Hewlett Packard Enterprise

VM Explorer

Software Version 6.1.005
JUNE - 2016

USER MANUAL

Legal Notices

Warranty

The only warranties for Hewlett Packard Enterprise Development LP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HPE shall not be liable for technical or editorial errors or omissions contained herein.

The information contained herein is subject to change without notice.

Restricted Rights Legend

Confidential computer software. Valid license from HPE required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

Copyright Notice

© Copyright 2016 Hewlett Packard Enterprise Development LP

Trademark Notices

Adobe™ is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

UNIX® is a registered trademark of The Open Group.

This product includes an interface of the 'zlib' general purpose compression library, which is Copyright © 1995-2002 Jean-loup Gailly and Mark Adler.

Contents

1 Introduction 9

2 Install VM Explorer 9
2.1 Installation 9
2.2 Configure the VM Explorer web interface 10
2.2.1 Configuring the web interface address 10
2.2.2 Configuring the administrator password 11
2.3 Configuring the Outgoing SMTP Server 11
2.4 Configuring TCP ports 12

3 VM Explorer web interface overview 13
3.1 Web interface access 13
3.2 Web interface menu view 14

4 How to add servers to VM Explorer 15
4.1 How to add Hypervisor Servers 16
4.1.1 Add ESXi server 17
4.1.2 Add Hyper-V server 23
4.1.3 Add vCenter 25
4.1.4 Add Amazon S3 26
4.1.5 Add OpenStack, HP and Rackspace Cloud 27
4.2 Server information 28
4.2.1 Server Overview 28
4.2.2 Inbound Outbound View 28
4.2.3 Instant Recovery Status 29
4.2.4 Upload Manager 30
4.3 Virtual Machine information 31

5 Configure SAN Infrastructure 33

6 Configure Tape Infrastructure 36
6.1 Tape Libraries 37
6.1.1 Drives 38
6.1.2 Media 38
6.1.3 Media Pools 39

6.1.4 Create custom media pool 39
6.2 Tape Backups 42

7 Configure Network Drives 43

8 Scheduled task 46
8.1 Create a Scheduled task 46
8.2 Copy a Scheduled task 48
8.3 Copy a Scheduled task element 49
8.4 Command line interface 49

9 Backup 50
9.1 Single VM 50
9.2 Multiple VMs 56
9.3 Incremental backup 57
9.3.1 Enabling VD Services for incremental backups 58
9.3.2 Initialize Virtual Disk Service (VD Service) 59
9.3.3 Enable the VD Service for ESXi host 59
9.4 Backup encryption 60

10 Replication 62
10.1 Single VM 62
10.2 Multiple VMs 66
10.3 Replication explorer 67

11 Copy backup 68

12 E-Mail report 72

13 Custom script 74

14 Restoring a VM 75
14.1 Restore an incremental backup 78
14.2 Restore an encrypted backup 79

15 Instant VM Recovery 80
15.1 Instant VM Recovery of Cloud backups 81

16 File Explorer 82
16.1 File level restore for single files 82

17 Task history 83

18 Instant Recovery Service 84

19 Settings 85
19.1 General 85
19.2 Export / Import Configuration 86
19.3 E-Mail 87
19.4 Active Directory 87
19.5 User 88
19.6 Groups 89
19.7 Password Recovery 90
19.8 Instant Recovery Service 91
19.9 Language 92

20 Supported systems 93
20.1 Operating Systems 93
20.2 ESXi Versions 93
20.3 Hyper-V Versions 96
20.4 Tape Libraries / Autoloaders 96
20.5 Virtual storage systems 96

21 FAQ and Support 97

List of figures

Figure 1: VM Explorer Starter....9
Figure 2: WebServer Settings....10
Figure 3: Supported web browsers....11
Figure 4: Web login field....13
Figure 5: Language selection for the first time access....13
Figure 6: Web available menu....14
Figure 7: Add server dialog....16
Figure 8: Organize servers in folder....16
Figure 9: Add Server - Name & Location....17
Figure 10: Add Server - Connection Settings....17
Figure 11: Add Server- Port Settings....18
Figure 12: Add Server - SSH / VM Explorer Agent....19
Figure 13: Add Server - Advanced Settings....20
Figure 14: Add Server - Test Connection....20
Figure 15: Add Server - Default Folders....21
Figure 16: Add Server - Summary....22
Figure 17: Add Server (Hyper-V) - Connection Settings....23
Figure 18: Add Server (Hyper-V) - Advanced Settings....23
Figure 19: Add Server (Hyper-V) - Test Connection....24
Figure 20: Add Server (Hyper-V) - Hyper-V Agent Manager....24
Figure 21: Add Server (vCenter) - Connection Settings....25
Figure 22: Add Server (vCenter) - Port Settings....25
Figure 23: Add Server (Amazon S3) - Connection Settings....26
Figure 24: Add Server (OpenStack, HP, Raskspace) - Connection Settings....27
Figure 25: Server - Overview....28
Figure 26: Server – Inbound Outbound View....28
Figure 27: Server - Instant Recovery Status....29
Figure 28: Server - Upload Manager....30
Figure 29: VM General....31
Figure 30: VM Screenshot....31
Figure 31: VM Snapshot Manager....32
Figure 32: San Infrastructure page....33
Figure 33: Add San Infrstucture - Name & Connection Settings....34
Figure 34: Add San Infrstucture - Test Connection....34

Figure 35: Add San Infrstucture - Summary 35
Figure 36: Windows Device Manager 36
Figure 37: Unknown Medium Changer in Windows Device Manager 36
Figure 38: Tape Instructure page 37
Figure 39: Tape Library overview 37
Figure 40: Add Media Pool - Name 39
Figure 41: Add Media Pool - Media List 40
Figure 42: Add Media Pool - Free Pool 40
Figure 43: Add Media Pool - Retention 41
Figure 44: Add Media Pool - Summary 41
Figure 45: Tape Restore - Target options 42
Figure 46: Network Drives page 43
Figure 47: Networkd Drive - Location 44
Figure 48: Network Drive - Credential 44
Figure 49: Network Drive - Test Connection 45
Figure 50: Netword Drive - Summary 45
Figure 51: Create New Backup Schedule... 46
Figure 52: Add Scheduled Task 46
Figure 53: Scheduled task page 47
Figure 54: Copy scheduled task dialog 48
Figure 55: Copy task element dialog 49
Figure 56: Add Task Element 50
Figure 57: Backup - General 51
Figure 58: Backup - Files & Disks 51
Figure 59: Backup – Snapshot (ESX) 52
Figure 60: Backup - VSS Snapshot (Hyper-V) 53
Figure 61: Backup - Connection 54
Figure 62: Backup - Advanced 54
Figure 63: Backup - Verify Backup 55
Figure 64: Backup - File Consistency confirm message 55
Figure 65: Multi Backup - General 56
Figure 66: Multi Backup - Select multiple VMs 57
Figure 67: Incremental Backup - General 58
Figure 68: Settings - Manuals 59
Figure 69: Edit Server... 59
Figure 70: Backup Encryption 60
Figure 71: Password encryption 60

Figure 72: Change encryption password 61
Figure 73: Replication - General 62
Figure 74: Replication - VD Service dialog 63
Figure 75: Replication - Enable VD Service 63
Figure 76: Replication - Replication tab 64
Figure 77: Replication - Network Adapters 65
Figure 78: Replication - Verify Replication 65
Figure 79: Muilti Replication - General 66
Figure 80: Multi Replication - Select multi VMs 66
Figure 81: Replication explorer 67
Figure 82: Copy Backup - Backups to copy 68
Figure 83: Copy Backup - Target options (To Server) 69
Figure 84: Copy Backup - Target options (Tape Media) 70
Figure 85: Copy Backup - Summary 70
Figure 86: Copy Backup - Target options (Removed scheduled task) 71
Figure 87: E-Mail Report 72
Figure 88: Script task setup 74
Figure 89: Restoring - Backup Explorer 75
Figure 90: File Explorer 75
Figure 91: Restore - General 76
Figure 92: Restore - Files & Disks 77
Figure 93: Restore - Connection 77
Figure 94: Restore - Network Adapters 78
Figure 95: Restore Incremental Backup - General 78
Figure 96: Restore encrypted backup 79
Figure 97: Instant VM Recovery from backup explorer 80
Figure 98: Instant VM Recovery target settings 80
Figure 99: Instant VM Recovery for Cloud 81
Figure 100: File Explorer 82
Figure 101: Disk image warning 82
Figure 102: Task history page 83
Figure 103: Scheduled Task Details 83
Figure 104: Instant Recovery Service page 84
Figure 105: Settings - General 85
Figure 106: Settings - Export / Import Configuration file 86
Figure 107: Settings - E-Mail 87
Figure 108: Settings - Active Directory page 87

Figure 109: Active Directory Details 88
Figure 110: Settings - Users.....88
Figure 111: Settings - User Details 88
Figure 112: Settings - Add Active Directory Users 89
Figure 113: Settings - Group Details 90
Figure 114: Settings – Password Recovery 90
Figure 115: Settings - Instant Recovery Service 91
Figure 116: Settings - Language 92

1 Introduction

VM Explorer® is a simple but 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.

The HPE services and materials presented for VM Explorer® hereinafter are protected by copyright, trademark, trade dress, unfair competition, and other intellectual property rights. The trademarks, logos and marks of HPE and VM Explorer® displayed on the services and products are the property of HPE or third parties. You are not permitted to use the Marks without the prior consent of HPE or the third party that may own the Marks.

2 Install VM Explorer

This section describes how to install and configure VM Explorer

2.1 Installation

First, download the latest VM Explorer® release from our website http://www.trilead.com/download/.

Start the installation by double clicking the downloaded file. Follow the steps of the installation wizard.

You should accept the EULA terms and condition.
Optionally, you can change your installation path.

Note: To install VM Explorer®, .NET Framework 4.0 or higher is required.

To start VM Explorer®, select Start → All Programs → HP Enterprise → HPE VM Explorer

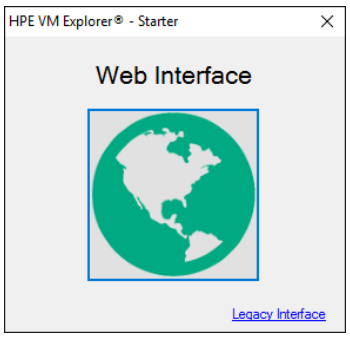


Figure 1: VM Explorer Starter

At this point if you press the Web Interface button 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:

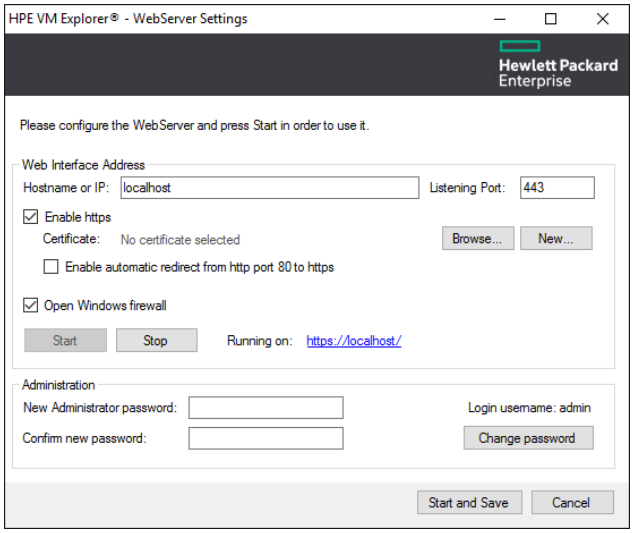


Figure 2: WebServer Settings

The configuration of the VM Explorer® Web Interface is described in the next section. Please note that you need to set the **administrator password** before entering the web interface for the first time.

2.2 Configure the VM Explorer web interface

The VM Explorer® Web Interface settings can be configured from the dialog shown in the previous section. It can also be configured from the VM Explorer Starter window by using the “Web Settings” link.

2.2.1 Configuring the web interface address

After having configured the hostname (or IP address) and the port where the web server listens, the web server can be started by pressing the “Start” button. The “Stop” button will halt the web server (Figure 2: WebServer Settings).

If the “Enable https” option is selected, the web interface will be accessible using the https protocol, and the web address will change accordingly; in this case, it is possible to enable automatic redirect from 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.

Clicking on the “New…” button, it is possible to generate and install a new VM Explorer® https certificate, after a confirmation dialog.

Please note that the browser could display a warning message when opening the https link, being the https certificate self-signed and not issued by a trusted certificate authority.
In order to select a user trusted certificate, click on the “Browse…” button. This option permits to see all the valid certificates and choose one of them.

Please note that only certificates installed on “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 show "Certificate not found.” words.

Clicking on the valid certificate text, a dialog box with all the information about it will be shown.

In this section it can also be configured if the Web Server has to be started automatically after a reboot and if Windows firewall has to be 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 manually or simply click the link that appears on “Running on:”. Please note that VM Explorer® Web Interface is tested to work with the latest version of the following browsers:

Figure 3: Supported web browsers

2.2.2 Configuring the administrator password

In the Administration section a new administrator password can be set. Enter and confirm the new password then press “Change password”. The administrator login name is **admin.** Please note that you need to set the admin password before entering the Web Interface for the first time.

The user password must satisfy the following constraints:

- At least one special characters (%&?,;:!-._*@#+$=)
- At least one lower case letter
- At least one upper case letter
- At least two digits
- The length must be between 10 and 20 characters

The same constraints must be satisfied whenever a new user is created or edited.

2.3 Configuring the Outgoing SMTP Server

The Outgoing SMTP Server is used by users to request a new temporary password by email. For more information see the Password Recovery section.

2.4 Configuring TCP ports

VM Explorer® will use different TCP ports to communicate between VM Explorer® and hosts or between hosts:

- **For ESXi Servers:**
  For ESXi editions only TCP Port 443 (HTTPS) is required
  If the option '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 vCenter:**
  For vCenter the 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

3 VM Explorer web interface overview

3.1 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 the user can insert login credentials and press “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

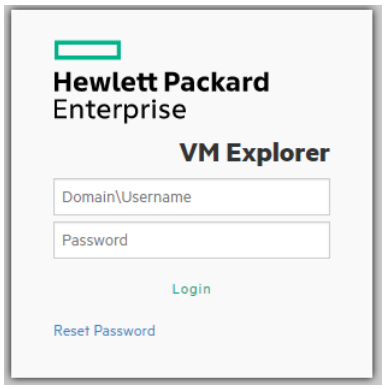


Figure 4: Web login field

If you did not have configured the language yet, before the login mask, it will appear the Language Choice mask. It permits you to localize the web interface with your preferred language.

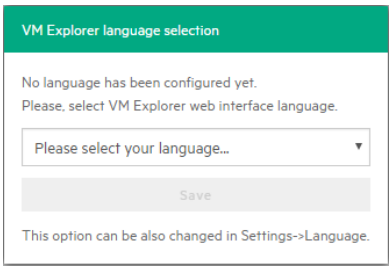


Figure 5: Language selection for the first time access

You can choose from one of the following languages:

- English
- German
- Italian
- French
- Japanese
- Spanish

3.2 Web interface menu view

In the Web Interface you will have a fixed menu on the top where you will be able to select eleven 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 (on the right side)
  - User options
  - Settings
  - Manuals
  - About…

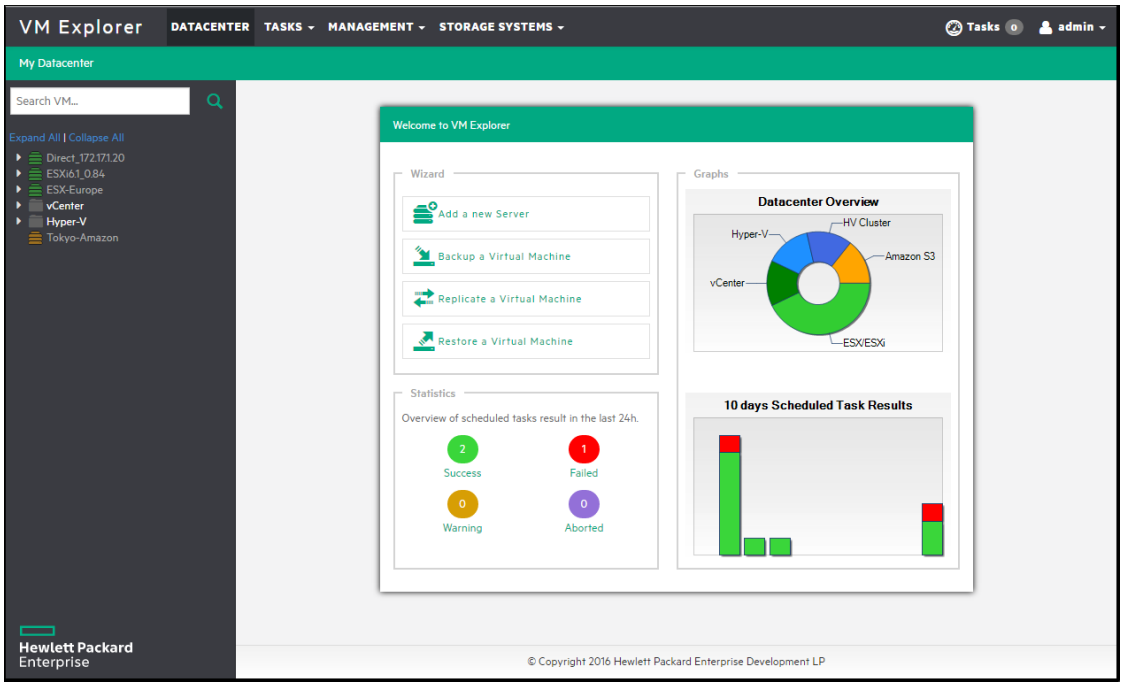


Figure 6: Web available menu

4 How to add servers to VM Explorer

VM Explorer® permits you to add various types of servers to its datacenter, from hypervisors to public/private clouds.
As well as select a name for the server to recognize the various entry, the icon in the datacenter permits to recognize the type of server. Below a representation of the various possibilities:

Folder

ESXi host

vCenter

Hyper-V

Hyper-V Cluster

Linux host

FreeBSD host

Amazon S3

OpenStack

HP Cloud

Rackspace Cloud

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

VM powered on

VM powered off

VM paused

VM in safe state (Hyper-V only)

Invalid VM

Unrecognized VM

4.1 How to add Hypervisor Servers

Before you can start using VM Explorer®, you need to add your Hypervisor hosts. There are several ways of doing this. Either you click the "Add a new Server" link on the intro page of VM Explorer®, or you can right-click the "My Datacenter" panel. From here, choose the "Add Server…" command.

This will start the “Add Server Wizard”. In the first dialog box you will need to choose the type of server you want to add. For this example, we will choose the option “ESXi 4/5/6

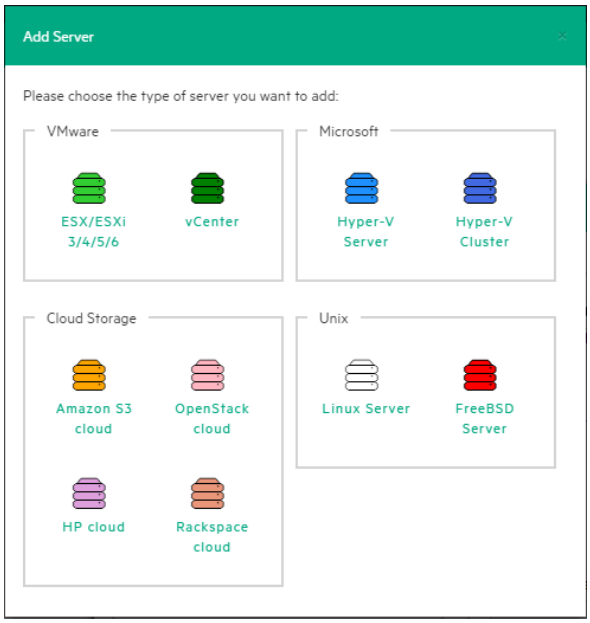


Figure 7: Add server dialog

If you want to organize your hosts in folders, you can right click on a host from "My Datacenter" panel and choose the “Add new Folder” command. The dialog box asks you to specify your folder.

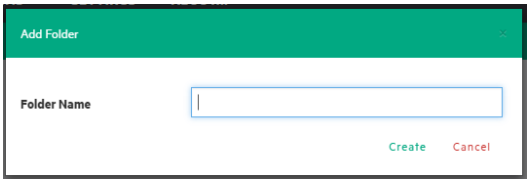


Figure 8: Organize servers in folder

4.1.1 Add ESXi server

1. Name & Location:

   In the next window we will 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.

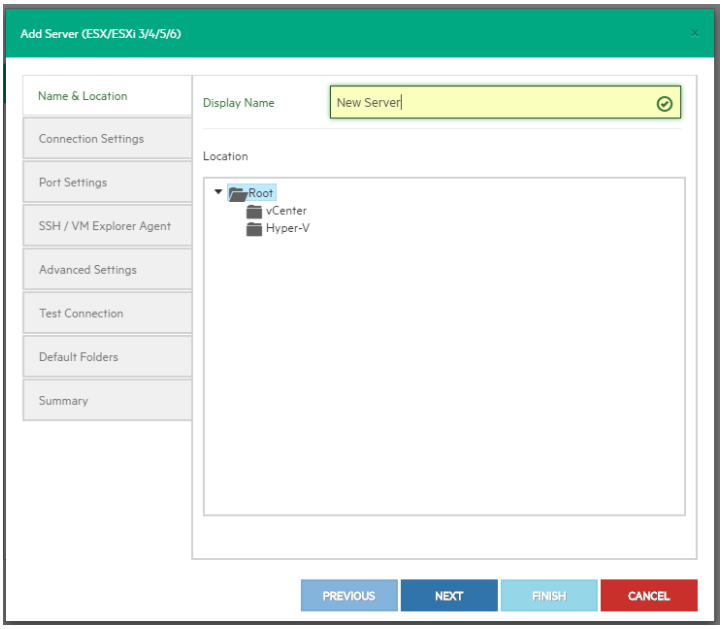


Figure 9: Add Server - Name & Location

2. Connection Settings (Only for ESXi host):

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

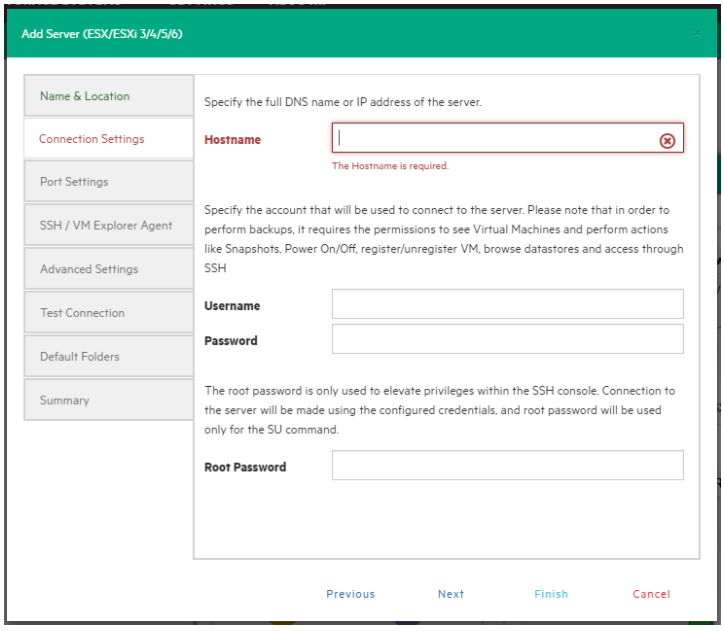


Figure 10: Add Server - Connection Settings

3. Port Settings (Only for ESXi host):

   This page will permit the user to configure, if necessary, a different port for SSH (default is 22) and a different port for the ESX Management Console (HTTPS, default is 443).

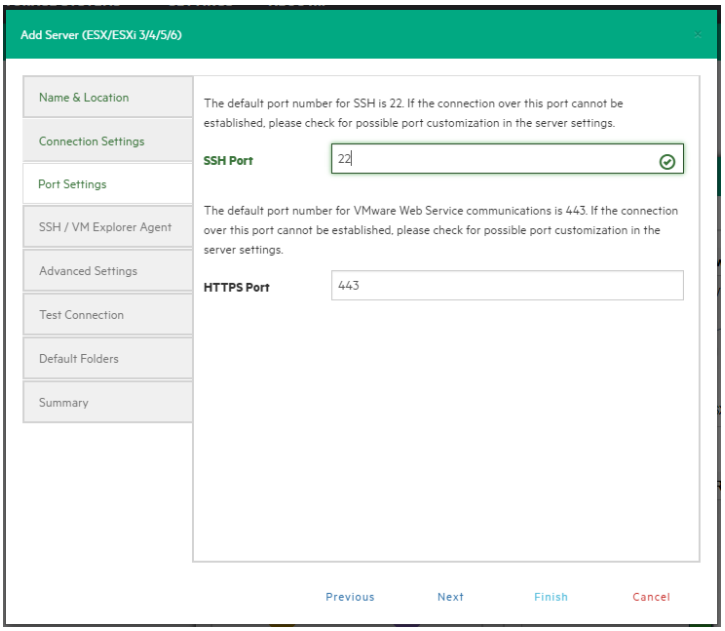


Figure 11: Add Server- Port Settings

4. SSH / VM Explorer Agent (Only for ESXi host):

   At this point you will be able to set three options:

   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. Just select the corresponding check.

   Use SSH (SCP) to transfer files if this is an ESX 4i/5i/6i 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 that backups are faster and more stable. ESXi does not support SSH by default, so no agent will be deployed. If you enable this option, VM Explorer® will deploy an agent to your ESXi server. We recommend activating this feature, as the performance will be much better than when using the official API.

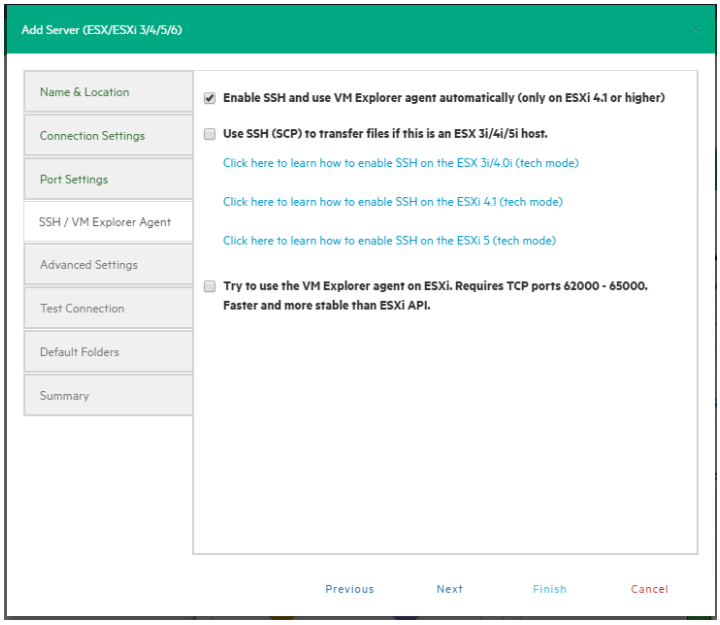


Figure 12: Add Server - SSH / VM Explorer Agent

5. Advanced Settings (Only for ESXi host)**:**

These three option available in this tab are:

Do not dynamically open the firewall
This only refers to Linux or ESXi ≥ 5.0 servers only. VM Explorer® will configure the firewall automatically for your Linux or ESXi ≥ 5.0 server. You can open the ports yourself (see FAQ) 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 in some cases uses more system resources.
Disable this option if you notice performance problems during your backups/replication from an ESX host to the same ESX host.

Using VD Service
The VD Service interface is a new feature which has been added to VM Explorer® in version 2.1. If you enable this feature, you will have the option to create differential backups. Note: ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 / 6.0 is required; please also note, that this feature does not work on ESXi 4.0 / 4.1 / 5.0 / 5.1 / 5.5 / 6.0 free edition.

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

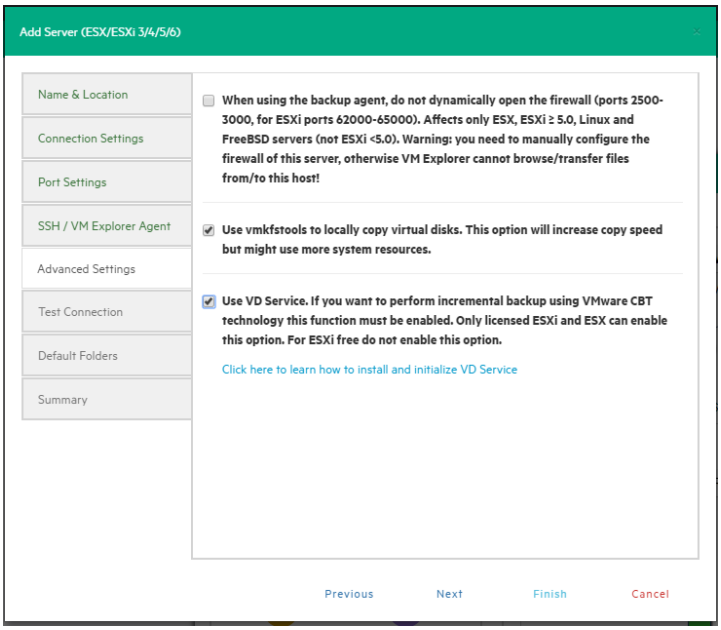


Figure 13: Add Server - Advanced Settings

6. Test Connection**:**

   This tab will automatically start the “Test Connection” functionality and reports if it succeeded or if an error was encountered. If succeeded, you can now proceed to the last few options.

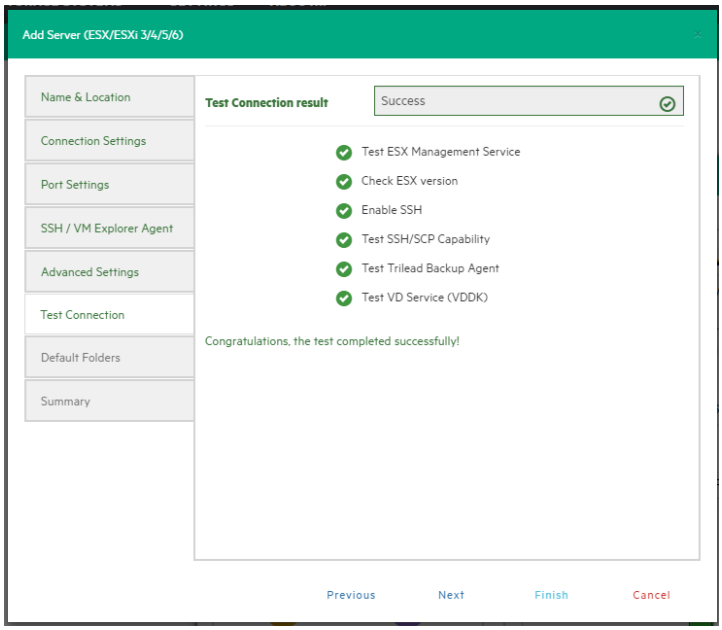


Figure 14: Add Server - Test Connection

7. Default Folders:

For the first field you can configure a default directory which will be proposed on the backup/replication setup dialog when 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}: current date/time, will write the date using the following format:
YYYY-MM-DD-hhmmss

{DATE}: current date, will write the date using the following format:
YYYY-MM-DD

{VM}: display name of the virtual machine

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

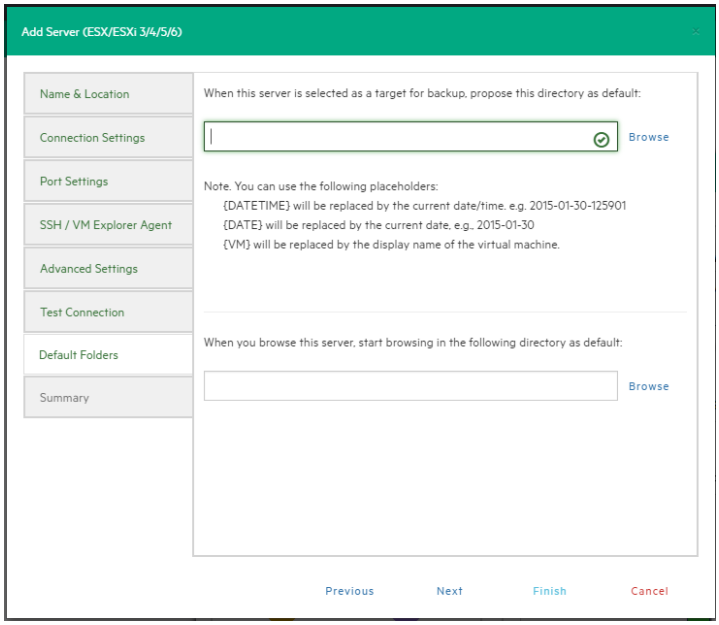


Figure 15: Add Server - Default Folders

8. Summary:

   At this point you have succeeded in configuring your host. A brief summary is visible so that you can check the parameters selected. Select save and it will be automatically added to your datacenter.

   The settings you have selected can be changed at any time by right-clicking your Hypervisor host entry in the datacenter View and choosing the "Edit Server..." menu.

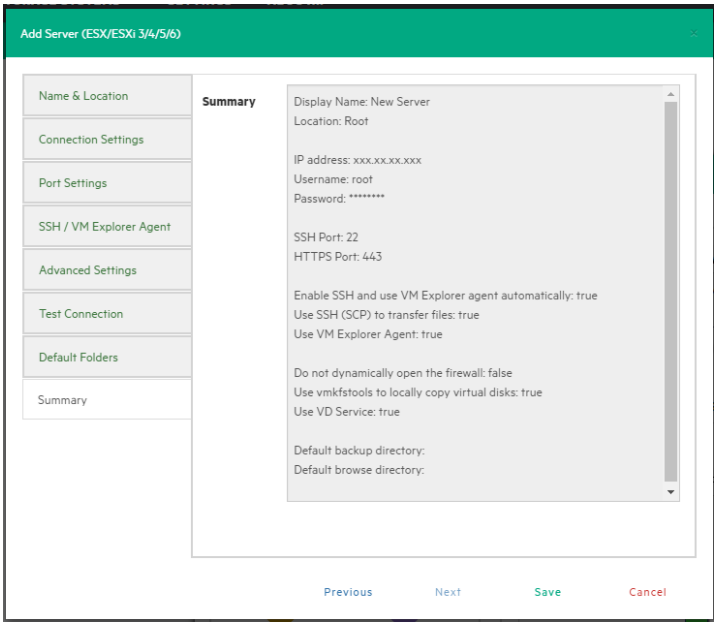


Figure 16: Add Server - Summary

4.1.2 Add Hyper-V server

This section will show the differences from adding an ESXi host when adding a Hyper-V host in the Add Server Wizard. For the tabs not explained please check the previous pages.

1. Connection Settings (Hyper-V Only): this page permits to set the credentials necessary for connecting to the Hyper-V host. The option “Start Hyper-V Agent using configured credentials” permits to start the agent with the credential inserted and not as the user Local System.

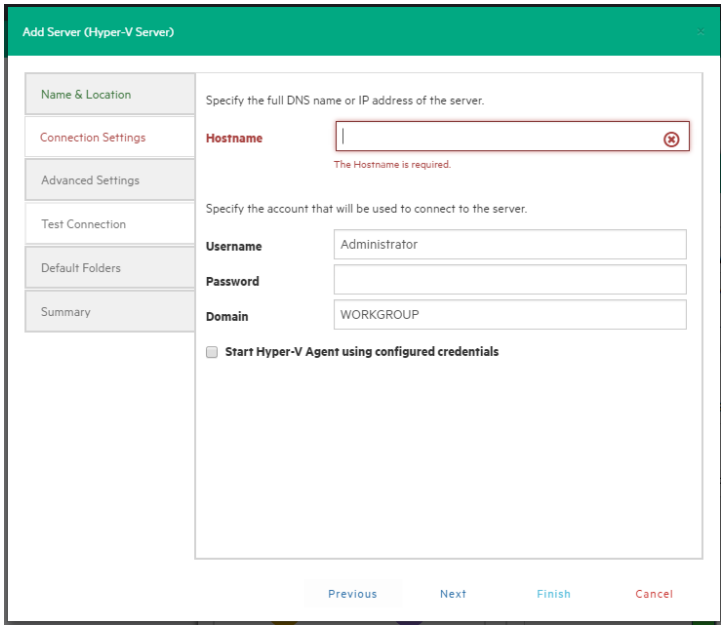


Figure 17: Add Server (Hyper-V) - Connection Settings

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

   Please note that using this option could slow down backup process if target is set to “Local Computer”.

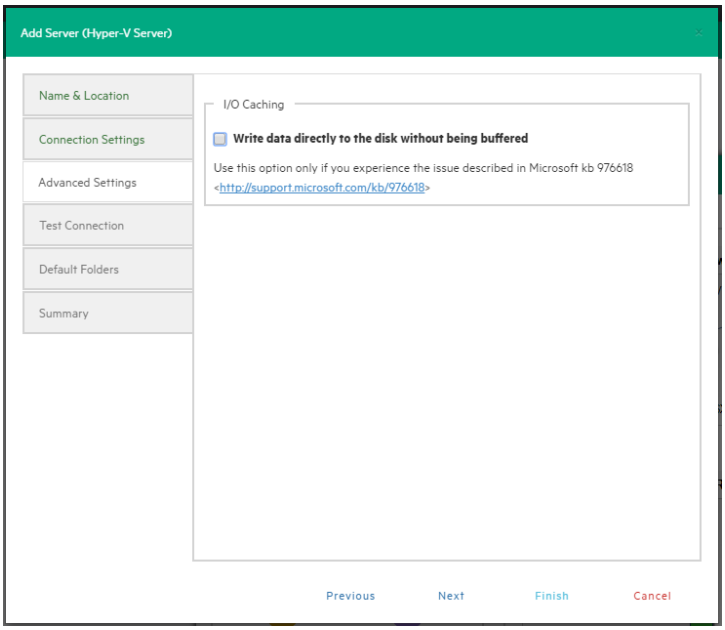


Figure 18: Add Server (Hyper-V) - Advanced Settings

3. Test Connection (Only for Hyper-V host): The test connection will deploy the “Trilead Agent Manager” to your server. If there are any problems with it, the “Agent Manager” button will appear. Click the button to open the “Hyper-V Agent Manager” window where you can manually deploy it. From this tab you can also choose the option to remove the Agent Manager from the server.

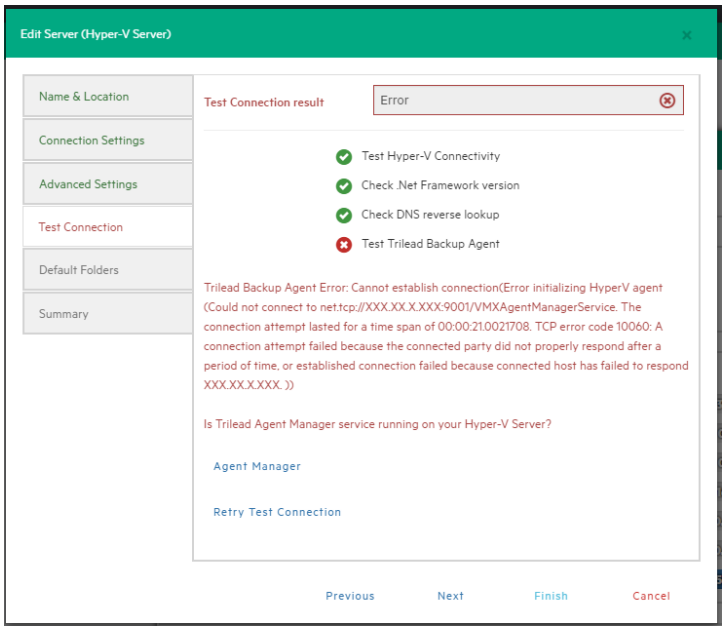


Figure 19: Add Server (Hyper-V) - Test Connection

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

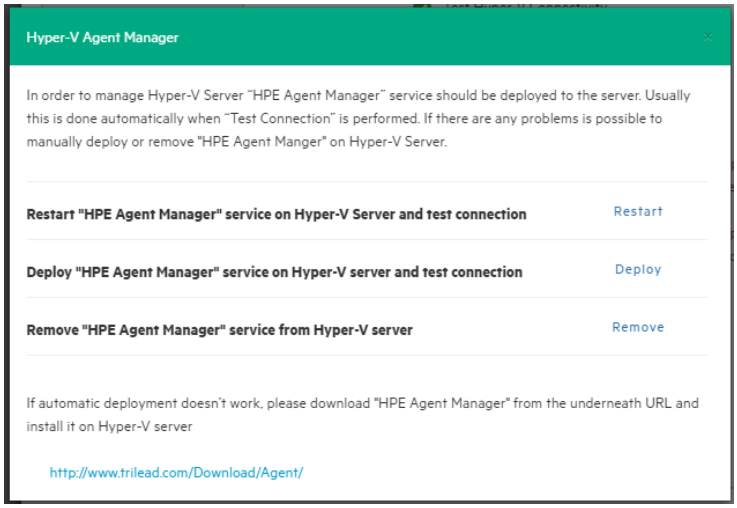


Figure 20: Add Server (Hyper-V) - Hyper-V Agent Manager

4.1.3 Add vCenter

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

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

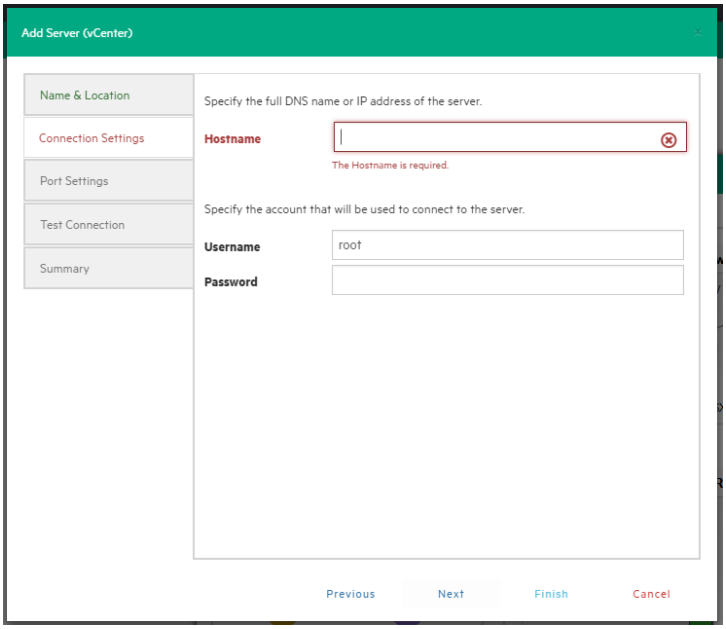


Figure 21: Add Server (vCenter) - Connection Settings

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

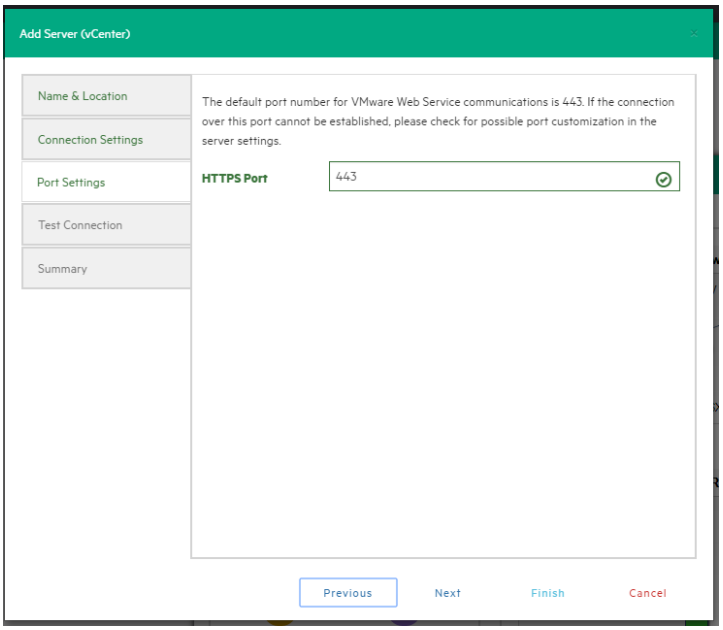


Figure 22: Add Server (vCenter) - Port Settings

After your vCenter has been added, VM Explorer® will show all hosts which belong to your vCenter. In order to be used, you have to configure every host by right clicking and choosing "Edit Server...". The configuration is identical as in the last chapter (Add ESXi Servers to VM Explorer®).

Please note: ESXi servers can't be set as Lockdown mode because of permission problem. If ESXi servers are already in Lockdown mode, please remove Lockdown:

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.

4.1.4 Add Amazon S3

This section will show the differences from adding an ESXi host when adding an Amazon S3 Cloud host in the Add Server Wizard. For the tabs not explained please check the previous pages.

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. Please note that choosing a specific region will reduce data latency.

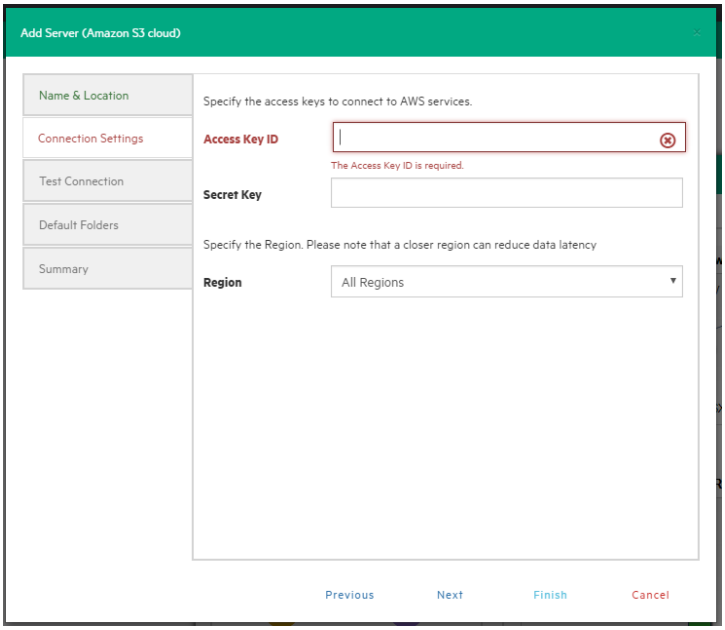


Figure 23: Add Server (Amazon S3) - Connection Settings

4.1.5 Add OpenStack, HP and Rackspace Cloud

This section will show the differences from adding an ESXi host when adding an OpenStack, HP or Rackspace Cloud host in the Add Server Wizard. For the tabs not explained please check the previous pages.

Connection Settings (Only for OpenStack, HP 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.

Please not that earlier versions used the term “Project” instead of “Tenant”.

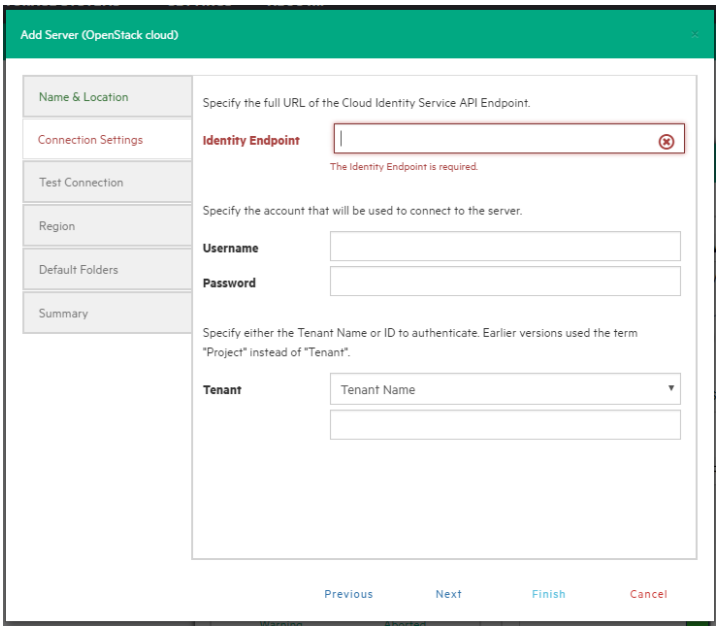


Figure 24: Add Server (OpenStack, HP, Raskspace) - Connection Settings

4.2 Server information

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

4.2.1 Server Overview

By selecting the server, you get general information about the host and its datastores:

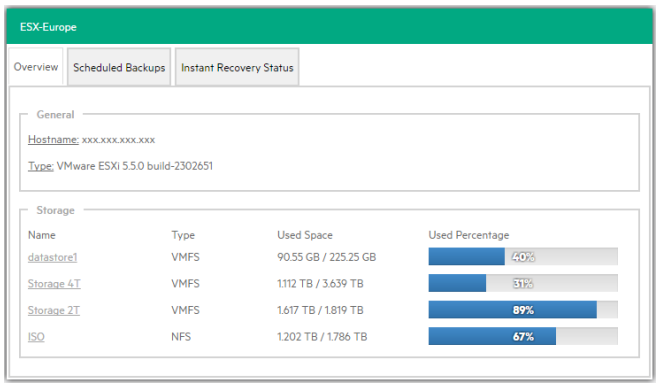


Figure 25: Server - Overview

4.2.2 Inbound Outbound View

The Scheduled Backups Tab will take you to a view that will sum up all the tasks that are connected with the current server.

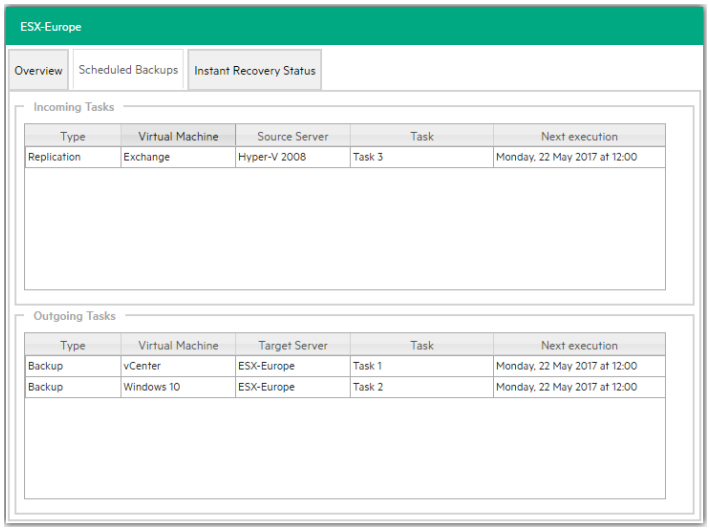


Figure 26: Server – Inbound Outbound View

4.2.3 Instant Recovery Status

You can also select the tab “Instant Recovery Status” to check the connection status between hypervisor and VM Explorer® NFS server.

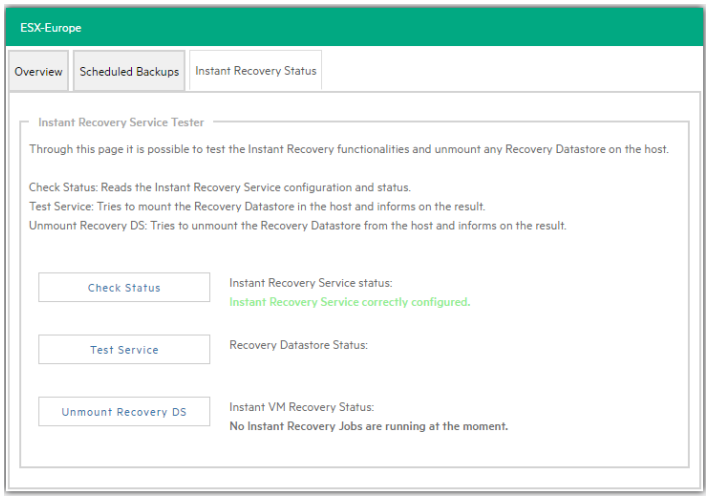


Figure 27: Server - Instant Recovery Status

The “Check Status” button will update the status of the data and give you an overview of the operation possible and ongoing. On the status 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 in execution this command will fail as the host will refuse it.

4.2.4 Upload Manager

The “Uploads Manager” tab is available only for Amazon S3, which permits you to have an overview of the multipart uploads currently active with the Amazon S3 cloud.

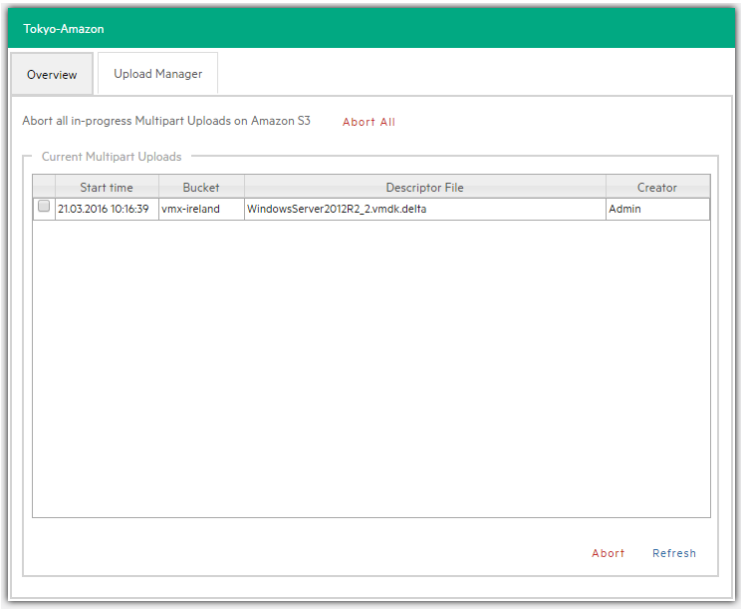


Figure 28: Server - Upload Manager

The “Abort All” button stops and delete all multipart upload jobs currently running.

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

Refresh is not automatic and must be activated by selecting the “Refresh” button, even the first time.

4.3 Virtual Machine information

By selecting a Virtual Machine, you will have an overview of the VM.

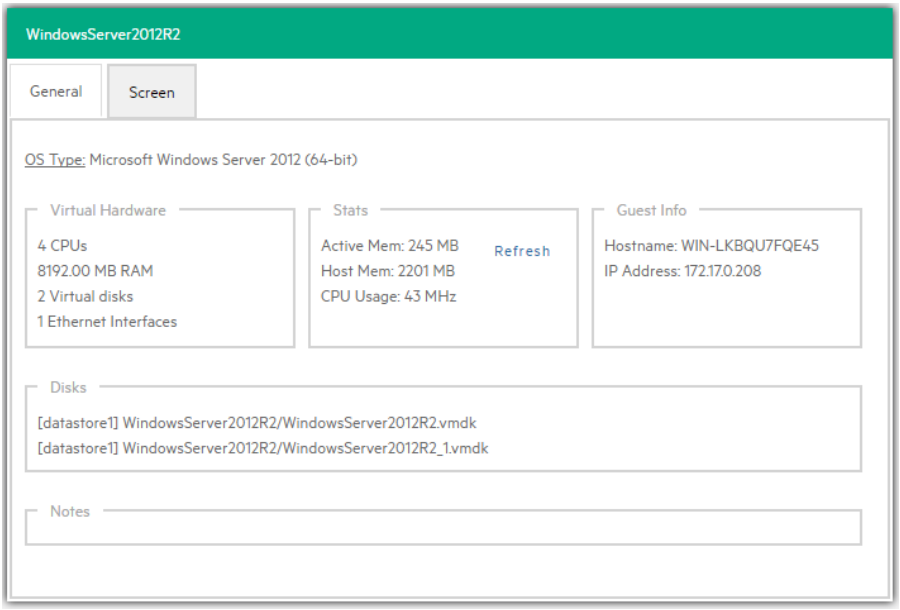


Figure 29: VM General

You also have the possibility to request a screenshot of the VM in the “Screen” tab. Just press refresh to be kept up to date.

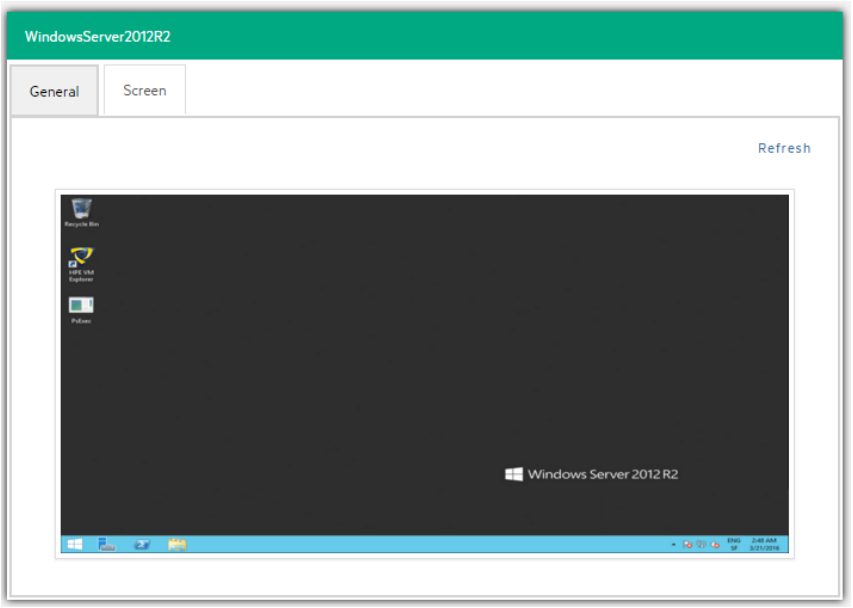


Figure 30: VM Screenshot

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

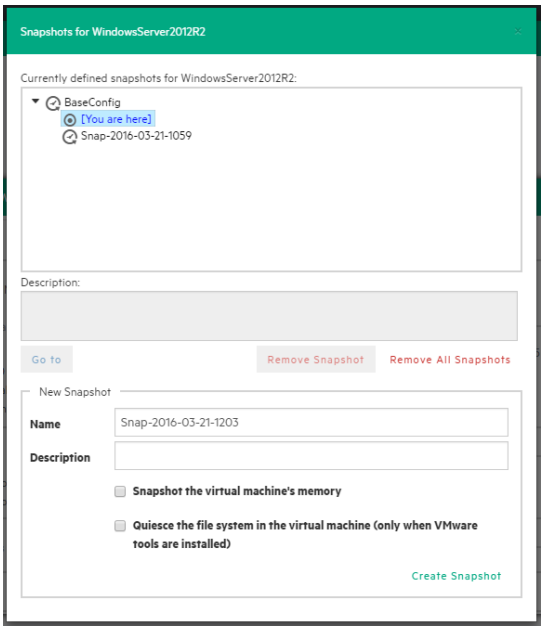


Figure 31: VM Snapshot Manager

When selecting “Snapshot Manager” option, a new dialog will appear, showing the snapshot tree of the selected VM. From here you can navigate through the snapshots, delete a specific snapshot or all.

With the “Create Snapshot” command you can take a new snapshot. You can set the option for quiesce and memory snapshot, name the snapshot and give a brief description.

5 Configure SAN Infrastructure

If your network has an EMC² ScaleIO System installed, you can add a reference to this SAN system in VM Explorer®, in order to have the possibility to see the information about your ScaleIO and execute backups with Storage Snapshot. Please see the “Backup a VM” chapter for more details.

Please note that for the moment VM Explorer supports EMC ScaleIO V1.32

Selecting “Storage Systems -> SAN Infrastructure” on the top of the page, you can find the SAN infrastructure page.

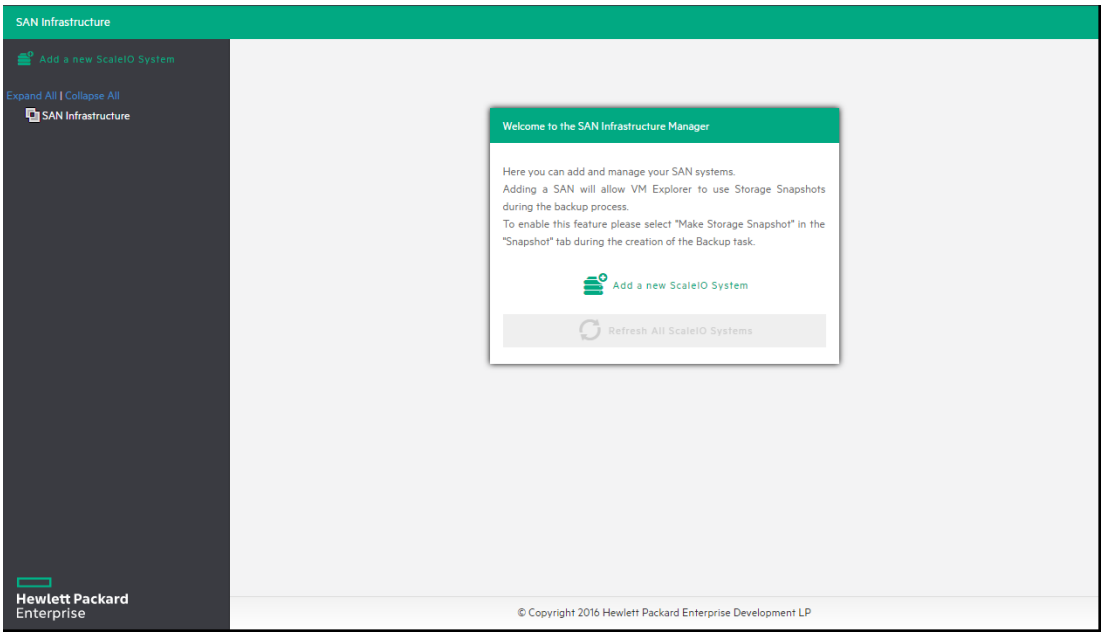


Figure 32: San Infrastructure page

As you can see in the image before, there are several ways to add your ScaleIO System. Either you click the “Add a new ScaleIO System” link on the intro panel of “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 choose the “Add a new ScaleIO System…” content menu item.

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

1. **Name & Connection Settings**

   In the first tab it is necessary to choose 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 Hostname” and the MDM account of your EMC² ScaleIO System.
   Once you have inserted all the necessary parameters, you can click “Next” to go to the next step.

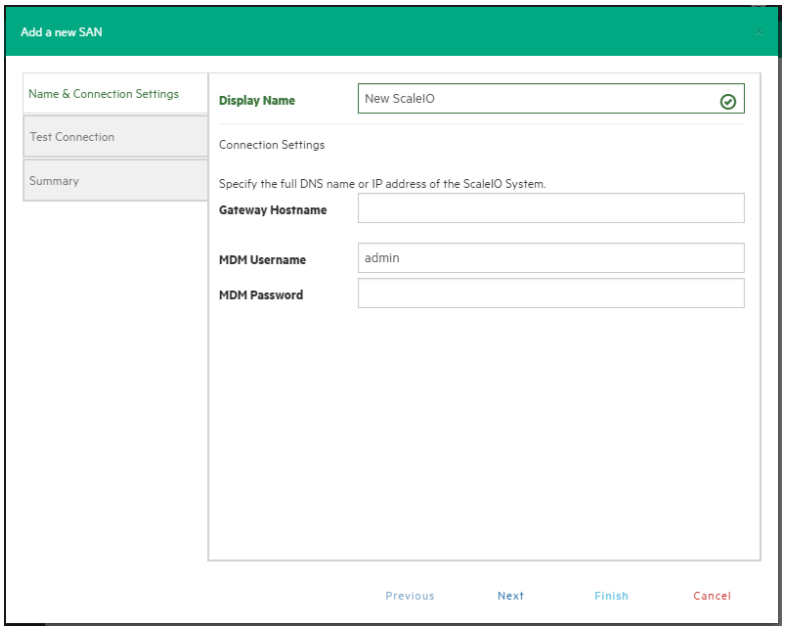


Figure 33: Add San Infrstucture - Name & Connection Settings

2. Test Connection

This tab will automatically start the test about 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.

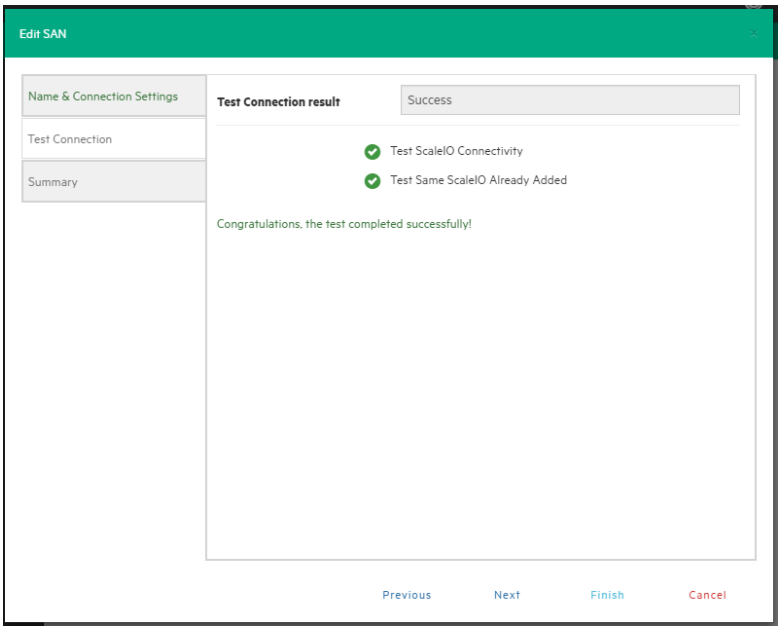


Figure 34: Add San Infrstucture - Test Connection

3. Summary

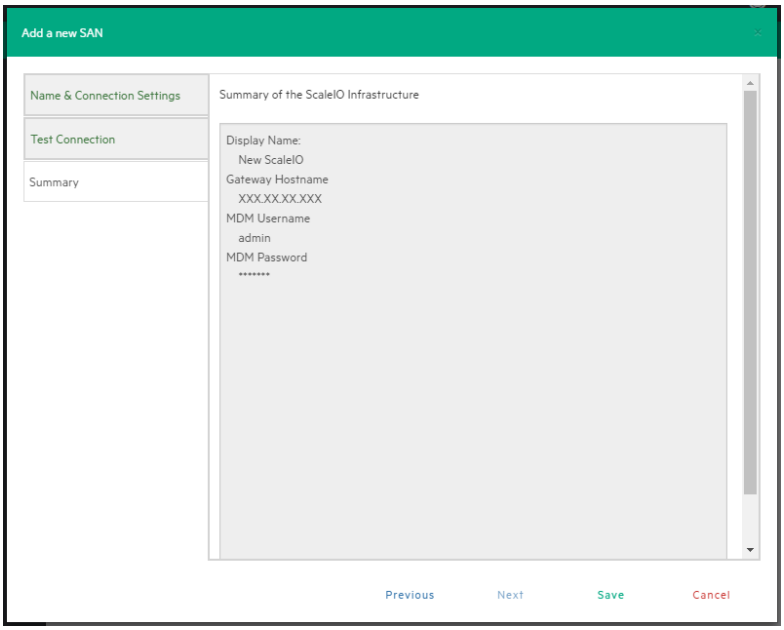


Figure 35: Add San Infrstucture - Summary

At this point you have succeeded in configuring your SAN System. A brief summary is visible so that you can check the parameters selected. Select save and it will be automatically added to your SAN Infrastructure tree.

The settings you have selected can be changed at any time by right-clicking your SAN System host entry in the SAN Infrastructure tree and choosing the "Edit ScaleIO System..." menu.

6 Configure Tape Infrastructure

VM Explorer® can help you to manage your Tape Infrastructures and save data on it; once tape devices and media pools are set up, you can schedule Copy Backups on tape as well as Restore them.

At this moment VM Explorer® has been tested and completely supports HPE StoreEver 1/8 G2 Tape Autoloader and Dell PowerVault 124T autoloaders, and can also support other tape Libraries/autoloaders/media changer devices with barcode reader and that implement standard API.

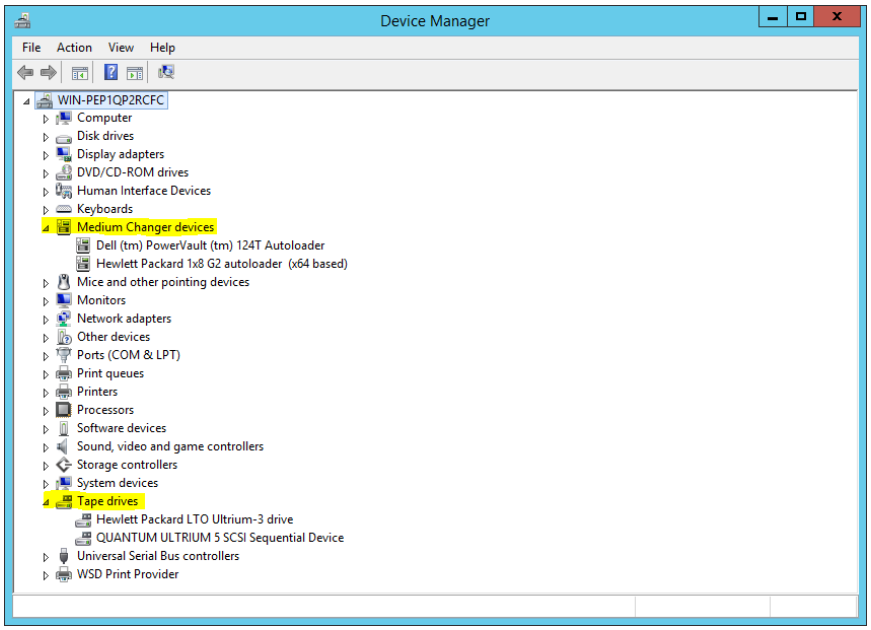


Figure 36: Windows Device Manager

VM Explorer® automatically recognizes the tape devices that are visible by the Windows machine where it is installed on. On Windows Device Manager, tape libraries are under 'Medium Changer devices' group and tape drives under 'Tape drives' group.
It is highly suggested to install the latest device drivers from your hardware provider, especially if the tape library is not detected by VM Explorer® and it is displayed as “Unknown Medium Changer” in Windows Device Manager.

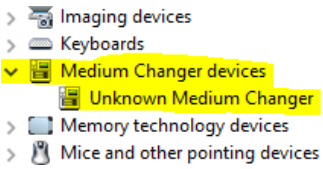


Figure 37: Unknown Medium Changer in Windows Device Manager

Latest drivers for HPE StoreEver tape library/autoloader/drive family and HPE D2D Virtual Tape Libraries (VTL) can be found at the following link:

http://h20565.www2.hpe.com/hpsc/swd/public/detail?swItemId=co_157540_1

Tape infrastructure page can be found from the menu (“Storage Systems -> Tape Infrastructure”). Click on the button “Rescan Infrastructure” to perform a rescan of your Tape Infrastructure.

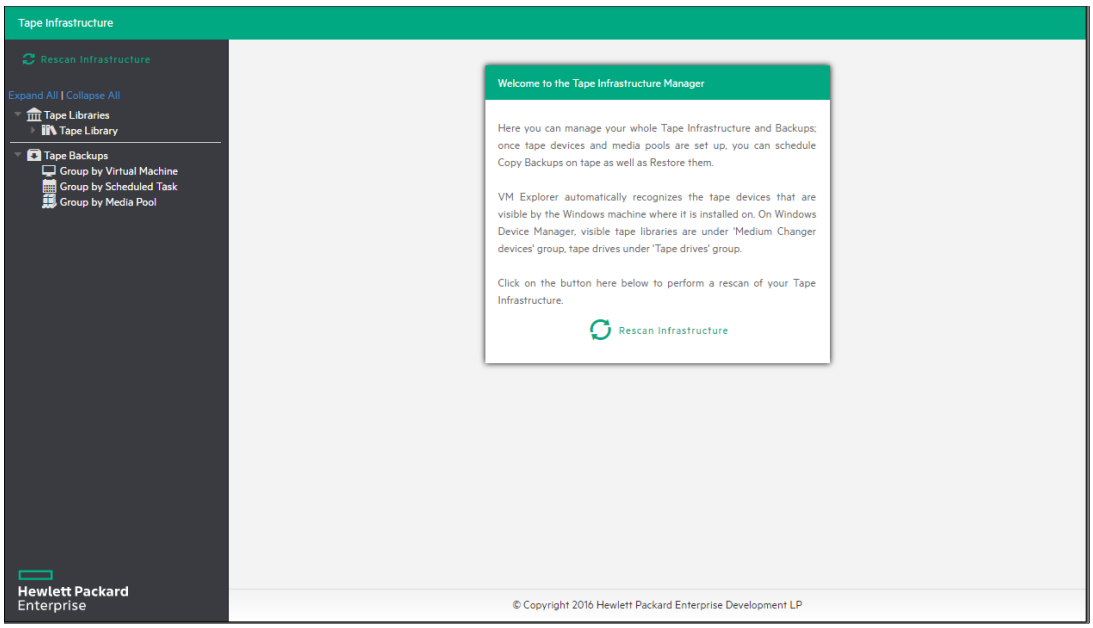


Figure 38: Tape Instructure page

6.1 Tape Libraries

As you can see in Figure 39: Tape Library overview, on the left side you can see the detected devices composing your infrastructure. The tape library is divided on:

Drives

Media

Media Pools

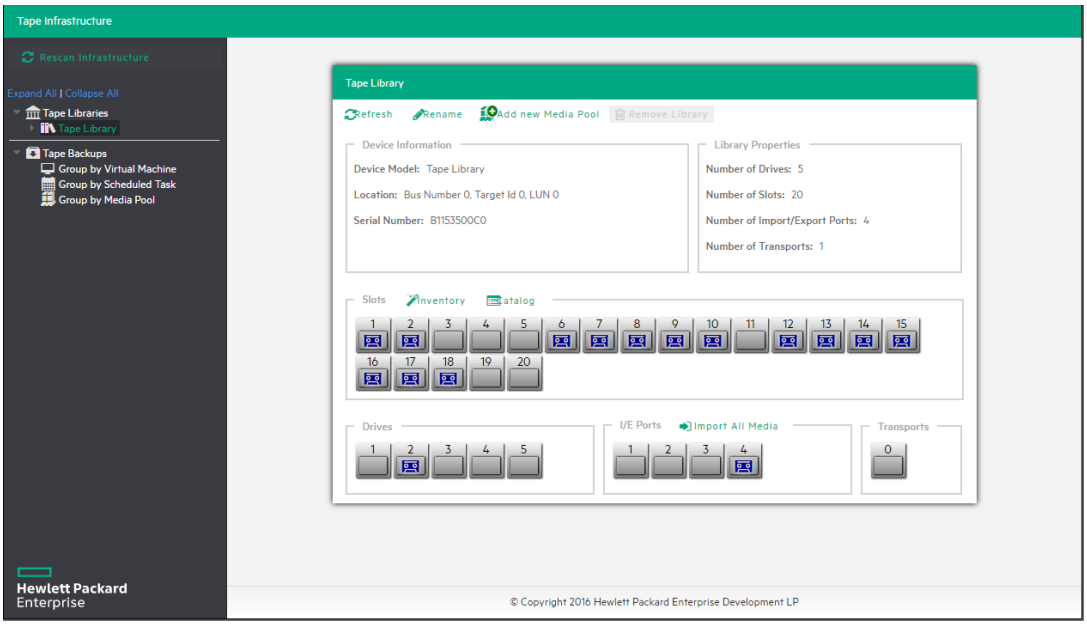


Figure 39: Tape Library overview

6.1.1 Drives

A drive is the physical part of a tape library that permits to read and write data from/to 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 usable in the backup procedures.

6.1.2 Media

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

Online media: list of media currently and physically present in the tape library.

Offline media: list of known media that were present in the tape library but actually not physically inserted.

You can do some operations on media:

- Move to media pool: you can logically include a tape in a Media pool. You can move the media in the free or in all your customs media pools. For more information, please check the paragraph “Media Pools” in this chapter.
- Inventory: prepare a new media to be used by VM Explorer® or check if a media is already recognized.
- Catalog: inventory tape media and scan all its contents for previously written backups. This operation can take several time, because VM Explorer® will read all the tape in order to catalog all the backups copied in it.
- Import: if a 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 physically remove a media from the library, you can use this option to move the tape media from its slot to an “I/E port”.
- Eject: permits to move a media from the drive to the first available empty slot.
- Erase: this operation deletes all the data written on the tape. You can choose to make a “Short erase (fast)” or a “Long erase (slow)”. Warning: all the backups on this tape media will be deleted physically and 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.
  Warning: 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 still recover the existing backups.
- Remove from catalog: if your media is offline you can remove it from the catalog.
  Warning: all the backups on this tape media will be deleted from the catalog. If you later decide to re-import the media, you can use the “Catalog” action before the media has been reused, to recover the existing backups.
- Details: this command permits to see few information about the media and which VM Explorer® backups are saved on it.

6.1.3 Media Pools

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

Free: in this pool are present all the media marked as free and usable from the system. Media can be moved to populate other custom Media Pools.

Unrecognized: this pool is 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 “Catalog” operation, in case you want to recover existing VM Explorer® backups.

Imported: this media pool is composed by tape media containing existing backups that have been recognized during a “Catalog” operation (e.g. media previously removed from catalog or previously used by another Tape Library).

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

Custom: in this custom media pool user can define the list of media and the specific retention rules for the backups.

6.1.4 Create custom media pool

You can create a new custom media pool right-clicking on “Media Pools” item and selecting “Add Media Pool”. This will open the “Add Media Pool” wizard.

1. Name: you must give it a name and you can insert a little description useful to explain some particulars of this pool. Click “Next” to show the next tab.

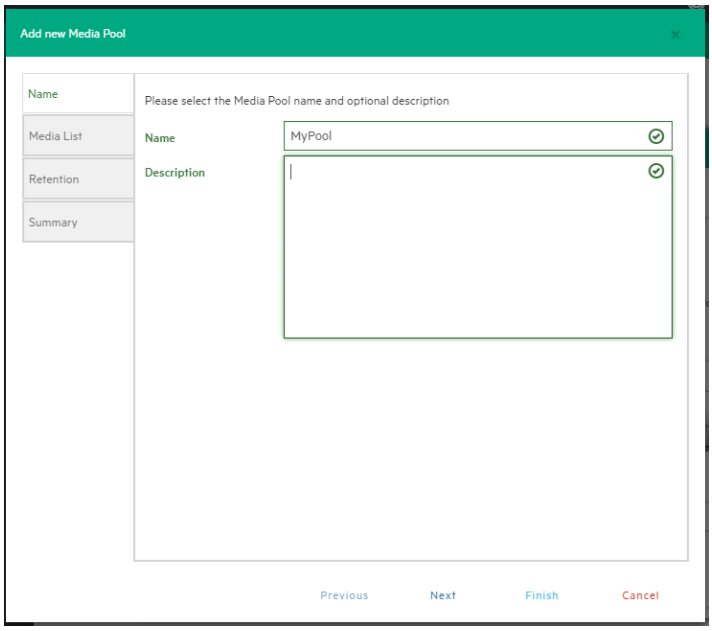


Figure 40: Add Media Pool - Name

2. The “Media List” tab permits to add free media to this pool. To do it, click on the “Add” button to select the free tape media from the Free media pool you want include into this Media Pool. If you want to remove media from the pool, select them and click on “Remove” button; they will be moved to the Free media pool.

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” to go to the next tab.

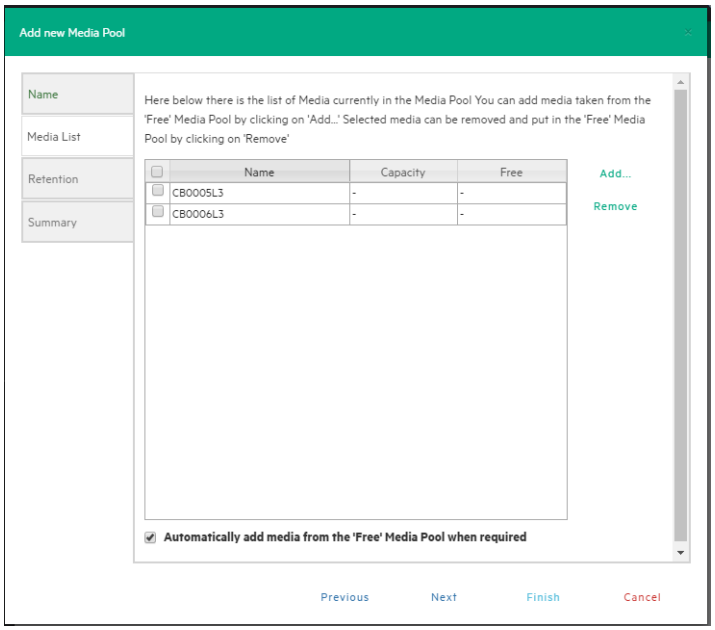


Figure 41: Add Media Pool - Media List

Figure 42: Add Media Pool - Free Pool

3. The “Retention” tape permits to set some rules useful to know how to use and/or reuse the media.

- Media reutilization: here 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: here you can select the desired media overwrite policy – Cyclic overwrite, overwrite if older than specific number of days, overwrite never.

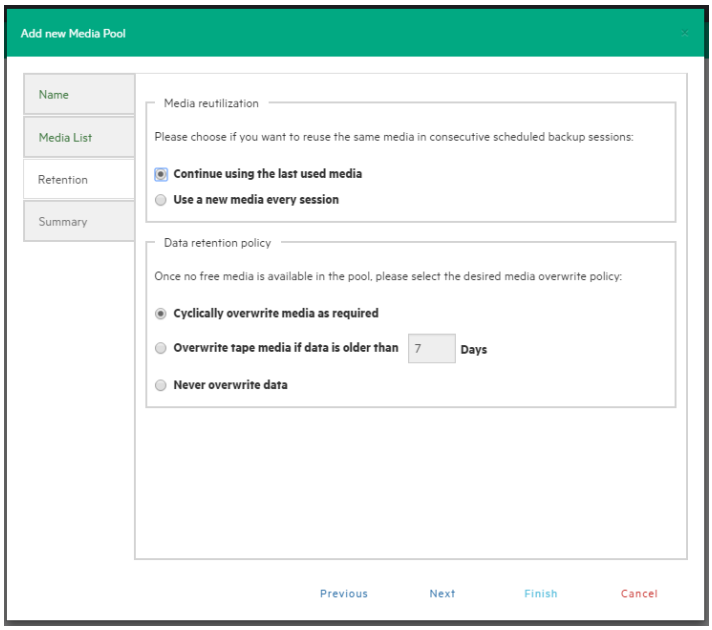


Figure 43: Add Media Pool - Retention

Click Next to go the next tab

4. At this point you have succeeded in configuring your Media Pool. A brief summary is visible so that you can check the parameters selected. Select save and it will be automatically added to your Tape Infrastructure tree.

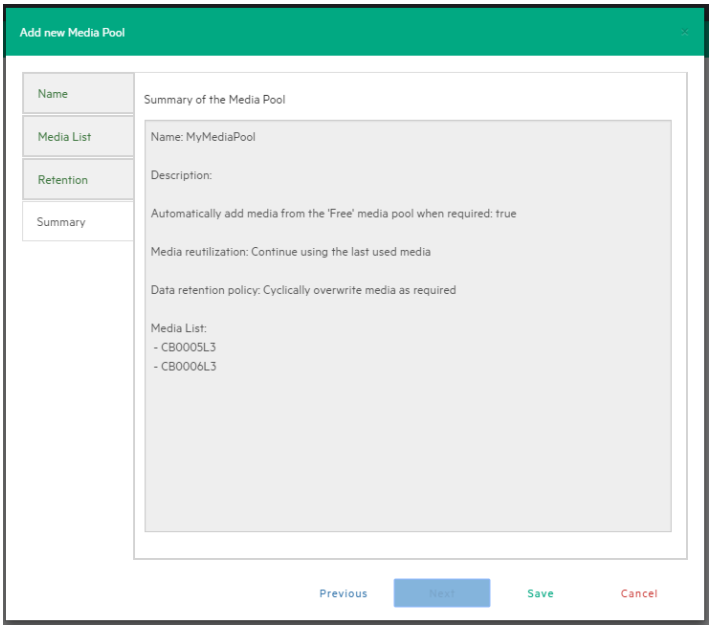


Figure 44: Add Media Pool - Summary

The settings you have selected can be changed at any time by right-clicking your Media Pool host entry in the Tape Infrastructure tree and choosing the "Edit" menu.

6.2 Tape Backups

In this section 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

Right-clicking on each backup, you can show some details or start a procedure to restore the copy of this backup by selecting “Restore backup from Media…” item. This will open the “Tape Restore” wizard.

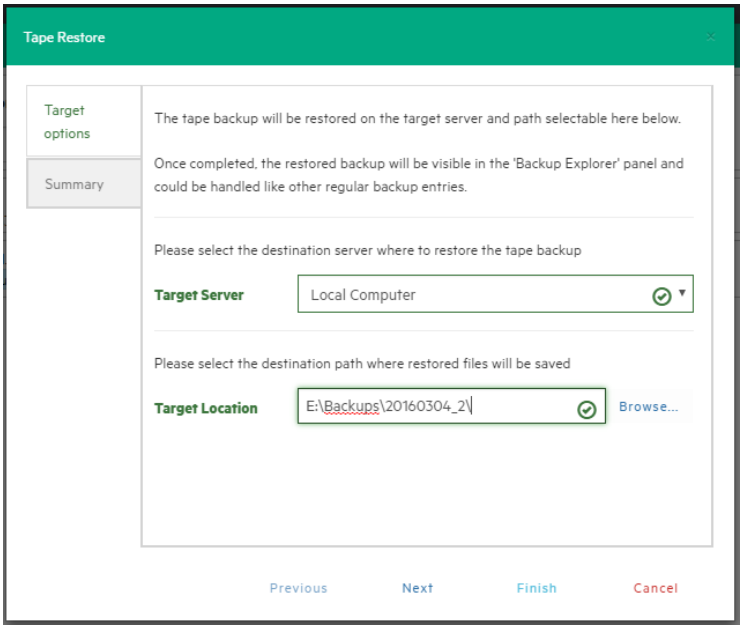


Figure 45: Tape Restore - Target options

7 Configure Network Drives

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

To configure your Network Drives simply select “Settings” → “Network Drives” from the user menu

This will open the Network Drives page. Pressing the “Add” button on the top “Add a network drive” dialog will be shown to the user.

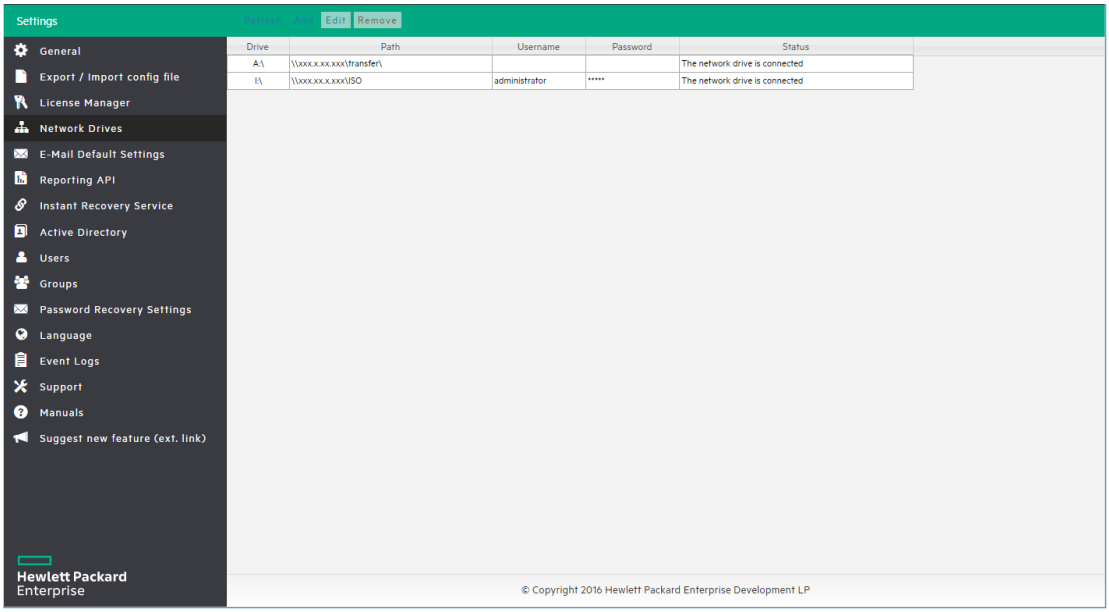


Figure 46: Network Drives page

1. Location

   You have select a “Drive Letter” for the network drive. If you have already mapped some network drives with letters, those letters will be not available to select.

   Provide the correct network driver path.

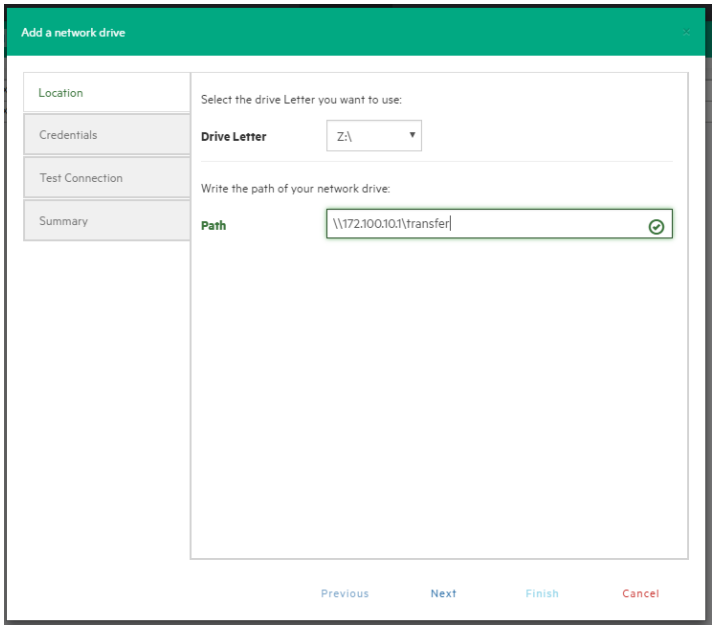


Figure 47: Networkd Drive - Location

2. Credential

   If the network drive has user credential, please provide them to authenticate. If not put a tick on “Do not use credential”.

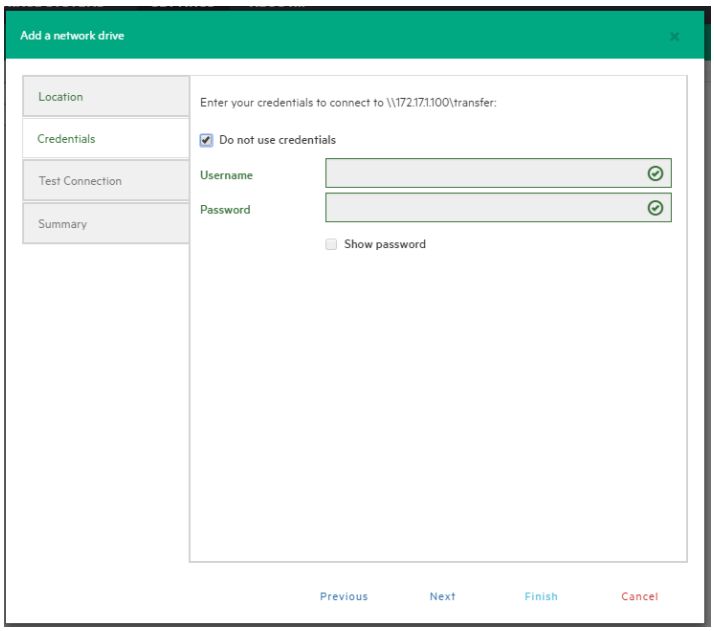


Figure 48: Network Drive - Credential

3. Test Connection

   In this tab a test connection with the network drive is made with your parameters given in the previous tabs.

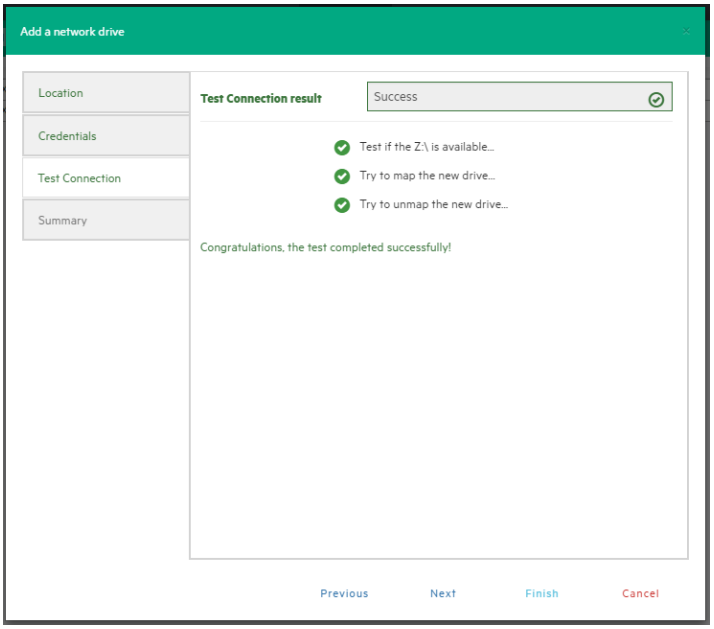


Figure 49: Network Drive - Test Connection

4. Summary

   Check all the parameters and click on “Save” button.

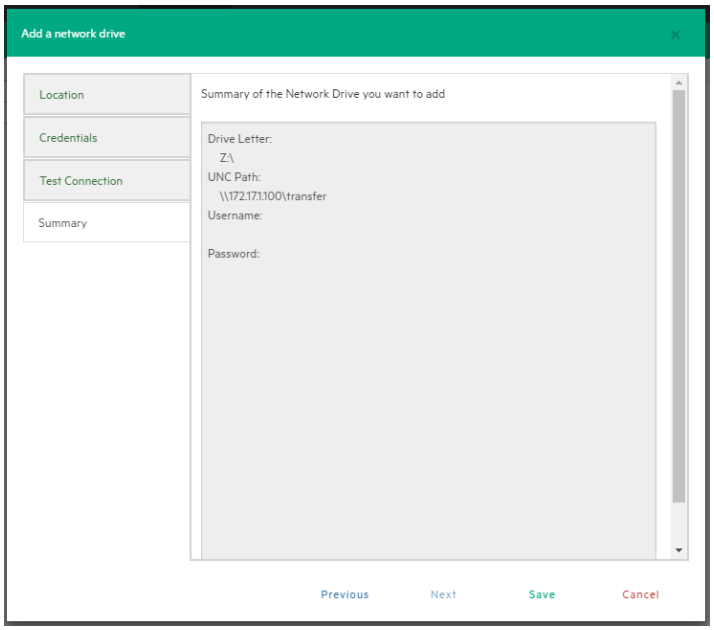


Figure 50: Netword Drive - Summary

8 Scheduled task

VM Explorer® allows you to schedule your backup tasks, so that they can run on a regular basis, such as daily, weekly, monthly. Moreover, you can back up any specific Virtual Machine.

8.1 Create a Scheduled task

There are two ways to create a scheduled task:

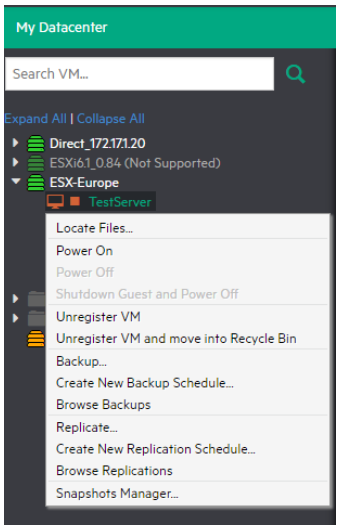


Figure 51: Create New Backup Schedule...

1. To create a new scheduled task, switch to Datacenter view and right-click the Virtual Machine you want to back up. Then choose the "Create New Backup Schedule..." command from the menu. This opens the "Edit Scheduled Task" dialog box.

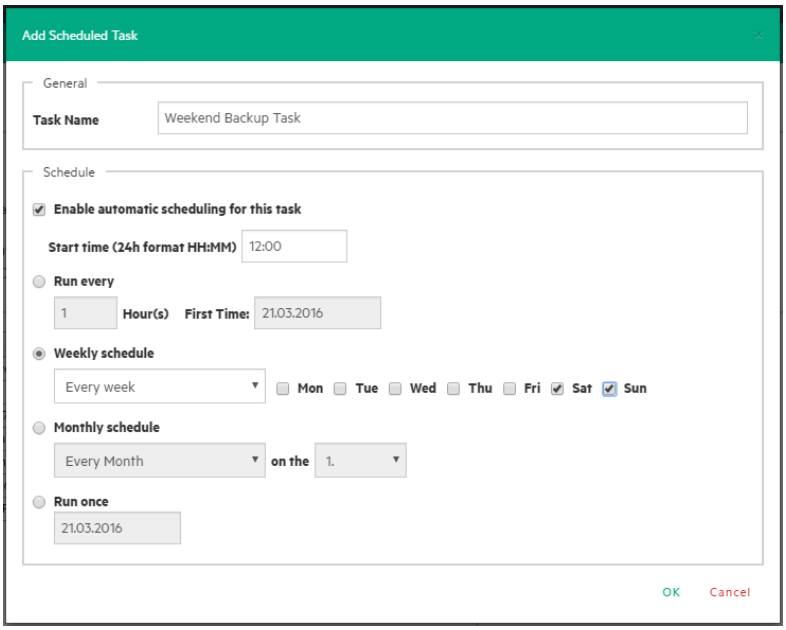


Figure 52: Add Scheduled Task

Enter a name for this task and configure the start time and schedule type for this task. When all is done, click the "OK" button. The next screen is the same as when you back up a Virtual Machine manually. Simply enter all the options you want and click "OK" to confirm.

It's possible to select the option "On error execute next task". This option allows the scheduled task to continue to the next step, even if the previous step failed.

2. As an alternative it is possible to create a new scheduled task by switching to the Scheduler view (Tasks → Scheduled Tasks): right click on the "Scheduled Tasks" list and select "Add Scheduled Task…".

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

In addition, make sure that you enable the scheduler in VM Explorer® by clicking "Enable the Scheduler" button on the Scheduler View.

Important 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 in order to perform scheduled task. In addition, if the scheduler is enabled and the General Settings option "Prevent 'Sleep Mode' if scheduler is enabled", will prevent the system Sleep Mode (if activated).

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

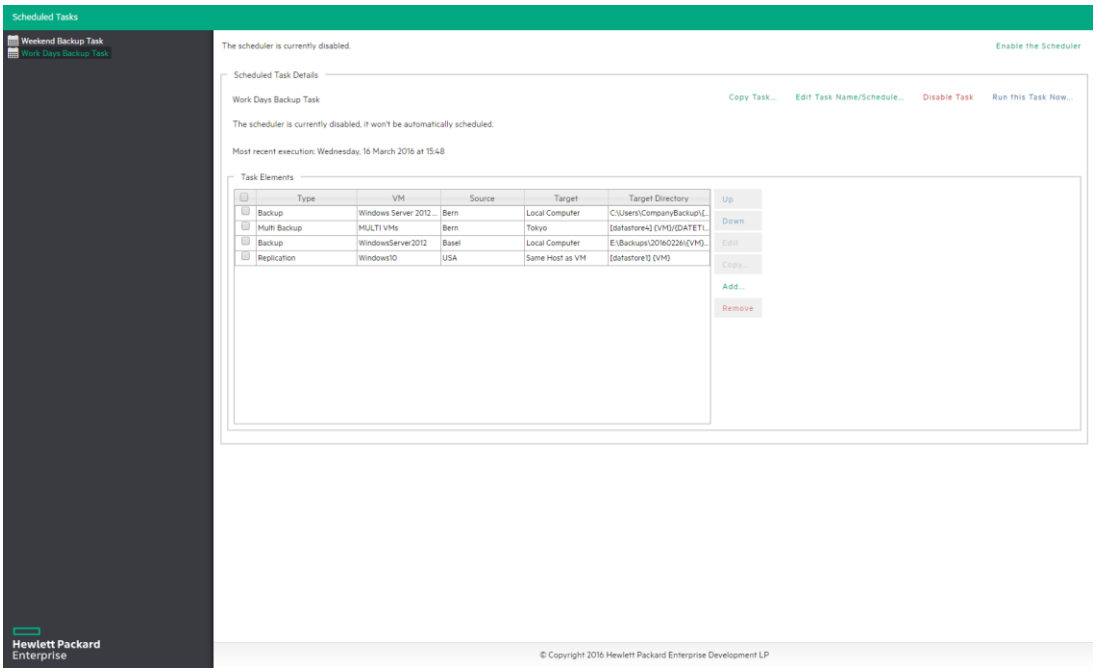


Figure 53: Scheduled task page

8.2 Copy a Scheduled task

A scheduled task can be entirely copied

How to copy:

- Right click on a scheduled task that you want to copy from the “Scheduled Tasks” list and select “Copy Task…” or select the scheduled task that you want to copy and press the button “Copy Task…” from the right panel.
- Edit Scheduled Task” dialog box will prompt. The copied scheduled task will have the same configuration as the original one.
  These configurations can be changed in the pop-up dialog.
- The copied task will be disabled (Paused) to avoid multiple running and conflicts.
- You have to “enable” the copied Scheduled task by clicking “Enable the Scheduler” button from the Scheduler View

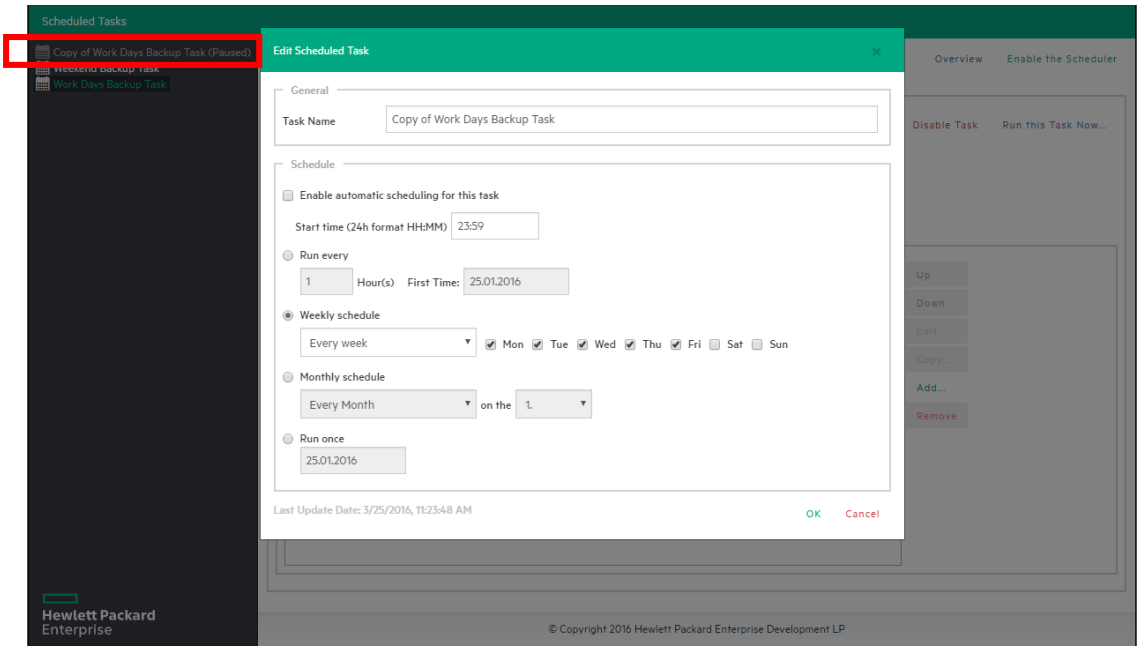


Figure 54: Copy scheduled task dialog

8.3 Copy a Scheduled task element

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

How to copy:

- From the Task Elements list, right click on a task element and select “Copy…” or press the “Copy…” button on the right.

- “Copy the selected Task Element” dialog box will prompt. In this dialog you can select into which scheduled task you want to copy the selected task element. Select the target scheduled task and click “OK”.

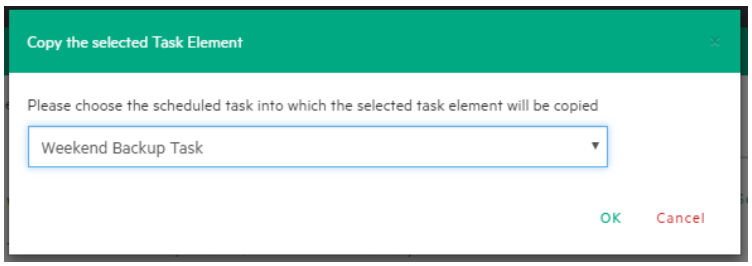


Figure 55: Copy task element dialog

8.4 Command line interface

VM Explorer® allows you to execute the scheduled tasks you created via command line. This can be useful if you want to use different software as scheduler, e.g. Windows built-in Task Scheduler.

To access full information about the command-line interface simply type

vmx.exe /?

at the command prompt. VM Explorer® will always generate a XML file containing all 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"

9 Backup

If you want to back up one of your Virtual Machines, switch to Datacenter View. Expand your ESXi or Hyper-V host and you will get a list of all your Virtual Machines. If you are using vCenter, then expand your vCenter's hosts to see all Virtual Machines. Right-click the one you want to back up and choose the "Backup…". This opens the Virtual Machine Backup dialog box.

Otherwise you can create a task which back up one of your VM from "Scheduled Tasks". From the menu go to Tasks → Scheduled task and select a scheduled task in which you want to create the backup task. Then press "Add", the following dialog will be show, from which you have to select "Single VM" (If you want to backup just one VM).

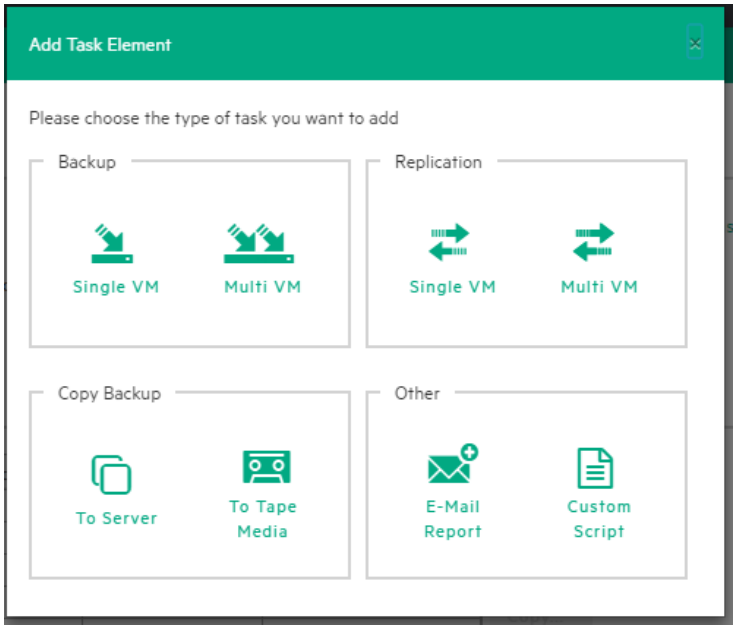


Figure 56: Add Task Element

9.1 Single VM

This section explains how to back-up a single VM.

1. General tab

   On the Host dropdown menu, you can choose the target location. This can be your local PC, an ESXi host, a Hyper-V host, or a Linux/FreeBSD host which has been added in to your Datacenter view. Choose the target directory and how you want to handle the backup. When you are set, click the "OK" button. 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 ESXi or Hyper-V server.

   Note: If you choose "overwrite existing files in the target directory" the existing backup will only be overwritten, when the new backup was successful. This is made in order to keep always a "working" backup, therefore you need enough free space while you run the backup. You can also decide to delete the backup before the backup starts by checking the option "Delete existing Backup in the target directory before the Backup starts". Important: If the backup fails, you will not have any working backup. Be careful when using this option.

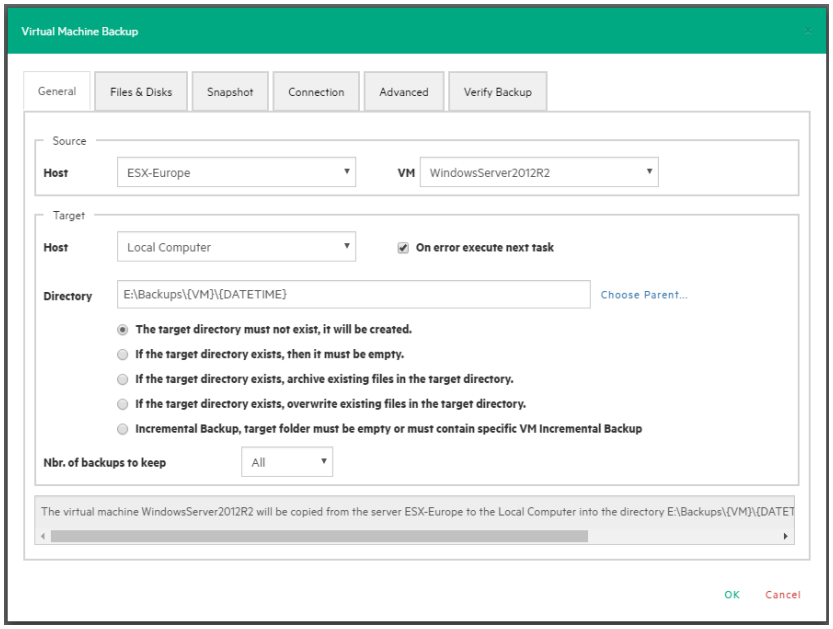


Figure 57: Backup - General

2. Files & Disks tabs

Virtual Disks to be included in the Backup
You can choose which Virtual Disks you want to include in the backup.
If the option “Include memory dump of the virtual machine” in the Snapshot tab is enabled, all the virtual disks must be selected, otherwise it won’t be possible to restore the memory snapshot.

Thin Provisioning Support
The option “After backup convert as thin disk” allows you to convert in the thin format all the disks included in the backup. This option is only available under the following conditions:

- the target host is ESXi
- the VM Explorer Agent is enabled on the target server (only for ESXi)
- the “Keep data compressed at destination” option is not enabled
- there aren’t any discs with the same name

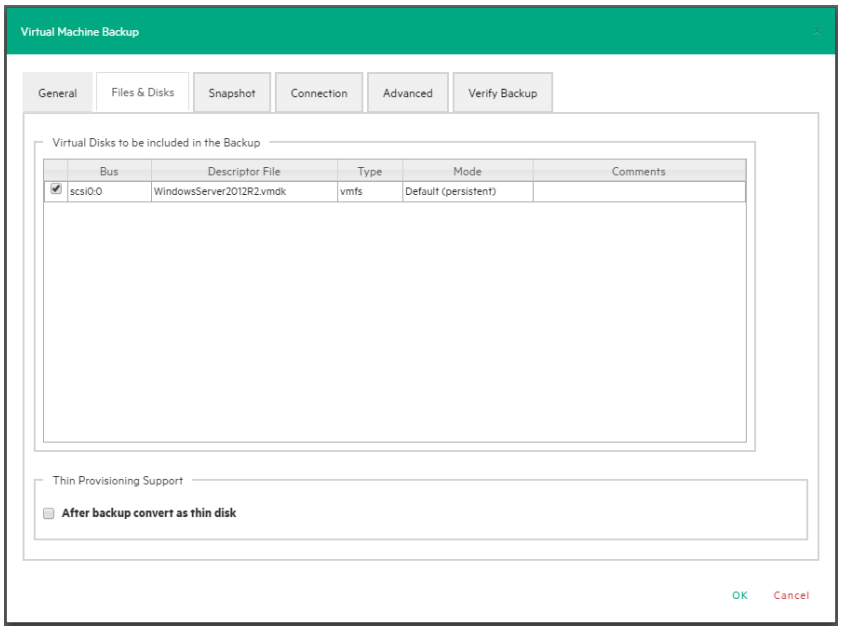


Figure 58: Backup - Files & Disks

3. Snapshot tab (ESXi Only)

Include 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. If you also want to back up the memory to capture the exact running state, enable this option.

Quiesce the file system in the virtual machine (only when VMware tools are installed)
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 it to write down all necessary data for a consistent snapshot. We recommend keeping this option enabled.

Note: All options are configured by default, as we recommend using them.

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 then un-maps all the datastores, and finally removes all the snapshots previously created.

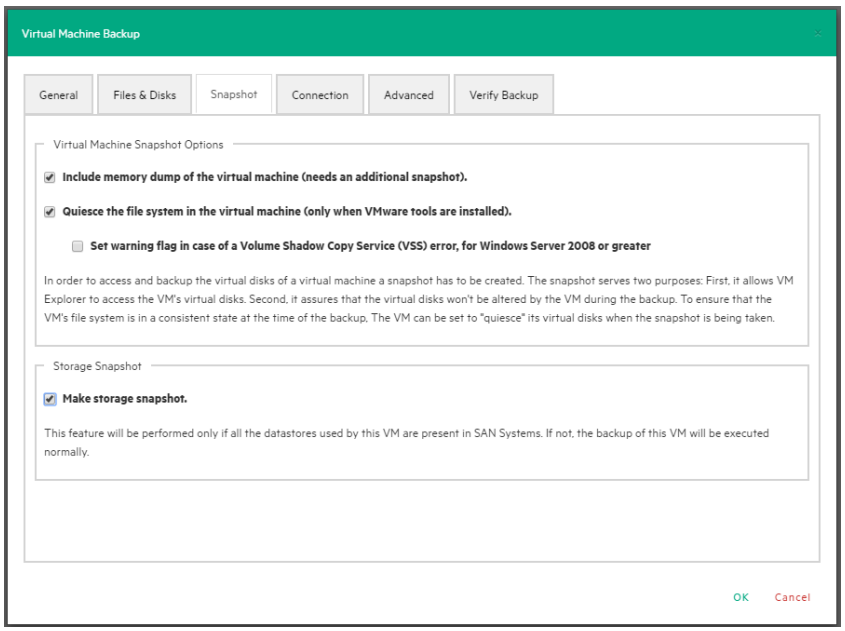


Figure 59: Backup – Snapshot (ESX)

4. This type of backup allows the host to release the source VM immediately after the storage snapshots are created. This permits to drastically reduce the merge times that a normal backup is subjected.**VSS Snapshot tab** (Hyper-V Only):

Volume Shadow Copy Service Options
In this section 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.

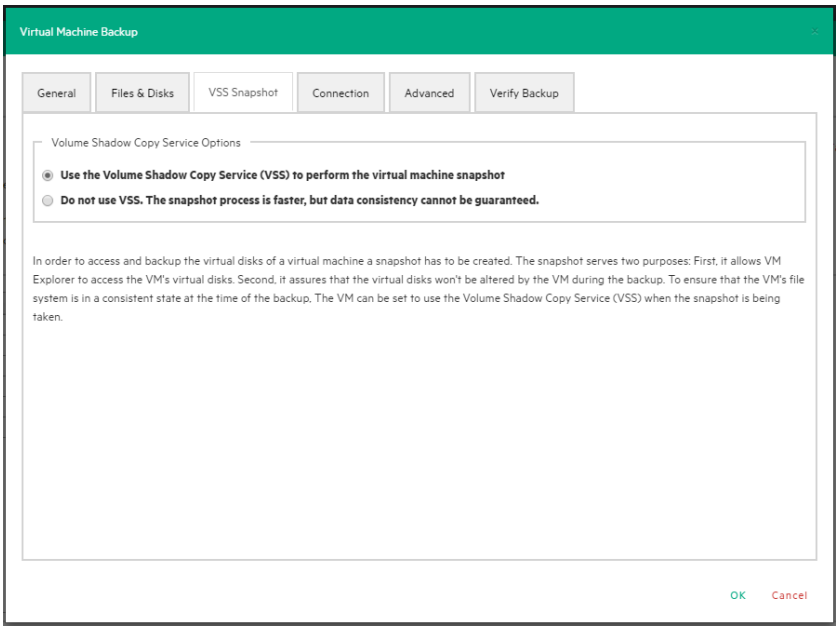


Figure 60: Backup - VSS Snapshot (Hyper-V)

5. Connection tab

Direct Copy Options
In this section you can 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. You can also decide to keep the data compressed at destination but in this case the File Level Restore won't be available for this backup.

The direct copy options are not available if 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.

The encryption can be used also in conjunction with the Cloud servers (Amazon S3, OpenStack, etc.). The direct copy connection is unavailable and all the data will be relayed through VM Explorer (See chapter Enabling VD Services for incremental backups for more details.).

WARNING: the password will be stored encrypted and not retrievable, please be sure to remember it or write it down in a safe place in order to be able to decrypt the backup.

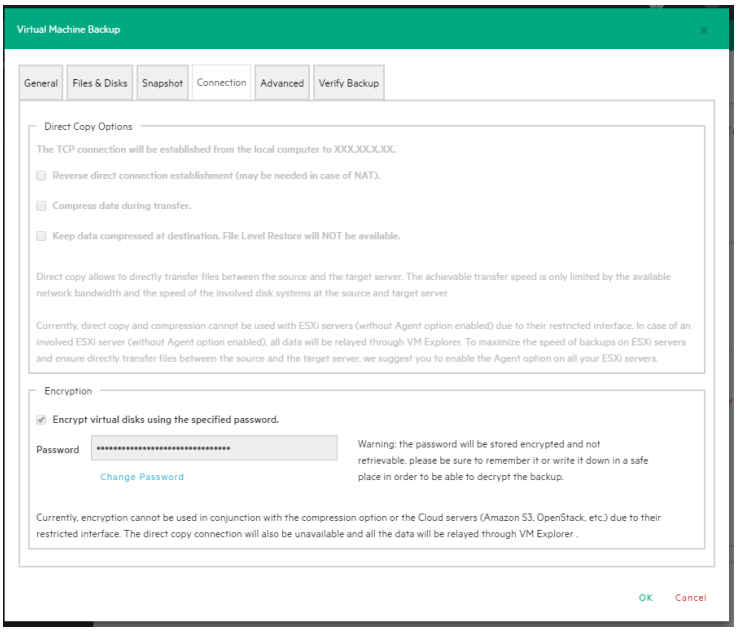


Figure 61: Backup - Connection

6. Advanced tab

   The advanced options allow to configure if the guest VM has to be shut down or unsuspended before starting the backup. These two options works 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.

   If the option “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).

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

   If the option “If guest VM (source) is suspended …” is enabled, it can be configured when the guest has to be set in suspended state again (once the backup starts, once the backup is terminated or not

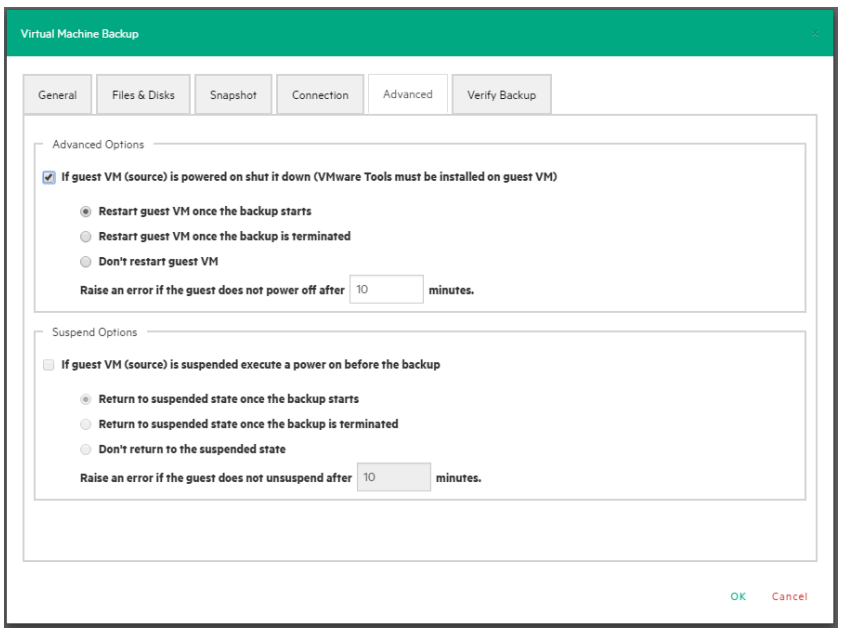


Figure 62: Backup - Advanced

suspend the guest VM again). It can be set how much time VM Explorer® must wait before the suspend timeout error is raised.

7. Verify Backup tab

The Verify Backup tab allows you to set if, 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.

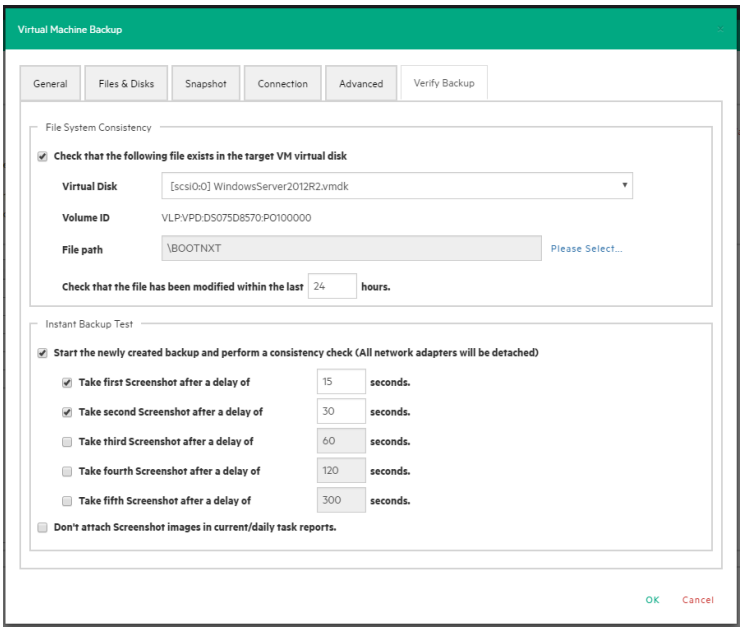


Figure 63: Backup - Verify Backup

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 (e.g.: 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.

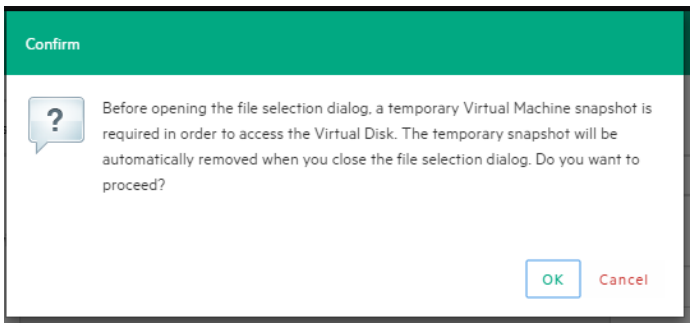


Figure 64: Backup - File Consistency confirm message

Please note that, during the File System Consistency configuration, in order to access the virtual disk and browse it a temporary VM snapshot will be required. It will be automatically deleted once the file

selection dialog closes. The following confirmation dialog will be shown, you can click on 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 it is possible to 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. To do so please check the chapter “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 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).
- Please note that VM Explorer® cannot perform the backup of the ESXi and Hyper-V host configuration.

9.2 Multiple VMs

If you have to back up more VMs with the same backup options, you can choose the button “Multi VM” in the frame-box “Backup” in the dialog “Add Task Element” which appears by pressing the “Add…” (Figure 56: Add Task Element).

By pressing the button, the Virtual Machine Backup dialog described in the section “Backing up a VM”, will appear.

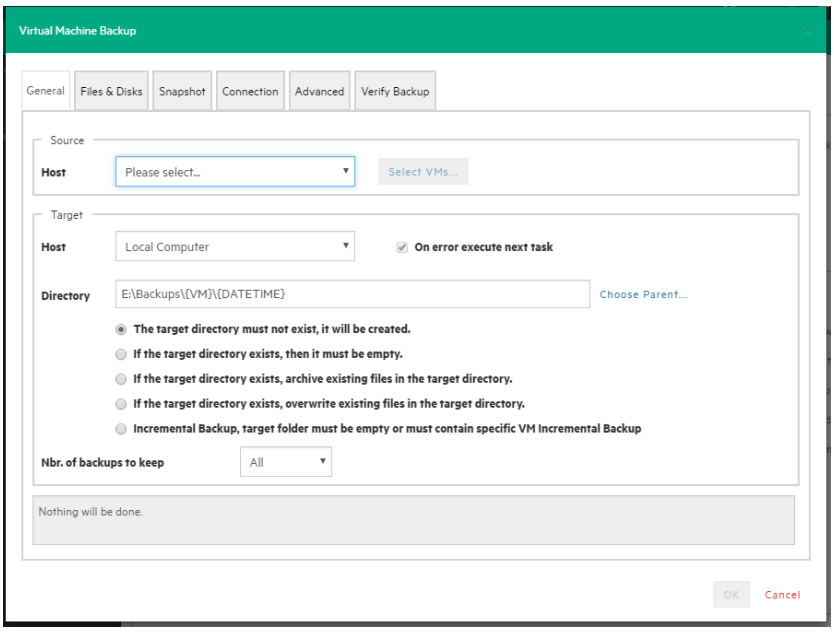


Figure 65: Multi Backup - General

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

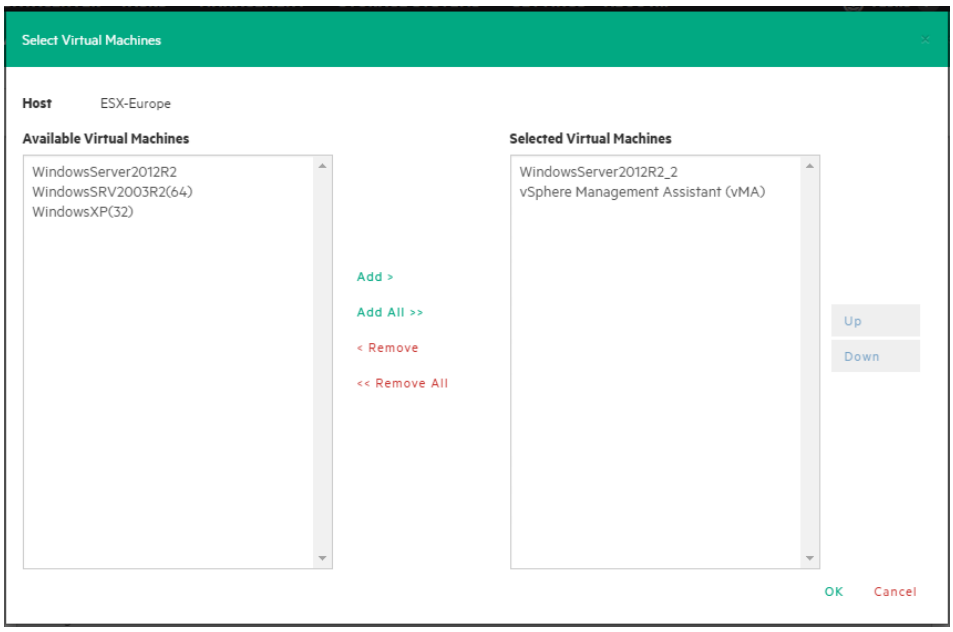


Figure 66: Multi Backup - Select multiple VMs

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 & 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.

The other configurations are the same described in chapter “Backing up a VM”.

9.3 Incremental backup

VM Explorer® allows you to create incremental backups. Incremental backups have the great advantage that you only have to create one full backup and afterwards only the changed bytes will be transferred when a backup is made. Please note that the VM snapshot points are not backed up with the incremental backup. But in the restore process it is possible to choose which backup version (backup date) you want to restore, please check “Restore an incremental backup” section.

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

- ESXi 4.0/4.1/5.0/5.1/5.5/6.0 - note ESXi 4.0/4.1/5.0/5.1/5.5/6.0 free edition is not supported
- Virtual Hardware of your VM must be version 7 or higher
- Enable VD service support 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. Please see the "Adding a Server" chapter for more details.

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

- option "VM Explorer agent on ESXi" 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. Please see the "Adding a Server" chapter for more details.

Incremental Backup on Hyper-V doesn't have any restrictions.

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

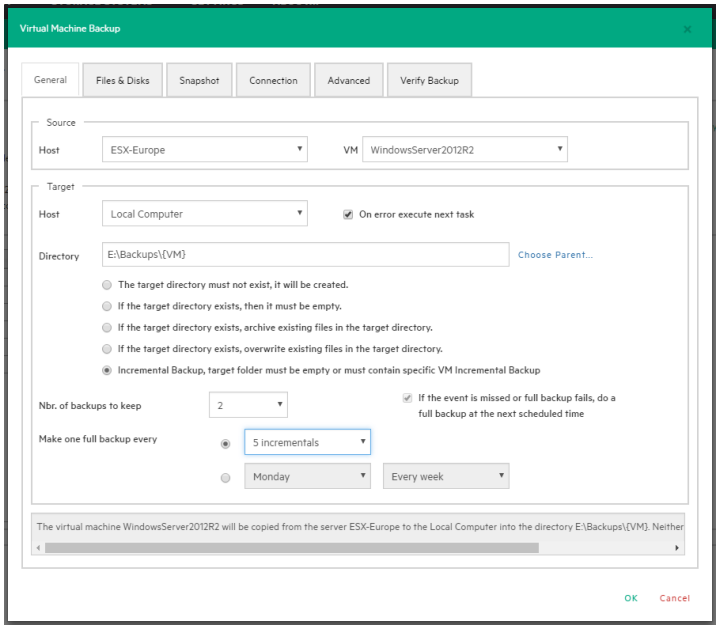


Figure 67: Incremental Backup - General

Just choose the "Incremental Backup" option to enable incremental backups. 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 containing only the changed data.

9.3.1 Enabling VD Services for incremental backups

Incremental Backups on ESXi do have some requirements to run properly. First of all, you need ESXi 4.0 or later. Note, ESXi free edition will not support incremental backups. VM Explorer® still can create full backups of your ESXi free edition. Next you must make sure, that you upgraded the virtual hardware in your VM to Version 7 or later. The Virtual Hardware Version is shown in your vSphere Client when editing the settings of your VM.

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

9.3.2 Initialize Virtual Disk Service (VD Service)

To enable the Virtual Disk Service in VM Explorer® choose "Help" > "Enabling Virtual Disk Service (VD Service)" in the GUI interface.

The initialize Screen will show up. First of all, you need to install the VDDK package which can be downloaded on

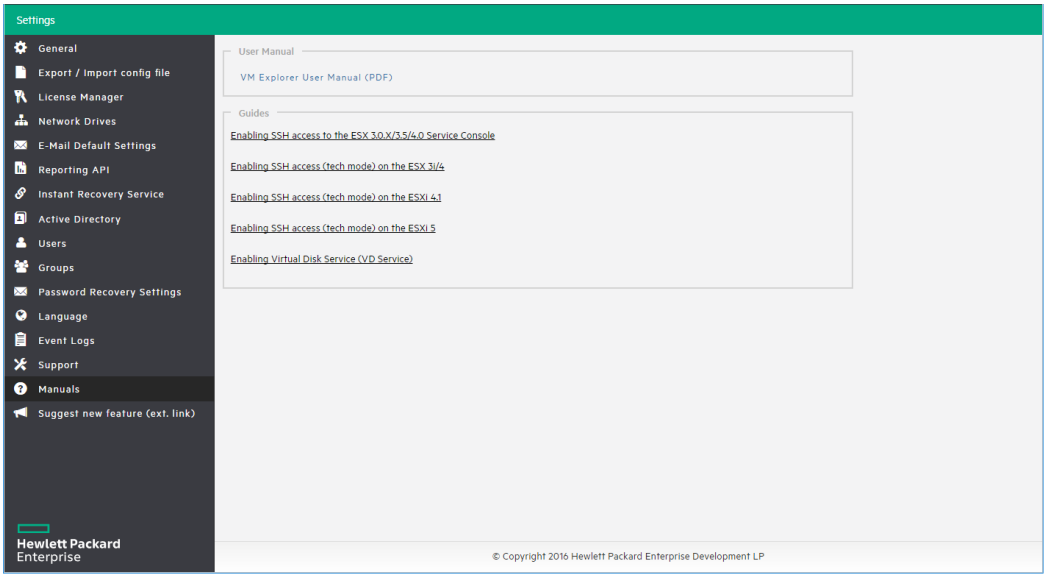


Figure 68: Settings - Manuals

the VMware webpage:
https://my.vmware.com/group/vmware/get-download?downloadGroup=VSP510-VDDK-510

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

When you installed the VDDK package just click the "Initialize VD Service" button in VM Explorer®. VM Explorer® will report that the initialization was successful

9.3.3 Enable the VD Service for ESXi host

Next you must enable the VD Service for your ESXi host in VM Explorer®. Go to the “My Datacenter” View and right click the ESXi host you want to configure. Choose the "Edit Server..." command.

The "Edit Server" dialog will show up (Figure 13: Add Server - Advanced Settings). Switch to the "Expert Settings" tab. Enable the "Use VD Service" option for this host. Click the "Test Connection" button to verify your settings. Click the "Save" button to save your settings. Repeat this setup for all other ESXi hosts.

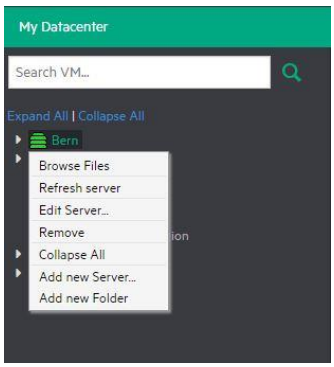


Figure 69: Edit Server...

9.4 Backup encryption

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

The encryption can be used also in conjunction with the Cloud servers (Amazon S3, OpenStack, etc.). The direct copy connection is 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 simply checking the option and specifying a password.

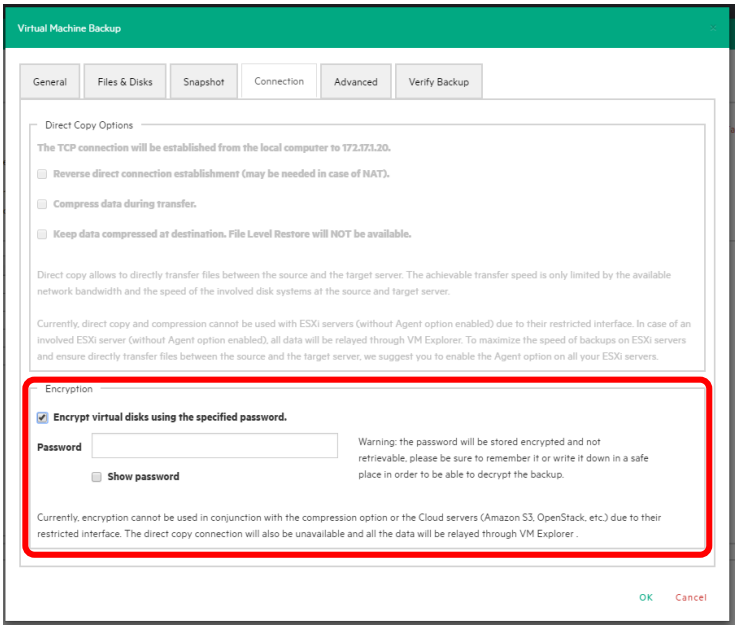


Figure 70: Backup Encryption

WARNING: the password will be stored encrypted and not retrievable, please be sure to remember it or write it down in a safe place in order to be able to decrypt the backup.

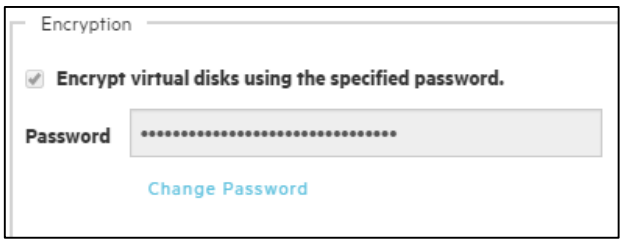


Figure 71: Password encryption

Once the backup task is saved, to change the password you will need to input the one previously inserted. To do so, select “Change Password”. Once the old password is confirmed you will be able to input the new one.

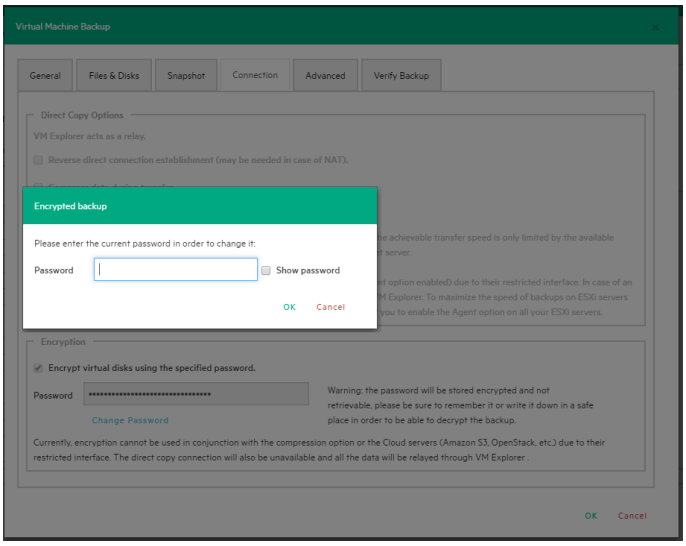


Figure 72: Change encryption password

10 Replication

If you have to replicate a single Virtual Machine, you can choose the button “Single VM” in the frame-box “Replication” in the dialog “Add Task Element” which appears by pressing the “Add…” button, as shown in the Figure 56: Add Task Element.

10.1 Single VM

When you press on “Single VM” the following dialog will be shown to the user.

1. General tab:

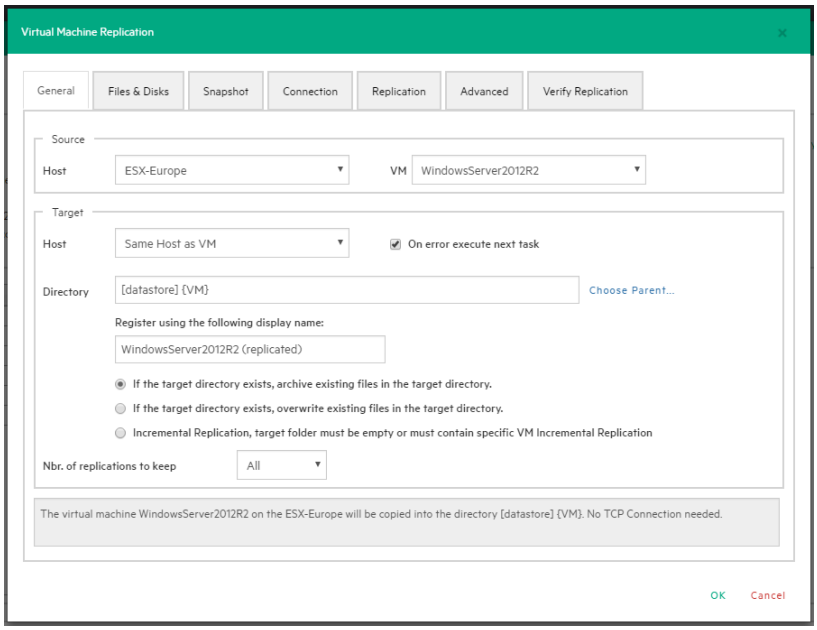


Figure 73: Replication - General

Select the Source Host and the VM you want to replicate.

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. 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 choose “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 in order to always keep a "working" replication; therefore, you need enough free space to temporarily hold both replications.

You can also decide to delete the previous replication before the replication procedure starts by checking the option “Delete existing Replication in the target directory before the Replication starts”. Important: If the replication fails, no replications will be available any more. Be careful when using this option.

The incremental replication option is only available by using Virtual Disk Development Kit (VDDK). Since the VDDK library is available only for licensed ESXi host, for example “Essential Kit” license, with the ESXi free license it’s not possible to perform incremental replications.

The first time you configure an incremental replication, please follow instructions that may appear.

If in the host VD Service is not activated the following dialog will be shown to the user which allows you to initialize VDDK for the ESXi server (Figure 74: Replication - VD Service dialog). If you press “ESXi Server Settings”, the “How to Enable Virtual Disk Service” dialog will be pop up. This dialog allows user to download VDDK and/or initialize VDDK for the host (Figure 75: Replication - Enable VD Service).

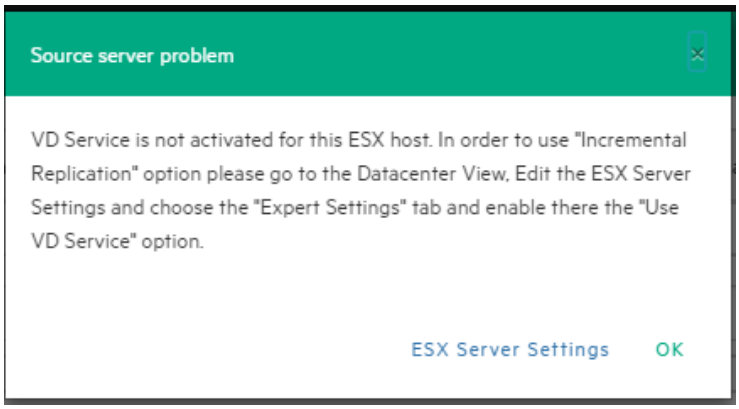


Figure 75: Replication - Enable VD Service

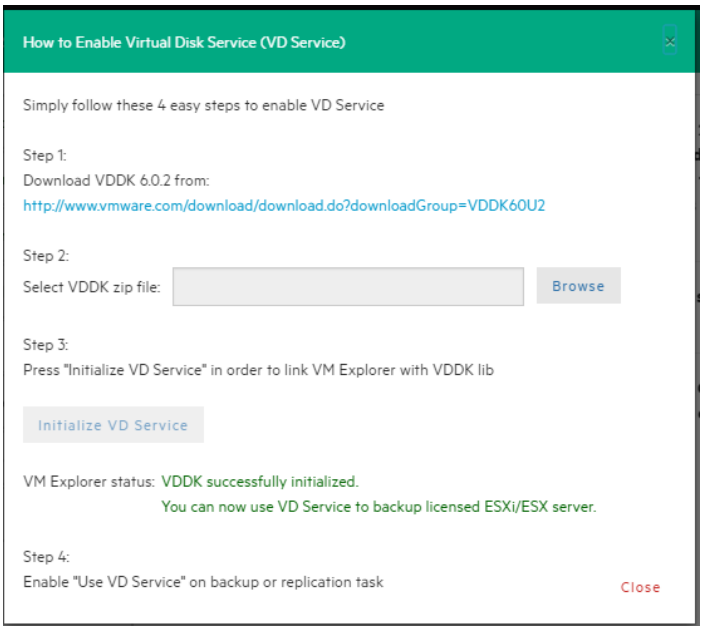


Figure 74: Replication - VD Service dialog

2. Files & Disks
   The configuration of Files & Disks does not vary from the backup task configuration. Please see the previous chapter.

3. Snapshot
   The configuration of Snapshot does not vary from the backup task configuration. Please see the previous chapter.

4. Connection tab

Direct Copy Options
In this section you can 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 option “keep the data compressed at destination” 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 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.

5. Replication tab

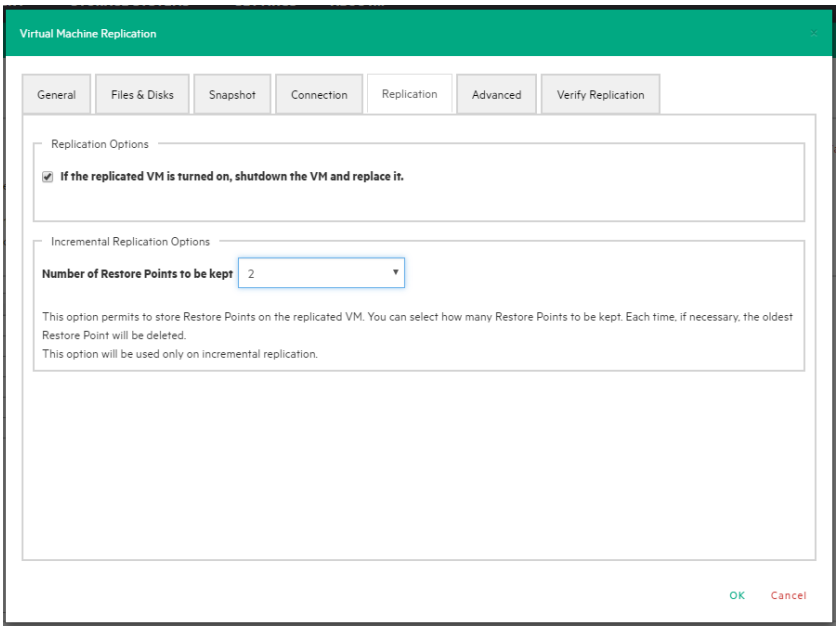


Figure 76: Replication - Replication tab

Under the “Replication” tab (Figure 76: Replication - Replication tab) you can choose to shut down and replace the replicated VM, if it was manually powered on.

Furthermore, for incremental replication the “Number of Restore Points to be kept” is implemented.

VM Explorer® will keep the Restore Points of previous incremental replication 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 and keep the previous version replicated.

6. Advanced tab
For the advanced options please see previous chapter.

7. Network Adapters tab (Hyper-V Host only)

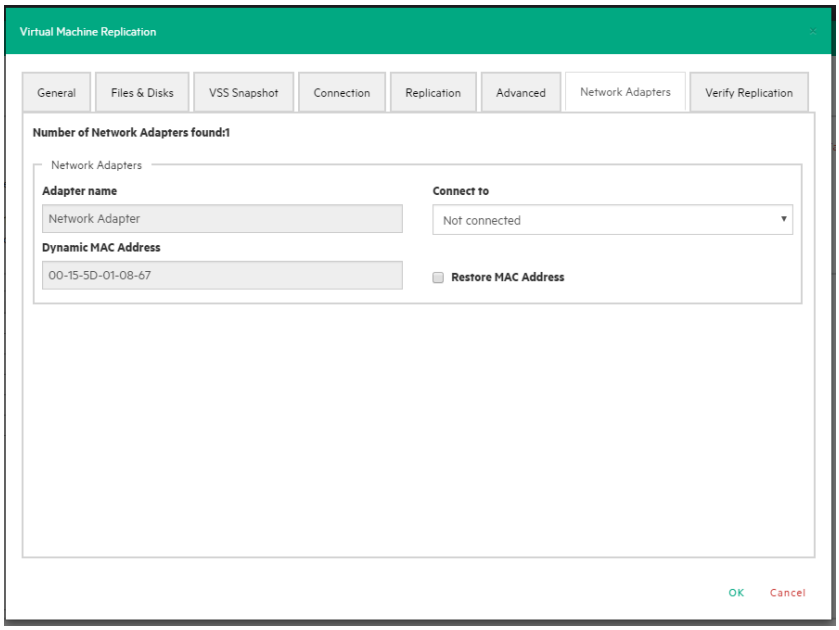


Figure 77: Replication - Network Adapters

If the VM is replicated on a Hyper-V server, the “Network Adapters” tab appears. In this tab you can configure to which virtual network the network adapters and the legacy network adapter should be linked. 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 and to which Hyper-V network adapters they will be connected.

8. Verify Replication tab
In this section you can enable the File Consistency Check feature for the target replicated VM, please see previous chapter “Backing up a VM” for details.

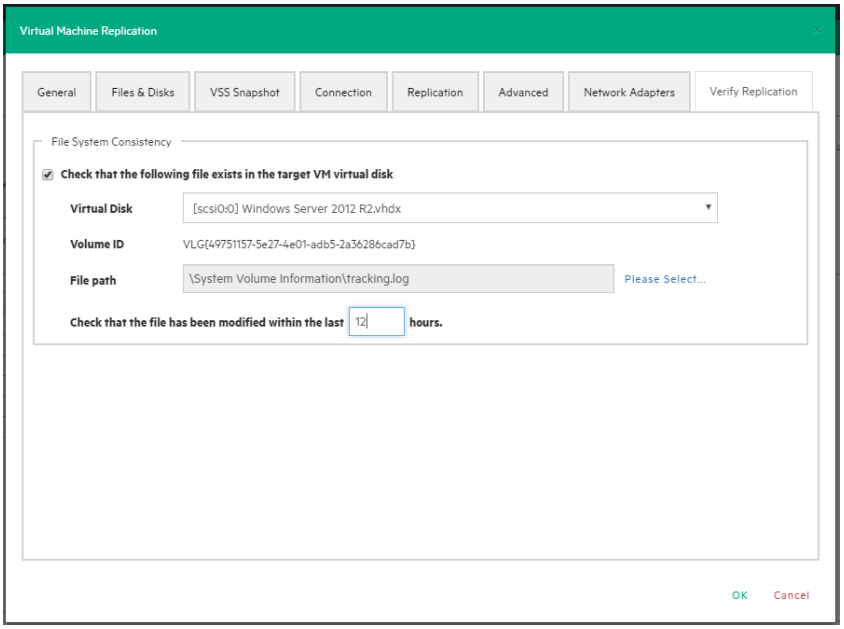


Figure 78: Replication - Verify Replication

10.2 Multiple VMs

If you have to replicate more VMs with the same options, you can choose the button “Multi VM” in the frame-box “Replication” in the dialog “Add Task Element” which appears by pressing the “Add…” (Figure 56: Add Task Element).

By pressing the button “Multiple VM”, the Virtual Machine Replication dialog, described in the section “Replicating a VM”, will appear.

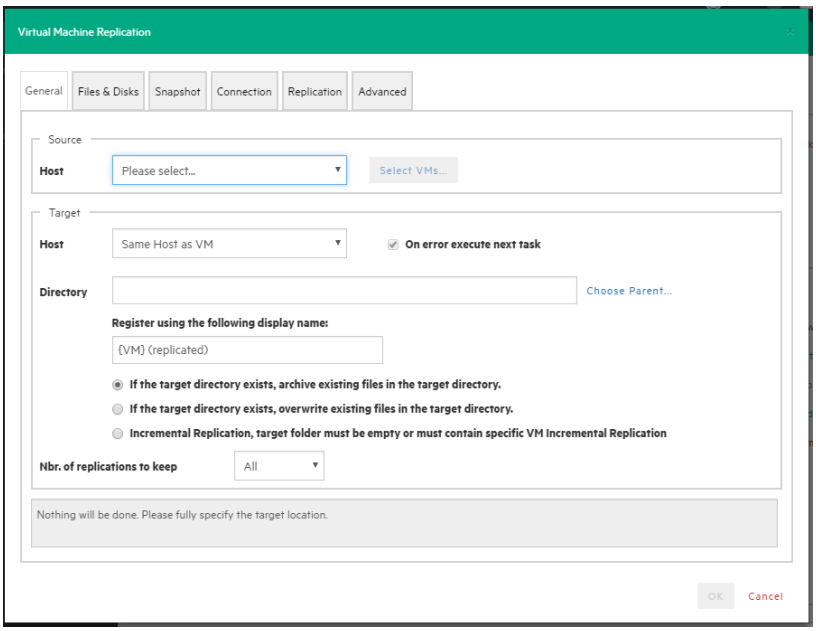


Figure 79: Muilti Replication - General

The difference with the single VM replication dialog is that you can select more than one Virtual Machine. By pressing the “Select VMs” button a dialog with all available Virtual Machines appears. Here you can select the virtual machines to replicate (multiple selection is available). The order of the selected VMs to replicate can be changed by pressing the “Up”/“Down” buttons and corresponds to the order in which the replications are done.

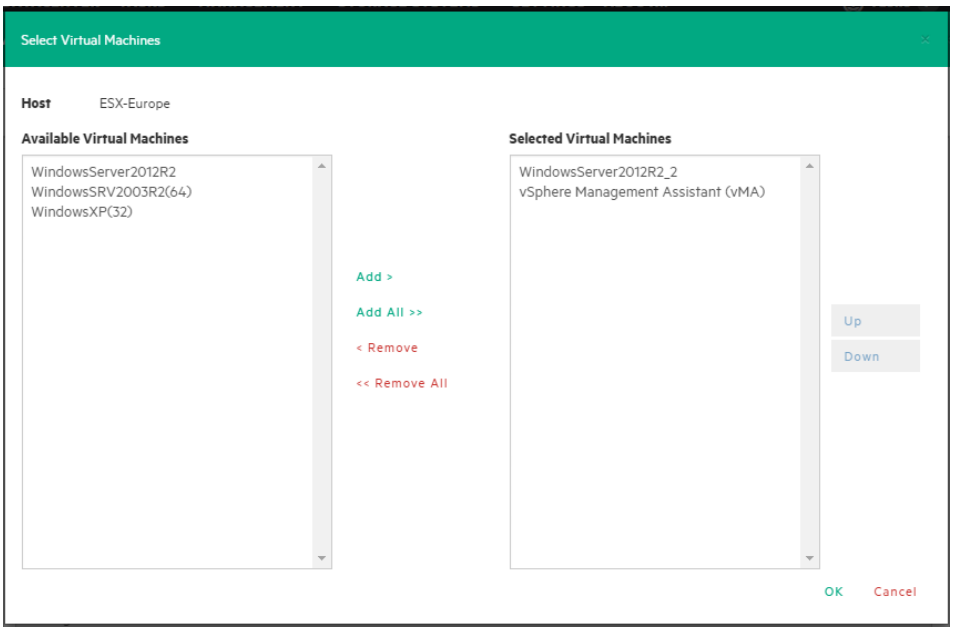


Figure 80: Multi Replication - Select multi VMs

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

Since the settings are common for every VM included in the task, in the “Files & Disks” tab there isn’t the possibility to select the files and disks to replicate for every single VM. All the files and disks of the virtual machines will be replicated.

The other configurations are the same as described in chapter “Replicating a VM”.

10.3 Replication explorer

To have an overview of any replications performed with VM Explorer®, switch to 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/off from the Replication Explorer: right-click on the registered VM and select “Power on” or “Power off”.

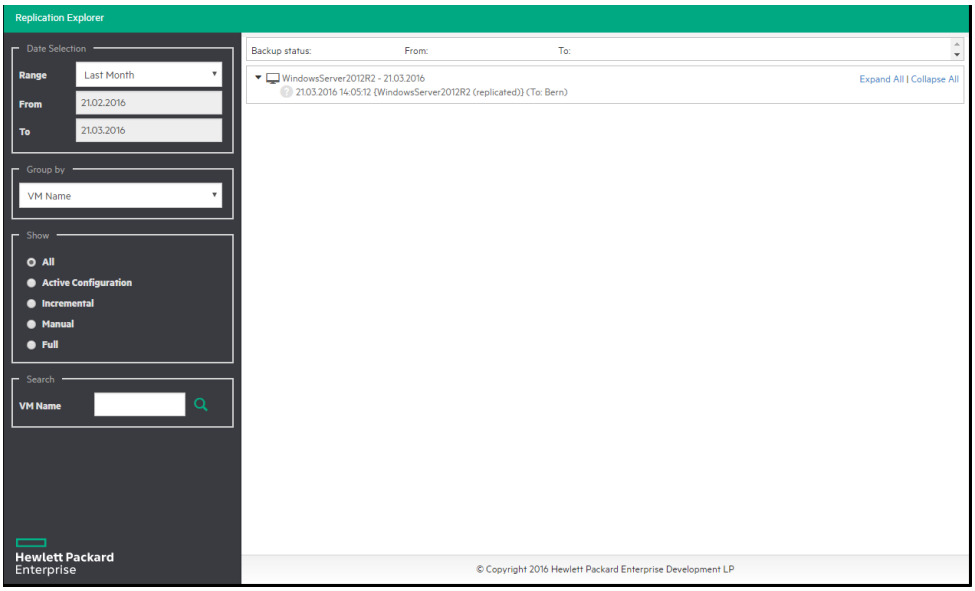


Figure 81: Replication explorer

11 Copy backup

It is possible to schedule a copy of one or more existing backups to a different target destination by adding a new Copy Backup Task element. Clicking on “Add…” button, VM Explorer® will open the “Add Task Element” dialog as shown in the Figure 56: Add Task Element. Please, choose the type of Copy Backup you want to perform (“Copy Backup To Server” or “Copy Backup To Tape Media”).

After the choice, the “Add Copy Backup Task” wizard dialog will be opened:

1. 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 will run, each single VM backup element will be 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.

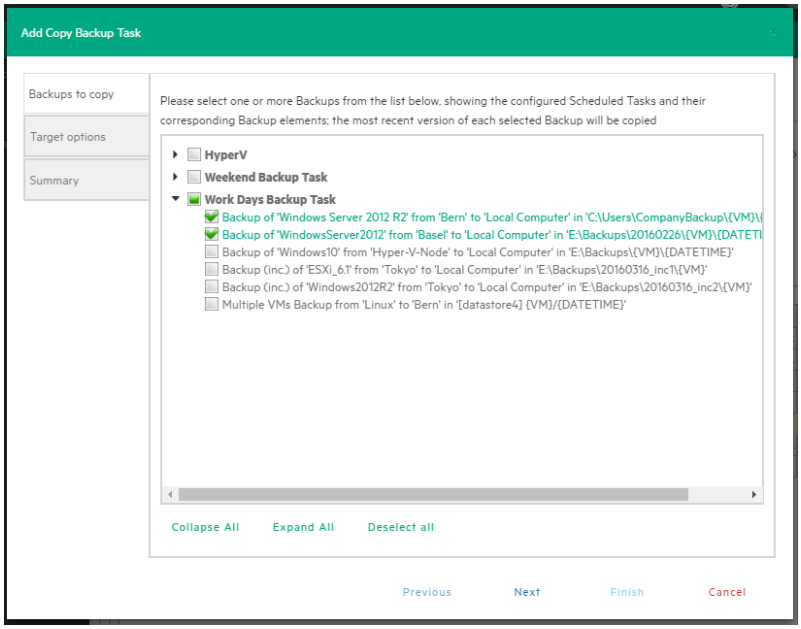


Figure 82: Copy Backup - Backups to copy

2. Target options (Copy Backup to Server only)

   In this next screen 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 VM name then by date/time of copy or vice versa.

   The “{VM}” and “{DATETIME}” placeholders of the append path will be replaced as follows:
   - {VM}: display name of the backed up virtual machine
   - {DATETIME}: starting date/time of the scheduled task in which the copy task is included. The format shown will be *YYYY-MM-DD-hhmmss*

   In this screen you can also specify how many full backup copies you want to keep stored on the target server once the copy task has completed. If you choose “All” (the default option), all previous backup

copies will be left 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:

- Copy of incremental backups is limited to local machine as target server
- In order to keep the incremental folder structure consistent, only “{VM}” subfolder will be appended to the target base path, ignoring current date/time and keeping the original backup date/time folder structure

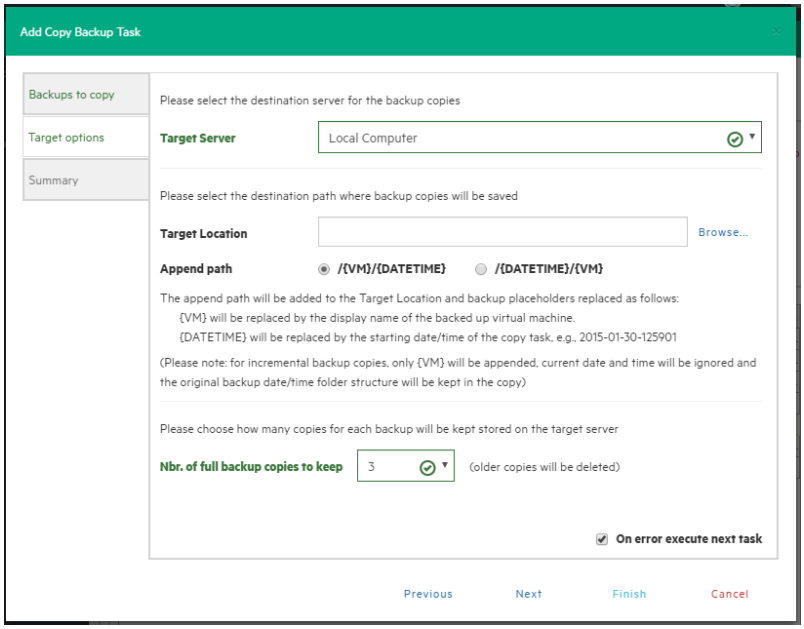


Figure 83: Copy Backup - Target options (To Server)

3. Target options (Copy Backup to Tape Media)

   In this screen you can select the target tape media pool from your tape infrastructure for the backup copies. You 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 will be used to store backup data, and large backups will be automatically split into multiple tape media when necessary.

   Here you can also choose to enable hardware data compression if your tape device supports it.

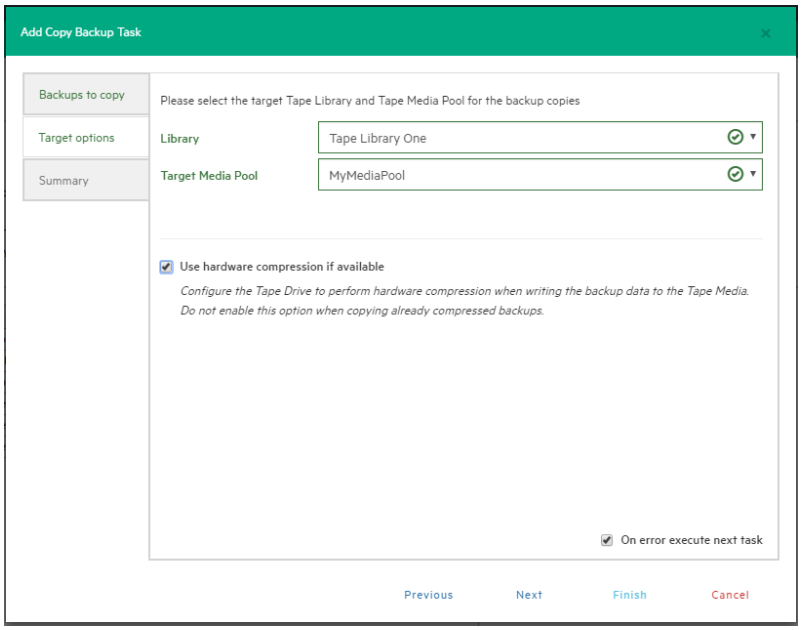


Figure 84: Copy Backup - Target options (Tape Media)

4. Summary

   Here you can see a summary of the selected copy backup options before saving the changes clicking on “Save” button.

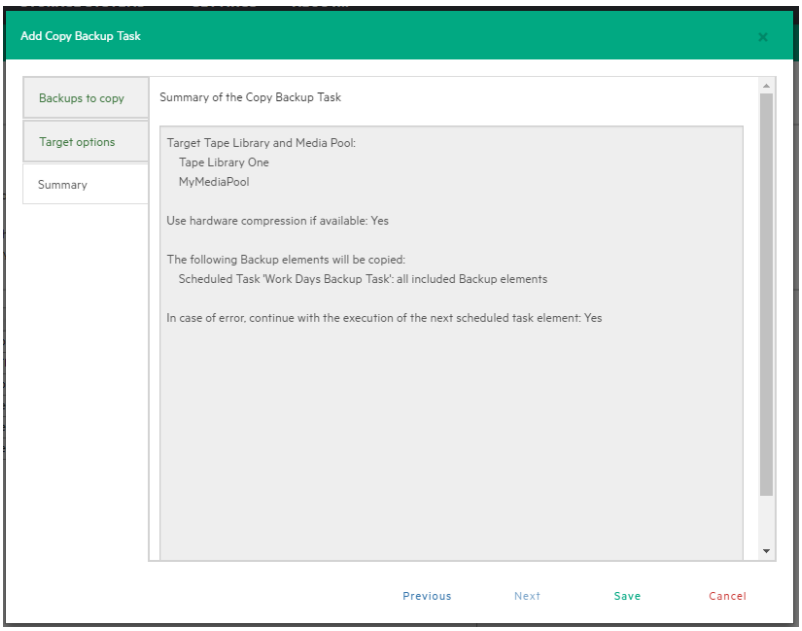


Figure 85: Copy Backup - Summary

Please note: removing or modifying any scheduled tasks or backup elements referenced by the copy backup task (e.g. 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:

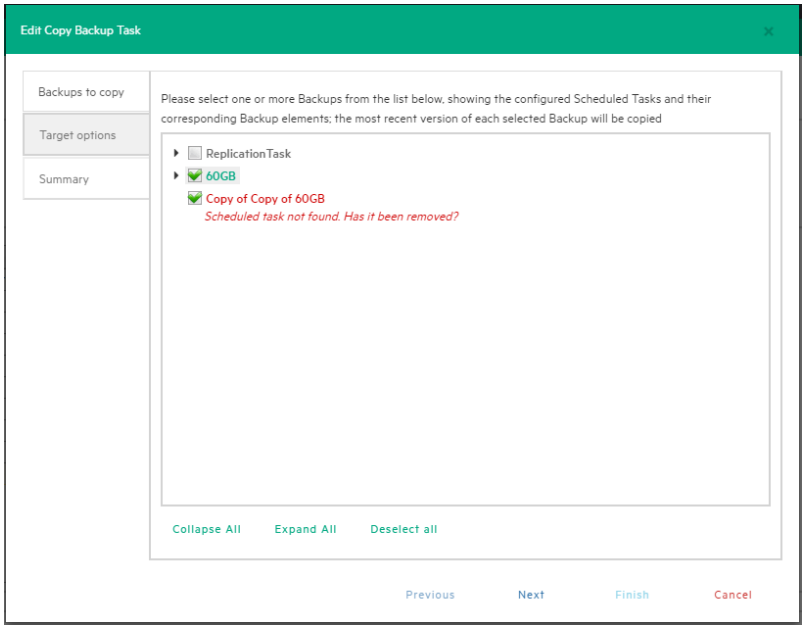


Figure 86: Copy Backup - Target options (Removed scheduled task)

12 E-Mail report

VM Explorer® has a built-in option to send email reports about the backups which 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.

1. Add a new scheduled task exclusively to send a report. In VM Explorer®
   - Go to the Scheduler Tab
   - On the Scheduled Task list, right-click and choose "Add Scheduled Task ..."
   - Enter "Email Report" as task name and set the time you want to get the report. Click ok when done
   - On the "Task Elements" list of this task, right-click and choose "Add E-Mail Report ..."
   - Configure SMTP Hostname, E-Mail and Subject as desired
   - Test your settings using the "Test" button, confirm with "OK" when you are done.
2. Add the report to an existing task
   - As explained above, just open an existing scheduled task. On the "Task Elements" right-click and choose "Add E-Mail Report". Then proceed as explained above.

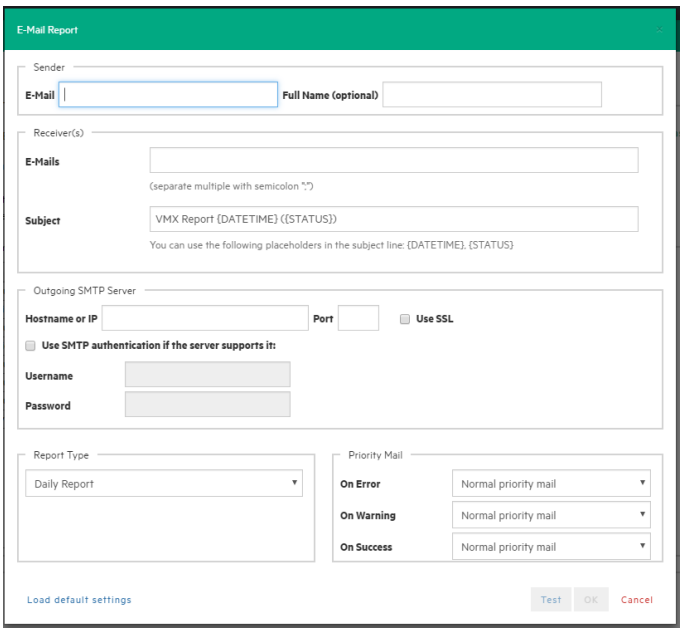


Figure 87: E-Mail Report

If you press the “Load default settings” button, 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: will send a report of the scheduled task in which the report has been added. This kind of report is usually implemented at the end of a scheduled task with multiple tasks, so that the user is informed only on specific scheduled task.

- Daily report: will send a report with the last 24 hours activities, including jobs still running, jobs terminated in the last 24 hours and their results, independently if the jobs where included or not in the task.

  This kind of report is usually implemented in a daily scheduled task of its own, so that the user is updated an all activities executed every day.

- Weekly report: works as the Daily report, only the report will be created integrating the jobs of the last week, not 24 hours.

- Monthly report: works as the Daily report, only the report will be created integrating the jobs of the last month, not 24 hours.

- Custom time report: works as the Daily report, only you have the possibility to set the time frame in which all the job executed (including the ones still running) will be included in the report.

Please note: if automated backup test has been configured to take screen shot of the VM console, the report will contain all the images that have been selected to be sent in the report. Be careful on the size of the report as it 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 at least on job failed or an error was encountered, the priority will be set to the “On error” option.

13 Custom script

To add a custom script to a scheduled task just choose the button “Custom Script” in the frame-box “Other” in the dialog “Add Task Element” which appears by pressing the “Add…” button, as shown in the Figure 56: Add Task Element.

The dialog shown below will appear. You can now select the script to be run in the scheduled task. You can 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) who will launch the script file.

You can press the “Test” button to verify the correct script configuration before saving the task.

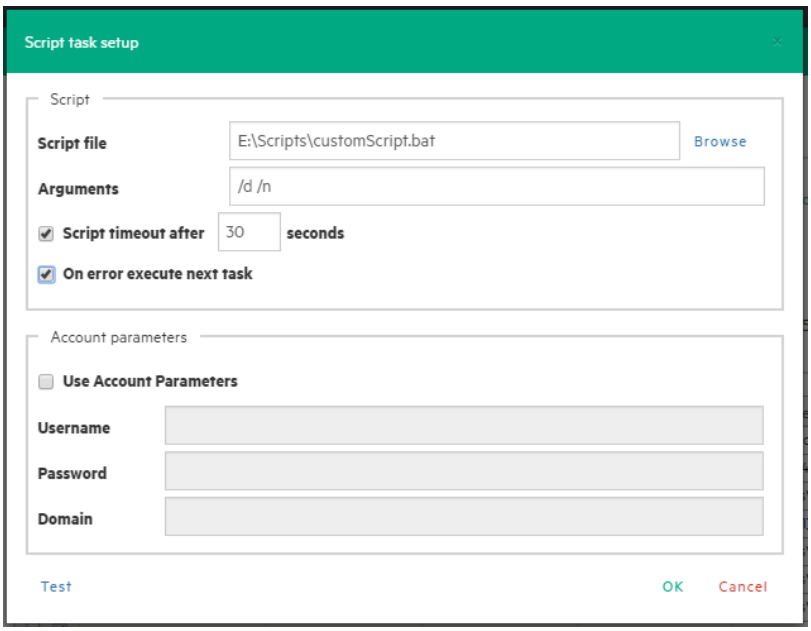


Figure 88: Script task setup

14 Restoring a VM

To restore any backup, you created with VM Explorer®, switch to the Backup Explorer view. The Backup Explorer view shows all the backups performed (according to the selected filters) on the right.

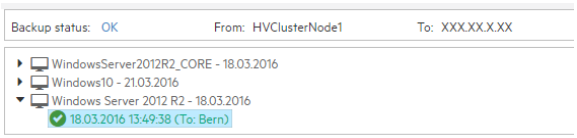


Figure 89: Restoring - Backup Explorer

In order to restore a backup, just select it from the “Available Restores” list, right click on it and select “Restore”.

To restore any backup using the Free Edition of VM Explorer® or to restore any backup which is not listed in Backup Explorer, switch to File Explorer view. 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. To restore this backup, right-click the vmxbackup.xml file and choose the "Restore Backup ..." command.

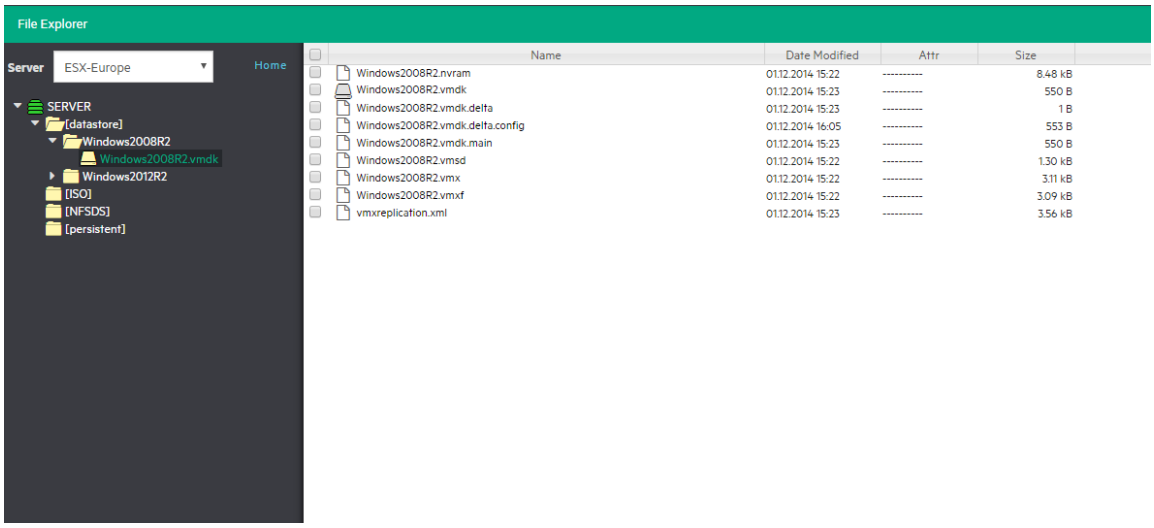


Figure 90: File Explorer

This opens the Virtual Machine Restore dialog box.

- General tab

  Choose the target host where you want to restore the backup. In addition, choose the directory and how to handle the restore.

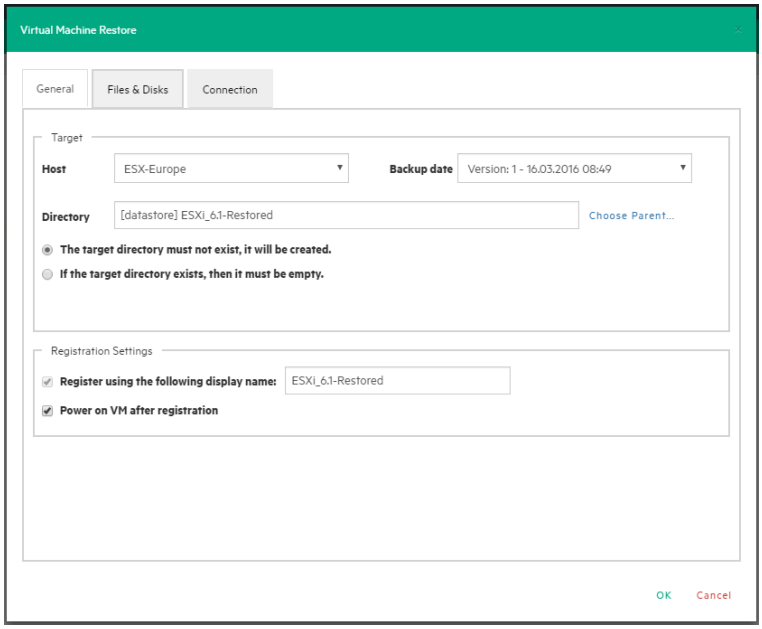


Figure 91: Restore - General

The option "Register using the following display name" allows you to directly register the Virtual Machine to your inventory. If you miss this option, you can always register any VM to your datastore by using "File Explorer" and choosing the "Register VM" command while right clicking on the VM configuration file (*.vmx for ESXi VMs or *.xml for Hyper-V VMs).

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

- Files & Disks tab

  In the “Files & Disks” tab (Figure 92: Restore - Files & Disks) you can choose which file/disk has 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:
  - Target host is ESXi
  - VM Explorer Agent is enabled on the target server
  - No discs with the same name are present

- Connection tab

  In this tab (Figure 93: Restore - Connection) the user can configure the direct copy options, which is explained in previous chapter.

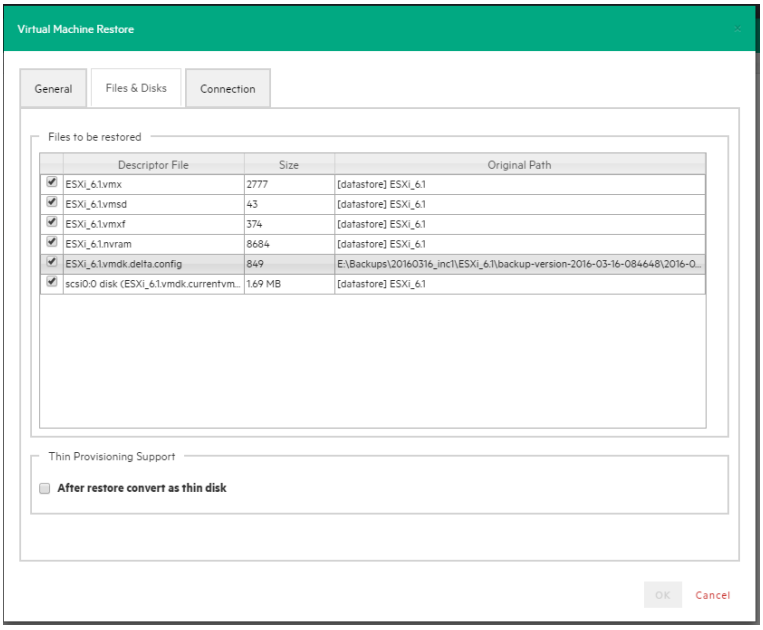


Figure 92: Restore - Files & Disks

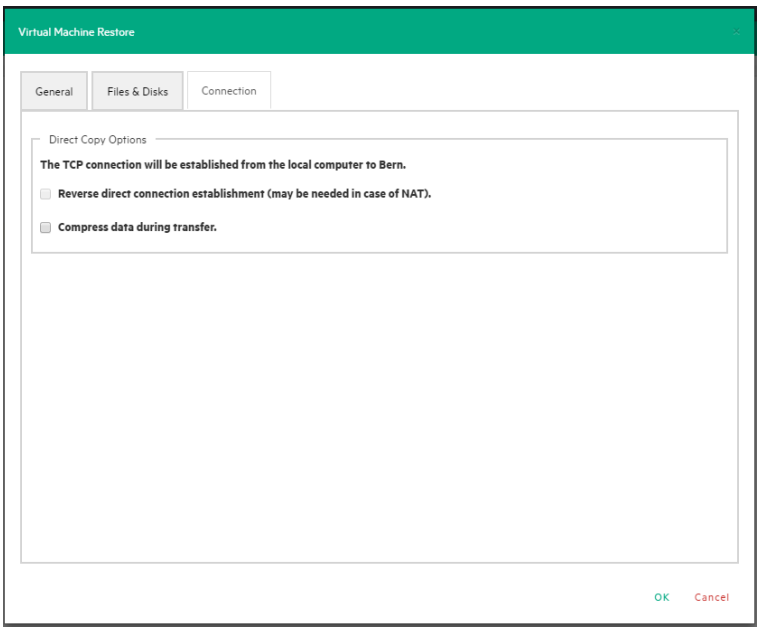


Figure 93: Restore - Connection

- Network Adapters tab (Hyper-V Host Only)

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

  You can select which network to connect the network adapter to in the field “Connect to:” The list is directly obtained by the target server.

When selecting “Restore MAC Address” you are automatically setting the old MAC address on the adapter.

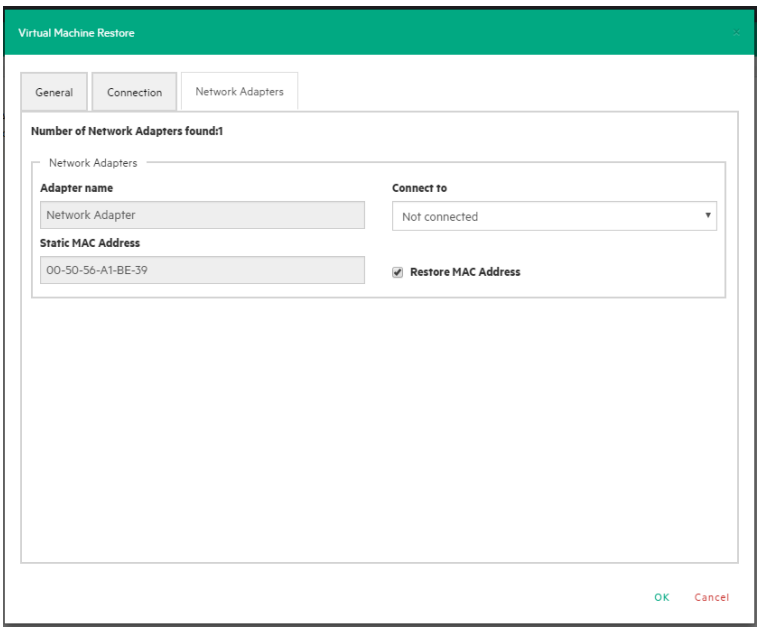


Figure 94: Restore - Network Adapters

When all options have been set, just click the "OK" button to start the process. After your VM has been restored, VM Explorer® will close the dialog box.

14.1 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 chapter “Restoring a VM”. This will make VM Explorer® restore the initial backup including all differential files up to the specified date.

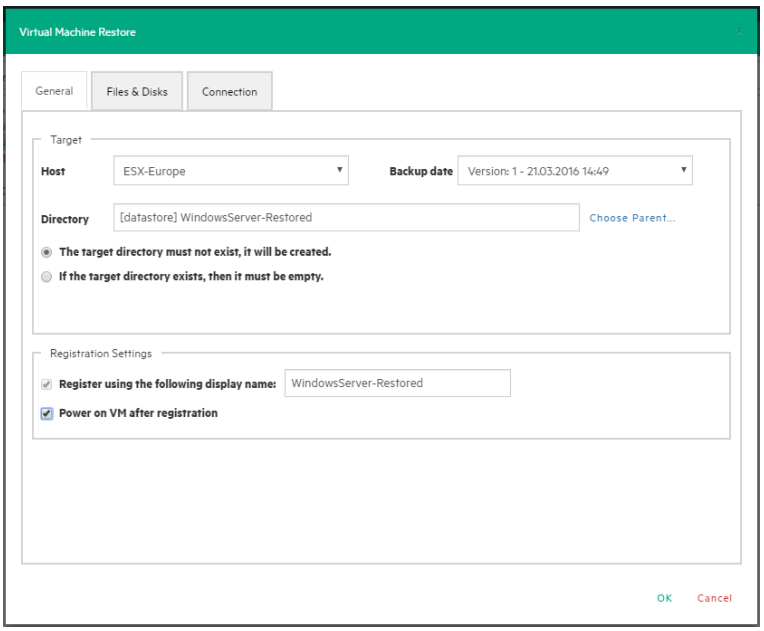


Figure 95: Restore Incremental Backup - General

14.2 Restore an encrypted backup

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

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

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

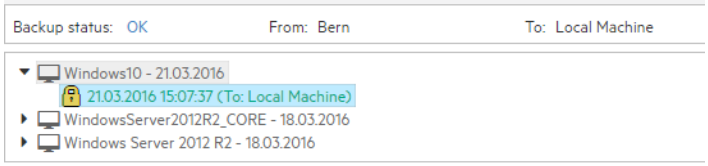


Figure 96: Restore encrypted backup

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.

15 Instant VM Recovery

VM Explorer® gives you the possibility to power on a backup directly on a selected server without the need of restoring or copying any file. This feature is provided by the Instant VM Recovery System.

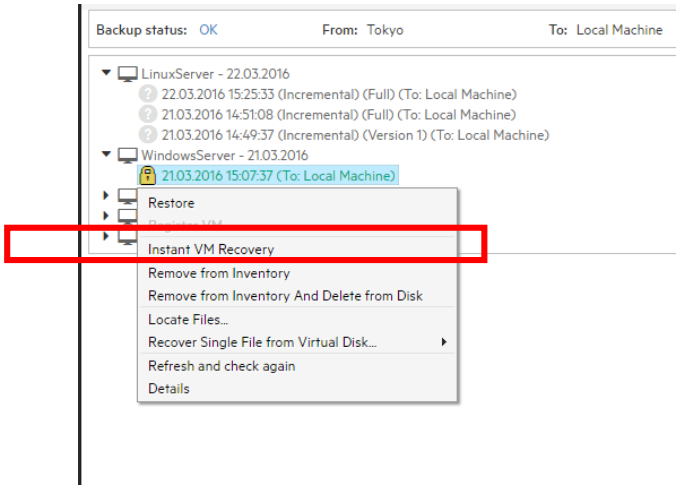


Figure 97: Instant VM Recovery from backup explorer

By selecting “Instant VM Recovery” from a backup, you can register a VM to your selected server. A NFS server will mount a temporary datastore on you host. The actual disk will be kept in your local disk.

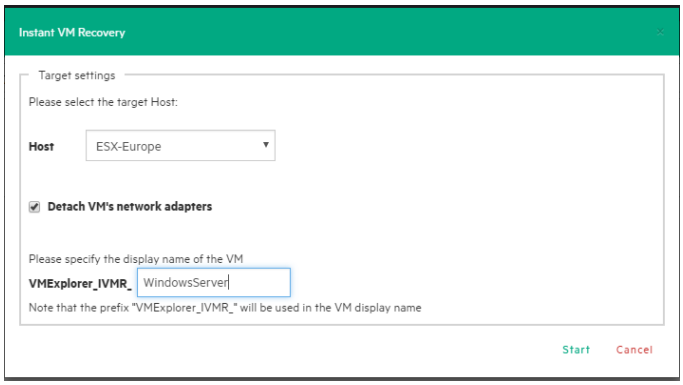


Figure 98: Instant VM Recovery target settings

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

While the Instant VM is up and running, you can even perform a vMotion operation to migrate it on an existing datastore, making it a real VM, no more depending on the VM Explorer® Instant VM Recovery System.

The Instant VM Recovery feature is only available for backups of VMware ESXi virtual machines saved locally or on a supported Cloud storage.

15.1 Instant VM Recovery of Cloud backups

With VM Explorer®, you can even launch Instant VM Recovery of VM backups saved on a supported Cloud storage (Amazon S3, Rackspace, Open Stack or HP Cloud).

The Instant VM Recovery dialog will display additional options:

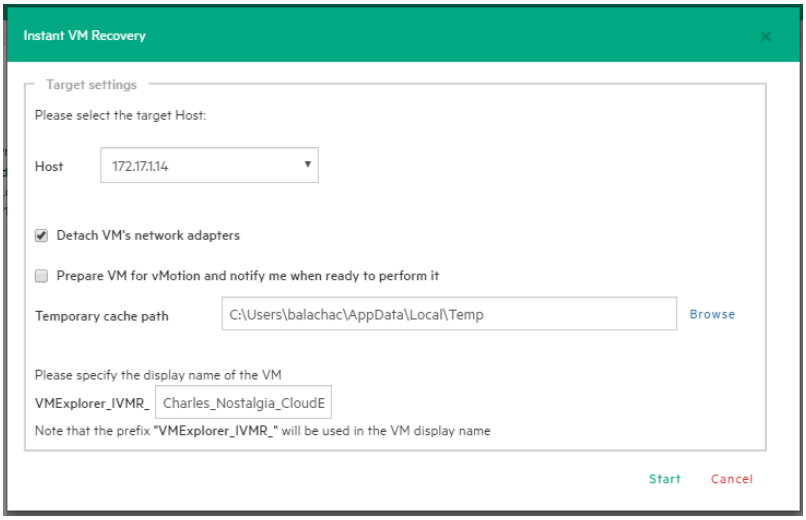


Figure 99: Instant VM Recovery for Cloud

If you plan to perform a vMotion migration on that Instant VM later, you can check the “Prepare VM for vMotion” option: an optimized data transfer task will start, added to the running tasks list where its progress will be visible. Once this task is completed, a notification alert message will be shown stating that the Instant VM is ready for vMotion.

The default local path for temporary Instant VM Recovery cache files can be set in the main VM Explorer® settings dialog, Instant Recovery Service tab. Here you can override the default value with a custom path. Generally, a safe estimate of the temporary disk space required for an Instant VM Recovery of a Cloud backup is the total size of the backup itself.

VM Explorer® implements several optimizations to improve the performance of an Instant VM Recovery of a Cloud backup; even so, the performance will be slower than a local backup, strongly depending on the network bandwidth and server workload of your infrastructure: the better performing are network and hypervisor server, the better responsive will be the Instant VM.

16 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. Simply select the server from the "Select..." dropdown menu.

In addition, you can register Virtual Machines to your ESXi or Hyper-V hosts by right-clicking the VM

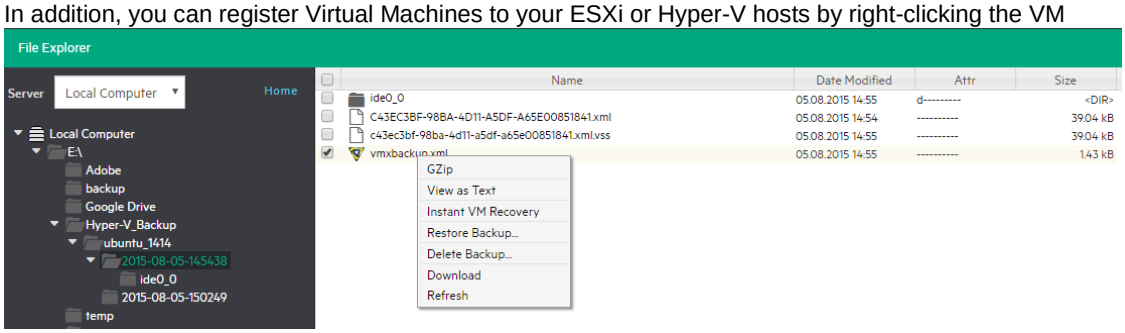


Figure 100: File Explorer

configuration file (*.vmx for ESXi VMs or *.xml for Hyper-V VMs) and choosing the "Register VM" command.

File Explorer also allows you to restore backups by right-clicking the vmxbackup.xml file and then choosing the "Restore Backup..." command.

16.1 File level restore for single files

File Explorer allows you to browse a disk image file and recover single files. Just select a disk image file and double click on it to navigate its content and view all the files and directories. To recover a single file or a whole directory, right-click on the file and select “Download”, then choose the 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 incompatible feature ‘64bit’ is not supported)
- Windows Dynamic Disks
  (simple, spanned, striped, mirrored volumes)
- Linux LVM - Logical Volume Manager
  (linear, striped, mirrored volumes)

If the EXT partition in the selected image disk is not 100% consistent a warning message is shown, but you can continue navigating the image disk. In this case the suggestion is to enable the quiesce option for the backups to generate consistent disk images.

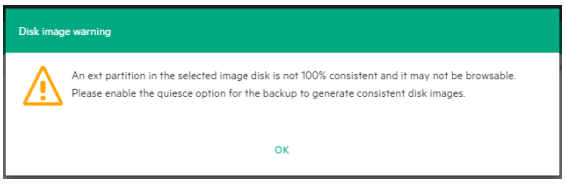


Figure 101: Disk image warning

17 Task history

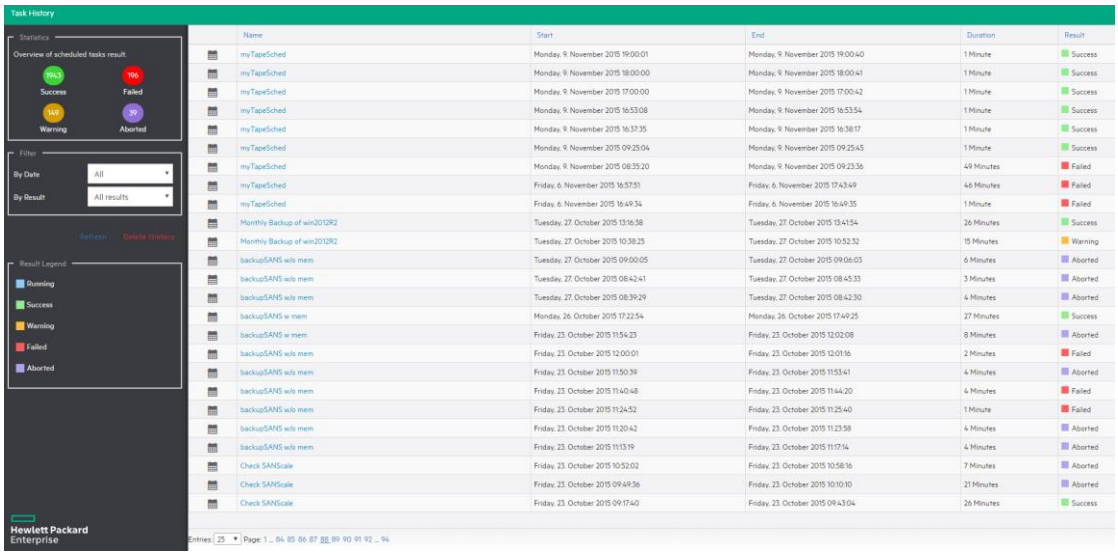


Figure 102: Task history page

The 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. For each entry it's possible to view more details by double-clicking it. In the Scheduled Task Detail dialog all the details of the task are shown, as in the following picture.

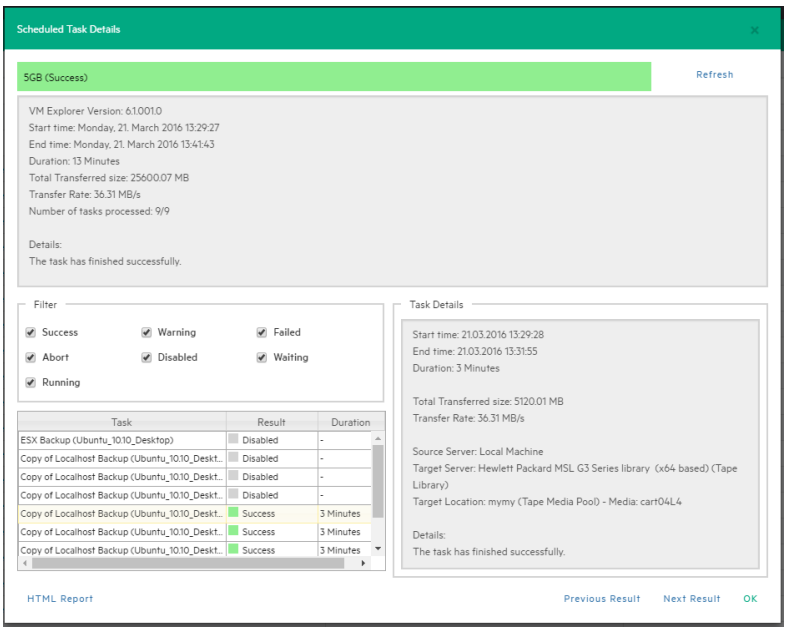


Figure 103: Scheduled Task Details

The "Html Report" button shows the current task result in a browser, html formatted and ready to be printed.

18 Instant Recovery Service

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

There are two types of Instant Recovery Service:

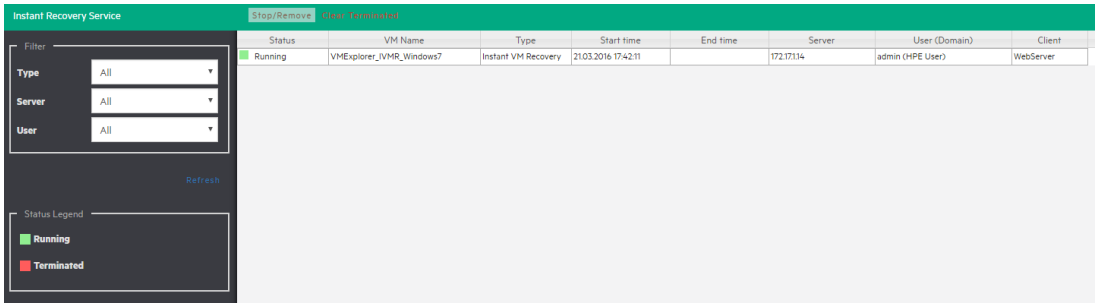


Figure 104: Instant Recovery Service page

- Instant VM Recovery. This service is started when you select a backup and from the pop-up menu you select “Instant VM Recovery”. This is a running task with no time limit and to prevent the VM to be kept indefinitely the user need to stop the process when finished using the Instant VM Recovery job.

- Instant Backup Test. This service is available only at the end of a backup done locally, where 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 time.

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

19 Settings

19.1 General

To configure some general settings, such as the Default Local Path, the Windows event logs and others, select the Settings view. In the left menu select “General”.

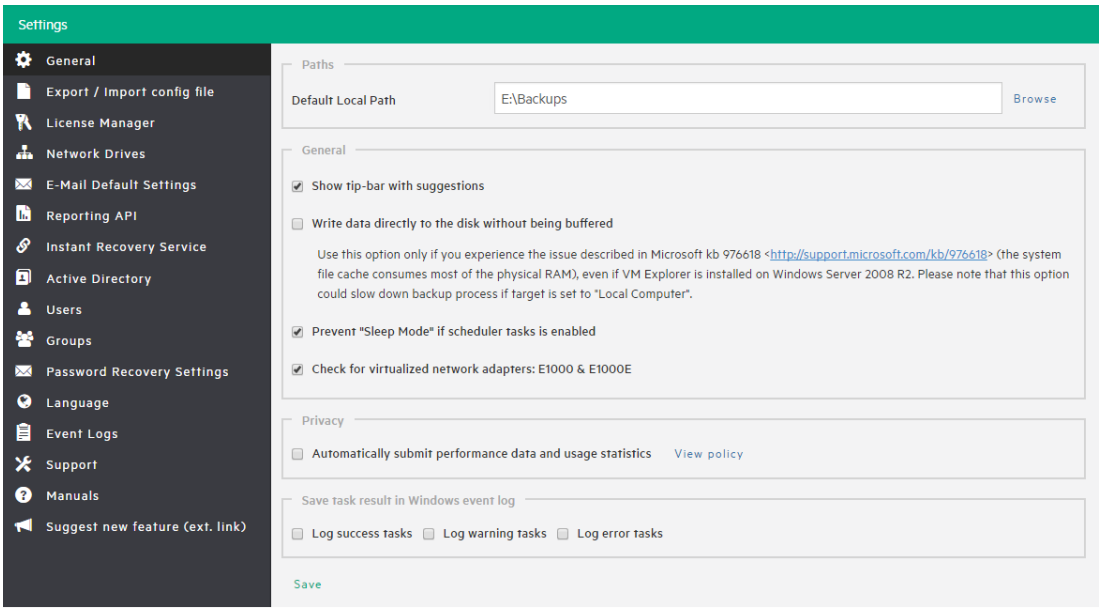


Figure 105: Settings - General

1. Path

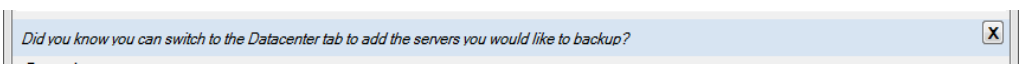
   To configure the default Local Path select, in the “Paths” section, the path you want to set as default local path.

   This path is used in File Explorer (home directory for local computer), in the Backup setup dialog (default target directory), in the Custom Script configurator and in the dialogs where a local path is proposed.

   If you don’t configure a local path, VM Explorer® will use the Windows Environment “MyDocuments” path.

2. General

   In the “General” section the “Show tip-bar with suggestion” checkbox can be enabled/disabled to show or hide the tip bar with the suggestions. This bar could also be deactivated by clicking on the “X” button. This option will influence only the GUI interface, as in the WEB interface is not present.

   The option “Write data directly to the disk without being buffered” has to be activated only if, during backup, there are performance problems as described in the Microsoft KB 976618 (http://support.microsoft.com/kb/976618)

The option “Prevent ‘Sleep Mode’ if scheduler is enabled” permits to prevent the system Sleep Mode (if activated). This option will be applied only if the scheduler is enabled.

3. Privacy

   In the “Privacy” section there is the possibility to enable/disable the performance data sending (used for statistical purpose). Press the “View policy” button to see the information about the privacy condition.

4. Windows event log

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

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

19.2 Export / Import Configuration

The configuration file can be exported or imported from Settings.

Exporting functionality give the user to encrypt configuration file with a password, which is recommended.

From the same window you can import an existing configuration.

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

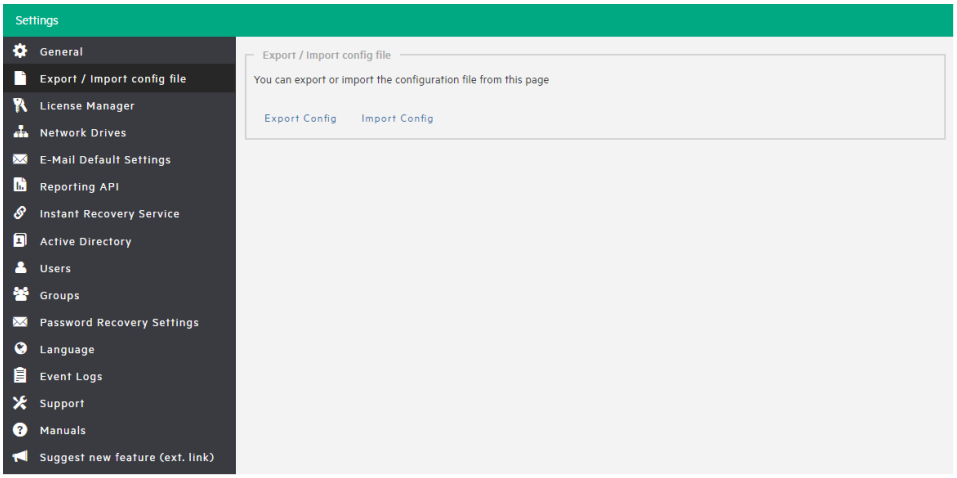


Figure 106: Settings - Export / Import Configuration file

19.3 E-Mail

To configure the default E-Mail default settings, select the Settings view. Switch to the Email in the left menu and fill the fields you want to configure as default. If you filled all the fields, then you can press the “Test” button to verify that the settings are correct. Press the “Ok” button to save the settings.

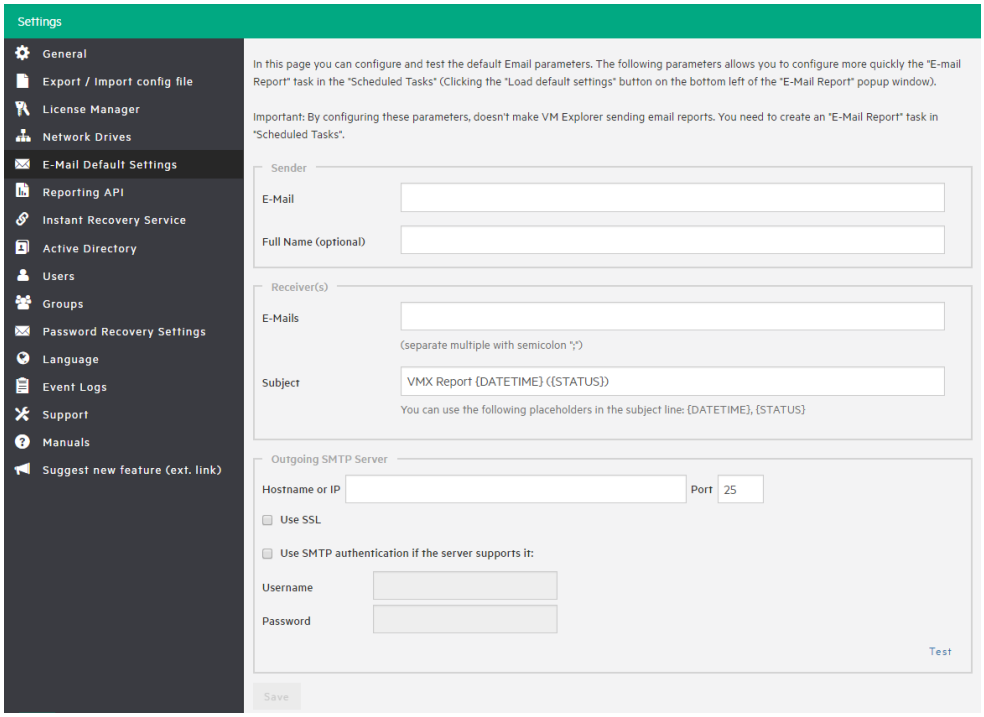


Figure 107: Settings - E-Mail

Please note that these settings will be used when adding an e-mail report in the scheduler only if you select the “Load default settings” button.

19.4 Active Directory

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

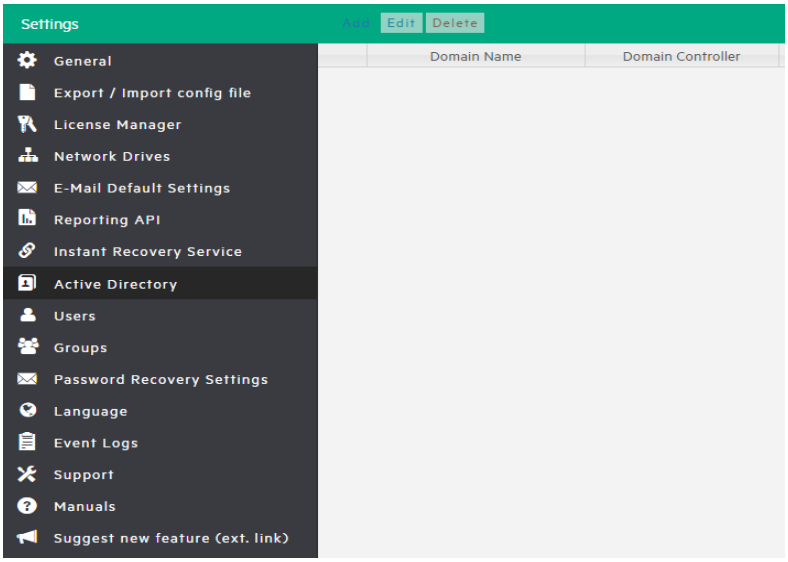


Figure 108: Settings - Active Directory page

To add an Active Directory entry simply click on “Add” and fill the Domain Name and the Domain Controller (IP or computer name) fields.

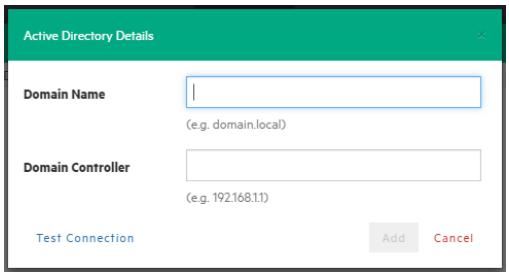


Figure 109: Active Directory Details

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

19.5 User

The “Users” settings allow 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.

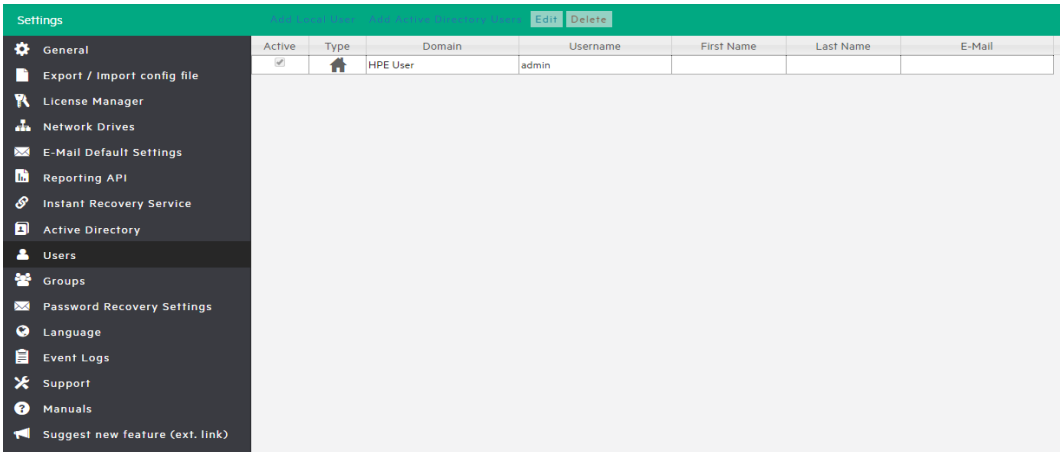


Figure 110: Settings - Users

To add a new local user, simply click “Add Local User”. To select which kind of access you want for the user, select the user group from the “Groups” list. Multiple choices are permitted.

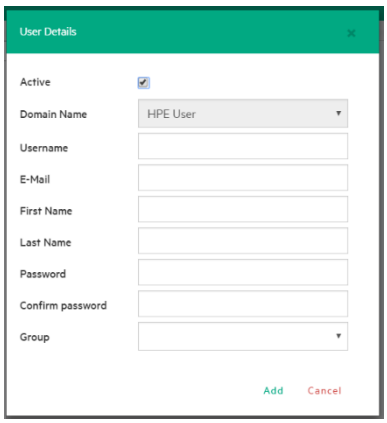


Figure 111: Settings - User Details

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

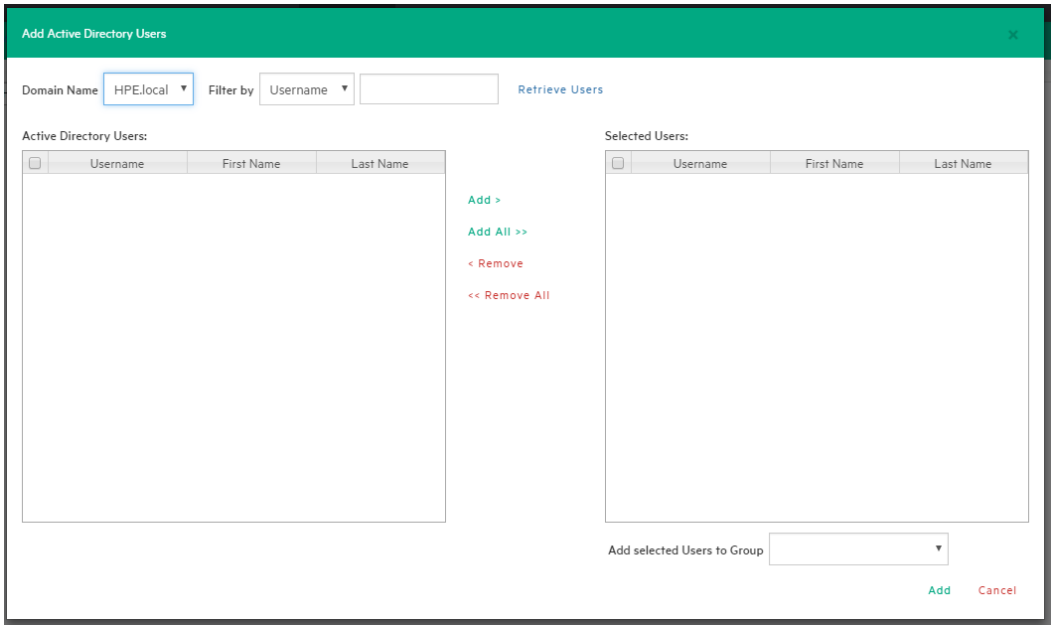


Figure 112: Settings - Add Active Directory Users

When adding the users you can also retrieve lists of users from Active Directories added in VM Explorer® (see previous chapter “Active Directory settings”). After the Active Directory has been added, select “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 press “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. To do so select the list in the “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 to editing in order to keep consistency with Active Directory.

19.6 Groups

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

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

To edit a group, select and click the “Edit” button. You can add a user selecting it from the “Users” list. To delete a user, press the “x” next to the name.

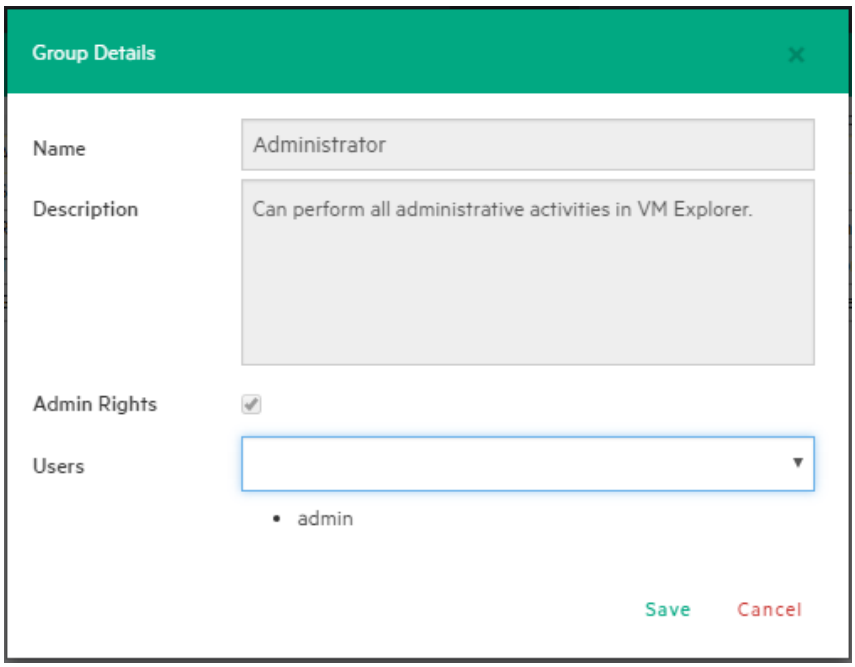


Figure 113: Settings - Group Details

19.7 Password Recovery

The Password Recovery Settings allows the user to configure the sender and Outgoing SMTP Server settings.

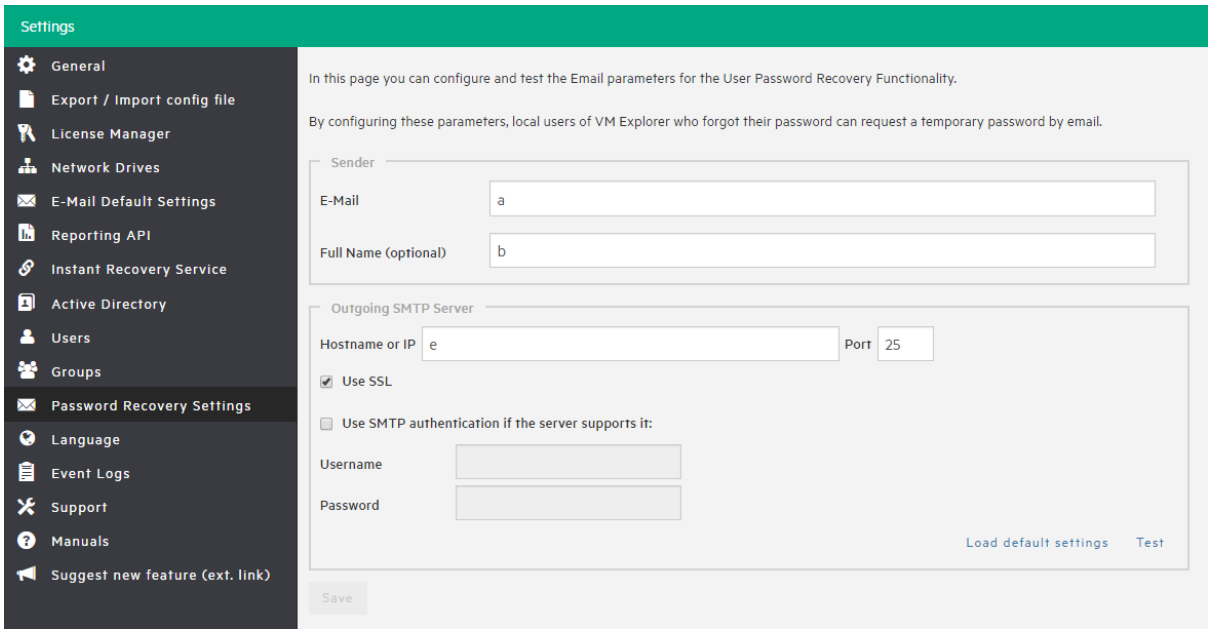


Figure 114: Settings – Password Recovery

If these settings are already configured in the “E-Mail Default Settings” page, they can be copied in this section by pressing the “Load default settings” button. Press the “Test” button to verify if the settings are correctly configured.

19.8 Instant Recovery Service

In order 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.

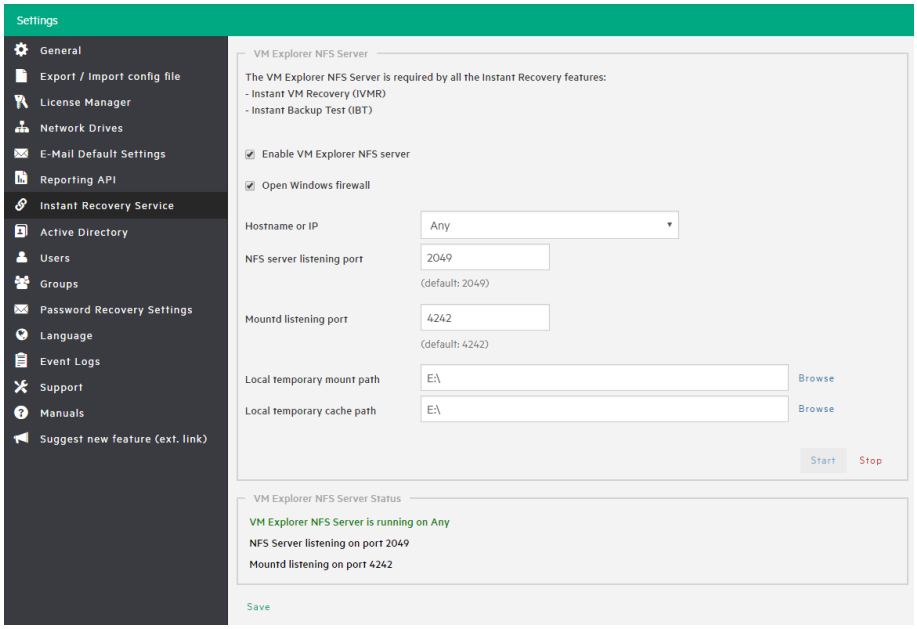


Figure 115: Settings - Instant Recovery Service

To be able to use the automatic backup test you need to configure and enable the VM Explorer® NFS. To do so, select the Settings view. In the left menu select “Instant Recovery Service”.

The “Start” and “Stop” button permit to influence the VM Explorer® NFS server while the dialog is open.

If the option “Enable VM Explorer NFS server” is checked VM Explorer® NFS Server will be automatically started when the dialog is close, on the other hand the server will be automatically stopped if this option is disabled.

The “Open Windows Firewall” option will automatically open Windows Firewall for VM Explorer® NFS Server.

The “NFS server listening port” and the “Mountd listening port” are the port that will be used to communicate with the NFS client on the host. Please note that 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 respectively. The default value for both is the default system Temp path.

The “VM NFS Server Status” will permit to show an overview of the server status.

19.9 Language

The Language Settings page permits to localize the web application in your preferred language.

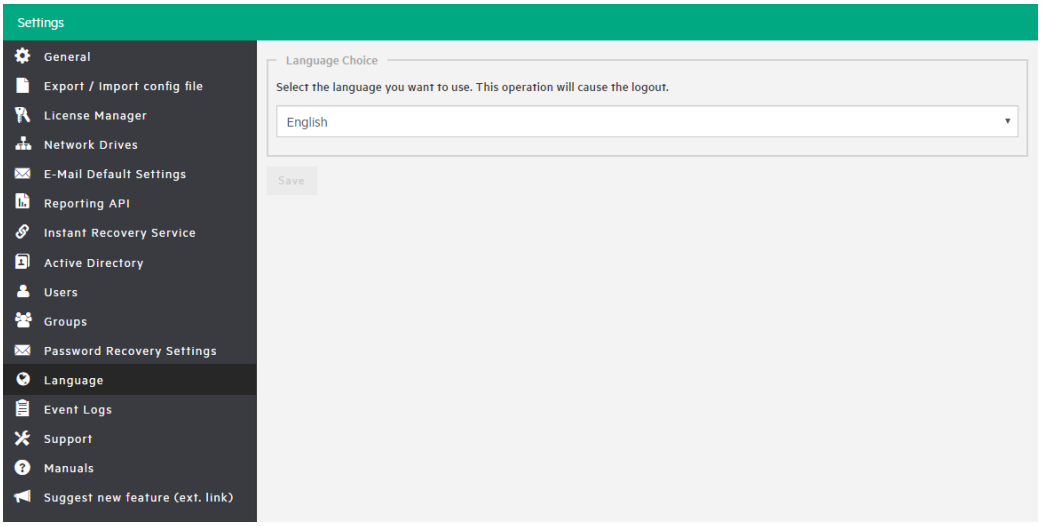


Figure 116: Settings - Language

This feature permits to show almost all the strings you can see in the web interface. By our choice, we did not translate (and remains in English): dates and times, tasks details, HTML Reports, Events logs, some Service errors.

You can choose from one of the following languages:

- English
- German
- Italian
- French
- Japanese
- Spanish

Attention: when you apply changes, the web application will automatically restart. Then you will return to the Login Page.

20 Supported systems

20.1 Operating Systems

Supported Operating Systems for installing VM Explorer®

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

20.2 ESXi Versions

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 5.0 Build 3982828

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 5.1 Build 3872664

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
- VMware ESXi 6.0 Build 3825889

20.3 Hyper-V Versions

Supported Hyper-V Versions

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

20.4 Tape Libraries / Autoloaders

Supported Tape Libraries/Autoloaders

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

20.5 Virtual storage systems

Supported Virtual storage systems

EMC ScaleIO V1.32

21 FAQ and Support

If you have any questions, please refer first to our online FAQ http://www.trilead.com/FAQ/.

For technical support please visit http://www.trilead.com/support/ or visit our free forum at:

http://community.hpe.com/t5/VM-Explorer-Practitioner-Forum/bd-p/vmexplorerpractitionerforum