

HPE VM Explorer

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User Manual

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Contents

List of figures	7
Chapter 2: Introduction	11
What's new in version 6.1	11
Chapter 3: Install VM Explorer	12
Installation	12
Configure the VM Explorer Web Interface	14
Configure the Web Interface address	14
Configure the administrator password	15
Configure the outgoing SMTP server	15
Configure TCP ports	16
Chapter 4: VM Explorer Web Interface overview	17
Web Interface access	17
Web Interface menu view	17
Chapter 5: Add servers to the VM Explorer	19
Add Hypervisor servers	20
Add an ESX/ESXi server	21
Default folders	25
Summary	26
Add a Hyper-V server	26
Add vCenter	28
Add Amazon S3	30
Add OpenStack, HPE and Rackspace Cloud	30
Server information	31
Server overview	31
Instant recovery status	31
Upload Manager	32
Virtual Machine information	33
Chapter 6: Configure the SAN Infrastructure	35
Chapter 7: Configure the Tape Infrastructure	38
Tape libraries	39
Drivers	40
Media	40
Media Pools	40
Create the Custom Media Pool	41
Tape backups	44
Chapter 8: Configure Network Drives	45

Chapter 9: Schedule a task	49
Create a scheduled task	49
Copy a scheduled task	51
Copy a scheduled task element	52
Command line interface	52
Chapter 10: Backup	54
Single VM	54
Virtual Disks to be included in the backup	55
Thin provisioning support	55
Include a memory dump of the virtual machine (needs additional snapshot)	56
Quiesce the file system	56
Make storage snapshot	56
Volume shadow copy service options	57
Direct copy options	58
Encryption	58
Multiple VMs	61
Incremental backup	63
Enable VD Services for incremental backups	64
Initialize the Virtual Disk Service (VD Service)	64
Enable the VD Service for an ESX host	65
Backup encryption	65
Chapter 11: Replication	68
Single VM	68
Direct Copy Options	70
Encryption	70
Multiple VMs	73
Replication explorer	74
Chapter 12: Copy a backup	76
Chapter 13: E-mail report	80
Chapter 14: Custom script	82
Chapter 15: Restore a VM	83
Restore an incremental backup	86
Restore an encrypted backup	87
Chapter 16: Instant VM Recovery	88
Chapter 17: File Explorer	89
File level restore for single file	89
Chapter 18: Task History	91

Chapter 19: Instant Recovery Service	92
Chapter 20: Settings	93
General	93
Export/Import configuration	94
E-mail	95
Active Directory	96
User	96
Groups	98
Instant Recovery Service	99
Language	100
Chapter 21: Supported Operating systems for installing VM	
Explorer	101
Supported ESX Versions	101
ESXi Versions	103
Hyper-V versions	107
Supported tape libraries and autoloaders	107
Chapter 22: FAQ and support	109

List of figures

- "Figure 1: VM Explorer Starter" on page 12
- "Figure 2: WebServer Settings" on page 13
- "Figure 3: Standalone Interface" on page 13
- "Figure 4: Web Interface Settings" on page 14
- "Figure 5: Supported web browsers" on page 15
- "Figure 6: Web login field" on page 17
- "Figure 7: Language selection for the first time access" on page 17
- "Figure 8: Web available menu" on page 18
- "Figure 9: Add server dialog" on page 20
- "Figure 10: Organize servers in folder" on page 20
- "Figure 11: Add Server - Name & Location" on page 21
- "Figure 12: Add Server - Connection Settings" on page 22
- "Figure 13: Add Server - Port Settings" on page 22
- "Figure 14: Add Server - SSH / VM Explorer Agent" on page 23
- "Figure 15: Add Server - Advanced Settings" on page 24
- "Figure 16: Add server - test connection" on page 25
- "Figure 17: Add server - default folders" on page 26
- " Add an ESX/ESXi server" on page 21
- "Figure 19: Add server (Hyper-V) - Connection settings" on page 27
- "Figure 20: Add server (Hyper-V) - Advanced settings" on page 27
- "Figure 21: Add server (Hyper-V) - Test connection" on page 28
- "Figure 22: Add Server (Hyper-V) - Hyper-V Agent Manager" on page 28
- "Figure 23: Add server (vCenter) - Connection settings" on page 29
- "Figure 24: Add server (vCenter) - Port settings" on page 29
- "Figure 25: Add server (Amazon S3) - Connection settings" on page 30
- "Figure 26: Add server (OpenStack, HPE, Raskspace) - Connection settings" on page 31
- "Figure 27: Server - Overview" on page 31
- "Figure 28: Server - Instant recovery status" on page 32
- "Figure 29: Server - Upload Manager" on page 32
- "Figure 30: VM general" on page 33
- "Figure 31: VM screenshot" on page 34

- "Figure 32: VM Snapshot Manager" on page 34
- "Figure 33: SAN Infrastructure page" on page 35
- "Configure the SAN Infrastructure" on page 35
- "Figure 35: Add San Infrastructure - Test connection" on page 36
- "Figure 36: Add San Infrastructure - Summary" on page 37
- "Figure 37: Windows Device Manager" on page 38
- "Figure 38: Tape Infrastructure page" on page 39
- "Figure 39: Tape Library overview" on page 39
- "Figure 40: Add Media Pool - Name" on page 41
- "Figure 41: Add Media Pool - Media List" on page 42
- "Figure 42: Add Media Pool - Free pool" on page 42
- "Figure 43: Add Media Pool - Retention" on page 43
- "Figure 44: Add Media Pool - Summary" on page 43
- "Figure 45: Tape Restore - Target options" on page 44
- "Figure 46: Network Drives page" on page 45
- "Figure 47: Network Drive - Location" on page 46
- "Figure 48: Network Drive - Credential" on page 46
- "Figure 49: Network Drive - Test Connection" on page 47
- "Figure 50: Network Drive - Summary" on page 48
- "Figure 51: Create new backup schedule" on page 49
- "Figure 52: Add scheduled task" on page 49
- "Figure 53: Scheduled task page" on page 51
- "Figure 54: Copy scheduled task dialog" on page 52
- "Figure 55: Copy task element dialog" on page 52
- "Figure 56: Add Task Element" on page 54
- "Figure 57: Backup - General" on page 55
- "Figure 58: Backup - Files & Disks" on page 56
- "Figure 59: Backup - Snapshot (ESX)" on page 57
- "Figure 60: Backup - VSS Snapshot (Hyper-V)" on page 57
- "Figure 61: Backup - Connection" on page 58
- "Figure 62: Backup - Advanced" on page 59
- "Figure 63: Backup - Verify Backup " on page 60
- "Figure 64: Backup - File Consistency confirm message" on page 60
- "Figure 65: Multi backup - General" on page 62

- "Figure 66: Multi backup - Select multiple VMs" on page 62
- "Figure 67: Incremental Backup - General" on page 63
- "Figure 68: Settings - Manuals" on page 64
- "Figure 69: Edit server" on page 65
- "Figure 70: Backup encryption" on page 66
- "Figure 71: Password encryption" on page 66
- "Figure 72: Change encryption password" on page 67
- "Figure 73: Replication - General" on page 68
- "Figure 74: Replication - Enable VD Service" on page 69
- "Figure 75: Replication - VD Service dialog" on page 69
- "Figure 76: Replication - Replication tab" on page 71
- "Figure 77: Replication - Network adapters" on page 72
- "Figure 78: Replication - Verify replication" on page 73
- "Figure 79: Multi Replication - General" on page 73
- "Figure 80: Multi Replication - Select multi VMs" on page 74
- "Figure 81: Replication Explorer" on page 75
- "Figure 82: Copy Backup - Backups to copy" on page 76
- "Figure 83: Copy Backup - Target options (to Server)" on page 77
- "Figure 84: Copy Backup - Target options (Tape Media)" on page 78
- "Figure 85: Copy backup - Summary" on page 79
- "Copy a backup" on page 76
- "Figure 87: E-Mail report" on page 80
- "Figure 88: Script task setup" on page 82
- "Figure 89: Restoring - Backup Explorer" on page 83
- "Figure 90: File Explorer" on page 83
- "Figure 91: Restore - General" on page 84
- "Figure 92: Restore - Files & Disks" on page 85
- "Figure 93: Restore - Connection" on page 85
- "Figure 94: Restore - Network Adapters" on page 86
- "Figure 95: Restore Incremental Backup - General" on page 86
- "Figure 96: Restore encrypted backup" on page 87
- "Figure 97: Instant VM Recovery from the Backup Explorer" on page 88
- "Figure 98: Instant VM Recovery target settings" on page 88
- "Figure 99: File Explorer" on page 89

- "Figure 100: Disk image warning" on page 90
- "Figure 101: Task History page" on page 91
- "Figure 102: Scheduled Task Details" on page 91
- "Figure 103: Instant Recovery Service page" on page 92
- "Figure 104: Settings - General" on page 93
- "Figure 105: Settings - Export/Import configuration file" on page 95
- "Figure 106: Settings - E-Mail" on page 95
- "Figure 107: Settings - Active Directory page" on page 96
- "Figure 108: Active Directory Details" on page 96
- "Figure 109: Settings - Users" on page 97
- "Figure 110: Settings - User Details" on page 97
- "Figure 111: Settings - Add Active Directory Users" on page 98
- "Figure 112: Settings - Group Details" on page 99
- "Figure 113: Settings - Instant Recovery Service" on page 99
- "Figure 114: Settings - Language" on page 100

Chapter 2: Introduction

VM Explorer is simple, yet powerful software to back up, replicate and restore your VMware ESX, ESXi and Microsoft Hyper-V Virtual Machines (VM).

The following documentation explains the main tasks required for configuration and daily use of VM Explorer. All services hereinafter are brought to you by HPE.

What's new in version 6.1

- Scheduled Task jobs can be copied
- Large backups can be split into multiple tape media
- Multiple files can be downloaded from the Web Interface
- The configuration file can be imported and exported from the Web Interface
- Support for new Amazon S3 region
- Enhanced network drive management
- Enhanced Web Interface security
- Support VDDK version 6.0.2 (64-bit)
- Support VDDK version 5.1.4 (32-bit)

Chapter 3: Install VM Explorer

This section describes how to install and configure VM Explorer.

Installation

1. Download the latest VM Explorer release from our website, <http://www.trilead.com/download/>.
2. Start the installation by double clicking the downloaded file. Follow the steps in the installation wizard.
3. Accept the End User License Agreement terms and condition.

Optionally, you can change your installation path.

NOTE To install VM Explorer 6.1, .NET Framework 4.0 or higher is required.

To start VM Explorer:

1. Click **Start > All Programs > HPE Enterprise > VM Explorer**.

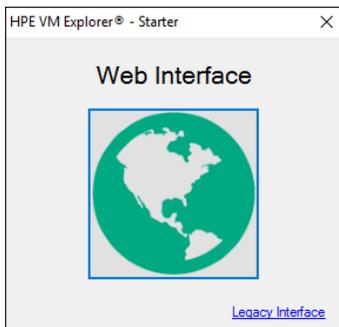


Figure 1: VM Explorer Starter

If you click **Web Interface**, a web browser will automatically open on the configured address. If the VM Explorer web server has not been configured or is not running, the web server configuration dialog will appear:

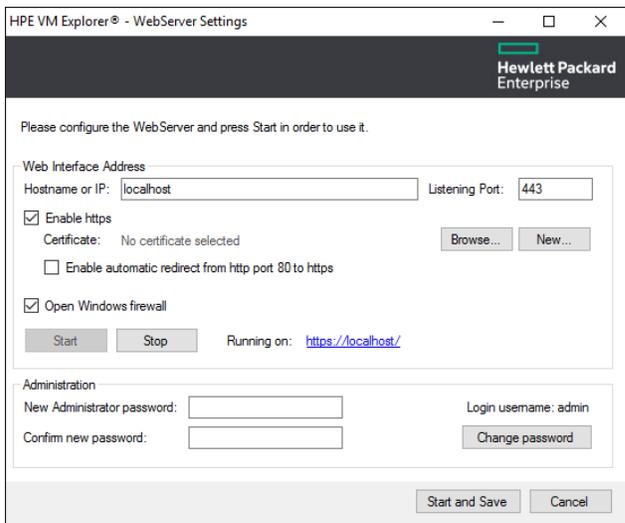


Figure 2: WebServer Settings

The configuration of the VM Explorer Web Interface is described in the next section, "Configure the VM Explorer Web Interface" on the next page.

NOTE You need to set the administrator password before logging into the Web Interface for the first time.

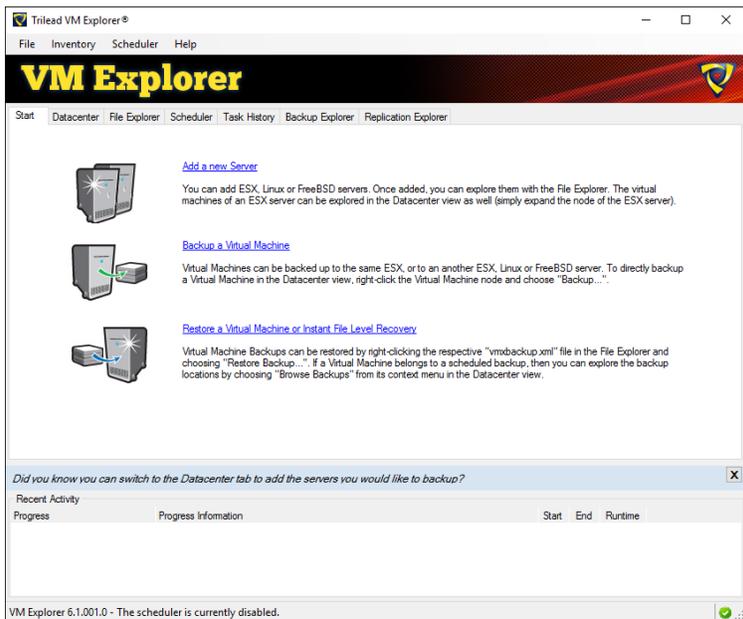


Figure 3: Standalone Interface

If there are problems starting the web client, you can start the standalone version. Click Legacy Interface from the Starter Dialog - "Figure 1: VM Explorer Starter" on the previous page.

Configure the VM Explorer Web Interface

The VM Explorer Web Interface settings can be configured from the dialog shown in the previous section, "Installation". It can also be configured from the standalone desktop interface of VM Explorer.

1. Select **Settings** from the **File** menu.
2. Switch to the **Web Interface** tab.

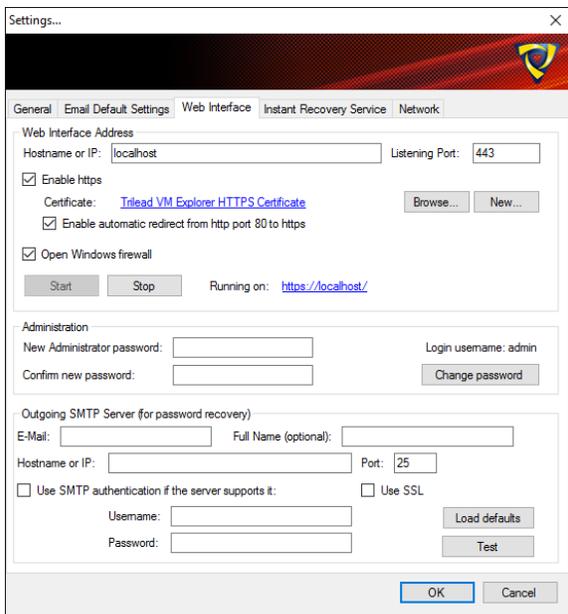


Figure 4: Web Interface Settings

Configure the Web Interface address

After configuring the hostname (IP address) and the port, click **Start**. The **Stop** button will halt the web server configuration, "Figure 4: Web Interface Settings" above.

If the **Enable HTTPS** option is selected, the Web Interface will be accessible using the HTTPS protocol, and the web address will change accordingly. You can enable automatic redirect from the HTTP port 80 by checking the corresponding option.

A self-signed HTTPS certificate for VM Explorer is automatically installed on the local computer in the Personal store.

If you click **New**, you can generate and install a new VM Explorer HTTPS certificate, after a confirmation dialog.

NOTE The browser might display a warning message when opening the HTTPS link, if the HTTPS certificate is signed and not issued by a trusted certificate authority. To select a user trusted certificate, click **Browse**. This option allows you to view and choose a valid certificates.

Only certificates installed on the local computer and in the following folders can be used:

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

The Friendly Name (or the Issuer By name if the first is not available) of the current HTTPS certificate is displayed in the **Certificate** field. Otherwise, VM Explorer will display, "Certificate Not Found."

If you click on the validate certificate text, an information dialog will appear.

The Web interface can also be configured if the Web server has to start automatically after a reboot, and if Windows Firewall is automatically opened.

If all settings are correctly configured, the link to the Web interface appears. Now you can use your browser to access VM Explorer. Insert the IP address manually or click the link that appears on **Running on:**.

VM Explorer Web Interface is tested to work with the latest version of the following browsers:



Figure 5: Supported web browsers

Configure the administrator password

In the Administration section, a new administrator password can be set.

1. Enter and confirm the new password.
2. Click **Change password**. The administrator login name is **admin**.

NOTE You need to set the administrator password before entering the Web Interface for the first time.

Configure the outgoing SMTP server

The outgoing SMTP server is used to send emails to the users of the Web Interface. For example, the password recovery system uses the email to send the new password.

How to configure the outgoing SMTP server

1. If the **Email Default Settings** tab and the Web Interface are already configured, they can be copied in this section by clicking **Load Defaults**.
2. Click **Test** to verify the settings are correctly configured.

Configure TCP ports

VM Explorer uses different TCP ports to communicate between VM Explorer and hosts or between hosts.

- **For ESXi Servers:**

For ESXi editions, TCP port 443 (HTTPS) is required.

If **Use VM Explorer Agent on ESXi** is enabled, ports 22 (SSH), 443 (HTTPS), 62000-65000 are required.

To use VDDK, port 902 is required.

- **For ESX Servers:**

For ESX servers 22 (SSH), 443 (HTTPS) and TCP ports 2500-3000 are required.

To use VDDK, port 902 is required.

To verify the ESX firewall you can run the following command:

```
esxcfg-firewall -q
```

To manually modify your firewall, run the following command:

```
esxcfg-firewall -o 2500:3000,tcp,in,VMX-Explorer
esxcfg-firewall -o 2500:3000,tcp,out,VMX-Explorer
```

If you are copying from/to ESXi (using the agent) /Linux/FreeBSD, you also have to open the following ports on your ESX server:

```
esxcfg-firewall -o 62000:65000,tcp,in,VMX-Explorer
esxcfg-firewall -o 62000:65000,tcp,out,VMX-Explorer
```

- **For vCenter:**

Port 443 (HTTPS) is required.

- **For Hyper-V servers:**

For Hyper-V servers 9000, 9001, 62000-65000 are required

- **For Linux and FreeBSD servers:**

For Linux and FreeBSD servers, the port 22 (SSH), 2500-3000 and 62000-65000 are required.

Chapter 4: VM Explorer Web Interface overview

Web Interface access

The link to access the Web Interface is configured in VM Explorer as described in the previous section (**Start >All Programs >HP Enterprise >HPE VM Explorer**). When connecting to this link, the login mask is shown. Here, you can insert login credentials and click **Login** to access the Web Interface. The administrator login name is **admin** and the password has to be previously configured in the Web Interface settings. If the login credentials are correct, the user can access the VM Explorer Web Interface.

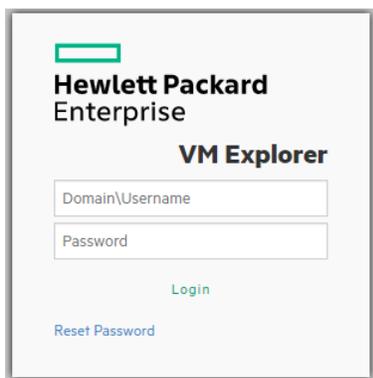


Figure 6: Web login field

If you have not yet configured the language before the login mask, the **Language Choice** screen will appear. You can localize the Web Interface with your preferred language.

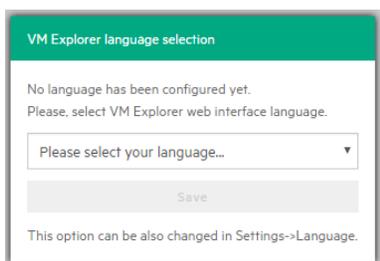


Figure 7: Language selection for the first time access

Web Interface menu view

In the Web Interface, you will have a menu at the top of the page, where you will be able to select the following main views:

- **Datacenter**

- **Tasks**
 - Scheduler Tasks
 - Task History
- **Management**
 - Backup Explorer
 - Replication Explorer
 - Instant Recovery Service
 - File Explorer
- **Storage System**
 - SAN Infrastructure
 - Tape Infrastructure
- **User Menu**
 - User Options
 - Settings
 - Manuals
 - About

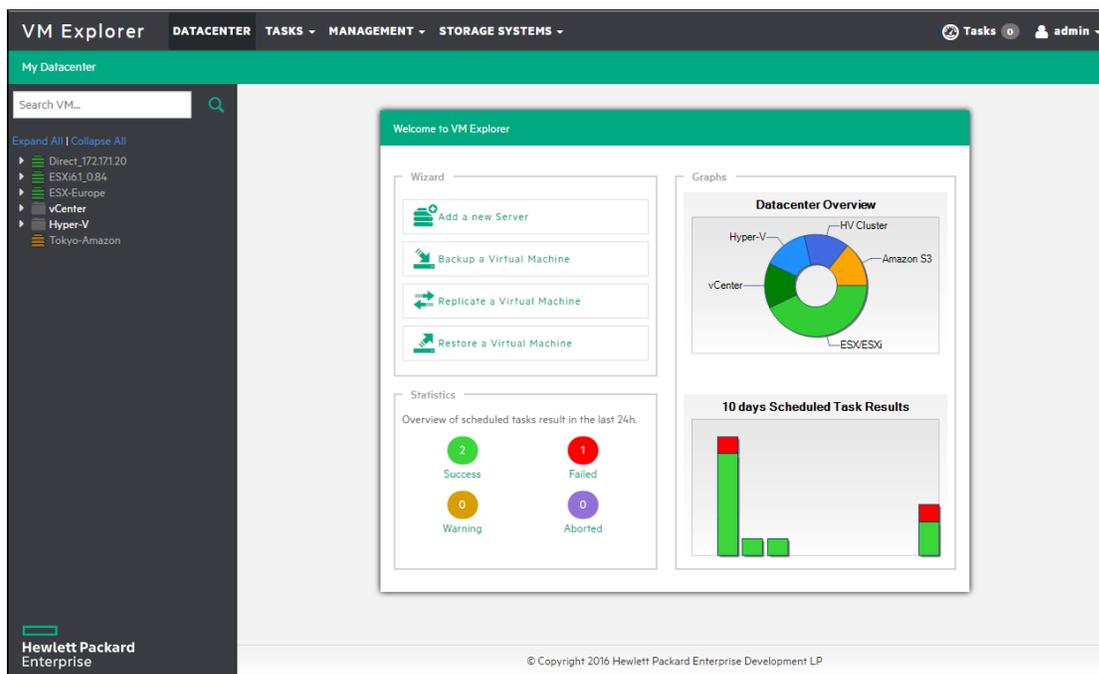
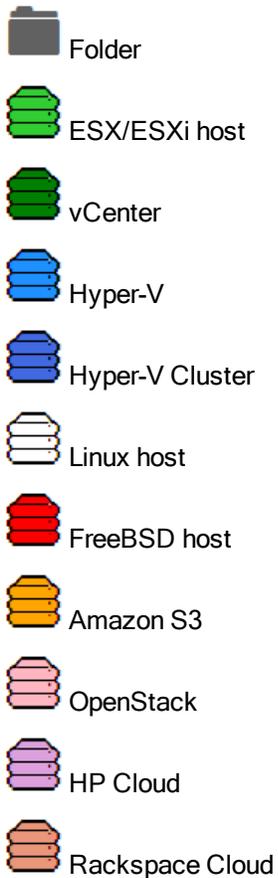


Figure 8: Web available menu

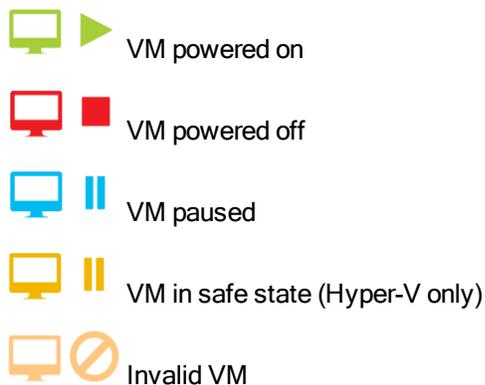
Chapter 5: Add servers to the VM Explorer

VM Explorer allows you to add various types of servers to the Datacenter, from hypervisors to public or private clouds.

As well as select a name for the server to recognize the various entries, the icon in the Datacenter allows you to recognize the type of server. The following is a representation of the various possibilities:



As for the VM included in the Hypervisor, various icons permit you to recognize the state of the VM:





Unrecognized VM

Add Hypervisor servers

Before you can start using VM Explorer, you need to add your Hypervisor hosts. There two ways you can do this.

1. Click the **Add a New Server** link on the intro page of VM Explorer.
2. Click **Add Server**.

OR

1. Right-click **My DataCenter**.
2. Click **Add Server**.

Both ways will start the **Add Server Wizard**. In the first dialog box, you will need to specify the type of server you want to add. For this example, we will choose **ESX 3.x, ESXi 3/4/5**.

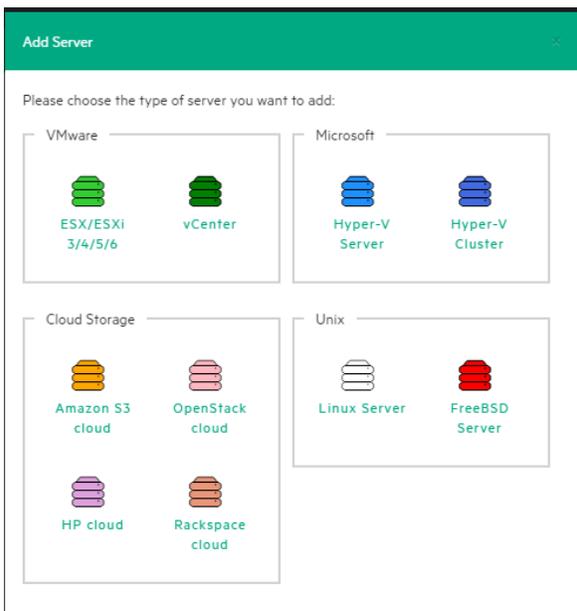


Figure 9: Add server dialog

If you want to organize your hosts in folders, right-click on a host from **My Datacenter** panel and click **Add New Folder**. The dialog box asks you to specify your folder.

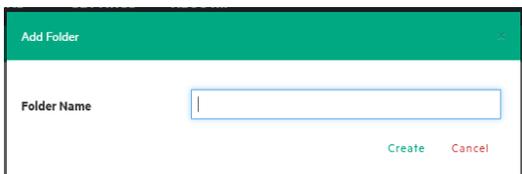


Figure 10: Organize servers in folder

Add an ESX/ESXi server

Name and location

You need to choose the location of the server in the VM Explorer Datacenter. This is only to order the server in different folders in the VM Explorer Datacenter and will not influence backups or replication in any way.

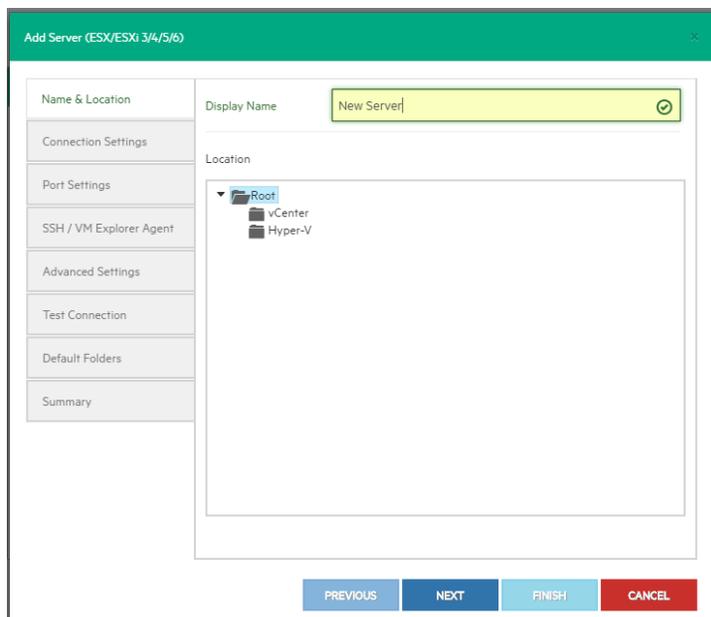


Figure 11: Add Server - Name & Location

Connection settings (ESX / ESXi host only)

At this point, the wizard requires the hostname (IP address), the username and the password. If you choose to connect to the host using a different user than root, insert the root password in **Root Password**; if you intend to use the SSH console to elevate privileges.

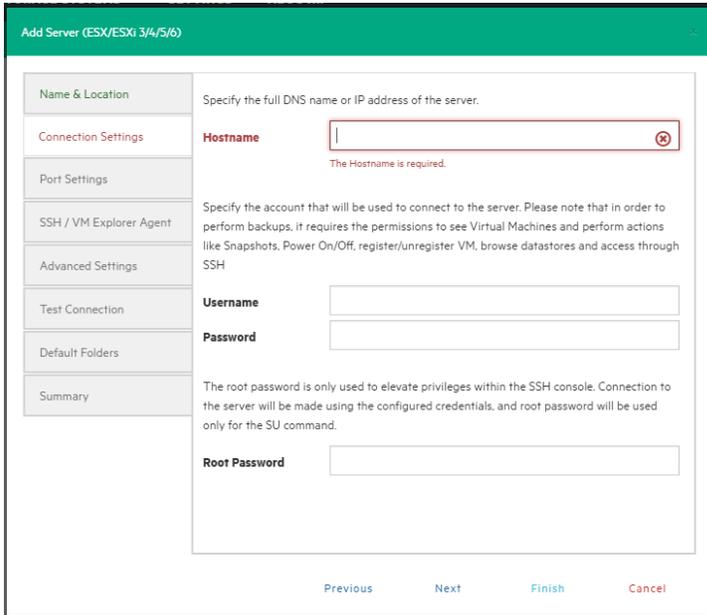


Figure 12: Add Server - Connection Settings

Port settings (ESX/ESXi host only)

This page allows you to configure a different port for SSH (default is 22) and a different port for the ESX Management Console (HTTPS, default is 443).

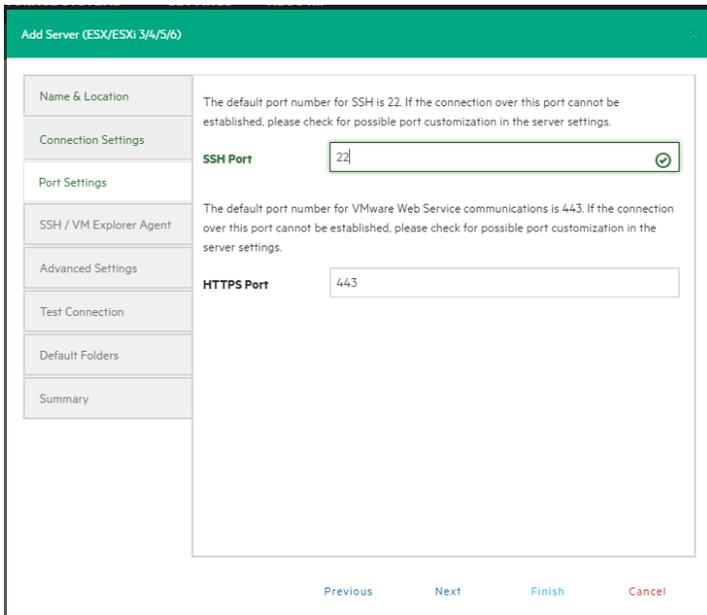


Figure 13: Add Server - Port Settings

SSH/VM Explorer Agent (ESX/ESXi host only)

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

For an ESXi 4.1 or higher, there is the option to enable SSH and use the VM Explorer agent automatically. Select the corresponding check.

Use SSH (SCP) to transfer files if this is an ESX 3i/4i/5i host

By activating this option, SSH will be enabled to transfer files from your ESXi hosts. SSH is not faster than the normal ESXi API, but it is more stable for uploading files to your ESXi server. Please click the link to see how you can change your ESXi server into tech mode to enable SSH.

Try to use the VM Explorer agent on ESXi

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

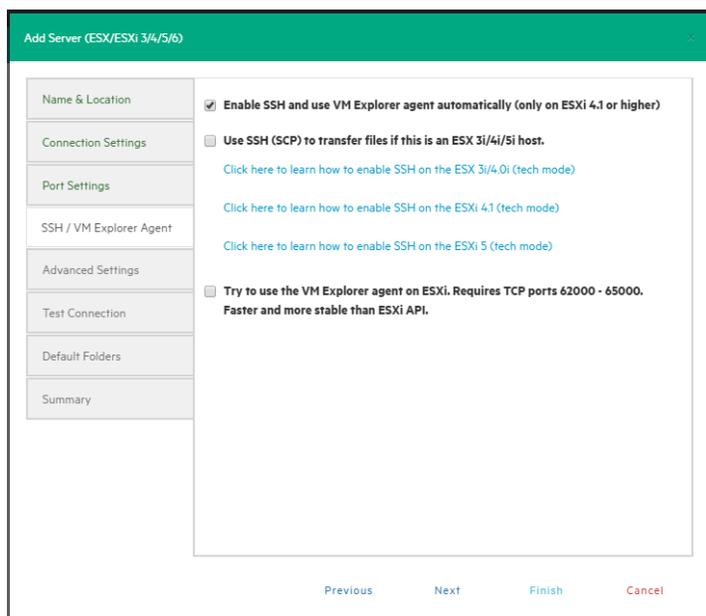


Figure 14: Add Server - SSH / VM Explorer Agent

Advanced settings (ESX/ESXi host only)

The following three options are available in this tab:

Do not dynamically open the firewall

This only refers to Linux, ESX or ESXi ≥ 5.0 servers only. VM Explorer will configure the firewall automatically for your Linux, ESX or ESXi ≥ 5.0 server. You can open the ports yourself (see "FAQ and support" on page 109) and disable this option. In this case, the 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 allows 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 sometimes uses more system resources.

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

Use the VD Service

If you enable this feature, you will have the option to create differential backups.

NOTE ESX or ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 is required. This feature also does not work on ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 free edition.

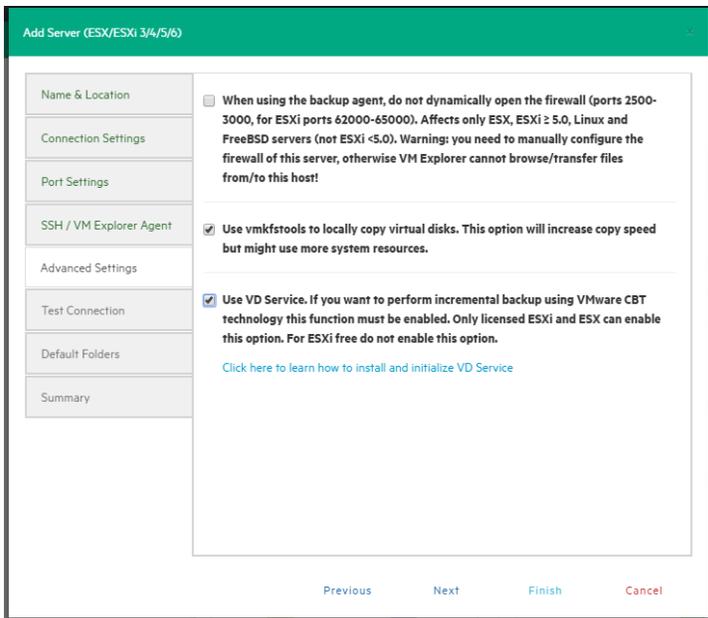


Figure 15: Add Server - Advanced Settings

Test connection

This tab automatically starts the Test Connection functionality and reports if it succeeded or if an error occurred. If it successful, you can now proceed to the last few options.

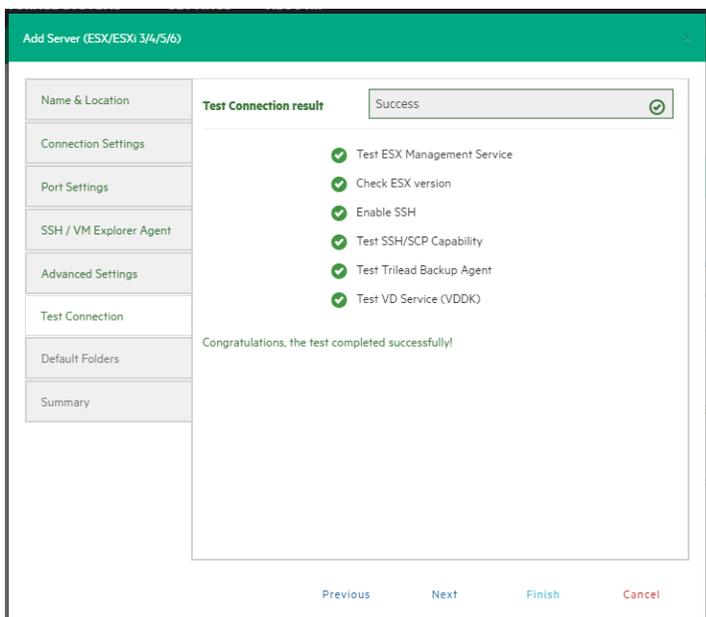


Figure 16: Add server - test connection

Default folders

For the first field, you can configure a default directory which will appear on the backup/replication setup dialog when the current server is selected as a target server. The placeholders {DATETIME}, {DATE} and {VM} can be used in the path. Placeholders will be replaced with the following values:

- {DATETIME}: the current date/time, will write the date using the following format:
YYYY-MM-DD-hhmmss
- {DATE}: the current date, will write the date using the following format:
YYYY-MM-DD
- {VM}: the display name of the virtual machine

In the last field, you can configure a default directory, which is used as the start directory when VM Explorer File Explorer is selected. In File Explorer, when you start to navigate a specific server or when you click Home, you will be redirected to the configured directory.

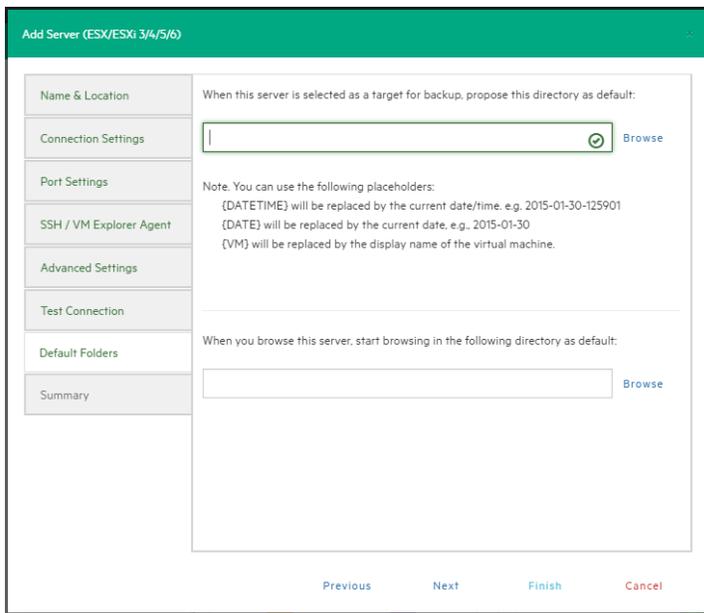


Figure 17: Add server - default folders

Summary

At this point, you have succeeded in configuring your host. A brief summary is visible so you can check the parameters selected. Click **Save** and it will be automatically added to your Datacenter.

Add a Hyper-V server

This section shows the differences from adding an ESX/ESXi host when adding a Hyper-V host in the **Add Server Wizard**. For the tabs not explained, please check the previous sections.

1. **Connection Settings (Hyper-V only):** This page allows you to set the credentials necessary for connecting to the Hyper-V host. The option **Start Hyper-V Agent Using Configured Credentials** starts the agent with the credentials inserted and not as your local system.

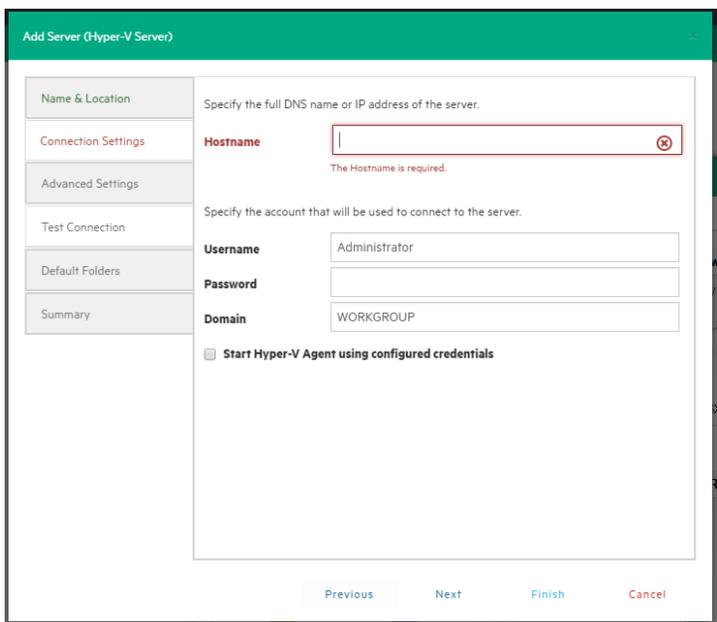


Figure 19: Add server (Hyper-V) - Connection settings

- 2. Advance Settings (Hyper-V only): This option allows you to directly write to the disk without being buffered and is only intended for users who encounter this issue: <http://support.microsoft.com/kb/976618>.

NOTE This option could slow down the backup process if target is set to Local Computer.

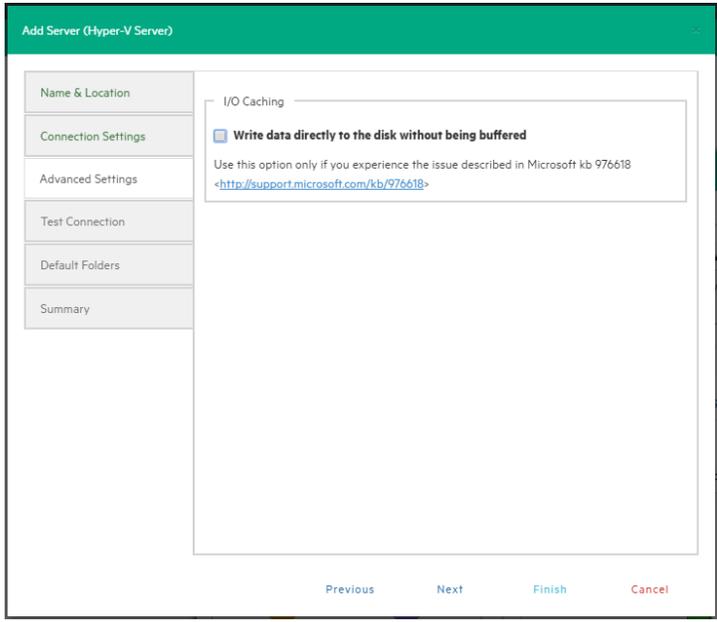


Figure 20: Add server (Hyper-V) - Advanced settings

- 3. Test Connection (Hyper-V host only): The test connection will deploy the *Trilead Agent Manager* to your server. If there are any problems, the **Agent Manager** appears. Open the Hyper-V Agent Manager window where you can manually deploy it. You can also select the option to remove the Agent Manager from the server.

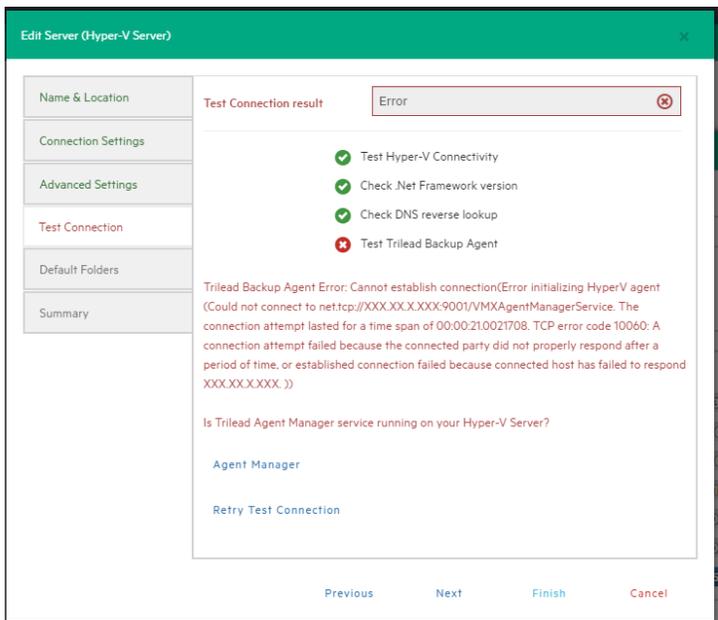


Figure 21: Add server (Hyper-V) - Test connection

This page can also be accessed when selecting the server in the Datacenter of VM Explorer.

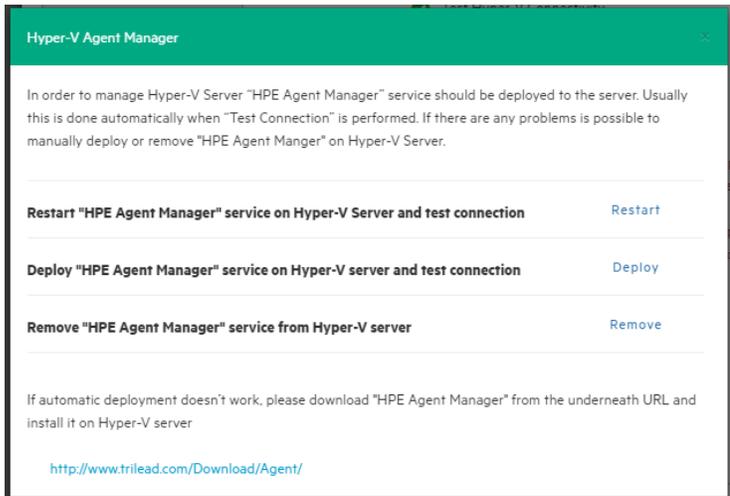


Figure 22: Add Server (Hyper-V) - Hyper-V Agent Manager

Add vCenter

This section will show the differences from adding an ESX/ESXi host when adding a vCenter host in the Add Server Wizard. For the tabs not explained, please check the previous sections.

1. **Connection Settings (vCenter only):** At this point, the wizard requires the hostname (IP address), the username and the password.

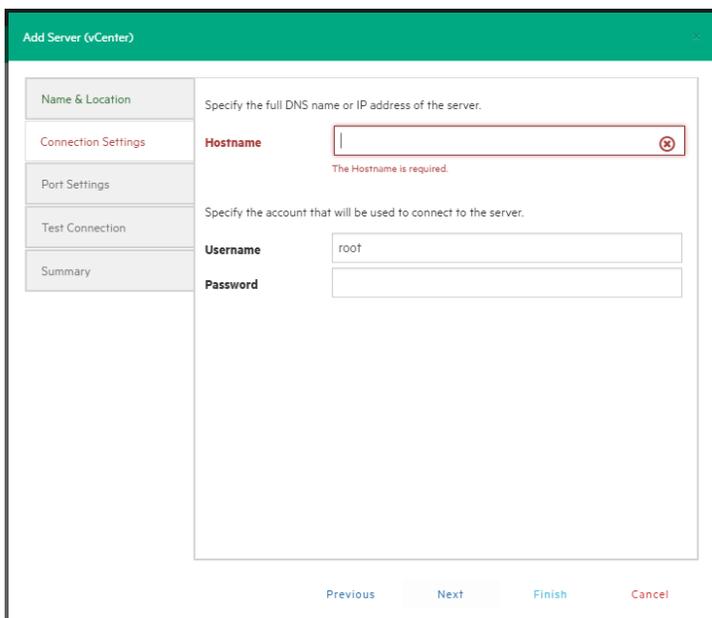


Figure 23: Add server (vCenter) - Connection settings

- 2. **Port Settings (vCenter host only):** In the vCenter configuration dialog, you can also configure a different port for the ESX Management Console (HTTPS, default is 443).

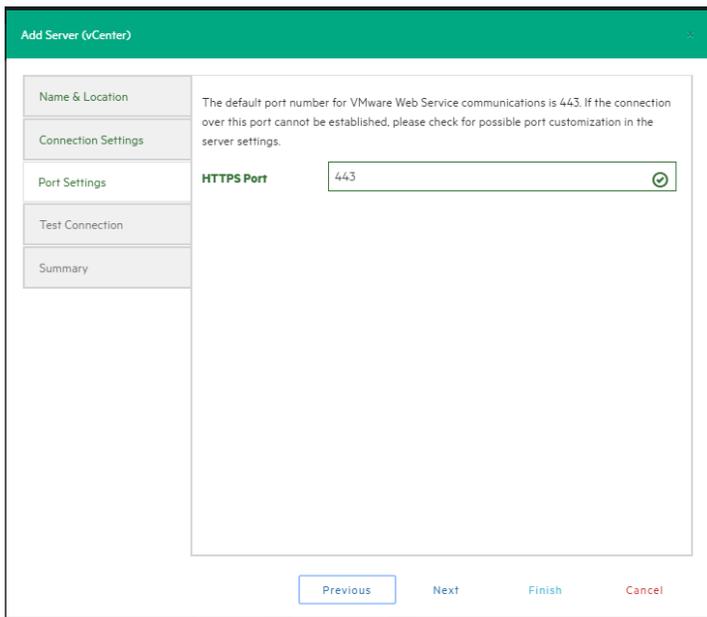


Figure 24: Add server (vCenter) - Port settings

After your vCenter has been added, VM Explorer will show all hosts belonging to your vCenter. To use the hosts, you have to configure every host by right-clicking and selecting **Edit Server**. For configuration details, refer to ["Add an ESX/ESXi server"](#) on page 21.

NOTE: ESXi servers cannot be set to Lockdown mode because of permission issues. If ESXi servers are already in Lockdown mode, please remove the lockdown mode.

To remove the lockdown mode:

1. Open the Direct Console User Interface (DCIU) on the host.
2. Press F2 for Initial Setup.
3. Select **Configure Lockdown Mode** and disable lockdown mode.

Add Amazon S3

This section will show the differences from adding an ESX/ESXi host when adding an Amazon S3 Cloud host in the Add Server Wizard. For the tabs not explained, please refer to the previous sections.

Connection Settings (Amazon S3 Cloud only): In this section, you can add the credentials needed to connect to the Amazon S3 Cloud and the region you want to work with.

You can select **All Regions** or just one of the regions that Amazon S3 Cloud provides. If you select a specific region, only the buckets contained will be visible.

TIP Choosing a specific region will reduce data latency.

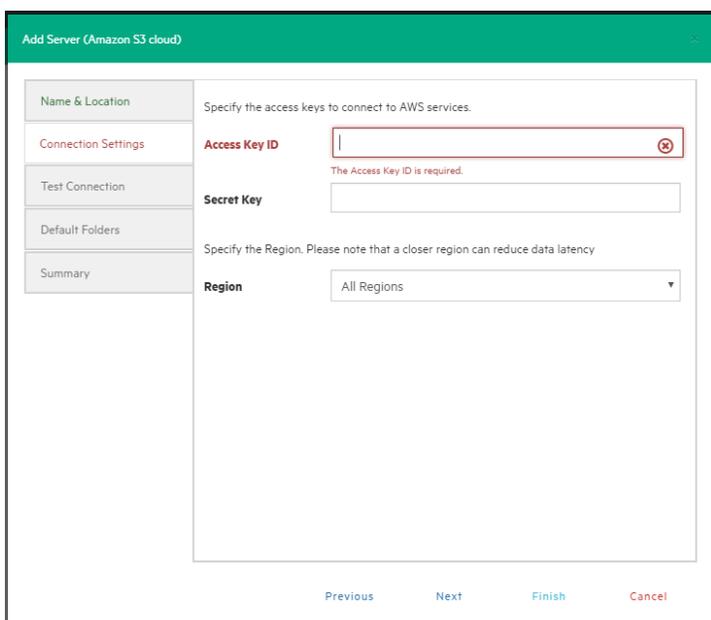


Figure 25: Add server (Amazon S3) - Connection settings

Add OpenStack, HPE and Rackspace Cloud

This section will show the differences from adding an ESX/ESXi host when adding an OpenStack, HPE or Rackspace Cloud host in the Add Server Wizard. For the tabs not explained, please refer to the previous sections.

Connection Settings (Only for OpenStack, HPE and Rackspace Cloud host): In this section, you can add the credentials needed to connect to the cloud selected. You can also select if you want to access to the Tenant Name or the Tenant ID, and specify which one.

NOTE Earlier versions used the term project, instead of tenant.

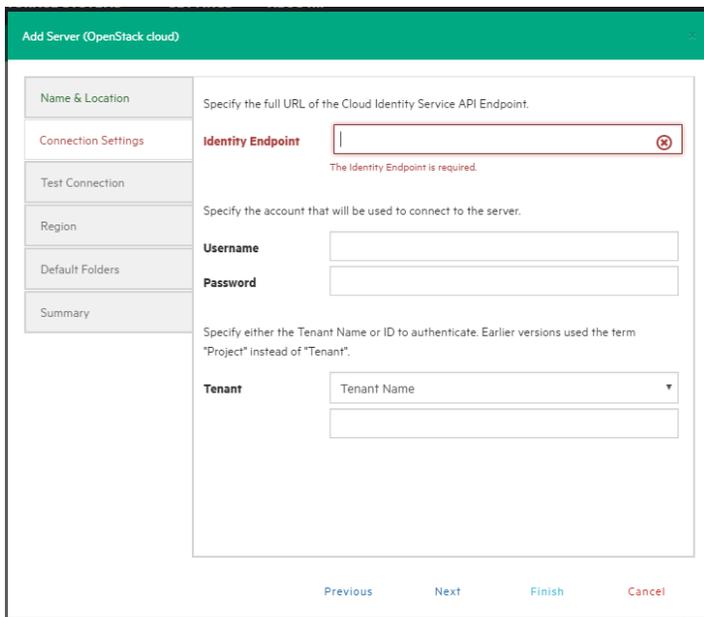


Figure 26: Add server (OpenStack, HPE, Raskspace) - Connection settings

Server information

To get an overview of a server, go to Datacenter and select a server.

Server overview

By selecting the server, you receive general information about the host and its datastores.

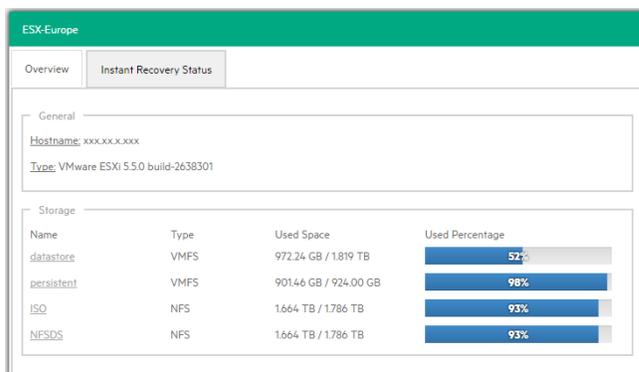


Figure 27: Server - Overview

Instant recovery status

You can also click the **Instant Recovery Status** tab to check the connection status between Hypervisor and the VM Explorer NFS server.

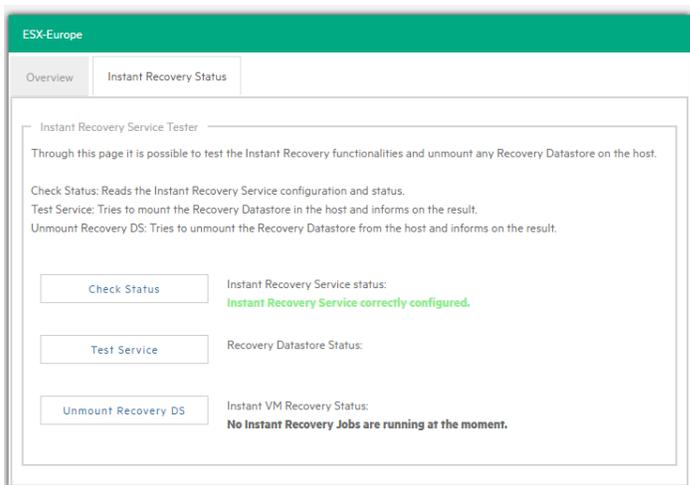


Figure 28: Server - Instant recovery status

Check Status will update the status of the data and give you an overview of the possible and current operation. You can read the information of the datastore registered through the VM Explorer NFS Server and if any backup test is running.

The **Test Service** will mount the VM Explorer NFS datastore (used for automated backup test) to the host and check if a basic communication is possible.

The **Unmount Recovery DS** will execute the unmounts of the VM Explorer NFS datastore. If any backup test is running, this command will fail as the host will refuse it.

Upload Manager

The **Upload Manager** tab is available only for Amazon S3, and displays an overview of the multi-part uploads currently active with the Amazon S3 cloud.

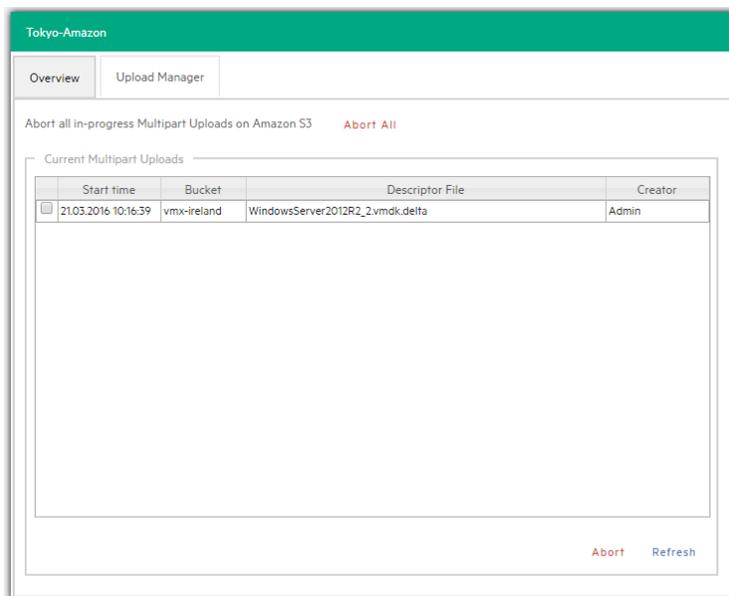


Figure 29: Server - Upload Manager

Abort All stops and deletes all multi-part upload jobs currently running.

The **Current Multipart Uploads** form gives a list of all running, uploaded jobs. If you select one or more of jobs, you can stop them without influencing the other jobs. This allows you to stop a job that may be blocked or malfunctioning.

Refresh is not automatic and must be activated by clicking **Refresh**, even the first time.

Virtual Machine information

By selecting a virtual machine, you will have an overview of the VM.

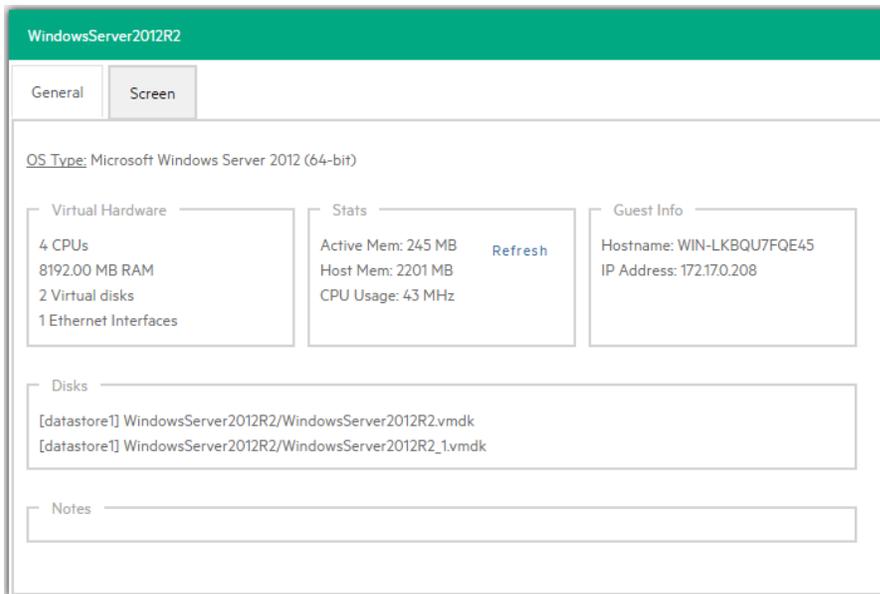


Figure 30: VM general

You also have the possibility to request a screenshot of the VM in the **Screen** tab. Click **Refresh** to stay up-to-date.

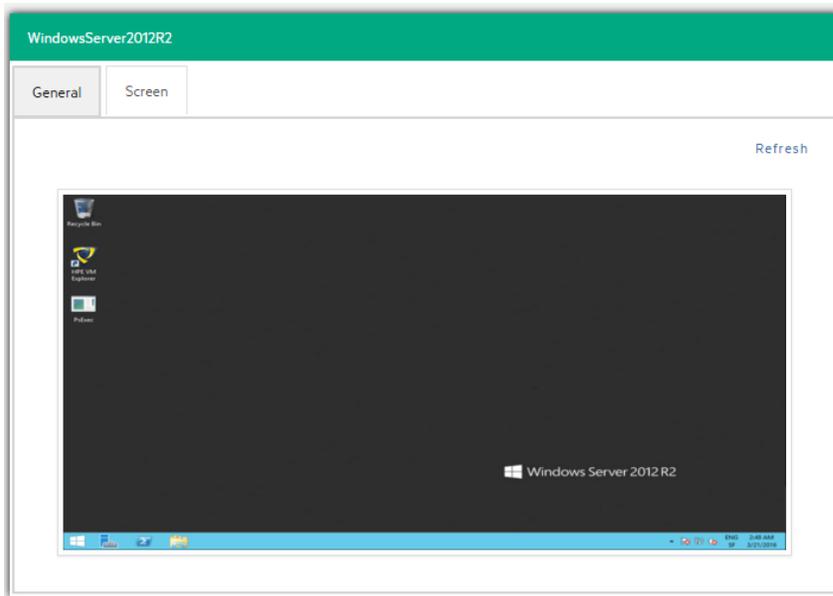


Figure 31: VM screenshot

By right-clicking a VM in the Datacenter tree, a popup menu will allow you to execute VM related actions; such as power on/off, backup/replication, locate VM files or manage the snapshots.

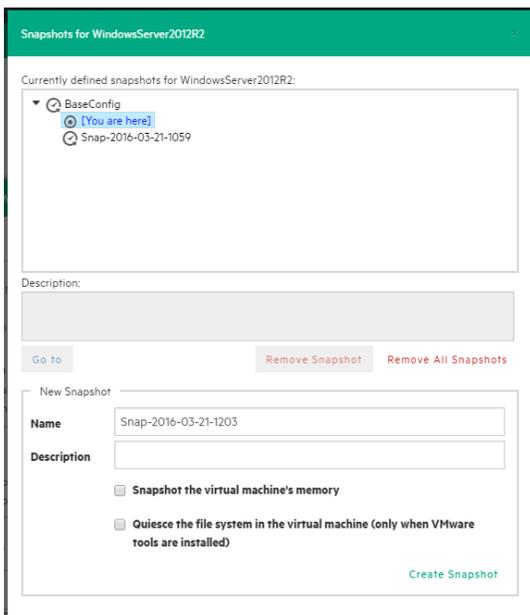


Figure 32: VM Snapshot Manager

When selecting the **Snapshot Manager** option, a new dialog will appear, showing the snapshot tree of the selected VM. You can navigate through the snapshots, delete a specific snapshot or both.

To take a new snapshot, click **Create Snapshot**. You can set the option for quiesce and memory snapshot, name the snapshot and give a brief description.

Chapter 6: Configure the SAN Infrastructure

If your network has an EMC² ScaleIO System installed, you can add a reference to this SAN system in VM Explorer to see the information about your ScaleIO and execute backups with Storage Snapshot. Refer to the "Backup" on page 54 section for more details.

You can find the SAN infrastructure by selecting **Storage System > SAN Infrastructure** at the top of the page.

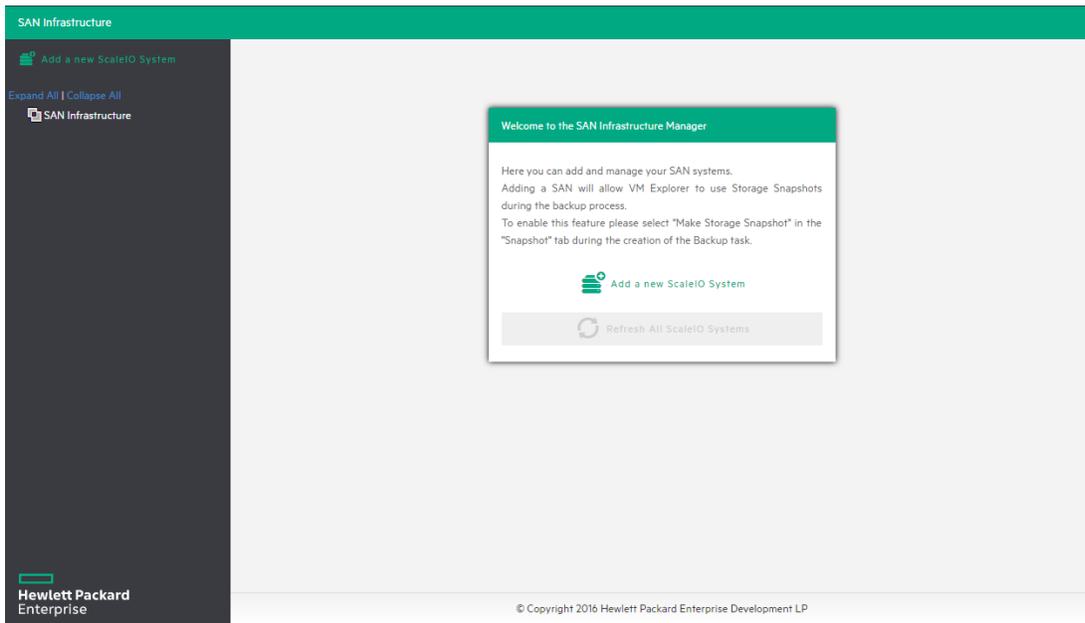


Figure 33: SAN Infrastructure page

There are several ways to add your ScaleIO System. You can either click the **Add a new ScaleIO System** link on the introduction panel of the SAN Infrastructure page, or you can click the button with the same name in the SAN Infrastructure panel. You can also right-click to this panel and select the **Add a new ScaleIO System** in the menu.

If you choose to add a new SAN, a wizard will help you accomplish this operation.

Name and connection settings

1. In the first tab, select the display name that identifies the SAN System in the tree of the SAN Infrastructure page.
It is also necessary to fill connection fields. To do this, you need to know the Gateway host name and the MDM account of your EMC² ScaleIO System.
2. Once you have inserted all the necessary parameters, click **Next** to go to the next step.

Test connection

This tab will automatically start the test about the connectivity and uniqueness of this SAN System. It reports if it succeeded or if an error was encountered. If succeeded, you can now proceed to the next step.

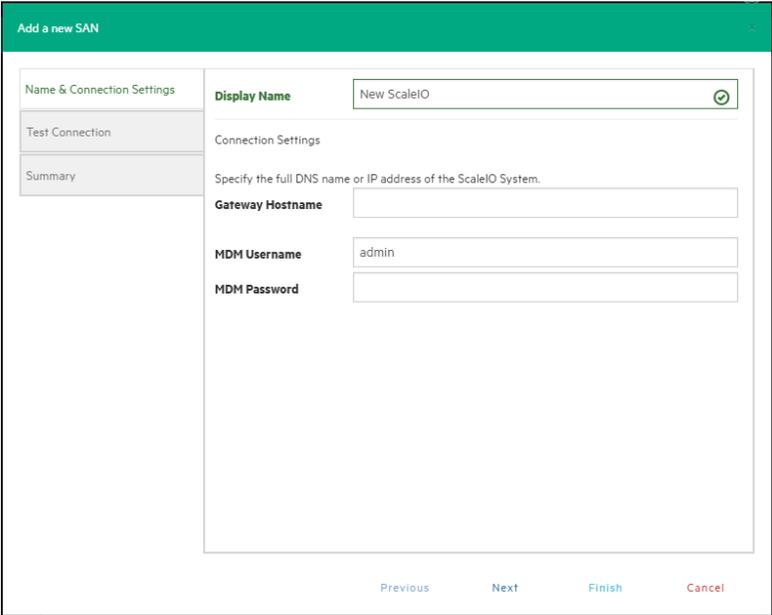


Figure 35: Add San Infrastructure - Test connection

Summary

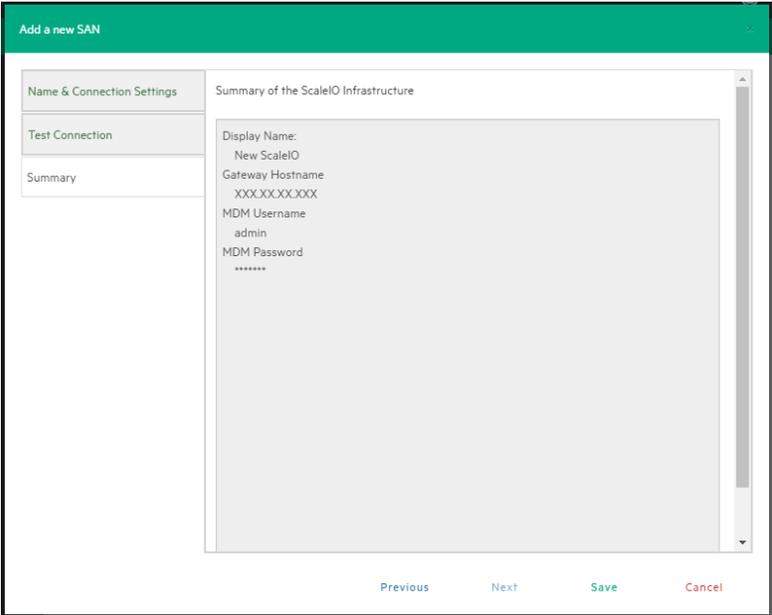


Figure 36: Add San Infrastructure - Summary

At this point, you have succeeded in configuring your SAN System. A brief summary is available so you can check the parameters selected. Click **Save** and it will be automatically added to your SAN Infrastructure tree.

NOTE: The settings can be changed any time by right-clicking your SAN System host entry in the SAN Infrastructure tree and choosing the **Edit ScaleIO System** menu.

Chapter 7: Configure the Tape Infrastructure

VM Explorer can help you to manage your Tape Infrastructures and save data. Once tape devices and media pools are set up, you can schedule the copy backups to tape, as well as restore them.

VM Explorer has been tested and completely supports HPE StoreEver 1/8 G2 Tape Autoloader and Dell PowerVault 124T autoloaders. It can also support other tape libraries/autoloaders/media changer devices with a barcode reader and the standard API.

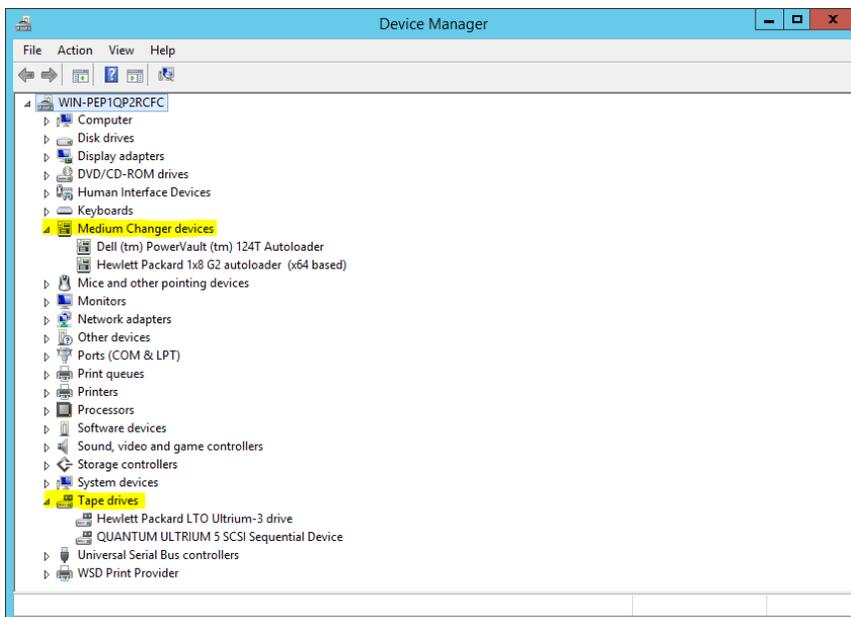


Figure 37: Windows Device Manager

VM Explorer automatically recognizes the tape devices visible the Windows machine on which it is installed. On Windows Device Manager, tape libraries are under the Medium Changer Devices group and tape drives are under the Tape Drives group.

The Tape infrastructure page can be found from the menu (**Storage Systems >Tape Infrastructure**). Click **Rescan Infrastructure** to rescan your Tape Infrastructure.

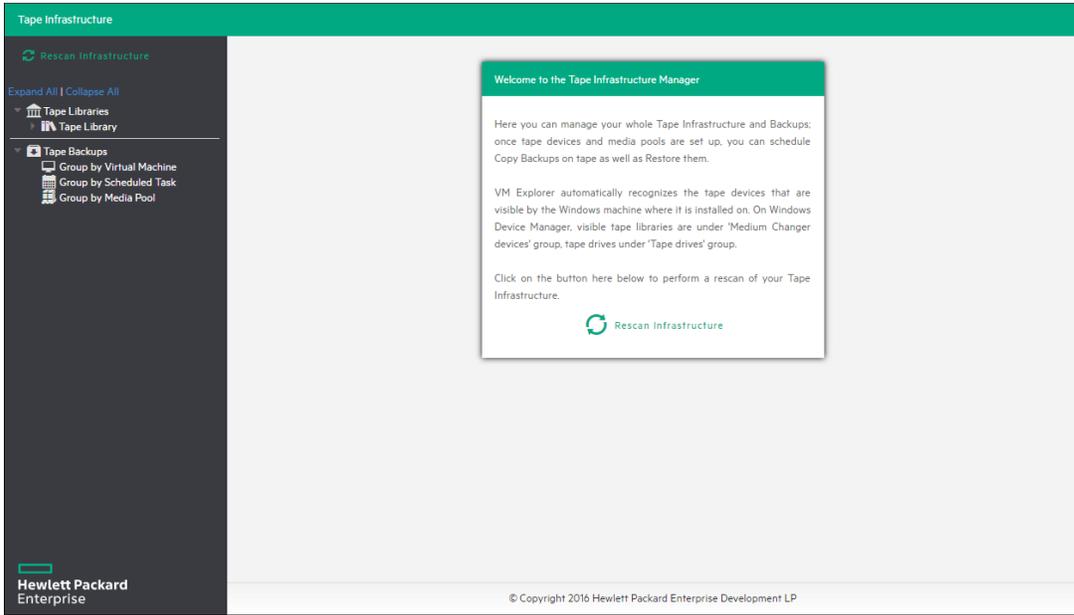


Figure 38: Tape Infrastructure page

Tape libraries

As you can see in the **"Figure 39: Tape Library overview"** below, in the left navigation menu, you can view the detected devices composing your infrastructure. The tape library is divided:

-  Drives
-  Media
-  Media Pools

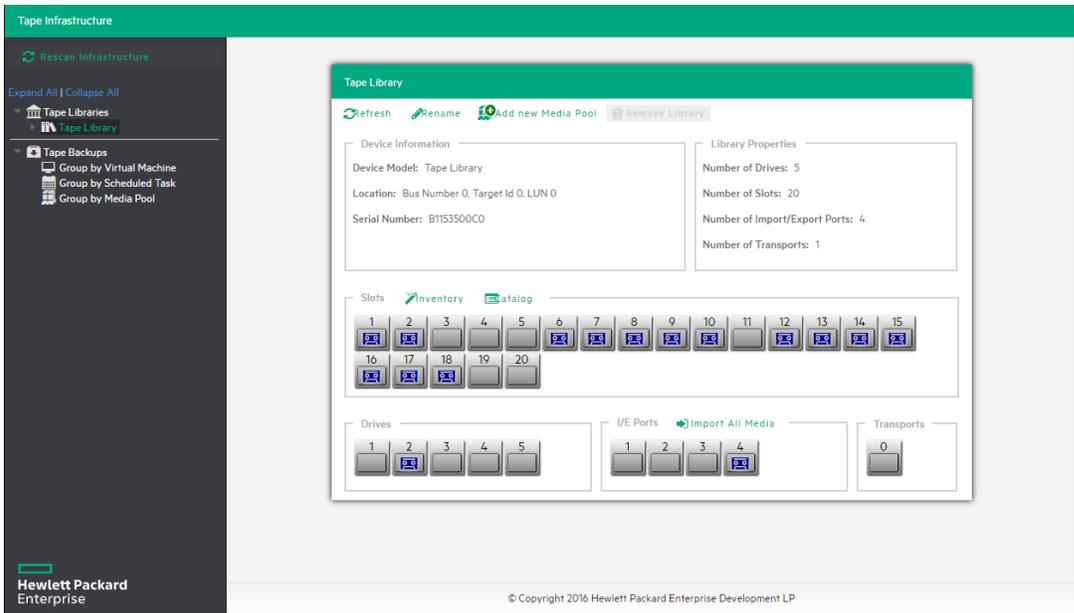


Figure 39: Tape Library overview

Drivers

A drive is the physical part of a tape library that permits you to read and write data to/from a tape media.

If you click on this item, you can see some information about the drive and enable/disable it.

If you enable/disable a drive, VM Explorer will include/exclude it in the pool of drives in the backup procedures.

Media

The media item shows all the tape media and cartridges the tape library recognizes.

-  Online media: list of media currently and physically present in the tape library.
-  Offline media: list of known media present in the tape library, but not inserted.

The following is a list of Media Operations:

- Move to media pool: You can include a tape in a media pool. You can move the media in the free or in all of your custom media pools. For more information, refer to "[Media Pools](#)" in this section.
- Inventory: Prepare a new media used by VM Explorer or check if media is already recognized.
- Catalog: Inventory tape media and scan all the contents for previously written backups.
- Import: If media is in an I/E port, you can import it. VM Explorer will move the media in the first available empty slot.
- Export: If you want to remove media from the library, you can export it to move the tape media to an I/E port.
- Eject: Allows you to move media from the drive to the first available empty slot.
- Erase: Deletes all the data written on the tape. You can choose to make a short erase (fast) or a long erase (slow).

CAUTION: All the backups on this media tape will be deleted from the catalog.

- Mark as Free: If you mark the media as free, you tell VM Explorer that this media is considered ready to be used and its content can be overwritten.

CAUTION: All the backups on this tape media will be deleted from the catalog. If you use the **Catalog** action before the media has been reused, you can recover the existing backups.

- Remove from the Catalog: If your media is offline you can remove it from the catalog.

CAUTION: 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 the media has been reused, to recover the existing backups.

- Details: Allows you to see information about the media and which VM Explorer backups are saved.

Media Pools

A media pool is a container of media that helps to organize the media included in a tape infrastructure. VM Explorer defines three types of system media pools that cannot be modified nor used as target for

your backups:

 **Free:** All media is marked as free and usable from the system. Media can be moved to populate other custom Media Pools.

 **Unrecognized:** Composed by unrecognized tape media which content is still unknown. You can perform the Inventory media operation, to make them usable in the Free media pool, or the Catalog operation, in case you want to recover existing VM Explorer backups.

 **Imported:** Composed by tape media containing existing backups that have been recognized during a Catalog operation. For example, media previously removed from catalog or previously used by another Tape Library.

NOTE In order to perform backups on tape, you can create custom media pools for that purpose.

 **Custom:** Users can define the list of media and the specific retention rules for the backups.

Create the Custom Media Pool

You can create a new custom media pool. Right-click on **Media Pools** and select **Add Media Pool**. This will open the Add Media Pool wizard.

Name

You must give a new custom media pool a name and you can insert a short description for parts of the pool. Click **Next** to show the next tab.

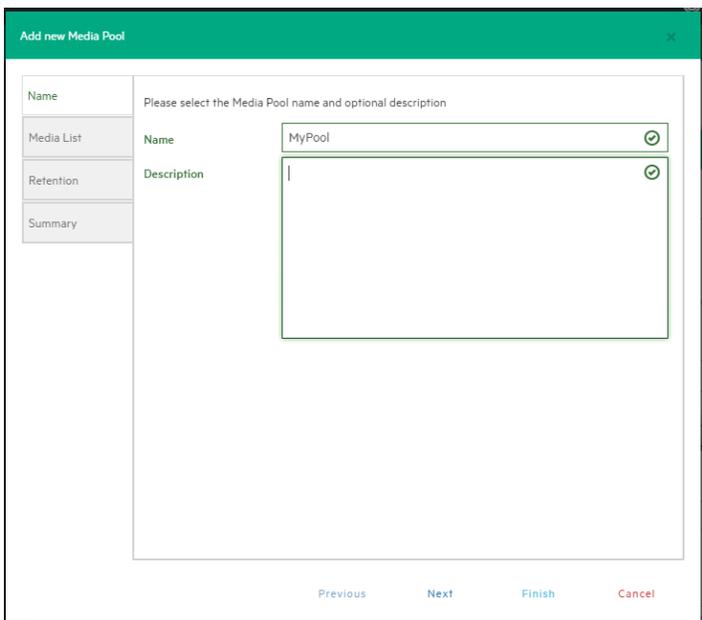


Figure 40: Add Media Pool - Name

The **Media List** tab permits to add free media to this pool. Click **Add** to select the free tape media from the free media pool you want include in this Media Pool. If you want to remove media from the pool, select the ones you want to remove and click **Remove**. They will be moved to the free media pool.

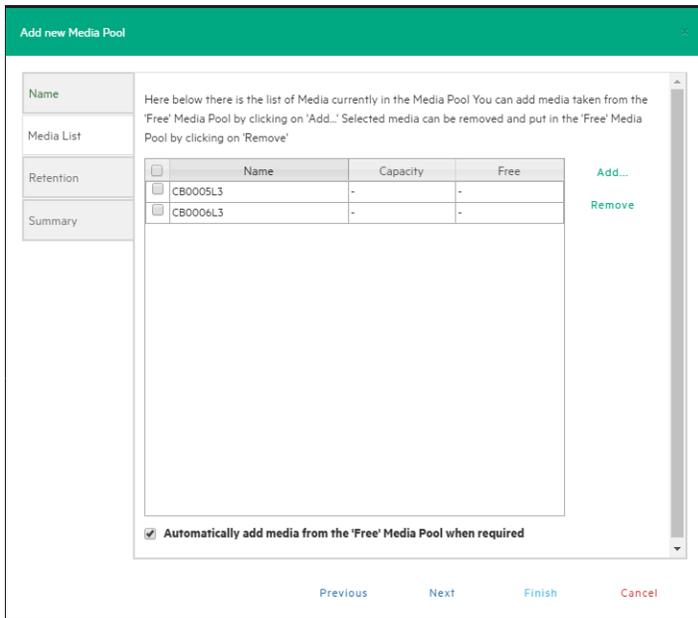


Figure 41: Add Media Pool - Media List

If you set the checkbox, **Automatically add media from the 'Free' Media Pool when required**, and if a backup needs an amount of space that cannot be granted by the media already present in this pool, VM Explorer will include the first free tape from the Free media pool. Click **Next**.

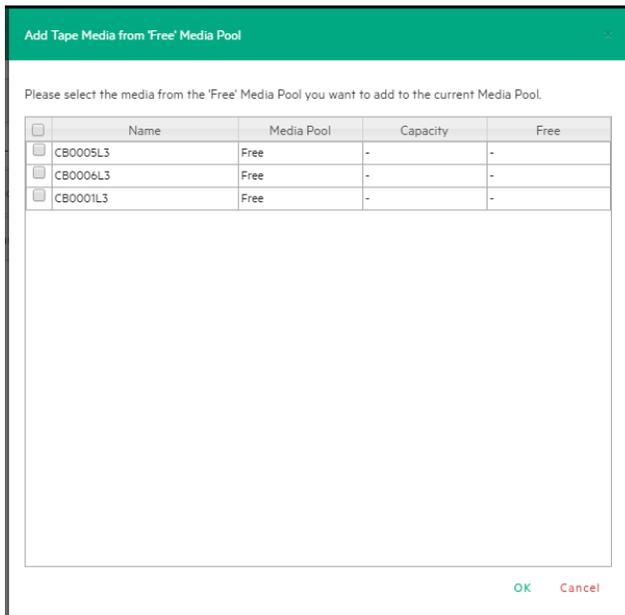


Figure 42: Add Media Pool - Free pool

The **Retention** tab permits to set some rules useful to know how to use and/or reuse the media.

- **Media Reutilization:** You can choose if you want to reuse the same media in subsequent scheduled backup sessions or if you want to use a different media every session.
- **Data Retention policy:** You can select the desired media overwrite policy - cyclic overwrite, overwrite if older than specific number of days, or never overwrite.

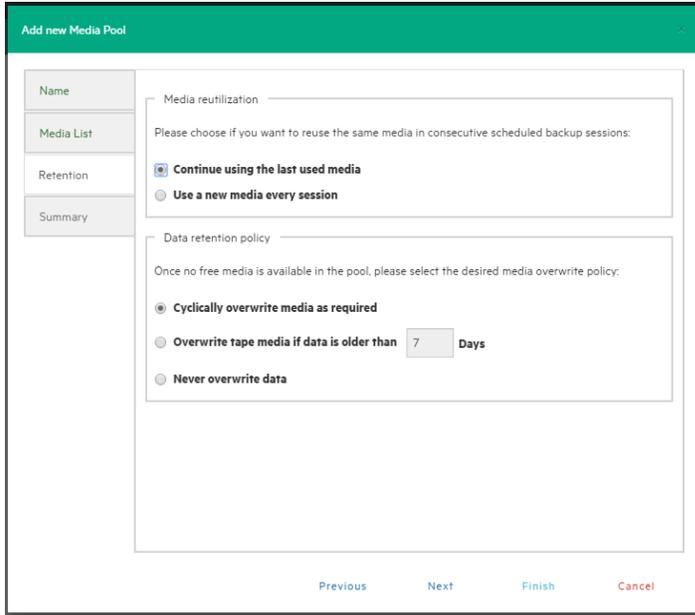


Figure 43: Add Media Pool - Retention

Click Next.

At this point, you have succeeded in configuring your Media Pool. A brief summary is available so that you can check the parameters selected. Click **Save** and it will be automatically added to your Tape Infrastructure tree.

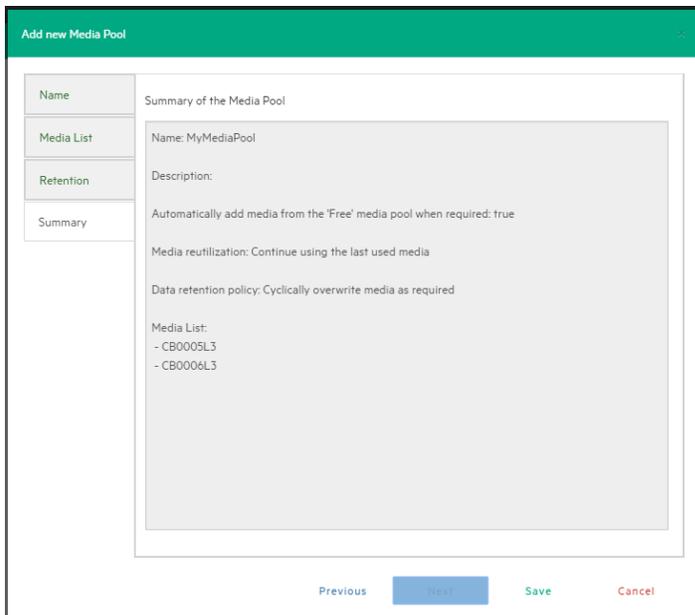


Figure 44: Add Media Pool - Summary

The settings you have selected can be changed at any time if you right-click your Media Pool host entry in the Tape Infrastructure tree and click the **Edit** menu.

Tape backups

You can find all your backups saved with VM Explorer in your Tape Infrastructures. You can show them grouping by:

 Virtual Machine

 Scheduled Task

 Media Pool

If you right-click on each backup, you can show some details or start a procedure to restore the copy of this backup by clicking, **Restore backup from Media**. This will open the Tape Restore wizard.

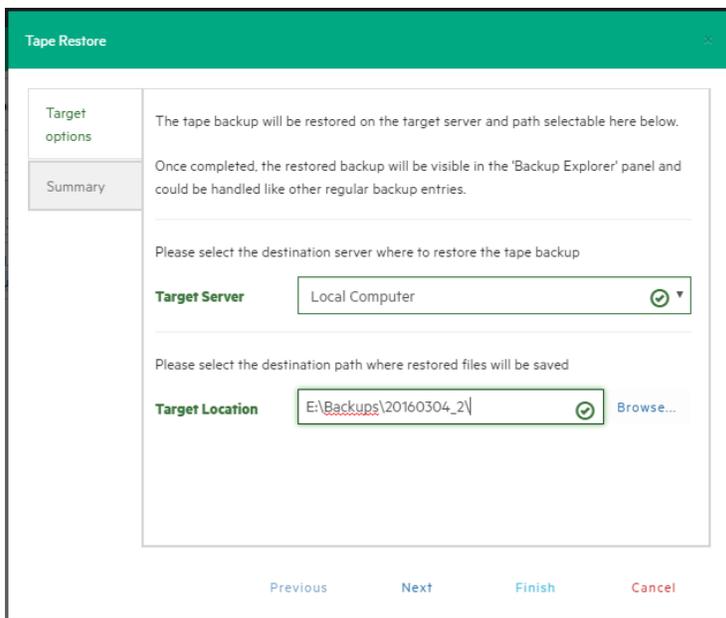


Figure 45: Tape Restore - Target options

Chapter 8: Configure Network Drives

As VM Explorer service runs within a different account than the logged in account, VM Explorer has no direct access to the shares mounted to your account. Therefore, network drives (used as a backup target) must be configured within VM Explorer to let the service mount them automatically.

To configure your Network Drives:

1. Go to **Settings**.
2. Click **Network Drives** from the **User** menu.
3. Open the **Network Drives** page.

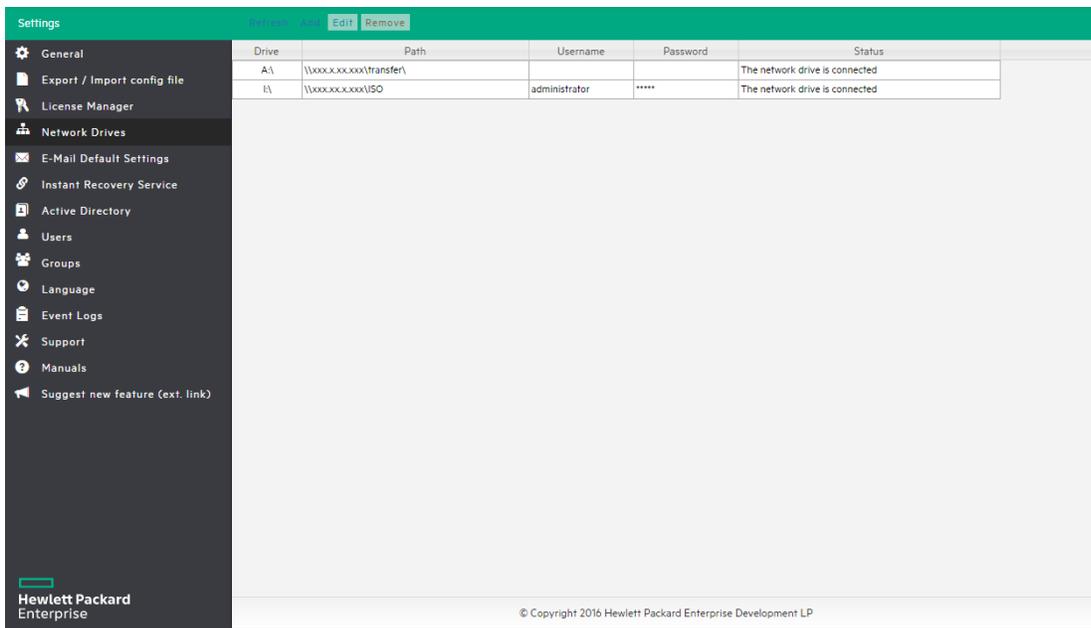


Figure 46: Network Drives page

Location

Select a drive letter for the network drive. If you have already mapped some network drives with letters, those letters will be not available.

Provide the correct network drive path.

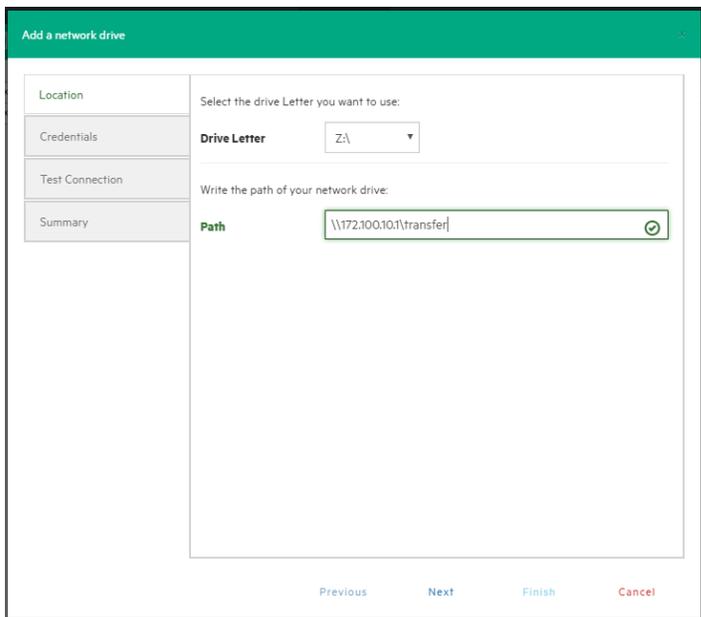


Figure 47: Network Drive - Location

Credential

If the network drive has user credentials, please provide. If not, check **Do not use credentials**.

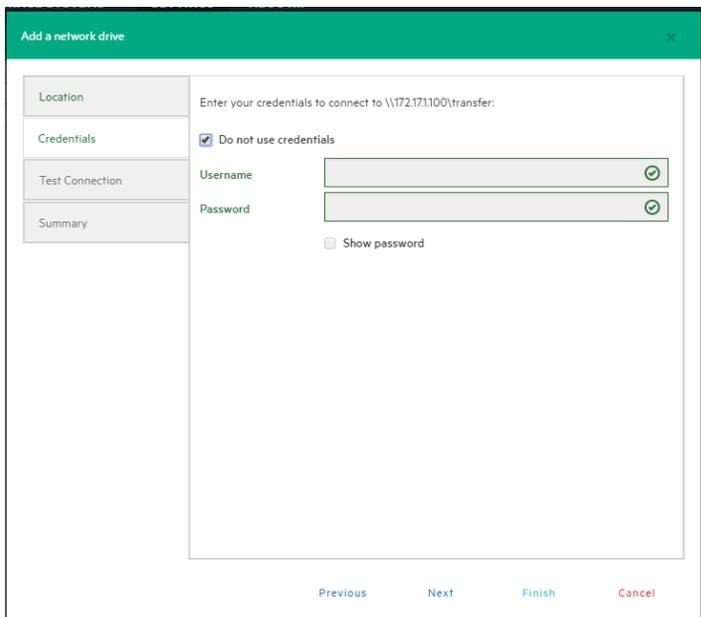


Figure 48: Network Drive - Credential

Test connection

A test connection with the network drive is made with your parameters, given in the previous tabs.

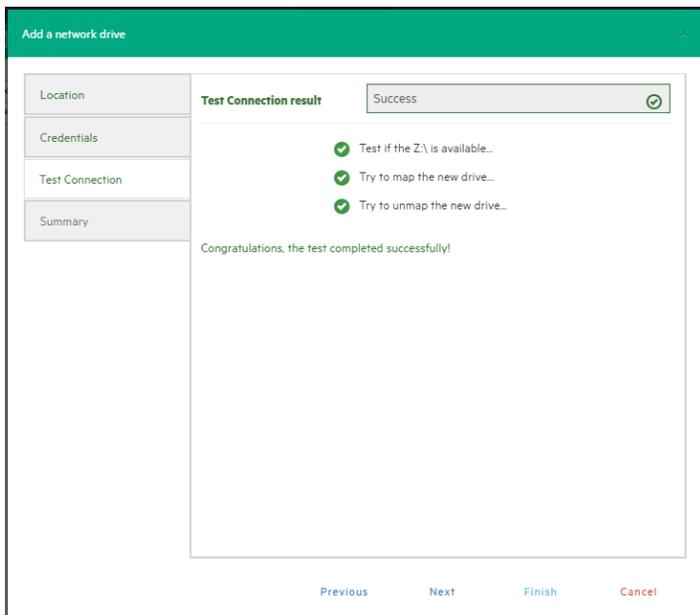


Figure 49: Network Drive - Test Connection

Summary

Check all the parameters and click **Save**. A brief summary is available so that you can check the parameters selected.

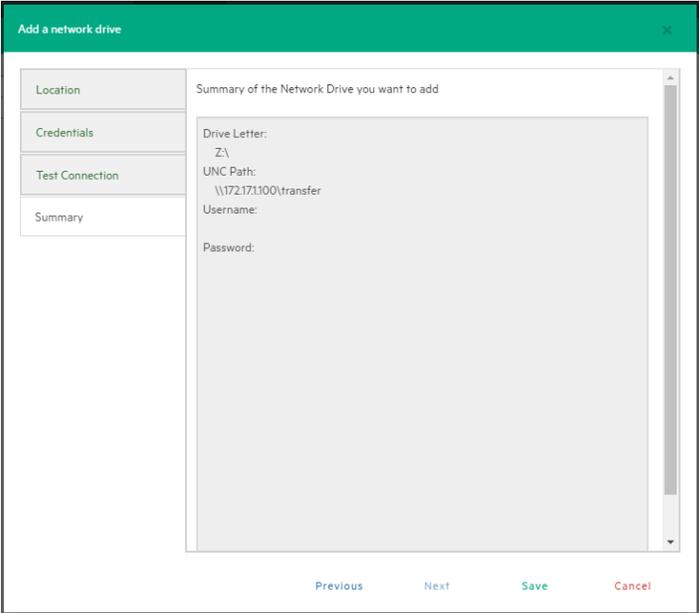


Figure 50: Network Drive - Summary

Chapter 9: Schedule a task

VM Explorer allows you to schedule backup tasks to run on a regular basis, such as daily, weekly, monthly. You can also back up any specific virtual machine.

Create a scheduled task

There are two ways to create a scheduled task:

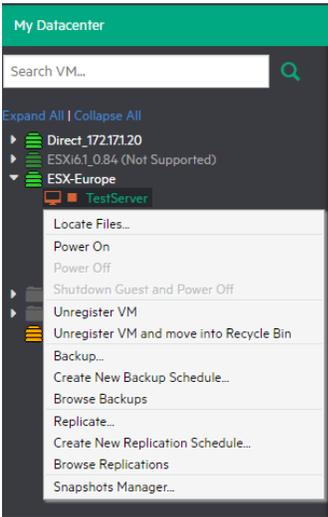


Figure 51: Create new backup schedule

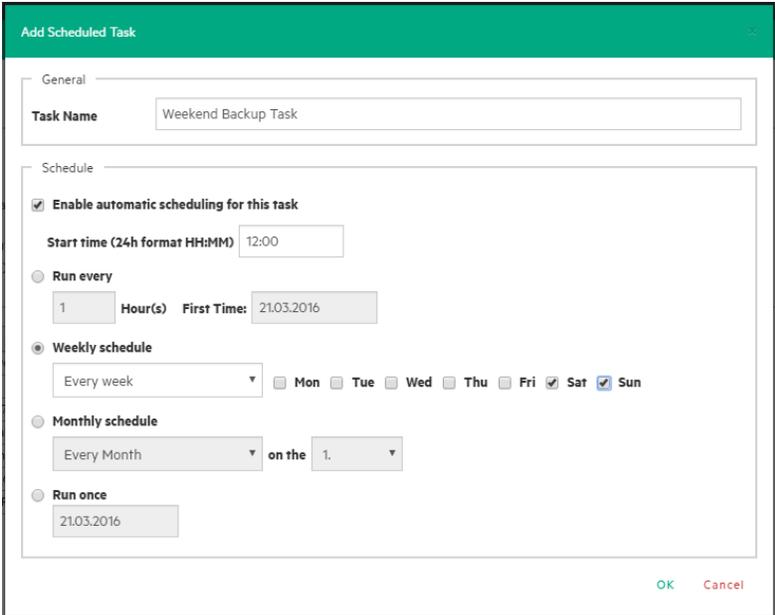


Figure 52: Add scheduled task

1. To create a new scheduled task, switch to the Datacenter view and right-click the virtual machine you want to back up.
You can click the **On error execute next task** option. This allows the scheduled task to continue to the next step, even if the previous step failed.
2. Click **Create New Backup Schedule**. The **Edit Scheduled Task** box appears.
3. Enter a name for the task and configure the start time and schedule type.
4. Click **OK**.
5. The next screen is the same as when you back up a virtual machine manually.
6. Enter all the options and click **OK** to confirm.
7. You can click the **On error execute next task** option. This allows the scheduled task to continue to the next step, even if the previous step failed

As an alternative, you can create a new scheduled task by switching to the Scheduler view **Tasks > Scheduled Tasks**. Right-click **Scheduled Tasks** and click **Add Scheduled Task**.

If you switch to Scheduler view, you can edit entries at any time. You can also add multiple steps to a single backup task and you can add backups of VM1 and VM2 to the same task.

NOTE Make sure that you enable the scheduler in VM Explorer by clicking **Enable the Scheduler** in the **Scheduler View**.

NOTE VM Explorer has a built-in Windows Service that executes the scheduled tasks. Using the VM Explorer service, you don't need to be logged in and have VM Explorer running to perform a scheduled task. Also, if the scheduler is enabled and the General Settings option is **Prevent 'Sleep Mode if scheduler is enabled**, this will prevent the system from Sleep Mode (if activated).

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

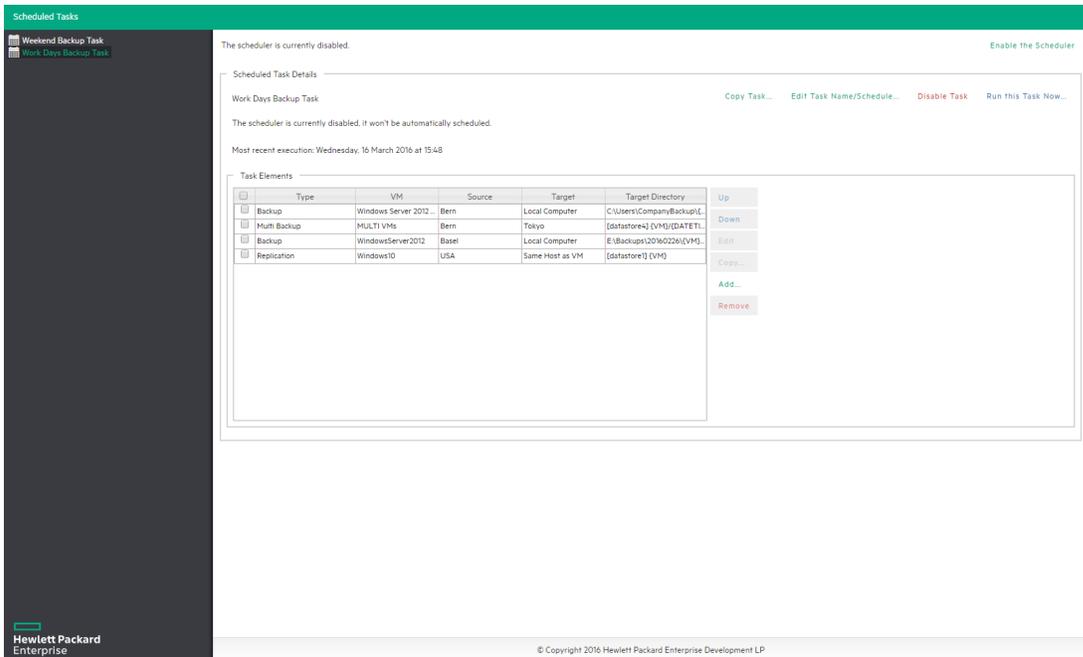


Figure 53: Scheduled task page

Copy a scheduled task

A scheduled task can be entirely copied:

1. Right-click on a scheduled task that you want to copy from the **Scheduled Tasks** list.
2. Click **Copy Task**, or select the scheduled task that you want to copy and click **Copy Task** from the right panel.
3. The **Edit Scheduled Task** dialog box will appear. The copied scheduled task will have the same configuration as the original one.
These configurations can be changed in the popup dialog.
4. The copied task will be disabled (paused) to avoid multiple running and conflicts.
5. Click **Enable the Scheduler** from the Scheduler View to copy the scheduled task.

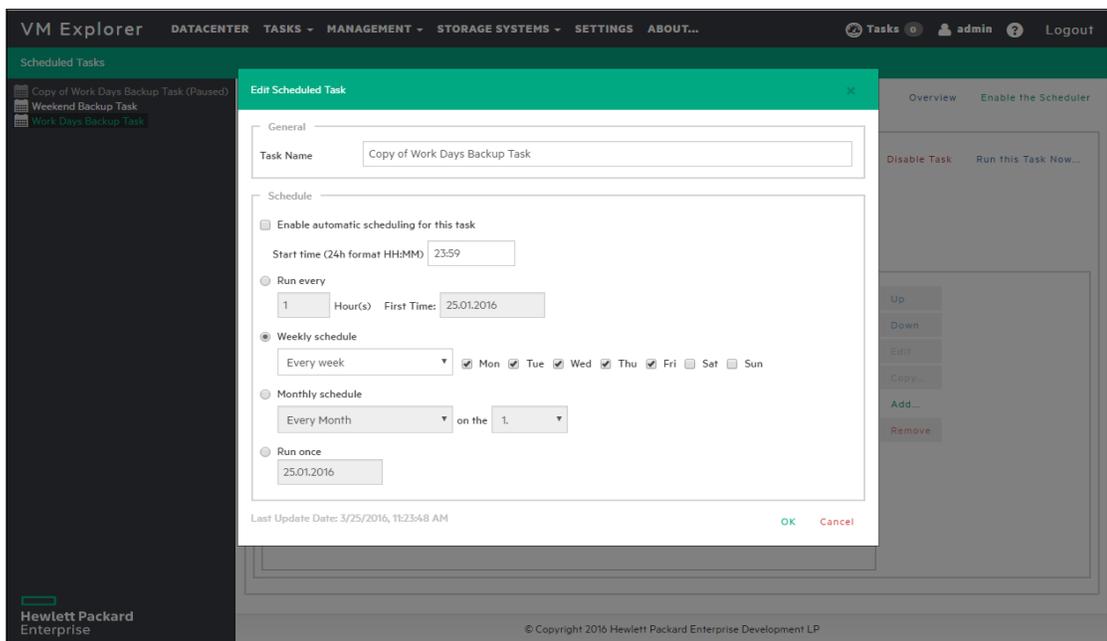


Figure 54: Copy scheduled task dialog

Copy a scheduled task element

You can copy a single task element into the same scheduled task or to another scheduled task:

1. From the **Task Elements** list, right-click on a **Task Element** and click **Copy**, or click **Copy** on the right.
2. The **Copy the selected Task Element** box will appear. In this dialog you can select which scheduled task you want to copy the selected task element. Select the **Target Scheduled** task.
3. Click **OK**.

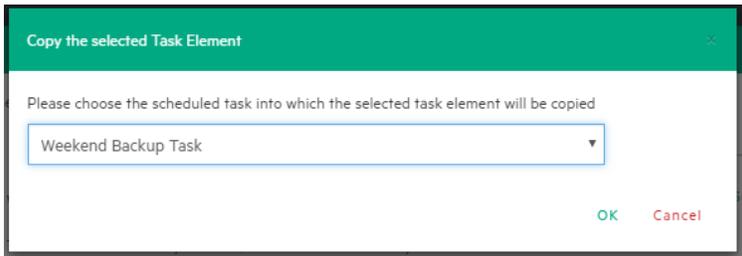


Figure 55: Copy task element dialog

Command line interface

VM Explorer allows you to execute the scheduled tasks you created by entering a command line. This can be useful if you want to use different software as a scheduler. For example, you might use Windows built-in Task Scheduler.

To access full information about the command line interface, enter the following at the command prompt:

```
vmx.exe /?
```

VM Explorer will always generate an XML file containing all the information about the executed task. The output location can always be changed by adding the `/logfile` parameter.

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

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

Chapter 10: Backup

If you want to back up one of your virtual machines, switch to the **Datacenter** view. Expand your ESX or Hyper-V host to get a list of all your Virtual Machines. If you are using vCenter, expand your vCenter's hosts to see all virtual machines. Right-click the one you want to back up and click **Backup**. This opens the **Virtual Machine Backup** dialog box.

You can also create a task that backs up one of your VM's from **Scheduled Tasks**.

1. From the menu go to **Tasks > Scheduled task** and select a scheduled task in which you want to create the backup task.
2. Click **Add**.
3. The following dialog will appear. Click **Single VM** (if you want to backup just one VM).

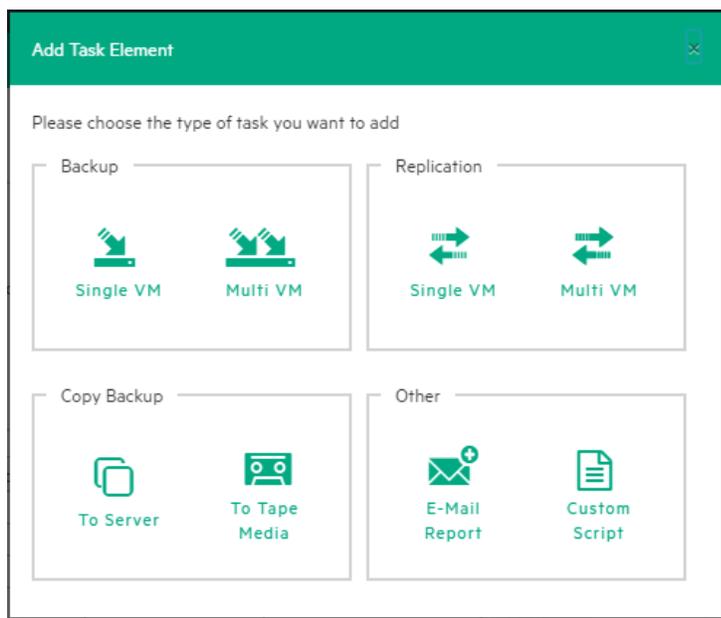


Figure 56: Add Task Element

Single VM

This section explains how to backup a single VM.

1. Click the **General Tab**.
2. In the Host dropdown menu, choose the target location. This can be your local PC, an ESX host, an Hyper-V host, or a Linux/FreeBSD host which has been added in to your Datacenter view.
3. Choose the target directory and how you want to handle the backup.
4. Click **OK**. This will start the backup process.

VM Explorer will create a snapshot of your virtual machine. This means that you can back up a running virtual machine without stopping it. When the backup is finished, VM Explorer automatically deletes the snapshot on your ESX or Hyper-V server.

NOTE If you choose **Overwrite existing files in the target directory**, the existing backup will only be overwritten if the new backup is successful. This allows you to always keep a working backup, and you need enough free space while you run the backup. You can also delete the backup before the backup starts by checking the option **Delete existing backup in the target directory before the backup starts** option. If the backup fails, you will not have any working backup. Be careful when using this option.

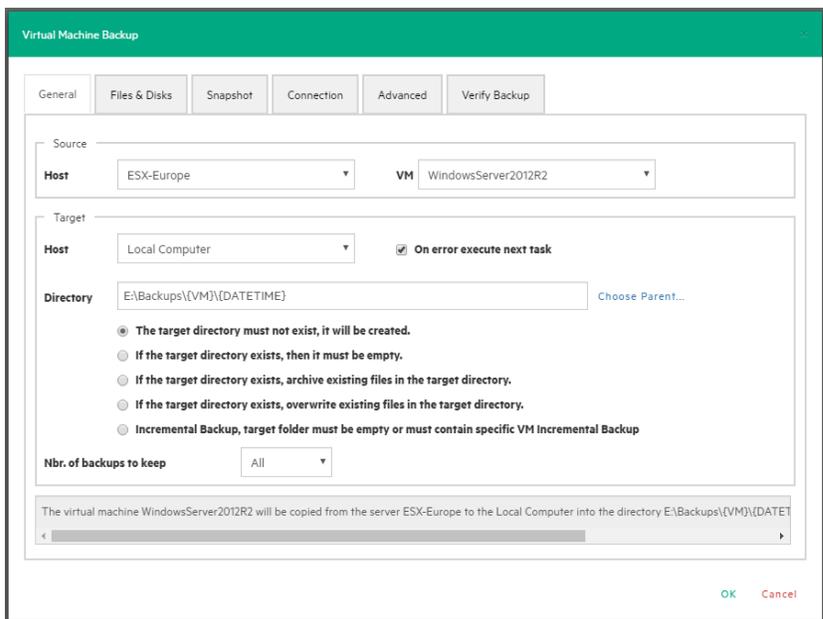


Figure 57: Backup - General

Files and disk tabs

Virtual Disks to be included in the backup

You can choose which Virtual Disks you want to include in the backup. If the **Include memory dump of the virtual machine** option in the Snapshot tab is enabled, all the virtual disks must be selected. Otherwise, you cannot restore the memory snapshot.

Thin provisioning support

The **After backup convert as thin disk** option allows you to convert all the disks in the thin format to be included in the backup. This option is only available under the following conditions:

- the target host is ESX/ESXi
- the VM Explorer Agent is enabled on the target server (only for ESXi)
- the **Keep data compressed at destination** option is not enabled

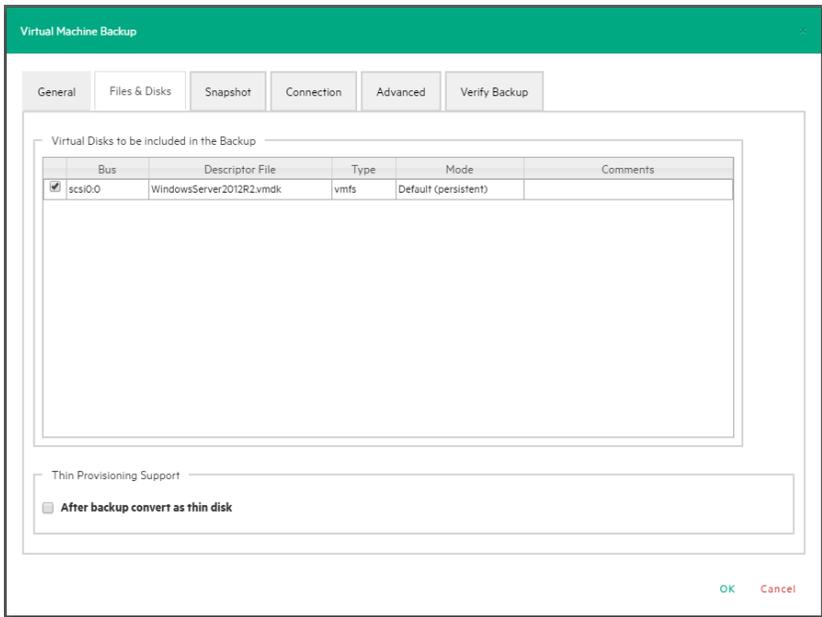


Figure 58: Backup - Files & Disks

Snapshot tab (ESX Only)

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

If your VM is running, VM Explorer creates a memory snapshot of the VM. When you restart the VM, you will lose the current memory. Enable this option if you also want to back up the memory to capture the exact running state.

Quiesce the file system

If this option is enabled and the VMware tools are installed on the guest system, the VMware tools will inform the OS that a snapshot will be created. This allows a record of all necessary data for a consistent snapshot. We recommend keeping this option enabled.

NOTE All options are configured by default.

Make storage snapshot

If this option is enabled and all the datastores are located on SAN Infrastructures, the backup will make storage snapshots.

When a backup starts with this option selected, VM Explorer checks if all the datastores of this VM are located on SAN Infrastructures. If yes, VM Explorer creates a snapshot (storage) of each datastore, maps them in the same ScaleIO Data Client (SDC) where the VM is registered, mounts the volumes and then starts the normal backup process on this copy of the VM structure. After that, VM Explorer unmounts and un-maps all the datastores, and finally removes all the snapshots previously created.

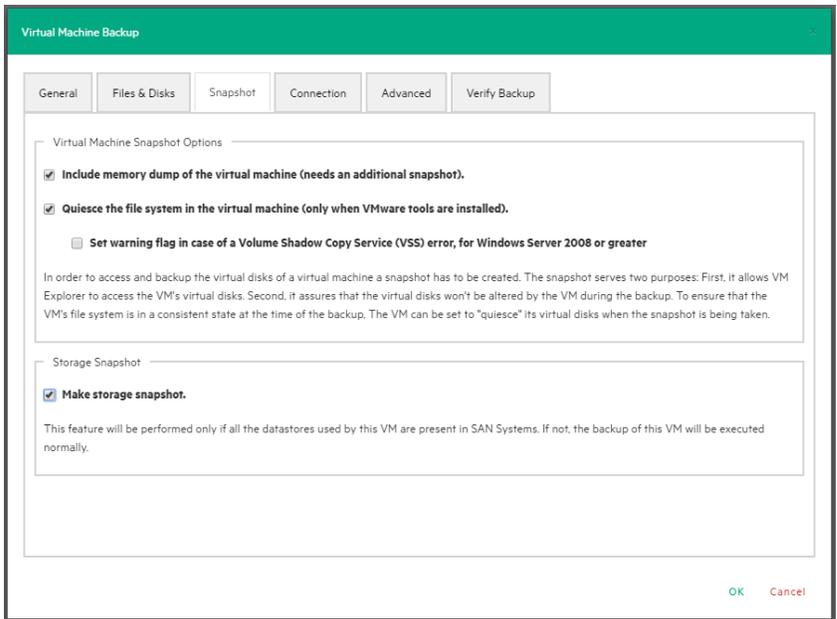


Figure 59: Backup - Snapshot (ESX)

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

Volume shadow copy service options

You can configure the VSS options. The VSS ensures the consistency of the backup. Not using the VSS may grant you a faster performance but data consistency will not be guaranteed.

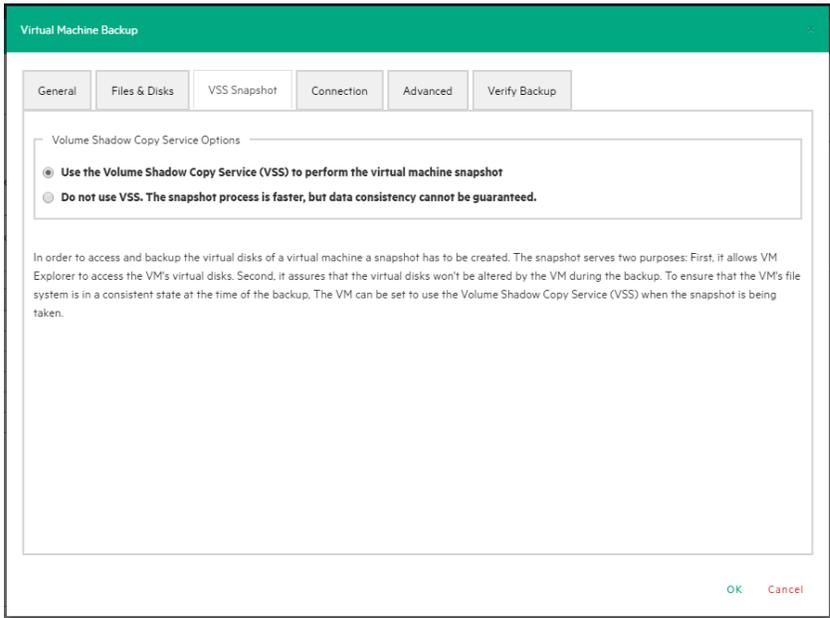


Figure 60: Backup - VSS Snapshot (Hyper-V)

Connection tab

Direct copy options

Direct copy allows you to directly transfer files between the source and the target server. You can configure the settings to reverse the direction of the TCP connection (default is from the source server to the target server). This option may be enabled in case of NAT (Network Address Translation).

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

The direct copy options are not available if the source or target server is ESXi and the VM Explorer Agent is not enabled.

Encryption

In this section, you can configure a password to encrypt the virtual disks of the backup.

Encryption cannot be used with the compression option or the Cloud servers (Amazon S3, OpenStack, etc.) due to their restricted interface. The direct copy connection will also be unavailable and all the data will be relayed through the VM Explorer. See section ["Enable VD Services for incremental backups"](#) on [page 64](#) for more details.

CAUTION The password will be stored, encrypted and not retrievable.

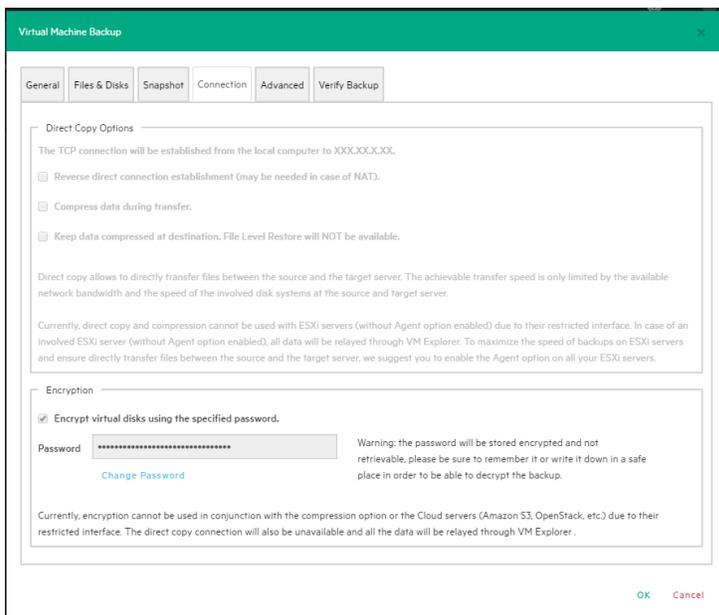


Figure 61: Backup - Connection

Advanced tab

The advanced options allow configuration if the guest VM has to be shut down or un-suspended before starting the backup. These two options work only if VMware Tools or Hyper-V Integration Services are installed on the guest VM. Only one of the options can be enabled at the same time.

When **If guest VM (source) is powered on shut it down** is enabled, it can be configured when the guest has to be restarted (once the backup starts, once the backup is terminated or never restarts the guest VM).

You can set how much time VM Explorer must wait before the shutdown timeout error is raised.

When **If guest VM (source) is suspended** option is enabled, it can be configured when the guest has to be set when suspended (that is once the backup starts, and when the backup is terminated or not suspend the guest VM again). You can set the amount of time VM Explorer must wait before the suspend timeout error is raised.

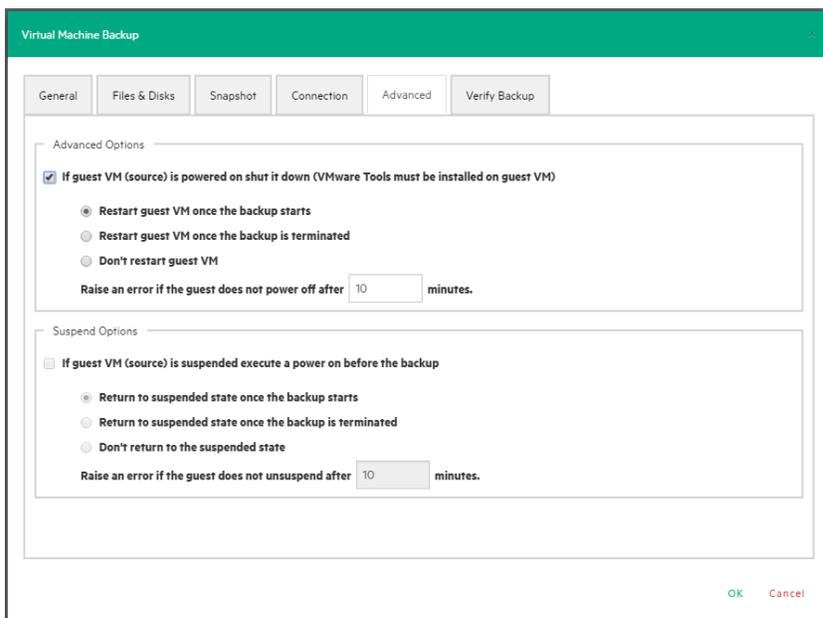


Figure 62: Backup - Advanced

Verify backup

You can set The Verify Backup after the backup is finished. The File System Consistency check has to be performed and/or the backup must be tested using the VM Explorer Instant Backup Test system.

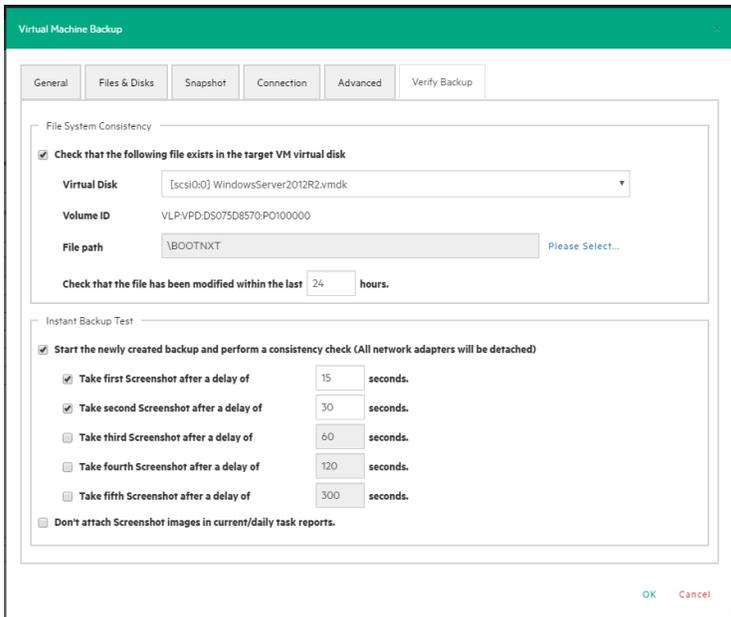


Figure 63: Backup - Verify Backup

File system consistency

This feature allows you to check for the existence 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 (the file must have been modified within the last 24 hours). The File System Consistency check will be performed once the backup/replication operation is completed: 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.

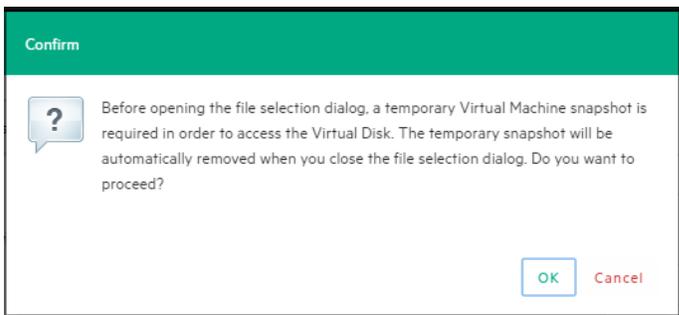


Figure 64: Backup - File Consistency confirm message

NOTE A temporary VM snapshot will be required to browse and access the virtual disk during the File System Consistency configuration. It will be automatically deleted once the file selection dialog closes. The following confirmation dialog will be shown. Click OK to accept and proceed.

Instant Backup Test

If you enable this option, once the backup terminates, it will be added to the Hypervisor inventory as a VM and powered on. The VM health state is checked and you can take screenshots of the VM Console every (x) seconds. Health state and screenshots can be checked in the Task History or in the e-mail report.

To be able to use this option you must configure the VM Explorer NFS Settings. Refer to the VM Explorer NFS settings.

Please note:

- Screen shots taken during backup test will be visible through the **Task History** or in the E-Mail reports.
- Automated backup test, for the moment, is only available for VM running on ESX or ESXi and if 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 made 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, are read-only).
- VM Explorer cannot perform the backup of the ESX/ESXi and Hyper-V host configuration.

Multiple VMs

If you have to back up more VMs with the same backup options, you can click **Multi VM** in the frame-box Backup. Click **Add** and the **Add Task Element** page appears ("**Figure 56: Add Task Element on page 54**").

Click **Virtual Machine Backup** and the **Backing up a VM** will appear.

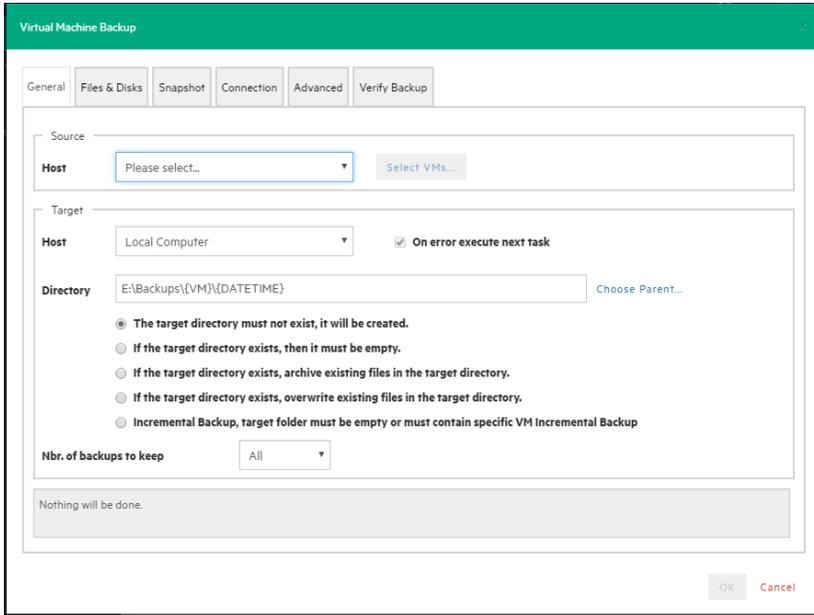


Figure 65: Multi backup - General

The difference with the single VM backup dialog is that you can select more than one Virtual Machine if you click **Select VMs**. A dialog with all available Virtual Machines appears. The order of the selected VMs to back up can be changed by clicking **Up** or **Down** and corresponds to the order in which the backups are done.

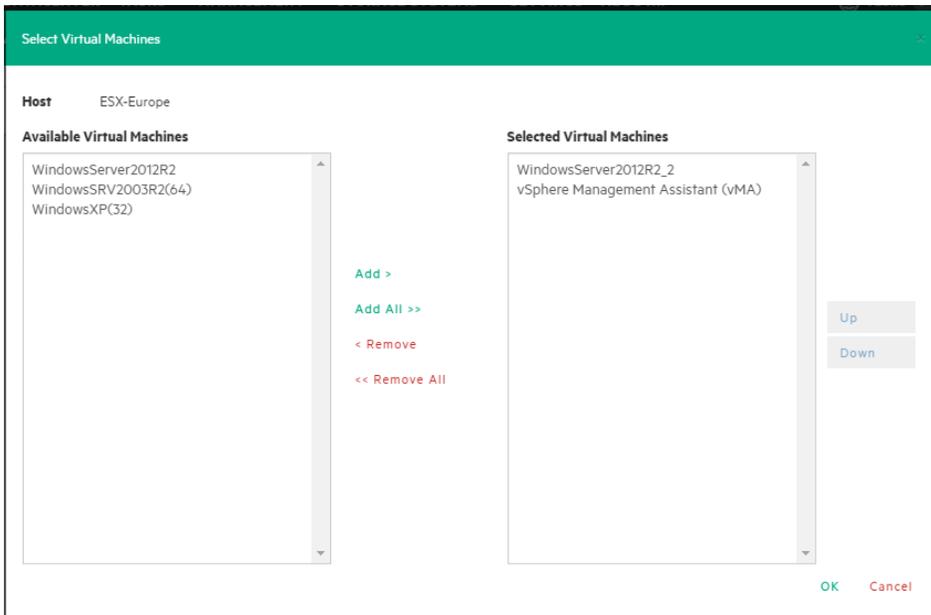


Figure 66: Multi backup - Select multiple VMs

In the backup dialog the directory field must contain the {VM} tag.

Since the settings are common for every VM included in the task, in the **Files and Disks** tab, there isn't the possibility to select the files and disks to back up for every single VM. All the files and disks of the virtual machines will be backed up.

Incremental backup

VM Explorer allows you to create incremental backups. Incremental backups only require one full backup and only the changed bytes will be transferred when there is a backup. VM snapshot points are not backed up with the incremental backup. However, in the restore process, you can choose which backup version (backup date) you want to restore. Refer to, "[Restore an incremental backup](#)" on page 86.

Incremental backup on ESX/ESXi (licensed edition) is only available by using the Virtual Disk Development Kit (VDDK) and has the following requirements:

- ESX 4.0/4.1 or ESXi 4.0/4.1/5.0/5.1/5.5 (ESXi 4.0/4.1/5.0/5.1/5.5 free edition is not supported)
- Virtual Hardware of your VM must be version 7 or higher
- VD service support is enabled for the Server in VM Explorer.
- The VD service must be initialized

To enable VD Service backup, you must edit your server settings (**Expert Settings** tab) in the VM Explorer Server view. Refer to "[Add servers to the VM Explorer](#)" on page 19 more details.

Incremental Backup on ESXi free edition does not use Virtual Disk Development Kit (VDDK) and has the following requirement:

- **VM Explorer agent on ESXi** option must be enabled

To enable **VM Explorer agent on ESXi** you must edit your server settings (**Expert Settings** tab) in the VM Explorer Server view. Refer to "[Add servers to the VM Explorer](#)" on page 19 for more details.

Incremental Backup on Hyper-V does not have any restrictions.

Once everything is set up correctly, you will able to configure the Incremental Backup options.

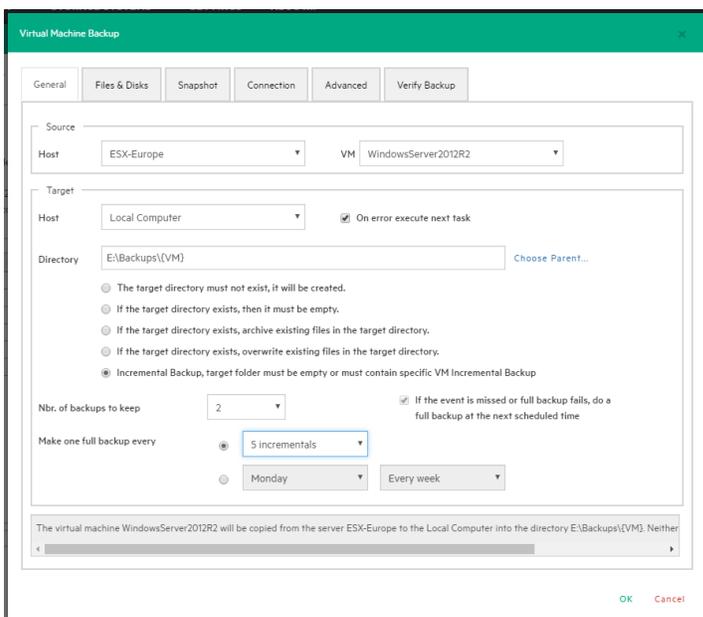


Figure 67: Incremental Backup - General

Just choose the **Incremental Backup** option to enable an incremental backup. All other settings are the same as for the default backup. If this feature is enabled, VM Explorer will create an initial full backup of your VM. After the initial full backup, incremental backups will be created only containing the changed data.

Enable VD Services for incremental backups

Incremental backups on ESX require the following in order to run properly:

- ESX or ESXi 4.0 or later; ESXi free edition will not support incremental backups. VM Explorer can create full backups of your ESXi free edition.
- The virtual hardware must be version 7 or later. The Virtual Hardware Version is shown in your vSphere Client when editing the settings of your VM.
- VM Explorer needs to be initialized to use the Virtual Disk Service Library (VD Service) and each host must have the VD Service enabled.

Initialize the Virtual Disk Service (VD Service)

To enable the Virtual Disk Service in VM Explorer:

1. Click **Help**.
2. Click **Enabling Virtual Disk Service (VD Service)** in the user interface.
3. The initialize screen will appear. You need to install the VDDK package which can be downloaded on the VMware webpage:

<https://my.vmware.com/group/vmware/get-download?downloadGroup=VSP510-VDDK-510>

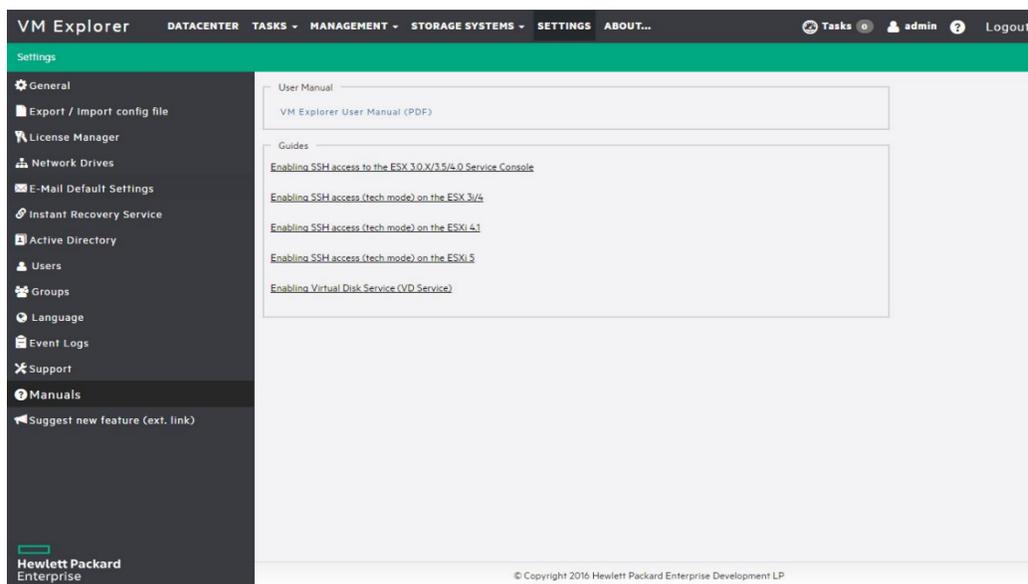


Figure 68: Settings - Manuals

This package needs only to be installed on the computer where V VM Explorer is running.

When you installed the VDDK package, click **Initialize VD Service**. VM Explorer will report that the initialization was successful.

Enable the VD Service for an ESX host

Next, you must enable the VD Service for your ESX/ESXi host in VM Explorer.

1. Go to the My Datacenter and right-click the ESX host you want to configure.
2. Click **Edit Server**.
3. The **Edit Server** page will appear.
4. Click the **Expert Settings** tab.
5. Enable the **Use VD Service** option for this host.
6. Click **Test Connection** to verify your settings.
7. Click **Save** to save your settings.
8. Repeat this setup for all other ESX/ESXi hosts.

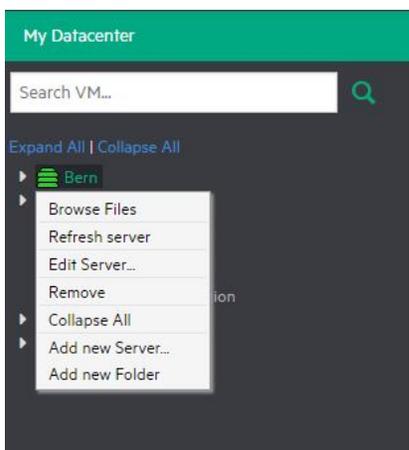


Figure 69: Edit server

Backup encryption

VM Explorer allows you to encrypt the backups to add more security to the virtual machines backups using the XTS-AES algorithm, a standard sector-based data encryption method defined by IEEE P1619. Only the disks data will be encrypted using the specified password.

Currently, encryption cannot be used in conjunction with the Cloud servers (Amazon S3, OpenStack, etc.) due to their restricted interface. The direct copy connection will also be unavailable and all the data will be relayed through VM Explorer.

When configuring a backup, you can find the Encryption section under the **Connection** tab. You can enable the encryption by checking the option and specifying a password.

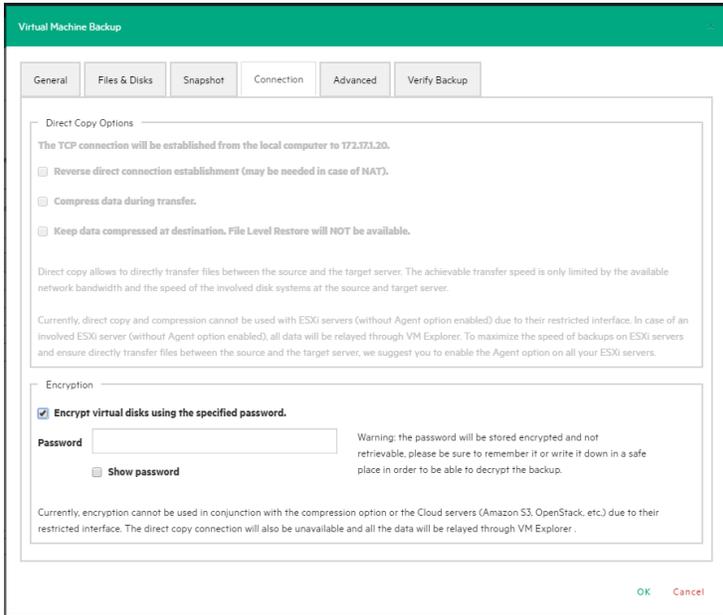


Figure 70: Backup encryption

CAUTION The password will be stored, encrypted and not retrievable.

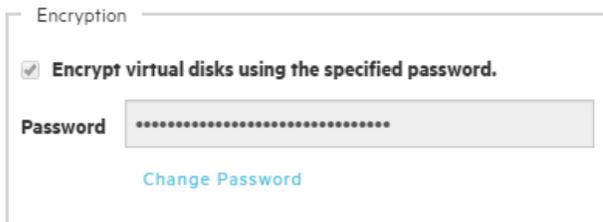


Figure 71: Password encryption

Once the backup task is saved and you want to change the password, you will need to enter the one previously inserted.

Click **Change Password**. Once the old password is confirmed, you will be able to input the new one.

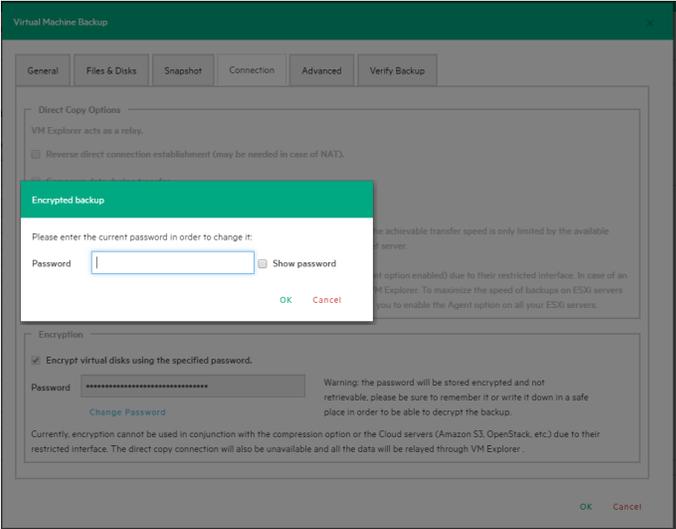


Figure 72: Change encryption password

Chapter 11: Replication

To replicate a single virtual machine:

1. Click **Single VM** in **Replication**.
2. Click **Add** and the **Add Task Element** appears as shown in the **"Figure 56: Add Task Element"** on **page 54**.

Single VM

Click **Single VM**, and the following page will appear.

General tab

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 box for 'On error execute next task', and 'Directory' set to '[datastore] (VM)'. Below the directory field, there is a text input for 'Register using the following display name:' with the value 'WindowsServer2012R2 (replicated)'. Three radio buttons are present: the first is selected and labeled 'If the target directory exists, archive existing files in the target directory.', the second is 'If the target directory exists, overwrite existing files in the target directory.', and the third is '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 bar 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 73: Replication - General

1. Select the Source Host and the VM you want to replicate.
2. On the Target Host dropdown menu, you can choose the target location. This can be the same host as VM or another host which has been previously added to your Datacenter view.
3. Choose the target directory, the name which will be used to register the replicated VM, and how you want to handle the target directory.

NOTE If you click **overwrite existing files in the target directory**, the previous replication will be overwritten only after the successful execution of the new replication. This is done to always keep a working replication; therefore, you need enough free space to temporarily hold both replications

To delete the previous replication before the replication procedure starts by checking the **Delete existing Replication in the target directory before the Replication starts** option.

CAUTION If the replication fails, there will be no replications available.

The incremental replication option is only available by using Virtual Disk Development Kit (VDDK). The VDDK library is available only for a licensed ESX/ESXi host.

If in the host VD Service is not activated, the following dialog will be shown which allows you to initialize VDDK for the ESX server ("**Figure 75: Replication - VD Service dialog**" below). Click **ESX Server Settings** and the **How to Enable Virtual Disk Service** page will appear. This dialog allows user to download VDDK and/or initialize VDDK for the host ("**Figure 74: Replication - Enable VD Service**" below).

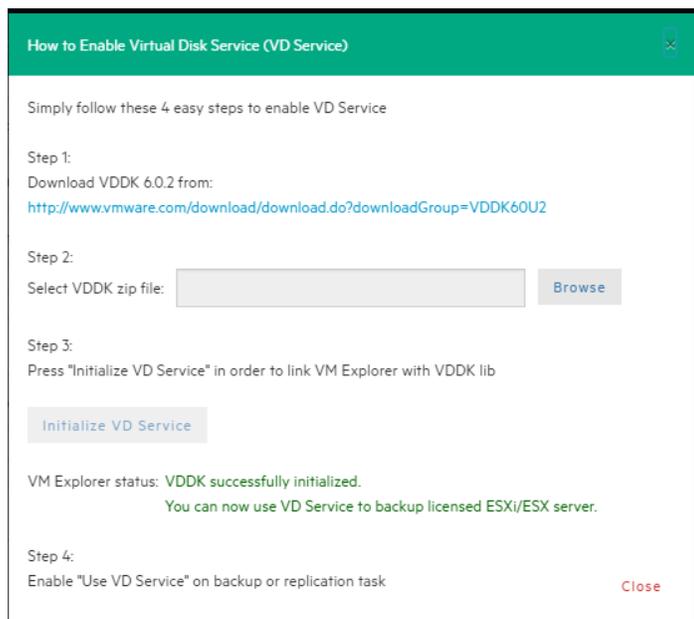


Figure 74: Replication - Enable VD Service

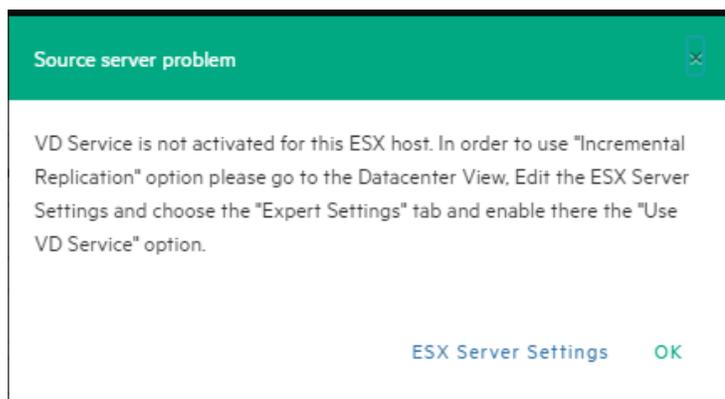


Figure 75: Replication - VD Service dialog

Files and disks

The configuration of Files and disks does not vary from the backup task configuration. Refer to the previous section, "[Backup](#)" on page 54.

Snapshot

The configuration of Snapshot does not vary from the backup task configuration. Refer to the previous section, "[Backup](#)" on page 54.

Connection Tab

Direct Copy Options

This section explains how to configure the direct copy options. Direct copy allows you to directly transfer files between the source and the target server. You can configure to reverse the TCP connection direction (default is from the source server to the target server). This option may be enabled in case of NAT (Network Address Translation).

The option to compress data during transfer is available in this section. The **Keep the data compressed at destination** option cannot be enabled for the replications because at the end of the replication process the VM will be registered on the target server.

The direct copy options are not available, if the source or target server is an ESXi and the VM Explorer Agent is not enabled.

Encryption

The encryption option is not available for any kind of replication.

Replication Tab

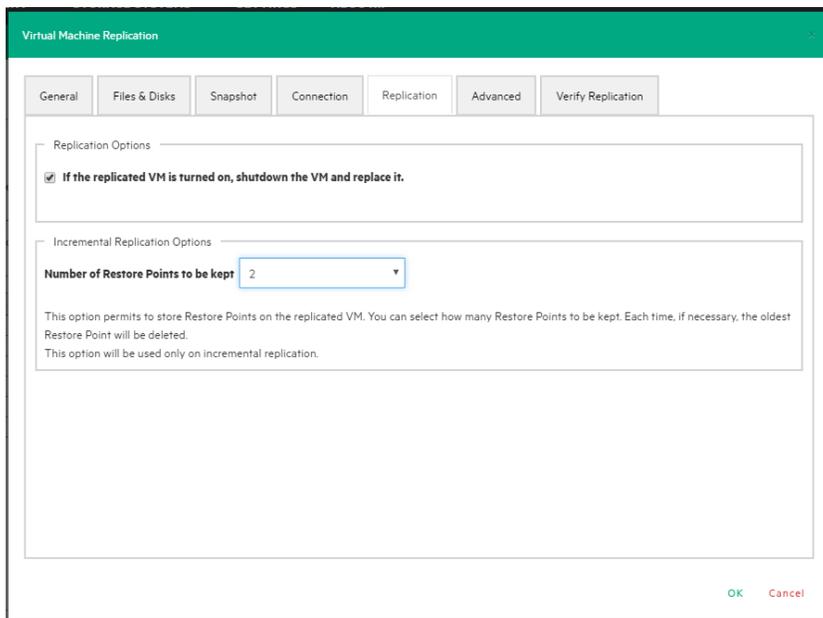


Figure 76: Replication - Replication tab

Under the **Replication** tab, you can shut down and replace the replicated VM, if it was manually powered on. For incremental replication, the **Number of Restore Points to be kept** is implemented.

VM Explorer will keep the Restore Points of previous incremental replications executed on the VM up to the number selected. This will permit the user to revert to one of these Restore Points, if needed, in the **Replication Explorer** Tab while keeping the previous version replicated.

Advanced Tab

For the advanced options, refer to the previous section, "[Backup](#)" on page 54.

Network Adapters tab (Hyper-V Host only)

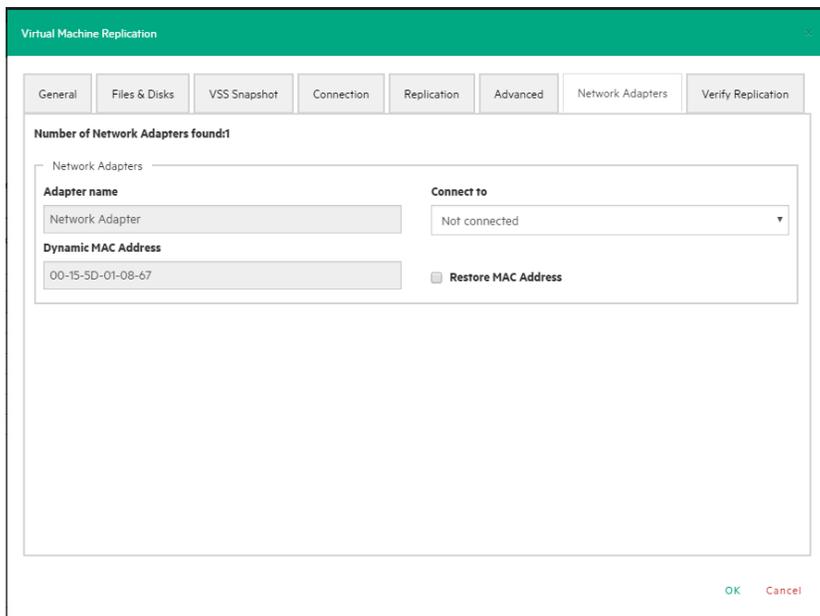


Figure 77: Replication - Network adapters

If the VM is replicated on a Hyper-V server, the **Network Adapters** tab will appear. In this tab, you can configure which virtual network the network adapters and the legacy network adapter should be link to. VM Explorer will automatically list all the network adapters that were found on the original VM. You can individually choose if you want to connect them as well as decide which Hyper-V network adapters they will connect to.

Verify replication tab

In this section, you can enable **File Consistency Check** for the target replicated VM. Refer to the previous section, "[Backup](#)" on page 54.

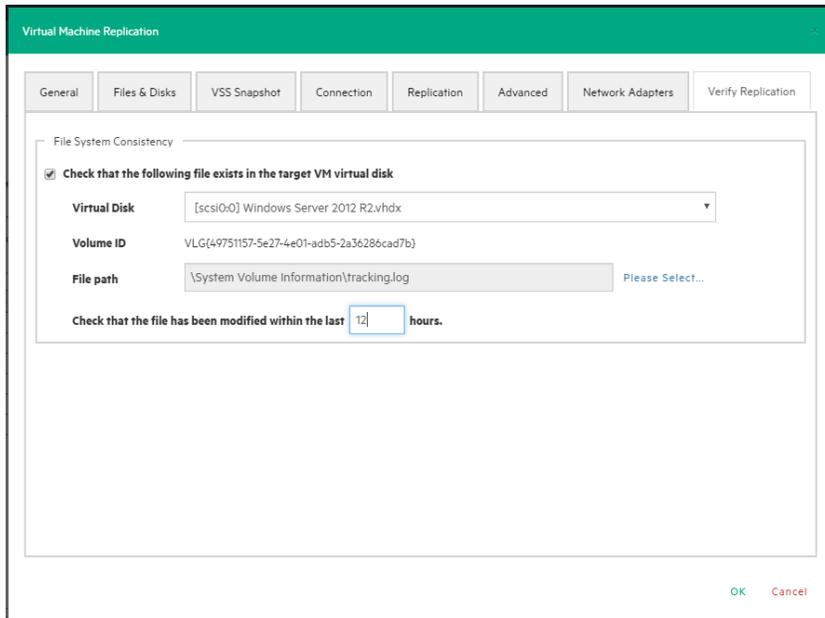


Figure 78: Replication - Verify replication

Multiple VMs

If you have to replicate more VMs with the same options, click **Multi VM** in the frame-box. Click **Add** and the **Add Task Element** page appears.

Click **Multiple VM** and the **Virtual Machine Replication** page appears.

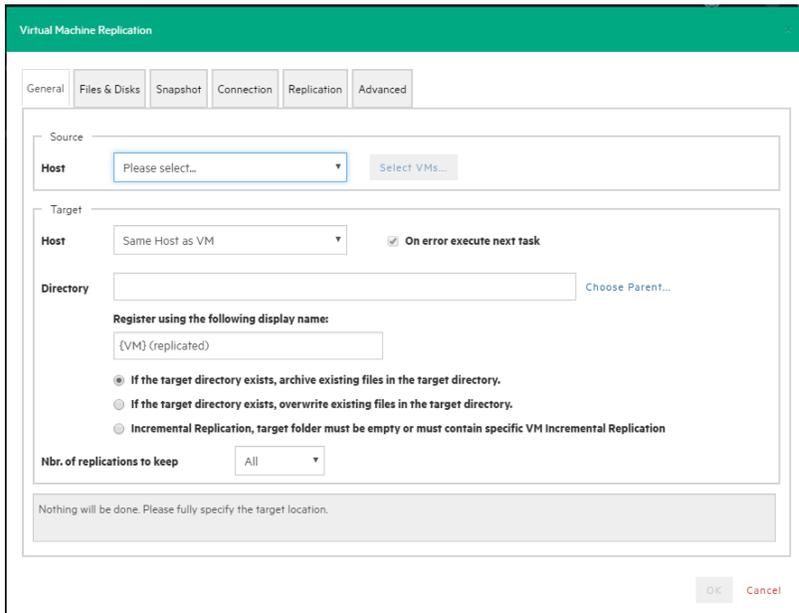


Figure 79: Multi Replication - General

The difference with the single VM replication dialog is that you can select more than one Virtual Machine. **Select VMs** will prompt a page that displays all the available Virtual machines. You can select the virtual machines to replicate (multiple selection is available). The order of the selected VMs to replicate can be changed by clicking **Up** or **Down** and corresponds to the order in which the replications are done.

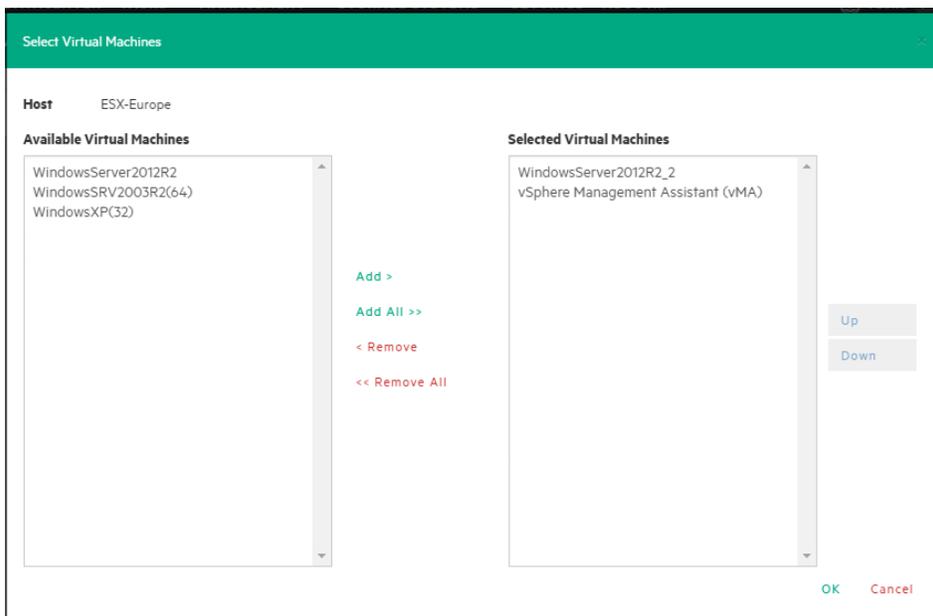


Figure 80: Multi Replication - Select multi VMs

In the replication dialog, the directory field and the display name used to register the replicated VM must contain the {VM} tag.

You cannot select files and disks to replicate for every single VM in the Files and Disks tab. The other configurations are the same as described in the previous section, "[Replication explorer](#)" below.

Replication explorer

For an overview of any replications performed with VM Explorer, click the **Replication Explorer** view. You can filter the replication's entries using the filters on the right side.

Every replicated VM can be powered on or off from the **Replication Explorer**:

1. Right-click on the registered VM.
2. Select **Power On** or **Power Off**.

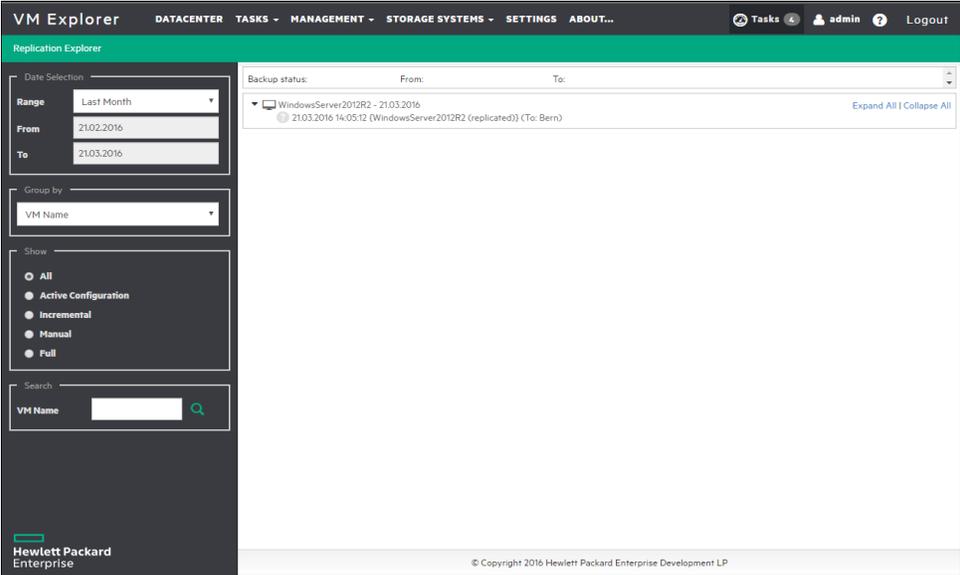


Figure 81: Replication Explorer

Chapter 12: Copy a backup

You can schedule a copy of one or more existing backups to a different target destination by adding a new Copy Backup Task element.

1. Click Add and the Add Task Element window will appear as shown in the "Figure 56: Add Task Element" on page 54.
2. Select the type of copy backup you want to perform (Copy Backup To Server or Copy Backup To Tape Media).
3. After you make your selection, click Add Copy Backup Task.

Backups to copy

Here you can select the backup element(s) you want to copy from the list of currently configured backups. A tree representation of the configured scheduled tasks and their corresponding backup elements is displayed. You can select an entire scheduled task (all included backup elements will be copied) or individual (backup/multiple VMs) backup elements.

When the scheduled Copy Backup Task runs, each single VM backup element is processed individually. For each backup element, the most recent execution will be considered. If this latest version has not been already copied to the copy target (see next step), the file transfer will start. Otherwise, the current backup element will be skipped returning success.

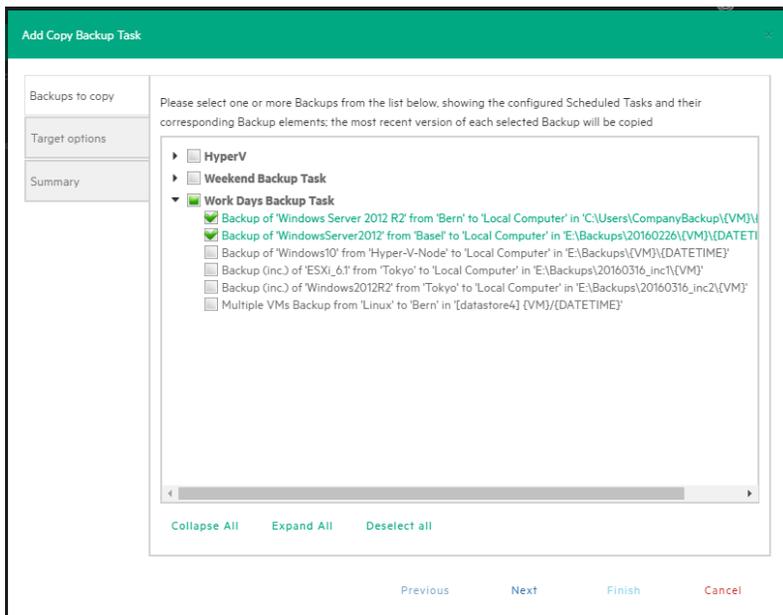


Figure 82: Copy Backup - Backups to copy

Target options (copy backup to a server only)

You can select the target host and the path for the backup copies. The final destination path on the target server is composed by the specified target base path followed by the selected append path option. Based on your preference, the backup copies will result grouped by the VM name, the by date/time of copy or vice versa.

The {VM} and {DATETIME} placeholders of the append path will be replaced as follows:

- VM: the display name of the backed up virtual machine.
- DATETIME: the starting date/time of the scheduled task in which the copy task is included. The format shown will be YYYY-MM-DD-hhmmss.

You can also specify how many full backup copies you want to keep stored on the target server once the copy task is complete. If you choose All (the default option), all previous backup copies will be untouched. If you select a specific number N, only the last N full backup copies will be kept. Older copies will be deleted.

Important notes for incremental backup copies:

- Copies of incremental backups are limited to a local machine as a target server.
- 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.

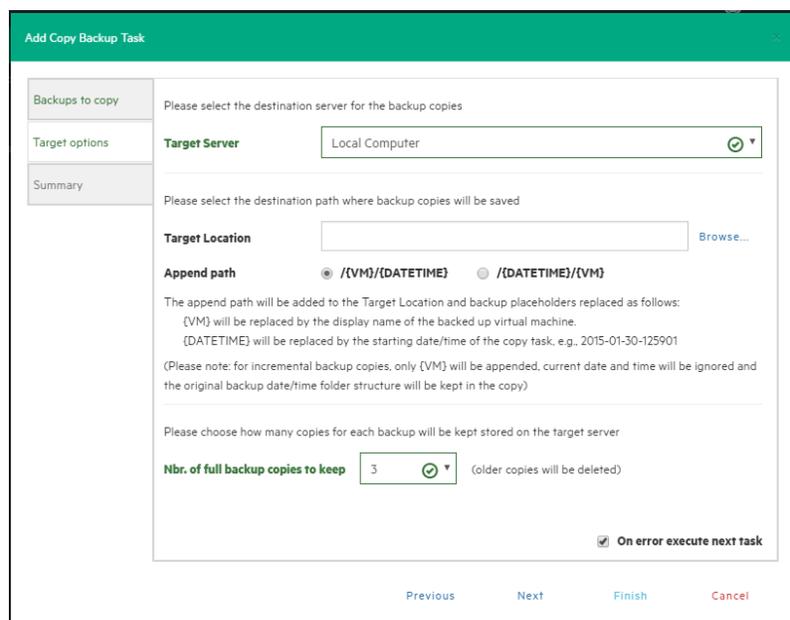


Figure 83: Copy Backup - Target options (to Server)

Target options (copy a back to a tape media)

You can select the target tape media pool from your tape infrastructure for the backup copies. You also can select the target tape library then a corresponding target custom media pool you created. When you choose a media pool, you decide to copy the backups into a media included in it, using the retention rules you defined when the media pool was created.

All tape media available space is used to store backup data, and large backups are automatically split into multiple tape media when necessary. You can also choose to enable hardware data compression if your tape device supports it.

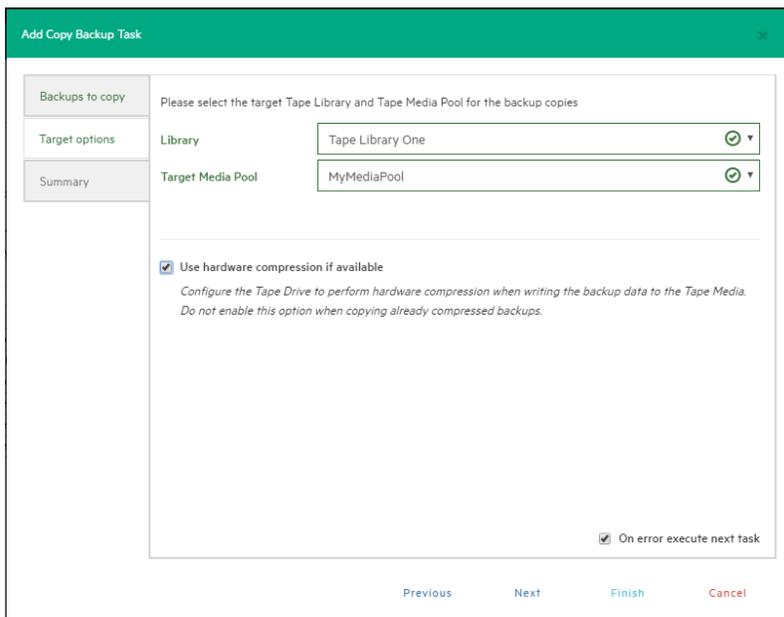


Figure 84: Copy Backup - Target options (Tape Media)

Summary

You can see a summary of the selected copy backup options before saving the changes. Click **Save**.

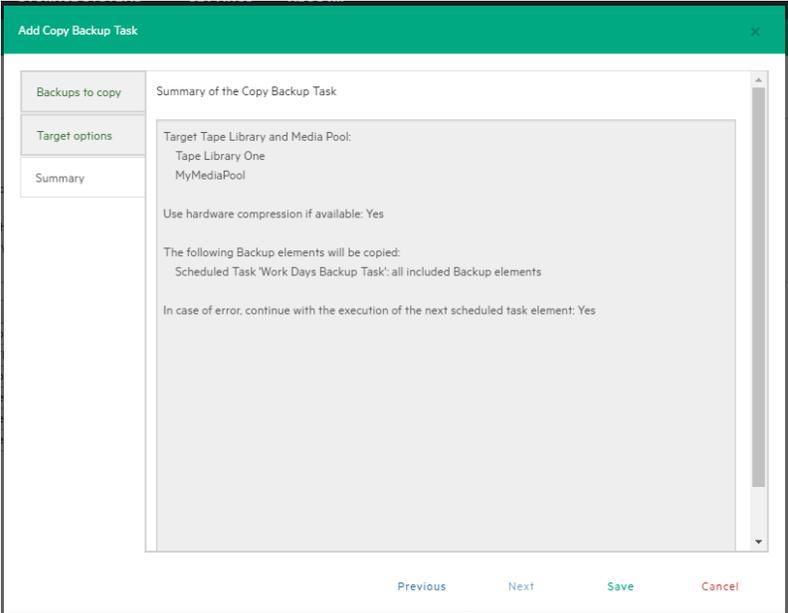


Figure 85: Copy backup - Summary

NOTE Removing or modifying any scheduled tasks or backup elements referenced by the copy backup task (removing a backup element that was supposed to be copied) might result in failed subtasks. You can fix this by keeping the copy backup task up to date, editing it and deselecting the highlighted items with errors.

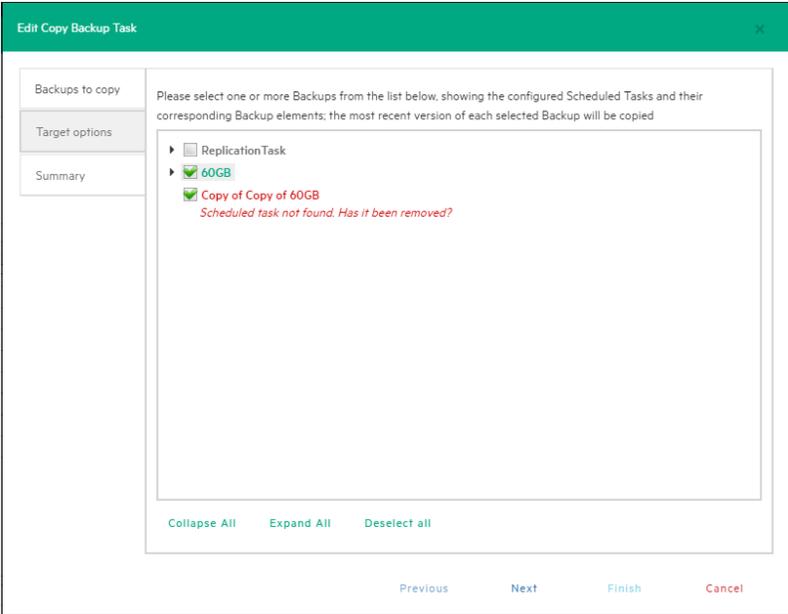


Figure 86: Copy Backup - Target options (removed scheduled task)

Chapter 13: E-mail report

VM Explorer has an option to send email reports about the backups that have been made. To add the email report, you have two options. You can send it directly after a task has run or add a scheduled task with the only intent to send the report.

Add a new scheduled task to send a report:

1. Go to the **Scheduler** tab.
2. On the **Scheduled Task** list, right-click and select **Add Scheduled Task**.
3. Enter **Email Report** as a task name and set the time you want to receive the report.
4. Click **OK**.
5. On the **Take Elements** list, right-click and select **Add e-mail report**.
6. Configure the SMTP hostname.
7. Click **Test** to test your settings.
8. Click **OK** when you are complete.

Add a report to an existing task:

1. Open an existing scheduled task.
2. Right-click **Task Elements** and select **Add E-mail Report**.
3. Configure the SMTP hostname.
4. Test your settings. Click **Test**.
5. Click **OK** when you are complete.

The screenshot shows the 'E-Mail Report' configuration dialog box. It has a green header bar with the title 'E-Mail Report'. The dialog is divided into several sections:

- Sender:** Contains two input fields: 'E-Mail' and 'Full Name (optional)'.
- Receiver(s):** Contains an 'E-Mails' input field with a note '(separate multiple with semicolon *)' and a 'Subject' input field with the placeholder 'VMX Report {DATETIME} {STATUS}'. A note below the subject field says 'You can use the following placeholders in the subject line: {DATETIME}, {STATUS}'.
- Outgoing SMTP Server:** Contains 'Hostname or IP' and 'Port' input fields, a 'Use SSL' checkbox, and a 'Use SMTP authentication if the server supports it:' checkbox. Below this are 'Username' and 'Password' input fields.
- Report Type:** A dropdown menu currently set to 'Daily Report'.
- Priority Mail:** Three dropdown menus for 'On Error', 'On Warning', and 'On Success', all currently set to 'Normal priority mail'.

At the bottom left is a 'Load default settings' link. At the bottom right are three buttons: 'Test', 'OK', and 'Cancel'.

Figure 87: E-Mail report

If you click **Load default settings**, you can fill the form with the e-mail default values. If you have not configured them, you will be asked if you would like to be redirected to the settings panel.

Report type

- **Current task report:** Sends a report of the scheduled task in which the report has been added. This report is usually implemented at the end of a scheduled task with multiple tasks, so that the user is informed only on a specific scheduled task.
- **Daily report:** Sends a report with the last 24 hours of activities, including jobs still running, jobs terminated in the last 24 hours and their results. This kind of report is usually implemented in a daily scheduled task of its own, so that the user is updated on all activities executed every day.
- **Weekly report:** A daily report that will only be created report when integrating the jobs of the last week, not 24 hours.
- **Monthly report:** A daily report that will only be created when integrating the jobs of the last month, not 24 hours.
- **Custom time report:** A daily report that only you can specify the time frame when any job is executed.

CAUTION If an automated backup test has been configured to take screen shots of the VM console, the report will contain all the images that have been select to be sent in the report. Also, the size of the report may reach maximum capacity of the mail server.

Priority mail

This option permits you to set the priority to the mail based on the worst case scenario. If all jobs included in the report are success the priority will be set depending on the **On Success** option. If at least one job has a warning, the priority will be set to the **On Warning** option. If a job fail or an error occurred, the priority will be set to the **On Error** option.

Chapter 14: Custom script

To add a custom script to a scheduled task:

1. Click **Custom Script**.
2. Click **Add**.
3. Click **Other** in the **Add Task Element** box, as shown in "Figure 56: Add Task Element" on page 54.

The dialog shown below will appear. You can now select the script to run in the scheduled task. Select a bat or ".exe" file and you can configure arguments, timeout (the time after which the task fails if the script execution hasn't finished) and the flag which indicates if the task has to fail or continue when the script fails.

You also can select an account (already present in your PC) that will launch the script file.

Click **Test** to verify the correct configuration script before saving the task.

Script task setup

Script

Script file: E:\Scripts\customScript.bat Browse

Arguments: /d /n

Script timeout after 30 seconds

On error execute next task

Account parameters

Use Account Parameters

Username:

Password:

Domain:

Test OK Cancel

Figure 88: Script task setup

Chapter 15: Restore a VM

To restore any backup, click the **Backup Explorer** view. The **Backup Explorer** view shows all the backups performed (according to the selected filters).



Figure 89: Restoring - Backup Explorer

To restore a backup:

1. Click **Restore a backup** from the **Available Restores** menu.
2. Click **Restore**.

To restore any backup using the Free Edition of VM Explorer 6.0 or to restore any backup not listed in the **Backup Explorer**:

1. Click the **File Explorer** view.
2. Navigate to the folder where you have stored the backup. In this folder, you will find the `vmxbackup.xml` file. This file contains all information about your original virtual machine.
3. Right-click the `vmxbackup.xml` file.
4. Click **Restore Backup**.

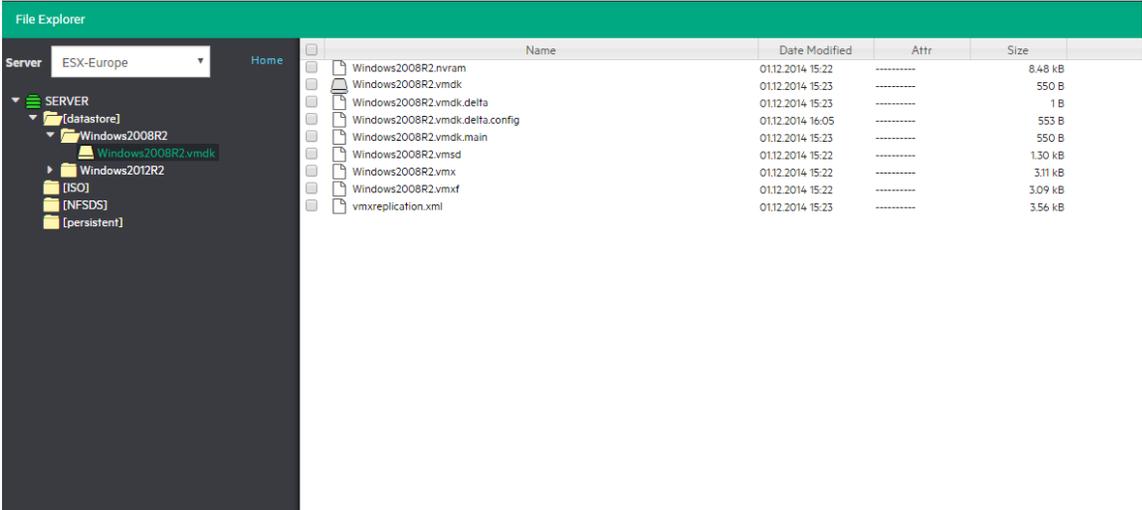


Figure 90: File Explorer

The **Virtual Machine Restore** dialog box will open.

General tab

Choose the target host where you want to restore the backup. Then, select the directory and how you want to restore the backup.

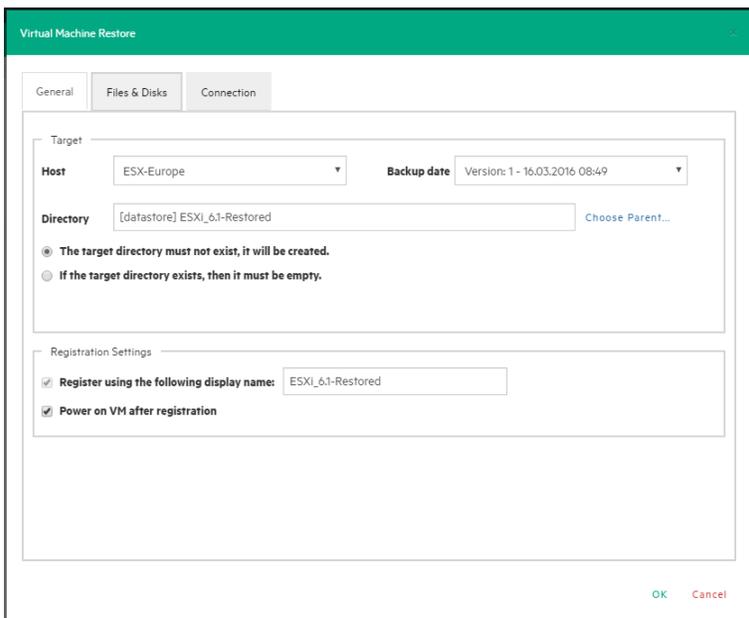


Figure 91: Restore - General

Register using the following display name allows you to directly register the virtual machine to your inventory. If you skip this option, you can always register any VM to your datastore by going to the File Explorer. Click Register VM and right-click on the VM configuration file, *.vmx for ESX VMs or *.xml for Hyper-V VMs.

The last option allows you to automatically power on the VM after registration.

Files and disks tab

In the Files and disks tab, you can choose which file/disk that needs to be included in the restore. In the Thin Provisioning Support section, you can choose if the disks have to be converted as thin after the restore process. This option is only available for the following conditions:

- if the target host is ESX/ESXi.
- if VM Explorer Agent is enabled on the target server.
- if no discs with the same name are present.

Connection tab

In this tab ("Figure 93: Restore - Connection" on the next page) the user can configure the direct copy options.

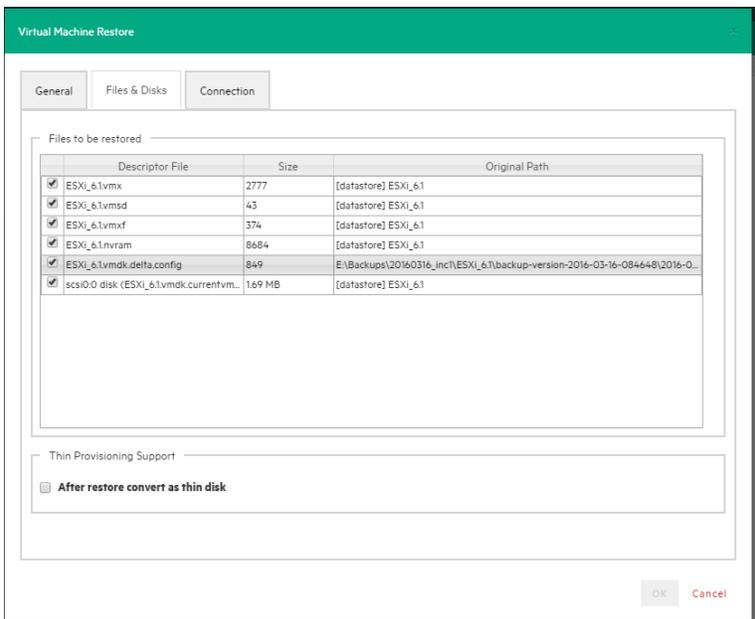


Figure 92: Restore - Files & Disks

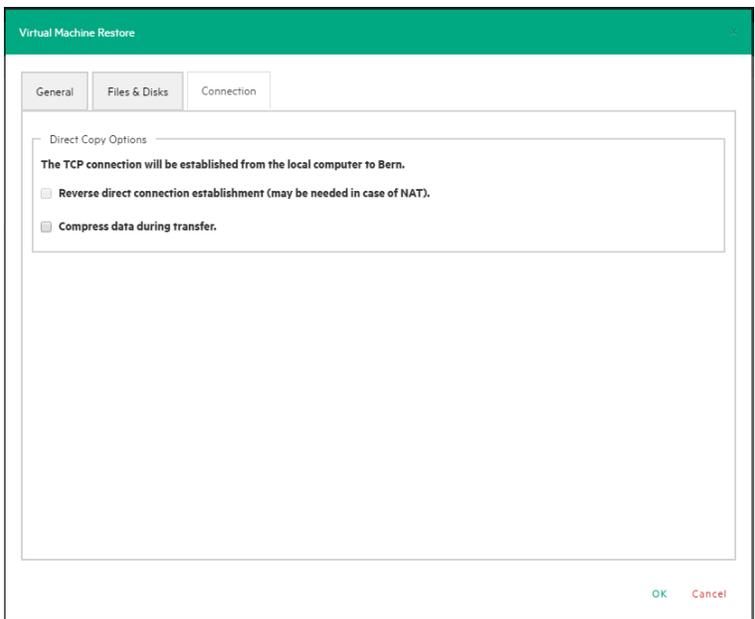


Figure 93: Restore - Connection

Network adapters tab (Hyper-V Host only)

If the VM has to be restored on a Hyper-V server, you can choose which virtual network the network adapters and the legacy network adapter will be linked to. All the saved network adapters can be restored in the new VM in the **Network Adapters** tab.

Click **Connect to:** to select which network will connect to the network adapter.

Restore MAC Address automatically sets the old MAC address on the adapter.

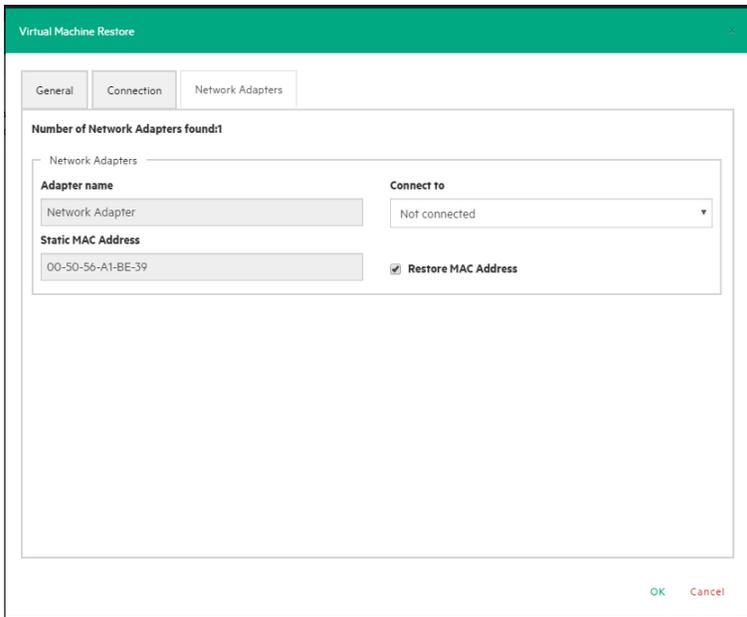


Figure 94: Restore - Network Adapters

Click OK to start restoring the VM. After your VM has been restored, VM Explorer will close the dialog box.

Restore an incremental backup

The restore of incremental backups is identical to normal restores. The only difference is that you can choose up to which date you want to restore. This gives you the option to choose a specific restore point. Start the restore as described in the previous section, "Restore a VM" on page 83. This will make VM Explorer restore the initial backup including all differential files up to the specified date.

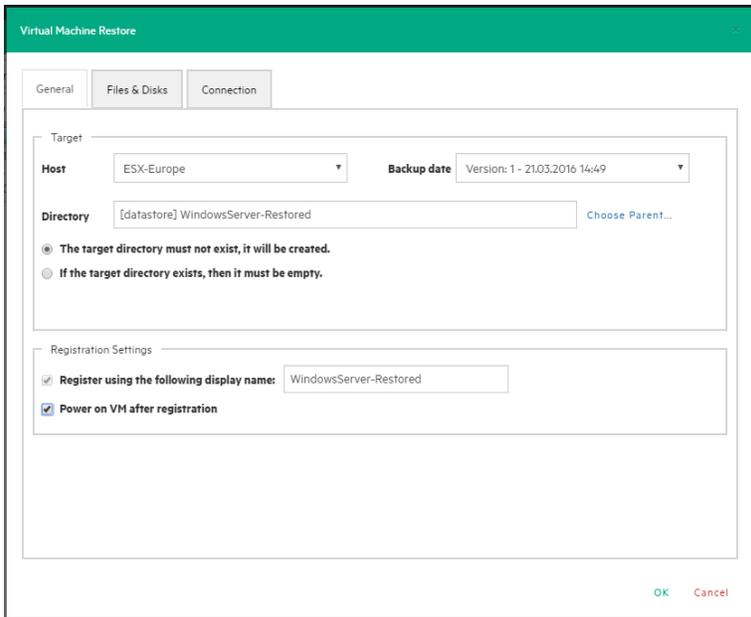


Figure 95: Restore Incremental Backup - General

Restore an encrypted backup

As explained above, simply right-click the encrypted backup, which will be displayed by a yellow padlock, and click **Restore**.

You will be prompted to enter the password used to encrypt the backup in order to proceed with the restore

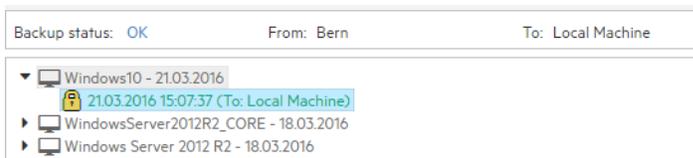


Figure 96: Restore encrypted backup

Once the password has been supplied correctly, the standard restore dialog will be displayed as normally.

As for the restore, when using Instant VM Recovery and File Level Restore, you will be prompted to insert the password in order to proceed with the operation.

Chapter 16: Instant VM Recovery

VM Explorer can begin a backup directly on a selected server, without restoring or copying any file. This feature is provided by the Instant VM Recovery System.

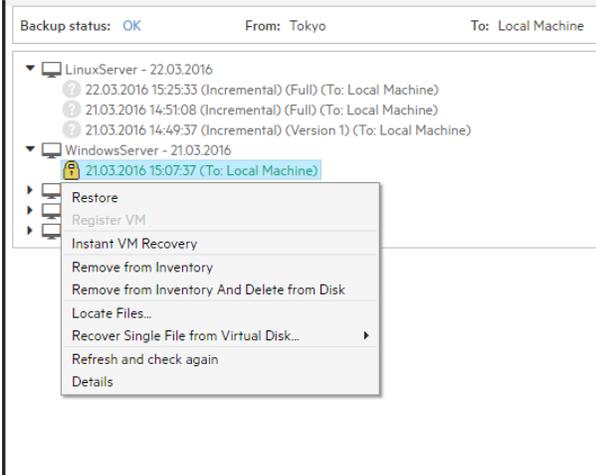


Figure 97: Instant VM Recovery from the Backup Explorer

Instant VM Recovery allows you to register a VM to your selected server. A NFS server will mount a temporary datastore on your host. The actual disk will be kept in your local disk.

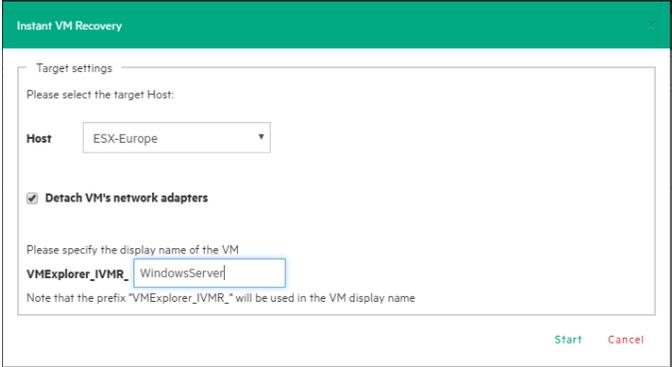


Figure 98: Instant VM Recovery target settings

No modification will be saved on the backup, so that any test made during your Instant VM Recovery will not conflict with your backup. You can also execute the procedure detaching any network adapters so that no conflict will arise with the original VM (default option).

While the Instant VM is running, you can perform a vMotion operation to migrate the VM to an existing datastore, making it a real VM. This mitigates the dependency will be no more on the VM Explorer Instant VM Recovery System.

The Instant VM Recovery is only available for backups and VMware ESX/ESXi virtual machines saved locally on a supported Cloud storage.

Chapter 17: File Explorer

File Explorer allows you to view and download files from your ESX, Hyper-V, Linux or FreeBSD hosts. You can choose the server which you want to browse. Select the server from the **Select** drop-down menu.

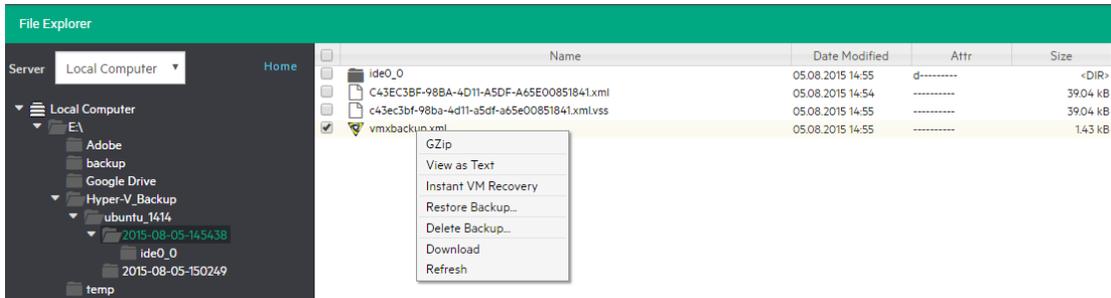


Figure 99: File Explorer

You can also register virtual machines to your ESX or Hyper-V hosts by right-clicking the VM configuration file *.vmx for ESX VMs or *.xml for Hyper-V VMs and click **Register VM**.

File Explorer also allows you to restore backups. Right-click the `vmxbackup.xml` file and select **Restore Backup**.

File level restore for single file

File Explorer allows you to browse a disk image file and recover single files. Select a disk image file and double click to navigate to its content and view all the files and directories. To recover a single file or a whole directory:

1. Right-click on the file.
2. Click **Copy**.
3. Choose the destination.

NOTE You can also drag and drop the files to copy the files or directory to a destination.

VM Explorer can browse all virtual drives of non-compressed backup.

The following file systems on disk image files are supported:

- NTFS
- FAT
- EXT

NOTE EXT4 is an incompatible feature; 64bit is not supported.

- Windows Dynamic Disks

NOTE Simple, spanned, striped, and mirrored volumes.

- Linux LVM - Logical Volume Manager

NOTE Linear, striped, and mirrored volumes.

If the EXT partition in the selected image disk is not 100% consistent, you will receive a warning message, but you can continue navigating the image disk. The warning message suggests enabling the quiesce option for the backups to generate consistent disk images.

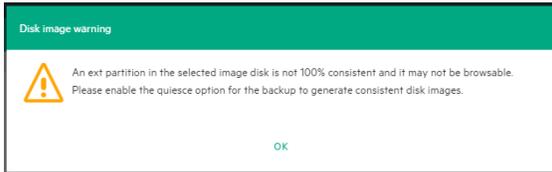


Figure 100: Disk image warning

Chapter 18: Task History

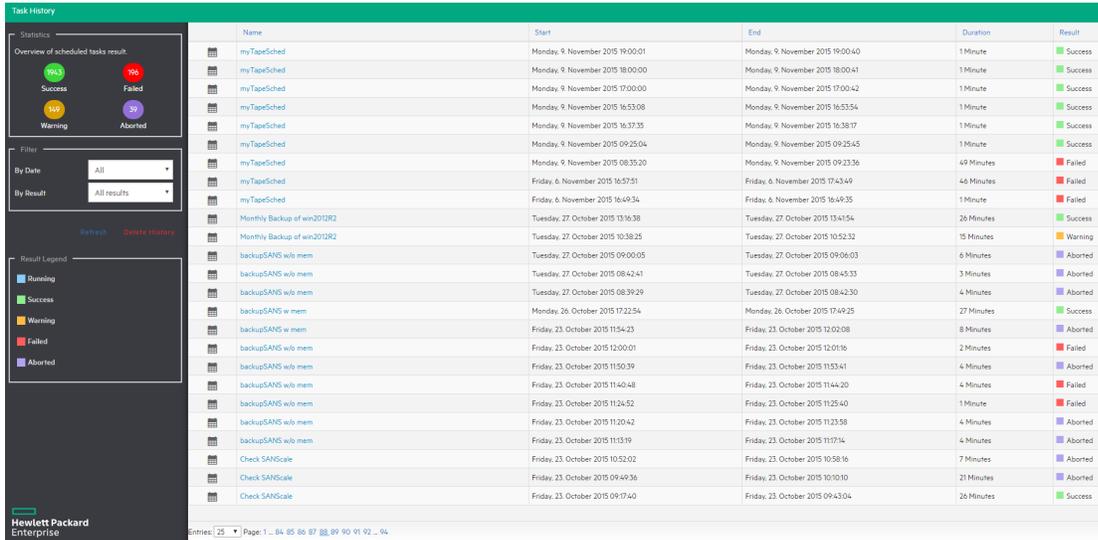


Figure 101: Task History page

Task History gives an overview of the recent scheduled tasks results, showing the name, the start and the end time, the duration of the task execution and the result.

TIP You can view more details for each entry by double clicking an entry.

The following screenshot shows the Scheduled Task Detail dialog with the details of the task.

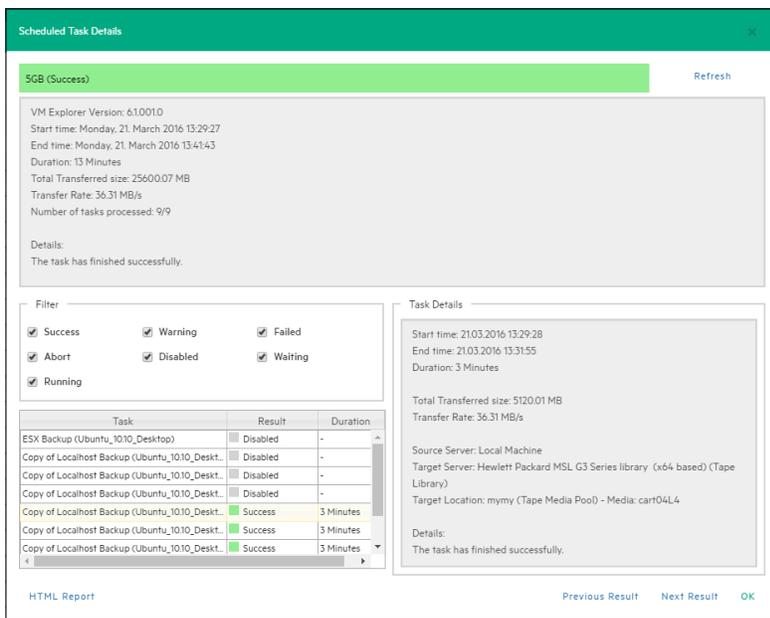


Figure 102: Scheduled Task Details

The HTML Report shows the current task result in a browser, that is HTML formatted and can be printed.

Chapter 19: Instant Recovery Service

The Instant Recovery Service view gives an overview of the Instant VM Recovery and Instant Backup Test running. It shows 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.

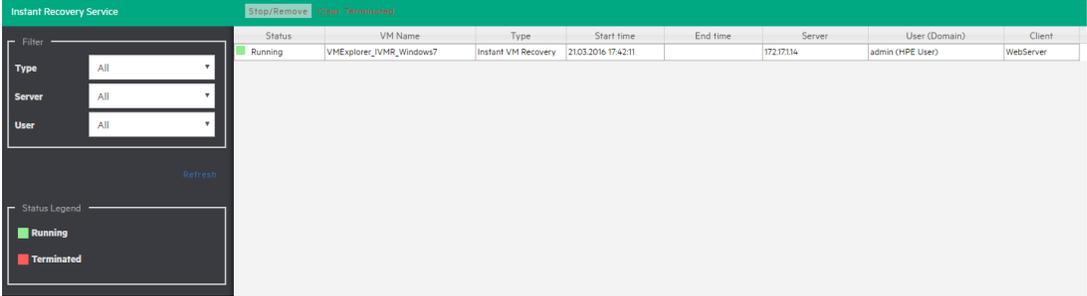


Figure 103: Instant Recovery Service page

There are two types of Instant Recovery Services:

- Instant VM Recovery. This service starts when you select a backup and when you click **Instant VM Recovery** from the popup menu. This is a running task with no time limit. To prevent the VM being kept indefinitely, the user needs to stop the process when it is complete, using the Instant VM Recovery job.
- Instant Backup Test. This service is only available at the end of a local backup, when the **Verify Backup** option has been enabled. As this task is related to the backup and has a time out, it is highly recommended to let this job finish on its own.

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

Chapter 20: Settings

General

To configure some general settings:

1. Click **Settings**.
2. In the left menu, click **General**.

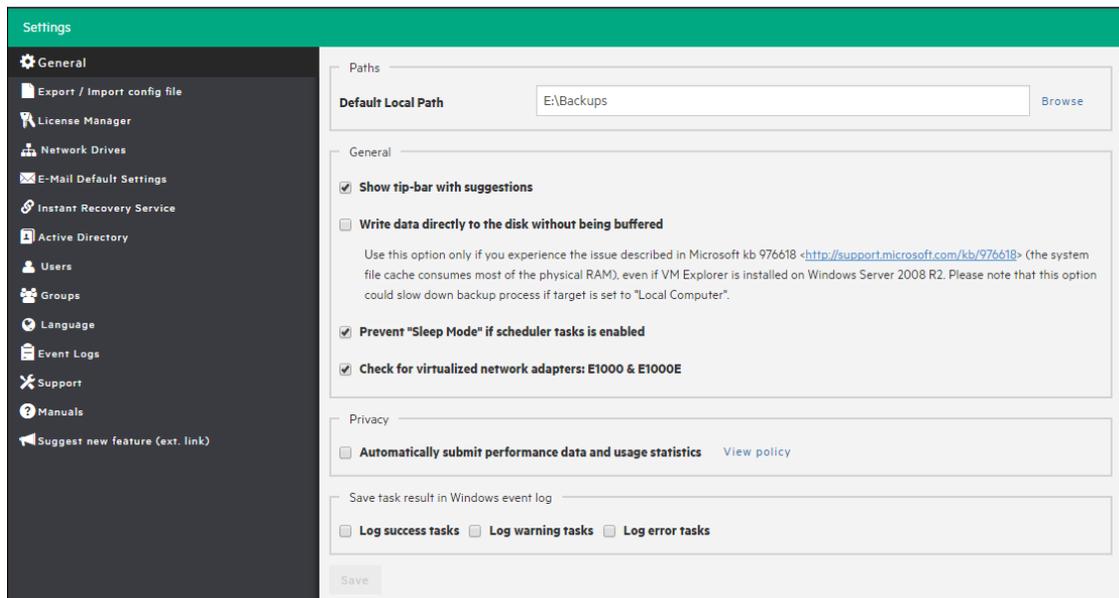


Figure 104: Settings - General

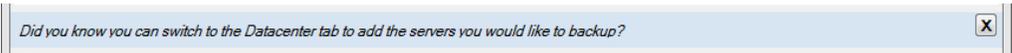
Path

To configure the default Local Path, click **Paths** and select the path you want to set as the default local path. This path is used in File Explorer (home directory for your local computer) in the Backup setup dialog (default target directory) in the Custom Script and in the dialogs where a local path is proposed.

NOTE If you don't configure a local path, VM Explorer will use the Windows Environment MyDocuments path.

General

In the General section, the **Show tip-bar with suggestion** check box can be enabled/disabled to show or hide the tip bar with the suggestions. This bar could also be deactivated by clicking X.



Did you know you can switch to the Datacenter tab to add the servers you would like to backup?

The **Write data directly to the disk without being buffered** must be activated only if, during backup, there are performance problems as described in the Microsoft KB 976618 <http://support.microsoft.com/kb/976618>.

The **Prevent Sleep Mode if scheduler is enabled** permits the system to go into Sleep Mode (if activated). This option will be applied only if the scheduler is enabled.

Privacy

You can enable/disable sending the performance data in the Privacy section. Click **View policy** to see the information about the privacy condition.

Windows event log

To save the scheduled tasks results in the Windows Event Log, check/uncheck the type of event in the **Save task result in Windows Event Log** section.

The result will be written in the Windows Event log at the end of the scheduled task execution, if the result type (success, warning or error) is enabled in the settings. Aborted tasks will be shown as a warning event.

Export/Import configuration

The configuration file can be exported or imported in **Settings**.

The exporting functionality allows you to encrypt the configuration file with a password.

From the same window you can import an existing configuration.

NOTE Ensure that you are not importing a configuration that has web server settings disabled.

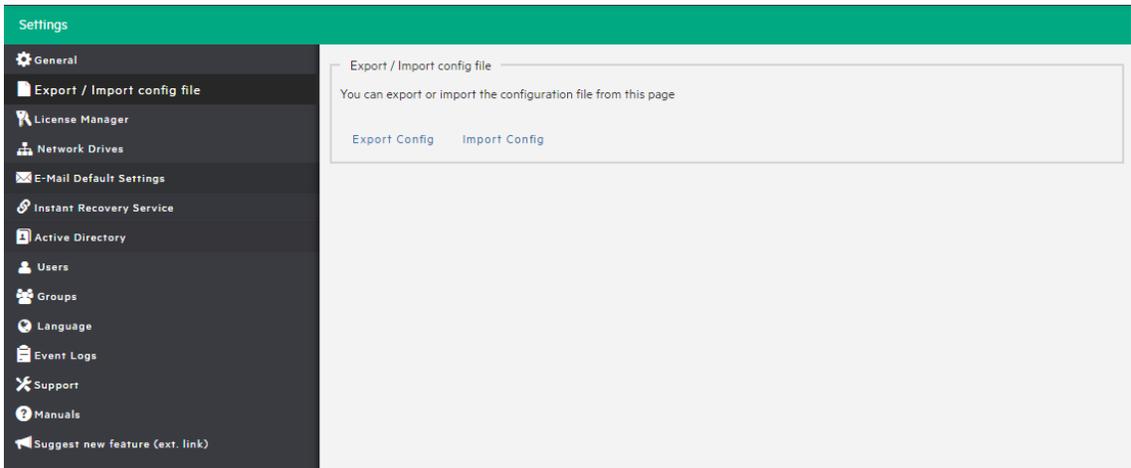


Figure 105: Settings - Export/Import configuration file

E-mail

To configure the default e-mail settings:

1. Click **Settings**.
2. Click the **E-mail** view in the left menu and fill the fields you want to configure.
3. If you filled all the fields, click **Test** to verify that the settings are correct.
4. Click **Ok** to save the settings.

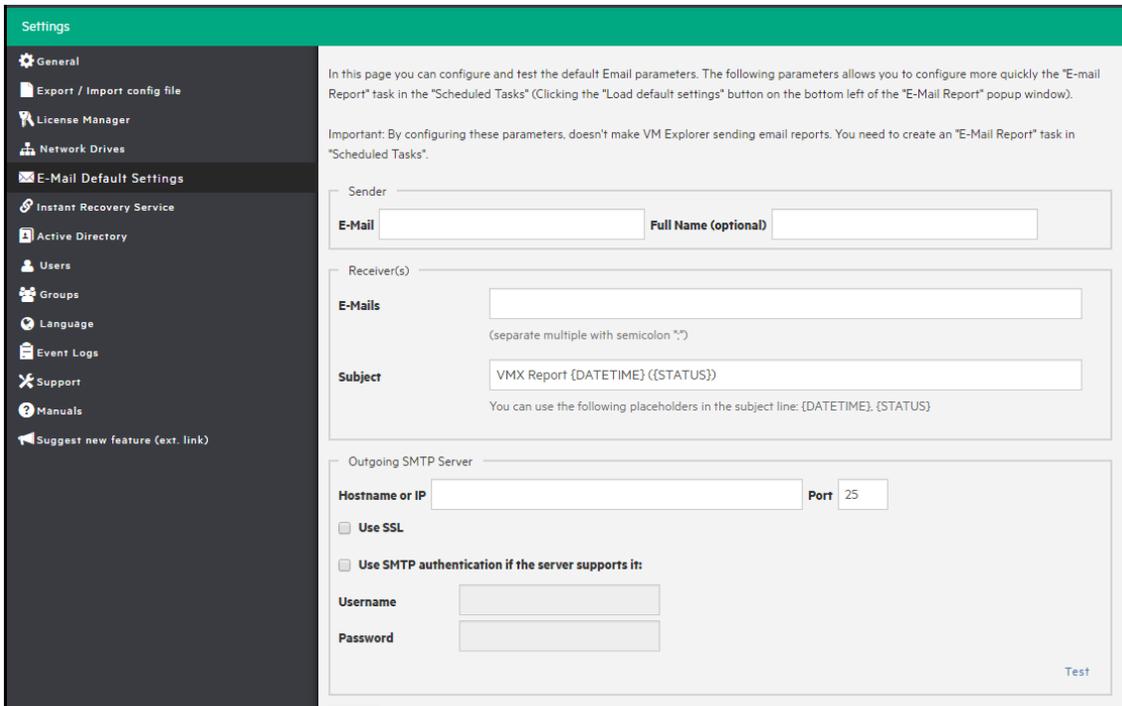


Figure 106: Settings - E-Mail

NOTE These settings will be used when adding an e-mail report in the scheduler, only if you click

Load default settings.

Active Directory

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

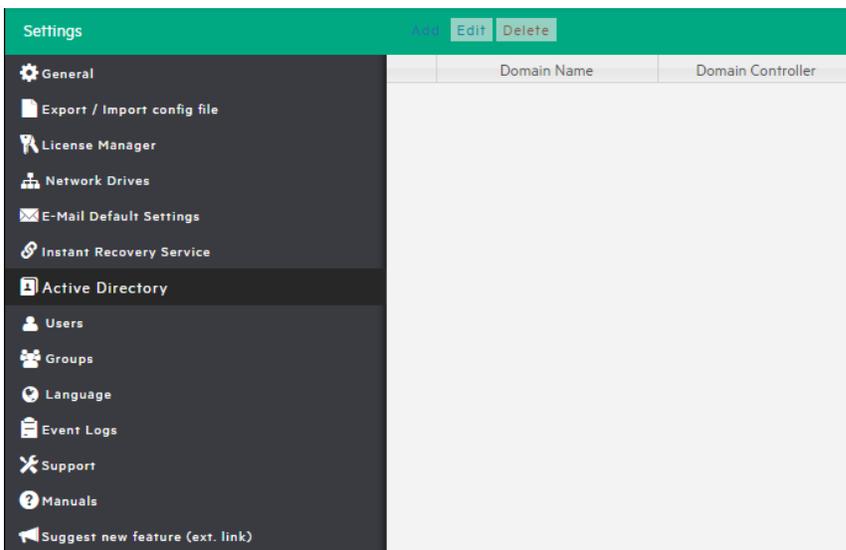


Figure 107: Settings - Active Directory page

To add an Active Directory entry:

1. Click Add.
2. Fill the Domain Name and the Domain Controller (IP or computer name) fields.

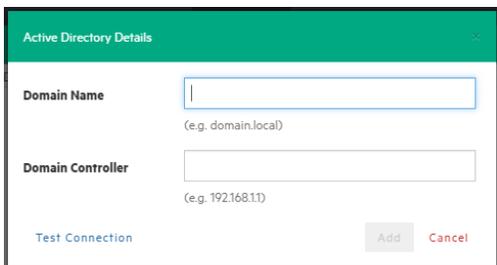


Figure 108: Active Directory Details

When testing the connection or acquiring the existing users in the Active Directory, you are prompted to add the administrative credentials (this will be requested every time, as VM Explorer does not store the administrative credentials in its database).

User

The **Users** settings allows you to add, edit and delete the VM Explorer users and their access permission. The table shows the list of the current users included in VM Explorer, with additional detailed information.

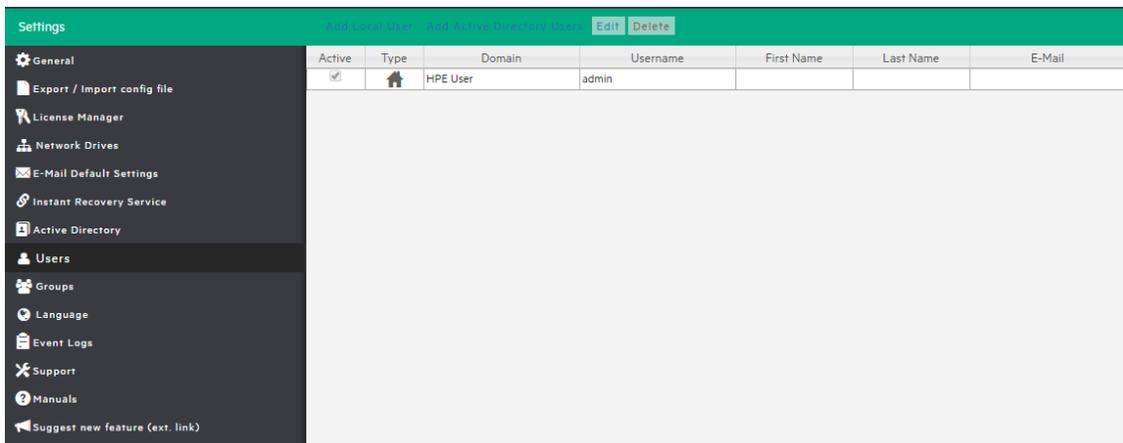


Figure 109: Settings - Users

To add a new local user:

1. Click Add Local User.
2. Select the user group from the Groups list. Multiple choices are permitted.

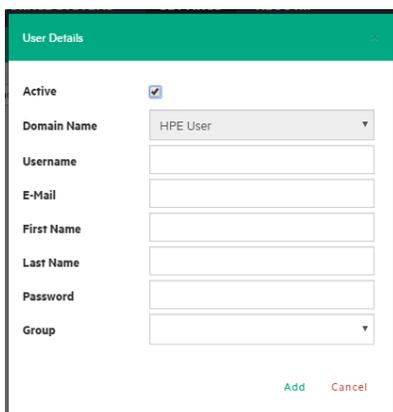


Figure 110: Settings - User Details

Local users will only be available in VM Explorer and the password will be stored and encrypted.

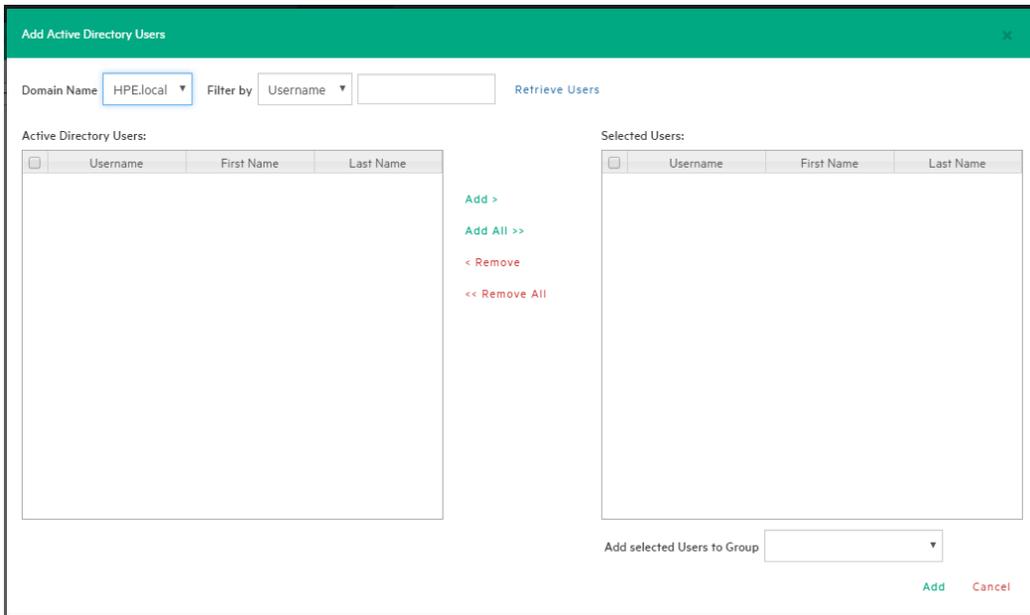


Figure 111: Settings - Add Active Directory Users

When adding users, you can also retrieve lists of users from Active Directories added in VM Explorer. Refer to "Active Directory" on page 96 for more information. After the Active Directory has been added, click **Add Active Directory Users**.

The new window will allow you to insert in the VM Explorer configuration the users present in the Active Directory. Select the domain name from the list (if multiple Active Directories have been added) then click **Retrieve Users** to obtain the list from the **Active Directory**. This action will require to enter the administrative credentials since VM Explorer does not save them.

As the retrieved list limit is 2000, if the user you are looking for is not present you can use the **Filter by** option. The filter can be applied by username, first name and last name.

Once you have selected the users to be added, you can now choose on which group they will be added. Click **Add selected Users to group**. Multiple choices are permitted.

As an admin, you will be able to edit the first name, the last name, the e-mail and the user groups in which the user has privileges. All other fields are disabled for editing in order to keep consistency with **Active Directory**.

Groups

In the **Groups** settings, you can add or exclude the users in every group. The available groups are:

- **Administrator:** performs all administrative activities in VM Explorer.
- **Scheduled Task Operator:** manually executes scheduled tasks and views the **Task History**.
- **Restore Task Operator:** performs restore operations using existing backups/replications and restores single files from any backup.
- **Task Viewer:** views all the existing backups/replications and the **Task History**.
- **Guest:** can view the Datacenter, the Scheduled Tasks, the existing backups/replications and the **Task History** in read-only mode.

To edit a group, click the **Edit**. You can add a user by selecting it from the Users list. To delete a user, click **X** next to the name.

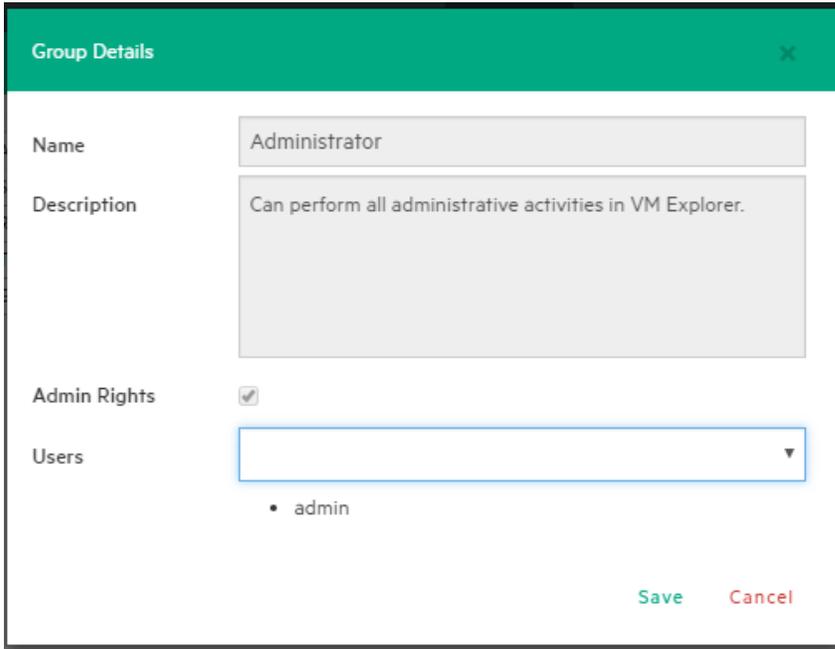


Figure 112: Settings - Group Details

Instant Recovery Service

To use VM Explorer NFS, ensure that no other NFS server is running on the machine with VM Explorer installed and that no other services are using TCP port 111.

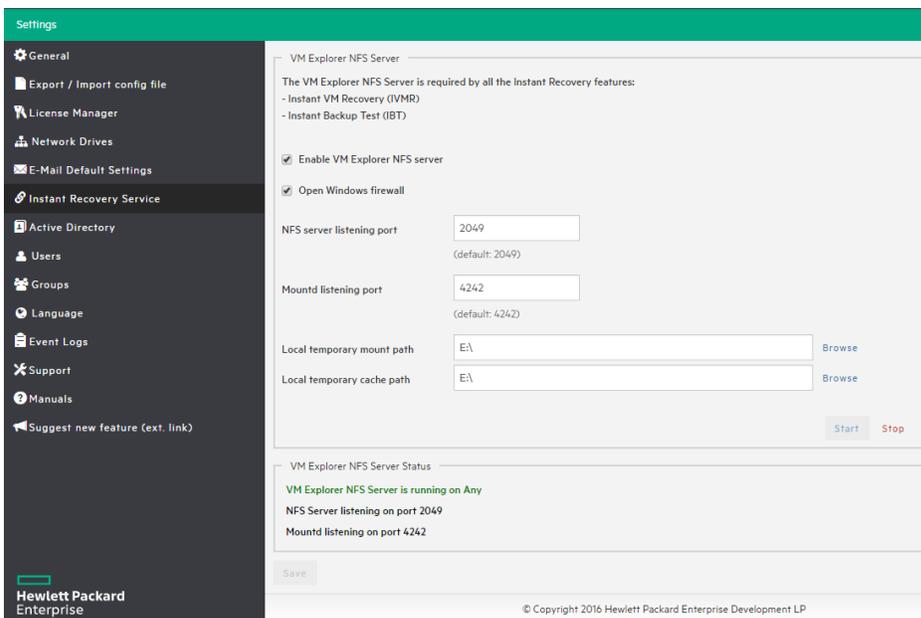


Figure 113: Settings - Instant Recovery Service

To be able to use the automatic backup test, you need to configure and enable the VM Explorer NFS:

1. Click **Settings**.
2. In the left menu, click **Instant Recovery Service**.

Start and Stop allow you to influence the VM Explorer NFS server while the dialog is open. If the **Enable VM Explorer NFS server** option is checked, VM Explorer NFS Server will automatically start when the dialog is closed. The server will automatically stop if this option is disabled.

The **Open Windows Firewall** option will automatically open Windows Firewall for the VM Explorer NFS Server.

The **NFS server listening port** and the **Mounted listening port** are the ports that will be used to communicate with the NFS client on the host.

NOTE These changes take place once the server is restarted.

The **Local temporary mount path** and **Local temporary cache path** are the local paths that will be used to save temporary NFS mount files and temporary Instant VM cache files. The default value for both is the default system temporary path.

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

Language

The **Language** settings page allows you to localize the web application in your preferred language.

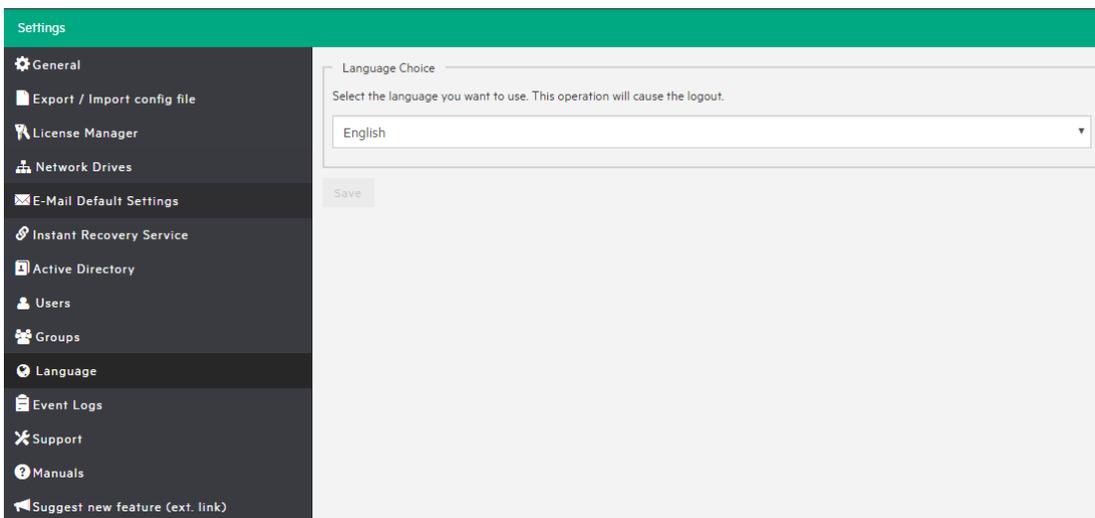


Figure 114: Settings - Language

This feature allows you to view almost all the strings in the Web Interface. By our choice, we did not translate: dates and times, tasks details, HTML Reports, Events logs, and some Service errors.

NOTE When you apply changes, the web application will automatically restart. Then you will return to the login page.

Chapter 21: Supported Operating systems for installing VM Explorer

- Windows Vista 32-bit/64-bit
- Windows 7 32-bit/64-bit
- Windows 8
- Windows 8.1
- Windows 10
- Windows Server 2008 32-bit/64-bit
- Windows Server 2008 R2
- Windows Server 2012
- Windows Server 2012 R2

Supported ESX Versions

VMware ESX Server 3.0.X

- VMware ESX Server 3.0.0 Build 27701
- VMware ESX Server 3.0.1 Build 32039
- VMware ESX Server 3.0.2 Build 52542
- VMware ESX Server 3.0.3 Build 104629
- VMware ESX Server 3.0.3 Update 1 Build 231127
- VMware ESX Server 3.0.3 Update 1 Build 312855

VMware ESX Server 3.5

- VMware ESX Server 3.5 Build 64607
- VMware ESX Server 3.5 Update 1 Build 82663
- VMware ESX Server 3.5 Update 2 Build 110268
- VMware ESX Server 3.5 Update 3 Build 123630
- VMware ESX Server 3.5 Update 4 Build 153875
- VMware ESX Server 3.5 Update 5 Build 207095
- VMware ESX Server 3.5 Update 5 Build 213532
- VMware ESX Server 3.5 Update 5 Build 226117
- VMware ESX Server 3.5 Update 5 Build 227413
- VMware ESX Server 3.5 Update 5 Build 238493
- VMware ESX Server 3.5 Update 5 Build 259926
- VMware ESX Server 3.5 Update 5 Build 283373

- VMware ESX Server 3.5 Update 5 Build 317866
- VMware ESX Server 3.5 Update 5 Build 391406
- VMware ESX Server 3.5 Update 5 Build 604481
- VMware ESX Server 3.5 Update 5 Build 702112
- VMware ESX Server 3.5 Update 5 Build 725354

VMware vSphere 4.0 (ESX 4.0)

- VMware ESX 4.0 Build 164009
- VMware ESX 4.0 Build 175625
- VMware ESX 4.0 Build 181792
- VMware ESX 4.0 Build 193498
- VMware ESX 4.0 Update 1 Build 208167
- VMware ESX 4.0 Update 1 Build 213128
- VMware ESX 4.0 Update 1 Build 219382
- VMware ESX 4.0 Update 1 Build 236512
- VMware ESX 4.0 Update 1 Build 244038
- VMware ESX 4.0 Update 1 Build 256968
- VMware ESX 4.0 Update 2 Build 261974
- VMware ESX 4.0 Update 2 Build 294855
- VMware ESX 4.0 Update 2 Build 332073
- VMware ESX 4.0 Update 2 Build 360236
- VMware ESX 4.0 Update 2 Build 392990
- VMware ESX 4.0 Update 3 Build 398348
- VMware ESX 4.0 Update 3 Build 480973
- VMware ESX 4.0 Update 4 Build 504850
- VMware ESX 4.0 Update 4 Build 538074
- VMware ESX 4.0 Update 4 Build 660575
- VMware ESX 4.0 Update 4 Build 702116
- VMware ESX 4.0 Update 4 Build 721907
- VMware ESX 4.0 Update 4 Build 787047
- VMware ESX 4.0 Update 4 Build 989856
- VMware ESX 4.0 Update 4 Build 1070634
- VMware ESX 4.0 Update 4 Build 1335992
- VMware ESX 4.0 Update 4 Build 1682696

VMware vSphere 4.1 (ESX 4.1)

- VMware ESX 4.1 Build 260247
- VMware ESX 4.1 Build 320092

- VMware ESX 4.1 Build 320137
- VMware ESX 4.1 Build 348481
- VMware ESX 4.1 Build 381591
- VMware ESX 4.1 Build 433742
- VMware ESX 4.1 Build 502767
- VMware ESX 4.1 Build 538358
- VMware ESX 4.1 Build 582267
- VMware ESX 4.1 Build 659051
- VMware ESX 4.1 Build 702113
- VMware ESX 4.1 Build 721871
- VMware ESX 4.1 Build 800380
- VMware ESX 4.1 Build 874690
- VMware ESX 4.1 Build 988178
- VMware ESX 4.1 Build 1050704
- VMware ESX 4.1 Build 1198252
- VMware ESX 4.1 Build 1363503
- VMware ESX 4.1 Build 1682698

ESXi Versions

VMware ESXi 3.5

- VMware ESXi 3.5 Build 70348
- VMware ESXi 3.5 Update 1 Build 82664
- VMware ESXi 3.5 Update 2 Build 110271
- VMware ESXi 3.5 Update 3 Build 123629
- VMware ESXi 3.5 Update 4 Build 153875
- VMware ESXi 3.5 Update 5 Build 207095
- VMware ESXi 3.5 Update 5 Build 213532
- VMware ESXi 3.5 Update 5 Build 226117
- VMware ESXi 3.5 Update 5 Build 238493
- VMware ESXi 3.5 Update 5 Build 259926
- VMware ESXi 3.5 Update 5 Build 289752
- VMware ESXi 3.5 Update 5 Build 317866
- VMware ESXi 3.5 Update 5 Build 391406
- VMware ESXi 3.5 Update 5 Build 604481
- VMware ESXi 3.5 Update 5 Build 702112
- VMware ESXi 3.5 Update 5 Build 725354

VMware ESXi 4.0

- VMware ESXi 4.0 Build 164009
- VMware ESXi 4.0 Build 175625
- VMware ESXi 4.0 Build 181792
- VMware ESXi 4.0 Build 193498
- VMware ESXi 4.0 Update 1 Build 208167
- VMware ESXi 4.0 Update 1 Build 219382
- VMware ESXi 4.0 Update 1 Build 236512
- VMware ESXi 4.0 Update 1 Build 244038
- VMware ESXi 4.0 Update 1 Build 256968
- VMware ESXi 4.0 Update 2 Build 261974
- VMware ESXi 4.0 Update 2 Build 294855
- VMware ESXi 4.0 Update 2 Build 332073
- VMware ESXi 4.0 Update 2 Build 360236
- VMware ESXi 4.0 Update 2 Build 392990
- VMware ESXi 4.0 Update 3 Build 398348
- VMware ESXi 4.0 Update 3 Build 480973
- VMware ESXi 4.0 Update 4 Build 504850
- VMware ESXi 4.0 Update 4 Build 660575
- VMware ESXi 4.0 Update 4 Build 702116
- VMware ESXi 4.0 Update 4 Build 721907
- VMware ESXi 4.0 Update 4 Build 787047
- VMware ESXi 4.0 Update 4 Build 989856
- VMware ESXi 4.0 Update 4 Build 1070634
- VMware ESXi 4.0 Update 4 Build 1335992
- VMware ESXi 4.0 Update 4 Build 1682696

VMware ESXi 4.1

- VMware ESXi 4.1 Build 260247
- VMware ESXi 4.1 Build 320092
- VMware ESXi 4.1 Build 320137
- VMware ESXi 4.1 Build 348481
- VMware ESXi 4.1 Build 381591
- VMware ESXi 4.1 Build 433742
- VMware ESXi 4.1 Build 502767
- VMware ESXi 4.1 Build 538358
- VMware ESXi 4.1 Build 659051
- VMware ESXi 4.1 Build 702113

- VMware ESXi 4.1 Build 721871
- VMware ESXi 4.1 Build 800380
- VMware ESXi 4.1 Build 874690
- VMware ESXi 4.1 Build 988178
- VMware ESXi 4.1 Build 1050704
- VMware ESXi 4.1 Build 1198252
- VMware ESXi 4.1 Build 1363503
- VMware ESXi 4.1 Build 1682698

VMware ESXi 5.0

- VMware ESXi 5.0 Build 469512
- VMware ESXi 5.0 Build 474610
- VMware ESXi 5.0 Build 504890
- VMware ESXi 5.0 Build 515841
- VMware ESXi 5.0 Build 623860
- VMware ESXi 5.0 Build 653509
- VMware ESXi 5.0 Build 702118
- VMware ESXi 5.0 Build 721882
- VMware ESXi 5.0 Build 768111
- VMware ESXi 5.0 Build 821926
- VMware ESXi 5.0 Build 914586
- VMware ESXi 5.0 Build 1024429
- VMware ESXi 5.0 Build 1117897
- VMware ESXi 5.0 Build 1254542
- VMware ESXi 5.0 Build 1311175
- VMware ESXi 5.0 Build 1489271
- VMware ESXi 5.0 Build 1851670
- VMware ESXi 5.0 Build 1918656
- VMware ESXi 5.0 Build 2000308
- VMware ESXi 5.0 Build 2312428
- VMware ESXi 5.0 Build 2509828
- VMware ESXi 5.0 Build 3086167

VMware ESXi 5.1

- VMware ESXi 5.1 Build 799733
- VMware ESXi 5.1 Build 838463
- VMware ESXi 5.1 Build 914609
- VMware ESXi 5.1 Build 1021289

- VMware ESXi 5.1 Build 1065491
- VMware ESXi 5.1 Build 1117900
- VMware ESXi 5.1 Build 1157734
- VMware ESXi 5.1 Build 1312873
- VMware ESXi 5.1 Build 1312874
- VMware ESXi 5.1 Build 1483097
- VMware ESXi 5.1 Build 1612806
- VMware ESXi 5.1 Build 1743533
- VMware ESXi 5.1 Build 1900470
- VMware ESXi 5.1 Build 2000251
- VMware ESXi 5.1 Build 2191751
- VMware ESXi 5.1 Build 2323236
- VMware ESXi 5.1 Build 2583090
- VMware ESXi 5.1 Build 3070626

VMware ESXi 5.5

- VMware ESXi 5.5 Build 1331820
- VMware ESXi 5.5 Build 1474528
- VMware ESXi 5.5 Build 1623387
- VMware ESXi 5.5 Build 1746974
- VMware ESXi 5.5 Build 1891313
- VMware ESXi 5.5 Build 1892794
- VMware ESXi 5.5 Build 2068190
- VMware ESXi 5.5 Build 2143827
- VMware ESXi 5.5 Build 2302651
- VMware ESXi 5.5 Build 2403361
- VMware ESXi 5.5 Build 2456374
- VMware ESXi 5.5 Build 2638301
- VMware ESXi 5.5 Build 2718055
- VMware ESXi 5.5 Build 3029944
- VMware ESXi 5.5 Build 3116895
- VMware ESXi 5.5 Build 3248547
- VMware ESXi 5.5 Build 3343343
- VMware ESXi 5.5 Build 3568722

VMware ESXi 6.0

- VMware ESXi 6.0 Build 1921158
- VMware ESXi 6.0 Build 2494585

- VMware ESXi 6.0 Build 2615704
- VMware ESXi 6.0 Build 2715440
- VMware ESXi 6.0 Build 2809209
- VMware ESXi 6.0 Build 3029758
- VMware ESXi 6.0 Build 3073146
- VMware ESXi 6.0 Build 3247720
- VMware ESXi 6.0 Build 3380124
- VMware ESXi 6.0 Build 3568940
- VMware ESXi 6.0 Build 3620759

Hyper-V versions

Supported Hyper-V versions

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

Supported tape libraries and autoloaders

- HPE StoreEver 1/8 G2 Tape Autoloader
- Dell PowerVault 124T

Chapter 22: FAQ and support

If you have any questions, please refer visit our online FAQ <http://www.trilead.com/FAQ/>.

If you need support, contact us at support@trilead.com.


Hewlett Packard
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