



OPEN-E JOVIANVHR JUMP START



Date: 2025.08.28

Table of contents

1. Install Open-E JovianVHR on a Physical Server	3
1.1. Booting Open-E JovianVHR Installer	3
1.2. Initialize Hardware	5
2. Install Open-E JovianVHR as a Virtual Machine	5
3. Storage Configuration	7
3.1. Preparing for the WebGUI Administration	7
3.2. Entering the Product Key and Logging into Open-E JovianVHR	7
3.3. Creating Zpools	7
4. Configuring a Hardened Backup Repository in Open-E JovianVHR	15
4.1. Prerequisites	15
4.2. Server Setup	15
5. Configuring a Backup Repository in Veeam (Windows)	18
5.1. Configuring Backup Repository	18
5.2. Configuring the Mount Server	24
5.3. Finalizing Configuration	26
6. Configure Your First Backup	27
6.1. Adding the Server to the Veeam Infrastructure	27
6.2. Creating a Backup Job	30
7. Restore	35
7.1. Starting the Restoration Process	35
7.2. Selecting the Type of Restoration	36
7.3. Choosing VM or Node for Restoration	37

1. INSTALL OPEN-E JOVIANVHR ON A PHYSICAL SERVER

Download and extract the ISO file using your preferred compression software (e.g., 7zip or WinZip) to an empty USB Flash Drive.

The ISO can be obtained from here: <https://www.open-e.com/products/open-e-jovianvhr/open-e-jovianvhr-free-trial/>

After extracting the ISO file on your USB Flash Drive, the root directory must contain the following directories ONLY: bxxxx, boot, and file mmenu_upd.sh where the xxxx is the software build number (for systems that support BIOS. If your system supports UEFI, it is also required to keep the EFI directory).

- To make your USB Flash Drive bootable, enter the "boot" directory and run the "bootinst.exe" (For Windows) or "bootinst.sh" (For Linux). Follow the prompt, then remove the USB Flash Drive.
- You can now boot your storage server installer with a USB Flash Drive.

NOTE: The prepared USB Flash Drive will run the software installer by default. If you wish to test or use the USB Flash Drive for non-mission-critical or non-production purposes, you can boot Open-E JovianVHR directly from it instead of running the software installer. To make this default change, run the „config.exe" from the boot directory and select „r" to remove the default boot of the software installer.

1.1 BOOTING OPEN-E JOVIANVHR INSTALLER

General Hardware requirements:

- The minimum size for the Open-E JovianVHR boot medium is 16GB. The installer creates up to 128GB boot medium partition size if bigger than 16GB boot disk is present. A recommended Open-E JovianVHR boot medium uses an HDD or SSD device. The USB Flash Drive can be used as an Open-E JovianVHR boot medium for testing purposes or non-mission-critical applications.
- Minimum of 8GB RAM plus 1GB per 1TB of pool space.
- Mirrored "Write Log" is recommended.
- An Uninterruptible Power Supply (UPS) is strongly recommended.

Plug your installer media (USB Flash Drive) into the storage appliance.

The first boot menu will show the software version. You can press enter, or it will skip and continue automatically within 5 seconds.

The second menu allows you to select to boot Open-E JovianVHR or to install the software on a writable boot media in your system using the interactive installer utility. Select "Run software installer" to install Open-E JovianVHR on a writable boot media in your system.

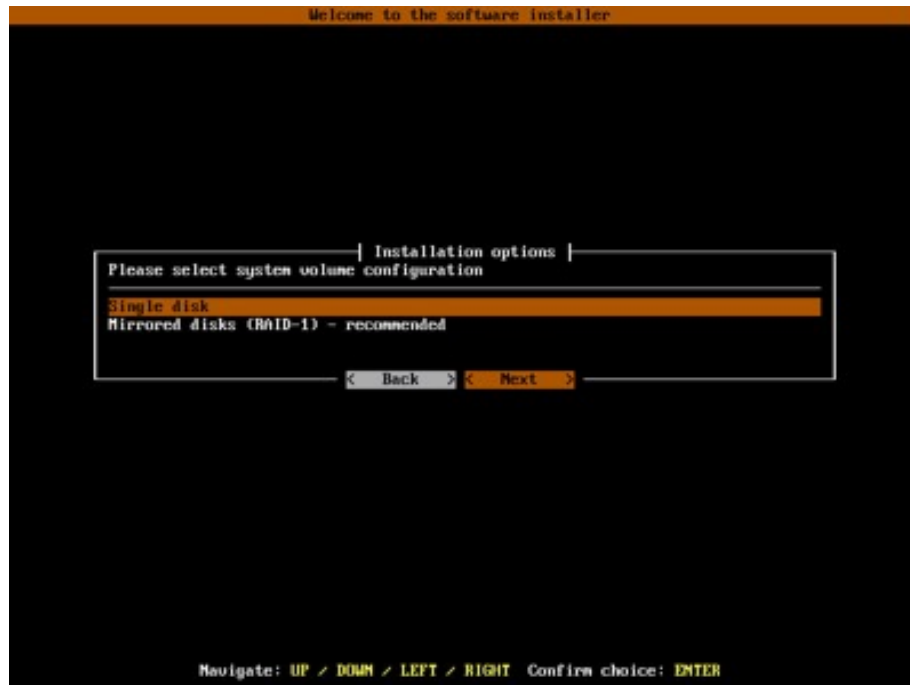
Please follow the instructions while running the installer. The installer optionally can install the system on a single disk or on mirrored disks (RAID1). If a single disk is selected, it is still creating degraded RAID1 on the single disk, but the system will not create error events about degraded RAID1. It will be possible to add a second disk and get redundant RAID1 anytime in the future.

Open-E JovianVHR

Jump start



Once the boot media becomes redundant RAID1, the system will generate error events if any disk of the mirror fails.



Finally, reboot your storage server from the new boot media (set your BIOS boot options back from USB to the medium where you installed the software).

NOTE: Open-E JovianVHR can be used for evaluation up to 60 days with the trial product key. The Trial Key can be downloaded after registration from: <https://www.open-e.com/partner-portal/partner-area/products/jovian-vhr-trials/>

1.2. INITIALIZE HARDWARE

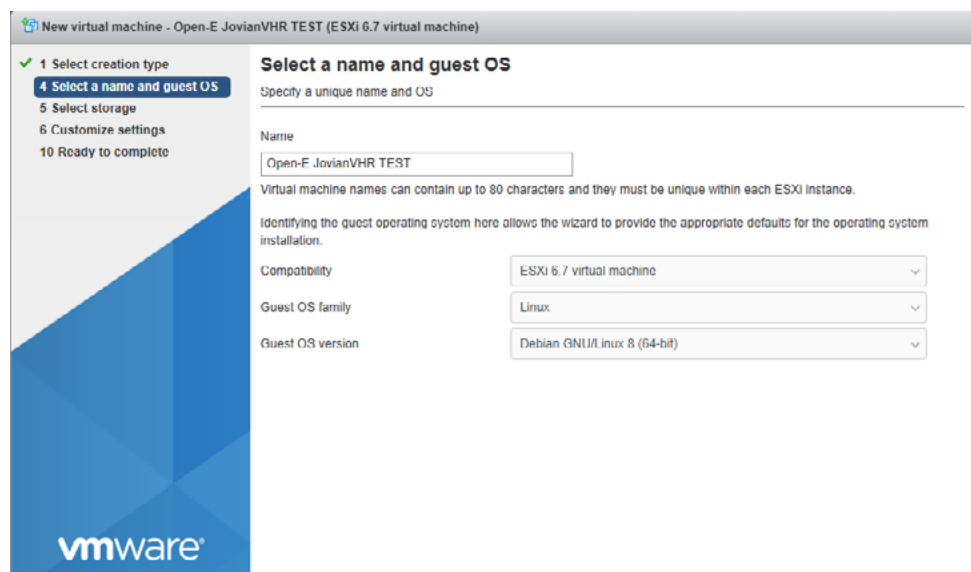
Before using Open-E JovianVHR, you should have the hard disk drives connected to the SATA, SAS, or NVMe ports on the motherboard or SAS HBA, and the LAN Card and other NICs already in your server.

Connect the keyboard and monitor (they will be needed for setup only). Later, you can run the server in “headless mode” (without keyboard and monitor).

NOTE: Please check the motherboard BIOS if the „headless mode” is enabled. In some cases, systems will not boot if the keyboard is not connected. You'll find more about the headless mode in the motherboard's BIOS manual.

2. INSTALL OPEN-E JOVIANVHR AS A VIRTUAL MACHINE

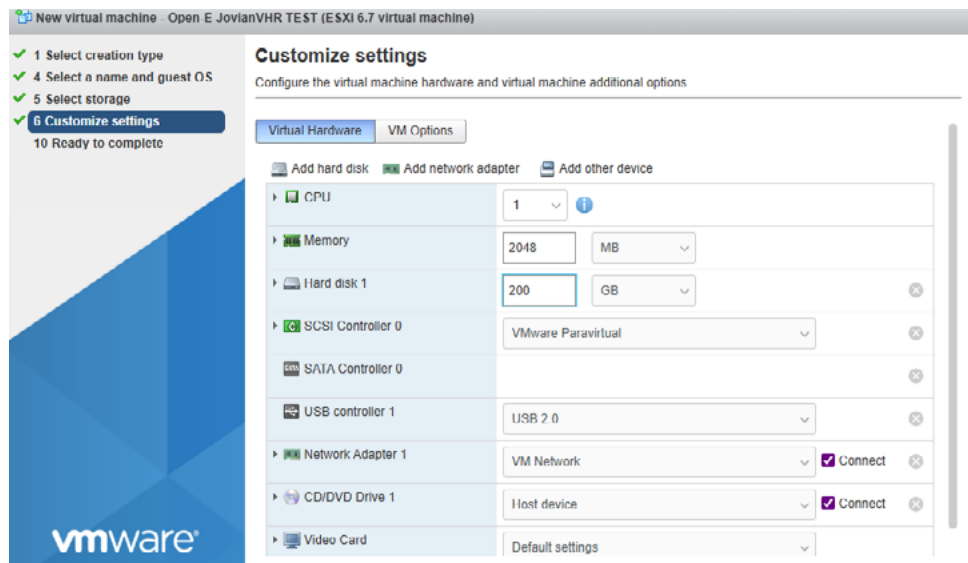
- In the ESX host menu, select “New Virtual Machine”, and in the wizard, click on the “Next” button.
- Enter the VM name. In this example, we have: Open-E JovianVHR TEST



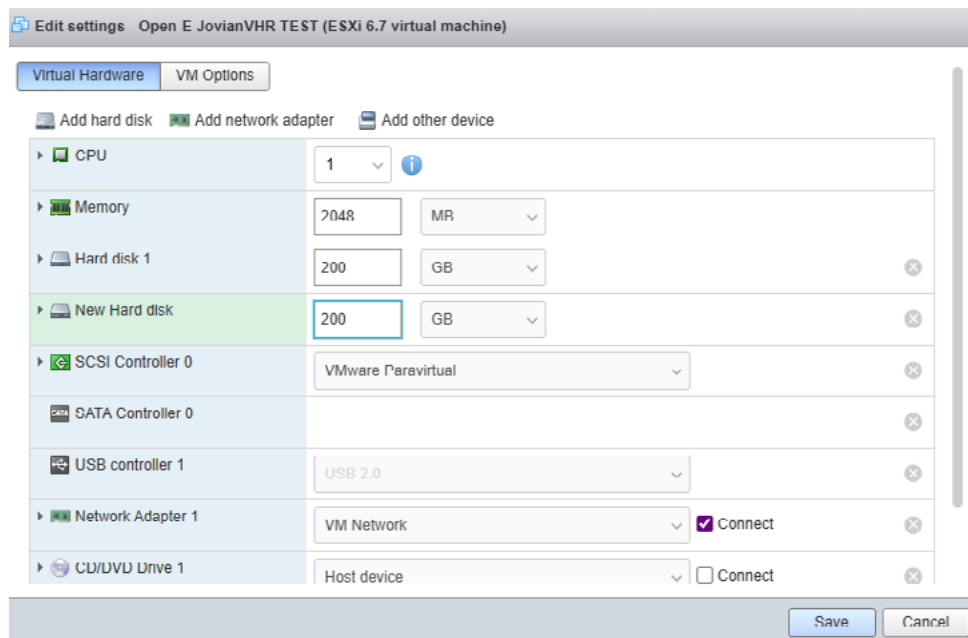
- Next, select the destination host and then select the datastore for the VM.
- Next, confirm the compatibility with ESXi 6.0 or later.
- In the guest OS step, please select Linux and Debian 8 (64-bit)
- In the customize step (screenshot below), please use 2 CPU, enter 12 GB or more for Memory, and 200GB or more for the New Hard disk.

Open-E JovianVHR

Jump start



- Next, power on the Open-E JovianVHR TEST VM, and please follow the instructions while running the installer.
- Next steps are the same as described in the Booting Open-E JovianVHR installer section.
- Once the Open-E JovianVHR TEST VM is up and running, you need to add drives for data storage, as during the virtual machine creation, only a single boot disk was configured.
- In Virtual Machine Edit Settings, click on “Add hard disk” → select “New Hard Disk” and click on the “Save” button.
- Here, another disk is inserted. To confirm it, click on the “Save” button.



- Now the Open-E JovianVHR TEST is ready for pool creation.

3. STORAGE CONFIGURATION

3.1. PREPARING FOR THE WEBGUI ADMINISTRATION

After the boot process has finished, Open-E JovianVHR will show you information about all its network settings. The standard IP Address setting for Open-E JovianVHR is: IP address 192.168.0.220 and Netmask 255.255.255.0. This setting can be changed manually by entering the following key sequence: left „Ctrl” + left „Alt” + „N”.

3.2. ENTERING THE PRODUCT KEY AND LOGGING INTO OPEN-E JOVIANVHR

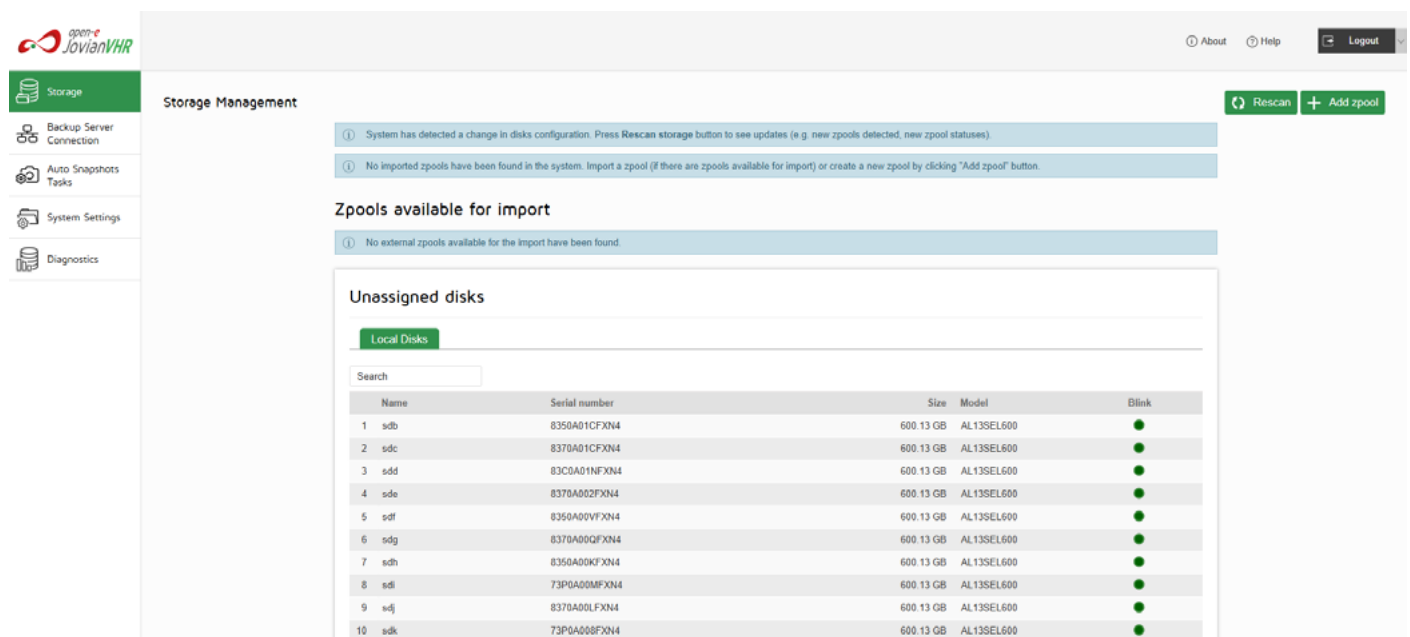
Connect to Open-E JovianVHR via the network using any standard browser, and type the IP address into the URL entry line: **https://192.168.0.220**

Next, a window for entering the product key will appear. If you already have one, please enter it and click the apply button. Log into Open-E JovianVHR by using the default password: „admin”. Now you will be able to set all server parameters to get started.

NOTE: Be aware that the password is case-sensitive.

3.3. CREATING ZPOOLS

- To create a new zpool, please go to the “Storage” menu, then click the “Add zpool” button in the upper right corner to run the “Zpool wizard”.



Name	Serial number	Size	Model	Blink
1 sdb	8350A01CFXN4	600.13 GB	AL13SEL600	●
2 sdc	8370A01CFXN4	600.13 GB	AL13SEL600	●
3 sdd	83C0A01NFXN4	600.13 GB	AL13SEL600	●
4 sde	8370A002FXN4	600.13 GB	AL13SEL600	●
5 sdf	8350A00VFXN4	600.13 GB	AL13SEL600	●
6 sdg	8370A00QFXN4	600.13 GB	AL13SEL600	●
7 sdh	8350A00KFXN4	600.13 GB	AL13SEL600	●
8 sdi	73P0A00MFXN4	600.13 GB	AL13SEL600	●
9 sdj	8370A00LFXN4	600.13 GB	AL13SEL600	●
10 sdk	73P0A008FXN4	600.13 GB	AL13SEL600	●

Open-E JovianVHR

Jump start



- After starting the “Zpool wizard”, all available disks will be listed.

Zpool wizard

1. Add data group

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdb	600.13 GB	●
<input type="checkbox"/> sdc	600.13 GB	●
<input type="checkbox"/> sdd	600.13 GB	●
<input type="checkbox"/> sde	600.13 GB	●
<input type="checkbox"/> sdf	600.13 GB	●
<input type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Z-1 + Add group

Cancel Next >

To add first Data Group to your zpool please select disks on the list on the left, select redundancy type and click "Add group" button.

Data groups Size

Zpool storage capacity: 0.00 B
Used licensed storage capacity: 0.00 B

Other groups Size

- Next, select the disks and redundancy level and click the “Add group” button.

Zpool wizard

1. Add data group

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input checked="" type="checkbox"/> sdb	600.13 GB	●
<input checked="" type="checkbox"/> sdc	600.13 GB	●
<input type="checkbox"/> sdd	600.13 GB	●
<input type="checkbox"/> sde	600.13 GB	●
<input type="checkbox"/> sdf	600.13 GB	●
<input type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Mirror (multiple groups) + Add group

Cancel Next >

To add first Data Group to your zpool please select disks on the list on the left, select redundancy type and click "Add group" button.

Data groups Size

Zpool storage capacity: 0.00 B
Used licensed storage capacity: 0.00 B

Other groups Size

- The created group will be displayed in the “Configuration preview” window on the right side.

Open-E JovianVHR

Jump start



Zpool wizard

1. Add data group

2. Add write log

3. Add read cache

4. Add special devices group

5. Add deduplication group

6. Add spare disks

7. Configuration

8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdd	600.13 GB	●
<input type="checkbox"/> sde	600.13 GB	●
<input type="checkbox"/> sdf	600.13 GB	●
<input type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Mirror (multiple groups) + Add group

Data groups

	Size
Mirror	×
sdb	600.13 GB
sdc	600.13 GB

Zpool storage capacity: 558.91 GiB
Used licensed storage capacity: 558.91 GiB

Other groups

Cancel Next >

- In this example, we have 2 mirror groups added.
- The created 2 mirror groups will be displayed in the “Configuration preview” on the right side. After adding all groups, click the “Next” button.

Zpool wizard

1. Add data group

2. Add write log

3. Add read cache

4. Add special devices group

5. Add deduplication group

6. Add spare disks

7. Configuration

8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdf	600.13 GB	●
<input type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Mirror (multiple groups) + Add group

Data groups

	Size
Mirror	×
sdb	600.13 GB
sdc	600.13 GB
Mirror	×
sdd	600.13 GB
sde	600.13 GB

Zpool storage capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups

Cancel Next >

- In the next step, you can create a write log (ZIL on SLOG).

NOTE: Mirrored and fast SSD disks are strongly recommended for the random writes IOPS.

Open-E JovianVHR

Jump start



Zpool wizard

1. Add data group
2. Add write log
3. Add read cache
4. Add special devices group
5. Add deduplication group
6. Add spare disks
7. Configuration
8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdf	600.13 GB	●
<input type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Single + Add group

Cancel Back Next

Data groups

	Size
Mirror	x
sdb	600.13 GB
sdc	600.13 GB
Mirror	x
sdd	600.13 GB
sde	600.13 GB

Zpool storage capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups

Size

- Select the fastest disks from the list on the left and create a mirror set for the redundancy level, then click the “Add group” and then the “Next” button.

Zpool wizard

1. Add data group
2. Add write log
3. Add read cache
4. Add special devices group
5. Add deduplication group
6. Add spare disks
7. Configuration
8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input checked="" type="checkbox"/> sdf	600.13 GB	●
<input checked="" type="checkbox"/> sdg	600.13 GB	●
<input type="checkbox"/> sdh	600.13 GB	●
<input type="checkbox"/> sdi	600.13 GB	●
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Mirror + Add group

Cancel Back Next

Data groups

	Size
Mirror	x
sdb	600.13 GB
sdc	600.13 GB
Mirror	x
sdd	600.13 GB
sde	600.13 GB

Zpool storage capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups

Size

- The created “write log” will be displayed in the „Configuration preview” on the right side.

Open-E JovianVHR

Jump start



Name	Size	Blink
sdh	600.13 GB	●
sdi	600.13 GB	●
sdj	600.13 GB	●
sdk	600.13 GB	●

Data groups	Size
Mirror	600.13 GB
Mirror	600.13 GB

Other groups	Size
Mirrored write log	600.13 GB

- In the next step, you will want to create the read cache. Select the disks from the list on the left and select redundancy „Read Cache”, type and click „Add group”, and then the „Next” button.

NOTE: For fast random read IOPS, it is recommended to use SSD disks.

Name	Size	Blink
sdh	600.13 GB	●
sdi	600.13 GB	●
sdj	600.13 GB	●
sdk	600.13 GB	●

Data groups	Size
Mirror	600.13 GB
Mirror	600.13 GB

Other groups	Size
Mirrored write log	600.13 GB

- The created read cache will be displayed in the “Configuration preview” on the right side.

Open-E JovianVHR

Jump start



Zpool wizard

1. Add data group
2. Add write log
3. Add read cache
4. Add special devices group
5. Add deduplication group
6. Add spare disks
7. Configuration
8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdj	600.13 GB	●
<input type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Single + Add group

Data groups

	Size
Mirror	×
sdb	600.13 GB
sdc	600.13 GB
Mirror	×
sdd	600.13 GB
sde	600.13 GB

Zpool storage capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups

	Size
Mirrored write log	×
sdf	600.13 GB
sdg	600.13 GB
Read cache	×
sdh	600.13 GB
sdi	600.13 GB

Cancel Back Next

- In the „Add spare disks“, please select the disk from the available disks list, click „Add group“, and then click the „Next“ button.

NOTE: “Spare disks” are optional. If no disks are tagged as spare disks, it is still possible to replace a faulty disk with any unassigned disk. You can skip this step by clicking “Next”.

Zpool wizard

1. Add data group
2. Add write log
3. Add read cache
4. Add special devices group
5. Add deduplication group
6. Add spare disks
7. Configuration
8. Summary

Available disks

☒ Show only unused disks Rescan disks

Name	Size	Blink
<input type="checkbox"/> sdj	600.13 GB	●
<input checked="" type="checkbox"/> sdk	600.13 GB	●

Select redundancy for group: Single + Add group

Data groups

	Size
Mirror	×
sdb	600.13 GB
sdc	600.13 GB
Mirror	×
sdd	600.13 GB
sde	600.13 GB

Zpool storage capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups

	Size
Mirrored write log	×
sdf	600.13 GB
sdg	600.13 GB
Read cache	×
sdh	600.13 GB
sdi	600.13 GB

Cancel Back Next

- The created „spare disks“ will be displayed in the “Configuration preview” on the right side. Now click the „Next“ button.

Open-E JovianVHR

Jump start

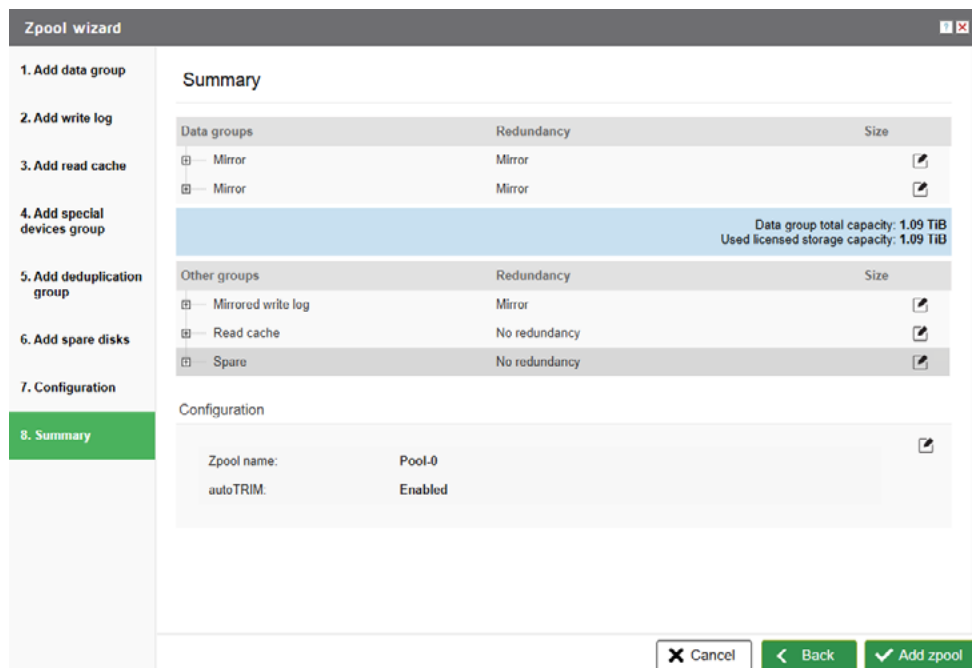


The screenshot shows the 'Zpool wizard' window at the 'Available disks' step. On the left, a sidebar lists steps 1 through 8, with '6. Add spare disks' highlighted in green. The main area is titled 'Available disks' and contains a 'Show only unused disks' toggle (checked) and a 'Rescan disks' button. Below is a table with columns 'Name', 'Size', and 'Blink'. One disk, 'sdj', is listed with a size of 600.13 GB and a green blink indicator. At the bottom, there is a 'Select redundancy for group:' dropdown set to 'Single' and an '+ Add group' button. On the right, a 'Data groups' panel shows a tree structure with 'Mirror' groups containing disks 'sdb', 'sdc', 'sdd', and 'sde', each 600.13 GB. Below this, a status bar indicates 'Zpool storage capacity: 1.09 TiB' and 'Used licensed storage capacity: 1.09 TiB'. Further down, an 'Other groups' panel shows 'Mirrored write log' (sdf, sdg), 'Read cache' (sdh, sdi), and 'Spare' (sdk) groups, each 600.13 GB. At the bottom right are 'Cancel', 'Back', and 'Next' buttons.

- In the next step, enter the zpool name and click the „Next” button.

The screenshot shows the 'Zpool wizard' window at the 'Configuration' step. The sidebar on the left highlights '7. Configuration'. The main area is titled 'Configuration' and contains a 'Zpool name:' label and a text input field with 'Pool-0'. Below the input field is a note: 'Zpool name: Defines name of the zpool in the system.' Further down, there is a section for 'autoTRIM' with a note: 'Note! The "autoTRIM" is not recommended for heavy workload systems - in such a case, using the function manually once every 3-6 months is recommended.' Below this is a quote: '"TRIM" works only for SSDs that support this function. This command erases unused data blocks on an SSD to keep the steady level of its performance and extend the drive's life. Whether or not the "autoTRIM" function is enabled, it is recommended to run a manual "TRIM" periodically to ensure optimal performance. This can be done in the "Status" tab in the "TRIM" section by using the "Run" button.' At the bottom, there is a radio button labeled 'autoTRIM'. At the bottom right are 'Cancel', 'Back', and 'Next' buttons.

- In „Summary”, you can see an overview of the zpool configuration. If the settings need to be modified, click the „Back” button and make the required changes. If it is correct, click the „Add zpool”.



The screenshot shows the 'Zpool wizard' window at the 'Summary' step. On the left is a sidebar with steps 1 through 8, where '8. Summary' is highlighted in green. The main area is titled 'Summary' and contains two tables. The first table, 'Data groups', has columns for 'Data groups', 'Redundancy', and 'Size'. It lists two 'Mirror' groups. A blue bar below this table shows 'Data group total capacity: 1.09 TiB' and 'Used licensed storage capacity: 1.09 TiB'. The second table, 'Other groups', also has columns for 'Other groups', 'Redundancy', and 'Size', listing 'Mirrored write log', 'Read cache', and 'Spare'. Below these tables is a 'Configuration' section with 'Zpool name: Pool-0' and 'autoTRIM: Enabled'. At the bottom right are three buttons: 'Cancel', 'Back', and 'Add zpool'.

Data groups	Redundancy	Size
Mirror	Mirror	
Mirror	Mirror	

Data group total capacity: 1.09 TiB
Used licensed storage capacity: 1.09 TiB

Other groups	Redundancy	Size
Mirrored write log	Mirror	
Read cache	No redundancy	
Spare	No redundancy	

Configuration

Zpool name: Pool-0
autoTRIM: Enabled

Buttons: Cancel, Back, Add zpool

- At this point, you have configured a new zpool.

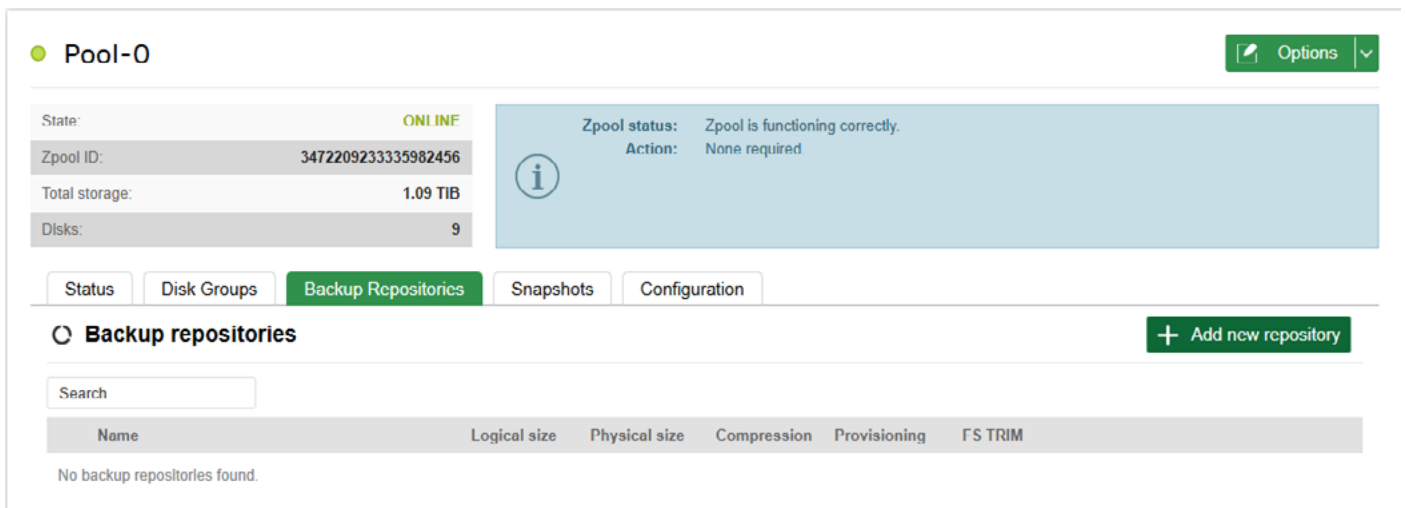
4. CONFIGURING A HARDENED BACKUP REPOSITORY IN OPEN-E JOVIANVHR

4.1. PREREQUISITES

- Open-E JovianVHR installed.
- Storage pool created.
- Time is synchronized between Open-E JovianVHR and the Veeam server

4.2. SERVER SETUP

- Log in to the Open-E JovianVHR server.
- Select the desired pool and go to the Backup Repositories.



The screenshot displays the Open-E JovianVHR web interface. At the top, a green circle indicates the selected pool, "Pool-0". To the right of the pool name is an "Options" button with a dropdown arrow. Below the pool name, a table shows the pool's state as "ONLINE", its Zpool ID as "347220923335982456", total storage as "1.09 TiB", and 9 disks. To the right of this table is a blue information box stating "Zpool status: Zpool is functioning correctly." and "Action: None required". Below the pool details is a tabbed interface with "Status", "Disk Groups", "Backup Repositories" (selected), "Snapshots", and "Configuration". Under the "Backup repositories" tab, there is a search bar and a table with columns: Name, Logical size, Physical size, Compression, Provisioning, and FS TRIM. The table currently shows "No backup repositories found." and a green "+ Add new repository" button is located at the top right of the table area.

- Click the "Add New Repository" button:

Add new repository ? ↺ ✕

Repository properties

Name:	<input type="text" value="my-repository"/>		
Size:	<input type="text" value="512"/>	GiB	▼
1.04 TiB physical available			
Provisioning:	<input type="radio"/> Thick provisioned <input checked="" type="radio"/> Thin provisioned (default)		
Deduplication:	<input type="text" value="Disabled (default)"/> ▼		
Number of the data copies:	<input type="text" value="1 (default)"/> ▼		
Compression:	<input type="text" value="lz4 (default)"/> ▼		
Block size:	<input type="text" value="64 KiB (default)"/> ▼		
Write cache sync requests:	<input type="text" value="Always (default)"/> ▼		
Write cache sync request handling (logbias):	<input type="text" value="Write log device (Latency)"/> ▼		
Read cache (primary, ARC) scope:	<input type="text" value="All (default)"/> ▼		
Read cache (secondary, L2ARC) scope:	<input type="text" value="All (default)"/> ▼		

✕ Cancel

✓ Add

- Complete the repository details and click “Add”.
- Go to “Backup Server Connection” in the left menu.



Storage



Backup Server
Connection



Auto Snapshots
Tasks



System Settings



Diagnostics

Open-E JovianVHR

Jump start



Backup Server Connection

Transport

Service status

SSH protocol:	disabled
Veeam Installer (VeeamDeploySvc):	not installed
Veeam Data Mover (VeeamTransportSvc):	not installed

SSH connection

① SSH is required to deploy the Transport Service or apply updates.
A connection from the Backup Server is only possible if a pool created with this software version is imported.
For security reasons, SSH should be disabled after the connection has been established and the Veeam Installer and Veeam Data Mover have been installed.

SSH protocol

☒ **Apply**

Note: To restore this connection to its default values, use **Remove Veeam Backup Agent** in the console. The console option **Restore factory system settings** does not reset the Backup Server connection.

- Enable the SSH protocol, set the password, and note the SSH port for later.

For security reasons, SSH should be disabled after the connection has been established and the Veeam Installer and Veeam Data Mover have been installed.

SSH protocol

Single-use credentials for hardened repository

SSH Port:	<input type="text" value="22522"/>
Username:	<input type="text" value="oeveeam"/>
Password:	<input type="password" value="*****"/>
Password confirmation:	<input type="password" value="*****"/>

☒ **Apply**

Note: To restore this connection to its default values, use **Remove Veeam Backup Agent** in the console. The console option **Restore factory system settings** does not reset the Backup Server

- Click "Apply". The SSH protocol will change its status to "Enabled".

Service status

Service status

SSH protocol:	enabled
Veeam Installer (VeeamDeploySvc):	not installed
Veeam Data Mover (VeeamTransportSvc):	not installed

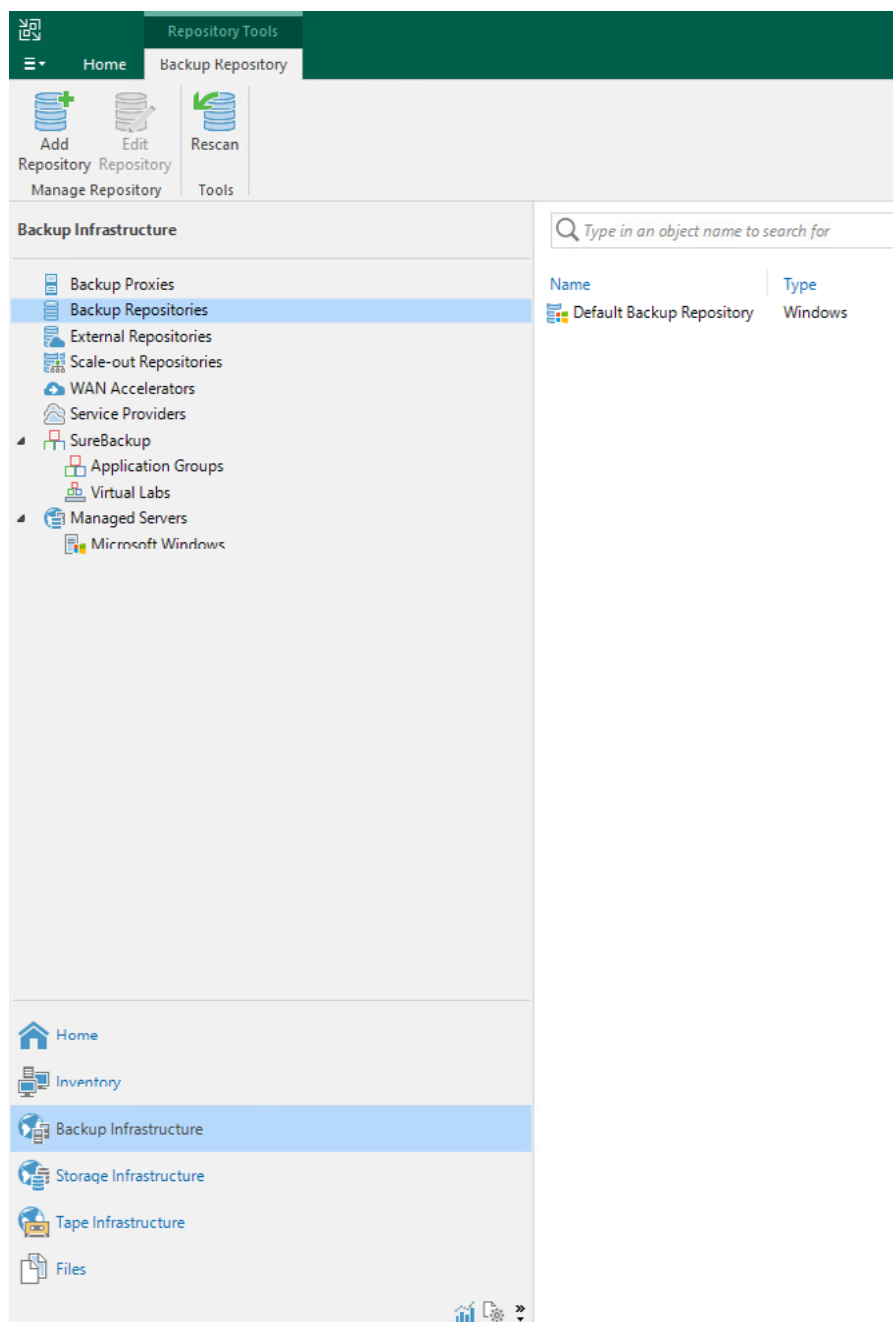
- Proceed to the machine with Veeam Backup & Replication.

5. CONFIGURING A BACKUP REPOSITORY IN VEEAM (WINDOWS)

5.1. CONFIGURING BACKUP REPOSITORY

Step 1: Open Backup Repositories Section

- In Veeam, go to: "Backup Infrastructure" → "Backup Repositories" → "Add Backup Repository".




Step 2: Choose Repository Type


- Choose: "Direct Attached Storage" → "Linux (Hardened Repository)".

Add Backup Repository


Select the type of backup repository you want to add.

**Direct attached storage**


Microsoft Windows or Linux server with internal or direct attached storage. This configuration enables data movers to run directly on the server, allowing for fastest performance.

**Network attached storage**


Network share on a file server or a NAS device. When backing up to a remote share, we recommend that you select a gateway server located in the same site with the share.

**Deduplicating storage appliance**

Dell Data Domain, ExaGrid, Fujitsu ETERNUS CS800, HPE StoreOnce, Infinidat InfiniGuard or Quantum DXi. If you are unable to meet the requirements of advanced integration via native appliance API, use the network attached storage option instead.

**Object storage**

On-prem object storage system or a cloud object storage provider.


**Veeam Data Cloud Vault**

Add fully managed, secure cloud object storage from Veeam. Cloud Vault is best suited for secondary backups. For more information and pricing, please go to vee.com/vault.


Cancel

Direct Attached Storage


Select the operating system type of a server you want to use as a backup repository.

**Microsoft Windows**

Add local storage presented as a regular volume or Storage Spaces. For better performance and storage efficiency, we recommend using ReFS.

**Linux**

Add local storage or locally mounted NFS share. For better performance and storage efficiency, we recommend using XFS. The Linux server must use bash shell, and have SSH and Perl installed.

**Linux (Hardened Repository)**

Requires a Linux server with internal or direct attached storage. This configuration enables protection against cybersecurity threats with immutable backups. The Linux server must use bash shell and have SSH installed. For reduced attack surface, minimal Linux installation is highly recommended.

Cancel

Open-E JovianVHR

Jump start



Change the name of the new backup repository and description for better management in the future. Then, proceed with the process by clicking “Next”.

Step 3: Add Linux Server

- Click “Add New”.

The 'New Backup Repository' dialog box is shown. It has a sidebar with options: Name, Server (selected), Repository, Mount Server, Review, Apply, and Summary. The main area is titled 'Repository server:' and contains a table with columns 'Path', 'Capacity', and 'Free'. There is an 'Add New...' button and a 'Populate' button. At the bottom are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

Enter:

- IP address (from Open-E JovianVHR),
- SSH credentials.

The 'New Linux Server' dialog box is shown. It has a sidebar with options: Name (selected), SSH Connection, Review, Apply, and Summary. The main area is titled 'Name' and contains a text field for 'DNS name or IP address:' with the value '10.18.0.161'. Below it is a text area for 'Description:' with the value 'Open-E JovianVHR'. At the bottom are buttons for '< Previous', 'Next >' (highlighted), 'Finish', and 'Cancel'.

Open-E JovianVHR

Jump start



New Linux Server

SSH Connection
Provide credentials for service console connection, and adjust secure shell (SSH) port number using advanced settings if required.

Name

SSH Connection

Review

Apply

Summary

Single-use credentials:

Add new single-use credentials

Add...

Customize advanced connection settings such as SSH timeout and service ports.

Advanced...

< Previous Next > Finish Cancel

New Linux Server

SSH Connection
Provide credentials for service console connection, and adjust secure shell (SSH) port number using advanced settings if required.

Name

SSH Connection

Review

Apply

Summary

Credentials

Username: oevveeam

Password:

SSH port: 22522

Non-root account

☒ Elevate account privileges automatically

☐ Add account to the sudoers file

☐ Use "su" if "sudo" fails

Root password:

Description:

oevveeam

OK Cancel

Customize advanced connection settings such as SSH timeout and service ports.

Advanced...

< Previous Next > Finish Cancel

- Confirm you trust the server when prompted.

Veeam Backup and Replication

10.18.0.161 SSH key fingerprint: ssh-rsa 3072 DsmpRjXSmEtztCXFziKm9Zq4b+WhMEb1I5j37nCeCtA
Do you trust this server?

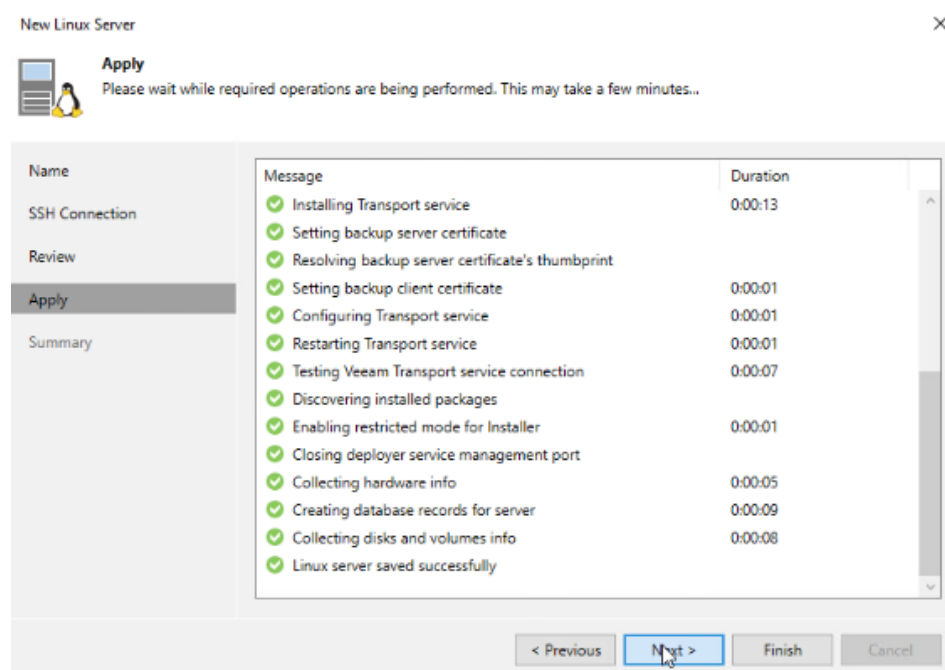
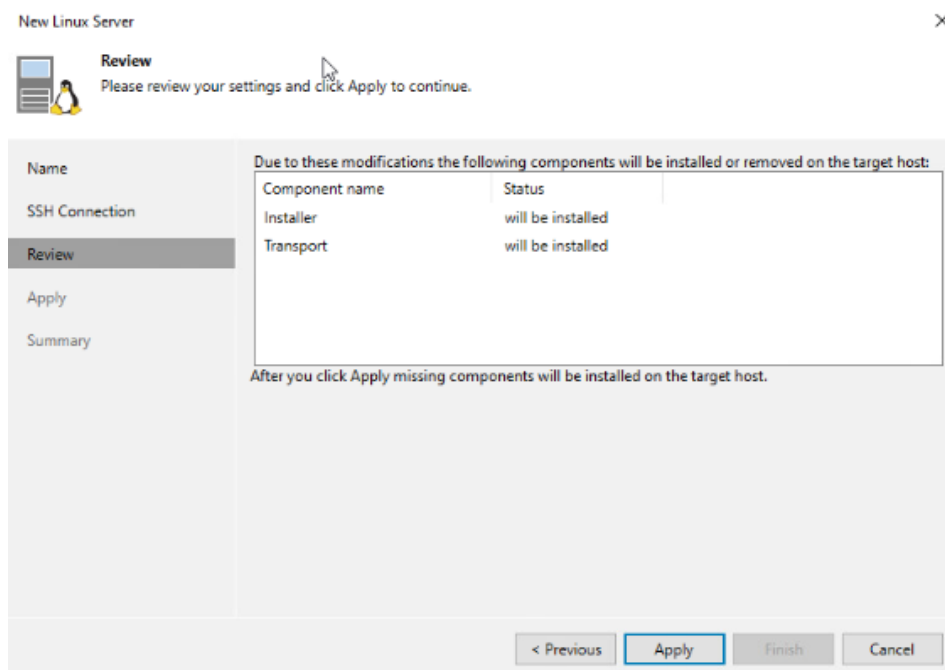
Yes No

Open-E JovianVHR

Jump start



- Click “Apply” and wait for the process to complete.



Step 4: Select Backup Directory

- Populate the server's storage list.

Open-E JovianVHR

Jump start



New Backup Repository

Server
Choose repository server. You can select server from the list of managed servers added to the console.

Name

Repository server: 10.18.0.161 (Open-E JovianVHR) Add New...

Path	Capacity	Free
------	----------	------

Populate

< Previous Next > Finish Cancel

- Select the directory /mnt/Pool-0/my-repository and click “Next”.

New Backup Repository

Server
Choose repository server. You can select server from the list of managed servers added to the console.

Name

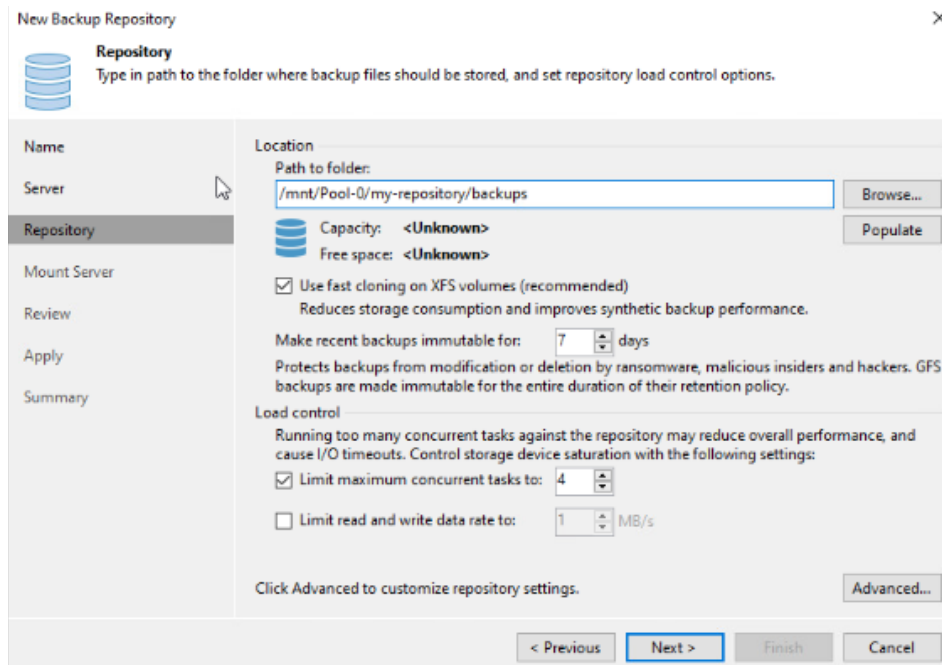
Repository server: 10.18.0.161 (Open-E JovianVHR) Add New...

Path	Capacity	Free
/ (aufs)	3.9 GB	3.4 GB
/dev (none)	492 KB	492 KB
/dev/shm (tmpfs)	31 GB	31 GB
/mnt/Pool-0/my-repository (/dev/zd16)	511.8 GB	508.2 GB
/Pools (aufs)	3.9 GB	3.6 GB
/Pools/Pool-0 (Pool-0)	1 TB	1 TB
/run (tmpfs)	12.4 GB	12.4 GB
/run/lock (tmpfs)	5 MB	5 MB
/tmp/host/etc (/mnt/host.lxc/etc-allow)	3.9 GB	3.6 GB
/var/lib/veeam (Pool-0/_veeam_logs)	1 TB	1 TB

Populate

< Previous Next > Finish Cancel

- Make sure that the “Use fast cloning on XFS volumes” option is checked, and click “Next”.



The "New Backup Repository" dialog box is shown. The "Repository" tab is selected in the left sidebar. The "Location" section contains a "Path to folder:" text box with the value "/mnt/Pool-0/my-repository/backups" and a "Browse..." button. Below this, "Capacity:" and "Free space:" are both listed as "<Unknown>" with a "Populate" button. A checkbox "Use fast cloning on XFS volumes (recommended)" is checked, with a note: "Reduces storage consumption and improves synthetic backup performance." Below this, a field "Make recent backups immutable for:" is set to "7" days, with a note: "Protects backups from modification or deletion by ransomware, malicious insiders and hackers. GFS backups are made immutable for the entire duration of their retention policy." The "Load control" section has a note: "Running too many concurrent tasks against the repository may reduce overall performance, and cause I/O timeouts. Control storage device saturation with the following settings:". It contains two checkboxes: "Limit maximum concurrent tasks to:" (checked, set to 4) and "Limit read and write data rate to:" (unchecked, set to 1 MB/s). At the bottom right is an "Advanced..." button. At the bottom are navigation buttons: "< Previous", "Next >", "Finish", and "Cancel".

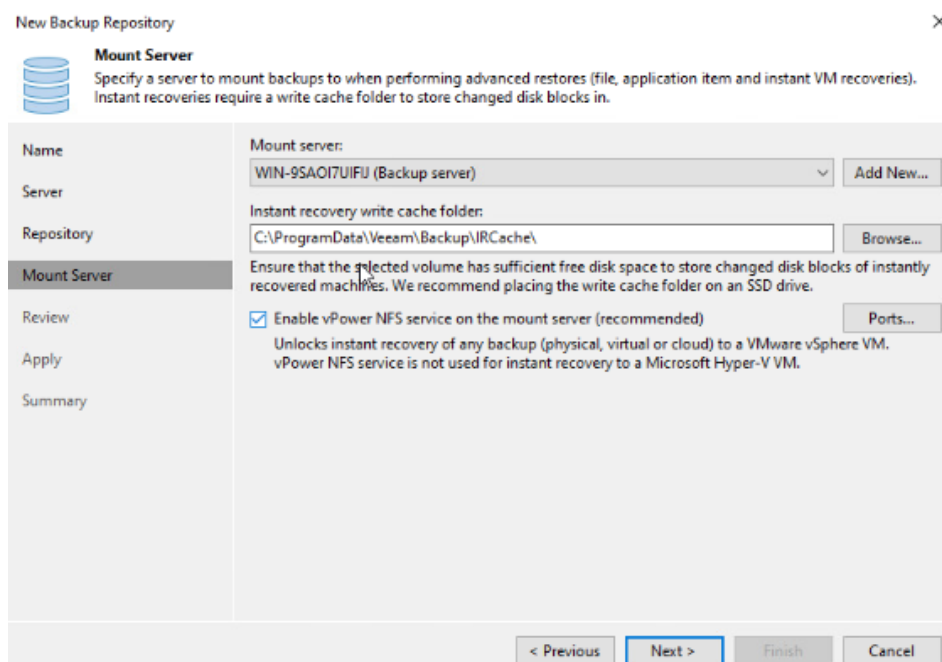
5.2. CONFIGURING THE MOUNT SERVER

The Mount Server enables:

- File-level restore
- Application item restore (SQL, Exchange, etc.)
- Instant VM Recovery

Unless specified otherwise, the Veeam Backup & Replication server acts as the mount server.

- This is a basic Mount Server configuration. If it is right for you, click “Next”.



The "New Backup Repository" dialog box is shown, with the "Mount Server" tab selected in the left sidebar. The "Mount server:" dropdown menu is set to "WIN-9SAOI7UIFU (Backup server)" with an "Add New..." button. The "Instant recovery write cache folder:" text box contains "C:\ProgramData\Veeam\Backup\IRCache\" and a "Browse..." button. A note states: "Ensure that the selected volume has sufficient free disk space to store changed disk blocks of instantly recovered machines. We recommend placing the write cache folder on an SSD drive." A checkbox "Enable vPower NFS service on the mount server (recommended)" is checked, with a "Ports..." button. A note below says: "Unlocks instant recovery of any backup (physical, virtual or cloud) to a VMware vSphere VM. vPower NFS service is not used for instant recovery to a Microsoft Hyper-V VM." At the bottom are navigation buttons: "< Previous", "Next >", "Finish", and "Cancel".

Open-E JovianVHR

Jump start



- Check the “Review” tab and click “Apply”.

New Backup Repository

Review
Please review the settings, and click Apply to continue.

Name
Server
Repository
Mount Server
Review
Apply
Summary

The following components will be processed on server WIN-9SAOI7UIFIJ:

Component name	Status
vPower NFS	already exists
Mount Server	already exists
VMware VDDK	already exists
Veeam Threat Hunter	already exists

☐ Search the repository for existing backups and import them automatically
☐ Import guest file system index data to the catalog

< Previous Apply Finish Cancel

- Check the “Summary” tab, then click “Finish”.

Edit Backup Repository

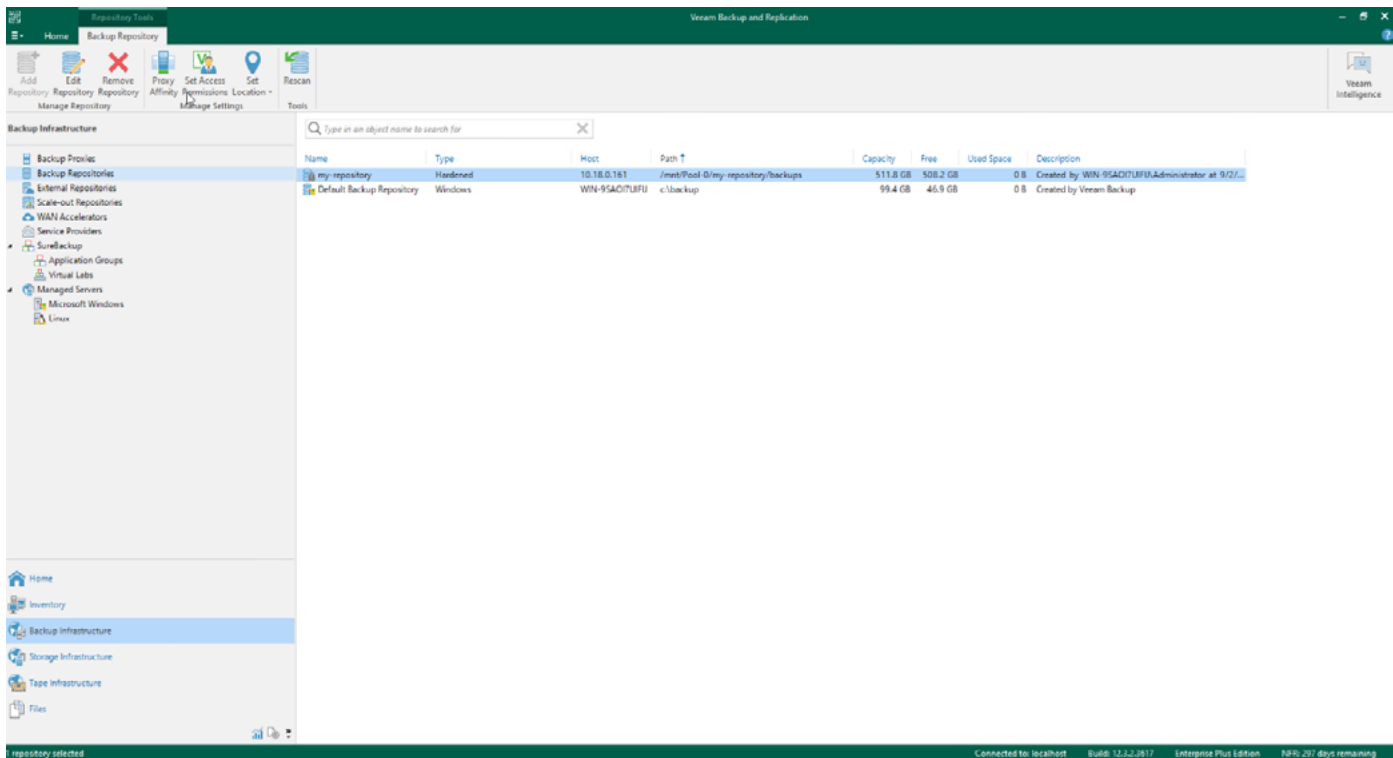
Summary
You can copy the configuration information below for future reference.

Name
Server
Repository
Mount Server
Review
Apply
Summary

Summary:
Hardened backup repository 'my-repository' was successfully saved.
Mount host: WIN-9SAOI7UIFIJ
Backup folder: /mnt/Pool-0/my-repository/backups
Write throughput: unlimited
Max parallel tasks: 4
Fast cloning on XFS volumes: enabled
Days of immutability: enabled for 7 days

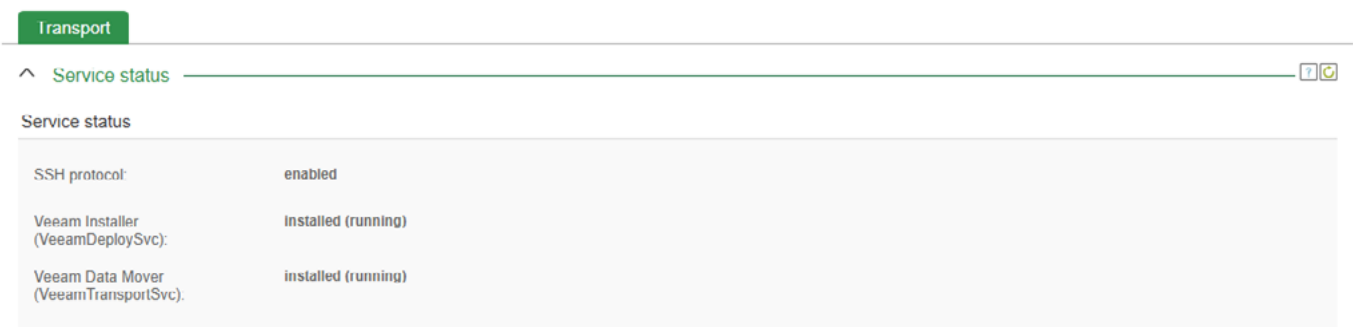
< Previous Next > Finish Cancel

- You can see your hardened repository here.

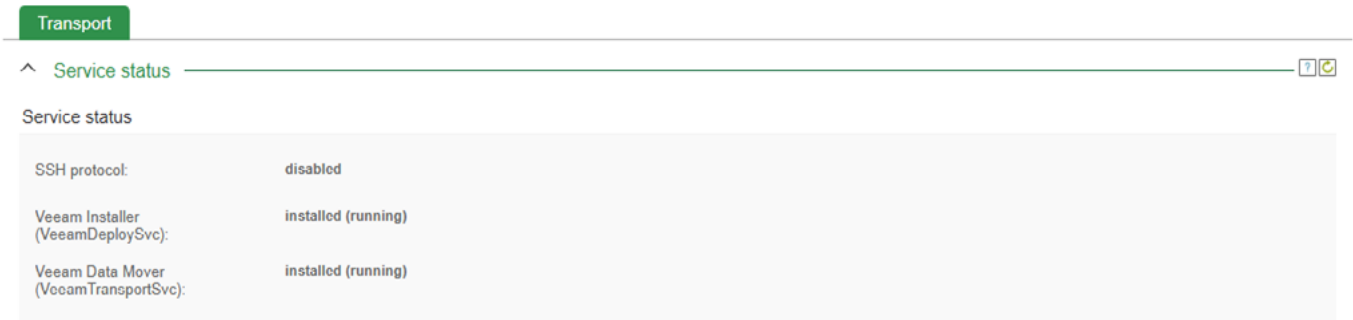


5.3. FINALIZING CONFIGURATION

- On the Open-E JovianVHR server, proceed to the “Backup Server Connection” tab. Confirm Veeam services are installed and running.



Security Tip: Disable SSH after completing the setup in Veeam.

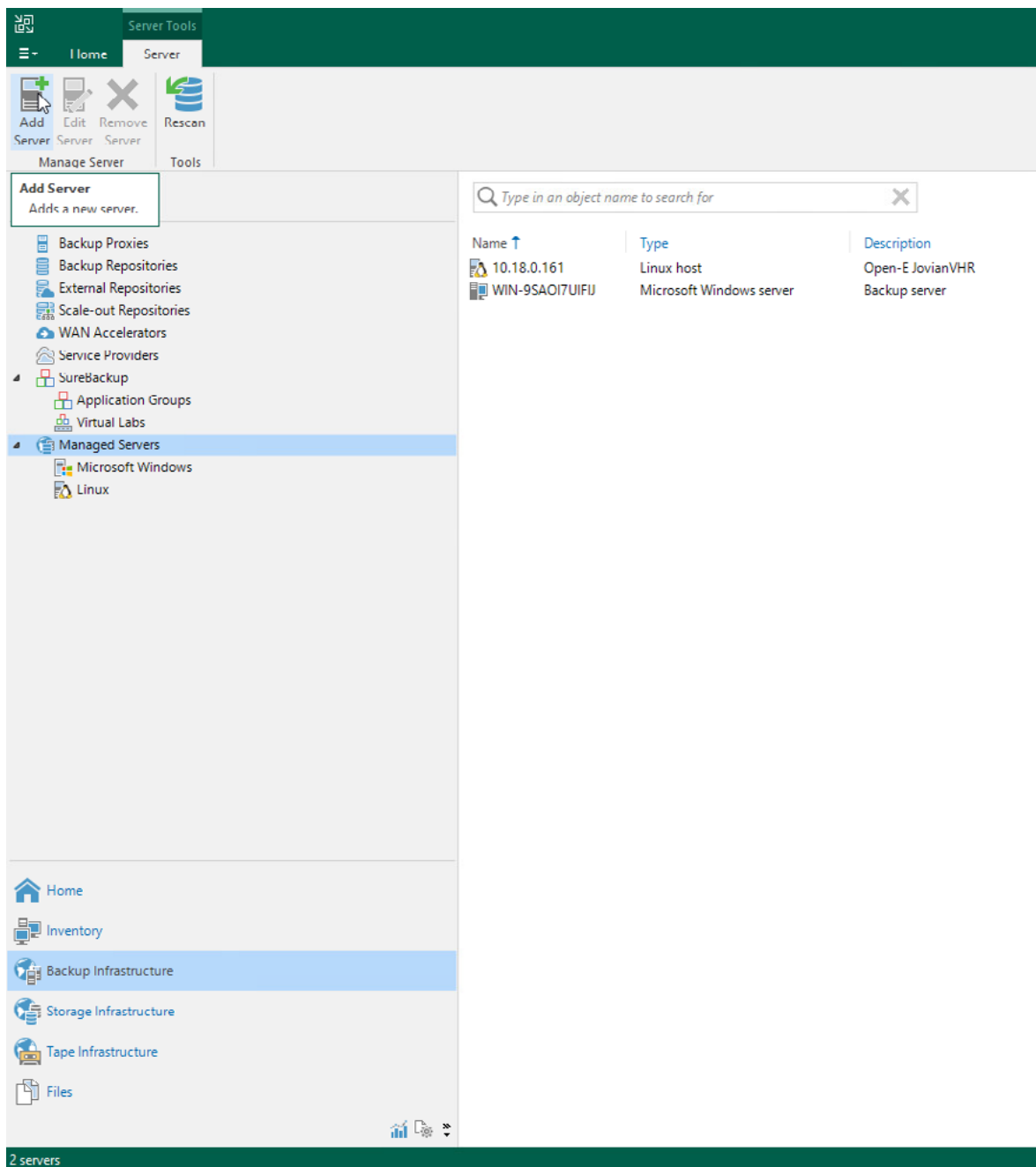


Done! Your Hardened Backup Repository and Mount Server are ready to start protecting workloads with Veeam.

6. CONFIGURE YOUR FIRST BACKUP

6.1. ADDING THE SERVER TO THE VEEAM INFRASTRUCTURE


To configure your first backup in Veeam, you need to add a server to the Veeam infrastructure. To do this, navigate to “Backup Infrastructure” in the menu, then choose “Manage Servers”. At the top, you will see the “Add server” button.




- After pressing the “Add Server” button, select the type of server you want to add to your backup infrastructure.

Add Server


Select the type of a server you want to add to your backup infrastructure. All already registered servers can be found under the Managed Servers node on the Backup Infrastructure tab.




[Virtualization Platforms](#)
Add supported virtual infrastructures to the inventory.




[Microsoft Windows](#)
Add a Microsoft Windows server to the inventory.



[Linux](#)
Add a Linux server to the inventory.



[Veeam cloud-native backup appliance](#)
Add Veeam Backup for AWS, Microsoft Azure or Google Cloud appliance to the inventory.




[Kasten backup for Kubernetes](#)
Connect to an existing Kasten instance.

Cancel

- For this document, we are going to back up our Virtual Machine from VMware, so click “Virtualization Platforms”.
- Choose “Virtualization Platforms” → “VMware vSpheres” → “vSphere” (EXSi also)
- Type your DNS name or IP address, change the description for easier management, then click the “Next” button.

New VMware Server



Name
Specify DNS name or IP address of VMware server.

Name

Credentials

Apply

Summary

DNS name or IP address:
10.18.0.109

Description:
VMware EXSi

< Previous

Next >

Finish

Cancel

Open-E JovianVHR

Jump start



- In the next step, add credentials for a VMware administrator. Then click "Apply".

New VMware Server

Credentials
Select server administrator's credentials. If required, specify additional connection settings including web-service port number.

Name

Credentials:

root (root, last edited: less than a day ago) Add...

Manage accounts

Default VMware web services port is 443. If connection cannot be established, check for possible port customization in the vCenter Server or ESXi server settings.

Port: 443

< Previous Apply Finish Cancel

- Click "Continue" on Certificate Security Alert if this message emerges.

Certificate Security Alert

An untrusted certificate is installed on 10.18.0.109 and secure communication cannot be guaranteed. Connect to this server anyway?

Remote certificate name mismatch:
OID.1.2.840.113549.1.9.2= "1752226084,564d7761726520496e632e",
CN=localhost.localdomain, E=ssl-certificates@vmware.com,
OU=VMware ESX Server Default Certificate, O="VMware, Inc", L=Palo Alto, S=California, C=US

Remote certificate chain errors:
PartialChain (A certificate chain could not be built to a trusted root authority.)
RevocationStatusUnknown (The revocation function was unable to check revocation for the certificate.)
OfflineRevocation (The revocation function was unable to check revocation because the revocation server was offline.)

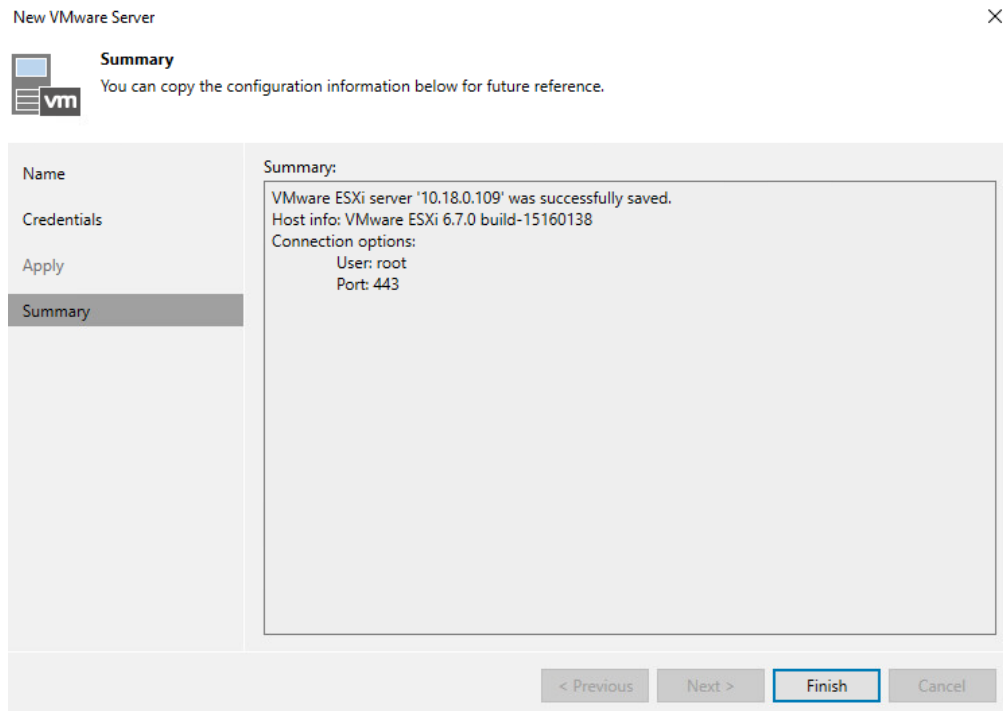
View... Continue Cancel

Open-E JovianVHR

Jump start

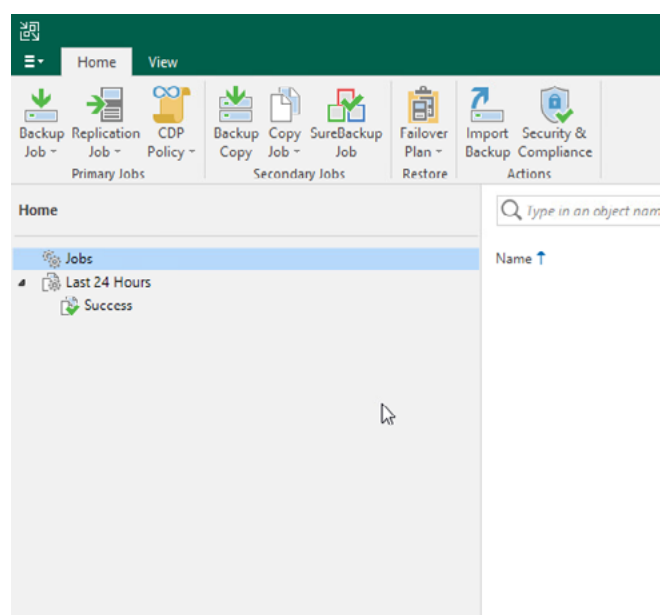


- Now, you have successfully added your VMware to the backup infrastructure in Veeam.
- Proceed with the “Finish” button.



6.2. CREATING A BACKUP JOB

- In the next step, we should create a backup job. To do this, navigate to “Home” in the left panel menu in Veeam.

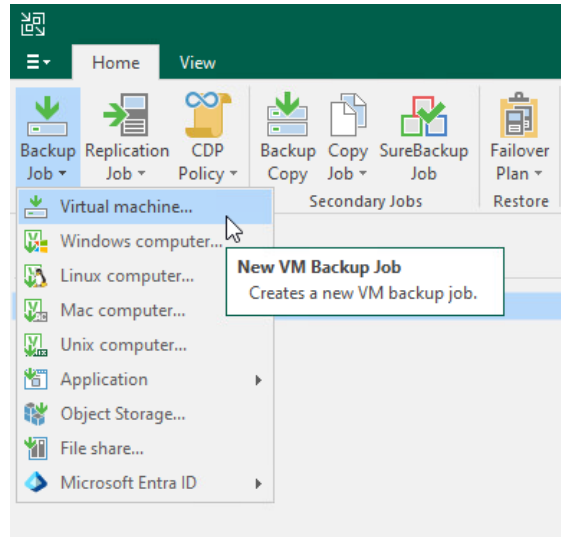


Open-E JovianVHR

Jump start




- At the top menu, choose “Backup Job” -> “Virtual machine”.



- Provide the name for the backup job and description to make it easier to manage. Then click “Next”.

New Backup Job ×

 **Name**
Type in a name and description for this backup job.

Name
Virtual Machines
Storage
Guest Processing
Schedule
Summary

Name:
VMware EXSi backup job

Description:
Windows VM

☐ High priority
Backup infrastructure resources are offered to high priority jobs first. Use this option for jobs sensitive to the start time, or jobs with strict RPO requirements.

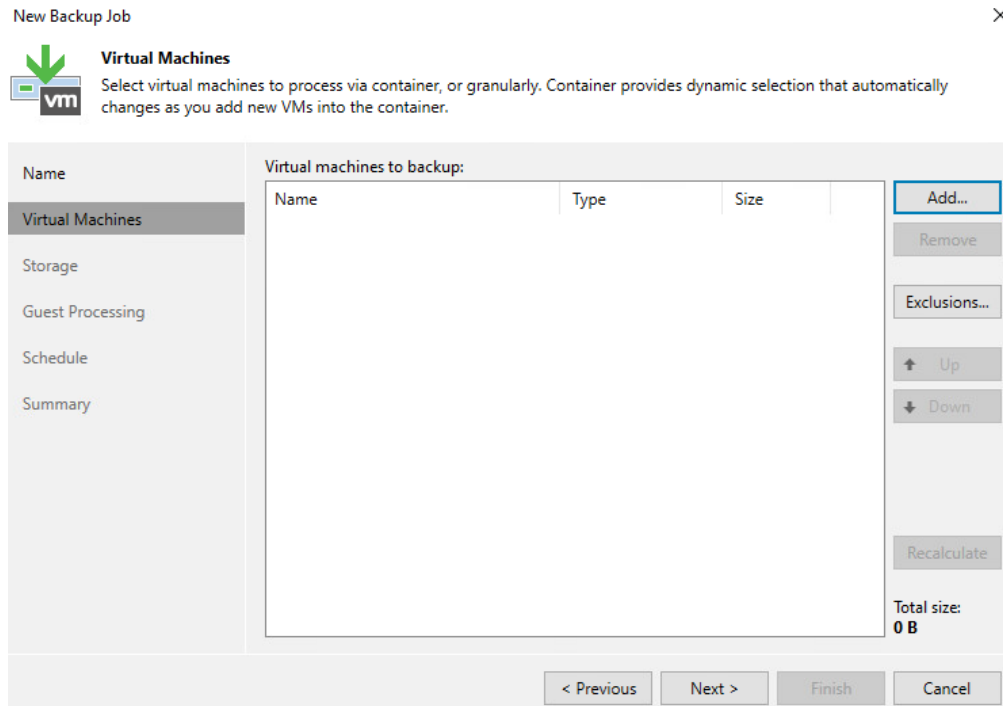
< Previous Next > Finish Cancel

Open-E JovianVHR

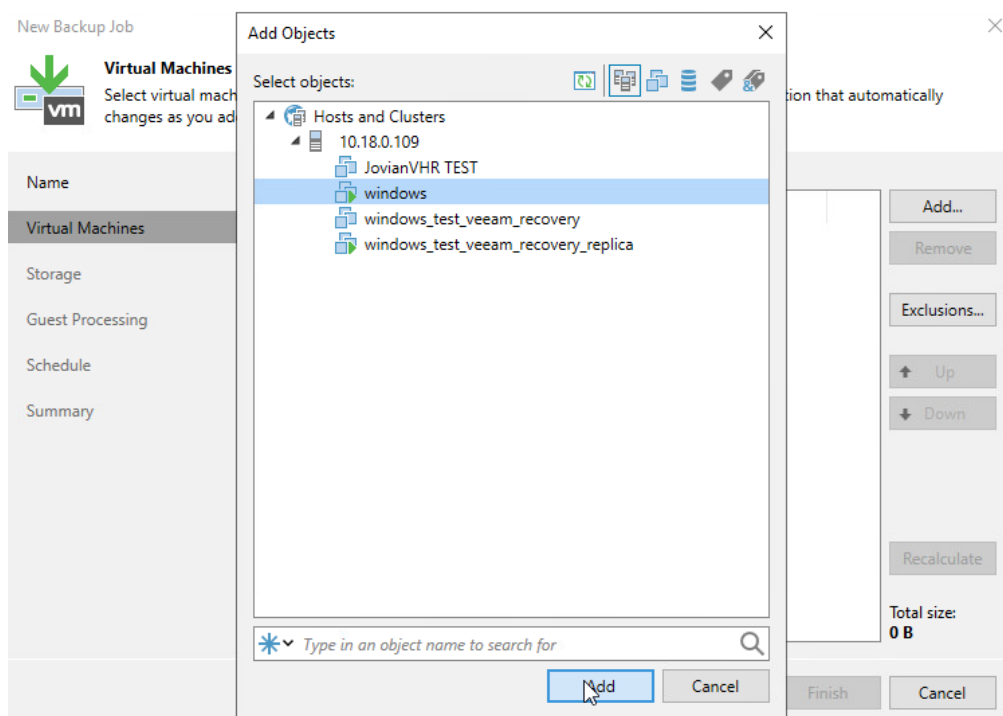
Jump start



- After clicking “Next”, we have to add what we want to back up from the VMware server previously added. You can back up the whole node or a specific VM. Click “Add”.



- Now, click on VM or Node and click “Add”.




Open-E JovianVHR

Jump start



- After choosing a Virtual Machine or EXSi host, press “Next”.

New Backup Job ×

 **Virtual Machines**
Select virtual machines to process via container, or granularly. Container provides dynamic selection that automatically changes as you add new VMs into the container.


Name	Type	Size
windows	Virtual machine	100 GB

Buttons: Add..., Remove, Exclusions..., Up, Down, Recalculate, Total size: 100 GB

Navigation: < Previous, Next >, Finish, Cancel

- As a next step, change the backup repository from the default to the one added from Open-E JovianVHR and click “Next”.

New Backup Job ×

 **Storage**
Specify processing proxy server to be used for source data retrieval, backup repository to store the backup files produced by this job and customize advanced job settings if required.

Backup proxy: Automatic selection Choose...

Backup repository: Default Backup Repository (Created by Veeam Backup) ▼

Retention policy: 7 days !

☐ Keep certain full backups longer for archival purposes
GFS retention policy is not configured

☐ Configure secondary destinations for this job
Copy backups produced by this job to another backup repository, or tape. We recommend to make at least one copy of your backups to a different storage device that is located off-site.

Advanced job settings include backup mode, compression and deduplication, block size, notification settings, automated post-job activity and other settings. Advanced...

Navigation: < Previous, Next >, Finish, Cancel


Open-E JovianVHR

Jump start



- After choosing the right repository for your backups, proceed to “Schedule” and set the backup plan. After configuring the schedule, click “Apply”.

New Backup Job ×


 **Schedule**
Specify the job scheduling options. If you do not set the schedule, the job will need to be controlled manually.

Name	<input checked="" type="checkbox"/> Run the job automatically
Virtual Machines	<input checked="" type="radio"/> Daily at this time: 10:00 PM Everyday Days...
Storage	<input type="radio"/> Monthly at this time: 10:00 PM Fourth Saturday Months...
Guest Processing	<input type="radio"/> Periodically every: 1 Hours Schedule...
Schedule	<input type="radio"/> After this job:
Summary	Automatic retry <input checked="" type="checkbox"/> Retry failed items processing: 3 times Wait before each retry attempt for: 10 minutes Backup window <input type="checkbox"/> Terminate the job outside of the allowed backup window Window... Long running or accidentally started jobs will be terminated to prevent impact on your production infrastructure during busy hours.

< Previous **Apply** Finish Cancel

- Check the summary and click “Finish”.

New Backup Job ×

 **Summary**
You have successfully created the new backup job.

Name	Summary: Configuration has been successfully saved. Name: VMware EXSi backup job Target Path: /mnt/Pool-0/my-repository/backups Type: VMware Backup Source items: windows (10.18.0.109) PowerShell cmdlet for starting the job: Get-VBRJob -Name "VMware EXSi backup job" Start-VBRJob
Virtual Machines	
Storage	
Guest Processing	
Schedule	
Summary	

☒ Run the job when I click Finish

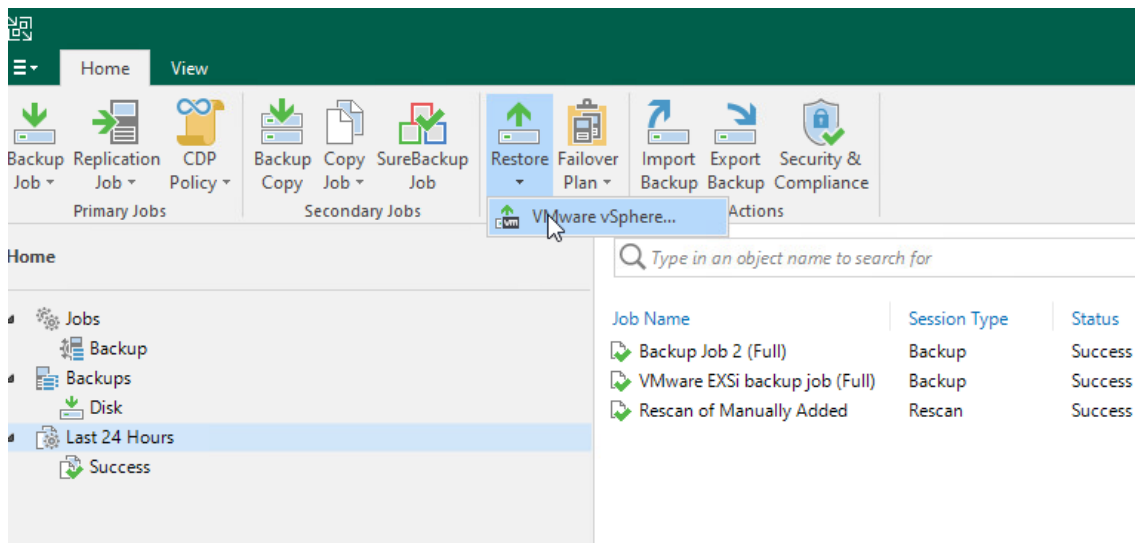
< Previous Next > **Finish** Cancel

7. RESTORE

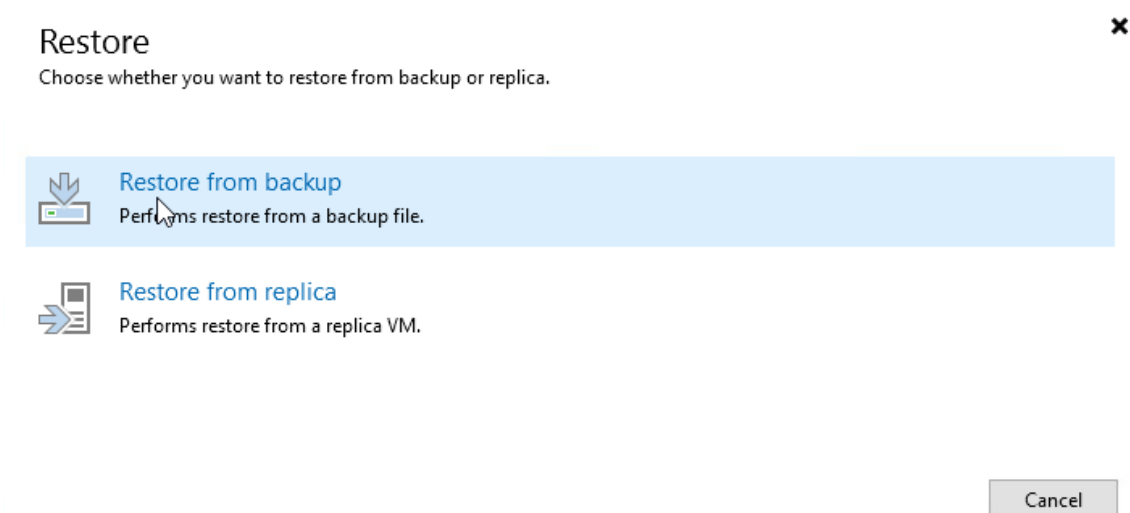
After the last backup job ended with a successful status, we can restore our VMs now.

7.1. STARTING THE RESTORATION PROCESS

To do this, proceed to the left menu. Choose “Home” → “Top Menu” → “Restore”.

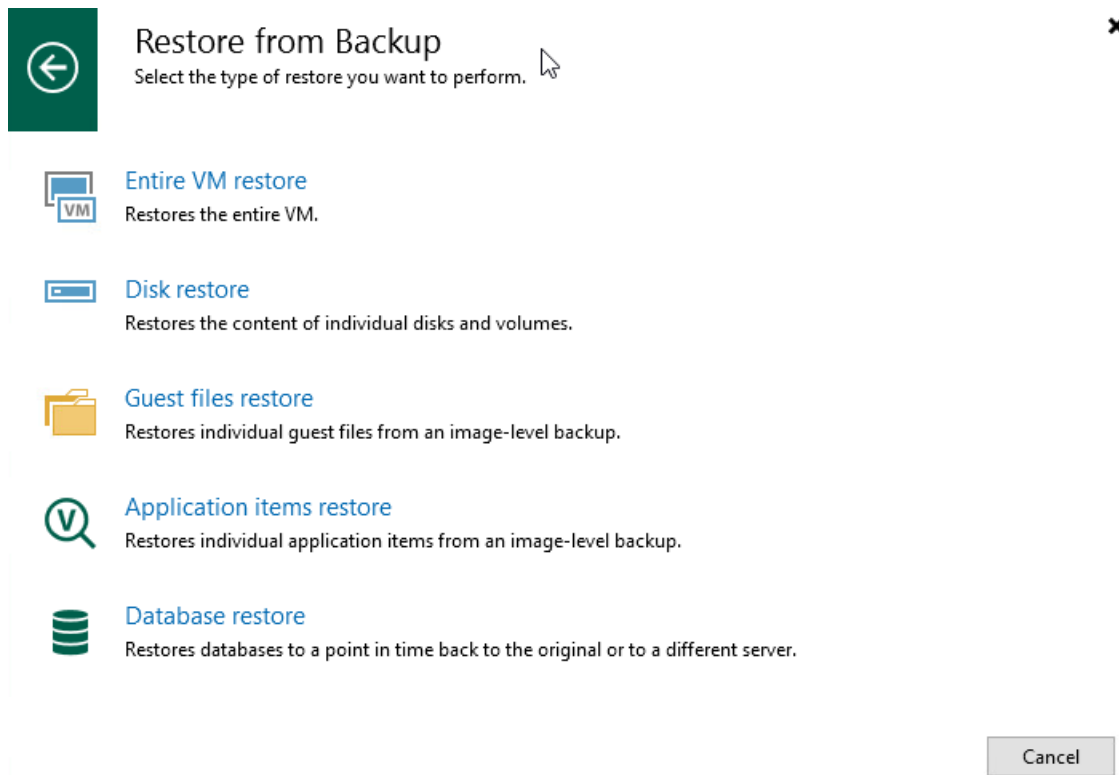


- Go to “Restore” → “VMware vSphere”, choose “Restore from backup”

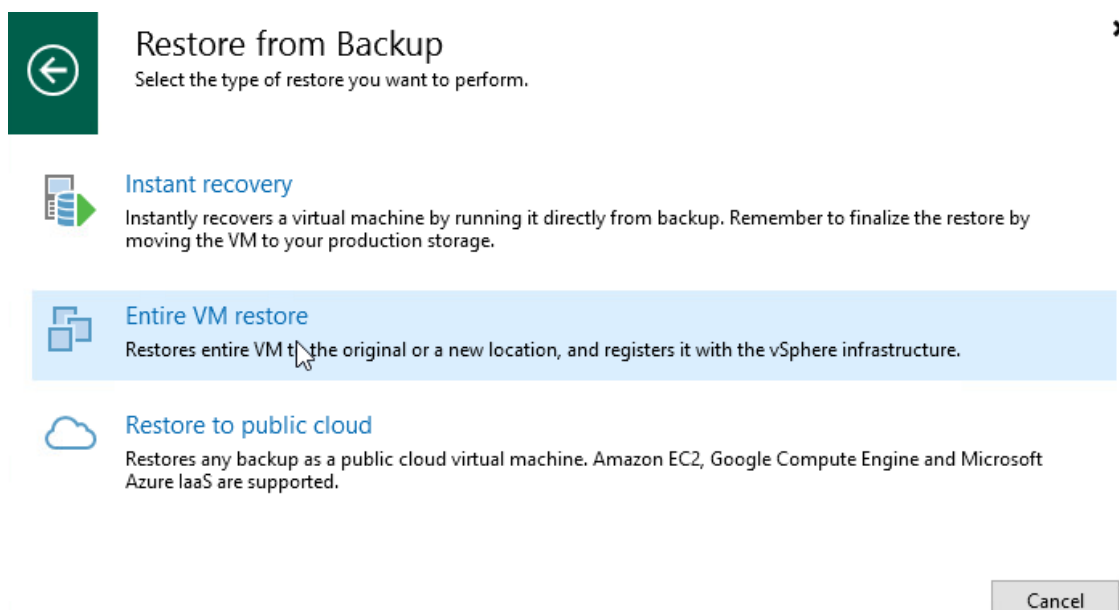


7.2. SELECTING THE TYPE OF RESTORATION

- In the next step, select the type of restore you want to perform. In our case, the “Entire VM restore”, so select the following option:

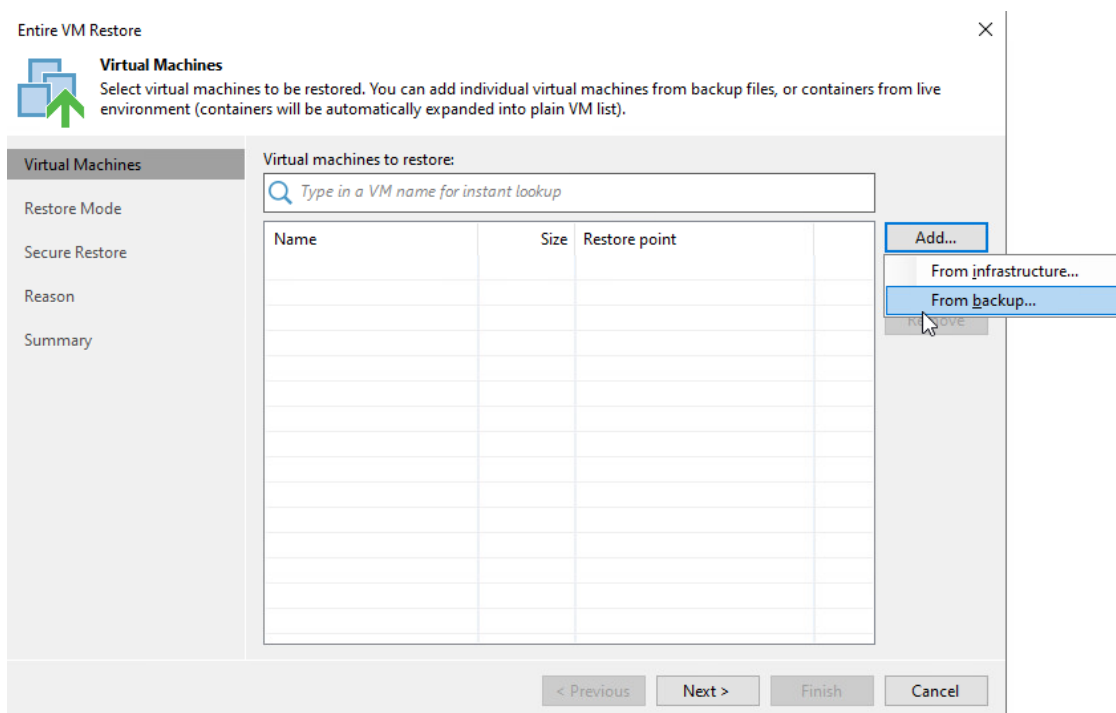


- On the next screen, choose “Entire VM restore”.

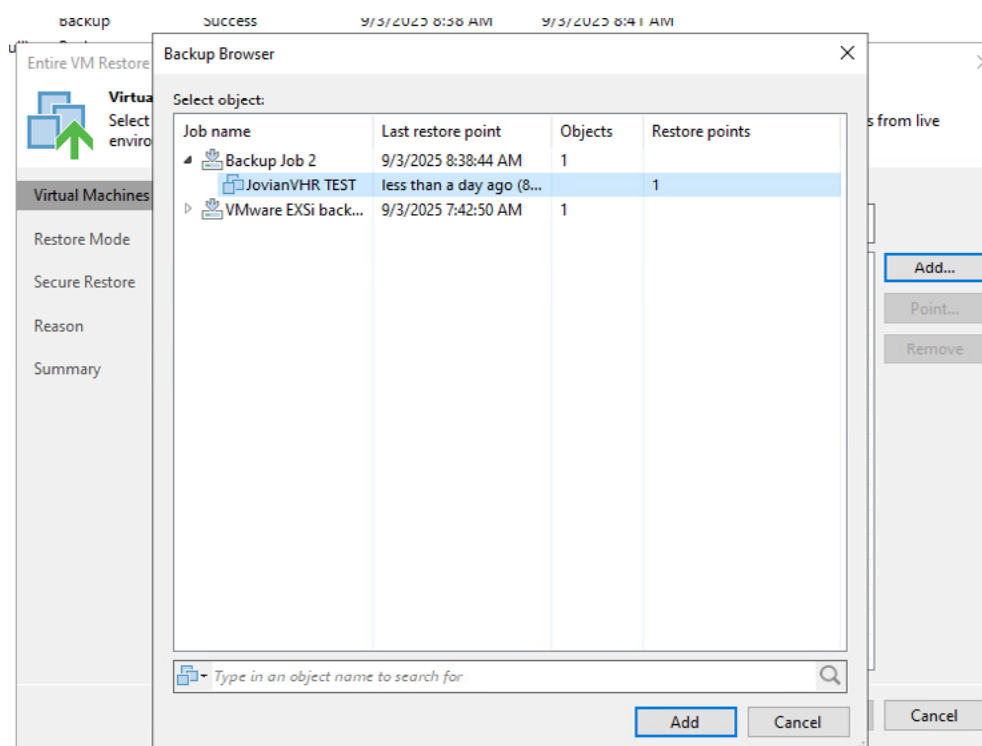


7.3. CHOOSING VM OR NODE FOR RESTORATION

- Press “Add” → “From backup” to select virtual machines to be restored.



- Next, choose the backup job and the VM that needs to be restored, then click “Add”.



Open-E JovianVHR

Jump start



- Choose “Restore Mode” and proceed with the restoration process by clicking “Next”.

The screenshot shows the 'Entire VM Restore' wizard with the 'Restore Mode' step selected. The left sidebar contains 'Virtual Machines', 'Restore Mode' (highlighted), 'Reason', and 'Summary'. The main area is titled 'Restore Mode' and contains the instruction: 'Specify whether selected VMs should be restored back to the original location, or to a new location or with different settings.' There are three radio button options: 'Restore to the original location' (selected), 'Restore to a new location, or with different settings', and 'Staged restore'. Below these is a checkbox for 'Quick rollback (restore changed blocks only)'. At the bottom are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

- If your Virtual Machine still exists in your EXSi infrastructure, Veeam needs to delete it. Press “OK”.

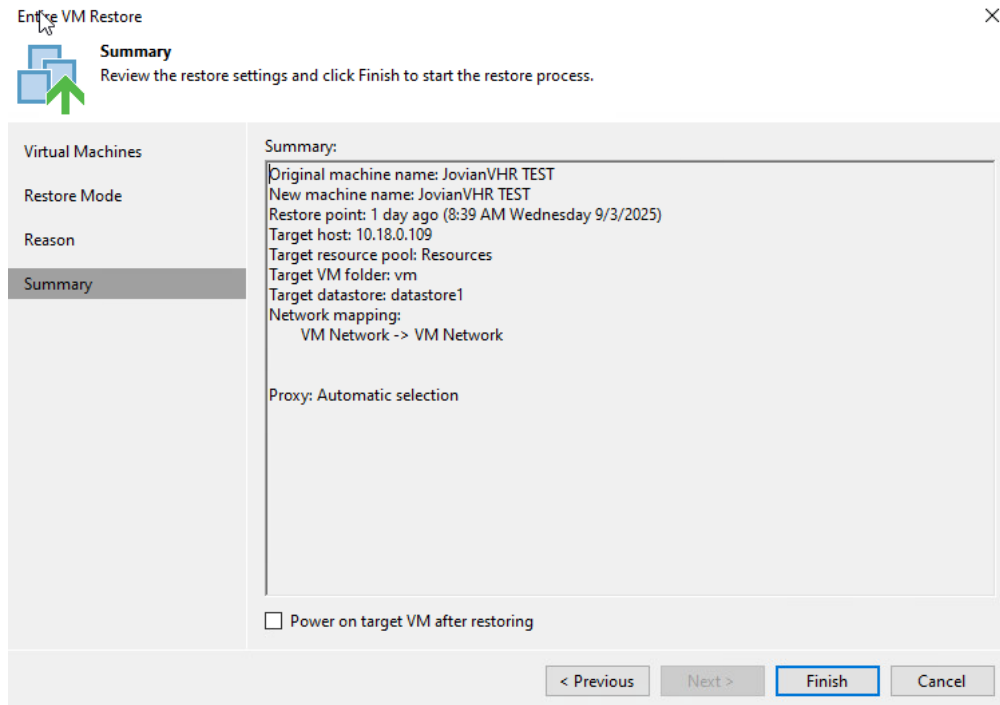
The screenshot shows the 'Entire VM Restore' wizard with the 'Reason' step selected. The left sidebar contains 'Virtual Machines', 'Restore Mode', 'Reason' (highlighted), and 'Summary'. The main area is titled 'Reason' and contains the instruction: 'Type in the reason for performing this restore operation. This information will be logged in the restore sessions history for later reference.' A text box for 'Restore reason:' is visible. Overlaid on this is a 'Veeam Backup & Replication' dialog box with an information icon and the message: 'The following existing VMs will be deleted from the infrastructure.' Below this is a table with one entry: 'JovianVHR TEST'. At the bottom of the dialog are buttons for 'Hide VMs', 'OK', and 'Cancel'.

Open-E JovianVHR

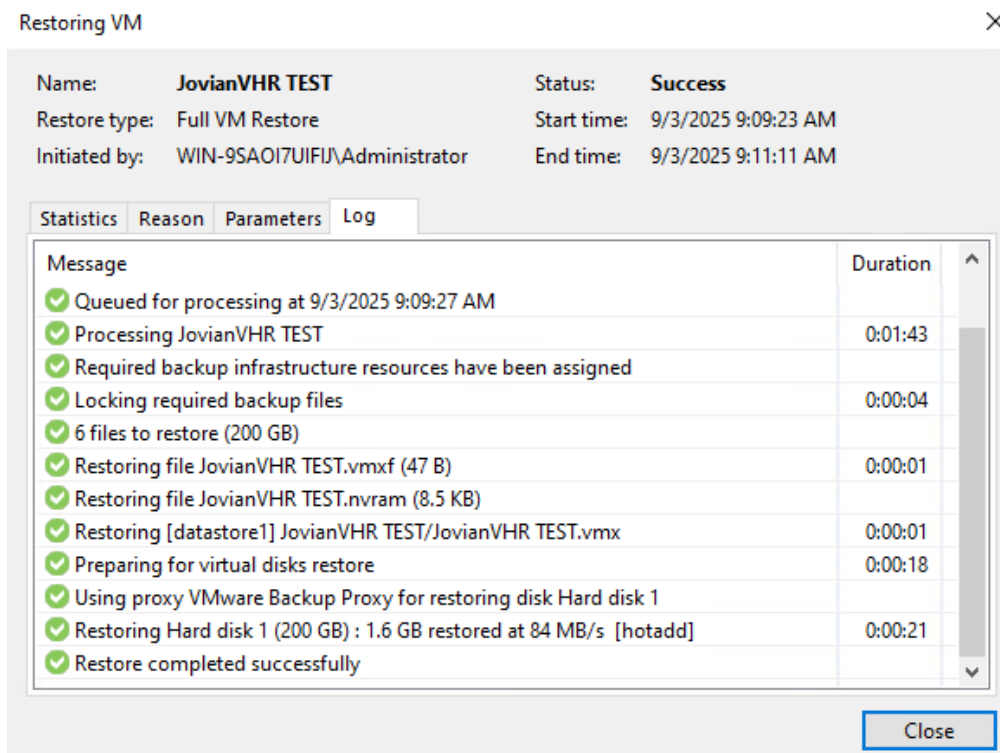
Jump start



DONE! After pressing “Finish”, Veeam proceeds with the restoration process.



- Virtual Machine restored successfully. Click “Close”.



Copyright

(c) 2004 - 2025 Open-E, Inc. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written consent of Open-E, Inc.

Trademarks

The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

Disclaimer

Open-E, Inc. assumes no responsibility for errors or omissions in this document, and Open-E, Inc. does not make any commitment to update the information contained herein.

Please register your Open-E JovianVHR license: <https://www.open-e.com/register/>