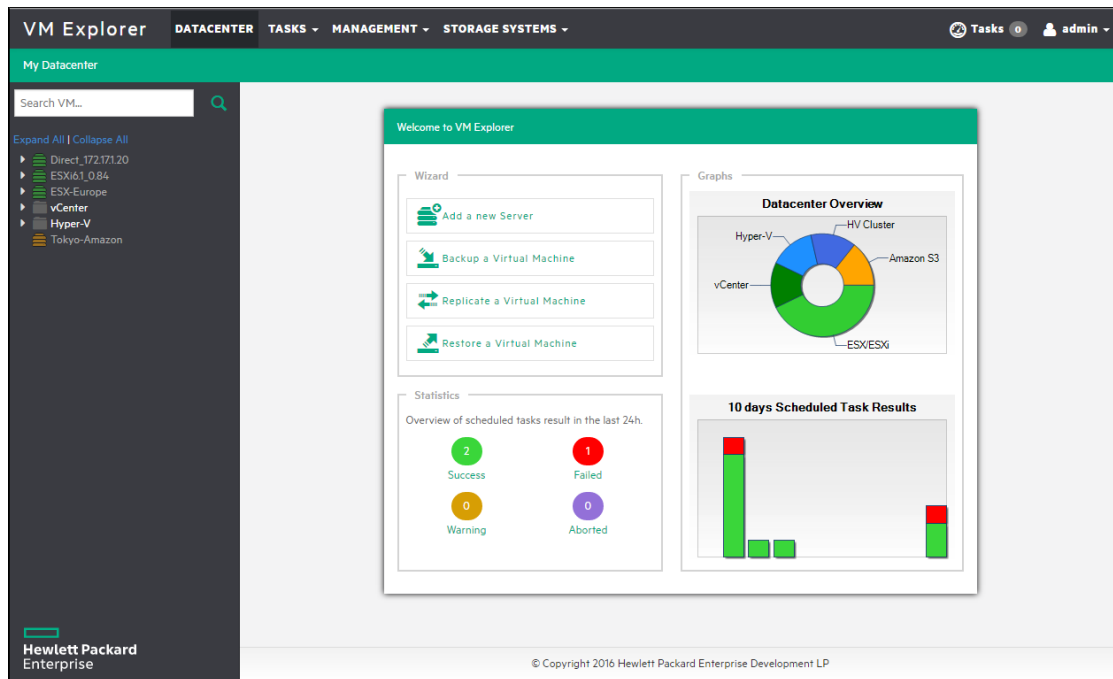


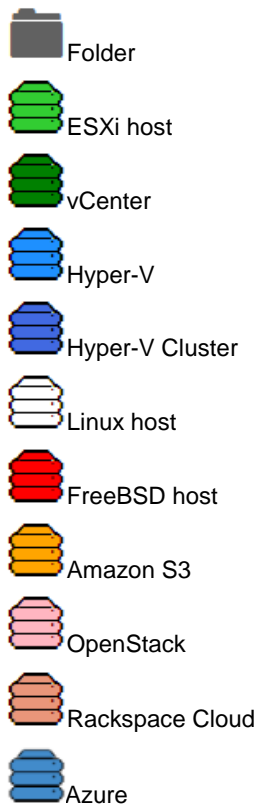
Figure 5: HPE VM Explorer Datacenter view

4 Working with Servers in HPE VM Explorer

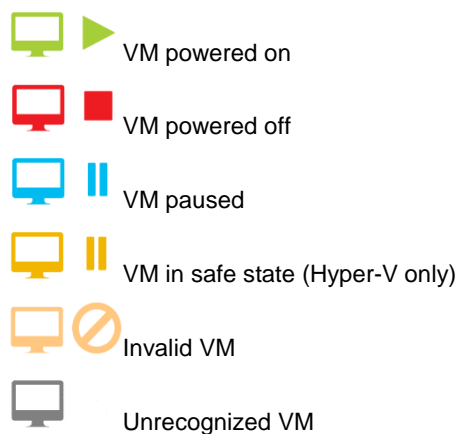
You can add a large variety of servers to the HPE VM Explorer Datacenter, from hypervisors to public/private clouds, which you can later modify or delete.

4.1 Visual representations of the supported servers and VM status

To make navigation easier for you, every supported server is represented by a dedicated icon in the datacenter, as follows:



In addition, various icons enable you to recognize the state of the Virtual Machine deployed in the Hypervisor:



4.2 Adding Hypervisor Servers

Before you start using HPE VM Explorer, you need to add your Hypervisor hosts. To do so:

1. In the **Welcome to HPE VM Explorer** screen (if this screen is not displayed by default after log on, click **Datacenter** on the top menu) and click **Add a new Server**.
2. In the **Add Server** wizard screen, select the type of server you want to add.

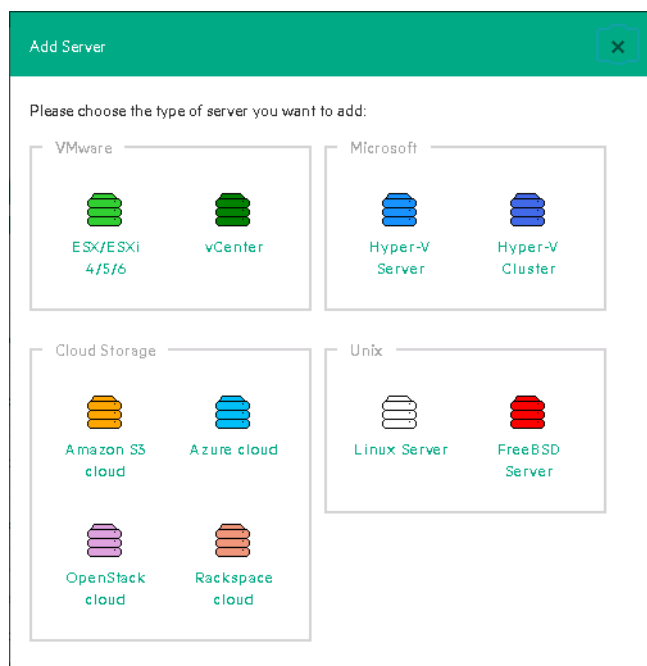


Figure 6: The **Add Server** screen

3. Configure the **Add Server <Server Name>** wizard screen, as required. During the configuration process, you can navigate through the previously completed wizard screens at any time. Depending on your server selection at this stage, the procedures available to you may vary. Read later in this publication for more information.

Note: Before adding servers to HPE VM Explorer, we recommend that you integrate your host(s) into a folder structure to increase your efficiency. To do so, right-click a host on the **My Datacenter** view, point to **Add Folder** and then type a meaningful name for your folder. Note that you can only add one child level folder to the root.

4.2.1 Adding an ESXi server

You can add an ESXi server to HPE VM Explorer in the **ESX/ESXi 4/5/6** screen, which you can complete by clicking **Next** after filling in the required information. Note that, unless otherwise stated, these procedures are shared across the application when adding various servers and storage environments.

1. In the **Add Server** screen, click **ESX/ESXi 4/5/6** and then, in the **Add Server ESX/ESXi 4/5/6** screen, select a display name for your server and browse to the desired location to store the server in the HPE VM Explorer Datacenter (this procedure will not influence backup or replication operations in any way).
2. In the **Connection Settings** screen, type the hostname (or IP), the username and the password, and the root password if you choose to connect to the host using a different user than the *root*.
3. In the **Port Settings** screen, configure a port for SSH (if different from the default 22) and an HTTPS port for the ESX Management Console (if different from the default 443). **Note:** This procedure only applies to the ESXi host.
4. In the **SSH / HPE VM Explorer Agent** wizard screen, select one of the following checkboxes. (**Note:** This procedure only applies to the ESXi host). The HPE VM Explorer Agent is an automatically deployed wrapper over the Hypervisor API and it is used for performing various operations, such as creating, replicating, restoring backups and so in.

Enable SSH and use HPE VM Explorer agent automatically (only on ESXi or higher)

For ESXi 4.1 or later, you can enable SSH and use the HPE VM Explorer agent automatically.

Use SSH (SCP) to transfer files if this is an ESX 4i/5i/6i host

You can enable SSH to transfer files from your ESXi hosts. SSH is not faster than the regular ESXi API, but it is more stable for uploading/downloading files to/from your ESXi server. Click the links in the wizard screen to see how you can change your ESXi server into tech mode to enable SSH.

Try to use the HPE VM Explorer agent on ESXi

HPE VM Explorer usually deploys an agent to the server so that backups are faster and more stable. ESXi does not support SSH by default, so no agent will be deployed. By selecting this option, HPE VM Explorer will deploy an agent to your ESXi server. We recommend activating this feature, as the performance will be much better than when using the official API.

5. (Note: This procedure only applies to the ESXi host.) In the **Advanced Settings** wizard screen, select one of the following checkboxes:

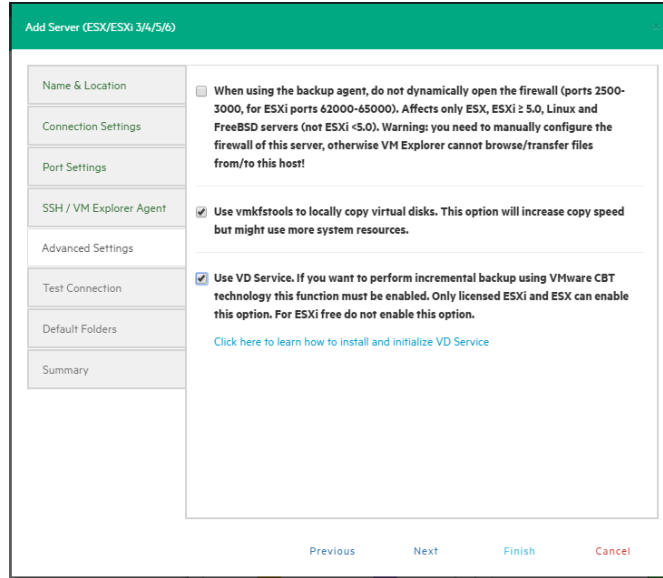


Figure 7: Add Server - Advanced Settings

Do not dynamically open the firewall

This option only refers to Linux or ESXi 5.0 or later servers. HPE VM Explorer will configure the firewall automatically for your Linux or ESXi 5.0 or later server. You can open the ports yourself (for more information, see the HPE VM Explorer Practitioner Forum) and disable this option. In this case, the HPE VM Explorer agents will not make any changes to your Linux or ESX firewall.

Use vmkfstools to locally copy virtual disks

This option is enabled by default and enables HPE VM Explorer to use the *vmkfstools* to copy virtual disks when the target host is the same as the source host. The use of *vmkfstools* increases the local copy speed, but in some cases uses more system resources.

Disable this option if you notice performance problems during your backups/replication from an ESX host to the same ESX host.

Use VD Service

If you enable this feature, you will be able to create differential backups. **Note:** ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 / 6.0 is required. Also, note that this feature does not work on the ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 / 6.0 free edition.

To use the VD Service interface, you need to make a one-time installation and initialization of the VD libraries. For more details, follow the **Click here to learn how to install and initialize VD Service** link.

6. In the **Test Connection** wizard screen, you can test your connectivity status. This is where you are notified in case an error occurs.
7. In the **Default Folders** wizard screen, configure a default directory for backup/replication. This folder will be suggested to you in the setup dialog box when the current server is selected as a target server. You can also use the following placeholders:

- {*DATE*TIME}—current date/time. HPE VM Explorer uses the following format: YYYY-MM-DD-hhmmss.
- {*DATE*}—current date. HPE VM Explorer uses the following format: YYYY-MM-DD.
- {*VM*}—displays the name of the virtual machine.

Use the last box to configure a default directory used as the start directory when using HPE VM Explorer's **File Explorer** component. When navigating to a specific server or when clicking **Home** in **File Explorer**, you will be redirected to the directory you specify here.

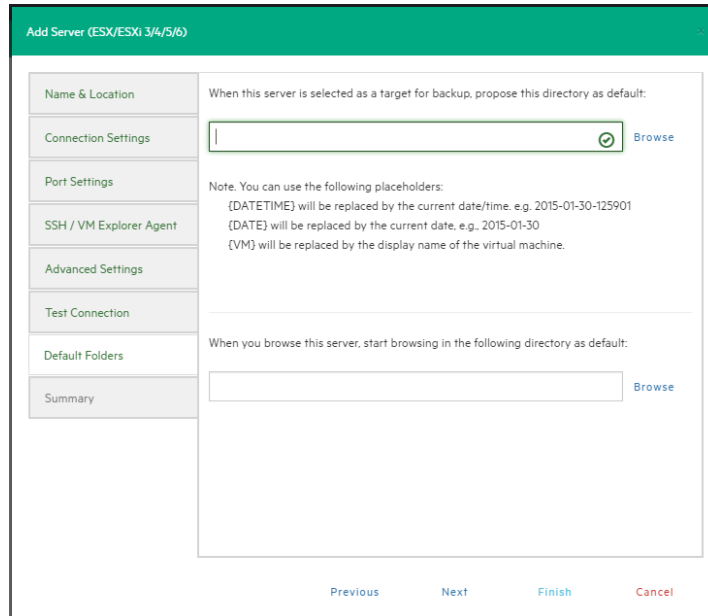


Figure 8: Add Server - Default Folders

8. The **Summary** wizard screen displays the summary of your newly configured ESX/ESXi 4/5/6 server. At this stage you can go back and make any necessary changes. After clicking **Finish**, you can still modify the server by right-clicking your Hypervisor host entry in the Datacenter View and pointing to the **Edit Server...** shortcut menu.

4.2.2 Adding a Hyper-V server

This section covers the differences between adding an ESXi host and a Hyper-V host in the **Add Server** wizard. You can find information on the tabs not explained here earlier in this publication. For more information, see also **Adding an ESXi server** on page 16.

1. In the **Connection Settings** wizard screen, configure the credentials for connecting to the Hyper-V host. Make sure you have a valid account with the Hyper-V host. Select the **Start Hyper-V Agent using configured credentials** checkbox to start the HPE VM Explorer Agent Manager Service with these credentials, not as the local system's user, if such credentials exist. If not, the system will use the local system user's credentials as default.

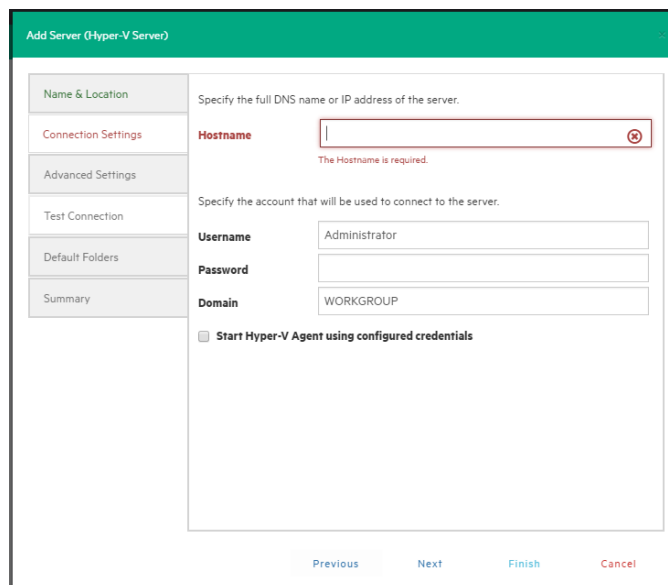


Figure 9: Add Server (Hyper-V) - Connection Settings

- In the **Advanced Settings** wizard screen, selecting the **Write data directly to the disk without being buffered** checkbox solves performance issues in applications and services when the system file cache consumes most of the physical RAM in certain services, as documented in the **Microsoft KB Article 976618**. **Note:** This option could slow down the backup process if the target is set to your local computer.

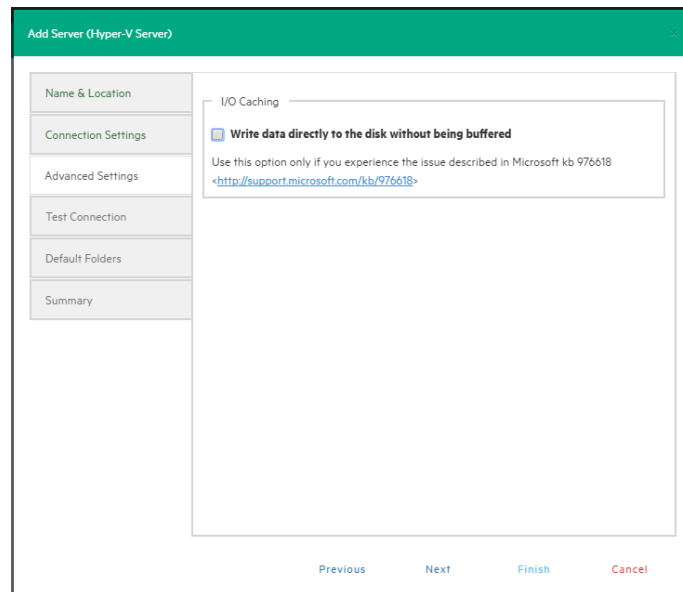


Figure 10: Add Server (Hyper-V) - Advanced Settings

- In the **Test Connection** wizard screen, you can deploy the HPE VM Explorer Agent Manager Service to your server. In case of errors, the **Agent Manager** button is displayed; clicking it opens the **Hyper-V Agent Manager** window where you can manually deploy it. You can also choose to remove the HPE VM Explorer Agent Manager from the server. The HPE VM Explorer Agent Manager verifies if your HPE VM Explorer Agent is up-to-date and will install the latest version on your Hypervisor, if needed.

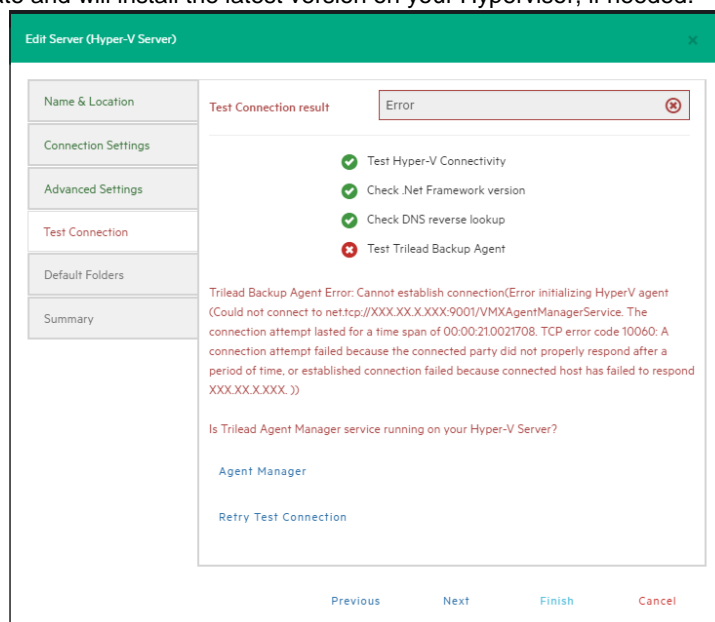


Figure 11: Add Server (Hyper-V) - Test Connection

You can also access this screen when selecting the server in the HPE VM Explorer Datacenter.

4.2.3 Adding a vCenter server

This section covers the differences between adding an ESXi host and a vCenter host in the **Add Server** wizard. You can find information on the wizard screens not explained here earlier in this publication. For more information, see also **Adding an ESXi server** on page 16.

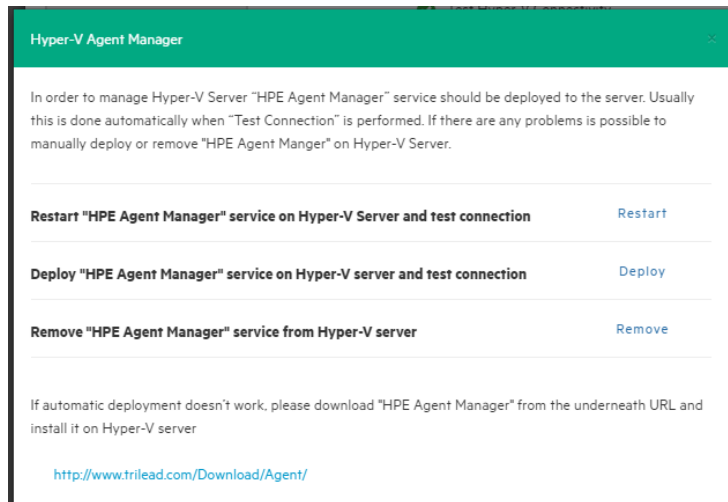


Figure 12: Add Server (Hyper-V) - Hyper-V Agent Manager

1. In the **Connection Settings** wizard screen, type the hostname (or IP), the username and the password for the server.

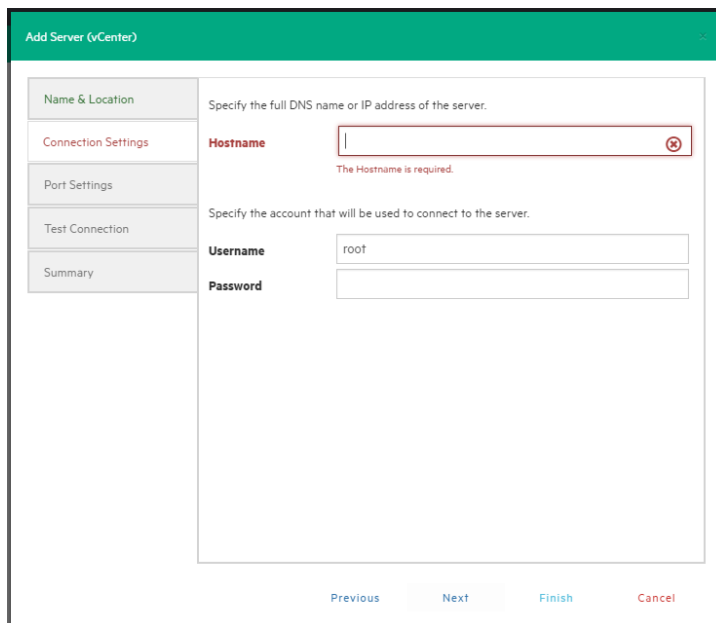


Figure 13: Add Server (vCenter) - Connection Settings

2. In the **Port Settings** wizard screen, configure an HTTPS port for the ESX Management Console (if different from the default 443).

After you have added your vCenter, you can find all vCenter hosts in the Datacenter view. You must also configure every host by right-clicking it and pointing to **Edit Server...** on the shortcut menu. For more information on this procedure, see **Adding an ESXi server** on page 16.

Important! You cannot set ESXi servers to Lockdown mode because of permission issues. If ESXi servers are already in Lockdown mode, you must remove Lockdown. To do so, open the Direct Console User Interface (DCIU) on the host, press F2 for Initial Setup, and then select **Configure Lockdown Mode** and disable Lockdown mode.

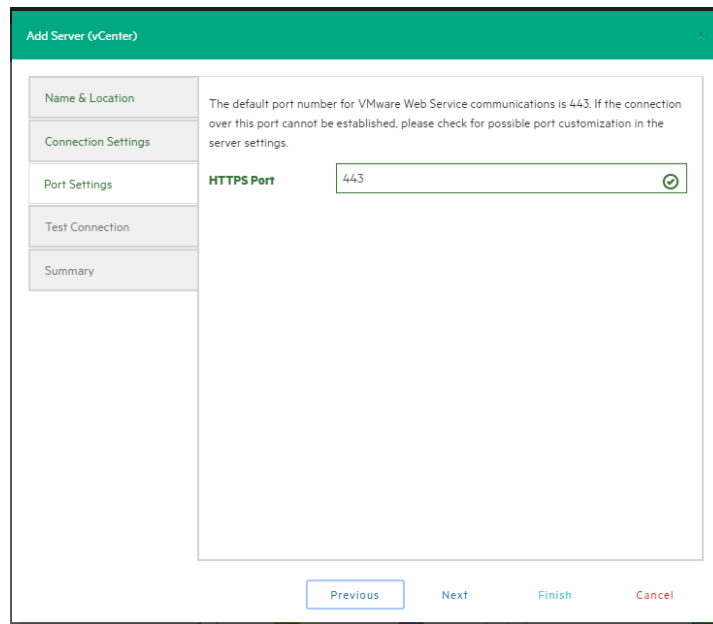


Figure 14: Add Server (vCenter) - Port Settings

4.3 Adding storage target servers

In HPE VM Explorer, you can add the following storage targets: Amazon S3, OpenStack, HPE Helion, Rackspace and Azure cloud, as well as Linux and FreeBSD servers.

4.3.1 Adding an Amazon S3 storage target

This section covers the differences between adding an ESXi host and adding an Amazon S3 Cloud host in the **Add Server** wizard. You can find information on the wizard screens not explained here earlier in this publication. For more information, see also **Adding an ESXi server** on page 16.

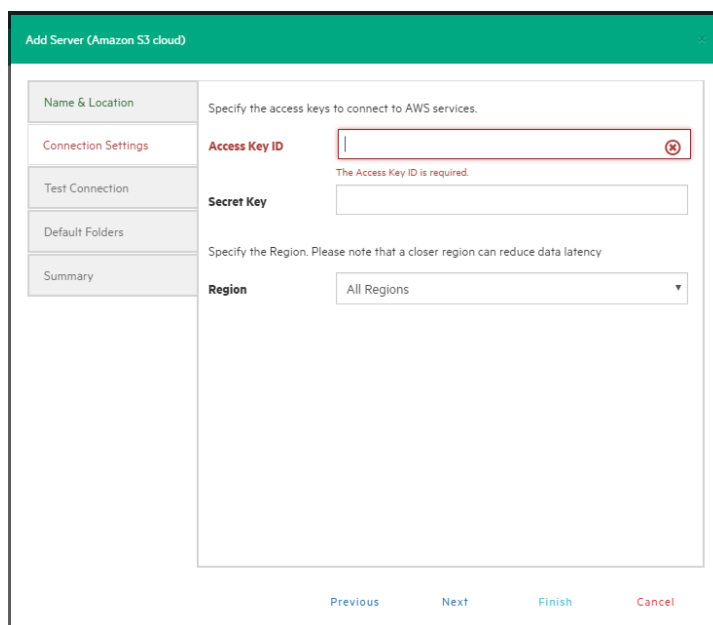


Figure 15: Add Server (Amazon S3) - Connection Settings

In the **Connection Settings** wizard screen, add your credentials to connect to the Amazon S3 Cloud as well as the region you want to work with. Make sure you have access to an Amazon S3 server and to your cloud account's Access Key ID and Secret Access Key and type this information in the **Connection Settings** wizard screen. For more information, click here. You can select **All Regions** or just one of them from the list. If you select a specific region, the region-specific bucket will become visible. **Note:** Choosing a specific region closer to you may reduce data latency.

Once finished, you can schedule your backups to the Amazon S3 server. For more information, see **Scheduling Tasks** on page 33.

4.3.2 Adding OpenStack, HPE Helion, Rackspace and Azure cloud storage targets

This section covers the differences between adding an ESXi host and adding an OpenStack, HP, Rackspace or Azure Cloud host in the **Add Server** wizard. You can find information on the wizard screens not explained here earlier in this publication. For more information, see also **Adding an ESXi server** on page 16.

You can choose between making backups directly to the cloud or to a local storage and then uploading the backup to the cloud.

In the **Connection Settings** wizard screen, type the credentials you need to connect to the selected cloud. For OpenStack, HP and Rackspace, you can also select if you want to access to the **Tenant Name** or the **Tenant ID** and you can specify which one(s).

Figure 16: Add Server (OpenStack, HP, Rackspace) - Connection Settings

4.3.3 Adding Linux and FreeBSD servers

This procedures of adding Linux and FreeBSD servers are similar to adding an ESXi host, except for the **SSH/HPE VM Explorer Agent** and **Advanced Settings**, which are only used by ESXi hosts. For more information, see also **Adding an ESXi server** on page 16.

4.4 Modifying a server or Virtual Machine

Depending on your needs, you can easily modify the settings of an existing server in HPE VM Explorer. To do so, go to the **Datacenter** view, right-click the server you want to modify and then point to **Edit Server** in the shortcut menu. Then, configure the **Edit Server (ESXi 4/5/6)** wizard accordingly. For more information on how to configure a server, see **Adding Hypervisor Servers** on page 16.

4.5 Viewing server or Virtual Machine information

In HPE VM Explorer, you can always check whether your server or Virtual Machine settings are compliant with your needs.

4.5.1 Viewing server information

To get an overview of a server, go to the Datacenter view and select a server from the side bar. In the **<server name>** screen, you can view information related to:

- **Server Overview**
- **Inbound Outbound View**
- **Instant Recovery Status**
- **Upload Manager** (only for Amazon S3).

Server Overview

In the **Overview** tab of the **<server name>** screen, you can see general information about the host and its datastores:

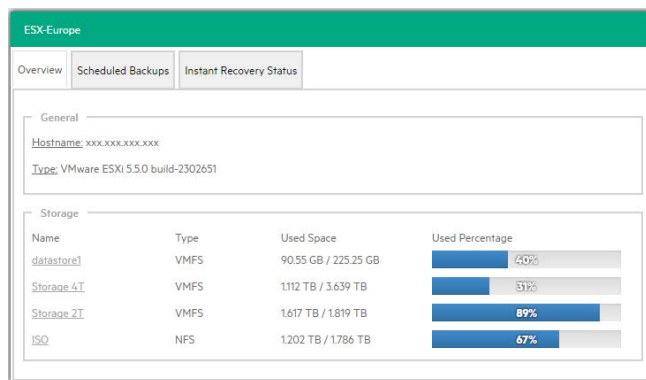


Figure 17: Server - Overview

Inbound Outbound View

In the **Scheduled Backups** tab of the **<server name>** screen, you can view all the tasks connected to the current server:

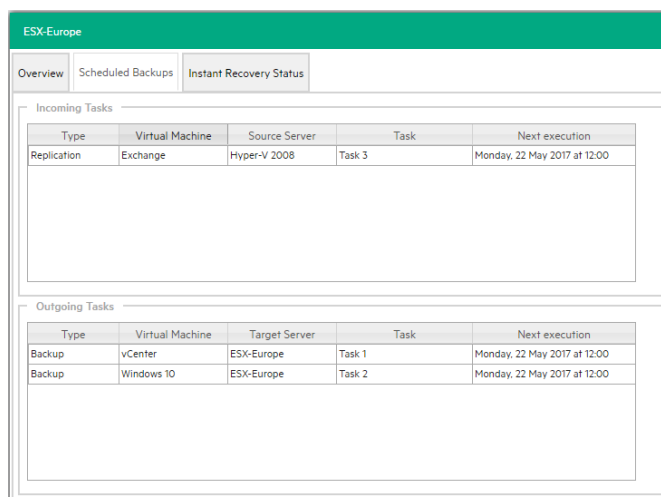


Figure 18: Server – Inbound Outbound View

Instant Recovery Status

In the **Instant Recovery Status** tab of the **<server name>** screen, you can check the connection status between the Hypervisor and HPE VM Explorer's NFS server (this feature is only available for ESXi):

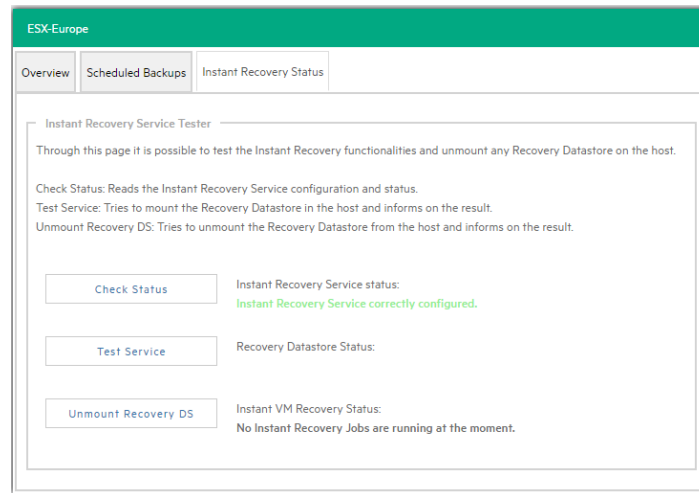


Figure 19: Server - Instant Recovery Status

On the **Instant Recovery Status** tab, you can:

- Check the status of the data and get an overview of the possible and ongoing operation. You can see information on the datastore registered through the HPE VM Explorer's NFS Server and also if any Backup Test is running.
- Test the Service, which mounts the HPE VM Explorer's NFS datastore (used for automated backup test and instant VM recovery) on to the host, and check if basic communication is possible.
- Unmount Recovery DS, which executes the unmounts of the HPE VM Explorer's NFS datastore. If any backup test is being executed, the command will fail due to the host refusing it.

Upload Manager

The **Upload Manager** tab of the **<server name>** screen is only available for Amazon S3. Here you can have an overview of the multipart uploads currently active with the Amazon S3 cloud:

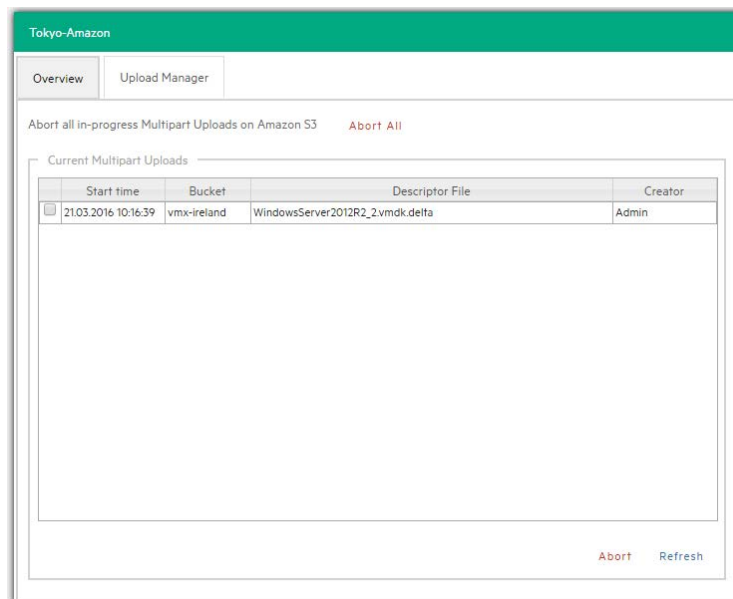


Figure 20: Server - Upload Manager

Click **Abort All** to stop and delete all multipart upload jobs currently running. Click **Current Multipart Uploads** to see a list of all running upload jobs. You can select one or more jobs and then stop them without influencing other jobs, which is useful in case of blocked or malfunctioning jobs. The refresh is not automatic, so manually click **Refresh** every time you need to see updated information.

4.5.2 Viewing Virtual Machine information

To have an overview of a Virtual Machine, expand the servers on the **Datacenter** view, click the desired Virtual Machine and then see all the desired information in the **<Virtual Machine Name>** screen.

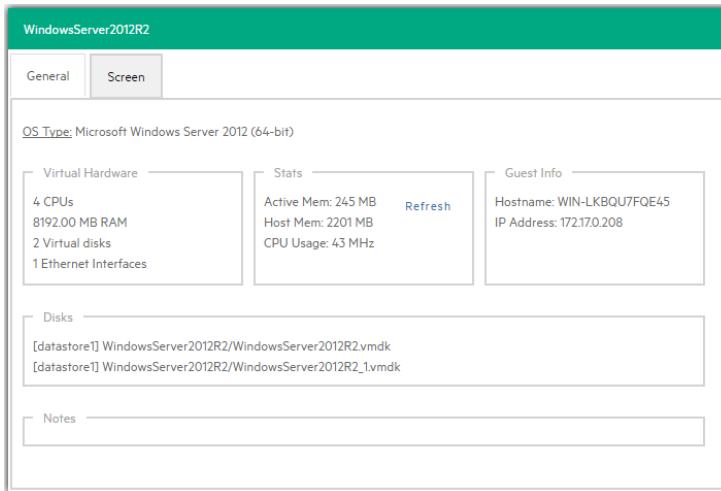


Figure 21: VM General

You can also request a screenshot of the VM in the **Screen** tab. Just press **Refresh** to update.

You can right-click a VM in the Datacenter tree and then, in the **Snapshots for <Virtual Machine Name>** screen, you can run VM related actions, such as power on/off, backup/replication, locate VM files or manage the snapshots.

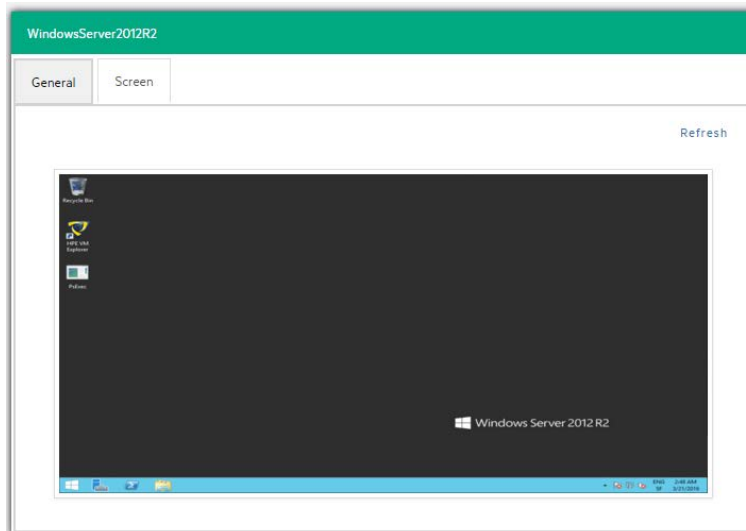


Figure 22: VM Screenshot

Clicking **Snapshot Manager** enables you to see the snapshot tree of the selected VM. Here you can navigate through the snapshots and delete one or more snapshots.

Click **Create Snapshot** to take a new snapshot. You can set the option for *quiesce* and *memory snapshot*. Give your snapshot a name and a meaningful description.

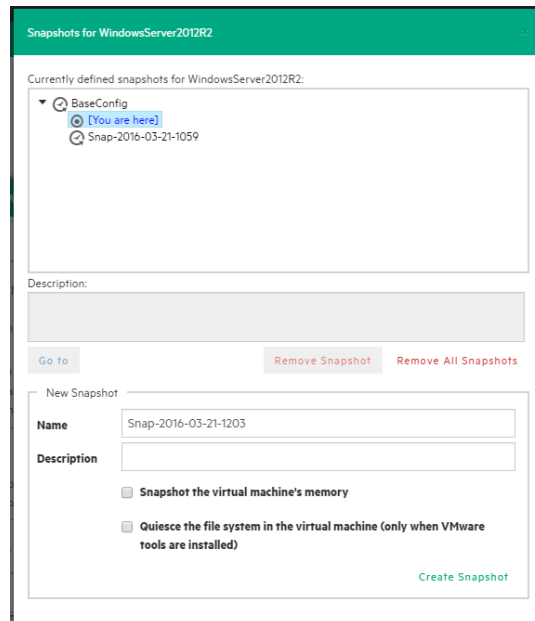


Figure 23: VM Snapshot Manager

4.6 Deleting a server

In HPE VM Explorer, you can delete a server you no longer need. To do so, go to the **Datacenter** view, right-click the server that you want to delete and then point to **Remove** on the shortcut menu. Then, in the **Confirm** dialog box, click **OK**.

5 Configure SAN Infrastructure

If your network has an EMC² ScaleIO System installed, you can add a reference to this SAN system in HPE VM Explorer so that you can see the information about your ScaleIO and execute backups with Storage Snapshot. For more information, see **Backing up one or several Virtual Machines** on page 36. You can add a SAN infrastructure and you can modify or delete an existing one.

Note: HPE VM Explorer currently supports ScaleIO System version 1.32.

5.1 Adding a SAN infrastructure

To add a SAN infrastructure:

1. In HPE VM Explorer, go to Storage Systems and point to SAN Infrastructure.
2. In the **Welcome to the SAN Infrastructure Manager** screen, click **Add a new ScaleIO System**. You can also click **Add a new ScaleIO System** on the **SAN Infrastructure** view or right-click a free area in the **SAN Infrastructure** view and point to **Add a new ScaleIO System...** on the shortcut menu.
3. In the **Add a new SAN** wizard, in the **Name & Connection Settings** screen, complete the boxes, as required. When finished, click **Next**.

Figure 24: Add San Infrastructure – Name & Connection Settings

4. In the **Test Connection** wizard screen, you can test the connectivity and uniqueness of your SAN System. If the test is successful, click **Next**.
5. In the **Summary** wizard screen, you can see the summary of your SAN infrastructure. At this stage, you can always go back and reconfigure the details of your SAN infrastructure. When finished, click **Save**. Your newly added SAN infrastructure is available in the **SAN infrastructure** view.

5.2 Modifying a SAN infrastructure

To modify your SAN infrastructure, right-click your SAN System host entry in the SAN Infrastructure tree, point to **Edit ScaleIO System...** on the shortcut menu and then modify the SAN Infrastructure settings accordingly. For more information, see **Adding a SAN infrastructure** above.

5.3 Deleting a SAN infrastructure

To delete your SAN infrastructure, right-click your SAN System host entry in the SAN Infrastructure tree and point to **Remove ScaleIO System** on the shortcut menu. In the confirmation box, click **Yes**.

6 Configure Tape Infrastructure

With HPE VM Explorer you can back up and restore your data on tape. HPE VM Explorer currently supports HPE StoreEver 1/8 G2 Tape Autoloader and Dell PowerVault 124T autoloaders, and can also support other tape libraries/autoloaders/media changer devices with barcode readers that implement standard API.

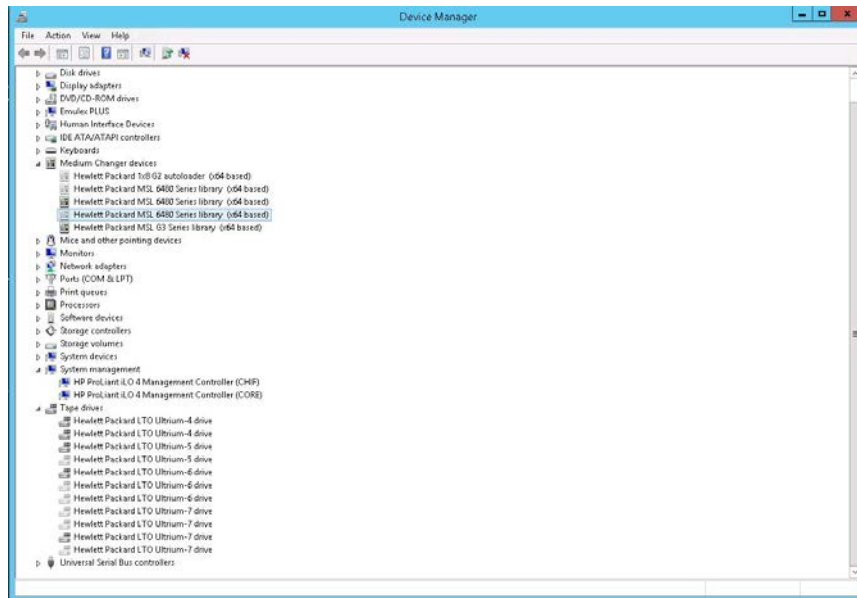


Figure 25: Windows Device Manager

HPE VM Explorer automatically recognizes tape devices visible to the Windows computer they are installed on. In Windows Device Manager, you can find tape libraries under the **Medium Changer devices** and tape drives under the **Tape drives** group.

We recommend that you install the latest device drivers from your hardware provider, especially if HPE VM Explorer does not detect the tape library and Windows Device Manager displays it as *Unknown Medium Changer*.

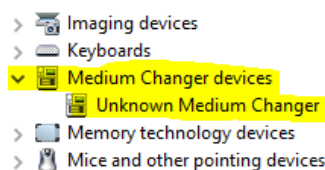




Figure 26: Unknown Medium Changer in Windows Device Manager

Before running a tape backup for HPE VM Explorer, you need to set up the libraries (with drives, media and media pools). You can find the latest drivers for HPE StoreEver tape library/autoloader/drive family and HPE D2D Virtual Tape Libraries (VTL) by clicking [here](#). Also, make sure your tape backup environment is setup.

To access Tape infrastructure, go to **Storage Systems > Tape Infrastructure** and click **Rescan Infrastructure**.

6.1 About Tape Libraries

As you can see in Figure 27: Tape Library overview, on the left side you can see the detected devices composing your infrastructure. The tape library is divided into:

-  Drives
-  Media

 Media Pools

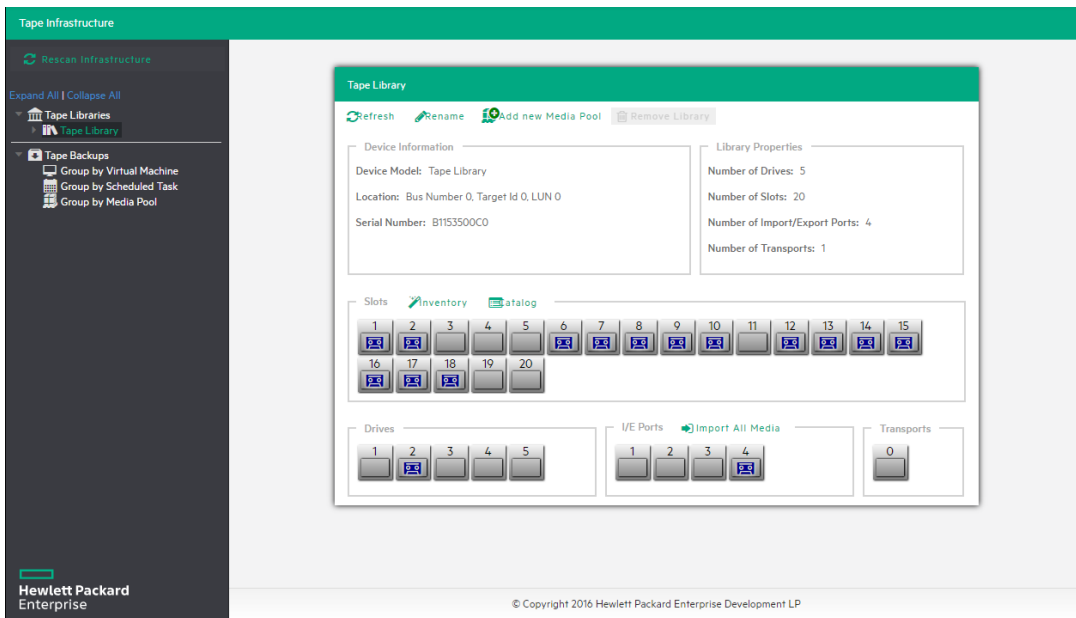




Figure 27: Tape Library overview

6.1.1 About Drives

A drive is the physical part of a tape library that enables you to read and write data from/to a tape media. Clicking this item enables you to see some information about the drive and to enable/disable it, which will cause HPE VM Explorer to include/exclude it from the pool of drives usable in the backup procedures.

6.1.2 About Media

The media item shows all the tape media/cartridges recognized by this tape library. There are:

-  **Online media**—list of media currently and physically present in the tape library.
-  **Offline media**—list of known media once present in the tape library but actually not physically inserted.

You can perform the following operations on the media:

Operation	Description
Move to media pool	You can logically include a tape in a Media pool. You can move the media in the free or in all your customs media pools. For more information, see Media Pools on page 30.
Inventory	Prepare new media for use with HPE VM Explorer or check if new media is already recognized.
Catalog	Makes the inventory of the tape media and scans all its contents for existing backups. HPE VM Explorer reads the entire tape to catalog all the backups copied in it, so this operation can take some time.
Import	If the media is in an I/E port, you can import it and HPE VM Explorer will move the media to the first available empty slot.
Export	Use this option to move the tape media from its slot to an I/E port If you want to physically remove media from the library.

Eject	Enables you to move media from the drive to the first available empty slot.
Erase	Click to delete all data written on the tape. You can choose between Short erase (fast) or Long erase (slow) . Warning: Clicking Erase removes all the backups on the tape media and from the catalog.
Mark as Free	Click to mark the media ready to use and to overwrite its content. Warning: All the backups on this tape media will be deleted from the catalog. If you use the Catalog action before reusing the media, you can still recover the existing backups.
Remove from catalog	If your media is offline, you can remove it from the catalog. Warning: All the backups on this tape media will be deleted from the catalog. If you later decide to re-import the media, you can use the Catalog action before reusing the media to recover existing backups.
Details	Click to see few information about the media and which HPE VM Explorer backups are saved on it.

6.1.3 Media Pools

A media pool is a container of media that helps to organize the media included in a tape infrastructure. HPE VM Explorer define 3 types of system media pools that cannot be modified nor used as target of your backups:



Free—This pool contains all the media from the system, marked as free and usable. You can move the media to populate other custom Media Pools.



Unrecognized—This pool consists of unrecognized tape media the content of which is still unknown. You can perform the **Inventory** operation to make the media usable in the **Free** Media Pool or the **Catalog** operation, in case you want to recover existing HPE VM Explorer backups.



Imported—This media pool consists of tape media containing existing backups recognized during a **Catalog** operation (for example, media previously removed from the catalog or previously used by another Tape Library).

To perform backups on tape, you can create custom media pools.



Custom—In this custom media pool you can define the list of media and the specific retention rules for the backups.

6.1.4 Creating a custom media pool

You can create a new custom media pool by right-clicking **Media Pools** and pointing to **Add Media Pool**. Then, complete the **Add new Media Pool** wizard, as follows:




1. In the **Name** wizard screen, type a name and a meaningful description for your pool. When finished, click **Next**.

Figure 28: Add Media Pool - Name

2. In the **Media List** wizard screen, click **Add** to select the free tape media from the **Free** media pool. You can also remove an existing media and move it to the **Free** media pool by selecting it and clicking **Remove**. Select the **Automatically add media from the 'Free' Media Pool when required** checkbox if you want HPE VM Explorer to include the first free tape from the Free media pool if a backup needs space that is unavailable in the media already present in this pool. When finished, click **Next**.
3. In the **Retention** wizard screen, set the rules for using/reusing the media. When finished, click **Next**.
 - Under **Media reutilization**—select whether you want to reuse the same media in subsequent scheduled backup sessions or if you want to use different media every session.
 - Under **Data retention policy**—select the desired media overwrite policy.
4. The **Summary** wizard screen displays the details of your newly configured Media Pool. At this stage, you can go back and make any necessary changes. When finished, click **Save** to add your Media Pool to your Tape Infrastructure tree. You can change your media Pool settings at any time by right-clicking your Media Pool host entry in the **Tape Infrastructure** tree and pointing to the **Edit** menu.

6.2 Tape Backups

This section describes how you can find all your backups saved with HPE VM Explorer in your Tape Infrastructures. You can show them based on the following groups:

-  Virtual Machine
-  Scheduled Task
-  Media Pool

Right-clicking the desired backup enables you to view its details or to start a restore procedure by selecting **Restore backup from Media...** and then completing the **Tape Restore** wizard.

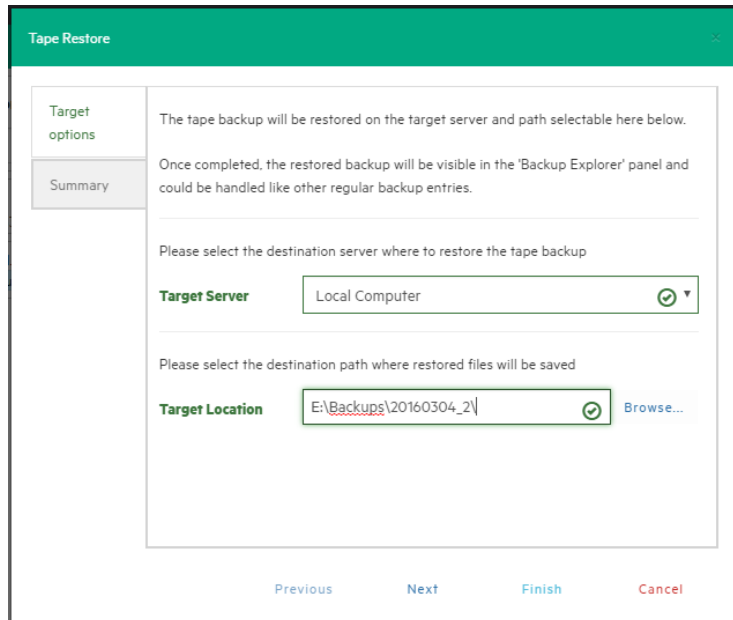


Figure 29: Tape Restore - Target options

7 Scheduling Tasks

With HPE VM Explorer, you can schedule your backup tasks to run automatically with configurable time intervals, such as hourly, daily, weekly, monthly.

7.1 Creating a scheduled task

You can create a scheduled task either from the Datacenter view or from the **Tasks > Scheduled Tasks** view. To create a scheduled task from the Datacenter view:

1. Go to the Datacenter view, right-click the Virtual Machine you want to back up and then point to **Create New Backup Schedule...** on the shortcut menu.

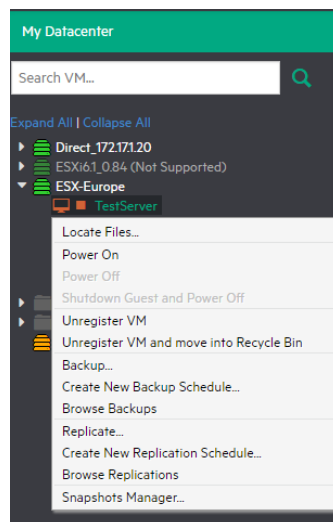


Figure 30: Create New Backup Schedule...

2. In the **Edit Scheduled Task** dialog box, configure the boxes according to your preferences. When finished, click **OK**.

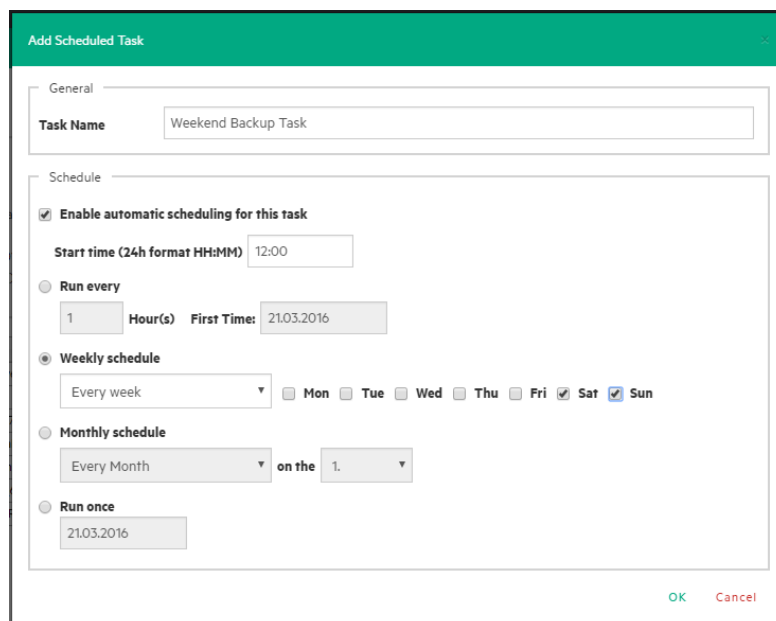


Figure 31: Add Scheduled Task

- Next, follow the Virtual Machine manual backup procedures described later in this publication. For more information, see **Backing up** on page 36. Selecting the **On error execute next task** checkbox enables the scheduled task to continue to the next step even if the previous step failed.

To create a scheduled task from the **Tasks > Scheduled Tasks** view, right-click the **Scheduled Tasks** list, select **Add Scheduled Task...** and repeat the task scheduling procedures described earlier in this publication.

To modify your entries at any time, switch to Scheduler view. You can also add multiple steps to a single backup task, meaning that you can add backups of multiple Virtual Machines to the same task. In addition, make sure that you enable the scheduler in HPE VM Explorer by clicking the **Enable the Scheduler** button on the Scheduler View.

Important! HPE VM Explorer has a built-in Windows Service that executes scheduled tasks. When using the HPE VM Explorer service you do not need to be logged on and have HPE VM Explorer running to perform scheduled tasks. In addition, if the scheduler is enabled and the **General Settings** option **Prevent 'Sleep Mode' if scheduler** is enabled (**Settings > General Settings**) prevents the system's Sleep Mode (if activated).

You can also decide, in a scheduled task, to disable a single task element by simply clearing it directly in the **Task Elements** list.

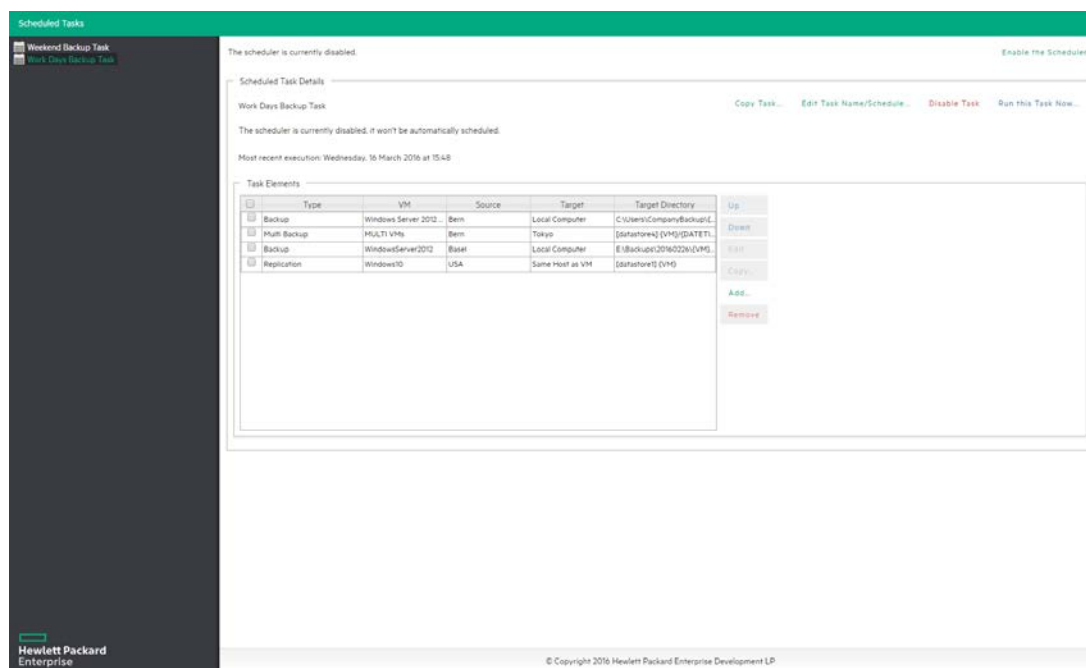


Figure 32: Scheduled task page

7.2 Copying a Scheduled task

To copy a scheduled task:

- Go to **Tasks > Scheduled Tasks**, right-click the scheduled task that you want to copy from the **Scheduled Tasks** list and point to **Copy Task...** You can also select the desired scheduled task and click the **Copy Task...** button on the **View Window**.
- In the **Edit Scheduled Task** dialog box, you can modify any of the task's inherited settings. When finished, click **OK**. To avoid multiple running tasks and any potential conflicts, the copied task is disabled (Paused) by default, so you have to click **Enable the Scheduler** in the **Scheduler** view.

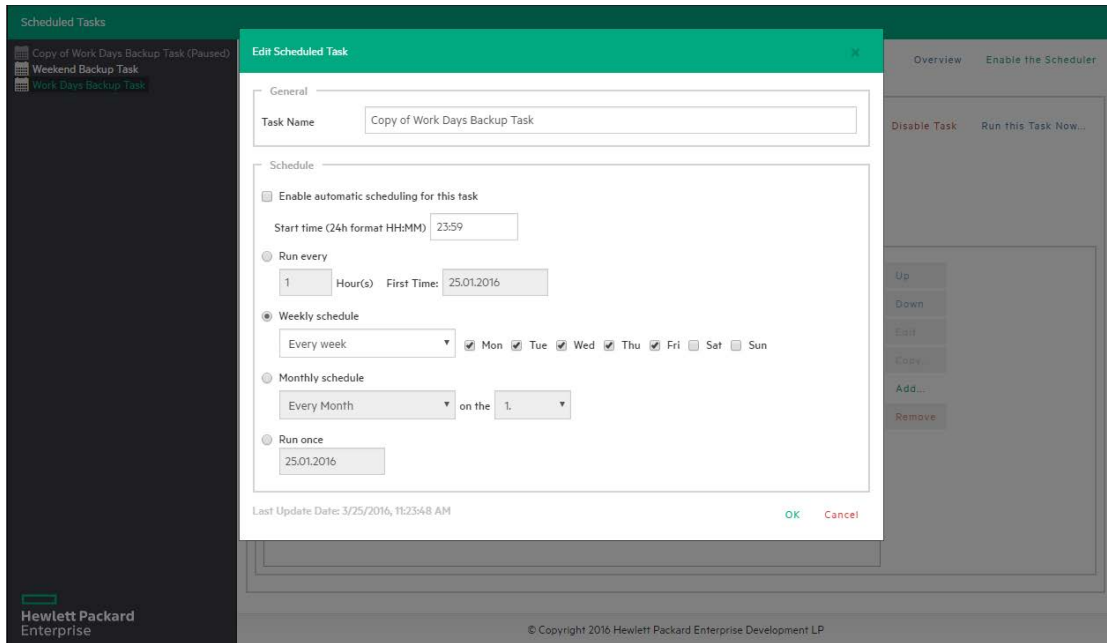


Figure 33: Copy scheduled task dialog

7.3 Copying a Scheduled task element

You can copy a single task element into the same or to another scheduled task. To copy a scheduled task element, while in the **Task Elements** list, right-click a task element and select **Copy...**, or press the **Copy...** button to the right. Then, in the **Copy the selected Task Element** dialog box, select into which scheduled task you want to copy the selected task element. Select the target scheduled task and click **OK**.

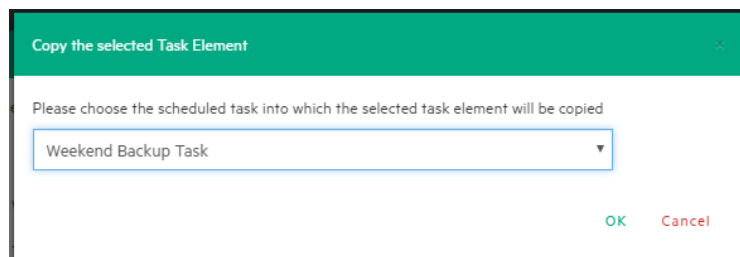


Figure 34: Copy Task Element dialog box

7.4 Using command line interface

HPE VM Explorer enables you to execute the scheduled tasks you created via command line. This can be useful if you want to use a different software as scheduler, such as the Windows built-in Task Scheduler.

To access full information about the command-line interface, simply type `vmx.exe /?` in command prompt to generate an .XML file containing all the information about the executed task. You can modify the output location by adding the `/logfile` parameter.

To start a backup task, you need the `/runtask` option. For example, to run your task, you can type:

```
vmx.exe /runtask:mytask /logfile:"c:\log files\vmx\vmx.xml"
```

8 Backing up one or several Virtual Machines

With HPE VM Explorer you can back up one or multiple Virtual Machines. To do so:

1. Go to the **Datacenter** view and expand your ESXi or Hyper-V host to get a list of all your Virtual Machines. If you are using vCenter, then expand your vCenter hosts to see all Virtual Machines.
2. Right-click the Virtual Machine you want to back up and click **Backup...** and then, in the **Virtual Machine Backup** dialog box, configure the boxes, as required.

You can also create a task to back up one of your VMs from the **Scheduled Tasks** view. To do so:

1. Go to **Tasks > Scheduled Tasks** and select a scheduled task in which to create the backup task.
2. Click **Add** and then, in the **Add Task Element** screen, click **Single VM** (for more information on backing up a single VM, see **Backing up a single VM** below) or **Multi VM** (for more information on backing up multiple VMs, see **Backing up multiple VMs** on page 41).

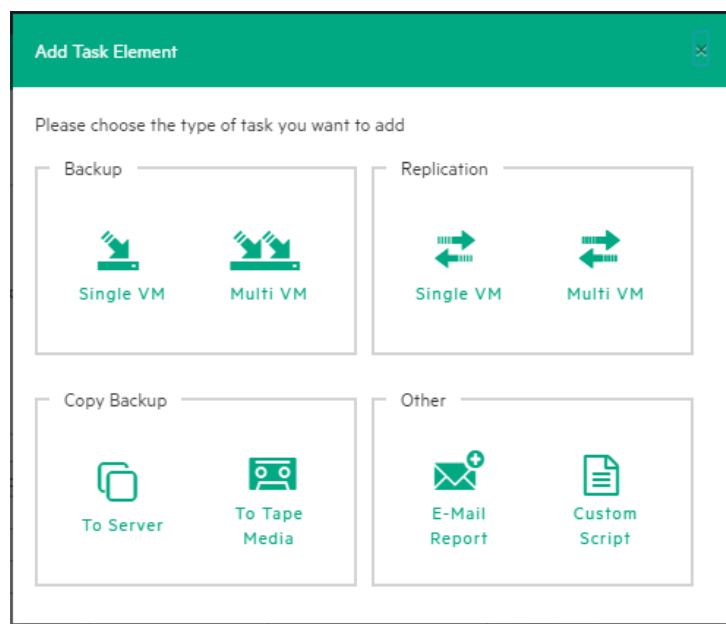


Figure 35: Add Task Element

8.1 Backing up a single VM

To back up a single VM, click **Single VM** in the **Add Task Element** screen. For more information, see **Backing up one or several Virtual Machines** above. Then, in the **Virtual Machine Backup** dialog box, configure the boxes in the specific tabs, as follows. Depending on the nature of the VM, some of the options available to you at this stage may vary.

1. In the **General** tab, under **Target**, select a target location from the **Host** list. This can be your local PC, an ESXi host, a Hyper-V host or a Linux/FreeBSD host already added to your **Datacenter** view. Choose the target directory and configure the backup process. When finished, click **OK** to start the backup process.

HPE VM Explorer will create a snapshot of your Virtual Machine, which means you can back up a running Virtual Machine without stopping it. When the backup is finished, HPE VM Explorer automatically deletes the Snapshot on your ESXi or Hyper-V server.

Note: Selecting the **If the target directory exists, overwrite existing files in the target directory** checkbox will only overwrite the existing backup after the new backup has been successful. The reason for this is to always

keep a working backup, so make sure you have enough free space while running the backup. You can also delete the existing backup before starting the new backup by selecting the **Delete existing Backup in the target directory before the Backup starts** checkbox. **Important!** Selecting this checkbox means that, if the backup fails, you will no longer have a functional backup.

At this stage, you can also perform an incremental backup. For more information, see **Performing an incremental backup** on page 42.

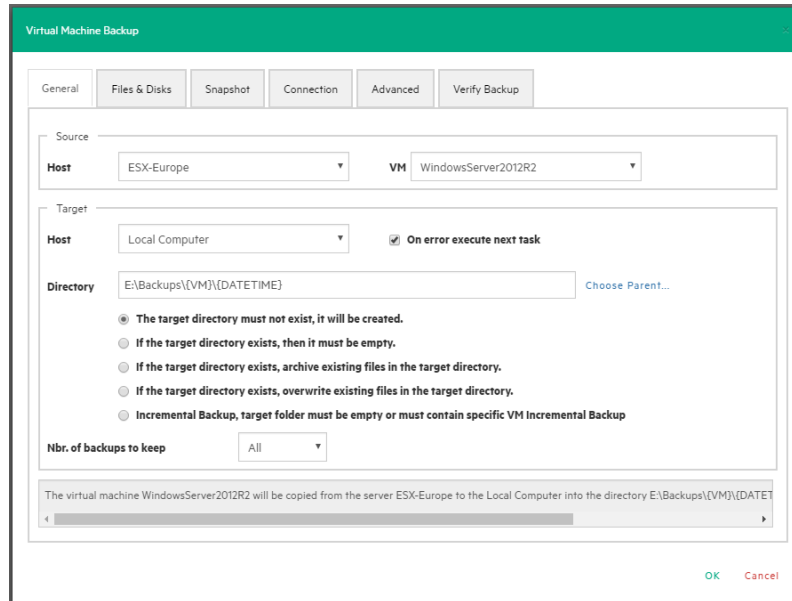


Figure 36: Backup - General

2. In the **Files & Disks** tab, choose which Virtual Disks you want to include in the backup. If the option **Include memory dump of the virtual machine** is enabled in the **Snapshot** tab, you must select all virtual disks, otherwise you will not be able to restore the memory snapshot. Select the **After backup convert as thin disk** checkbox to convert all disks in the backup to thin format. This option is only available if:

- The target host is ESXi.
- The HPE VM Explorer Agent is enabled on the target server (only for ESXi).
- The **Keep data compressed at destination** option is not enabled.
- There are no other discs with the same name.

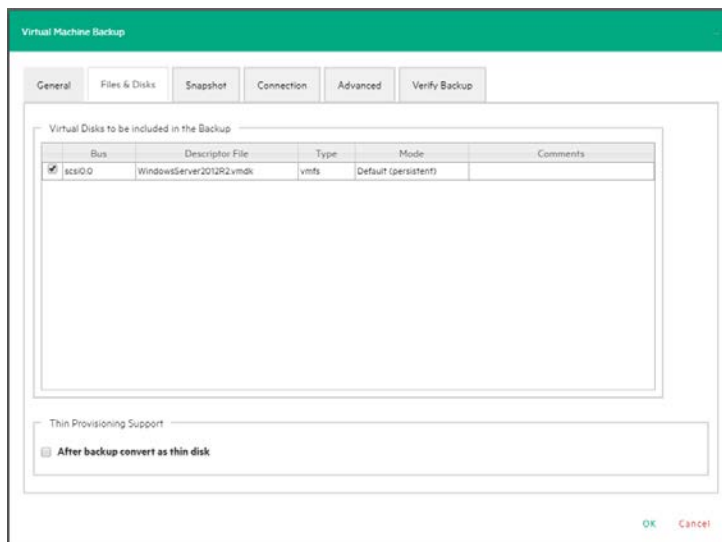


Figure 37: Backup - Files & Disks

3. In the **Snapshot** tab (ESXi only), configure your VM backup snapshot options. All recommended options are already selected by default.

Include memory dump of the virtual machine (needs additional snapshot)

If your VM is running, HPE VM Explorer creates a memory snapshot of the VM. When restarting the VM, you will lose the current memory. If you also want to back up the memory to capture the exact running state, select this checkbox.

Quiesce the file system in the virtual machine (only when VMware tools are installed)

Select this checkbox (recommended) if VMware tools are installed on the guest system so that VMware tools can inform the OS that a snapshot will be created. This enables you to write down all necessary data for a consistent snapshot.

Make storage snapshot

Select this checkbox if all datastores are located on SAN Infrastructures to enable the backup to make storage snapshots of each datastore, map them on the same ScaleIO Data Client (SDC) where the VM is registered, mount the volumes and then start the normal backup process on this copy of the VM structure. Then, HPE VM Explorer unmounts and then un-maps all the datastores and finally removes all the snapshots previously created.

This type of backup allows the host to release the source VM immediately after the storage snapshots are created, thus drastically reducing the merge times of a normal backup.

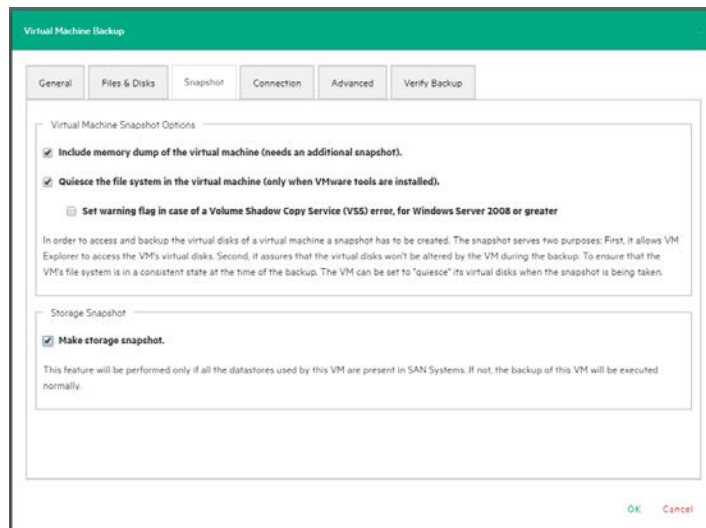


Figure 38: Backup – Snapshot (ESX)

4. In the **VSS Snapshot** tab (Hyper-V Only), configure your VSS options, which ensures the consistency of the backup. Not using the VSS may grant you a faster performance but does not guarantee backup data consistency.

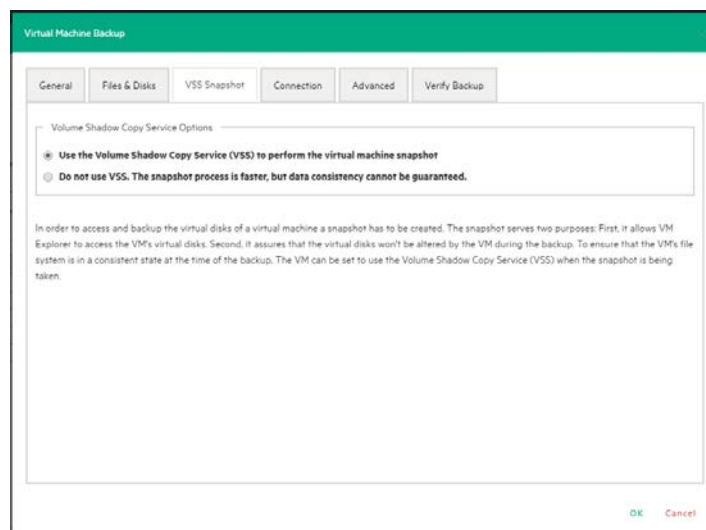


Figure 39: Backup - VSS Snapshot (Hyper-V)

5. In the **Connection** tab, configure the single VM backup connectivity options.

Direct Copy Options

Select if you want to transfer files directly between the source and the target server. You can also reverse the direction of the TCP connection (default is from the source server to the target server) in case of NAT (Network Address Translation). The direct copy options are not available if the source or target server is ESXi and the HPE VM Explorer Agent is not enabled.

Compress data during transfer

Select to compress data during transfer. You can also decide to keep the data compressed at destination but in this case the File Level Restore will not be available for this backup.

Encryption

You can also use encryption in conjunction with the Cloud servers (Amazon S3, OpenStack and so on). The direct copy connection is unavailable and all the data will be relayed through HPE VM Explorer (see **Enabling VD Services for incremental backups** on page 44 for more details).

WARNING: the password is stored encrypted and is not retrievable. Make sure to save it in a safe place to be able to decrypt the backup.

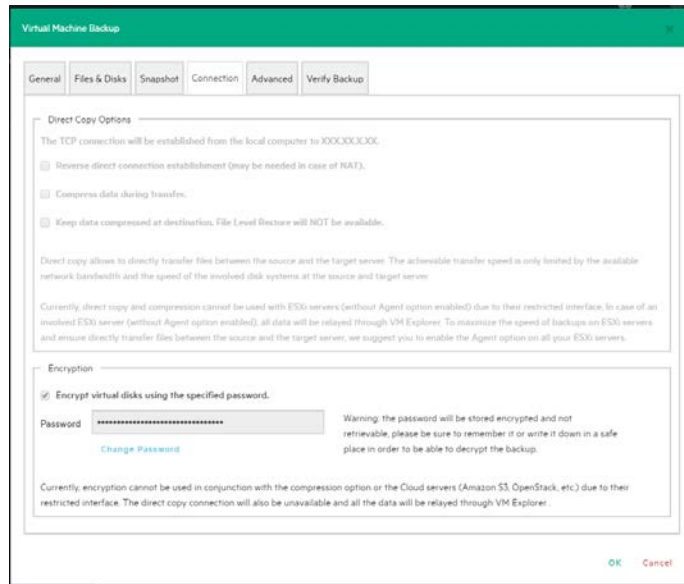


Figure 40: Backup - Connection

6. In the **Advanced** tab, you can either shut down or unsuspend the guest VM before starting the backup if VMware Tools or Hyper-V Integration Services are installed on the guest VM.
 - If you choose to shut the guest VM down, you can also configure if and when to restart it (once the backup starts, once the backup is terminated or never to restart the guest VM) and the shutdown timeout error interval.
 - If the guest VM (source) is suspended, you can set the next suspended state (once the backup starts, once the backup is terminated or not to suspend the guest VM again), as well as the suspend timeout error interval.

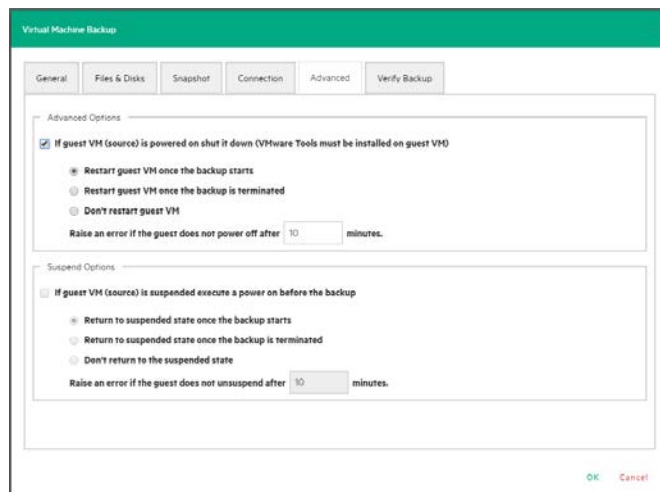


Figure 41: Backup – Advanced

- In the **Verify Backup** tab you can configure when to run the File System Consistency check after the backup is completed and whether or not to test the backup using the HPE VM Explorer Instant Backup Test system.

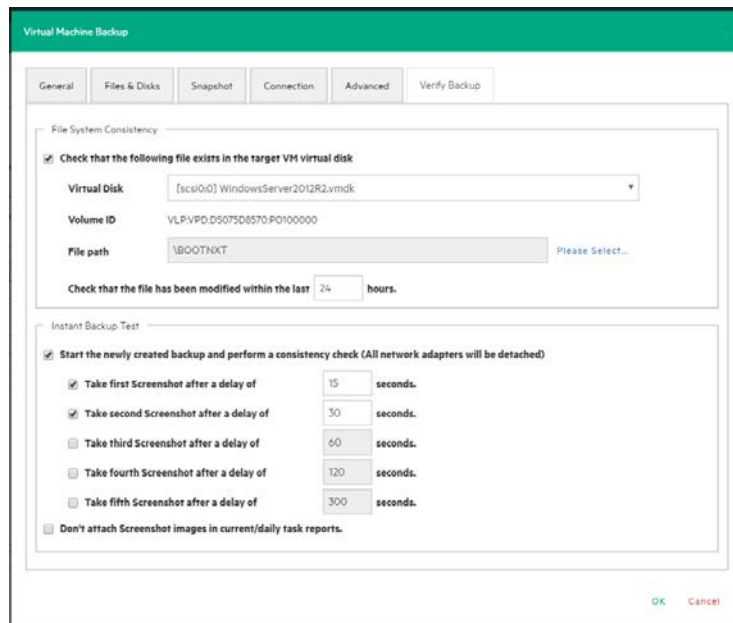


Figure 42: Backup - Verify Backup

Perform a File System Consistency check

Enables you to check for changes and last modification date of a specific file in a target virtual disk, once the backup/replication operation is completed. You can select the target virtual disk and the file path to check and specify the acceptable modification time interval (for example, if the file has changed within the last 24 hours). The File System Consistency check is performed once the backup/replication operation is completed: HPE VM Explorer will open the fresh target virtual disk and look for the specified file path, checking for its existence and last modification date. If the check fails, the resulting backup/replication status will be set to Warning and a detailed message will be included in the report.

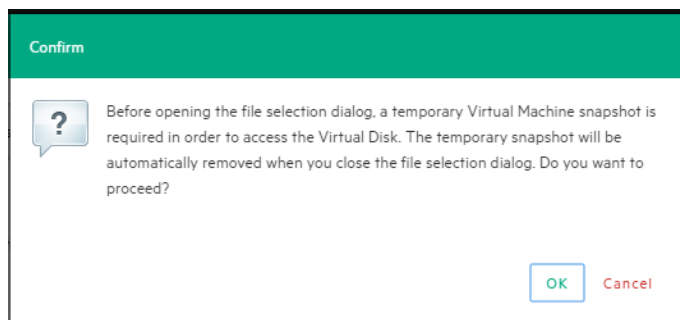


Figure 43: Backup - File Consistency confirm message

Note: During the File System Consistency configuration, in order to access and browse the virtual disk, a temporary VM snapshot will be required, which will be deleted automatically once the file selection dialog box closes. To accept and proceed, click **OK** in the **Confirm** dialog box.

Instant Backup Test

Enabling this option adds a completed backup to the Hypervisor inventory as a powered on VM. The VM health state is checked and you can take screenshots of the VM Console every x seconds. You can check the health state and VM screenshots in the **Task History** or in the e-mail report. For more information, see **Task history** on page 62 or **Sending e-mail** report on page 54.

To use this option, configure the HPE VM Explorer NFS Settings. For more information, see **Working with HPE VM Explorer Settings** on page 64.

Note:

- Screenshots taken during backup test are visible in the Task History view or in E-mail reports.
- Automated backup test, for the moment, is only available for VM running on ESXi and if the target is set to <local computer>.

- During the backup test all network adapters will be disconnected so that the test will not compromise your network.
- Any change occurred during the Instant Backup Test will be discharged when the test is over and will have no influence on the backup data (backup data, during the test, is read-only).
- HPE VM Explorer cannot perform the backup of the ESXi and Hyper-V host configuration.

8.2 Backing up multiple VMs

To back up two or more VMs, in the **Add Task Element** screen, under **Backup**, click **Multi VMs**. For more information on how to get to this screen, see **Backing up one or several Virtual Machines** on page 36. Then, in the **Virtual Machine Backup** dialog box, configure the boxes in the specific tabs, as described in **Backing up a single VM** on page 6.

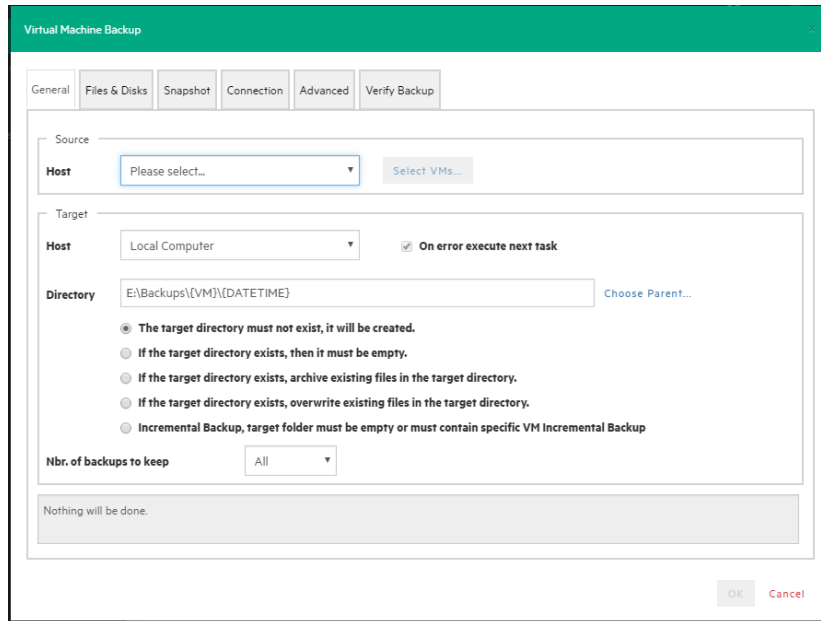


Figure 44: Multi Backup - General

The difference with the single VM backup is that you can select more than one VM by clicking **Select VMs...** and then selecting the desired VMs to back up. You can change the machines' backup priority using the **Up** and **Down** buttons. In the backup dialog box, the directory field must contain the {VM} tag.

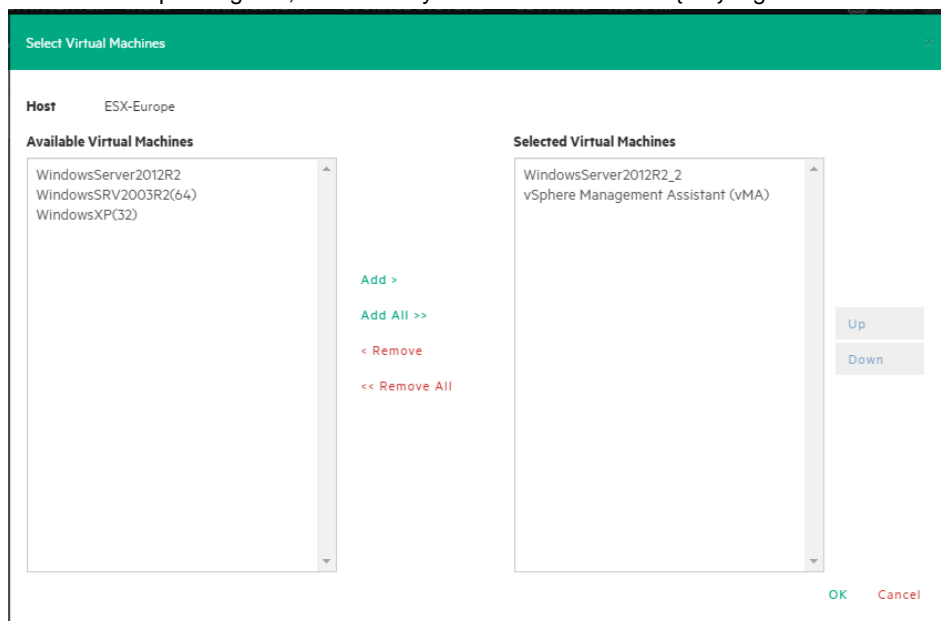


Figure 45: Multi Backup - Select multiple VMs

Also, since the settings are shared across every VM included in the task, you cannot select the files and disks to back up for every single VM in the **Files & Disks** tab: everything in the virtual machines will be backed up.

8.3 Performing an incremental backup

With HPE VM Explorer you can create incremental backups, which transfer only the modified files to the next backup, not the entire Virtual Machine. Note that you cannot perform an incremental backup of VM snapshot points, but during the restore process you can choose which backup version (backup date) you want to restore. For more information, see **Restoring an incremental backup** on page 58.

There are no restrictions for running Incremental Backup on Hyper-V, but you need to take into account certain aspects when performing an Incremental Backup on ESXi servers.

Incremental backup on ESXi (licensed edition) prerequisites

To perform an incremental backup on ESXi (licensed edition), you need Virtual Disk Development Kit (VDDK) installed on your computer and your system needs to meet the following requirements:

- ESXi 4.0/4.1/5.0/5.1/5.5/6.0 (**Note:** ESXi 4.0/4.1/5.0/5.1/5.5/6.0 free edition is not supported).
- Virtual Hardware of your VM must be version 7 or higher (check your version in your vSphere Client in the settings editing section of your VM).
- You must enable VD service support for the Server in HPE VM Explorer.
- You must initialize the VD service.

To enable VD Service backup, configure your server settings in the **Advanced Settings** screen of the **Add or Edit Server (ESX/ESXi 3/4/5/6)** wizard. For more information, see **Working with Servers in HPE VM Explorer** on page 15.

Incremental backup on ESXi (free edition) prerequisites

To perform an incremental backup on the ESXi free edition you do not need VDDK, but you must enable the HPE VM Explorer agent on the ESXi server by selecting the **Try to use the HPE VM Explorer agent on ESXi (...)** checkbox in the **SSH / HPE VM Explorer Agent** screen of the **Add or Edit Server (ESX/ESXi 4/5/6)** wizard. For more information, see **Working with Servers in HPE VM Explorer** on page 15.

After configuring all the settings, in the **Virtual Machine Backup** dialog box, select **Incremental Backup, target folder must be empty or must contain Specific VM Incremental Backup**. All other procedures are the same as for the default backup. HPE VM Explorer initially creates a full backup of your VM and then will create incremental backups, which contain only the changed data.

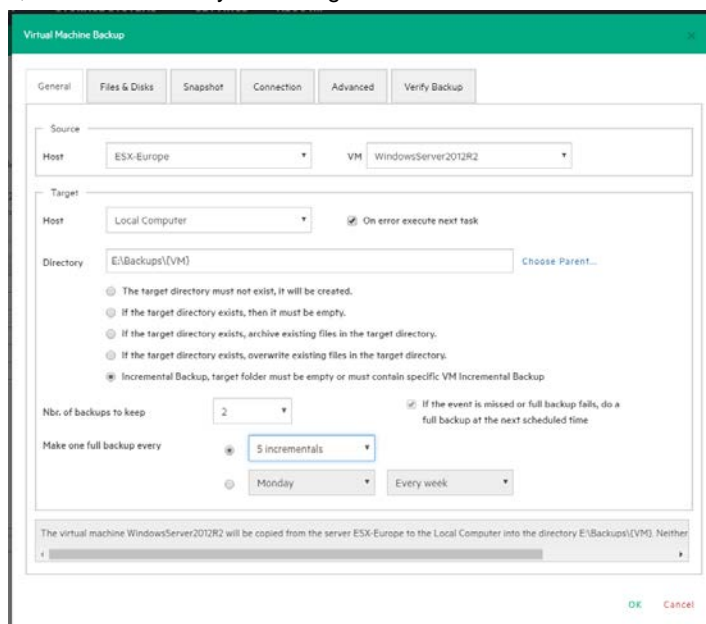


Figure 46: Incremental Backup - General

8.3.1 Enabling VD Services for incremental backups

To enable Incremental Backups on ESXi, you need ESXi 4.0 or later. Next, you must make sure, that you upgraded the virtual hardware in your VM to Version 7 or later.

In addition to this, HPE VM Explorer needs to be initialized to use the Virtual Disk Service Library (VD Service) and you must enable the VD Service in HPE VM Explorer for each host.

8.3.2 Initializing Virtual Disk Service (VD Service)

The Virtual Disk service, when enabled, uses the VMware VDDK (Virtual Disk Development Kit) to perform backups. This will leverage VMware's VADP (vStorage API's for Data Protection) enabling enhanced features, including Change Block Tracking, which results in more efficient backups.

To enable the Virtual Disk Service in HPE VM Explorer:

1. Go to **<User Name> Manuals > Enabling Virtual Disk Service (VD Service)**.

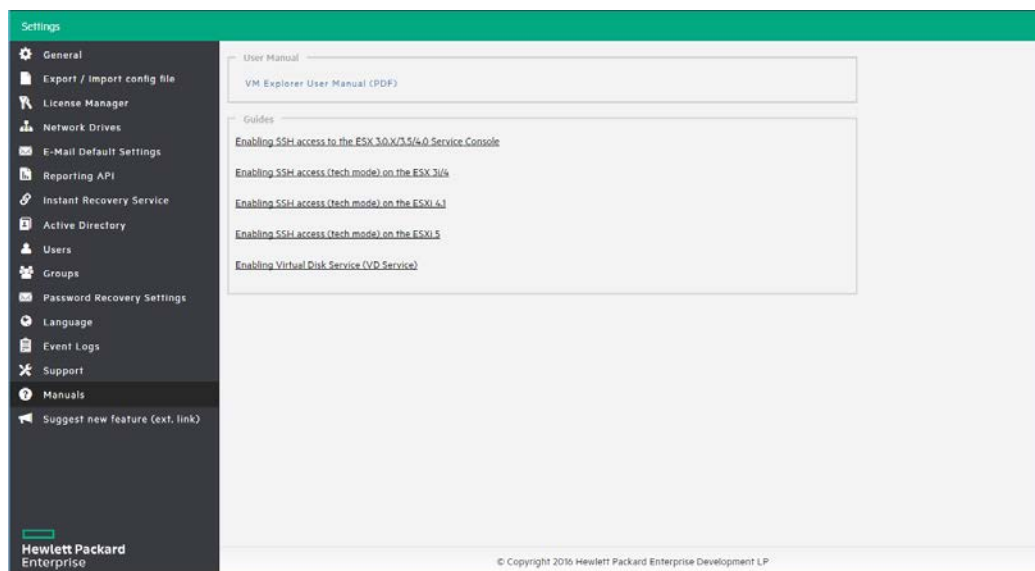


Figure 47: Settings - Manuals

2. In the **How to Enable Virtual Disk Service (VD Service)** screen, install the VDDK package on the computer where HPE VM Explorer is running from the manufacturer's website <https://my.vmware.com/group/vmware/get-download?downloadGroup=VSP510-VDDK-510>.
3. After installing the VDDK package, click **Initialize VD Service** in HPE VM Explorer.

8.3.3 Enabling the VD Service for each ESXi host

Once the VD service is initialized, it needs to be enabled on each ESXi host. To do this:

1. Go to the **My Datacenter** view and right-click the ESXi host you want to configure. In the shortcut menu, point to **Edit Server...**
2. In the **Edit Server** wizard, go to the **Advanced Settings** screen and select **Use VD Service**. Click **Next**.

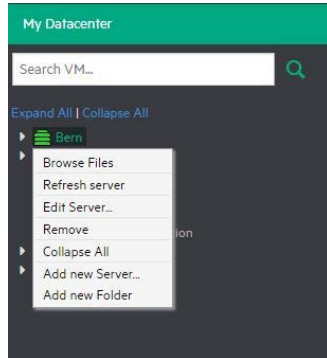


Figure 48: Edit Server...

3. In the **Test Connection** screen, verify your settings. When finished, click **Finish**. Repeat this procedure for all other ESXi hosts.

8.4 Backup encryption

With HPE VM Explorer, you can encrypt the backups to increase the security of your Virtual Machines using AES algorithm, a standard sector-based data encryption method defined by IEEE P1619. Specifically, only the disks' data will be encrypted using the specified password.

You can use encryption in conjunction with Cloud storage targets. The direct copy connection is unavailable and all the data is relayed through HPE VM Explorer.

To encrypt your backups, during the backup configuration process (for more information, see **Backing up one or several Virtual Machines** on page 36), in the **Connection** tab, select **Encrypt virtual disks using the specified password** and then type your password.

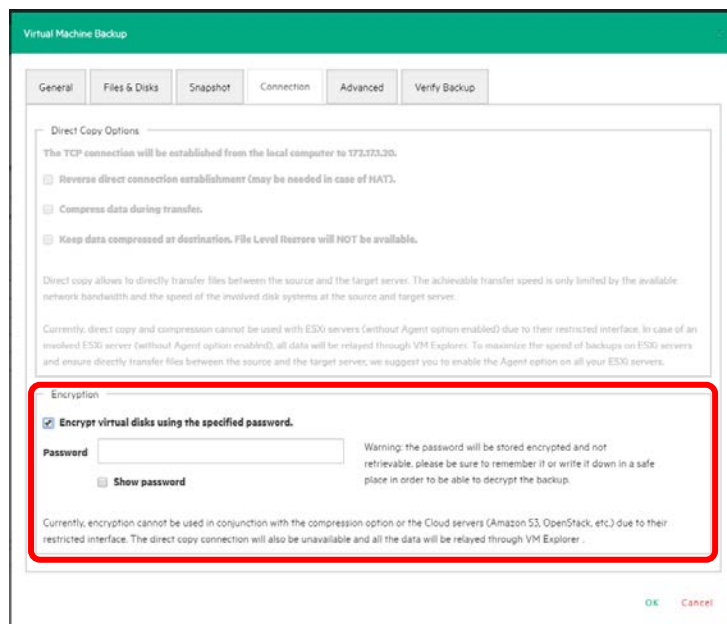


Figure 49: Backup Encryption

Warning! The password is stored encrypted and is not retrievable, so make sure to remember it or write it down in a safe place in order to be able to decrypt the backup.

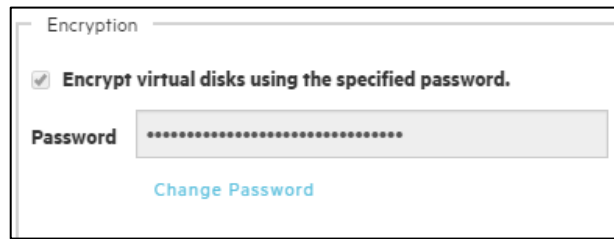


Figure 50: Password encryption

Note: You can only change your password after typing your existing password.

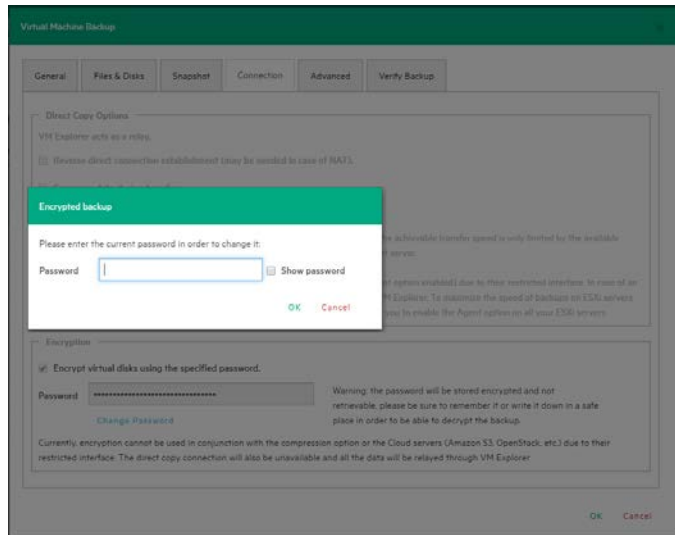


Figure 51: Change encryption password

9 Replicating One or More Virtual Machines

With HPE VM Explorer, you can replicate one or multiple Virtual Machines to another hypervisor host. To do so:

1. Go to **Tasks > Scheduled Tasks** and click **Add**.
2. In the **Add Task Element** screen, under **Replication**, select either **Single VM** or **Multi VM**, depending on your preferences.
3. In the **Virtual Machine Replication** dialog box, configure the replication parameters. For more information, see **Replicating a single VM** below and **Replicating multiple VMs** on page 49.

Note: With HPE VM Explorer you can create full backups and incremental backups of the VM(s) deployed on an ESXi free edition server. ESXi free edition does not support incremental replication.

9.1 Replicating a single VM

Note: If this is your first time to make an incremental replication, follow the on-screen instructions.

To replicate a single VM, configure the **Virtual Machine Replication** dialog box, as follows:

1. In the **General** tab, select the Source Host and the VM that you want to replicate, as well as the target location – the same host as the VM or another host in the **Datacenter** view. Choose the target directory, the name which will be used to register the replicated VM, and how you want to handle the target directory.

The screenshot shows the 'Virtual Machine Replication' dialog box with the 'General' tab selected. The 'Source' section has 'Host' set to 'ESX-Europe' and 'VM' set to 'WindowsServer2012R2'. The 'Target' section has 'Host' set to 'Same Host as VM', a checked 'On error execute next task' option, and 'Directory' set to '[datastore] [VM]'. Below this, there is a text input for the display name, currently containing 'WindowsServer2012R2 (replicated)'. Three radio buttons are present: 'If the target directory exists, archive existing files in the target directory.' (selected), 'If the target directory exists, overwrite existing files in the target directory.', and 'Incremental Replication, target folder must be empty or must contain specific VM Incremental Replication'. The 'Nbr. of replications to keep' is set to 'All'. A status message at the bottom states: 'The virtual machine WindowsServer2012R2 on the ESX-Europe will be copied into the directory [datastore] [VM]. No TCP Connection needed.' The dialog has 'OK' and 'Cancel' buttons at the bottom right.

Figure 52: Replication - General

Note:

- Selecting **Overwrite existing files in the target directory** will overwrite the previous replication only after the successful execution of the new one. The purpose is to always preserve a functional replication, so make sure there is enough free space to temporarily hold both replications.
- Selecting **Delete existing Replication in the target directory before the Replication starts** will erase your existing replication before the execution of the new one. If the replication process fails, you will have no replications available, so proceed with caution.

Virtual Disk Development Kit (VDDK) must be activated to make an incremental replication, so this procedure only applies to licensed ESXi hosts, not to the ESXi free version. If the host's VD Service is not activated, you will be prompted to initialize VDDK for the ESXi server (Figure 53: Replication - VD Service dialog). Click **ESXi Server Settings** and then, in the **How to Enable Virtual Disk Service** dialog box, download VDDK and/or initialize VDDK for the host (Figure 54: Replication - Enable VD Service). When finished, click **Close**.

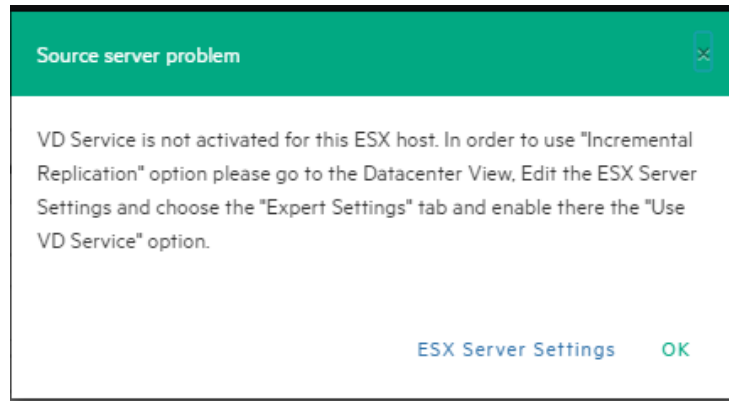


Figure 53: Replication - VD Service dialog box

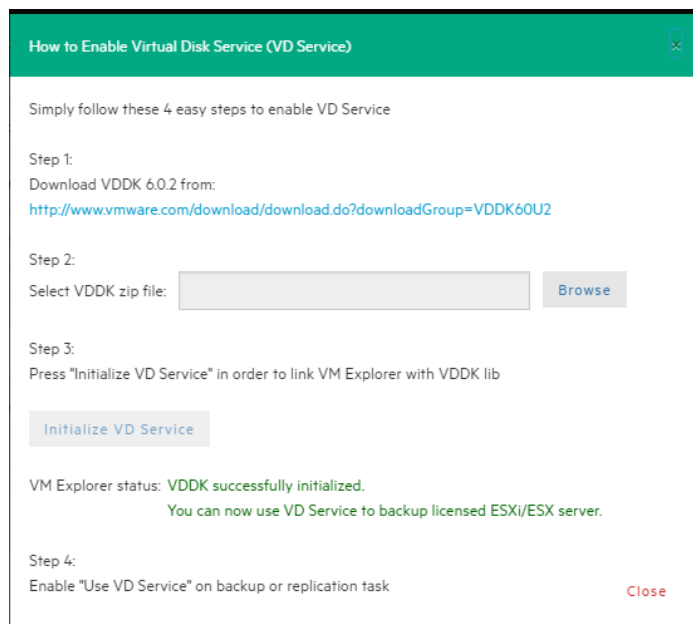


Figure 54: Replication - Enable VD Service

2. In the **Files & Disks** and **Snapshot** screens, the procedures you need to perform are similar to backing up a VM. See **Backing up a single VM** on page 36.
3. In the **Connection** tab, configure the direct copy options, which enables you to directly transfer files between the source and the target server. You can reverse the TCP connection direction (default is from the source server to the target server) for Network Address Translation (NAT).

You can also compress data during transfer, but you cannot keep the data compressed at destination for replications because at the end of the replication process the VM will be registered on the target server. Also, the direct copy options are not available if the case of ESXi source or target server and the HPE VM Explorer Agent is not enabled. In addition, this type of replication does not support encryption.

- In the **Replication** tab, you can choose to shut down and replace the replicated VM, if it is already powered on manually. Also, for incremental replication, you can choose to preserve any desired number of Restore Points, which you can revert to, if needed, whilst keeping the previous version replicated.

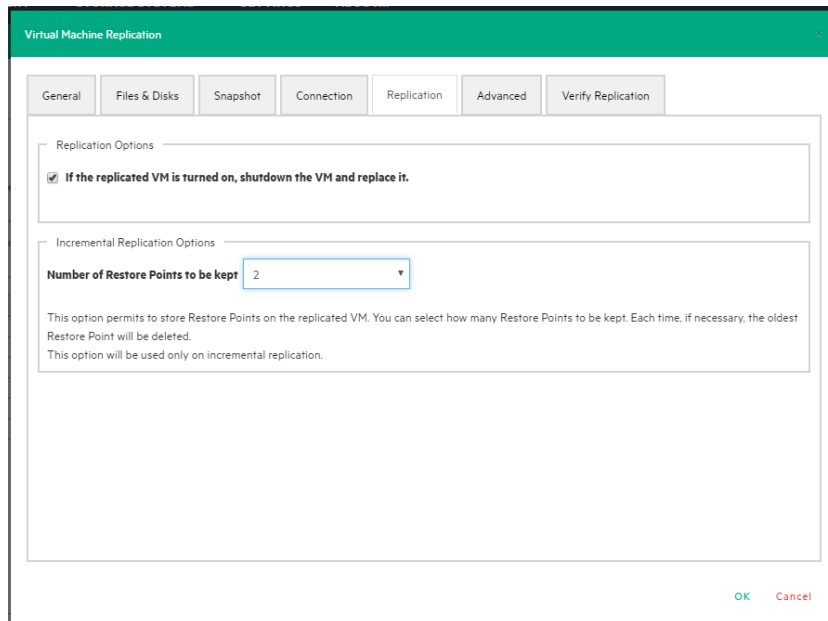


Figure 55: Replication - Replication tab

- For information on how to configure the **Advanced** tab, see **Backing up a single VM** on page 36.
- In the **Network Adapters** tab (available for Hyper-V Host only), select from the list which virtual network the (legacy) adapters should connect to.

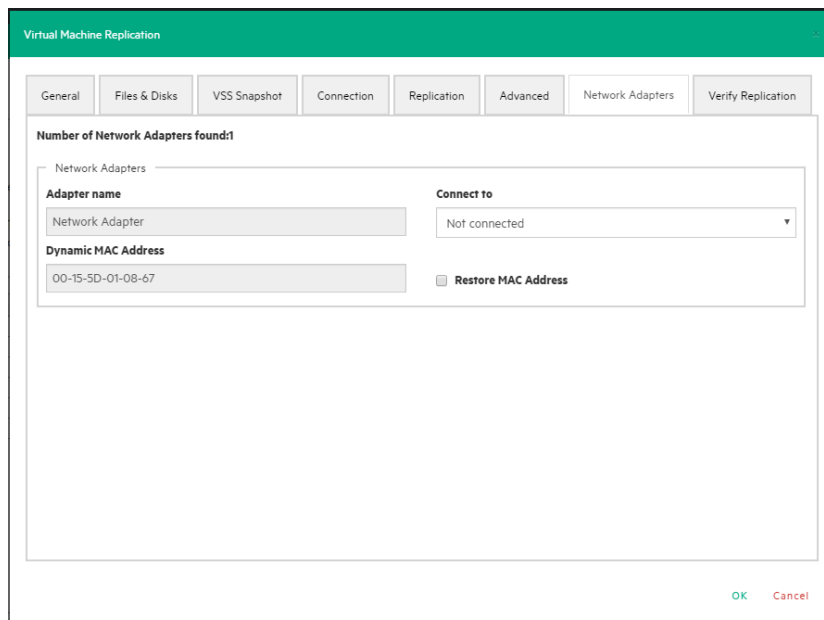


Figure 56: Replication - Network Adapters

- In the **Verify Replication** tab, you can enable the File Consistency Check feature for the target replicated VM. For more information, see **Backing up a single VM** on page 36.

9.2 Replicating multiple VMs

To replicate two or more VMs, in the **Add Task Element** screen, under **Replication**, click **Multi VMs**. For more information on how to get to this stage, see **Replicating One or More Virtual Machines** on page 46. Then, in the **Virtual Machine Replication** dialog box, configure the boxes in the specific tabs, as described in **Replicating a single VM** on page 46.

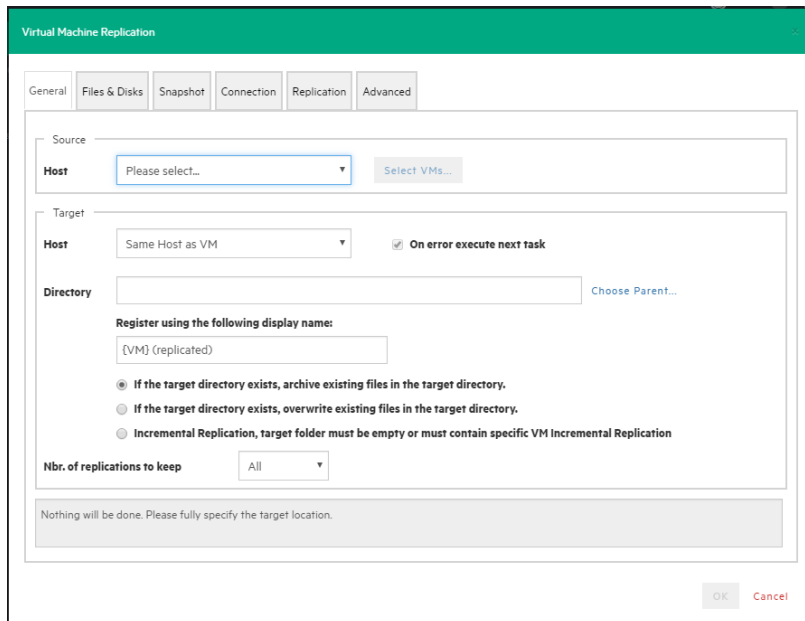


Figure 57: Multi VM Replication - General

The difference with the single VM replication procedure is that here you can select two or more Virtual Machines by clicking **Select VMs** in the **General** tab and picking the desired VMs in the **Select Virtual Machines** dialog box. The directory and the display name used to register the replicated VM must contain the {VM} tag.

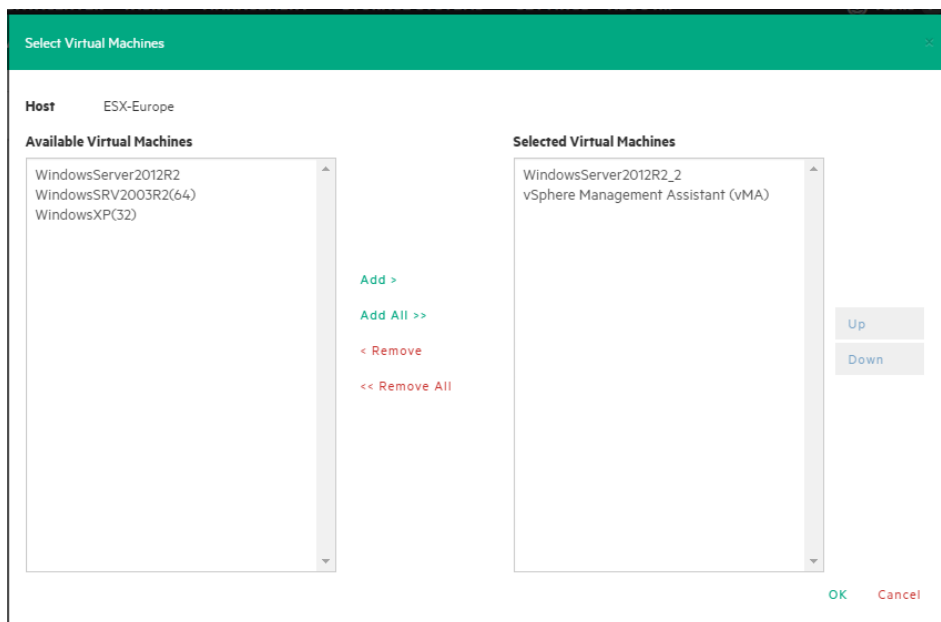


Figure 58: Multi Replication - Select multi VMs

Also, since the settings are common across every VM included in the task, in the **Files & Disks** tab you cannot select the files and disks to replicate for every single VM as everything on these machines will be replicated.

9.3 Replication Explorer

To have an overview of any replications performed with HPE VM Explorer, go to **Management > Replication Explorer**. You can filter the replication entries using the filters to the right. You can also power on/off every replicated VM by right-clicking the registered VM and selecting the desired operation.

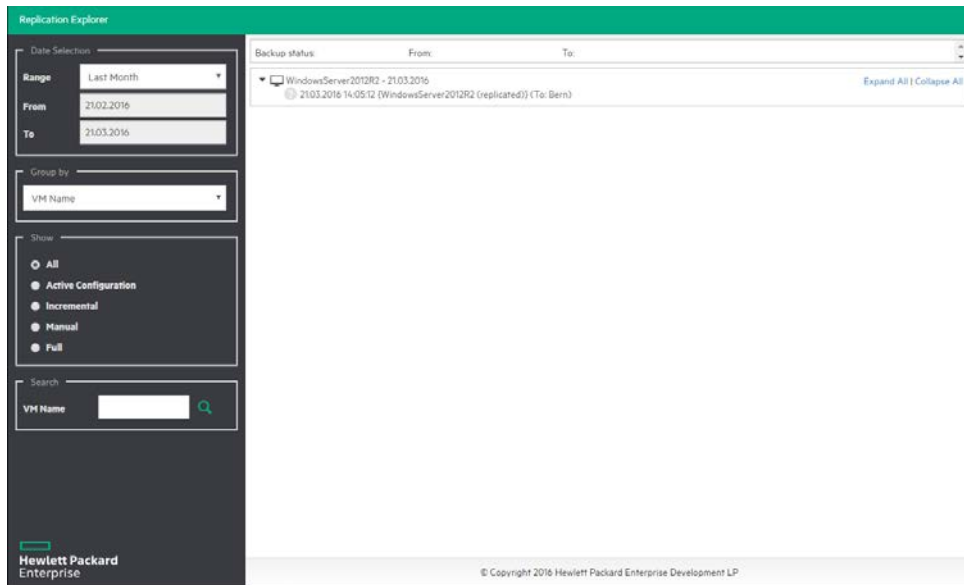


Figure 59: Replication explorer

10 Copy backup

You can schedule a copy of one or more existing backups to another target destination. To do so:

1. Go to **Tasks > Scheduled Tasks** and click **Add**.
2. In the **Add Task Element** screen, under **Copy Backup**, select the desired backup destination: to server or to tape media.
3. In the **Add Copy Backup Task** wizard, in the **Backups to copy** screen, select the backup element(s) you want to copy from the list. Here, you can select an entire scheduled task (all included backup elements will be copied) or individual backup/multiple VMs backup elements. The scheduled Copy Backup Task is performed individually for every VM only on backup versions that have changed since the last backup (if not, no backup is performed of these machines).

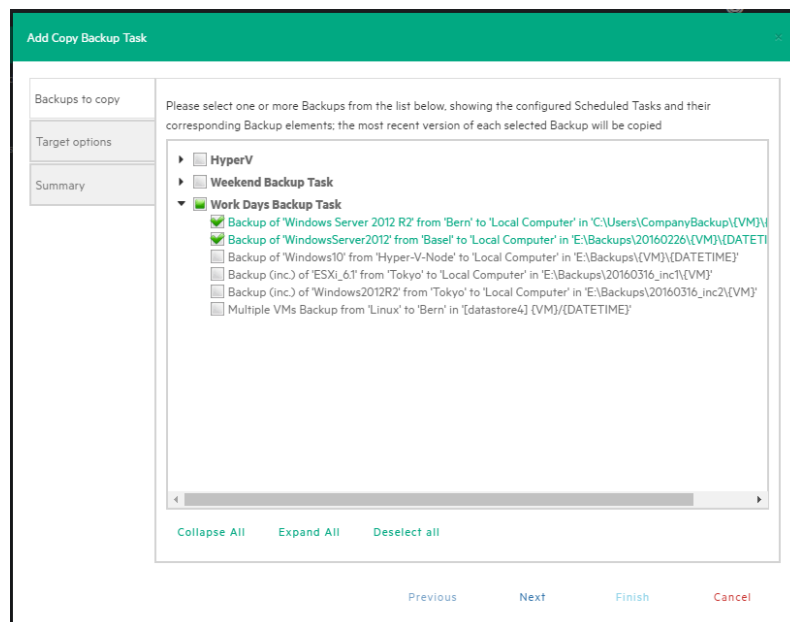


Figure 60: Copy Backup - Backups to copy

4. (for **Copy Backup to Server** only) In the **Target options** screen, select the target host and the path for the backup copies. The destination path of the target server consists of the specified target base path followed by the selected append path option. You can group the backup copies by VM name or by date/time of copy and vice versa.

The “{VM}” and “{DATETIME}” placeholders of the append path stand for:

- {VM}: display name of the backed up virtual machine
- {DATETIME}: starting date/time of the scheduled copy task, in YYYY-MM-DD-hhmmss format.

Also, specify the number of full backup copies to store on the target server: either **All** (default), which copies all backup copies, or a specific number, which deletes all older copies.

Important! The copy of incremental backups is limited to the local machine as target server. Also, to keep the incremental folder structure consistent, only the **{VM}** subfolder will be appended to the target base path, ignoring current date/time and keeping the original backup date/time folder structure.

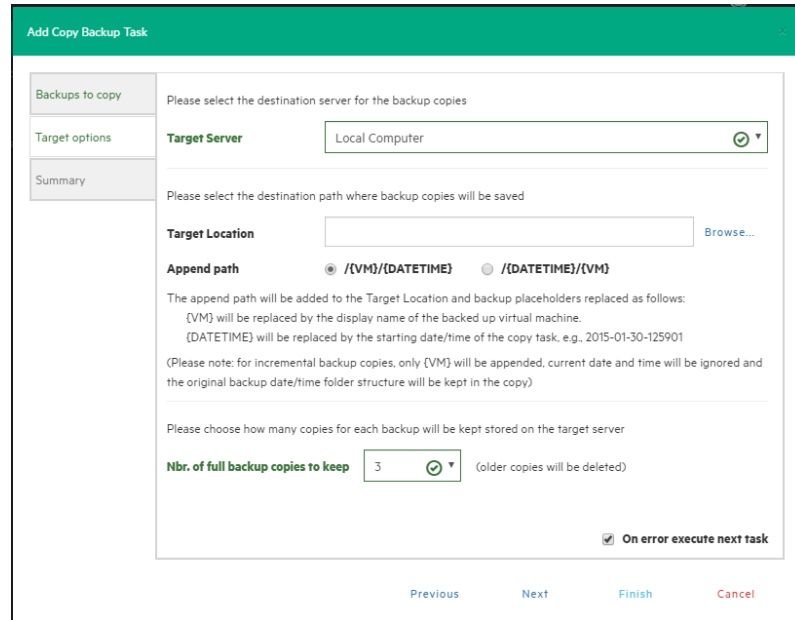


Figure 61: Copy Backup - Target options (To Server)

5. (For **Copy Backup to Tape Media**) In the **Target options** screen, select the desired target tape media pool. You can select the target tape library, then a corresponding target custom media pool you created. When choosing a media pool, you will copy the backups onto a media included in it, using the media pool's retention rules. All available space will be used to store backup data. Large backups will be automatically split into multiple tape media if necessary. Also, you can enable hardware data compression if your tape device supports it.
6. In the **Summary** screen, you can see the details of your copy backup options. At this stage you can go back and make any necessary changes. When finished, click **Save**.

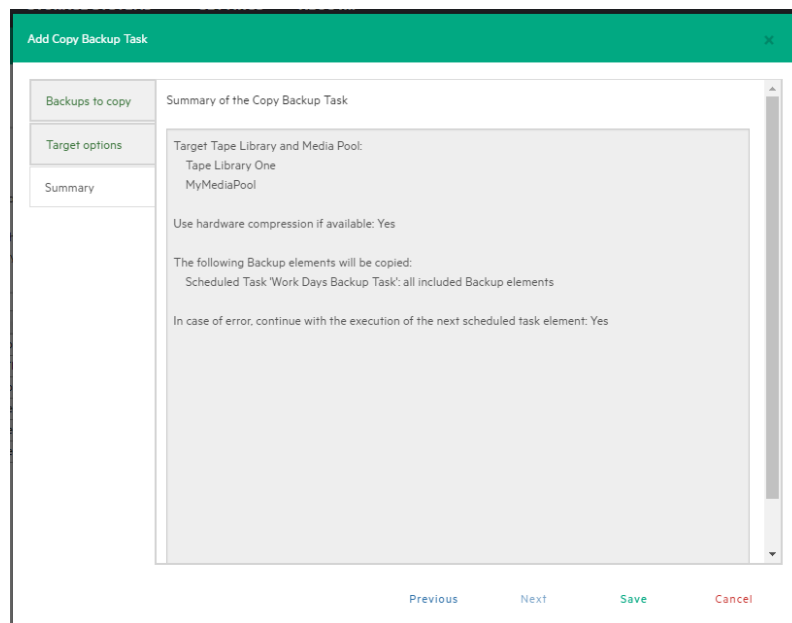


Figure 62: Copy Backup - Summary

Note: Removing or modifying any scheduled tasks or backup elements referenced by the copy backup task (for example, removing a backup element that was scheduled for copying) may result in failed subtasks. To fix this, keep the copy backup task up-to-date, modify it and clear the highlighted items with errors:

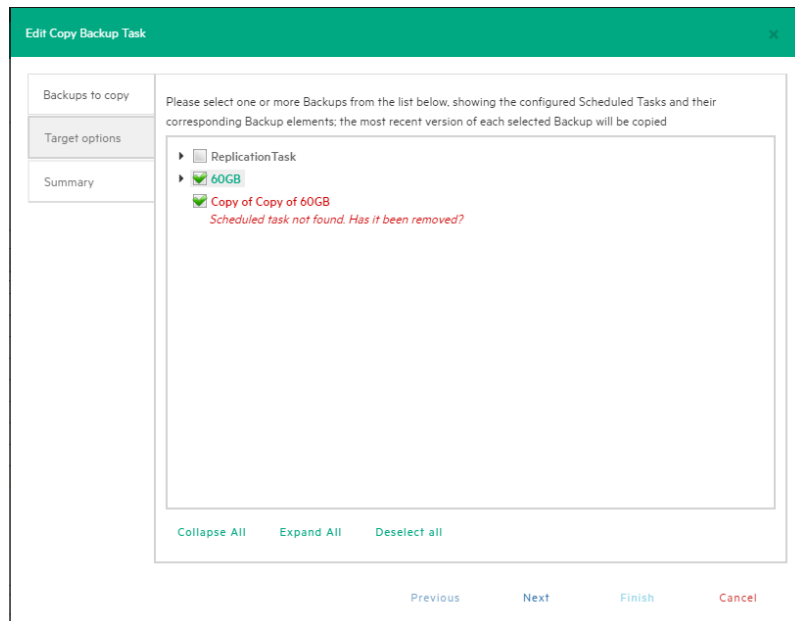


Figure 63: Copy Backup - Target options (Removed scheduled task)

11 Sending e-mail reports

HPE VM Explorer has a built-in option to send e-mail reports about performed backups. To add e-mail reporting, you can either configure HPE VM Explorer to use e-mail notifications after performing a task or you can add a scheduled e-mail notification task.

11.1 Adding e-mail reporting as a scheduled task

To create a scheduled task for sending backup reports:

1. Go to **Tasks > Scheduled Tasks**, right-click the **Scheduled Tasks** view and point to **Add Scheduled Task...** on the shortcut menu.
2. In the **Add Scheduled Task** dialog box, give a meaningful name to your e-mail reporting task, such as **E-mail report for <Task Name>**, and set the report schedule. When finished, click **OK**.
3. Then, right the **Task Elements** list of this task and point to **Add E-Mail Report...** on the shortcut menu.
4. In the **E-Mail Report** screen, configure the settings of your e-mail report, such as **SMTP Hostname**, **E-mail** and **Subject**. You can also test your settings or load the default settings, which you can complete at this stage if not previously configured. For more information on configuring e-mail settings, see **Managing network drives** on page 65. Also, see the priority of your e-mail. For more information, see **Setting up a priority e-mail** on page 55. When finished, click **OK**.

Figure 64: E-Mail Report

11.2 Adding e-mail report to an existing task

To add e-mail reporting to an existing task, go to **Tasks > Scheduled Tasks**, select the desired task and right-click the **Scheduled Tasks** view. On the shortcut menu, point to **Add E-Mail Report...** and configure the settings. For more information, see **Adding e-mail reporting as a scheduled task** above.

11.3 Types of reports

The following default reports are available in HPE VM Explorer:

- **Current task report**—sends a report of the scheduled task to which the report has been added. It is usually implemented at the end of a scheduled task with multiple tasks, to keep you informed on specific scheduled task.

- **Daily report**—sends a report with the activities occurred in the past 24 hours, including jobs still running, jobs terminated in the past 24 hours and their results, whether or not the jobs have been included in the task or not. It is usually implemented in a daily scheduled task of its own, to keep you informed on all activities executed every day.
- **Weekly report**—works the same as the Daily report, but integrates jobs in the past week.
- **Monthly report**—works the same as the Daily report, but integrates jobs in the past month.
- **Custom time report**— works the same as the Daily report, but for a specified time frame in which all the job executed (including the ones still running) are included in the report.

Note: If you have not configured automated backup tests to take screenshots of the VM console, the report will contain all the images selected for the report. Be careful on the size of the report as it may reach the maximum capacity of the mail server.

11.4 Setting up a priority e-mail address

You can set the priority to the mail based on the worst-case scenario. If all jobs included in the report are successful, you can set the priority depending on the **On Success** option. If at least one job has a warning, you can set the priority to **On Warning**. If at least on job fails or an error occurs, you can set the priority to **On error**.

12 Custom script

In HPE VM Explorer, you can add a custom script element to a scheduled task. To do so:

1. Go to **Tasks > Scheduled Tasks**, select the desired task and click **Add**.
2. In the **Add Task Element** screen, under **Other**, click **Custom Script**. The **Script task setup** dialog box is displayed.
3. In the **Script task setup** dialog box, click **Browse** to select the script you want to run in the scheduled task. You can select a “.bat” or “.exe” file and you can configure the arguments, timeout interval (the time after which the task fails if the script has not finished) and whether the task should stop or continue if the script fails. You also can select an existing account to launch the script file and test your script configuration. When finished, click **OK**.

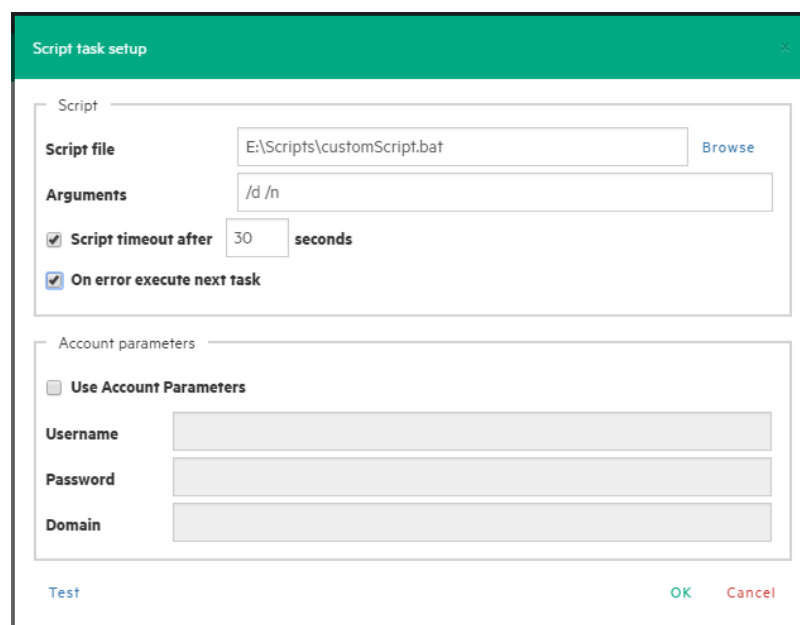


Figure 65: Script task setup

13 Restoring a VM backup

To restore a backup In HPE VM Explorer, Professional and Enterprise editions, go to **Management > Backup Explorer**, filter to view the desired backups, if needed, then right-click the backup you want to restore and point to **Restore**.

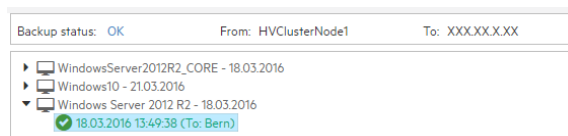


Figure 66: Restoring - Backup Explorer

To restore a backup In HPE VM Explorer Free Edition or to restore any backup not listed in Backup Explorer:

1. Go to **Management > File Explorer**, open the desired backup folder and right-click the vmxbackup.xml file, which contains all the information about your original VM. On the shortcut menu, point to **Restore Backup...**
2. In the **Virtual Machine Restore** dialog box, in the **General** tab, choose the target host where you want to restore the backup, select the directory and whether to directly register the Virtual Machine to your inventory using the default name. If not, you can always register any VM to your datastore by going to **File Explorer**, right-clicking the VM configuration file (*.vmx for ESXi VMs or *.xml for Hyper-V VMs) and pointing to **Register VM**. Also, you can power on the VM after registration.
3. In the **Files & Disks** tab, choose which file/disk you want to include in the restore and whether to convert the disks as thin after restore (if your Target host is ESXi, HPE VM Explorer Agent is enabled on the target server and there are no other disks with the same name).

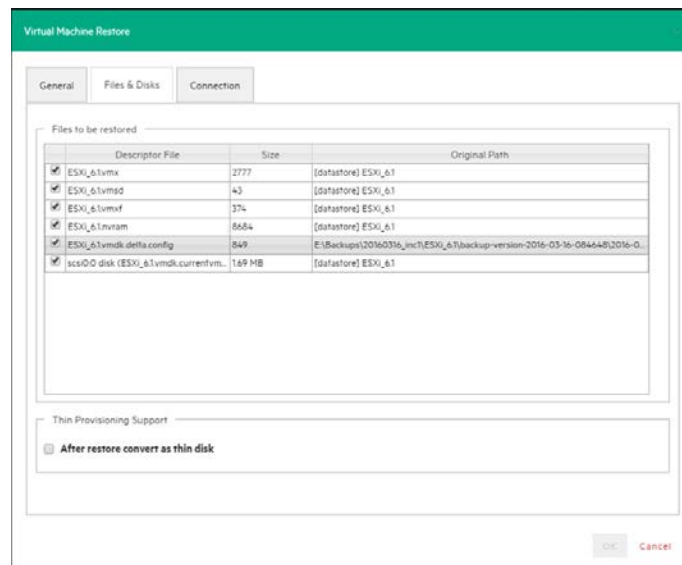


Figure 67: Restore - Files & Disks

4. In the **Connection** tab, configure the direct copy options. The procedures are similar to **Replicating a single VM** on page 46.
5. (Hyper-V Host only) In the **Network Adapters** tab, in the **Connect to** list, select which virtual network the network adapters and the legacy network adapter should be linked to. You can restore all saved network adapters in the new VM. To automatically set the old MAC address on the adapter, select **Restore MAC Address**. When finished, click **OK**.

13.1 Restoring an incremental backup

When restoring an incremental backup, you can choose up to which date to restore the date – more exactly, you can choose a specific restore point to restore. The other procedures are identical to regular backup restores. For more information, see **Restoring a VM backup** on page 57.

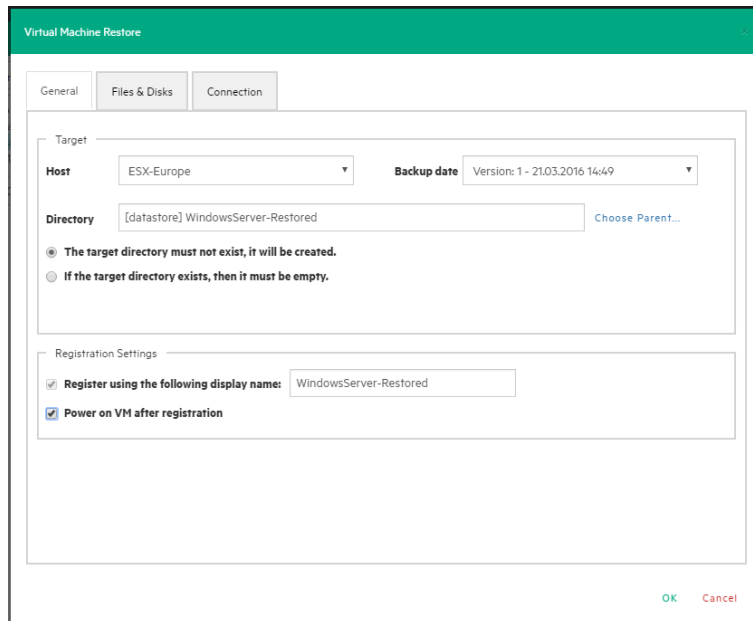


Figure 68: Restore Incremental Backup - General

13.2 Restoring an encrypted backup

When restoring an encrypted backup, make sure you know the encryption password. To restore an encrypted backup, follow the procedures of **Restoring a VM backup** on page 57. Encrypted backups are displayed with a yellow padlock symbol.

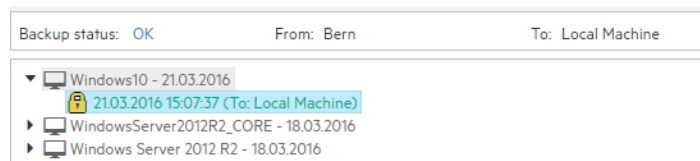


Figure 69: Restore encrypted backup

14 Making an Instant VM Recovery

The Instant VM Recovery feature is only available for backups of VMware ESXi Virtual Machines saved locally or on a supported Cloud storage. For more information, see later in this publication.

14.1 Making an Instant VM Recovery from a local machine

With HPE VM Explorer, you can power on a backup directly on a selected server without the need of restoring or copying any file using the Instant VM Recovery System. To do so:

1. Go to **Management > Backup Explorer**, filter through the available backups, if needed, then expand the backups' tree to get to the desired VM. Then, right-click desired the VM and on the shortcut menu point to **Instant VM Recovery**. A NFS server will mount a temporary datastore on you host. The actual disk will be preserved in your local disk.

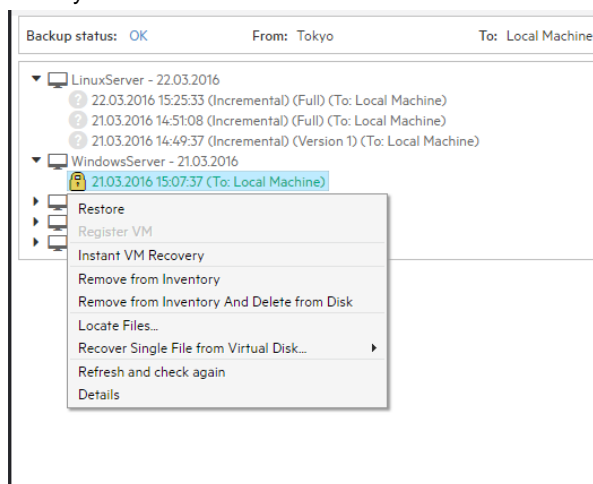


Figure 70: Instant VM Recovery from backup explorer

2. Then, in the **Instant VM Recovery** dialog box, register the VM to your selected server.

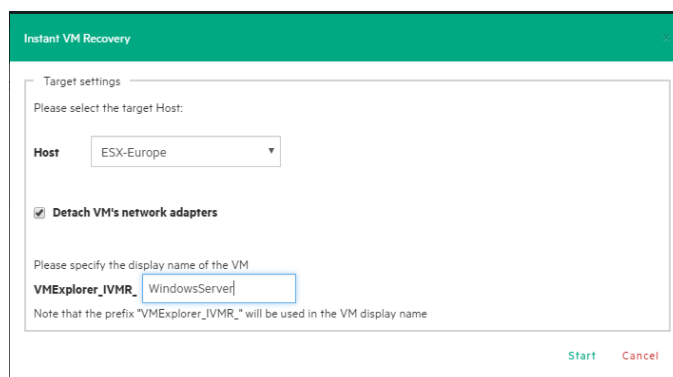


Figure 71: Instant VM Recovery target settings

3. When finished, click **Start**.

Note: You can perform any test during your Instant Recovery process, as none of your changes will be saved. You can also remove any network adapters to avoid conflicts with the original VM (default option).

While the Instant VM is up and running, you can even perform a vMotion operation to migrate it on an existing datastore, making it a real VM, not dependent on the HPE VM Explorer Instant VM Recovery System.

14.2 Making an Instant VM Recovery from Cloud backups

With HPE VM Explorer, you can launch Instant VM Recovery of VM backups saved on a supported Cloud storage (Amazon S3, Rackspace, Open Stack, Azure or HPE Helion). The procedures are similar to making an Instant VM Recovery from a local machine (for more information, see **Making an Instant VM Recovery from a local machine** on page 59), except for some additional options:

Figure 72: Instant VM Recovery for Cloud

Select the **Prepare VM for vMotion and notify me when ready to perform it** checkbox if you plan to perform a vMotion migration on that Instant VM later. This will start an optimized data transfer task, added to the running tasks list where you can check the progress. Once this task is completed, you will be notified that Instant VM is ready for vMotion.

You can set the default local path for temporary Instant VM Recovery cache files in the main HPE VM Explorer **Settings** screen, in the **Instant Recovery Service** tab. Here you can override the default value with a custom path. Generally, a safe estimate of the temporary disk space required for an Instant VM Recovery of a Cloud backup is the total size of the backup itself. For more information, see **Making an Instant VM Recovery from Cloud backups** above.

HPE VM Explorer implements optimizations to improve the performance of an Instant VM Recovery of a Cloud backup, but even so the performance is generally slower than that of a local backup, strongly depending on the network bandwidth and server workload of your infrastructure. The better the performance of the network and hypervisor server, the more responsive the Instant VM Recovery process.

15 Working with File Explorer

File Explorer enables you to view and download files from your ESX, Hyper-V, Linux or FreeBSD hosts and select the server you want to browse. Simply go to **Management > File Explorer** and select the server from the **Server** list.

In addition, you can register Virtual Machines to your ESXi or Hyper-V hosts by right-clicking the VM configuration file (*.vmtx for ESXi VMs or *.xml for Hyper-V VMs) and choosing the "Register VM" command.

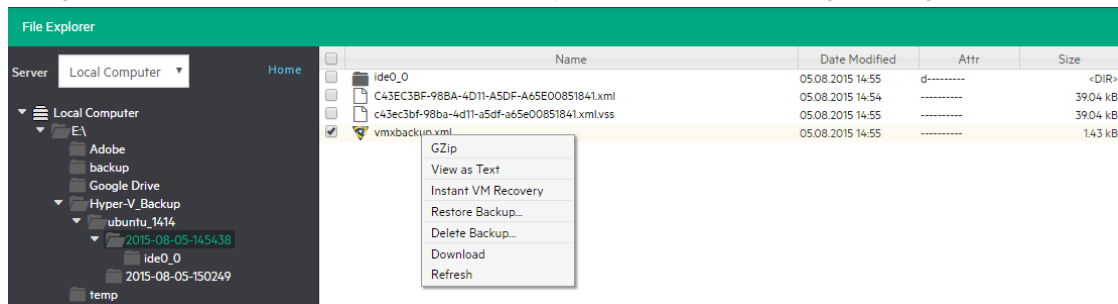


Figure 73: File Explorer

File Explorer also enables you to restore backups by right-clicking the *vmxbackup.xml* file and pointing to **Restore Backup...**

15.1 File level restore for single files

File Explorer enables you to browse a disk image file and recover single files. Just select a disk image file and double-click on it to navigate its content and view all its files and directories. To recover a single file or a whole directory, right-click on the file and select **Download**, then choose the destination.

You can browse all virtual drives of non-compressed backup. HPE VM Explorer supports the following file systems on disk image files:

- NTFS
- FAT
- EXT (**Note:** EXT4 64 bit and XFS are not supported)
- Windows Dynamic Disks (simple, spanned, striped, mirrored volumes)
- Linux LVM - Logical Volume Manager (linear, striped, mirrored volumes).

If the EXT partition in the selected image disk is not 100% consistent, you will be notified in this respect, however, you can continue navigating the image disk. To generate consistent disk images, we recommend that you enable the *quiesce* option for the backups.

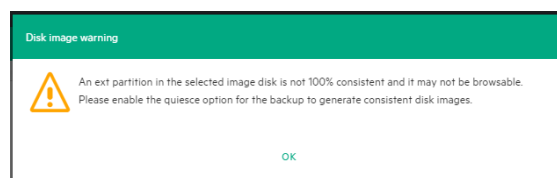


Figure 74: Disk image warning

16 Task history

Go to **Tasks > Task History** for an overview of the recent scheduled tasks results, with the name, the start and the end time, the duration of the task execution and the result. Clicking an entry enables you to view even more task details in the **Scheduled Task Details** dialog box.

Name	Start	End	Duration	Result
myTaskSchd	Monday, 9 November 2015 19:00:01	Monday, 9 November 2015 19:00:40	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 18:00:00	Monday, 9 November 2015 18:00:41	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 17:00:00	Monday, 9 November 2015 17:00:42	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 16:53:08	Monday, 9 November 2015 16:53:34	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 16:37:30	Monday, 9 November 2015 16:38:07	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 09:25:04	Monday, 9 November 2015 09:25:45	1 Minute	Success
myTaskSchd	Monday, 9 November 2015 08:25:20	Monday, 9 November 2015 08:25:36	19 Minutes	Failed
myTaskSchd	Friday, 6 November 2015 16:57:51	Friday, 6 November 2015 17:43:49	44 Minutes	Failed
myTaskSchd	Friday, 6 November 2015 16:49:34	Friday, 6 November 2015 16:49:35	1 Minute	Failed
Monthly Backup of win2008R2	Tuesday, 27 October 2015 13:16:38	Tuesday, 27 October 2015 13:41:34	26 Minutes	Success
Monthly Backup of win2008R2	Tuesday, 27 October 2015 10:58:25	Tuesday, 27 October 2015 10:52:32	15 Minutes	Warning
backuSANS wls mem	Tuesday, 27 October 2015 09:00:05	Tuesday, 27 October 2015 09:06:01	6 Minutes	Aborted
backuSANS wls mem	Tuesday, 27 October 2015 08:42:41	Tuesday, 27 October 2015 08:45:53	3 Minutes	Aborted
backuSANS wls mem	Tuesday, 27 October 2015 08:39:29	Tuesday, 27 October 2015 08:42:30	4 Minutes	Aborted
backuSANS wls mem	Monday, 26 October 2015 17:22:34	Monday, 26 October 2015 17:49:29	27 Minutes	Success
backuSANS wls mem	Friday, 23 October 2015 13:54:21	Friday, 23 October 2015 12:02:08	9 Minutes	Aborted
backuSANS wls mem	Friday, 23 October 2015 12:00:01	Friday, 23 October 2015 12:01:16	2 Minutes	Failed
backuSANS wls mem	Friday, 23 October 2015 11:50:39	Friday, 23 October 2015 11:53:41	4 Minutes	Aborted
backuSANS wls mem	Friday, 23 October 2015 11:40:48	Friday, 23 October 2015 11:44:20	4 Minutes	Failed
backuSANS wls mem	Friday, 23 October 2015 11:21:51	Friday, 23 October 2015 11:25:40	1 Minute	Failed
backuSANS wls mem	Friday, 23 October 2015 11:20:43	Friday, 23 October 2015 11:23:38	4 Minutes	Aborted
backuSANS wls mem	Friday, 23 October 2015 11:10:19	Friday, 23 October 2015 11:07:14	4 Minutes	Aborted
Check SANScale	Friday, 23 October 2015 10:51:02	Friday, 23 October 2015 10:58:16	7 Minutes	Aborted
Check SANScale	Friday, 23 October 2015 09:49:36	Friday, 23 October 2015 10:10:10	21 Minutes	Aborted
Check SANScale	Friday, 23 October 2015 09:17:40	Friday, 23 October 2015 09:43:04	26 Minutes	Success

Figure 75: Task history page

Clicking the **Html Report** button shows the current task result in your browser in HTML format, ready for print.

Scheduled Task Details

5GB (Success) Refresh

VM Explorer Version: 6.1.0.0.10
 Start time: Monday, 21 March 2016 13:29:27
 End time: Monday, 21 March 2016 13:41:43
 Duration: 13 Minutes
 Total Transferred size: 25600.07 MB
 Transfer Rate: 36.31 MB/s
 Number of tasks processed: 9/9

Details
 The task has finished successfully.

Filter

Success Warning Failed
 Abort Disabled Waiting
 Running

Task	Result	Duration
ESX Backup (Ubuntu_1010_Desktop)	Disabled	-
Copy of Localhost Backup (Ubuntu_1010_Desk...	Disabled	-
Copy of Localhost Backup (Ubuntu_1010_Desk...	Disabled	-
Copy of Localhost Backup (Ubuntu_1010_Desk...	Disabled	-
Copy of Localhost Backup (Ubuntu_1010_Desk...	Success	3 Minutes
Copy of Localhost Backup (Ubuntu_1010_Desk...	Success	3 Minutes
Copy of Localhost Backup (Ubuntu_1010_Desk...	Success	3 Minutes

Task Details

Start time: 21.03.2016 13:29:28
 End time: 21.03.2016 13:31:55
 Duration: 3 Minutes
 Total Transferred size: 5120.01 MB
 Transfer Rate: 36.31 MB/s

Source Server: Local Machine
 Target Server: Hewlett Packard MSL G3 Series library (x64 based) (Tape Library)
 Target Location: mymy (Tape Media Pool - Media: cam04L4)

Details
 The task has finished successfully.

HTML Report Previous Result Next Result OK

Figure 76: Scheduled Task Details

17 Instant Recovery Service

Go to **Management > Instant Recovery Service** for an overview of the Instant VM Recovery and Instant Backup Test running, with the VM name, the type of test running, the start time, the server on which the test is running on, the user that started the test and the client.

Status	VM Name	Type	Start time	End time	Server	User (Domain)	Client
Running	VMEExplorer_VMR_Windows7	Instant VM Recovery	21.03.2016 17:42:11		172.17.134	admin (HPE User)	WebServer

Figure 77: Instant Recovery Service page

There are two types of Instant Recovery Service:

- **Instant VM Recovery**—This service starts when selecting a backup and clicking **Instant VM Recovery** from the menu. This running task has no time limit and to prevent the VM to be kept indefinitely you must stop the process once finished using the **Instant VM Recovery** job.
- **Instant Backup Test**—This service is available only at the end of a backup done locally, after the **Verify Backup** option has been enabled. As this task is related to the backup and has a timeout, you are recommended to let this job finish on its own time.

You can filter the Instant Recovery Service view by type, by the server on which the VM is running and by the user running the service.

18 Working with HPE VM Explorer Settings

Go to **<user account>** -> **Settings** to configure your HPE VM Explorer settings, such as the UI language, event logs, support information, documentation and so on.

18.1 Configuring General settings

To configure some of HPE VM Explorer’s general settings, such as the Default Local Path, the Windows event logs and others, in the **Settings** view, click **General**. When finished configuring the settings, click **Save**.

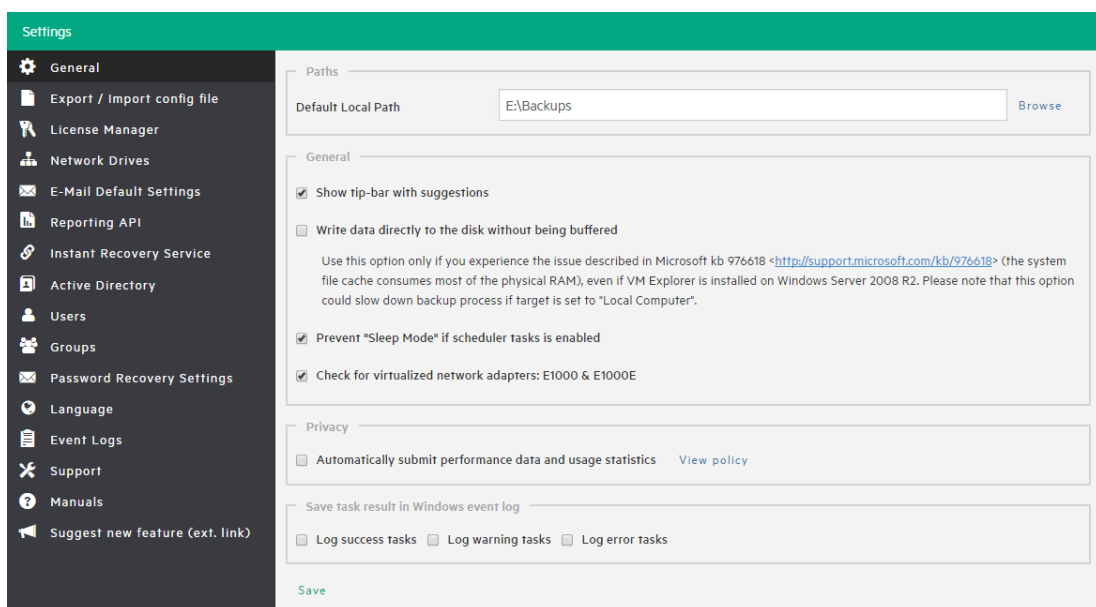


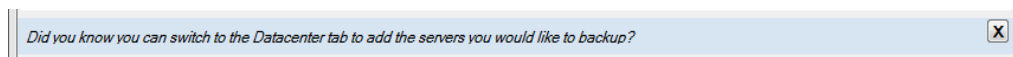
Figure 78: Settings - General

Under Paths

Click **Browse** to configure the default Local Path used in **File Explorer** (home directory for local computer), in the **Backup** setup dialog (default target directory), in the **Custom Script** configurator and wherever a local path is required. If left blank, HPE VM Explorer will use the Windows **My Documents** path.

Under General

Select/clear the **Show tip-bar with suggestions** checkbox display/hide the tip bar with the suggestions. You can also deactivate the tip-bar by clicking **X** (close).



Select the **Write data directly to the disk without being buffered** checkbox only if, during backups, performance issues as described in the Microsoft KB 976618 occur. For more information, see <https://support.microsoft.com/en-us/kb/976618>.

Select the **Prevent ‘Sleep Mode’ if scheduler is enabled** checkbox to prevent the system from going into sleep mode. This option will be applied only if the scheduler is enabled. For more information, see **Scheduling Tasks** on page 33.

Under **Privacy**

Here you can decide whether or not to send performance data sending (for statistical purposes). For more information, click **View policy**.

Under **Save task result in Windows event log**

To save the results of Scheduled Tasks in the Windows Event Log, select/clear the desired checkbox(es) under **Save task result in Windows Event Log**.

18.2 Export / Import configuration settings

In HPE VM Explorer, you can export/import the existing configuration. During export, you can encrypt the configuration file with a password (recommended).

Note: Ensure that you are not importing a configuration with its web server settings disabled.

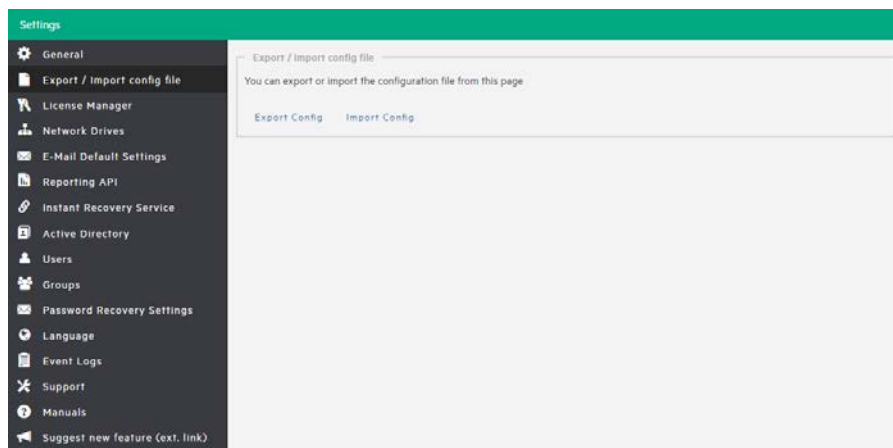


Figure 79: Settings - Export / Import Configuration file

18.3 Managing network drives

In HPE VM Explorer, you can add, modify and delete network drives that you can use to perform and restore backups from. To view and manage network drives, in the **Settings** view, click **Network Drives**. Click **Refresh** to update the list of available network drives.

Note: Before adding or modifying a network drive, make sure the target is available on your network and that you have write access to the shared folder.

18.3.1 Adding a network drive

To add a network drive:

1. In the **Network Drives** view, click **Add** and then, in the **Location** screen of the **Add a network drive** wizard, select a letter for your network drive and write your network drive's path. When finished, click **Next**.
2. In the **Credentials** screen, type your access credentials, if necessary, and then click **Next**.
3. In the **Test Connection** screen, you can verify if your connection is valid. If not, you can go back and reconfigure your newly added network drive. If yes, click **Next**.
4. The **Summary** screen displays the details of your newly added network drive. At this stage you can go back and make any necessary changes. When finished, click **Finish**.

Your newly added drive is now available in the **Network Drives** view.

18.3.2 Modifying a network drive

To modify an existing network drive, in the **Network Drives** view, select the network drive you want to modify and click **Edit**. Then, complete the **Add a network drive** wizard. For more information, see **Adding a network drive** above.

18.3.3 Removing a network drive

To delete an existing network drive, in the **Network Drives** view, click the network drive you want to delete and click **Remove**. Then, in the confirmation box, click **OK**.

18.4 Configuring e-mail default settings

In the **E-Mail Default Settings** screen, you can configure the default e-mail settings. You can also test if your settings are correct. When finished, click **OK**.

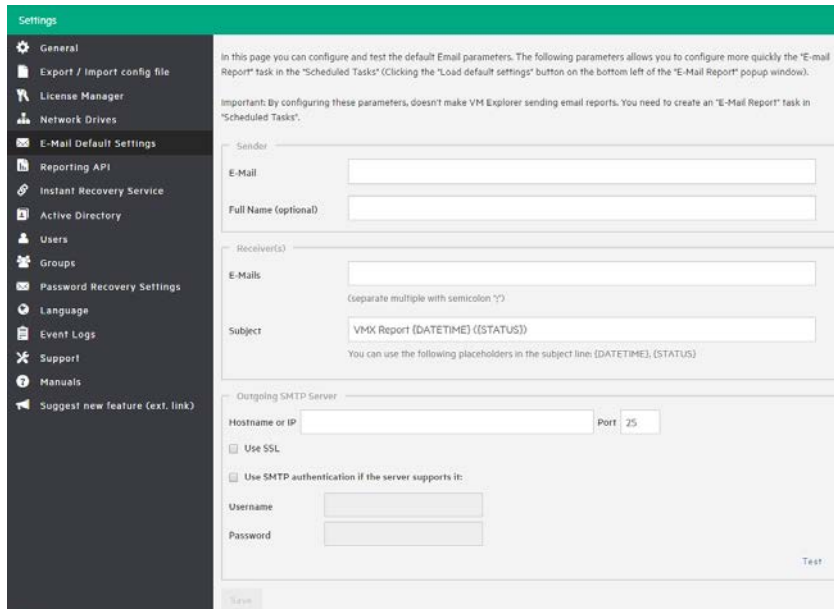


Figure 80: Settings - E-Mail

Note: You can use the settings you configure here in e-mail reports only when loading the default settings. For more information, see **Sending e-mail reports** on page 54.

18.5 Instant Recovery Service

To be able to use HPE VM Explorer NFS, make sure no other NFS server is running on the machine where HPE VM Explorer is installed, and that no other services are using TCP port 111.

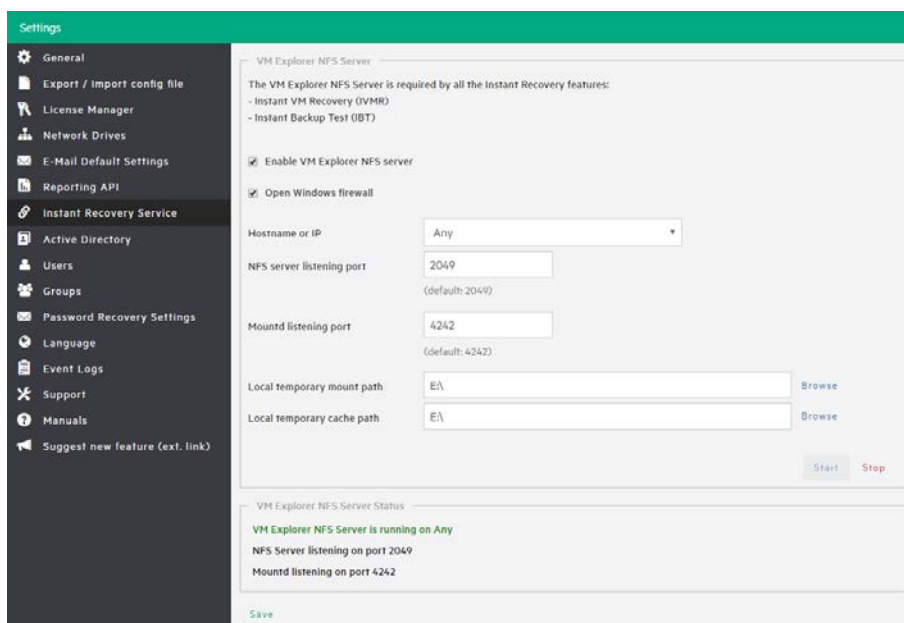


Figure 81: Settings - Instant Recovery Service

To be able to use the automatic backup test, you need to configure and enable the HPE VM Explorer NFS. To do so, in the **Settings** view, go to **Instant Recovery Service**. Here, you can start or stop the HPE VM Explorer NFS server.

If the **Enable HPE VM Explorer NFS server** dialog box is selected/cleared, HPE VM Explorer NFS Server will automatically start/stop when closing this dialog. Selecting the **Open Windows Firewall** checkbox will automatically open Windows Firewall for HPE VM Explorer NFS Server.

Configure the **NFS server listening port** and the **Mountd listening port** to be used to communicate with the NFS client on the host. Changes will apply after restarting the server.

Select the **Local temporary mount path** and **Local temporary cache path** to save temporary NFS mount files and temporary Instant VM cache files, respectively. The default value for both is your system's default Temp path. In

The **VM NFS Server Status** displays an overview of the server status.

18.6 Configuring the Active Directory

You can include Active Directory entries in your configuration and authenticate users through the Domain server using the Active Directory credentials.

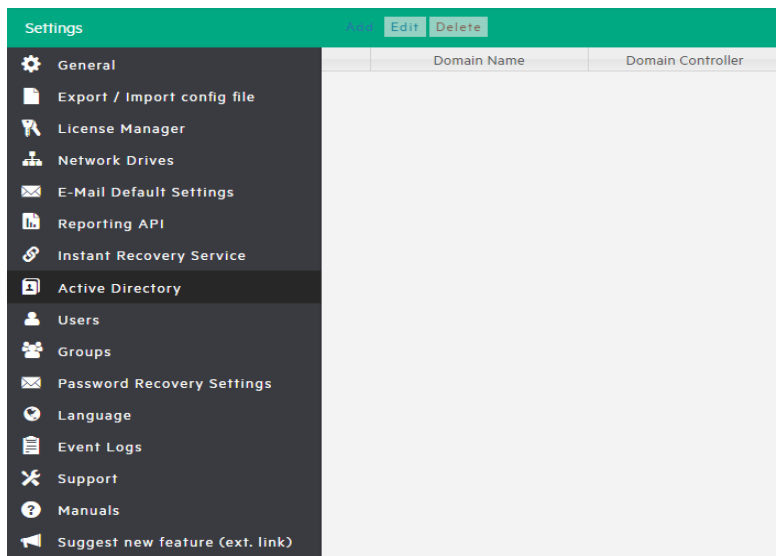


Figure 82: Settings - Active Directory page

To add an Active Directory entry, click **Add** and fill in the **Domain Name** and the **Domain Controller** (IP or computer name).

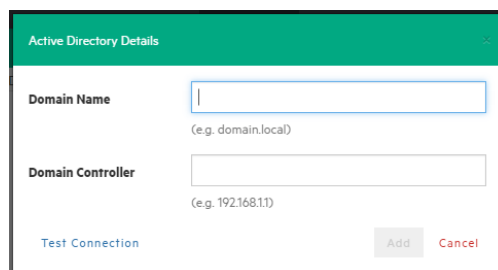


Figure 83: Active Directory Details

Every time you test the connection or acquire existing users in the Active Directory, you need to type your administrative credentials, as HPE VM Explorer does not store the administrative credentials in its database.

18.7 Working with Users

In the **Users** settings you can add, modify and delete HPE VM Explorer users and their access permissions. You can see the current users included in HPE VM Explorer with their detailed information.

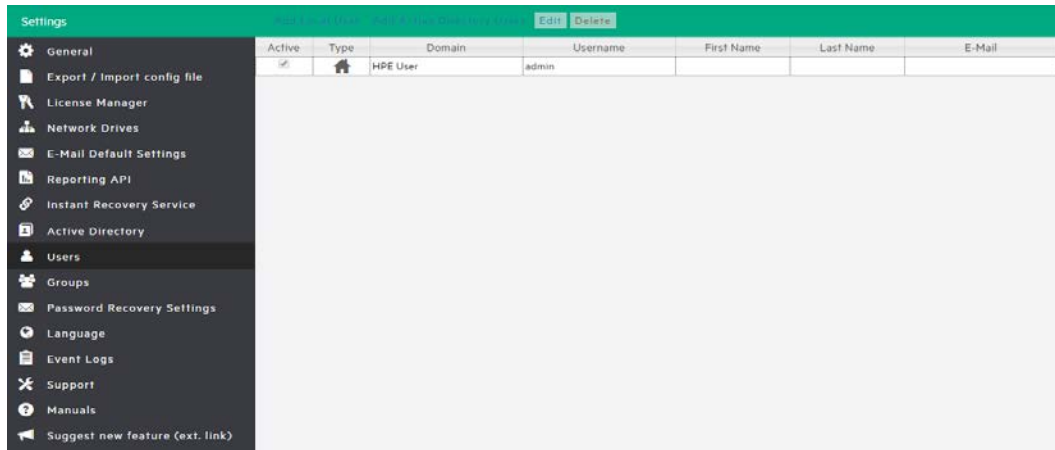


Figure 84: Settings - Users

To add a new local user, click **Add Local User** and then, from the **Groups** list, select the user group to define the type of access. The choices are multiple.

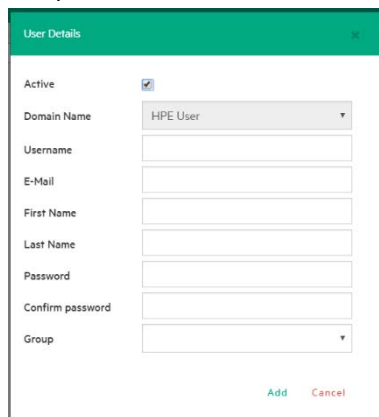


Figure 85: Settings - User Details

Only local users are available in HPE VM Explorer, and the password is stored encrypted.

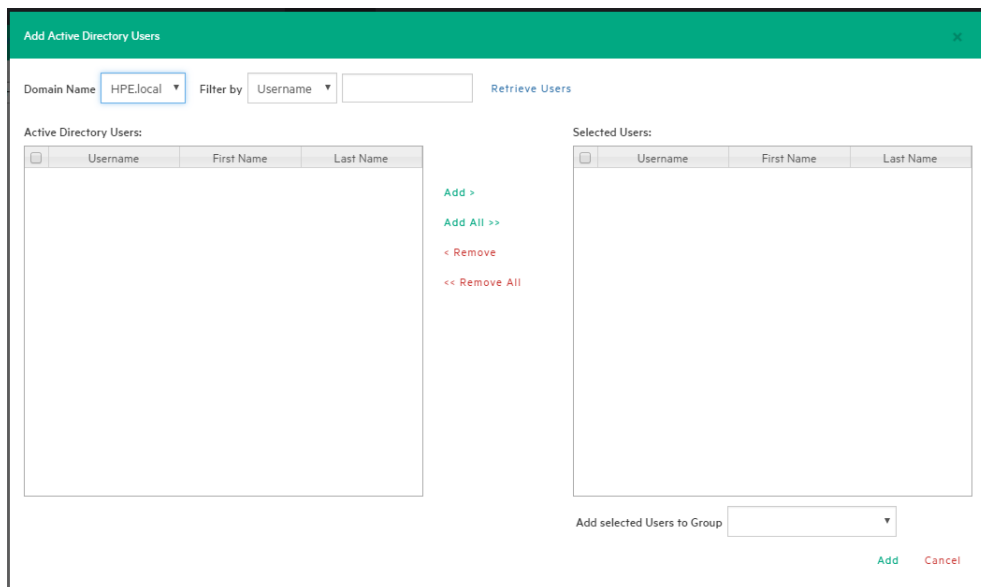


Figure 86: Settings - Add Active Directory Users

You can also add existing users from the Active Directories added to HPE VM Explorer (for more information, see **Configuring the Active Directory** on page 67) by selecting **Add Active Directory Users** and then adding them. Also, select the desired domain name from the list and click **Retrieve Users**. Make sure you know your administrative credentials (HPE VM Explorer does not store them).

The list you retrieve is limited to 2000 entries, but you can use the **Filter** option if the user you are looking for is not present. Then, select to which group to add your users by clicking **Add selected Users to group**. Users can be part of multiple groups.

Only Administrators can modify the first name, last name, the e-mail and the user groups in which the user has privileges. All other fields are disabled to editing in order to keep consistency with Active Directory.

18.8 Working with Groups

The Groups Settings permit to add or exclude the users in every group. The available groups are:

- **Administrator**—Can perform all administrative activities in HPE VM Explorer.
- **Scheduled Task Operator**—Can manually execute Scheduled Tasks and view the Task History.
- **Restore Task Operator**—Can perform restore operations using existing backups/replications and restore single files from any backup.
- **Task Viewer**—Can view all the existing backups/replications and view the Task History.
- **Guest**—can view the Datacenter, the Scheduled Tasks, the existing backups/replications and the Task History in "read-only" mode.

You can modify a group, you can add and delete a user.

Figure 87: Settings - Group Details

18.9 Recovering your password

You can recover a lost password via e-mail after configuring the sender and Outgoing SMTP Server settings in the **Password Recovery Settings** screen. If you have already configured e-mail settings in the **E-Mail Default Settings** page, you can load them by clicking **Load default settings**. You can also test your e-mail settings.

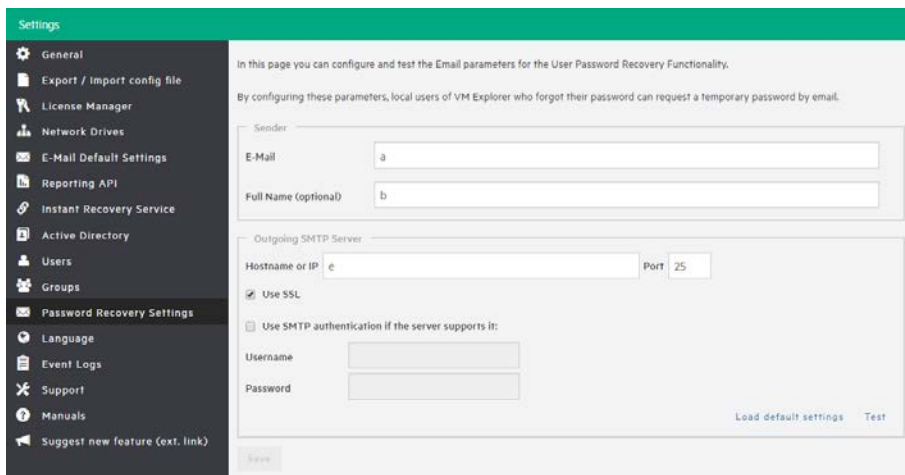


Figure 88: Settings – Password Recovery

18.10 Changing your display language

In the **Language** screen you can change the language of your UI.

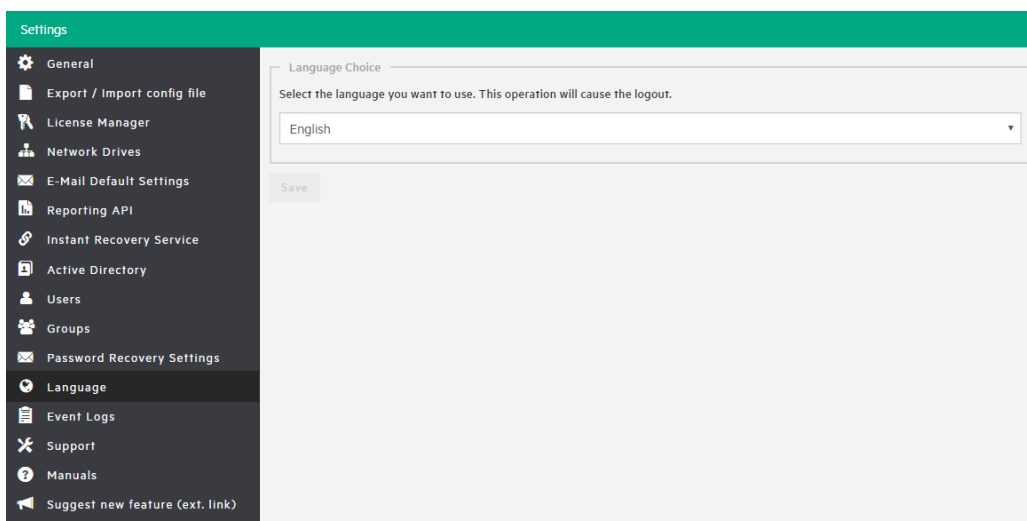


Figure 89: Settings - Language

Note: Some UI elements have not been translated on purpose: dates and times, tasks details, HTML Reports, Events logs, some Service errors. Also, when selecting a different UI language, after applying the changes, the web application will automatically restart and you will return to the **Login** page.

You can choose from any of the following languages:

- English
- French
- German
- Italian
- Spanish
- Japanese
- Russian
- Chinese–simplified
- Portuguese–Brazilian.

Part of our constant effort to enhance HPE VM Explorer, more languages will become available to you in the future.

19 Troubleshooting

For common troubleshooting issues, you are invited to refer to our dedicated HPE VM Explorer Practitioner Forum, at <http://community.hpe.com/t5/VM-Explorer-Practitioner-Forum/bd-p/vmexplorerpractitionerforum>.

During your interaction with Support, you may be asked to provide debug logs. To do so, go to **<user account> - > Settings**, click **Support** and then click **Generate New Debug Report**. Then, download the report as a ZIP file from the **Debug Report** section.

20 Contacting Support

Before contacting our Support department, you are invited to refer to our dedicated HPE VM Explorer Practitioner Forum, at <http://community.hpe.com/t5/VM-Explorer-Practitioner-Forum/bd-p/vmexplorerpractitionerforum>. Also, first refer to **Troubleshooting** on page 71.

To visit our HPE Software Knowledge Base, go to <https://softwaresupport.hpe.com> and then go to **Search**, or visit this deep link: <https://softwaresupport.hpe.com/group/softwaresupport/search-result?keyword=> if you have a running support contract. If you do not have one, add your support contract to your HPE passport account:

1. Go to <https://softwaresupport.hpe.com> and log in using your HPE passport credentials.
2. On the top left side, hover your mouse over **Home** and point to **My Entitlements**.
3. Type your Contract identifier (SAID) and click **Add**.

By phone, you can call +1-800-633-3600 (toll free from the United States of America, carrier charges may apply for the rest of the world) and then, to be transferred to our Customer Support Representative, on the Interactive Voice Response system, say *Software* and then *HPE VM Explorer* when prompted.