

# StarWind Virtual Tape Library: Configuration Guide for Local Storage, VTL Deployed as a Windows Applications using GUI

2024

TECHNICAL PAPERS



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## About StarWind

StarWind is a pioneer in virtualization and a company that participated in the development of this technology from its earliest days. Now the company is among the leading vendors of software and hardware hyper-converged solutions. The company's core product is the years-proven StarWind Virtual SAN, which allows SMB and ROBO to benefit from cost-efficient hyperconverged IT infrastructure. Having earned a reputation of reliability, StarWind created a hardware product line and is actively tapping into hyperconverged and storage appliances market. In 2016, Gartner named StarWind “Cool Vendor for Compute Platforms” following the success and popularity of StarWind HyperConverged Appliance. StarWind partners with world-known companies: Microsoft, VMware, Veeam, Intel, Dell, Mellanox, Citrix, Western Digital, etc.

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## Annotation

Relevant products

This guide is applicable for StarWind VTL (build version 12336 and later).

Purpose

StarWind Virtual Tape Library (VTL) is a software solution that allows you to emulate physical Tape Libraries while storing data on the hard disk drives. The solution targets companies that want to completely quit using the physical Tape Library, as well as simplify and accelerate the process of data backup and recovery.

This document outlines how to configure a StarWind VTL and includes steps on how to backup and restore data to VTL via different backup applications.

Audience

This technical guide is intended for storage and virtualization architects, system administrators, and partners designing virtualized environments using StarWind Virtual Tape Library (VTL).

Expected result

The end result of following this guide will be a fully configured StarWind VTL with configured backup jobs to StarWind VTL using backup applications of choice.

## Prerequisites

StarWind VTL system requirements

Prior to installing StarWind Virtual SAN, please make sure that the system meets the requirements, which are available via the following link: <https://www.starwindsoftware.com/system-requirements#virtual-tape-library>

Recommended RAID settings for HDD and SSD disks:  
<https://knowledgebase.starwindsoftware.com/guidance/recommended-raid-settings-for-hdd-and-ssd-disks/>

**IMPORTANT NOTE:** In order to fit the ransomware resiliency, the VTL should be located

on the dedicated storage/host which must be isolated from the production environment.

Please read the following document for details:

[Backing up StarWind Virtual SAN Environment: Best Practice.](#)

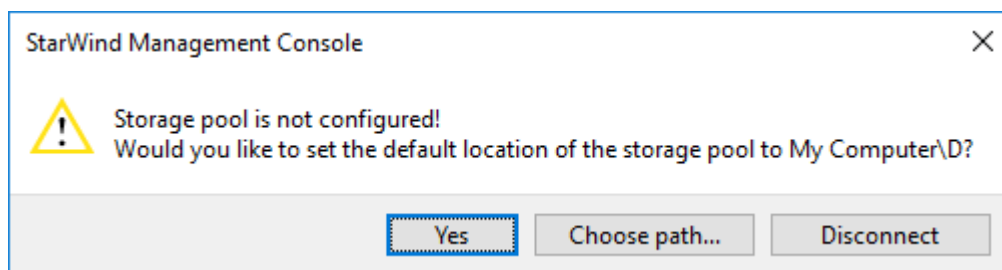
## Configuring Virtual Tape Library

1. Launch the StarWind Management Console by double-clicking the StarWind tray icon.

NOTE: If StarWind service and Management Console are installed on the same server, the Management Console will automatically add the local StarWind instance to the Console tree after the first launch. Then, the Management Console automatically connects to it using the default credentials. To add remote StarWind servers to the Console, use the Add Server button on the control panel.

2. StarWind Management Console will ask to specify the default storage pool on the server you are connecting to for the first time. Please, configure the default storage pool to use one of the volumes you have prepared as StarWind storage earlier. All the devices created through the Add Device wizard will be stored on that storage pool by default.

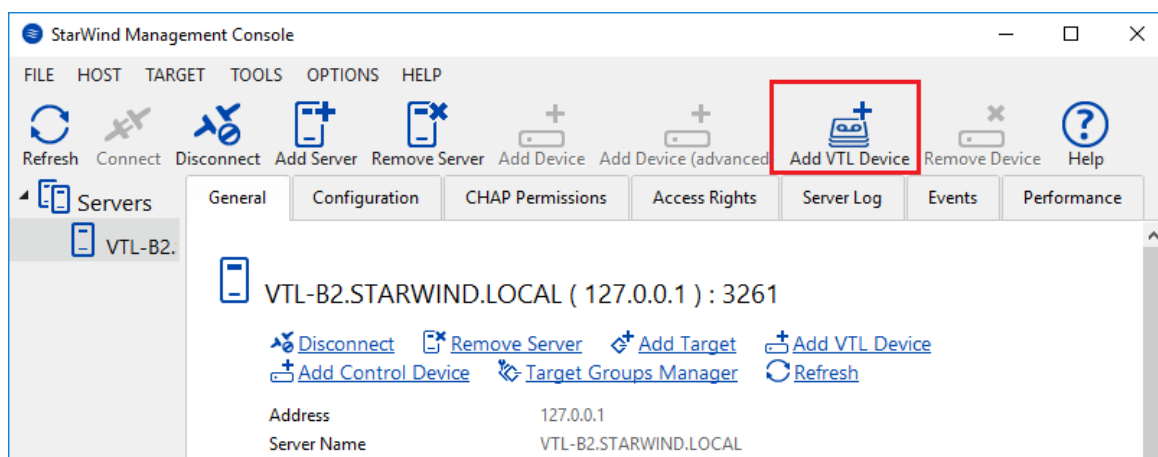
3. Press the Yes button to configure the storage pool. Should you require to change the storage pool destination, press Choose path... and point the browser to the necessary disk.



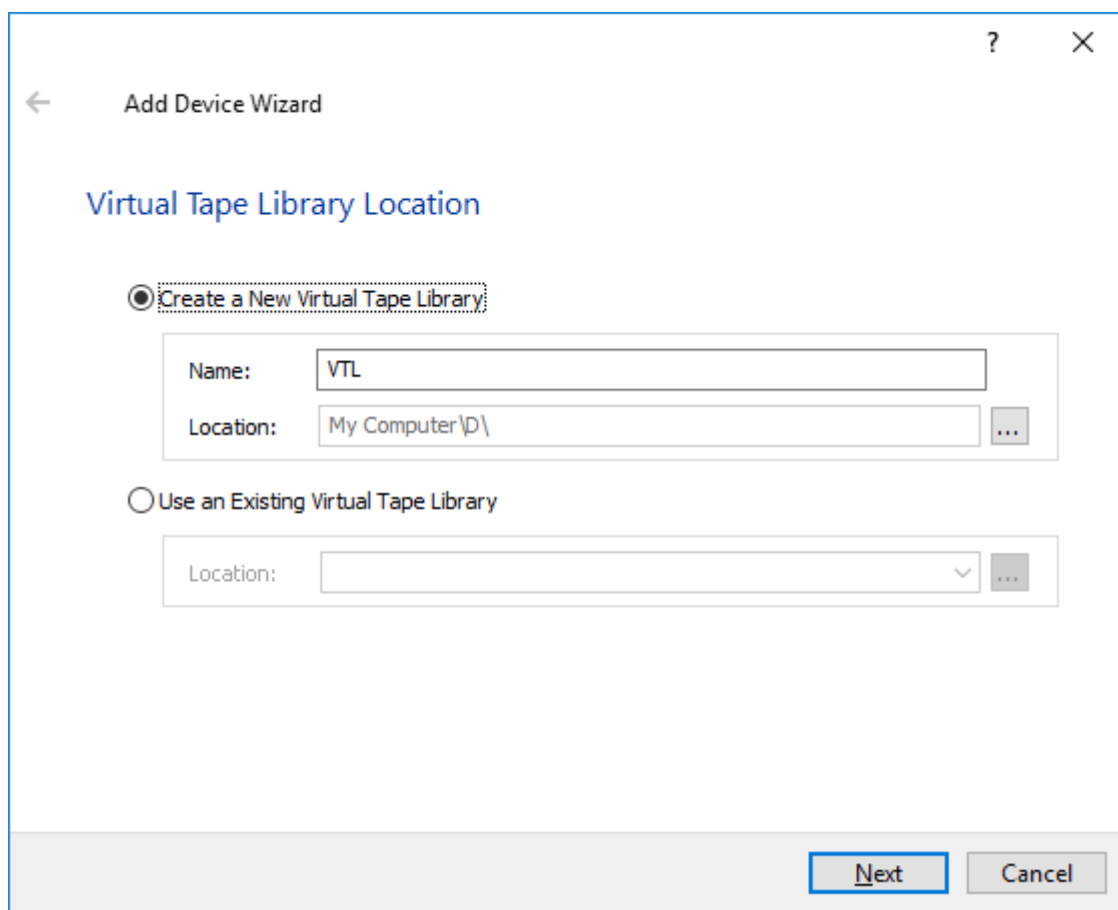
4. Select the StarWind server where the device needs to be created.

5. Press the Add VTL Device button on the toolbar.

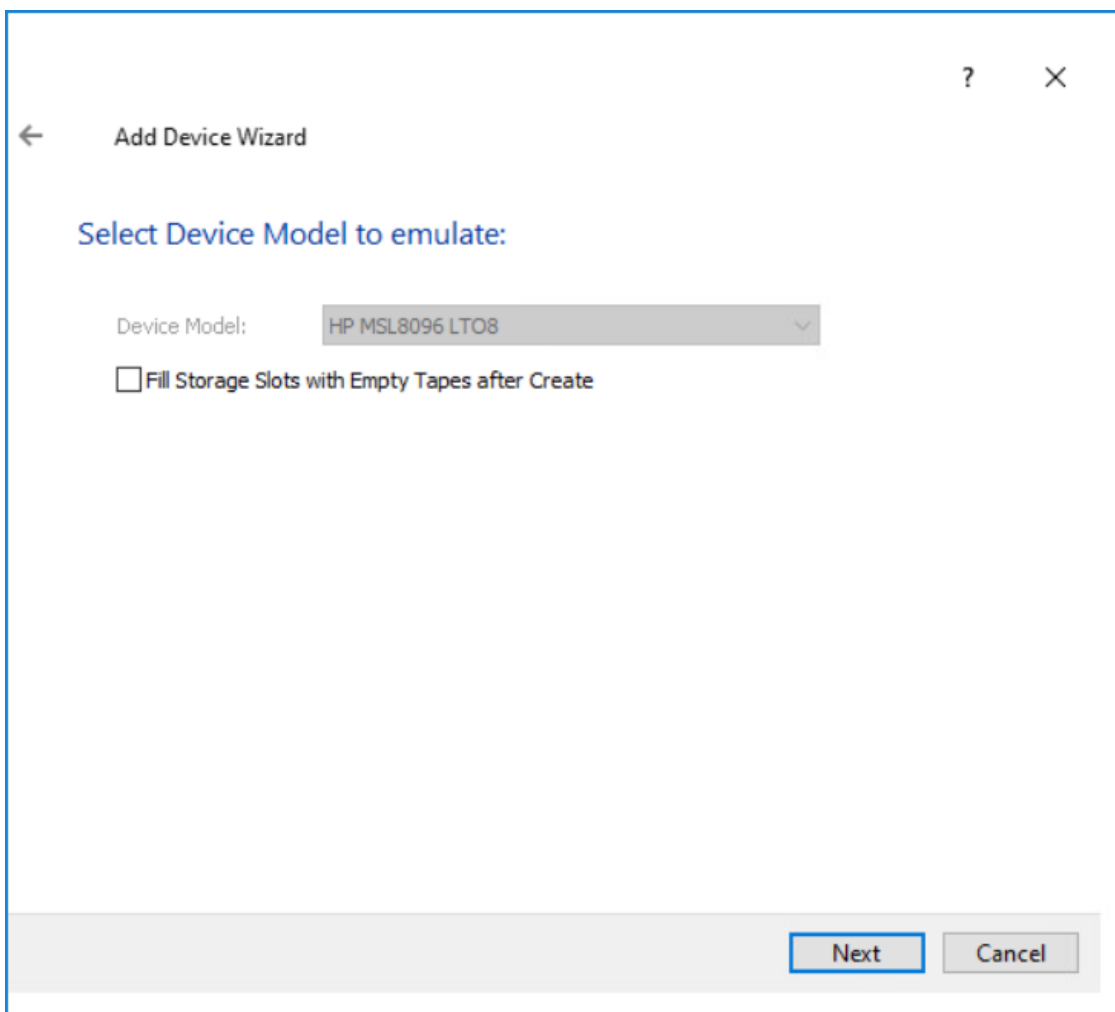




6. Specify the Virtual Tape Library location in the appeared window and click Next.



7. Select the Device Model from a drop-down list. You can also fill all slots in the newly created Tape Library with empty tapes.



8. Provide Target Alias or choose the default one.

← Add Device Wizard

Target Parameters

Choose a Target Attachment Method

Create new Target

Target Alias

VTL

☐ Target Name

iqn.2008-08.com.starwindsoftware:vtl-b2.starwind.local-vtl

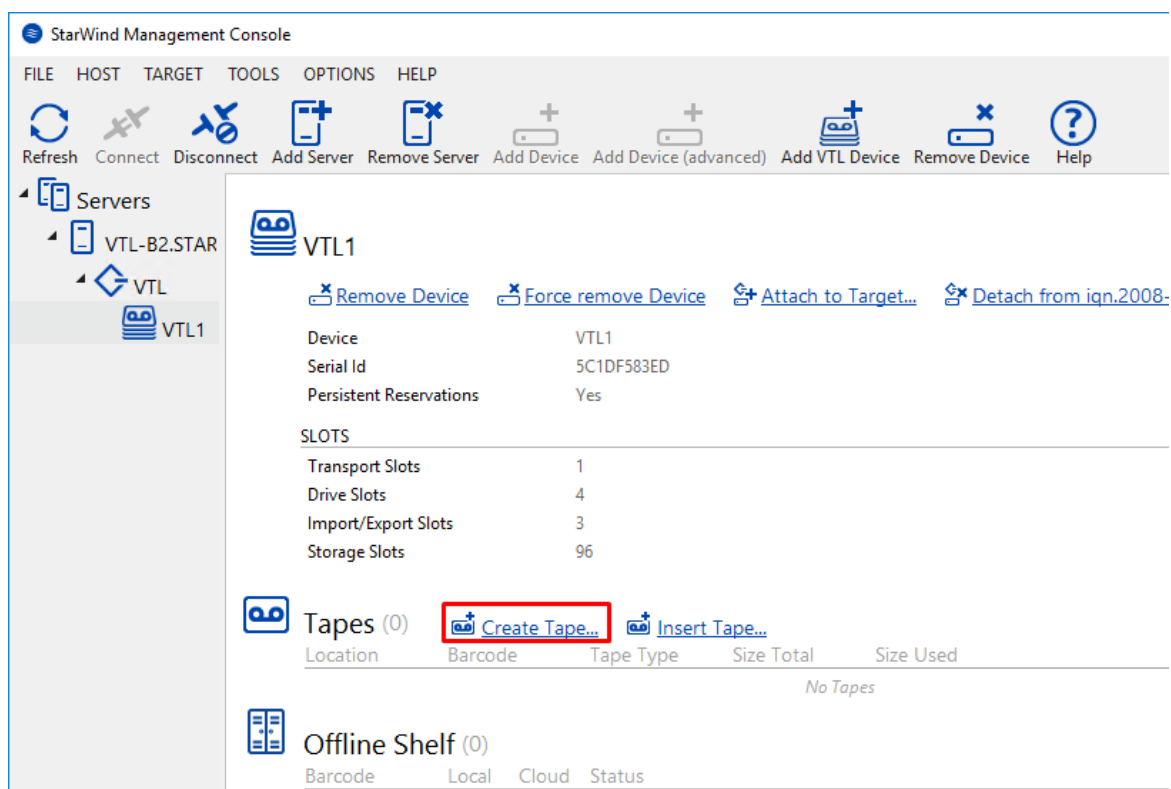
☒ Allow multiple concurrent iSCSI Connections

Next Cancel

9. Press the Create button to start the creation process.

10. Once the device creation is completed, click Close.

11. Once the VTL device is created, the tapes can be added. To do this, select the VTL device and click the Create Tape button located in the Tapes section.



12. The Create Tape wizard will appear. Optionally, select the checkbox and specify the custom path where the tape files must be stored.

13. Specify the Number of Tapes, Tape Type, and other parameters and click the Create button. It's possible to customize the tape parameters.

← Create Tape

Specify Tape Parameters

☐ Custom Barcode

Barcode

Number of Tapes

Tape Type

☐ Custom Tape Size

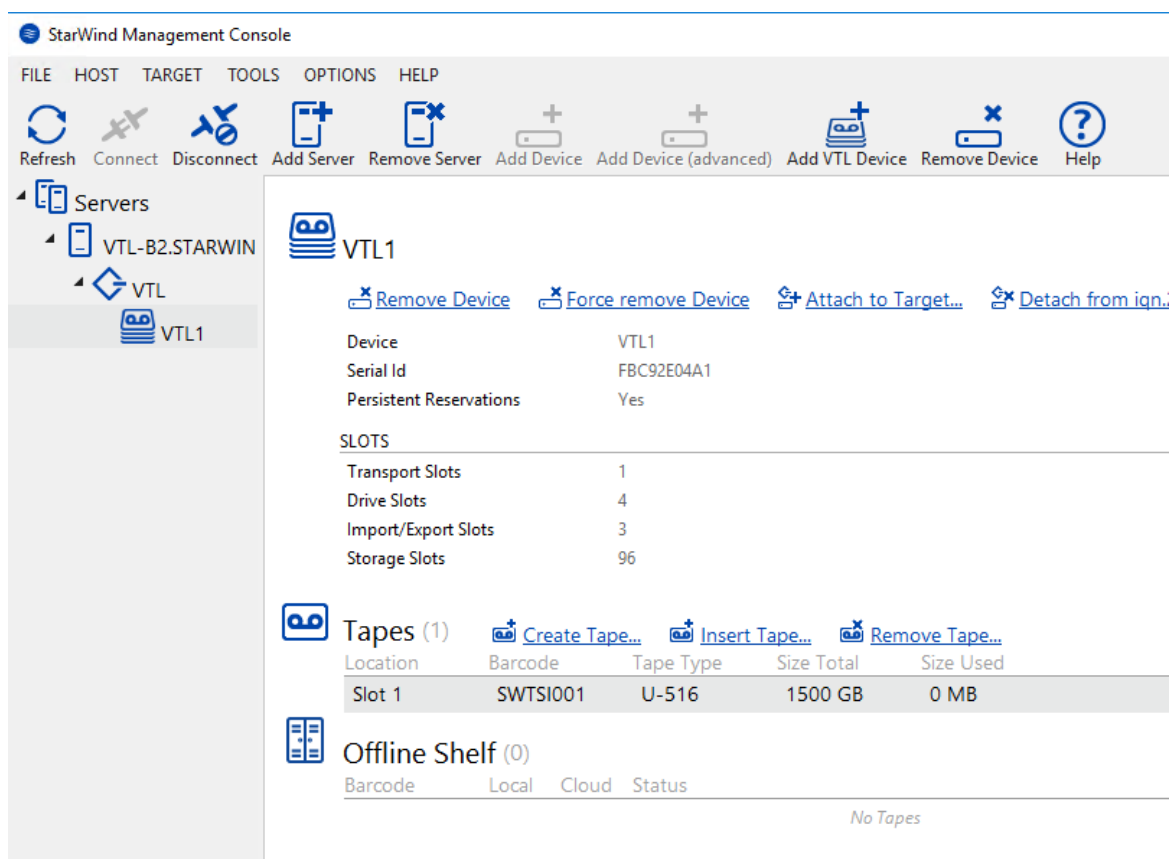
Tape Size  GB

☐ Split Into Parts

Part Size  GB

Create Cancel

14. The created tape appears in the first slot of the VTL device in the StarWind Management Console.

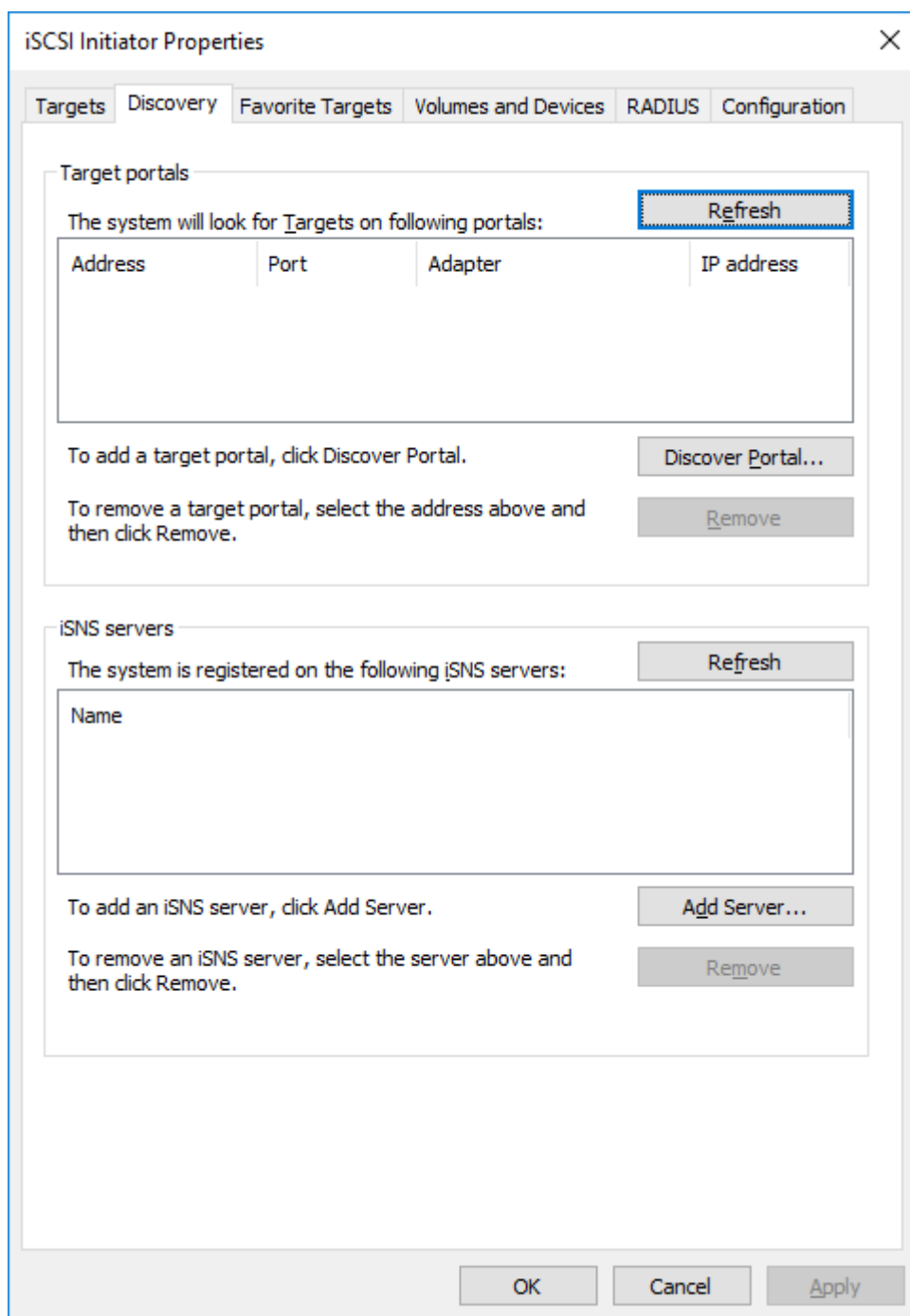


If required, create new tapes in the same way.

## Mounting Vtl On The Backup Host

To pass-through the VTL device to the Windows server with the backup software provider, the corresponding VTL iSCSI target should be mounted first.

1. Open Microsoft iSCSI Initiator, navigate to the Discovery tab, and press the Discover Portal button.



2. Enter the localhost address (127.0.0.1) and press the Advanced button.

Discover Target Portal

Enter the IP address or DNS name and port number of the portal you want to add.  
  
To change the default settings of the discovery of the target portal, click the Advanced button.

IP address or DNS name:

Port: (Default is 3260.)

127.0.0.1

3260

Advanced...

OK

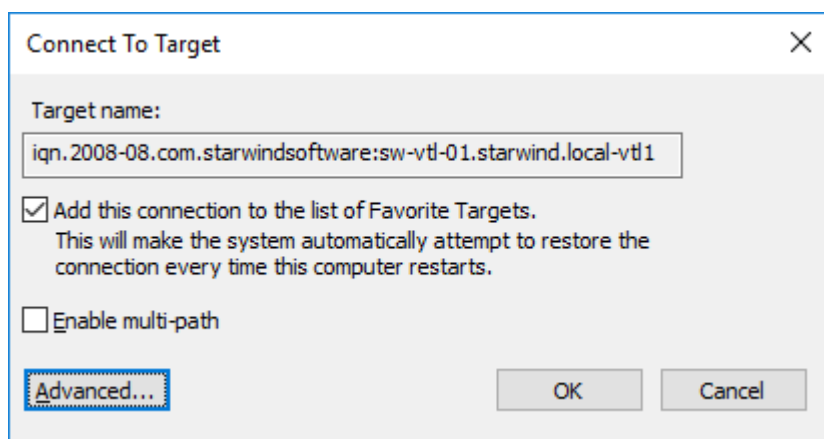
Cancel

3. Select Microsoft iSCSI Initiator from the Local Adapter drop-down list and press OK.



The screenshot shows the 'Advanced Settings' dialog box with the 'IPsec' tab selected. The 'General' tab is also visible. The 'Connect using' section has three dropdown menus: 'Local adapter' set to 'Microsoft iSCSI Initiator', 'Initiator IP' set to 'Default', and 'Target portal IP' set to an empty dropdown. The 'CRC / Checksum' section has two checkboxes: 'Data digest' and 'Header digest', both unchecked. The 'Enable CHAP log on' checkbox is also unchecked. The 'CHAP Log on information' section contains a text box for 'Name' with the value 'iqn.1991-05.com.microsoft:vtl.starwind.local' and an empty text box for 'Target secret'. Below this, there are three more checkboxes: 'Perform mutual authentication' (unchecked), 'Use RADIUS to generate user authentication credentials' (unchecked), and 'Use RADIUS to authenticate target credentials' (unchecked). The 'OK', 'Cancel', and 'Apply' buttons are at the bottom right.

4. The newly added Discovery Portal will appear in the list.
5. Navigate to the Targets tab, find the iSCSI target which corresponds to the StarWind VTL device, and press the Connect button.
6. Leave the Enable Multipath checkbox empty and press the Advanced button.



7. Set Local adapter as Microsoft iSCSI Initiator, specify 127.0.0.1 / 3260 as Target portal IP and double-click the OK button to complete the target connection.

**Advanced Settings**

**General** **IPsec**

**Connect using**

Local adapter: Microsoft iSCSI Initiator

Initiator IP: Default

Target portal IP: 127.0.0.1 / 3260

**CRC / Checksum**

☐ Data digest ☐ Header digest

☒ Enable CHAP log on

**CHAP Log on information**

CHAP helps ensure connection security by providing authentication between a target and an initiator.

To use, specify the same name and CHAP secret that was configured on the target for this initiator. The name will default to the Initiator Name of the system unless another name is specified.

Name: iqn.1991-05.com.microsoft:sw-vtl-01.starwind.local

Target secret:

☒ Perform mutual authentication

To use mutual CHAP, either specify an initiator secret on the Configuration page or use RADIUS.

☐ Use RADIUS to generate user authentication credentials

☐ Use RADIUS to authenticate target credentials

OK Cancel Apply

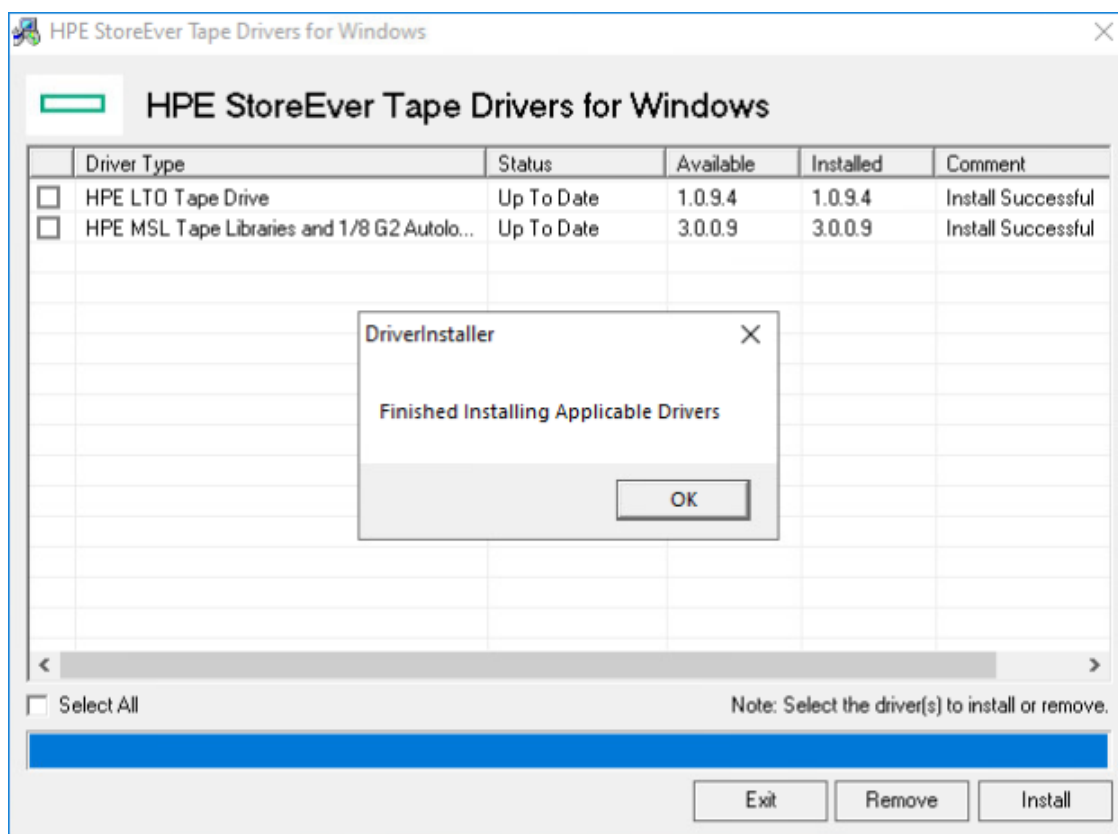
The VTL iSCSI target should be shown as Connected in the list.

Installing tape library drivers

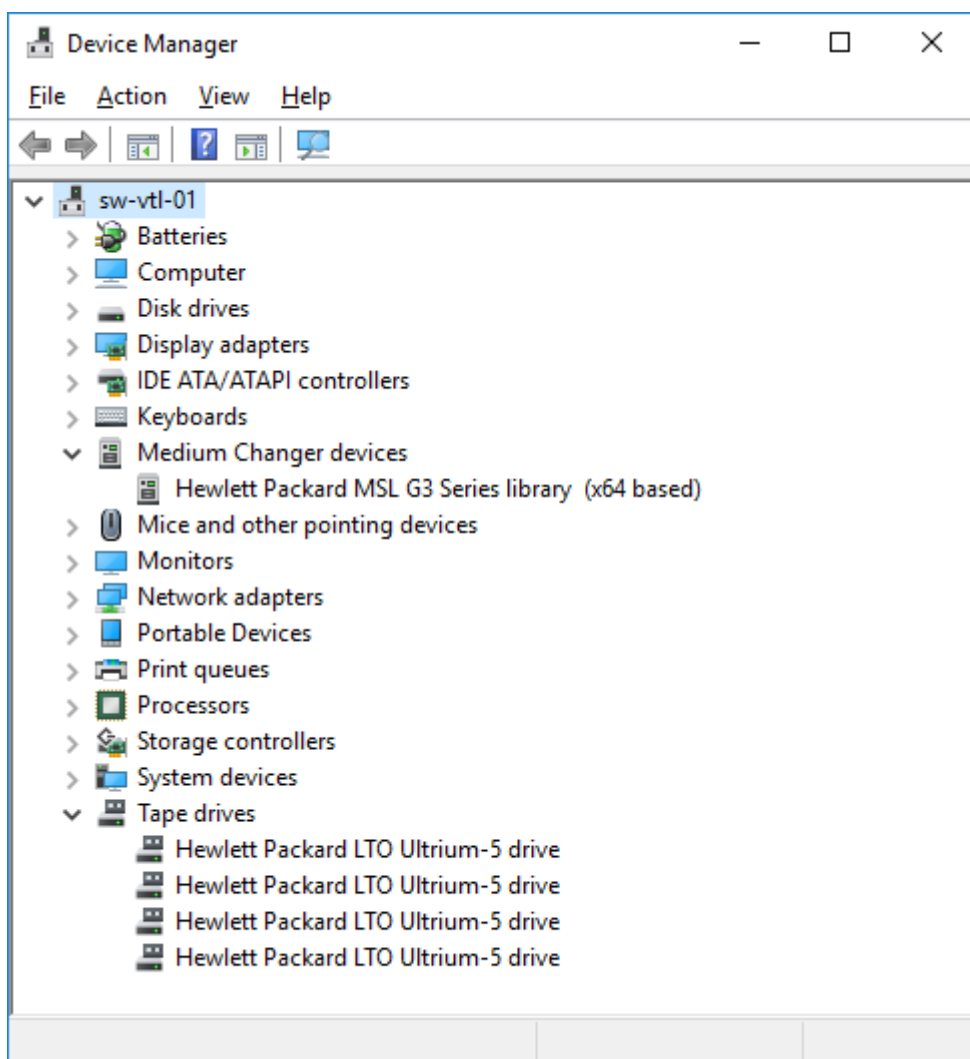
It's recommended to install the latest update driver from HP. The driver for HP MSL8096 can be downloaded here:

[HPE StoreEver Tape Drivers for Microsoft Windows](#). The current version that supports Windows Server 2022 is 4.6.0.0. HP drivers must be installed on the host (localhost in this example) where StarWind VTL device is mounted via iSCSI.

1. Extract the downloaded driver and launch cpqsetup.exe.
2. Choose the Select All checkbox and click Install.



3. Once the drivers are installed, the Medium Changer devices is shown as Hewlett Packard MSL G3 Series library (x64 based).



The tape library is ready to be added to the server with the backup software provider.

## Backing Up To Starwind Virtual Tapes

Choose the required backup software provider to add StarWind Virtual Tape Library to:

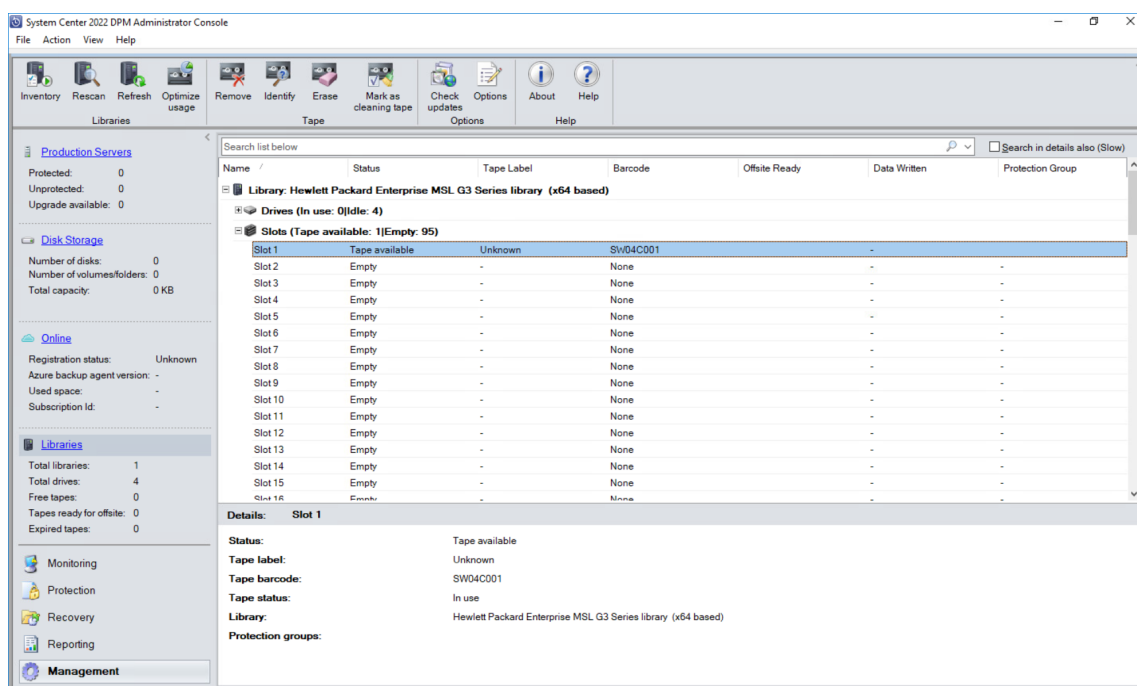
### Microsoft System Center Data Protection Manager

Adding StarWind VTL Device to Microsoft SCDPM

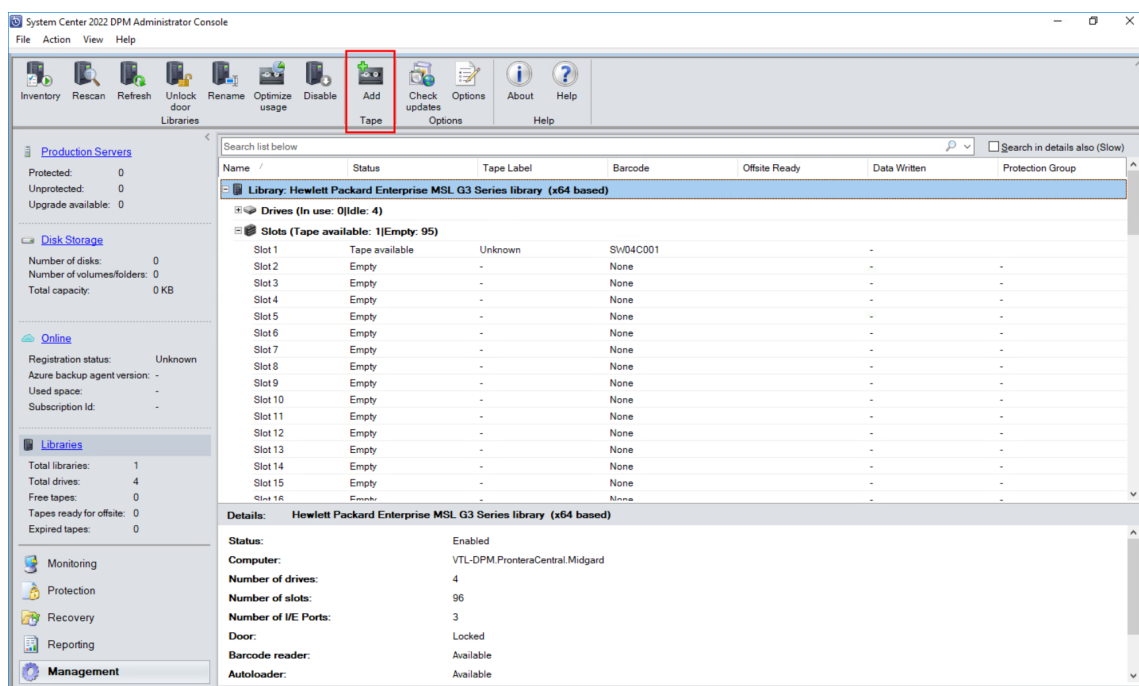
In case of any question regarding Microsoft SCDP deployment, please refer the following link:

<https://docs.microsoft.com/en-us/system-center/dpm/install-dpm?view=sc-dpm-1807>

1. DPM automatically detects tape devices that are attached to it and they are displayed in the Libraries workspace of the Management view. If the tape isn't displayed, it can be detected manually with the Rescan button.
2. After the rescan, check that the details displayed in Device Manager and in the tape library are the same.

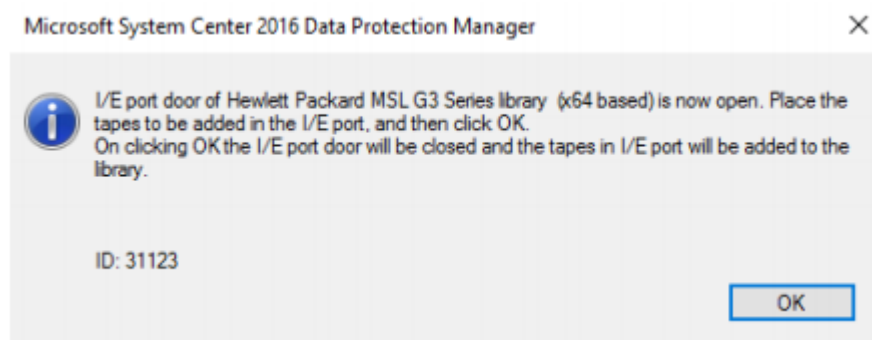


3. To add more tapes, select the tape library in the Libraries workspace of the Management view, and then click Add.



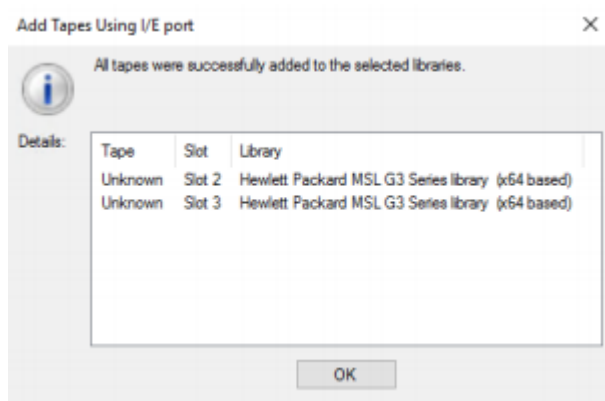
4. The I/E port door named “Hewlett Packard MSL G3 Series library” will be opened, and more tapes can be created using StarWind management console as described in the previous steps.

NOTE: Do not press OK in case more tapes need to be created.

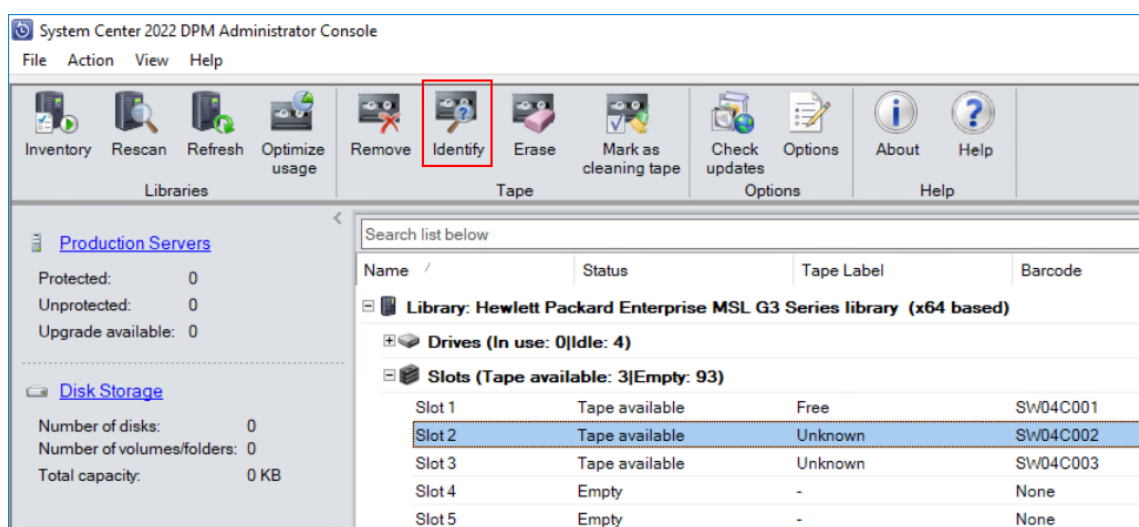


NOTE: While adding/removing tapes to the tape library using the Unlock library door or Add tape, DPM will automatically inventory the library. While adding/removing tapes to the tape library without using Unlock library door or Add tape, the Inventory library action must be used to update the information in DPM Administrator Console.

5. Once the tapes are created using StarWind management console, press OK. DPM will detect the newly added tapes as shown in the screenshot.



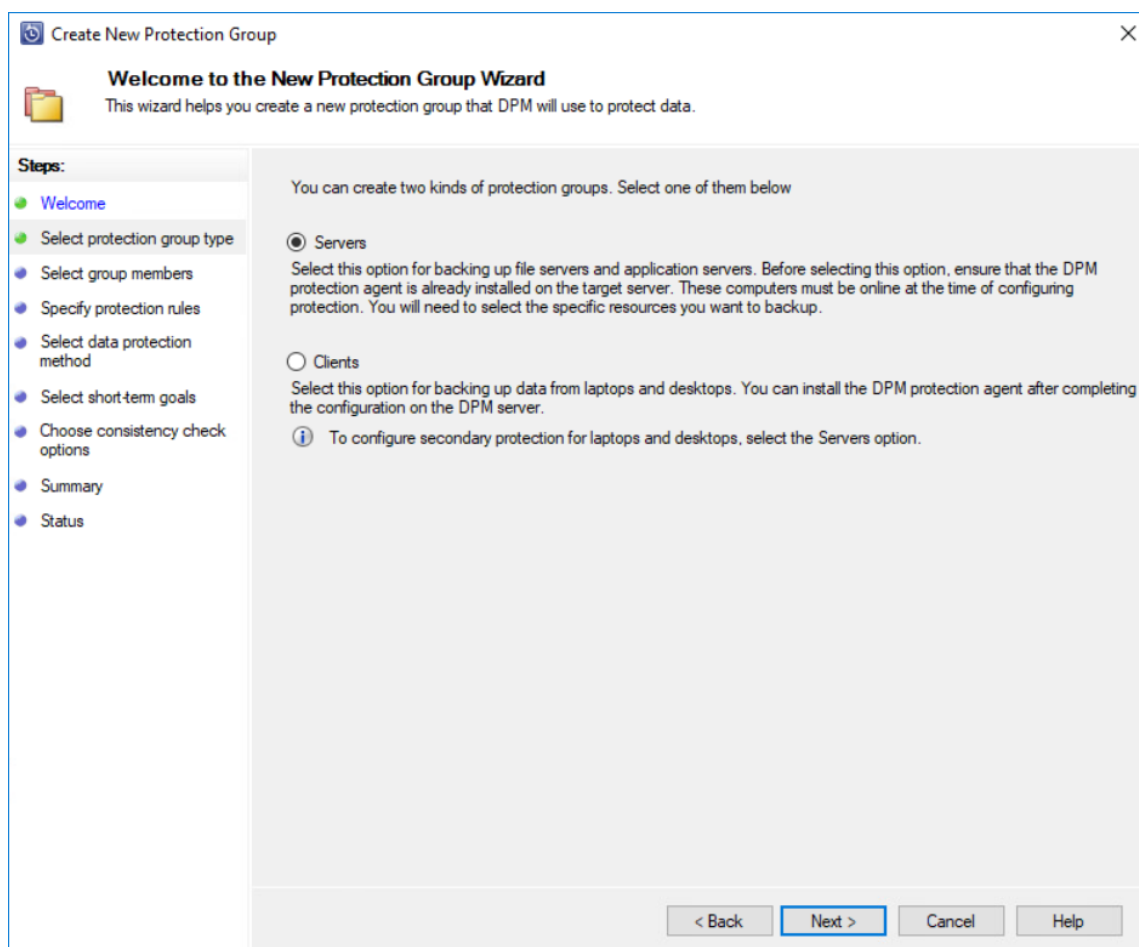
6. Prior to using the newly added tapes, Identify the “Unknown” tapes so they become “Free” and ready to be used.



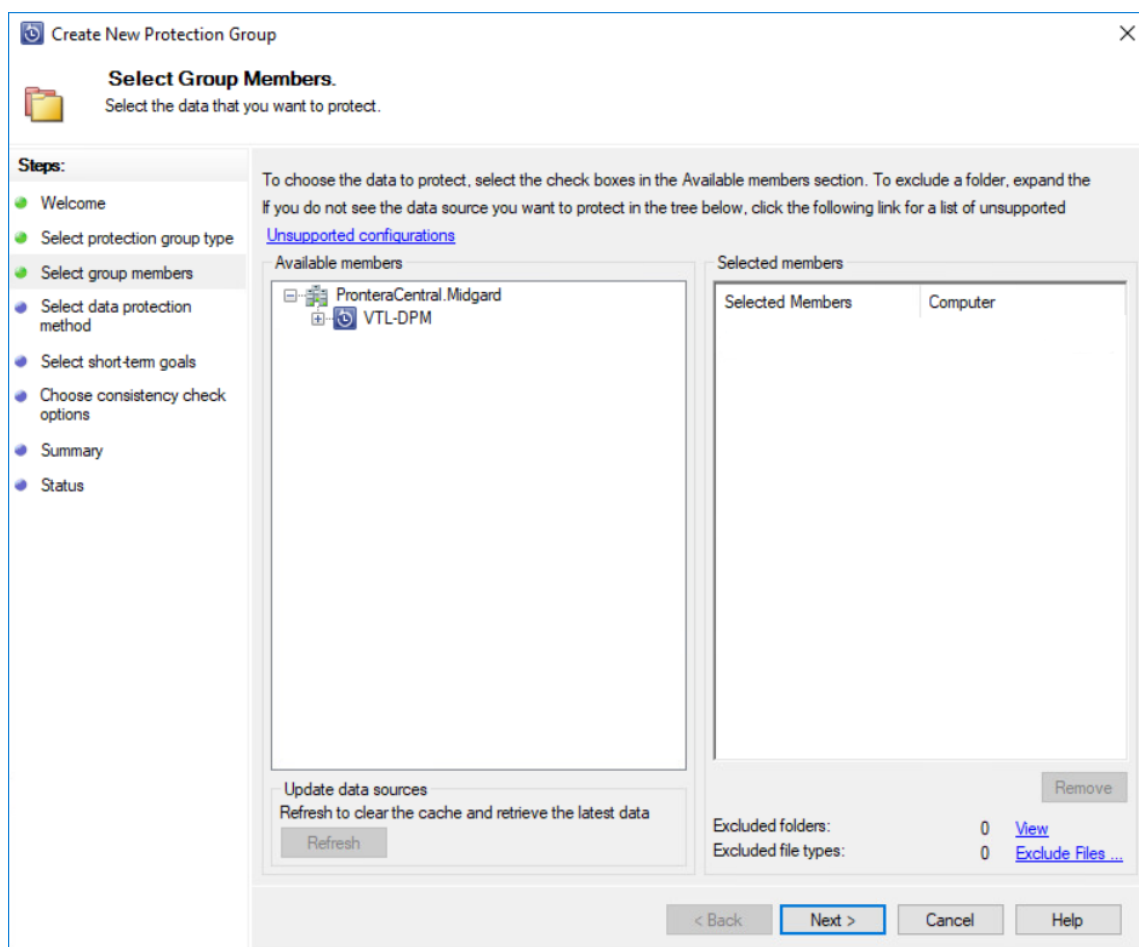
### Configuring protection group for DPM

1. Open DPM Management Console in the Protection workspace of the Management view, and then click New+
2. Select the required backup option (Servers / Clients).





3. Choose the data that needs to be protected.



4. In Protection Group Wizard, select the required protection option:

- short-term protection (Disk / Tape)
- long-term protection (Tape)

The screenshot shows the 'Create New Protection Group' wizard window. The title bar says 'Create New Protection Group'. The main heading is 'Select Data Protection Method'. Below it, a sub-heading says 'DPM can help provide disk, online and tape based data protection.' On the left, there is a 'Steps:' sidebar with a list of steps: 'Welcome', 'Select protection group type', 'Select group members', 'Select data protection method' (which is highlighted), 'Select short-term goals', 'Choose consistency check options', 'Summary', and 'Status'. The main area of the wizard is titled 'Protection group name:' with a text box containing 'Protection Group 1'. Below this, it says 'Protection method' and 'Select your protection method.' There are three options: 1. 'I want short-term protection using:' with a dropdown menu showing 'Tape', 'Disk', and 'Tape' (the first and last are highlighted). 2. 'I want online protection' with an unchecked checkbox and a note 'Configure online protection from the Management page to enable this option.' 3. 'I want long-term protection using tape' with a checked checkbox. At the bottom right, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

5. In Protection Group Wizard, specify the short-term goals.

**Create New Protection Group**

**Specify Short-Term Protection**  
Specify your short-term recovery goals, which DPM will use to generate your protection plan.

**Steps:**

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Specify short-term goals**
- Specify long-term goals
- Select library and tape details
- Summary
- Status

**Specify your protection goal on tape.**

Retention range: 12 weeks

Frequency of backup: Daily

Backup mode: Only full backup

Backup schedule:  
Specify your backup day and time.

Full backup time: 11:00 PM

Full backup days: ☐ Sunday ☒ Monday ☒ Tuesday ☒ Wednesday ☒ Thursday ☒ Friday ☒ Saturday

< Back Next > Cancel Help

6. Specify the required Long-Term Goals.

Create New Protection Group

Select Long-Term Goals

DPM will create a protection plan using your long-term recovery goals.

Steps:

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Specify short-term goals
- Specify long-term goals
- Select library and tape details
- Summary
- Status

Specify your long-term recovery goals for tape-based protection. All long-term tape-based protection uses full backups.

Recovery goals

The retention range and backup frequency that you select will determine the recovery point schedule.

Click Customize to modify the recovery point schedule or the default tape labels.

Retention range: 3 Years

Frequency of backup: Quarterly

Recovery points: 1 recovery point every 3 month(s) for the last 12 month(s)  
1 recovery point every 1 year(s) for the last 3 year(s)

Restore Defaults Customize

Backup schedule

Based on the specified backup frequency, the tape library will perform a full backup to the tapes according to the following schedule

Click the Modify button to choose the backup days in case of daily tape backups.

Quarterly: Day 1, 11:00 PM

Yearly: January 1, 11:00 PM

Modify...

< Back

Next >

Cancel

Help

7. Specify the required Library and Tape Details.

**Create New Protection Group**

**Select Library and Tape Details**  
Specify details about tape and the library that you would like to use for backup.

**Steps:**

- Welcome
- Select protection group type
- Select group members
- Select data protection method
- Specify short-term goals
- Specify long-term goals
- Select library and tape details**
- Summary
- Status

Specify details about the library and tape that you want to use for tape backups.

**Library details**

Library: Hewlett Packard Enterprise MSL G3 Series library (x64 v)

Drives allocated: 4

Copy library: Hewlett Packard Enterprise MSL G3 Series library (x64 v)

☐ Check backup for data integrity (time consuming operation)

**Tape options for short-term protection**

☒ Compress data

☐ Encrypt data  
A valid DPM encryption certificate must be available on this DPM server. For more information click Help.

☐ Do not compress or encrypt data.

**Tape options for long-term protection**

☒ Compress data

☐ Encrypt data  
A valid DPM encryption certificate must be available on this DPM server. For more information click Help.

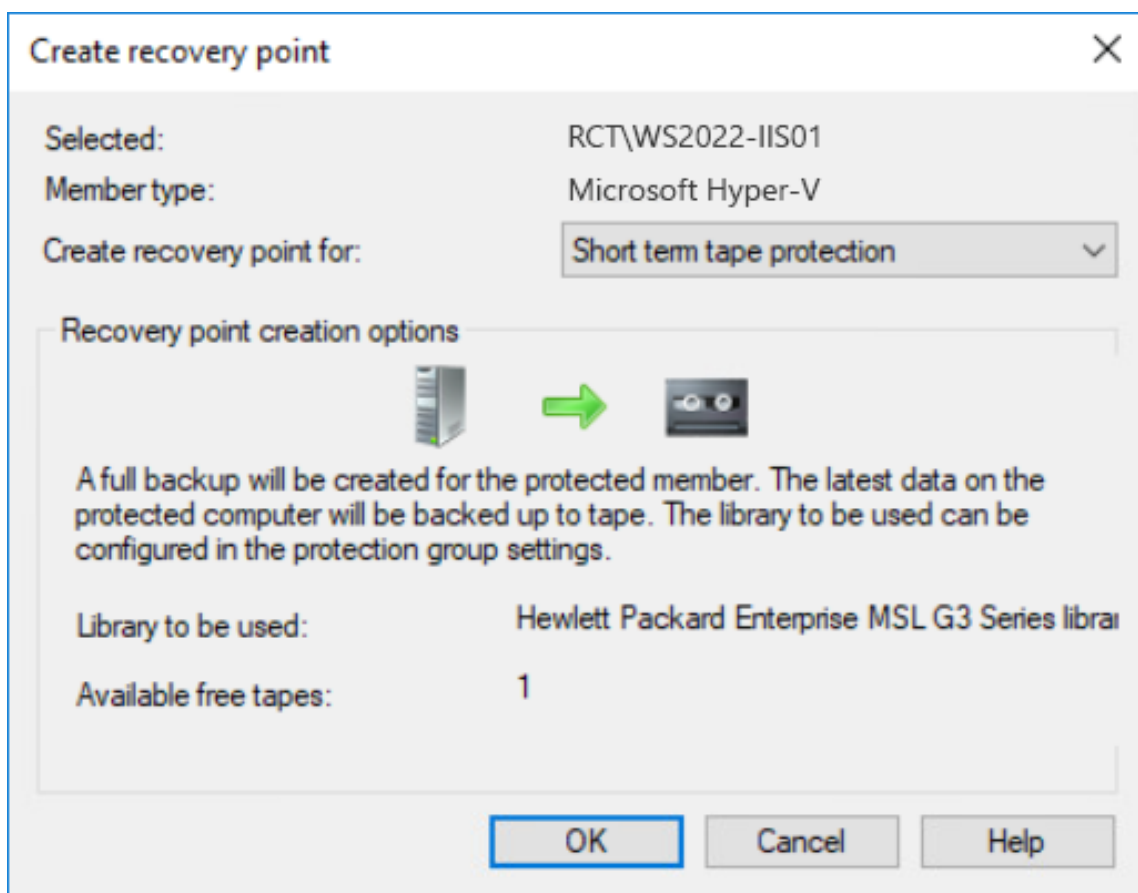
☐ Do not compress or encrypt data.

*i* You can optimize tape usage for this protection group using 'Optimize Tape Usage' on the Libraries Management page.

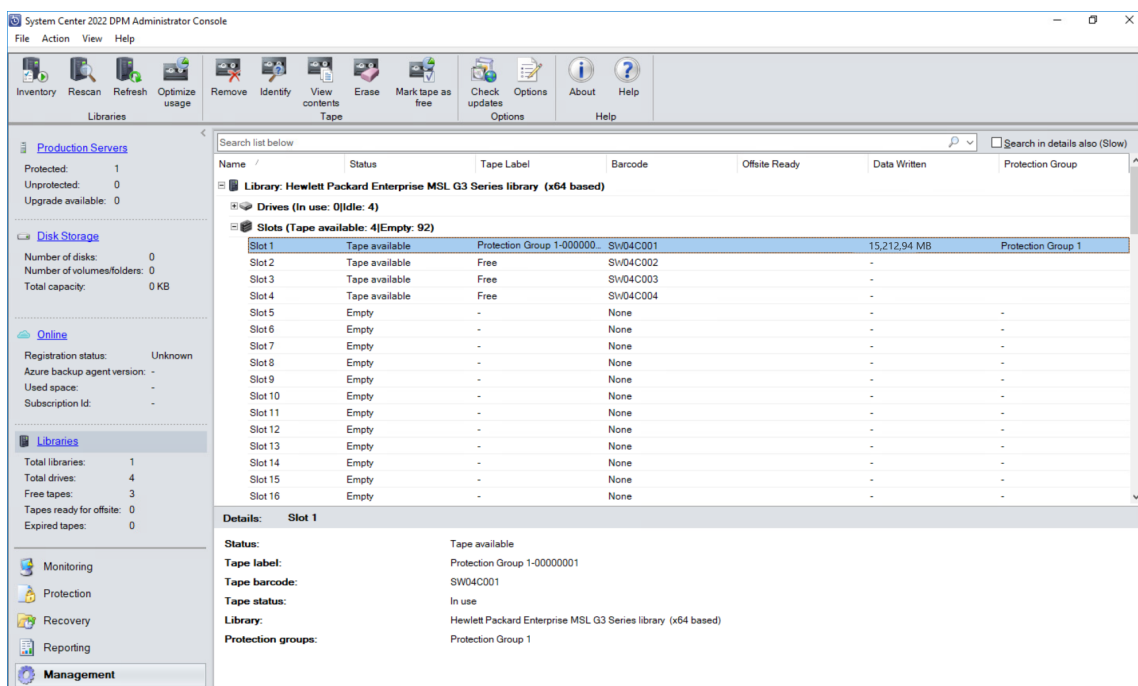
< Back   **Next >**   Cancel   Help

8. Review the Summary and click Create Group.

9. To create a manual recovery point, navigate to the Protection workspace of the Management view, right-click on the protected item and select Create recovery point... Select Short term tape protection or Long term tape protection.

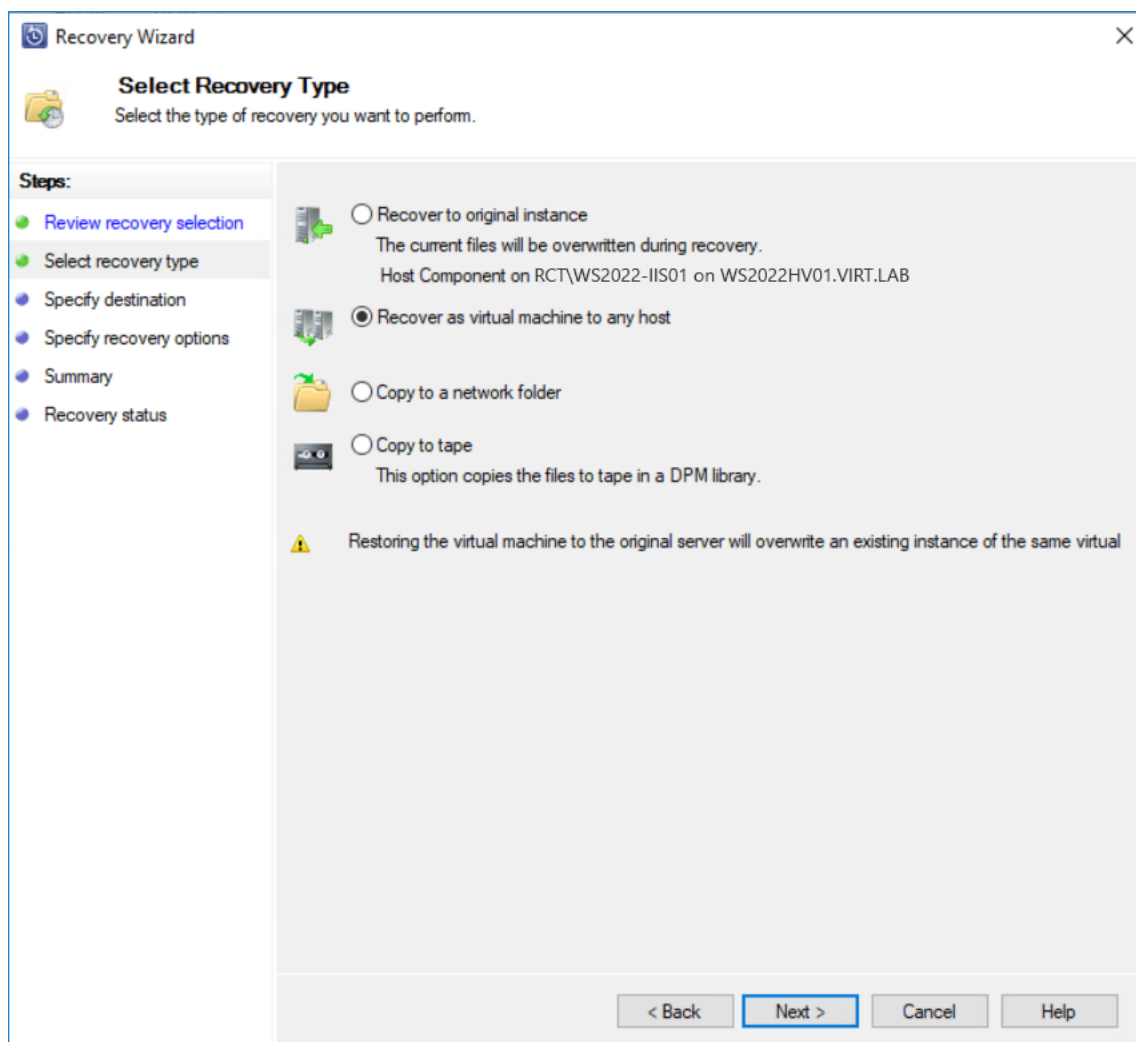


10. Open the Libraries workspace of the Management view, the protection group named "Tape Protection Group 1" is assigned to slot 1.



## Restoring data from tape

1. Make sure that the tape library is online and does not report any errors; this can be done by verifying the alerts in the Monitoring view of the DPM console or in the Libraries workspace of the Management view of the DPM console.
2. In the DPM console, go to Recovery and choose the data source to recover.
3. Mark the data source and choose the data and time for the restore. Right-click on the data source and choose Recover... to start the Recovery wizard.
4. In the Review Recovery Selection wizard, review the data source that is chosen for recovery and click on Next to continue.
5. In the Select Recovery Type wizard, choose one of the recovery options:





6. To recover data as a virtual machine, select Recover as virtual machine to any host option.

7. In the Specify Destination wizard, select the location to recover the virtual machine to.

**Recovery Wizard**

**Specify Destination**  
Specify where you want to recover the virtual machine.

**Steps:**

- Review recovery selection
- Select recovery type
- Specify destination
- Specify recovery options
- Summary
- Recovery status

Specify where you want to recover the virtual machine.

☐ Destination host uses remote storage.

All the files will be copied inside a folder named WS2022-IIS01\_10-11-2023\_8.20.39' in the copy destination.

Destination host: WS2022-HV03.VIRT.LAB Browse...

Destination path: D:\VMs

Space required: 14.86 GB

Space available: 640.47 GB

< Back   Next >   Cancel   Help

8. In the Specify Recovery Options wizard, configure specific options for the recovery.  
NOTE: Make sure to choose the library that hosts all the tapes that are needed for the recovery.

The screenshot shows the 'Specify Recovery Options' window of the Recovery Wizard. On the left, a 'Steps' pane lists: Review recovery selection, Select recovery type, Specify destination, Specify recovery options (highlighted), Summary, and Recovery status. The main area contains the following sections:

- Recovery library:** A text box stating 'All the tapes needed for recovery needs to be present in this library.' Below it, a dropdown menu for 'Library name' is set to 'Hewlett Packard Enterprise MSL G3 Series library (x64 basec)'.
- Network bandwidth usage throttling:** A section with 'Status: Disabled' and a 'Modify...' link.
- SAN Recovery:** A section with an unchecked checkbox 'Enable SAN based recovery using hardware snapshots' and a link 'Click on Help to learn about the prerequisite steps'.
- Notification:** A section with an unchecked checkbox 'Send an e-mail when this recovery completes'. Below it is a 'Recipients:' text box with an up/down arrow. To the right, it says 'Separate e-mail addresses with comma. Example: Kim@Contoso.com, Terry@Adventure-works.com'.

At the bottom right, there are four buttons: '< Back', 'Next >' (highlighted with a blue border), 'Cancel', and 'Help'.

9. In the Summary step, verify the recovery settings, and click Recover to start the process of recovering the virtual machine to a different host.

NOTE: DPM uses a scratch before it sends the data to the selected data source. It is very important that the DPM %systemdrive% server has more than 10 GB of free disk space. DPM supports item-level recovery (ILR), which allows performing a specific recovery of files, folders, volumes, and virtual hard disks from a host-level backup of Hyper-V virtual machines to a network share or a volume on a DPM protected server. However, ILR is not supported when restoring from tapes. Only an entire VM or a single virtual hard disk can be restored.

10. To restore files from the cloud storage, please navigate to the Restoring tapes from the cloud storage section.

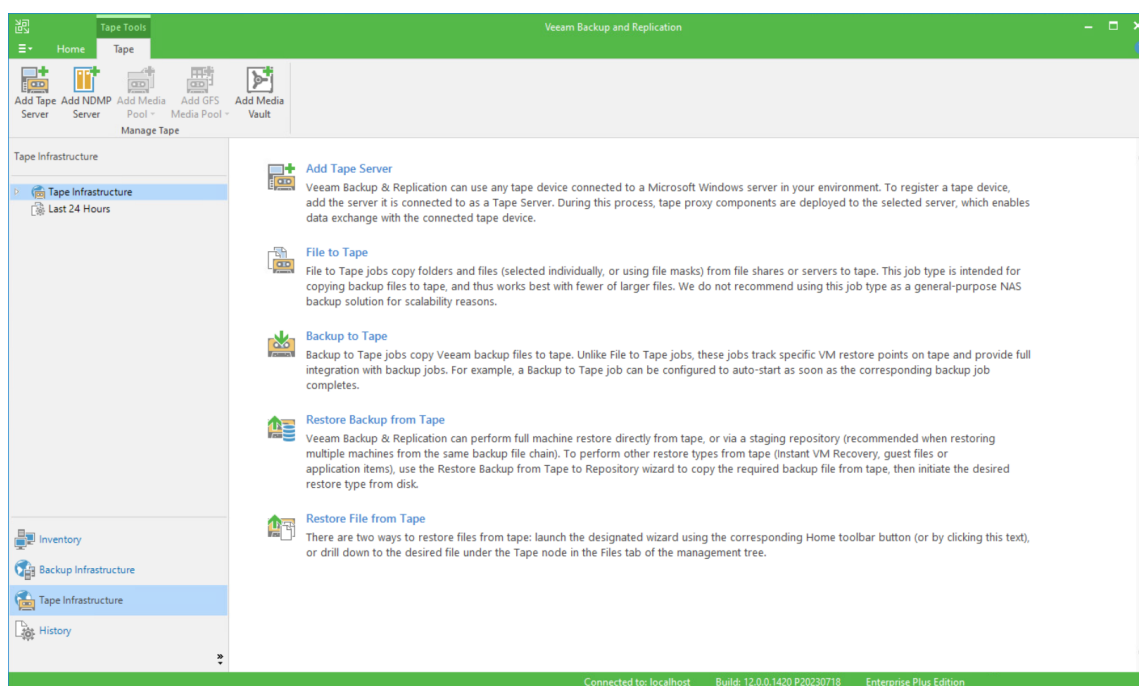
## Veeam Backup & Replication

In case of any question regarding Veeam Backup & Replication deployment, please refer the following link:

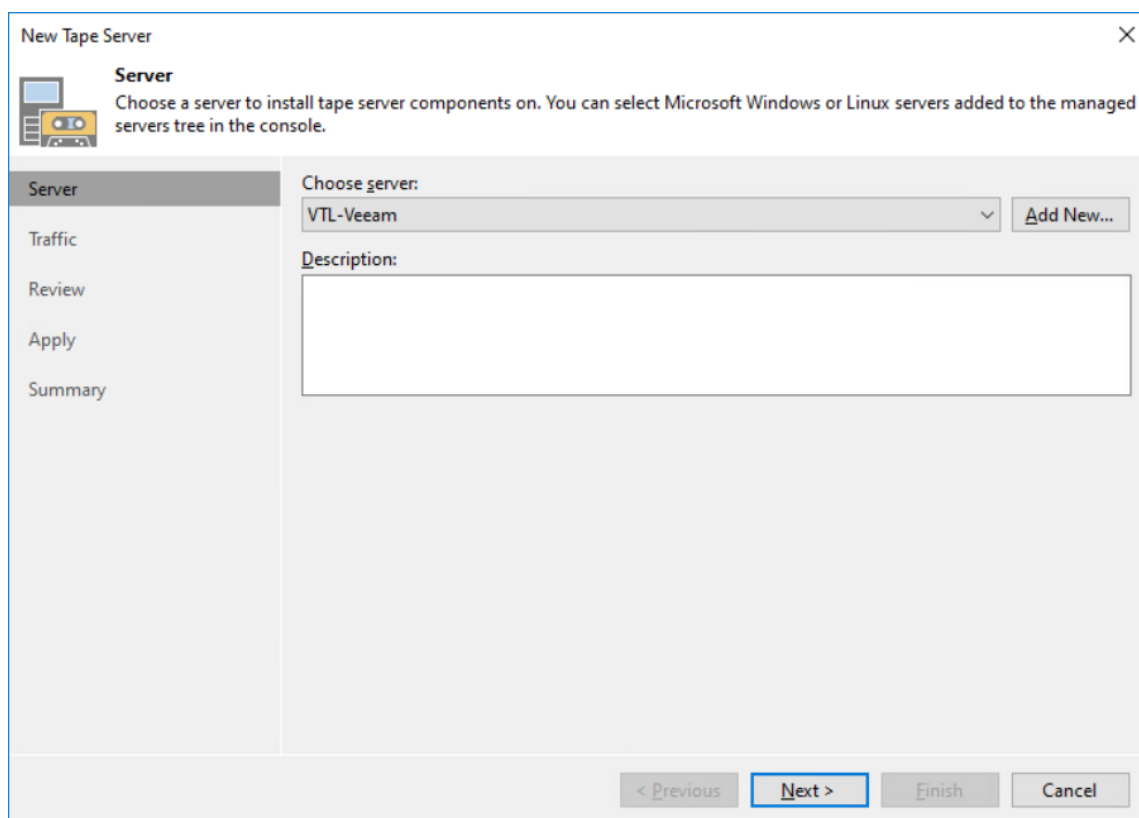
<https://www.veeam.com/documentation-guides-datasheets.html?ad=menu-resources>

Adding StarWind VTL to the Veeam Inventory

1. Open Veeam Backup & Replication. Open the Tape Infrastructure tab.

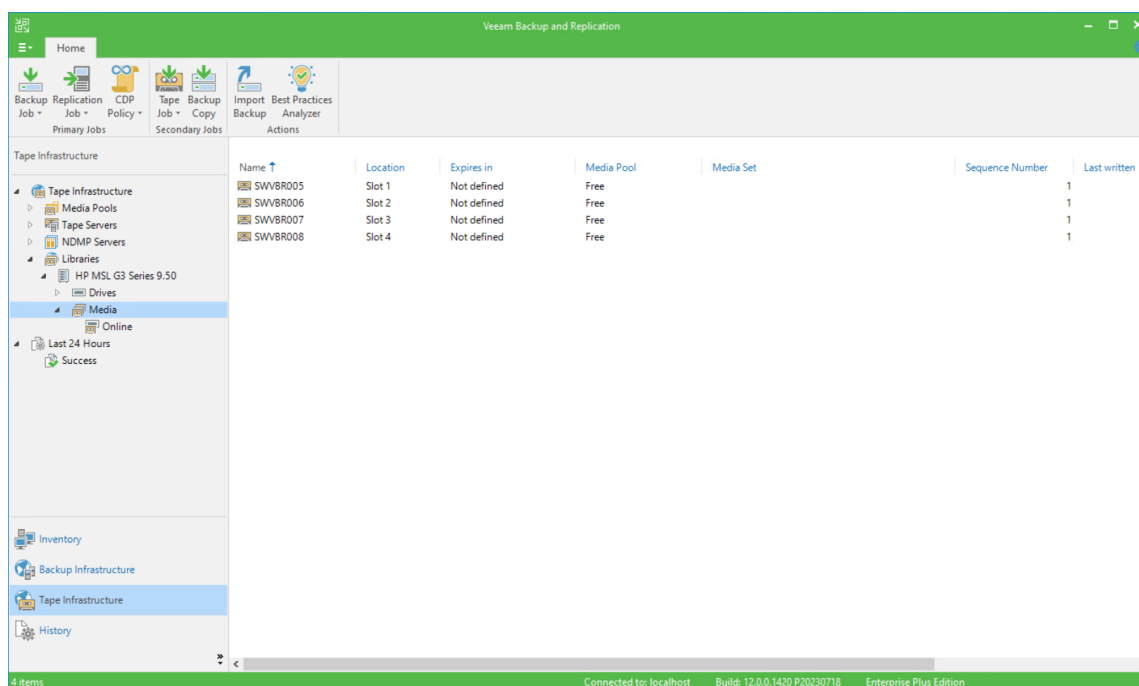


2. Open the Add Tape Server wizard. Choose the local server and press Next.

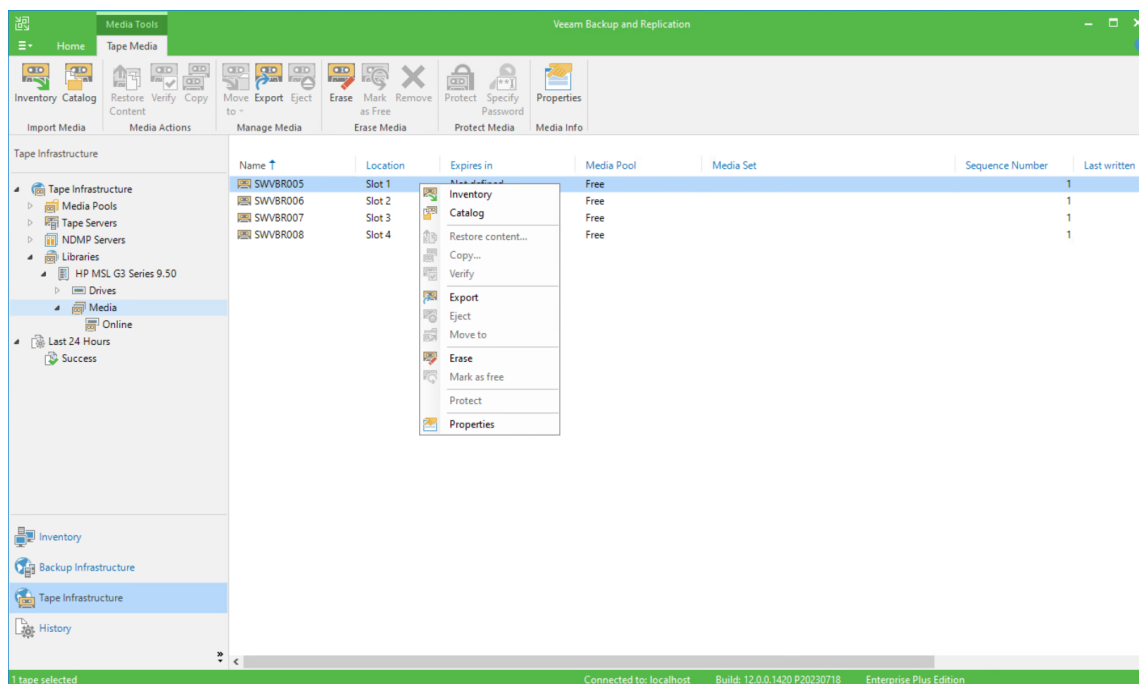


3. Complete the wizard, select Start tape library inventory when I click Finish and press the Finish button.

4. After Tape Inventory job is finished, the newly added tape library device will appear.

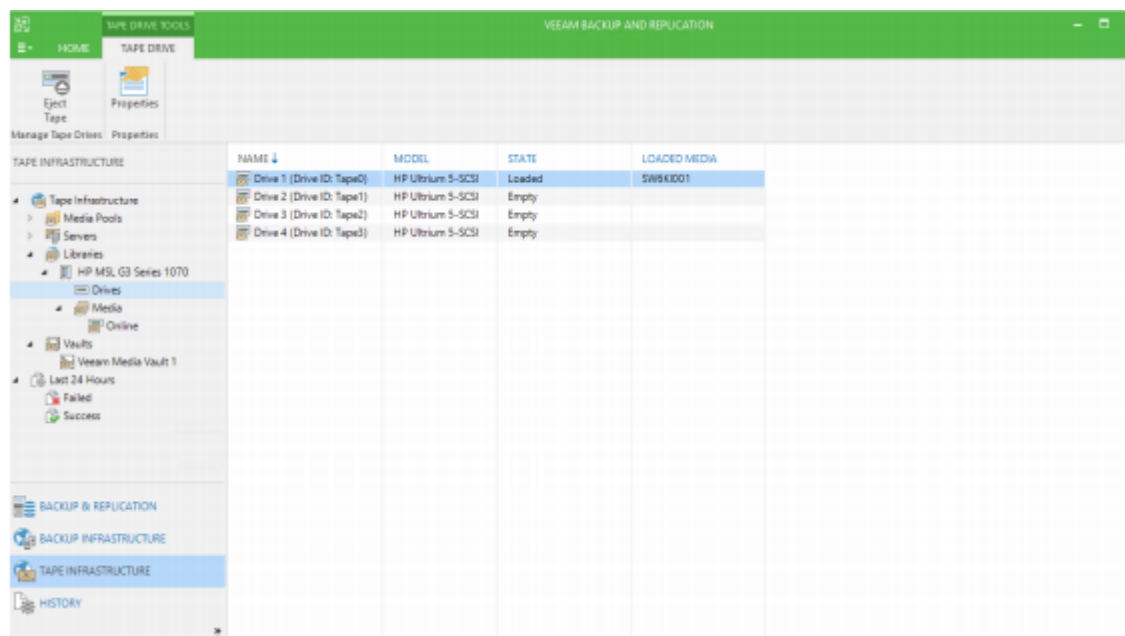


5. To erase Inventory and Catalog tapes, click Media and right-click the required tape.

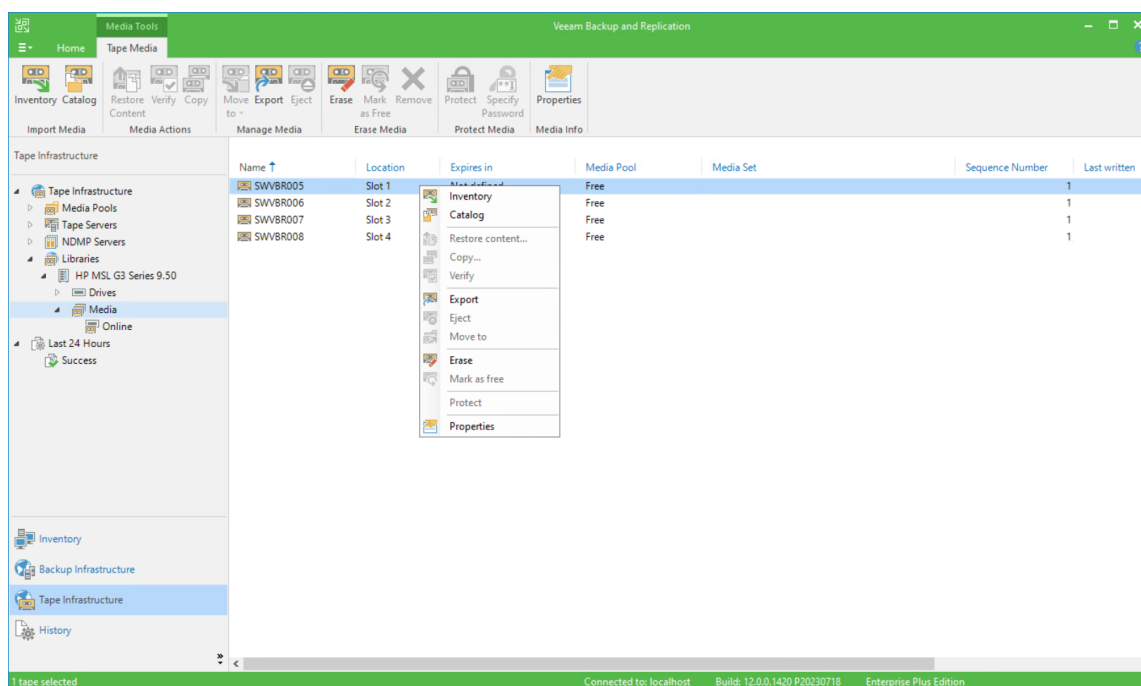


Configuring back up to Tape Job in Veeam

1. Before using the new tape, erase it. The tape will be loaded into Drive.



2. Click Tape Job on the Home tab and select Files to run the File to Tape job wizard.



3. Specify the job Name and Description.

New File to Tape Job

Name

Type in a name and description for this job.

Files and Folders

Full Backup

Incremental Backup

Options

Summary

Name:

File to Tape Job

Description:

< Previous

Next >

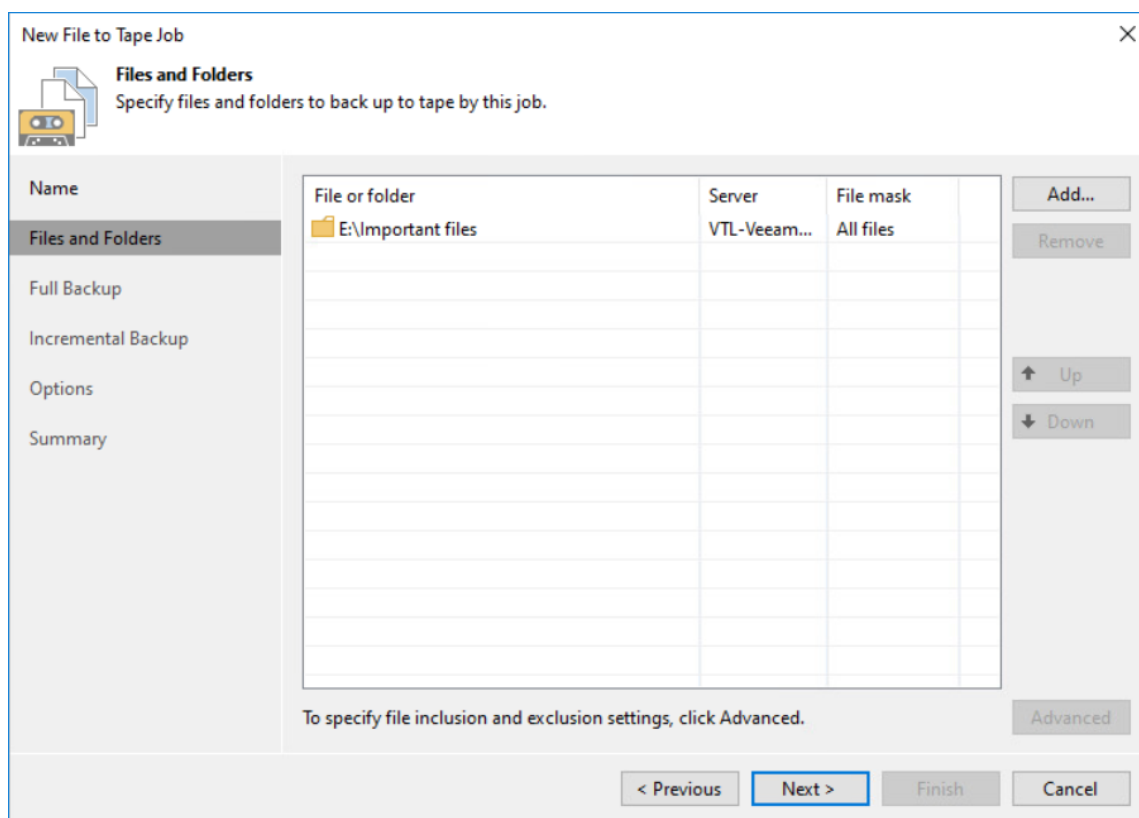
Finish

Cancel

4. Specify the files and folders to be backed up.

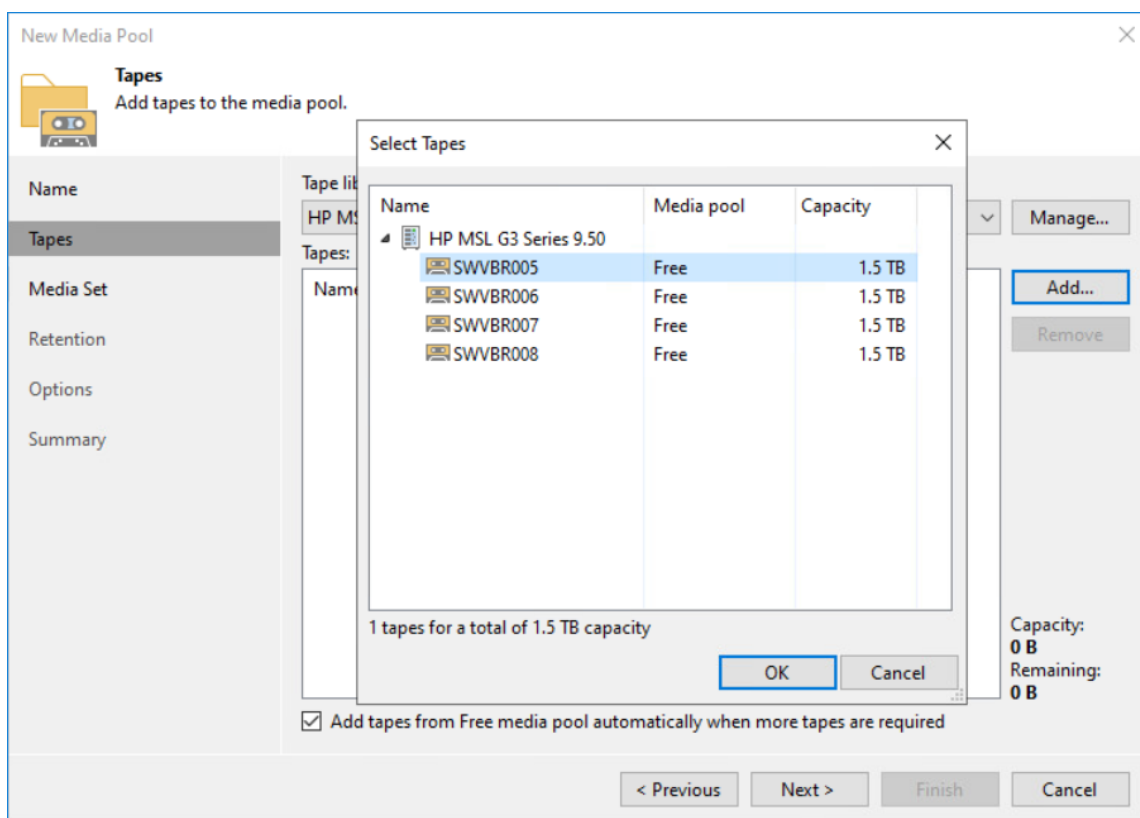
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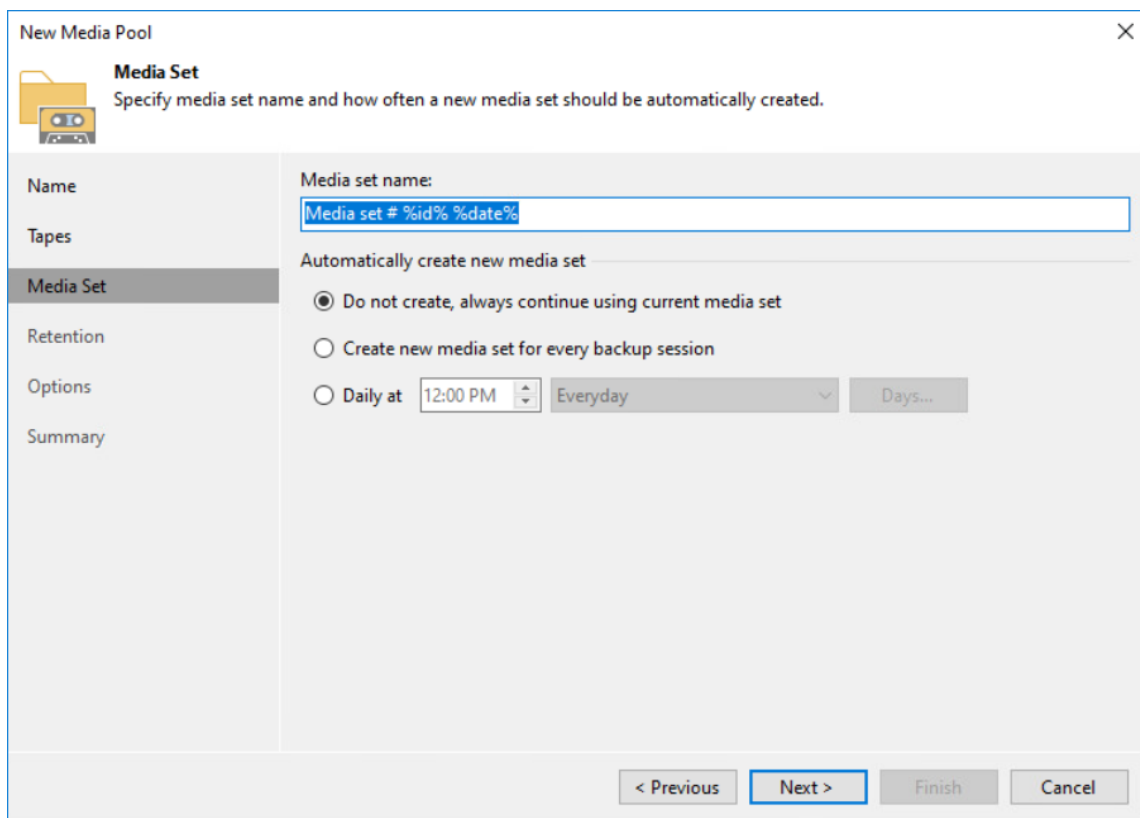


5. In Full Backup, choose the existing media pool or create a new one by clicking the Add New... button. Set the schedule if necessary.

6. Add tapes to the media pool and click OK. Then click Next.

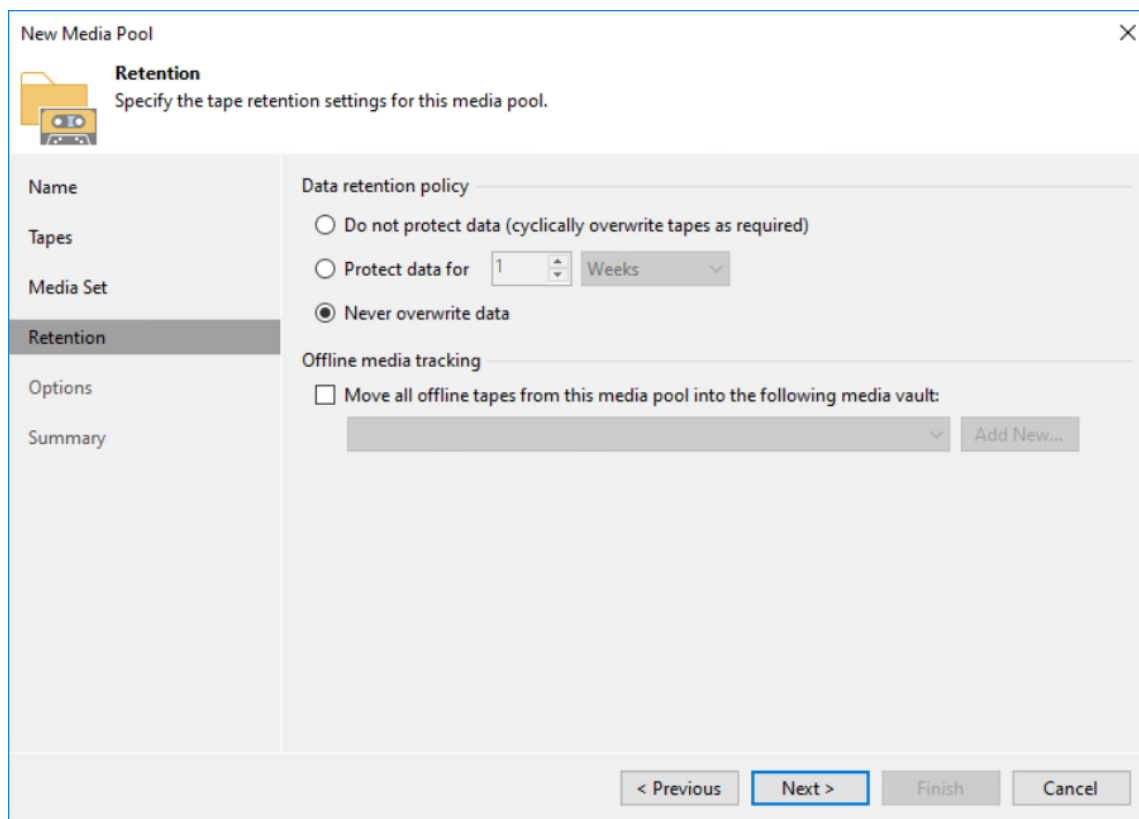


7. Enter Media set name. Specify the automatic creation settings if necessary.





8. Specify the tape Retention settings.



**New Media Pool** [X]

**Retention**  
Specify the tape retention settings for this media pool.

**Left Sidebar:**

- Name
- Tapes
- Media Set
- Retention**
- Options
- Summary

**Main Content Area:**

**Data retention policy**

- ☐ Do not protect data (cyclically overwrite tapes as required)
- ☐ Protect data for
- ☒ Never overwrite data

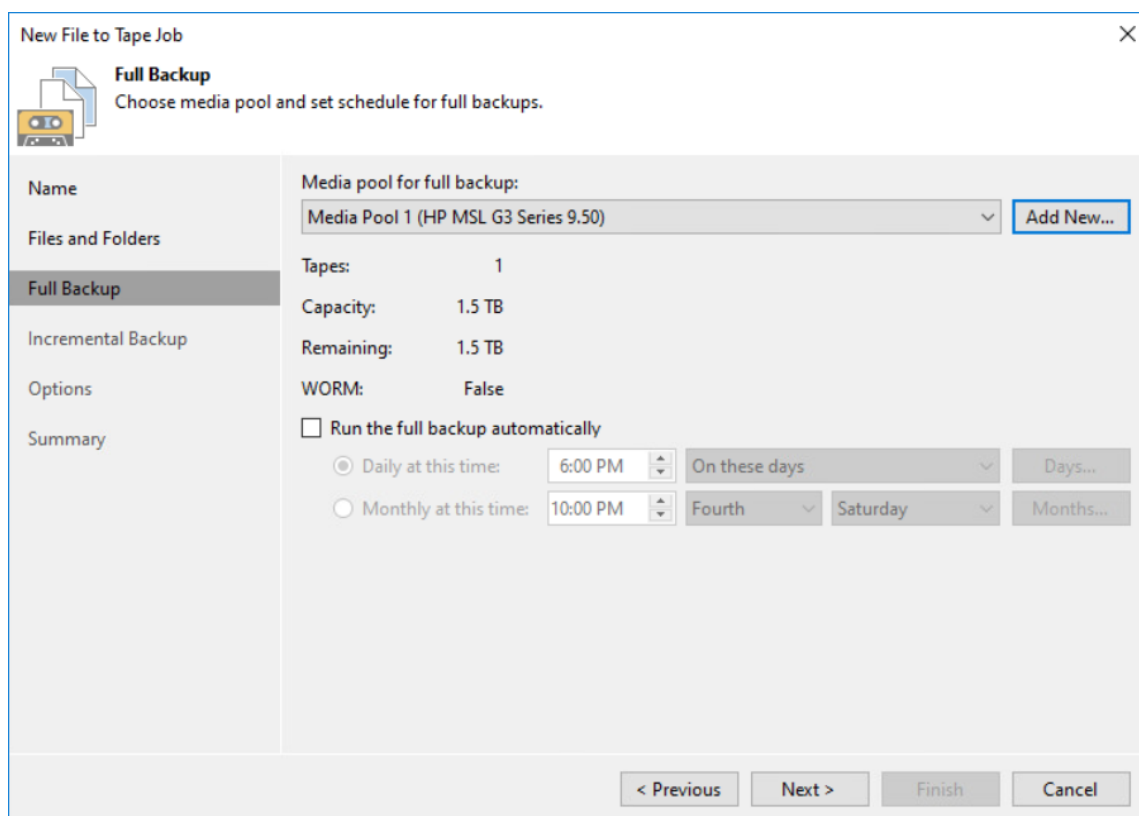
**Offline media tracking**

☐ Move all offline tapes from this media pool into the following media vault:

**Bottom Buttons:** < Previous, Next > (highlighted), Finish, Cancel

9. Check the summary and click Finish.

10. Select Media pool for full backup and set the schedule if necessary. Click Next.



**New File to Tape Job** [X]

**Full Backup**  
Choose media pool and set schedule for full backups.

**Left Panel (Tabs):**

- Name
- Files and Folders
- Full Backup**
- Incremental Backup
- Options
- Summary

**Main Content Area:**

Media pool for full backup:  
 Media Pool 1 (HP MSL G3 Series 9.50) [v] **Add New...**

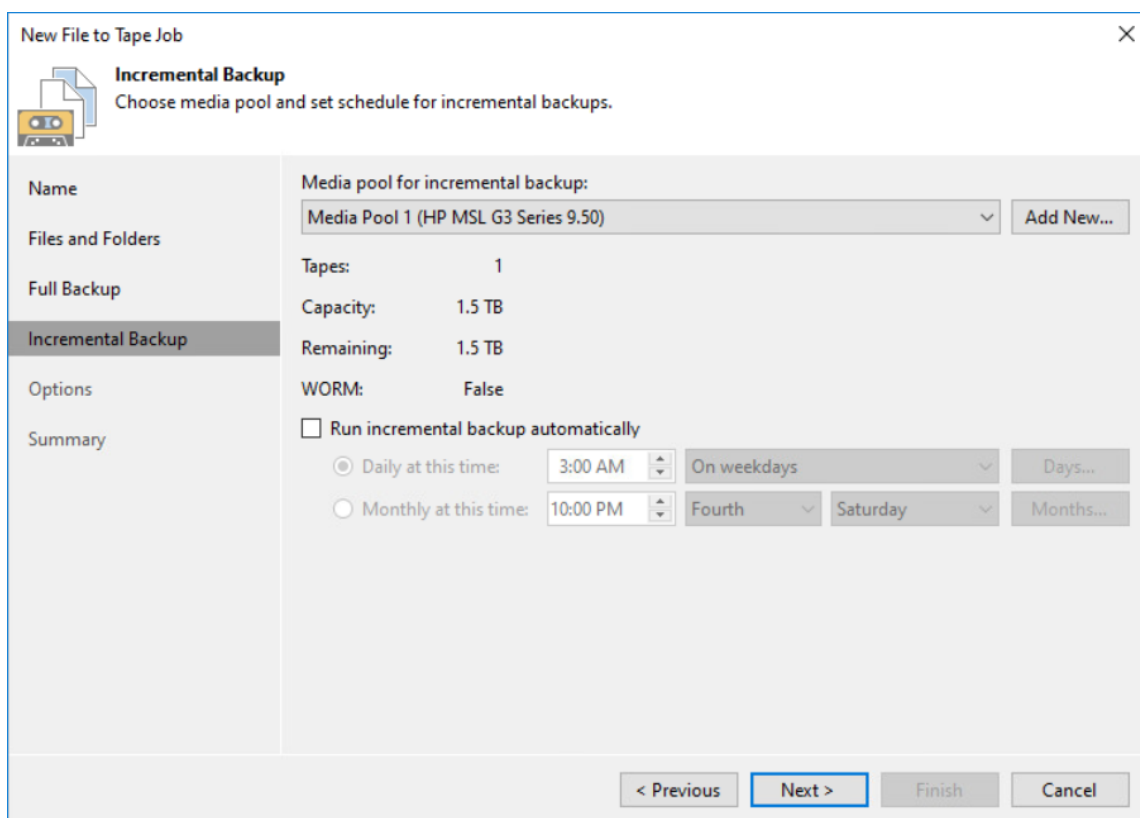
Tapes: 1  
 Capacity: 1.5 TB  
 Remaining: 1.5 TB  
 WORM: False

☐ Run the full backup automatically

☒ Daily at this time: 6:00 PM [v] On these days: [v] Days...  
☐ Monthly at this time: 10:00 PM [v] Fourth [v] Saturday [v] Months...

**Bottom Buttons:** < Previous, Next >, Finish, Cancel

11. Choose the media pool or add a new one for incremental backup. Optionally, set the schedule.



**New File to Tape Job** [X]

**Incremental Backup**  
Choose media pool and set schedule for incremental backups.

**Name**

**Files and Folders**

**Full Backup**

**Incremental Backup**

**Options**

**Summary**

Media pool for incremental backup:  
Media Pool 1 (HP MSL G3 Series 9.50) [v] [Add New...]

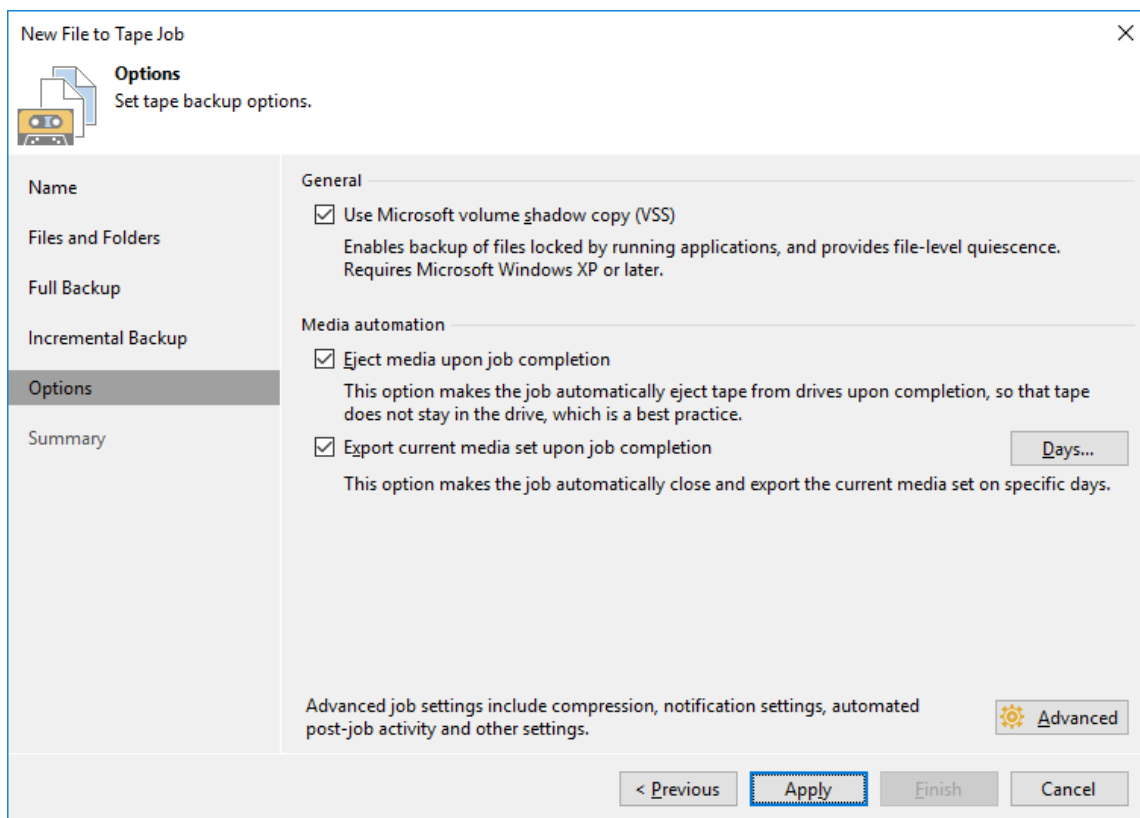
Tapes: 1  
Capacity: 1.5 TB  
Remaining: 1.5 TB  
WORM: False

☐ Run incremental backup automatically

☒ Daily at this time: 3:00 AM [v] On weekdays [v] [Days...]  
☐ Monthly at this time: 10:00 PM [v] Fourth [v] Saturday [v] [Months...]

[< Previous] [Next >] [Finish] [Cancel]

12. Set backup Options and click Apply.



**New File to Tape Job** [X]

**Options**  
Set tape backup options.

**Name**

**Files and Folders**

**Full Backup**

**Incremental Backup**

**Options**

**Summary**

**General**

☒ Use Microsoft volume shadow copy (VSS)  
Enables backup of files locked by running applications, and provides file-level quiescence. Requires Microsoft Windows XP or later.

**Media automation**

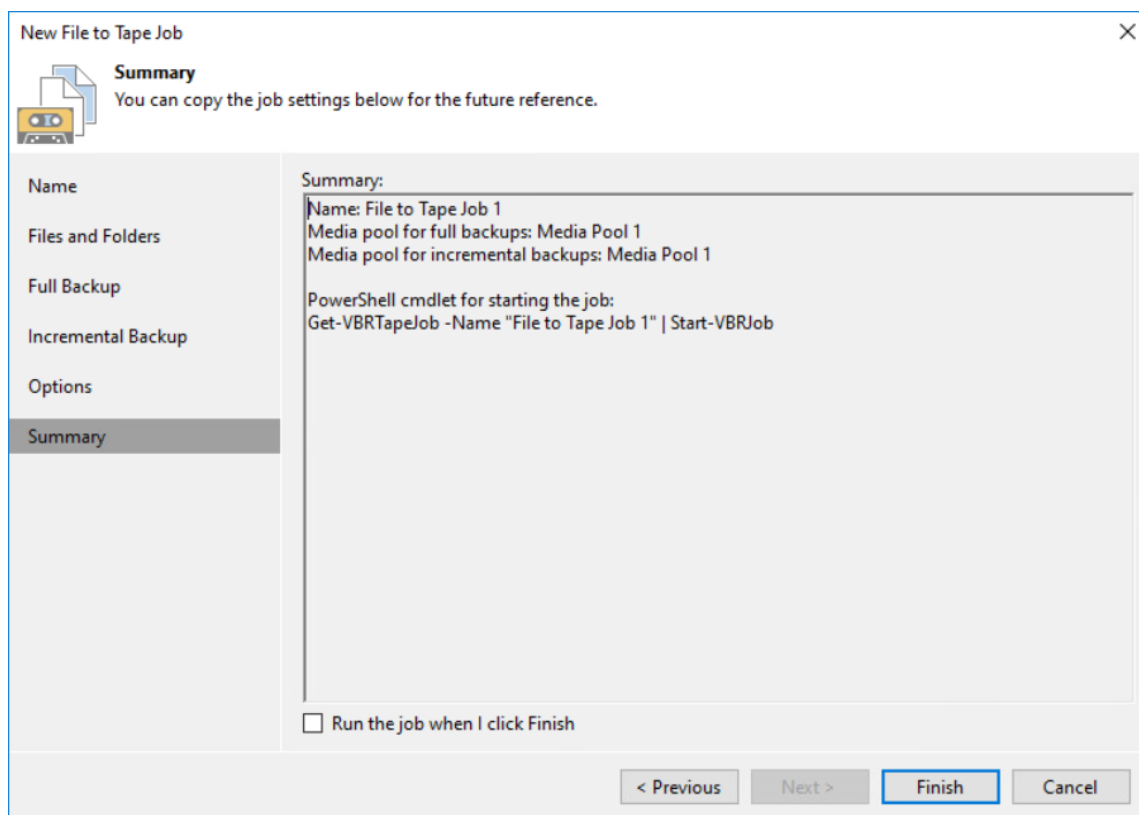
☒ Eject media upon job completion  
This option makes the job automatically eject tape from drives upon completion, so that tape does not stay in the drive, which is a best practice.

☒ Export current media set upon job completion [Days...]  
This option makes the job automatically close and export the current media set on specific days.

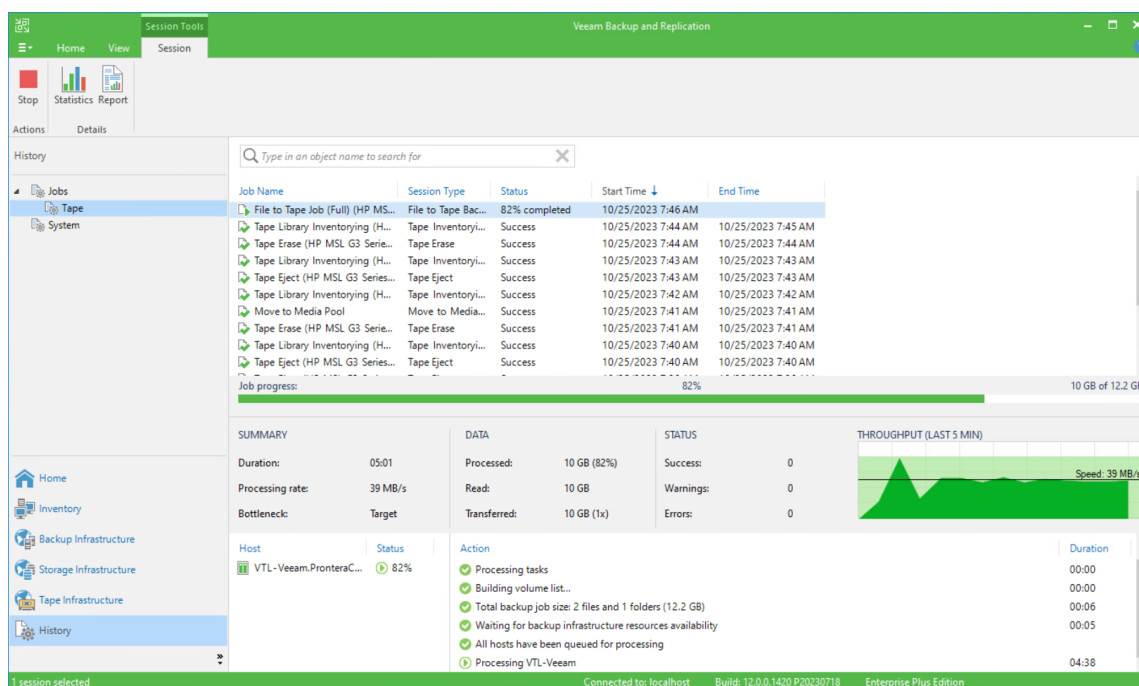
Advanced job settings include compression, notification settings, automated post-job activity and other settings. [Advanced]

[< Previous] [Apply] [Finish] [Cancel]

13. Check the summary. For immediate job execution, select Run the job when I click Finish and click Finish.

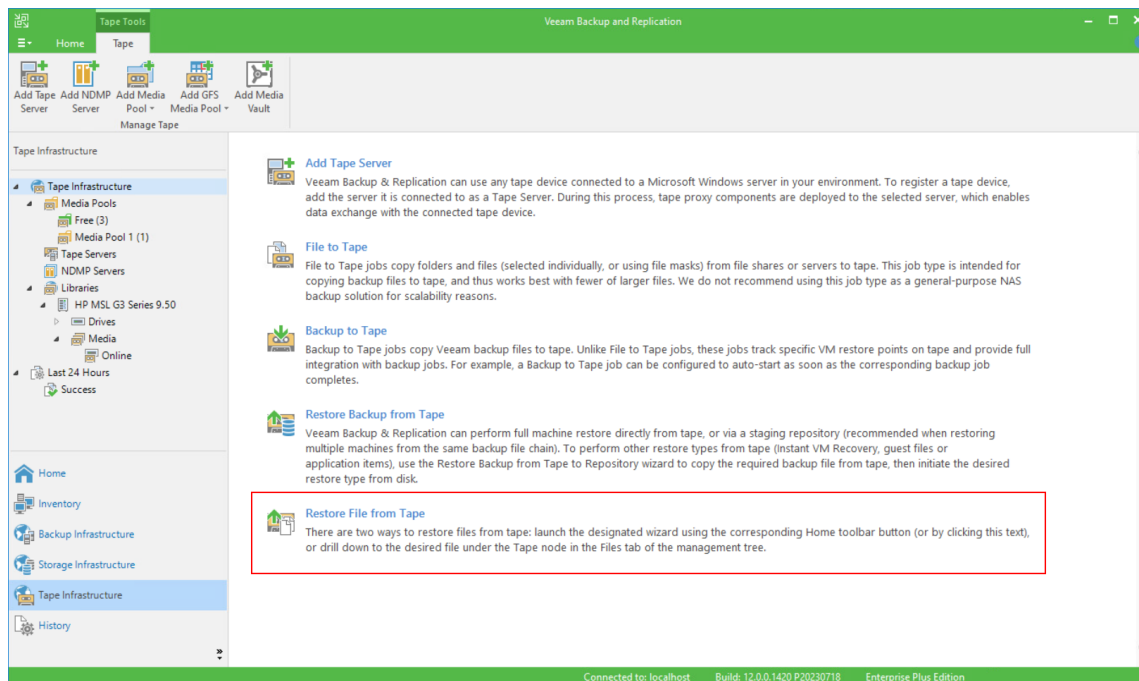


14. The job status and progress can be checked in the History tab.



## Restoring data from tape

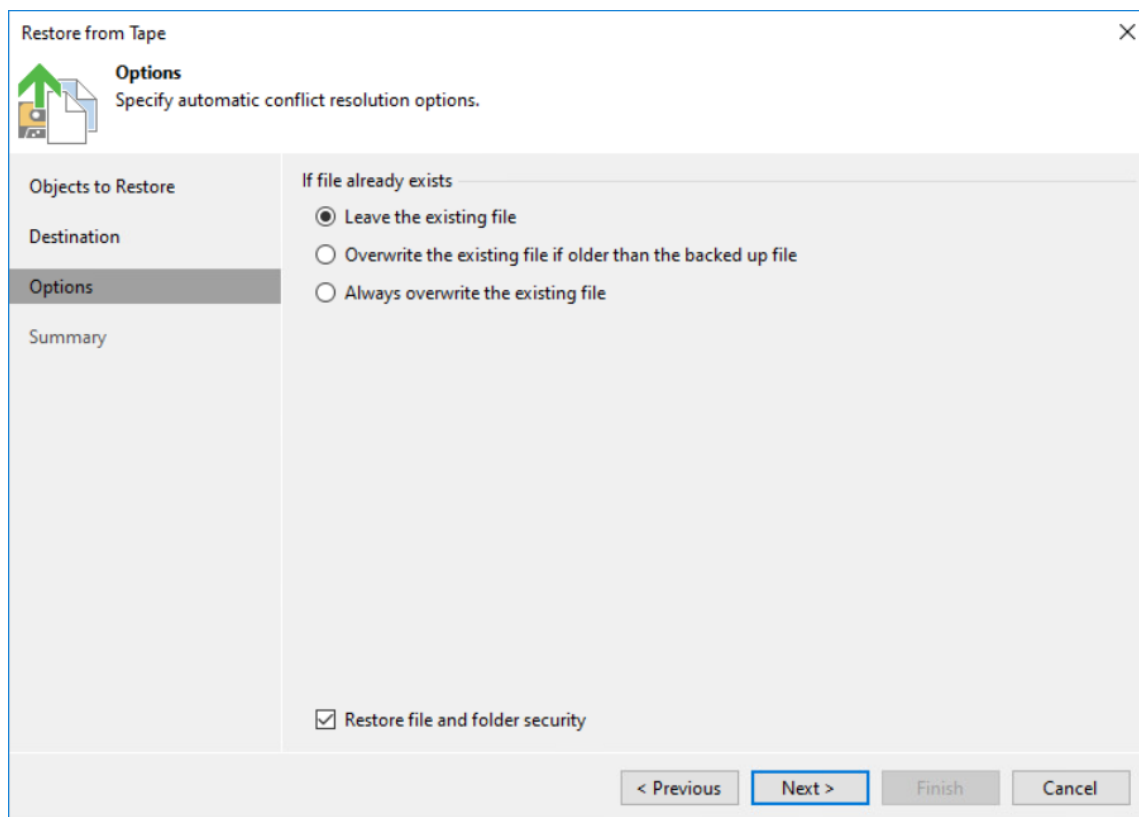
### 1. Click the Restore file from tape.



### 2. Specify files and folders to restore and click Next.

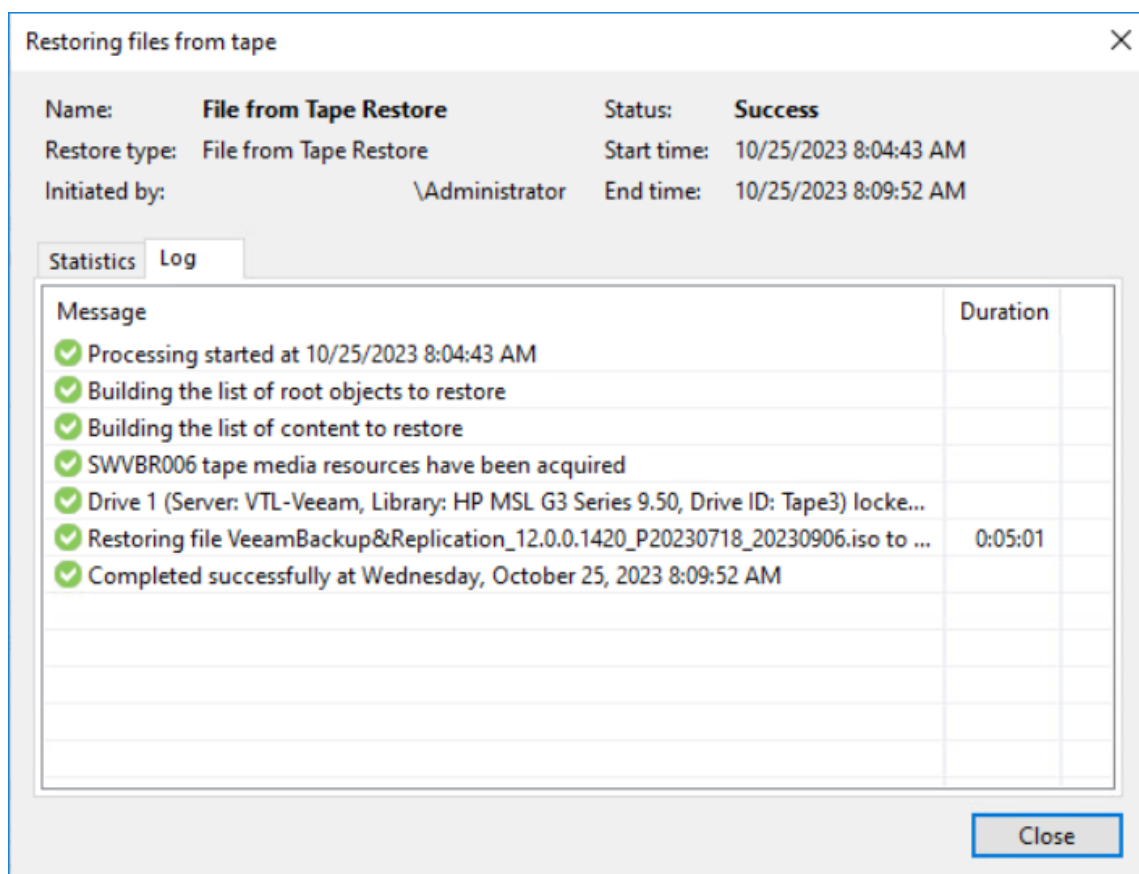


4. Select Automatic conflict resolution options and click Next.



5. Check Summary and click Finish.

6. The restoration progress will appear in the pop-up window or can be checked in the History tab.



## Veritas Backup Exec™

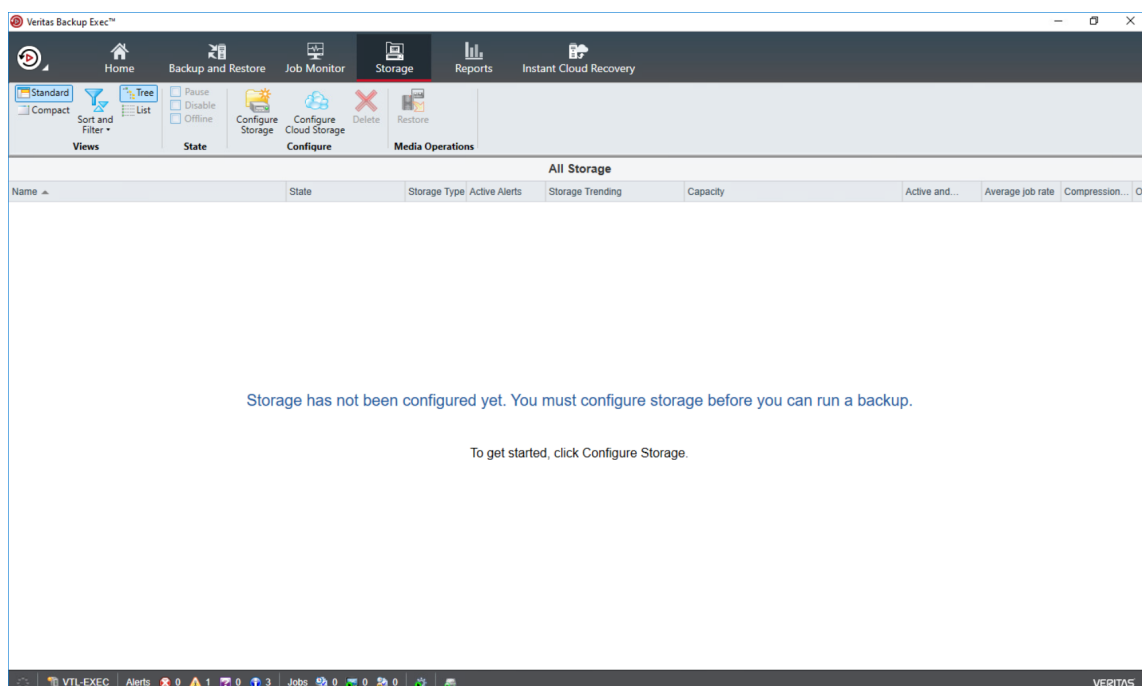
### Adding StarWind VTL Device to Veritas Backup Exec™

In case of any question regarding Veritas Backup Exec™ deployment, please refer the following link:

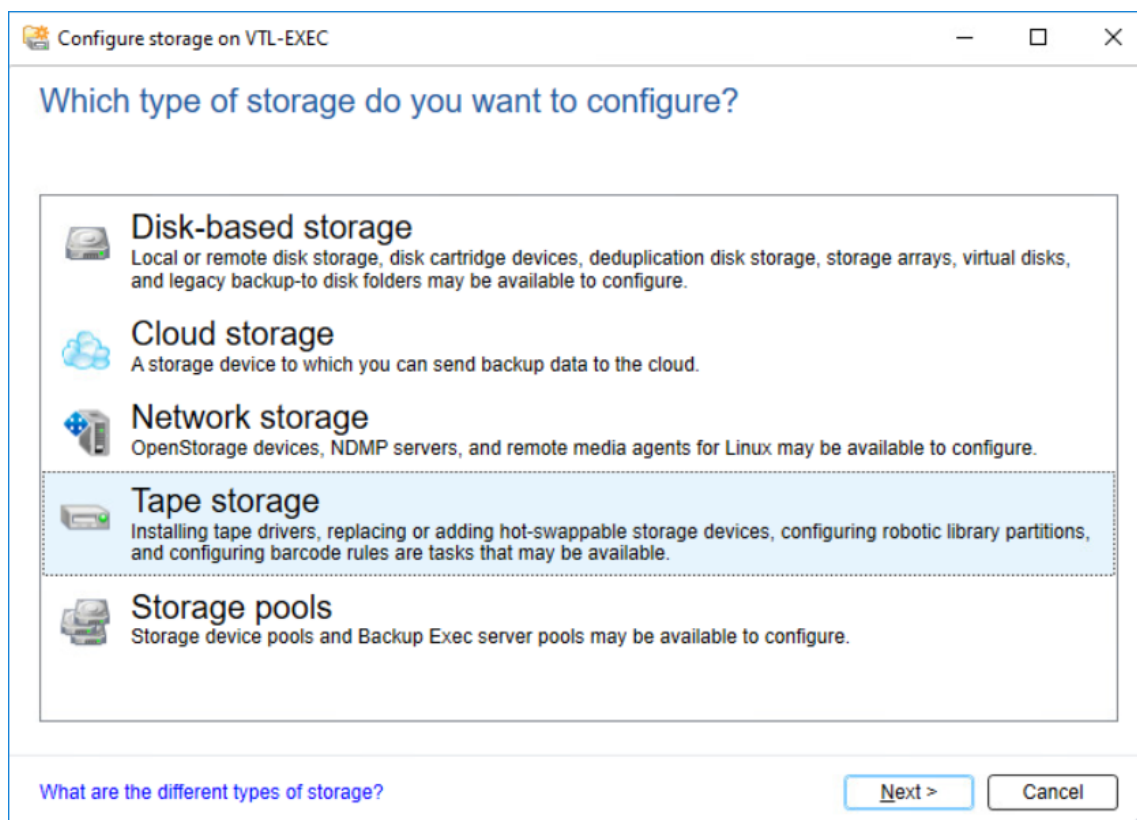
[https://www.veritas.com/content/support/en\\_US/doc/59226269-99535599-0/v59899992-99535599](https://www.veritas.com/content/support/en_US/doc/59226269-99535599-0/v59899992-99535599)

1. In Veritas Backup Exec™ console, click the Storage tab and Configure Storage.





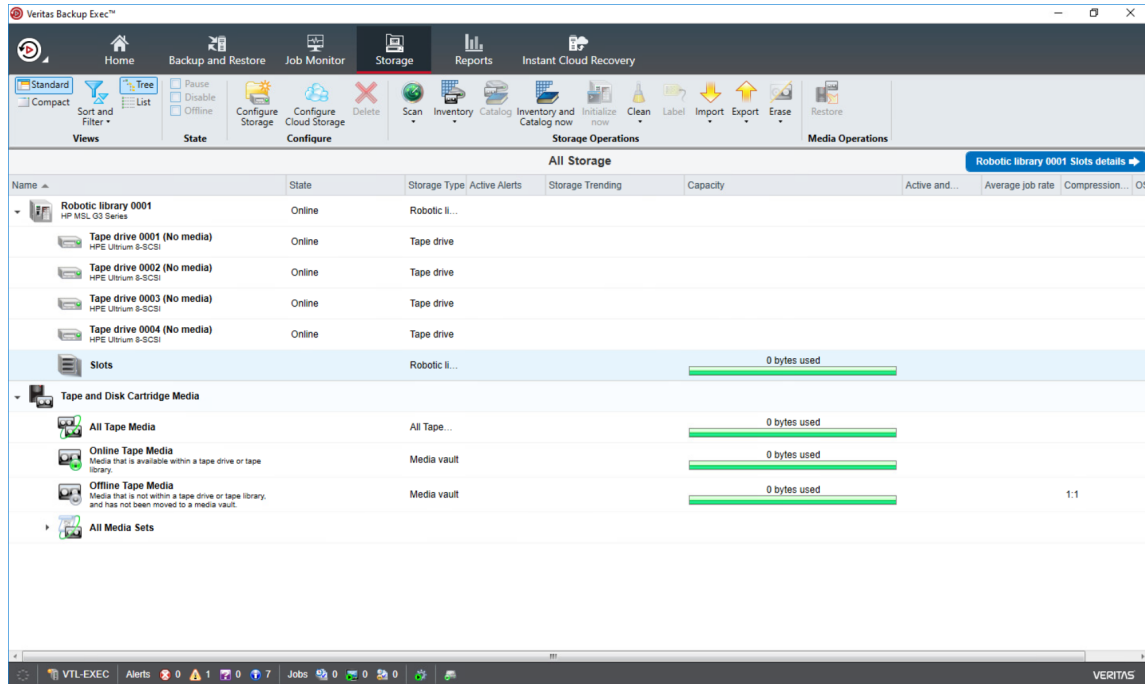
2. In the opened window, select Tape storage and click Next.



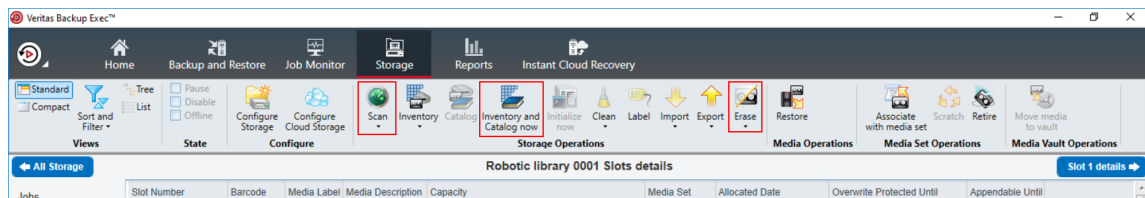
3. Select Run the Hot-swappable Device Wizard and click Next.

4. Follow the steps suggested by Hot-Swappable Device Wizard and to complete it.  
NOTE: If the tape device has not appeared in the Storage tab, initiate the restart.

5. Double-click Slots to scan, erase, inventory and catalog the tapes.



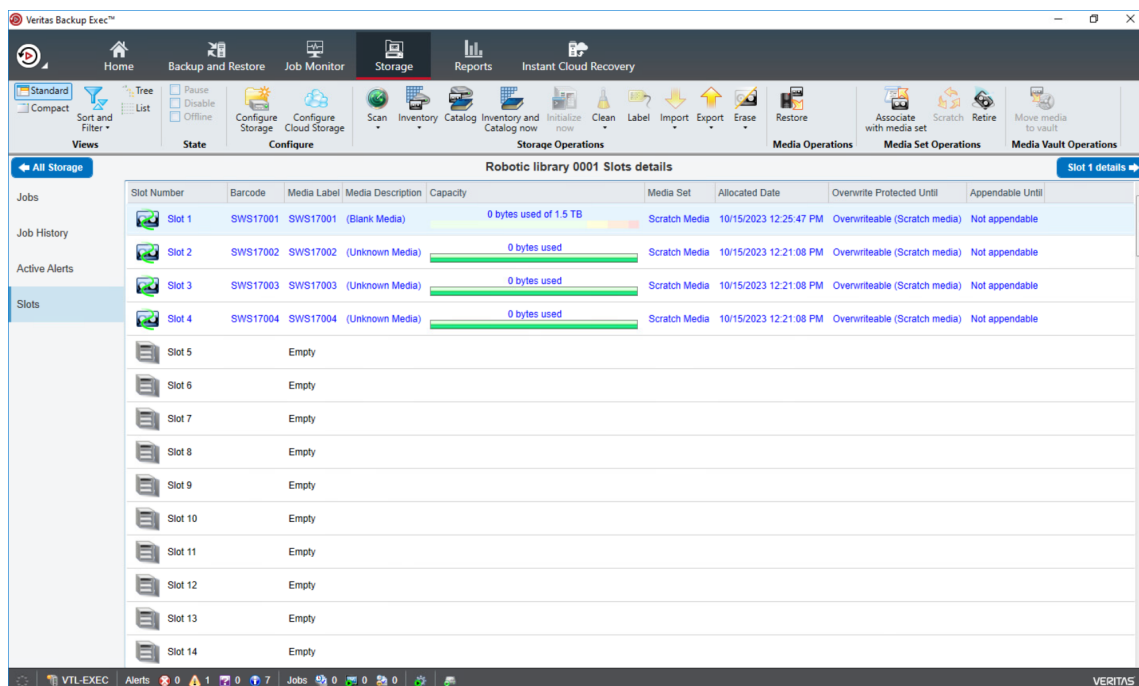
6. Choose the tape and perform the necessary operations.



7. Confirm the data erasure when requested.



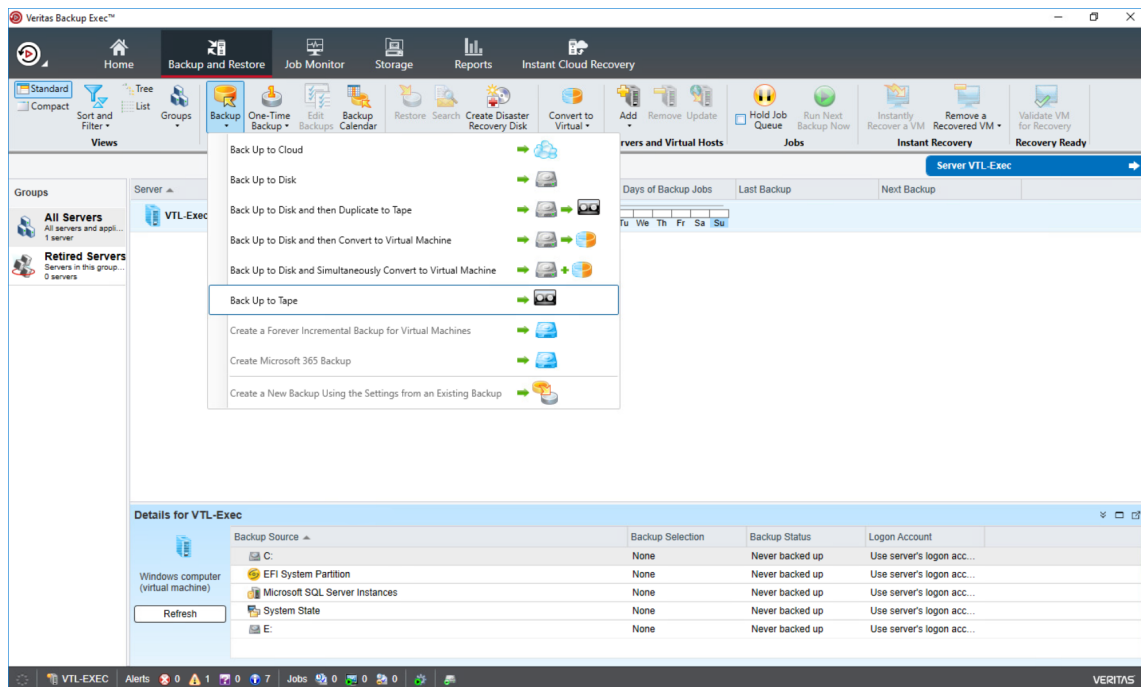
8. The prepared tape should look like in the screenshot below.



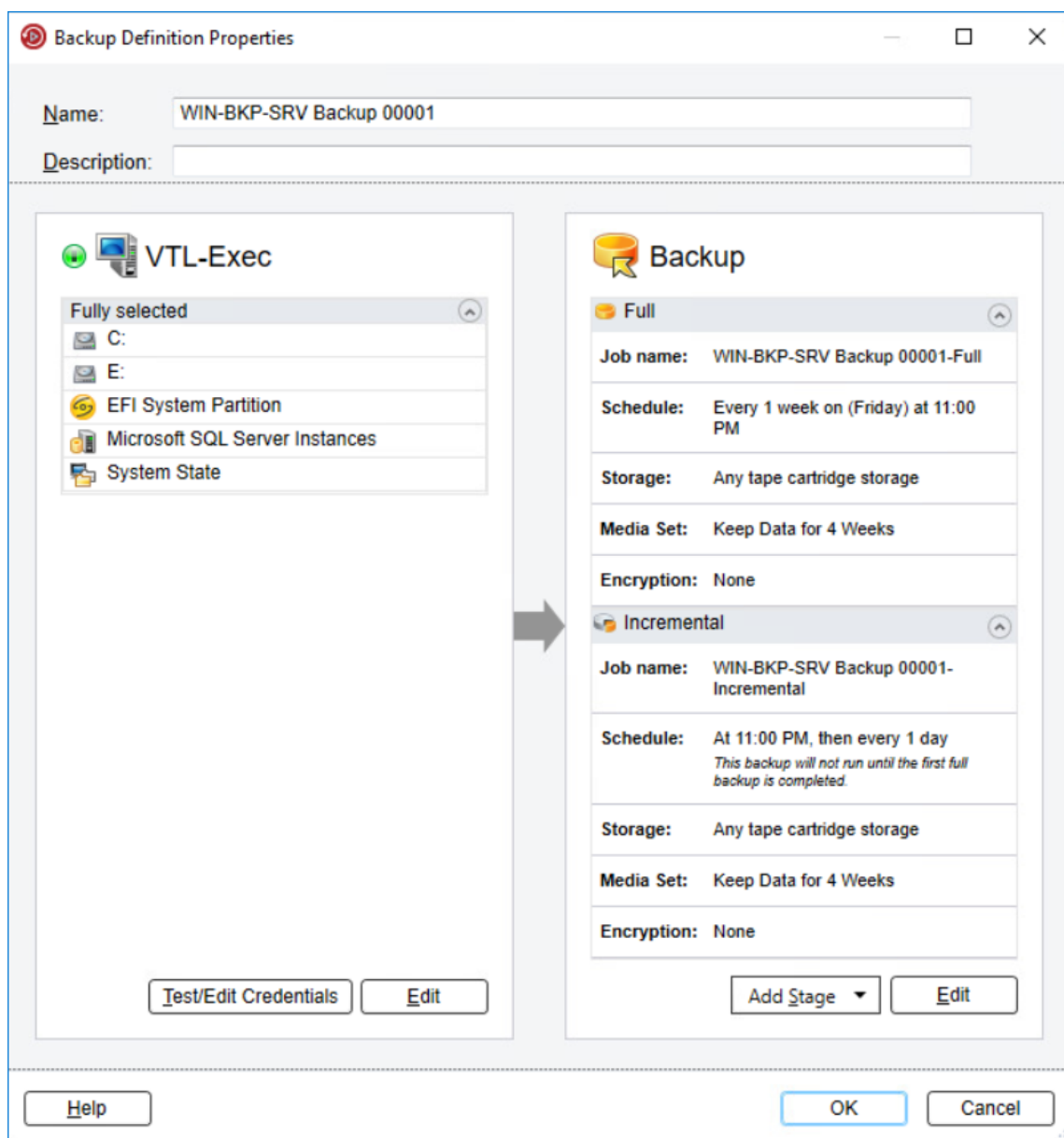
## Configuring Backup to Tape job in Veritas Backup Exec™

In this part, the backup/restore process of the folder is shown as an example.

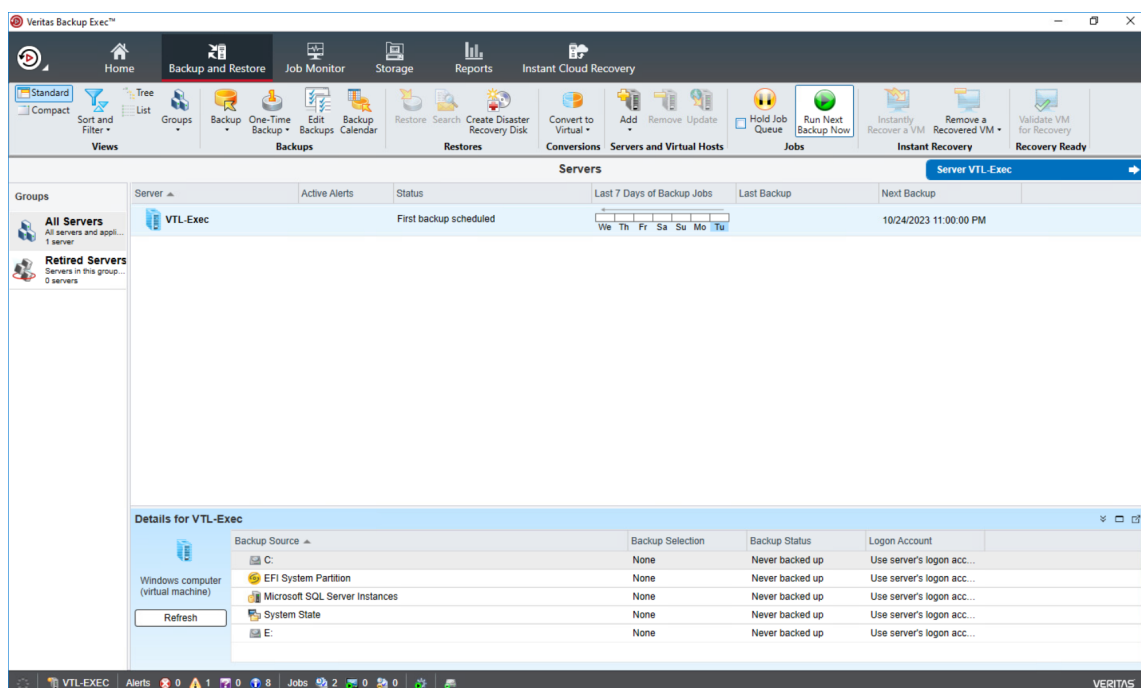
1. In the Backups group, click on the Backup and Restore tab. Click Backup and select Back Up to Tape.



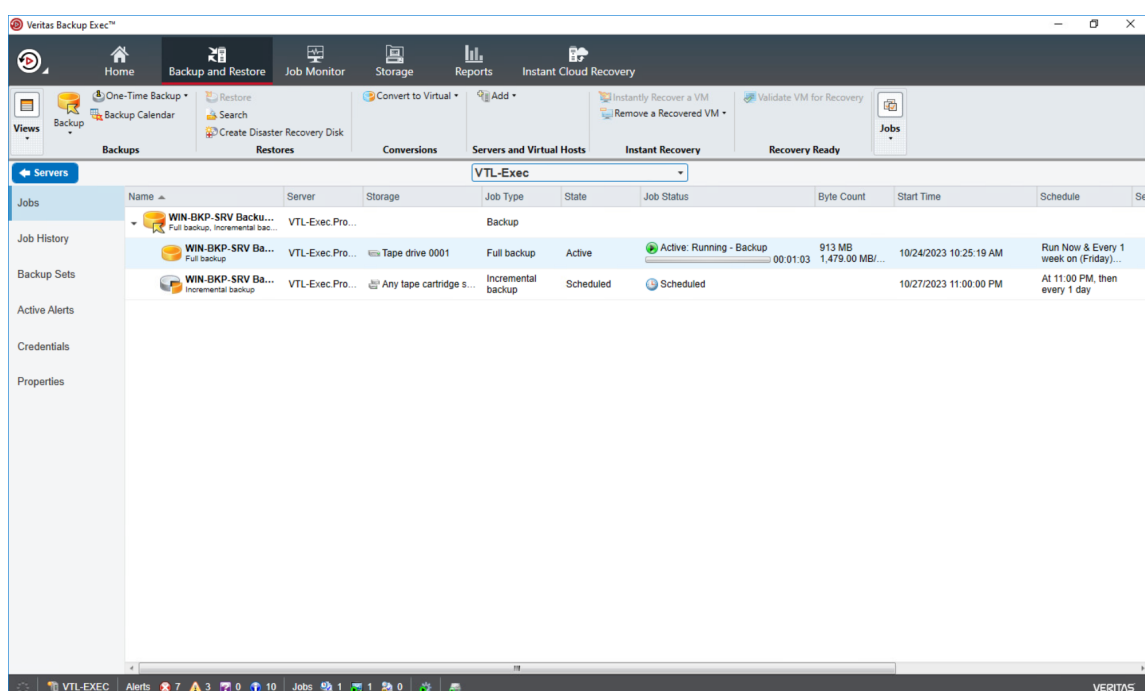
2. Configure the Backup settings and click OK.



3. Once the job is configured, click the appropriate button to start it.



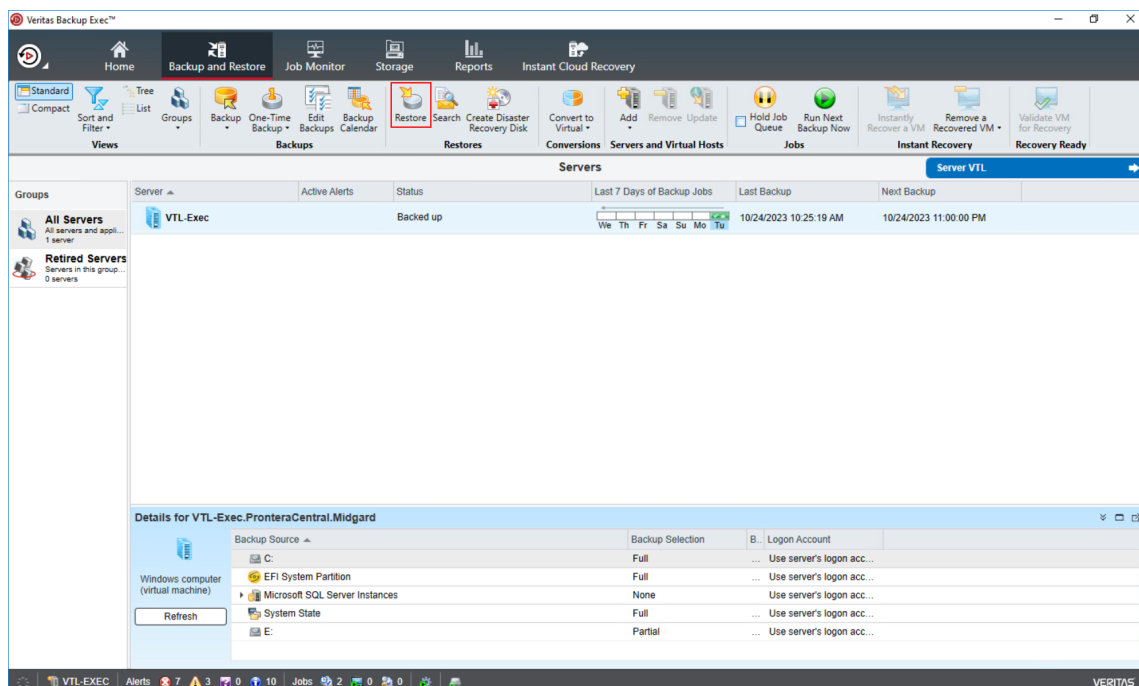
4. When the backup process starts, the progress is shown in the Status section. Double-click on the server to see the details.



5. To check the amount of the occupied storage space, navigate to the Capacity section.

## Restore data from Veritas Backup Exec™

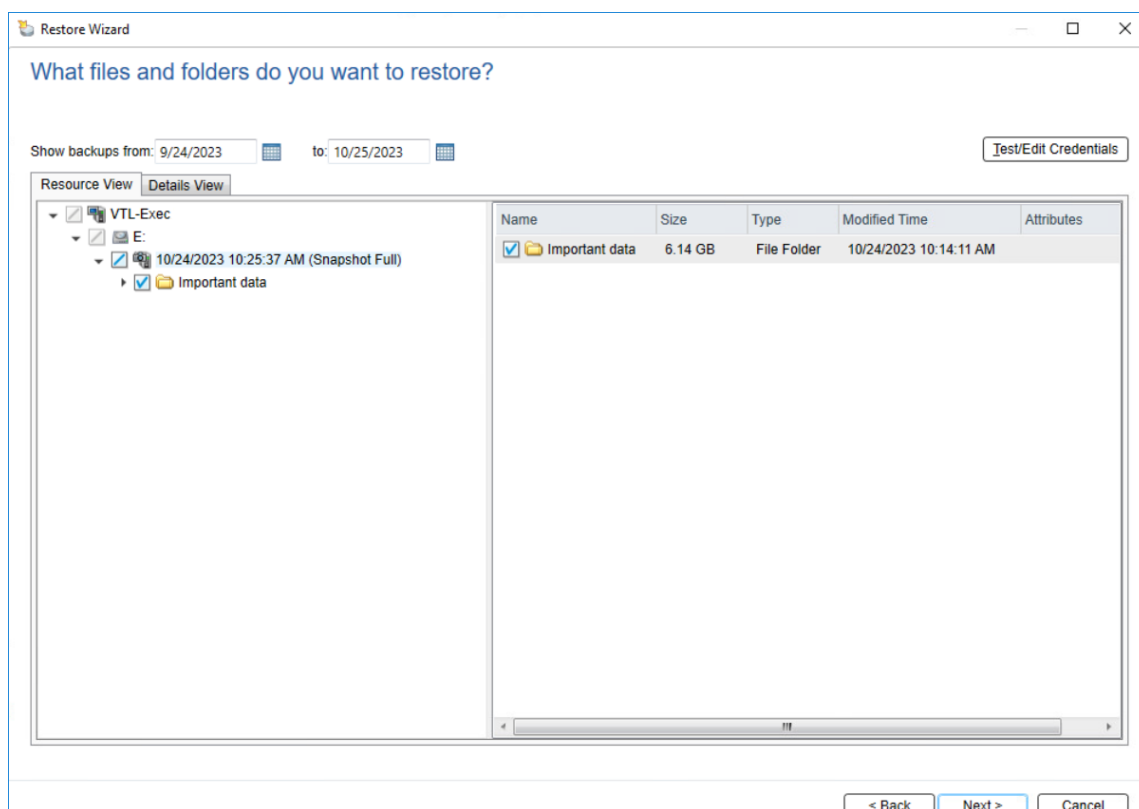
1. To restore data, click Restore in the Backup and Restore tab.



2. Select the type of data to restore.

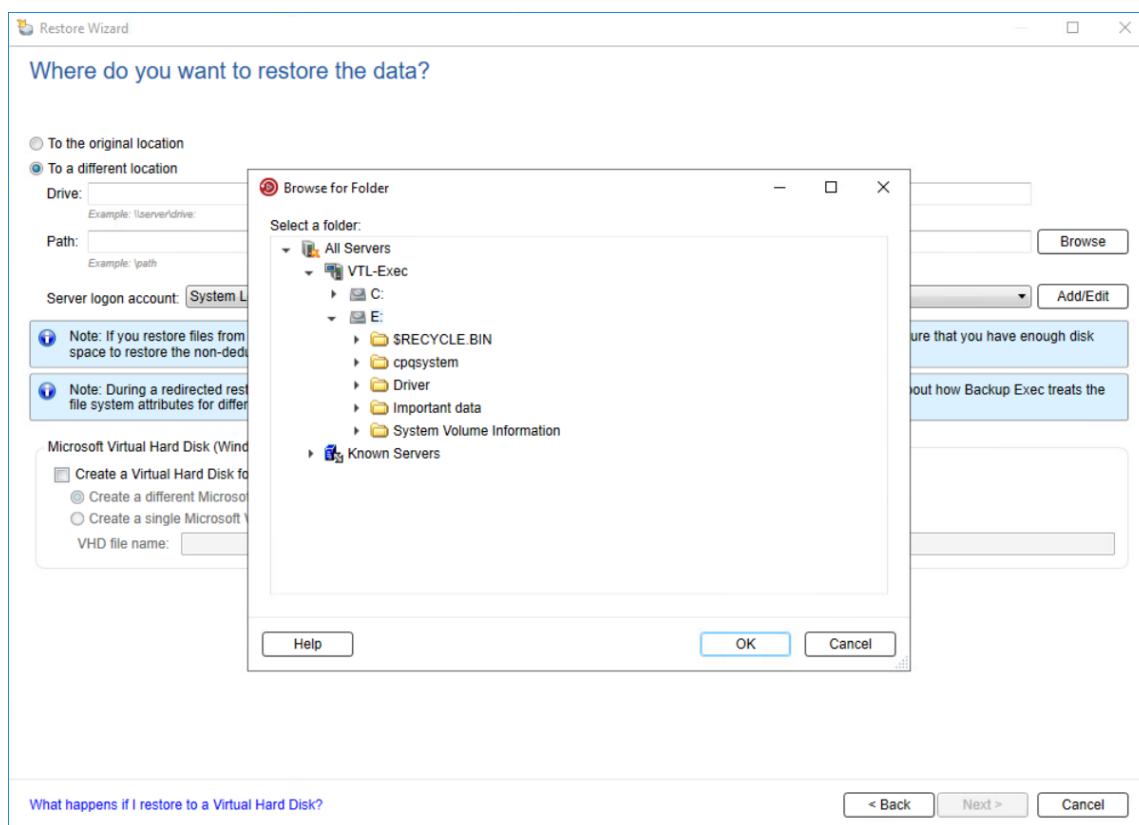
3. Select the appropriate restore option.

4. Select files and folders to restore.



5. In the Browse for Folder window, specify the destination folder for the restored data and click OK. Then click Next.





6. Confirm the restore location and click Next.

Restore Wizard

Where do you want to restore the data?

☐ To the original location

☒ To a different location

Drive: \\VTL-Exec\\E:  
Example: \\server\\drive:

Path: \\ Browse  
Example: \\path

Server logon account: System Logon Account Add/Edit

**Note:** If you restore files from a volume that has Windows deduplication, Backup Exec places the files on the disk as non-deduplicated. Ensure that you have enough disk space to restore the non-deduplicated data before you run a restore job. For more information see: [TECH204775](#)

**Note:** During a redirected restore, you may not be able to restore some file system attributes from the original data. For more information about how Backup Exec treats the file system attributes for different types of file systems, see: [TECH205960](#)

Microsoft Virtual Hard Disk (Windows Server 2008 R2 or later)

☒ Create a Virtual Hard Disk for redirected data

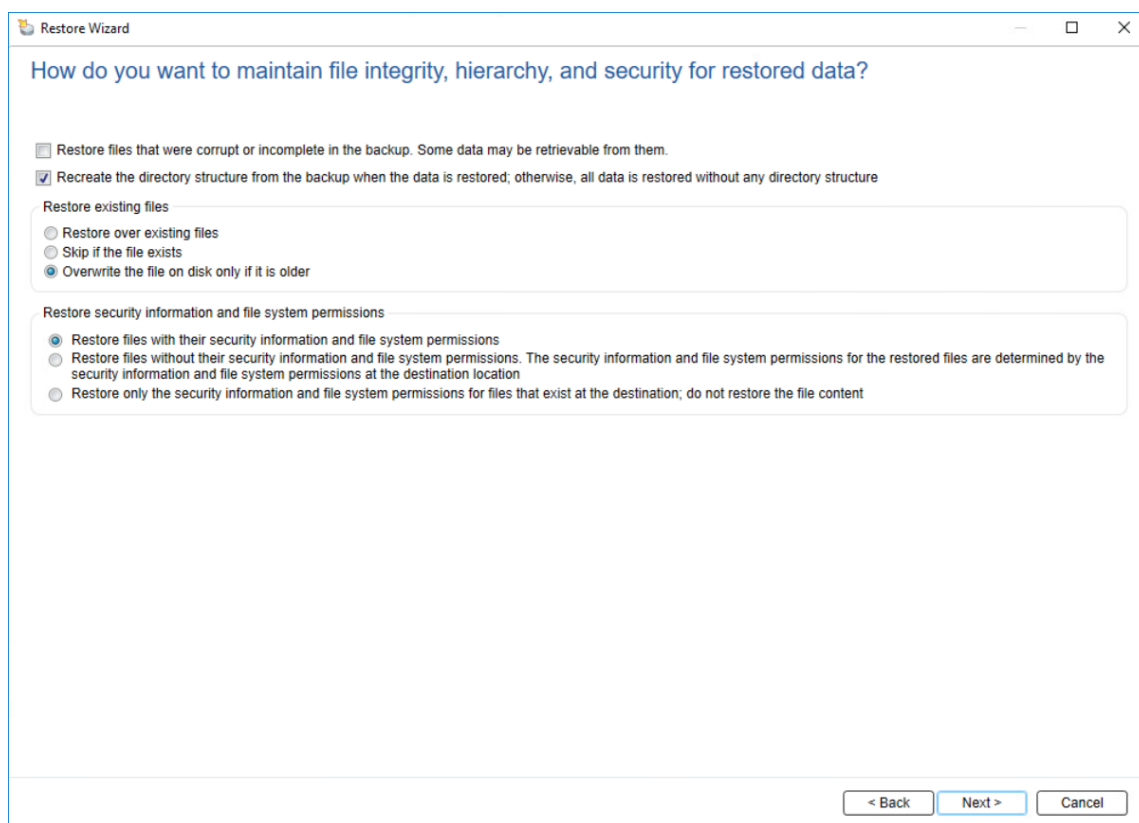
☒ Create a different Microsoft Virtual Hard Disk for each backup set that is restored

☐ Create a single Microsoft Virtual Hard Disk that contains the merged files and folders from all redirected backup sets

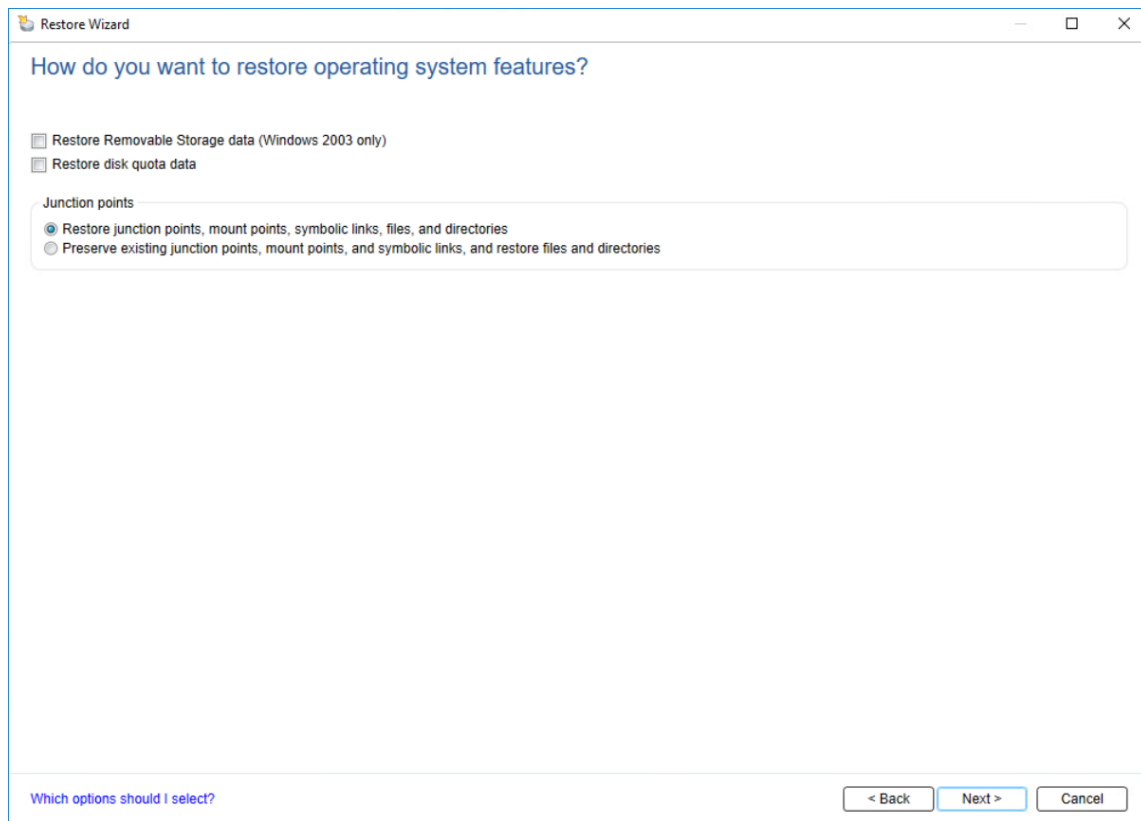
VHD file name:

[What happens if I restore to a Virtual Hard Disk?](#) < Back Next > Cancel

7. Select the settings for file integrity, hierarchy, and security for the restored data.



8. Select options for restoring operating system features.



9. Specify additional tasks to perform before and/or after a restore.

Restore Wizard

What additional tasks do you want to perform before and/or after a restore?

☐ Run a command before and/or after the restore

Type a command to run before the restore runs:

Type a command to run after the restore runs:

☐ Let Backup Exec check the exit codes of the commands to determine if the commands completed successfully

☒ Run job only if pre-command is successful

☒ Run post-command only if pre-command is successful

☒ Run post-command even if job fails

Cancel command if not complete within  minutes

Run these commands:

☐ On this Backup Exec server

☒ On each server restored to

Notification

Select each recipient to notify when the job completes.

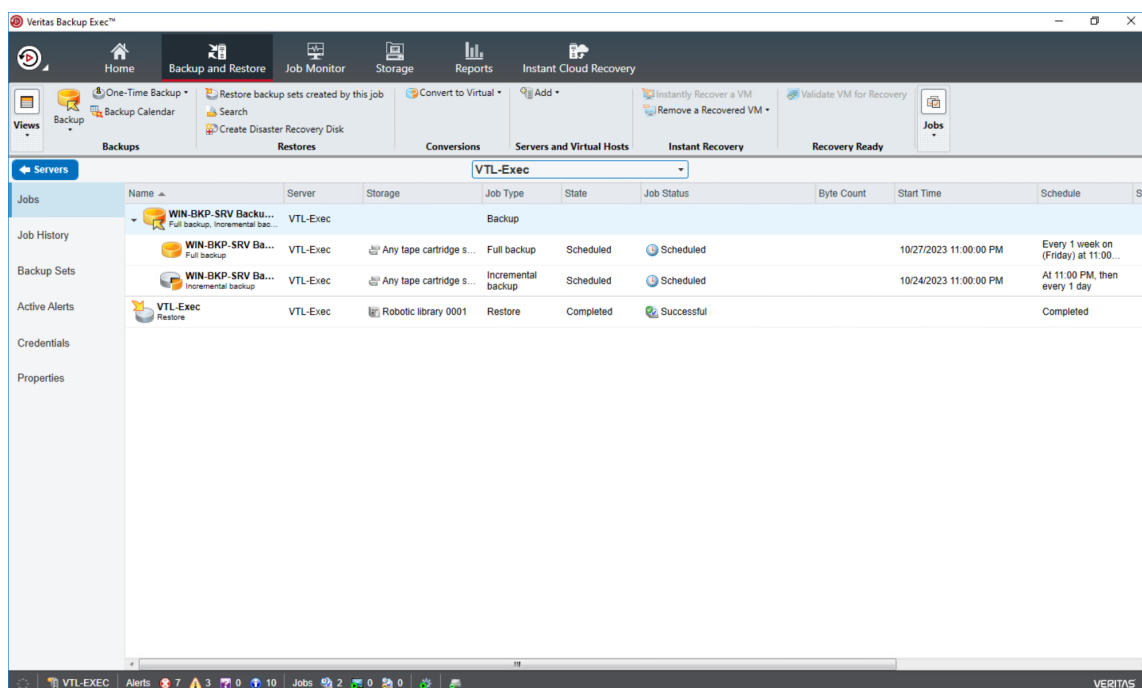
Recipient Name	Recipient Type

☐ Include the job log in email notifications

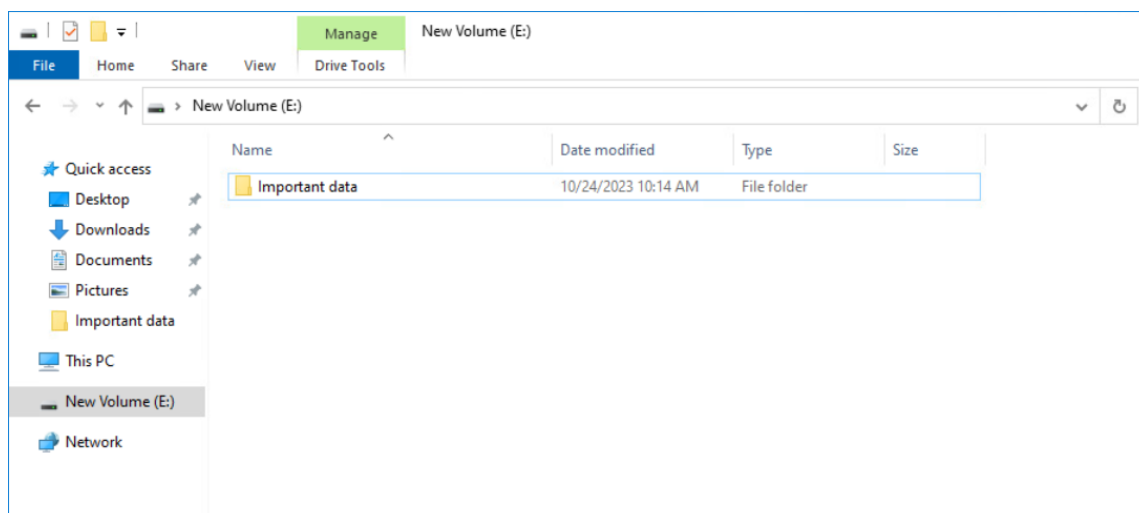
Which options should I select for the additional tasks?

< Back   Next >   Cancel

10. Specify the restore job Name, Storage, and Schedule.
11. Double-check the summary and complete the restore job by clicking Finish.
12. To check the job progress, navigate to the Backup and Restore tab.
13. To see the restoring details, double-click on the server.



14. The restored files can be found in the specified folder.










To restore files from the cloud storage, please navigate to Restoring tapes from the cloud storage section.

## Conclusion

Following this guide, a StarWind VTL was deployed and backup jobs were configured to StarWind VTL using backup applications of choice.

## Contacts

US Headquarters	EMEA and APAC
 +1 617 829 44 95	 +44 2037 691 857 (United Kingdom)
 +1 617 507 58 45	 +49 800 100 68 26 (Germany)
 +1 866 790 26 46	 +34 629 03 07 17 (Spain and Portugal)
	 +33 788 60 30 06 (France)

Customer Support Portal: <https://www.starwind.com/support>

Support Forum: <https://www.starwind.com/forums>

Sales: [sales@starwind.com](mailto:sales@starwind.com)

General Information: [info@starwind.com](mailto:info@starwind.com)



StarWind Software, Inc. 100 Cummings Center Suite 224-C Beverly MA 01915, USA  
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