

VEEAM BACKUP AND REPLICATION

OPERATIONS GUIDE

VOLUME 3



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Veeam Backup and Replication Operational Guide Volume 4

Volume 4 Based on Version 12

Dave Kawula, Cristal Kawula, Cary Sun and Emile Cabot

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Feedback Information

We'd like to hear from you! If you have any comments about how we could improve the quality of this book, please don't hesitate to contact us by visiting www.checkyourlogs.net or emailing feedback@mvpdays.com.

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Foreword

Here is another book by Dave, Cristal, Cary and Emile; what a significant milestone!

Ask yourself one question: Why? There are so many technologies, but why do we use what we use? Why do we do what we do? The answer is how. It's how we use something. I like to explain compliance in this way sometimes. No product or technology is inherently compliant. It's how it is implemented and how it is audited. The same goes for technology implementations; it's about how we use them. The how is the why.

Operations are still cool. There are so many razzle-dazzle job titles and buzzwords in the market today, but in the end, Operations are Operations. DevOps, PlatformOps, SRE (Sire Reliability Engineer), Platform Engineering... I do not need to go on, but no technology will take care of itself across all disciplines. How it is used, implemented, monitored, etc., matters today. Technology still needs humans and their knowledge.

Expert advice is the difference. We all learn from each other. When it comes to taking on the next new challenge, where does one go first? We look for resources to consume. Blogs, books like this, and social profiles; the established experts in the space are the trusted advisors in the technology space. Call it community, social sharing, or what you want; we all find ourselves going to the go-to experts of a particular space.

Above and Beyond. What Dave, Cristal, Cary, and Emile put forth in this book, in their practical advice for technology, is outstanding. They could easily focus on their professional responsibilities and keep them narrow. But writing a book is hard work! Editing a book is hard work! I've not discussed this with them, but I'm sure they aren't doing it for the money of writing a book. They write this book because they go above and beyond, share, and care.

I'm sure you will enjoy this book, and a big congratulations on this book, Dave, Cristal, Cary and Emile.

Best Regards,

A handwritten signature in black ink, appearing to read 'Rick W. Vanover', with a stylized flourish at the end.

Rick W. Vanover *Microsoft MVP, VMware vExpert, Cisco Champion*
Senior Director, Product Strategy - Veeam Software
Twitter: [@RickVanover](https://twitter.com/RickVanover)¹

¹<http://www.twitter.com/rickvanover>

About the Authors

Dave Kawula–Microsoft MVP

Dave is a Microsoft Most Valuable Professional (MVP) with over 20 years of experience in the IT industry. His background includes data communications networks within multi-server environments, and he has led architecture teams for virtualization, System Centers, Exchange, Active Directory, and Internet gateways. Very active within the Microsoft technical and consulting teams, Dave has provided deep-dive technical knowledge and subject matter expertise on various System centers and operating system topics.

Dave is well-known as an evangelist for Microsoft, 1E, and Veeam technologies. Locating Dave is easy as he speaks at conferences and sessions each year, including TechEd, Ignite, MVP Days Community Roadshow, and VeeamOn.

Recently, Dave has been honoured to take on the role of Conference Co-Chair of TechMentor and Cyber Security & Ransomware Live with fellow MVP Sami Laiho. The lineup of speakers and attendees attending this conference over the past 20 years is fantastic.

As the founder and Managing Principal Consultant at TriCon Elite Consulting, Dave is a leading technology expert for local customers and large international enterprises, providing optimal guidance and methodologies to achieve and maintain an efficient infrastructure.

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¹<http://www.checkyourlogs.net>



Cristal Kawula–Microsoft MVP

Cristal Kawula co-founded MVPDays Community Roadshow, and #MVPHour live Twitter Chat. She was also a Technical Advisory board member and the President of TriCon Elite Consulting. Cristal is the only 2nd Woman worldwide to receive the prestigious Veeam Vanguard award.

Cristal speaks at Microsoft Ignite, MVPDays, and other local user groups. In addition, she has been instrumental in founding MVPDays Publishing and has helped author over 25 + books.

At conferences like Microsoft Ignite, she has led community meetups on topics such as Women in IT, Parenting in IT, Diversity in Tech, and becoming a Community Rockstar.

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Cary Sun—Microsoft MVP

Cary Sun has a wealth of knowledge and expertise in data center and deployment solutions. As a Principal Consultant, he likely works closely with clients to help them design, implement, and manage their data center infrastructure and deployment strategies.

With his background in data center solutions, Cary Sun may have experience in server and storage virtualization, network design and optimization, backup and disaster recovery planning, and security and compliance management. He has held CISCO-CERTIFIED INTERNETWORK EXPERT (CCIE No.4531) since 1999. Cary is a Microsoft Most Valuable Professional (MVP), Microsoft Azure MVP, and Veeam Vanguard. He is a published author with several titles, including blogs on Checkyourlogs.net, and the author of many books.

Cary is a very active blogger at [checkyourlogs.net](https://www.checkyourlogs.net) and is permanently available online for questions from the community. His passion for technology is contagious, improving everyone around him at what they do.

Blog site: <https://www.checkyourlogs.net>

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Blog site: <https://gooddealmart.com>

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in: <https://www.linkedin.com/in/sifusun/>

Amazon Author: <https://Amazon.com/author/carysun>





Emile Cabot–Microsoft MVP

Emile started in the industry during the mid-90s working at an ISP and designing celebrity websites. He has a solid operational background specializing in Systems Management and collaboration solutions. He has spent many years performing infrastructure analyses and solution implementations for organizations ranging from 20 to over 200,000 employees. Coupling his wealth of experience with a small partner network, Emile works very closely with TriCon Elite, 1E, and Veeam to deliver low-cost solutions with minimal infrastructure requirements.

He actively volunteers as a member of the Canadian Ski Patrol, providing over 250 hours each year for first aid services and public education at Castle Mountain Resort and in the community.

BLOG: <http://www.checkyourlogs.net>

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Introduction

This book aims to showcase the fantastic expertise of our guest speakers of MVPDays Online. They have so much passion, expertise, and expert knowledge that it only seemed fitting to write it down in a book.

This book aims to show how to be operationally proficient using Veeam Backup and Replication, Veeam One and various other Veeam products and tools. We hope you find immense value in reviewing this guide and encourage you to share your operational knowledge and skills with others in the community.

Sample Files

All sample files for this book can be downloaded from <http://www.checkyourlogs.net> and www.github.com/mvpday¹s

Additional Resources

In addition to all the tips and tricks provided in this book, you can find extra resources like articles and video recordings on our blog <http://www.checkyourlogs.net>

¹<http://www.github.com/mvpdayspublishing>

Chapter 1: Backup and Backup Copy

Veeam Backup & Replication creates VM image-level backups. It treats virtual machines as objects rather than a collection of files. Veeam Backup & Replication copies the entire VM image at a block level when you backup a VM. Image-level backups can be used for various restore scenarios, such as instant recovery, restoring full VM, recovering VM files, recovering file-level, and so on.

Typically, backup technology is used for VMs with shorter RTOs. When the primary virtual machine fails, restoring VM data from a deduplicated and compressed backup file takes some time.

The backup copy process is job-driven. Veeam Backup & Replication fully automates backup copying. It allows you to specify retention settings to keep the desired number of restore points and full backups for archival purposes.

The primary goal of backup is to protect your data from disasters and virtual or physical machine failures. On the other hand, having only one backup does not provide the necessary level of security. The primary backup and production data may be destroyed, leaving you with no backups from which to restore data.

It is recommended that you follow the 3-2-1 rule when developing a successful data protection and disaster recovery plan:

3: At least three copies of your data are required: the original production data and two backups.

2: You must store copies of your data on at least two media types: local disc and cloud.

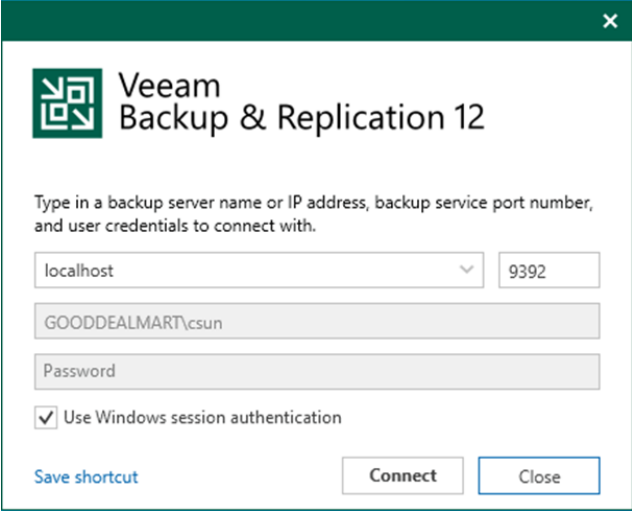
1: At least one backup must be kept off-site, such as in the cloud or a remote location.

As a result, you must have at least two backups, each in a different location. If your production data and local backup are destroyed in a disaster, you can still recover from your off-site backup.

Creating a Backup job to backup the VMS portion of the Hyper-V Host

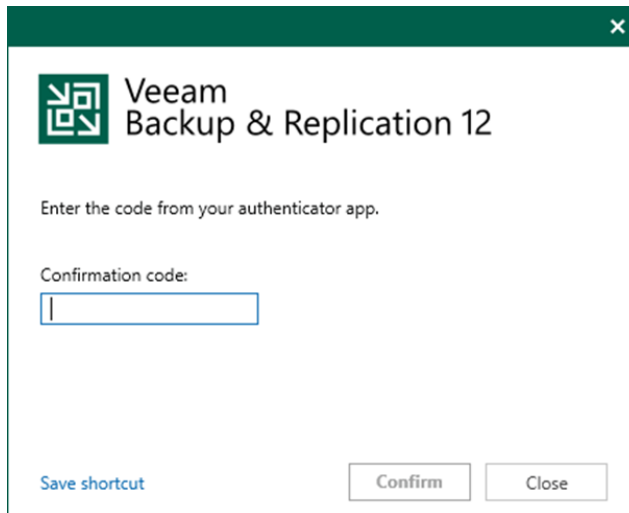
This process creates a backup job to backup the VMS of the Hyper-V host, but not all of them.

1. Login to the Veeam Backup and replication v12 manager server.
2. Open the Veeam Backup & Replication v12 Console and click Connect.

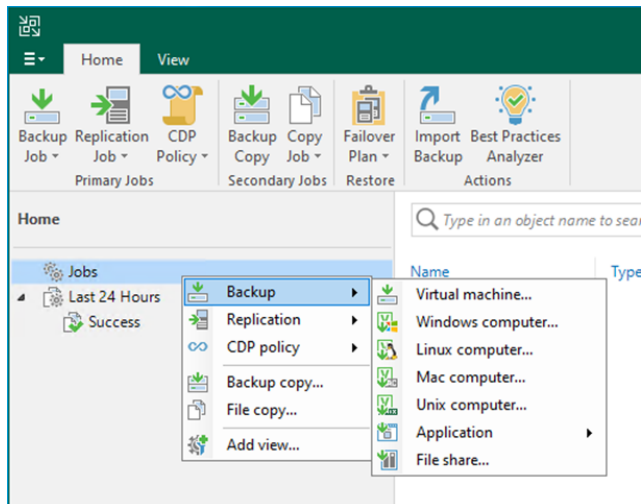


The screenshot shows the 'Veeam Backup & Replication 12' connection dialog box. It has a dark green header with the Veeam logo and title. Below the header, there is a text prompt: 'Type in a backup server name or IP address, backup service port number, and user credentials to connect with.' The form contains several input fields: a dropdown menu for the server name (currently showing 'localhost'), a text box for the port number (currently showing '9392'), a text box for the username (currently showing 'GOODDEALMART\csun'), and a password field. There is a checkbox labeled 'Use Windows session authentication' which is checked. At the bottom, there are three buttons: 'Save shortcut', 'Connect', and 'Close'.

3. Enter the MFA Confirmation code and click Confirm.

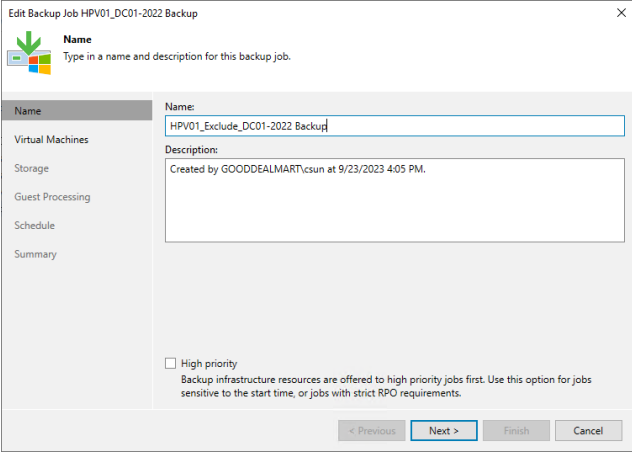


4. Select Jobs on the Home page and right-click Jobs.
5. Select Backup and click Virtual machine.



6. On the Name page, enter a name for the backup job in the Name field.
7. Give a brief description in the Description field for the future.
8. Select the High priority checkbox if you want this job to allocate resources in the first place.

9. Click Next.



The screenshot shows the 'Edit Backup Job' dialog box for a job named 'HPV01_DC01-2022 Backup'. The 'Name' tab is selected in the left sidebar. The 'Name' field contains 'HPV01_Exclude_DC01-2022 Backup'. The 'Description' field contains 'Created by GOODDEALMARTcsun at 9/23/2023 4:05 PM.'. There is an unchecked checkbox for 'High priority' with a description: '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.' At the bottom, there are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

Edit Backup Job HPV01_DC01-2022 Backup

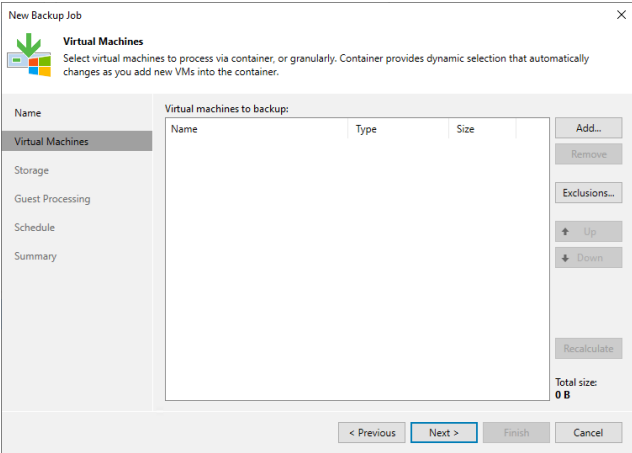
Name
Type in a name and description for this backup job.

Name
Name: HPV01_Exclude_DC01-2022 Backup
Description: Created by GOODDEALMARTcsun at 9/23/2023 4:05 PM.

☐ 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

10. Click Add on the Virtual Machines page.



The screenshot shows the 'New Backup Job' dialog box with the 'Virtual Machines' tab selected. It features a table titled 'Virtual machines to backup:' with columns for Name, Type, and Size. To the right of the table are buttons for 'Add...', 'Remove', 'Exclusions...', 'Up', 'Down', and 'Recalculate'. The 'Total size' is shown as '0 B'. At the bottom, there are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

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
Virtual machines to backup:

Name	Type	Size
------	------	------

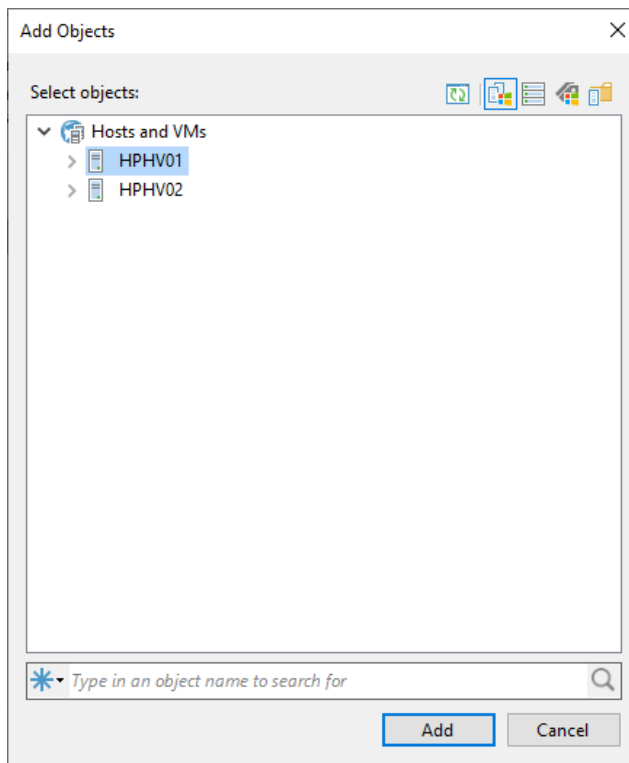
Add...
Remove
Exclusions...
Up
Down
Recalculate

Total size:
0 B

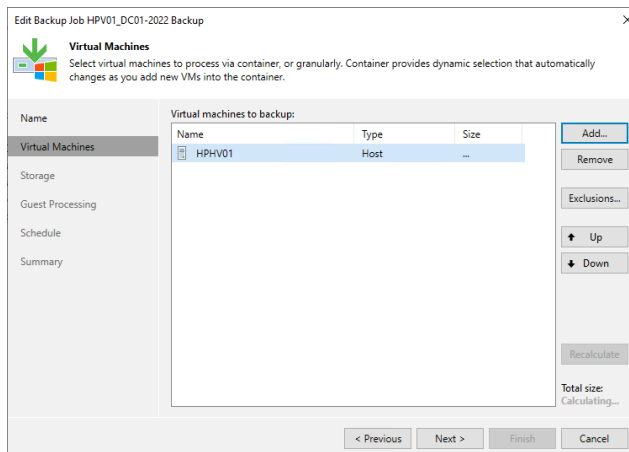
< Previous Next > Finish Cancel

11. Select the host on the Add Objects page list and click Add.

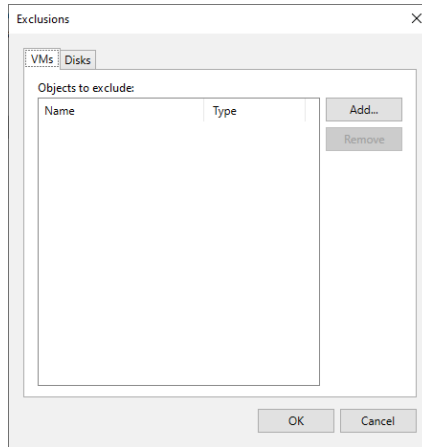
12. If multiple hosts need to backup in the same backup job, you can repeat the step to add them.



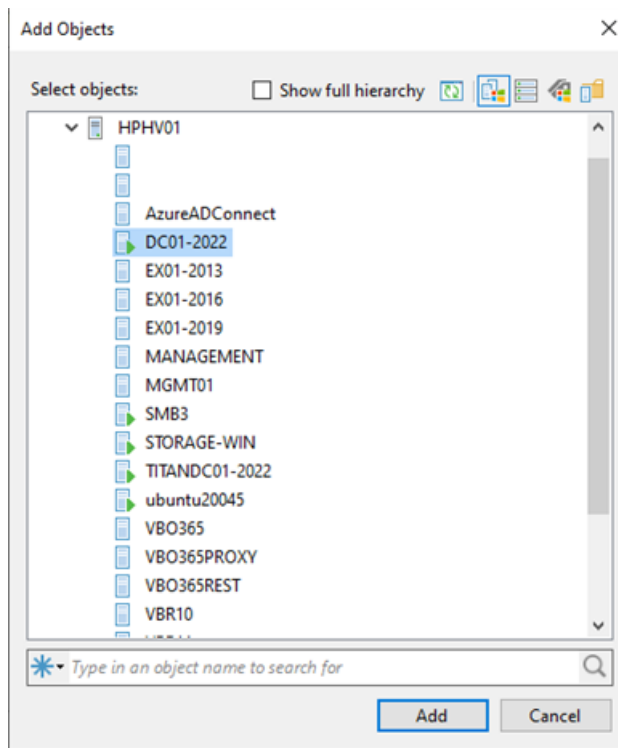
13. On the Virtual Machines page, click Exclusions.



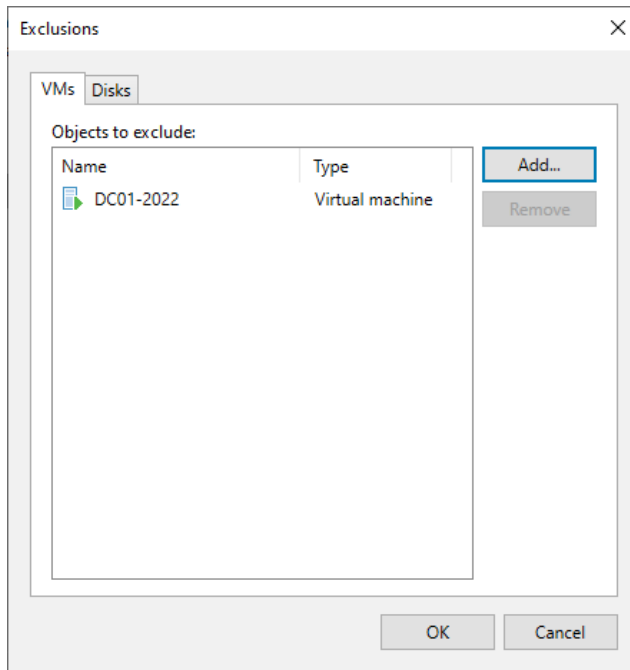
14. On the Exclusions page, select VMS and click Add.



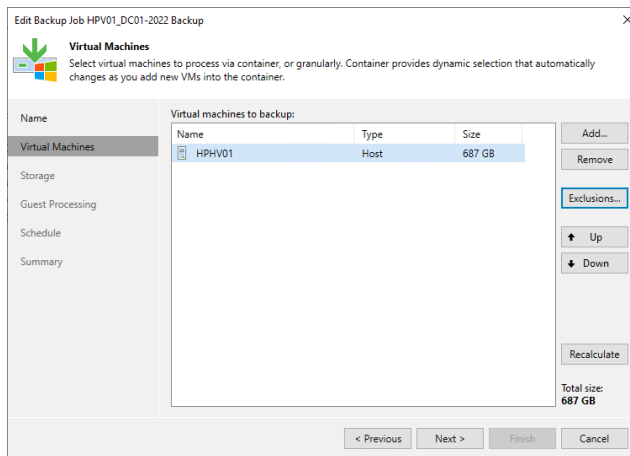
15. On the Add Objects page, expand the host.
16. Select the VM you want to exclude and click Add.



17. On the Exclusions page, click OK.

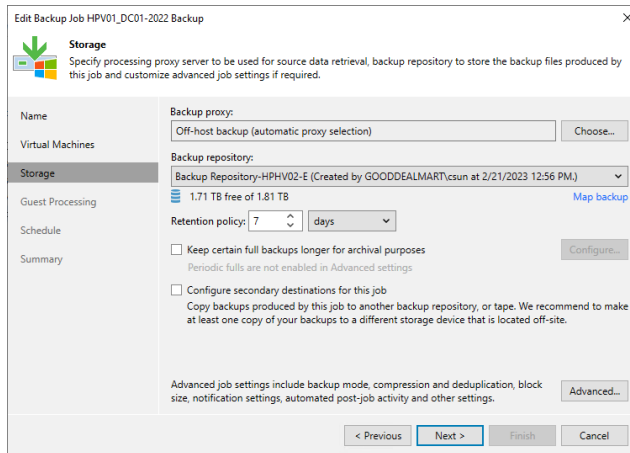


18. On the Virtual Machines page, click Next.



19. On the Storage page, click Choose to select a backup proxy if you don't

want to use the default Off-host backup (automatic proxy selection) setting.



20. On the Backup Proxy page, if you select On-host backup mode, the source Microsoft Hyper-V host will serve as both the source host and the backup proxy. In this mode, Veeam Data Mover runs directly on the source host, which speeds up data retrieval but places additional strain on the host.
21. If you select Off-host backup mode, Veeam Data Mover will run on a dedicated off-host backup proxy. In this model, all backup processing operations from the source host are routed to the off-host backup proxy.
22. If the off-host backup mode is selected for the job, but no off-host backup proxies are available when the job begins, Veeam Backup & Replication will transition to on-host backup mode.
23. You unselect the Failover to on-host backup mode if no suitable off-host proxies are available in the checkbox. Still, the job will fail to start if off-host backup proxies are unavailable or configured properly.
24. Click OK.

Backup Proxy

Choose a backup mode for this job. When multiple backup proxy servers are available to process the same VM, selection of most suitable one will be performed by taking into account proxy priority, connectivity and its current load.

☐ **On-host backup**
Backup proxy runs directly on each Hyper-V host, which enables for direct to target operation, but puts extra load on all Hyper-V hosts.

☒ **Off-host backup**
Backup proxy server for each VM will be auto-selected from all available off - host proxies. In this mode, backup processing is offloaded from Hyper-V host.

☒ Failover to on-host backup mode if no suitable off-host proxies available

☐ Use the following backup proxy servers only:

Name
☐ HPHV01
☐ HPHV02

Select all

Clear all

OK Cancel

25. Select the backup repository from the Backup repository drop-down list where the created backup files must be saved.

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.

Name: _____

Virtual Machines: _____

Guest Processing: _____

Schedule: _____

Summary: _____

Backup proxy: Off-host backup (automatic proxy selection) Choose...

Backup repository: Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

Backup Repository-HPHV01-USB (Created by GOODDEALMART\csun at 2/7/2023 5:38 PM.)

Backup Repository-Storage-Win_VBRBackup (Created by GOODDEALMART\csun at 2/7/2023 4:39 PM.)

Backup Repository-ubuntu20045 (Created by GOODDEALMART\csun at 2/7/2023 3:47 PM.)

Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

Backup Repository-Storage-Win (Created by GOODDEALMART\csun at 2/7/2023 12:26 PM.)

Default Backup Repository (Created by GOODDEALMART\csun at 2/1/2023 3:01 PM.)

Hardened Backup Repository-ubuntu20045 (Created by GOODDEALMART\csun at 2/7/2023 2:57 PM.)

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...

< Previous Next > Finish Cancel

26. Set the retention policy settings for restore points in the Retention Policy field.
27. Select days or restore points from the drop-down list.

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.

Name
Backup proxy: Off-host backup (automatic proxy selection) [Choose...](#)

Virtual Machines
Backup repository: Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

Storage
1.71 TB free of 1.81 TB [Map backup](#)

Guest Processing
Retention policy: 7 days [days](#) [restore points](#) [days](#) [Configure...](#)

☐ 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...](#)

[< Previous](#) [Next >](#) [Finish](#) [Cancel](#)

28. You can configure the backup job's GFS retention policy settings to ignore the short-term retention policy for some full backups and store them for long-term archiving.
29. Select Keep certain full backups for longer for archival purposes and click Configure.

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.

Name
Backup proxy: Off-host backup (automatic proxy selection) [Choose...](#)

Virtual Machines
Backup repository: Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

Storage
1.71 TB free of 1.81 TB [Map backup](#)

Guest Processing
Retention policy: 7 days [days](#) [restore points](#) [days](#) [Configure...](#)

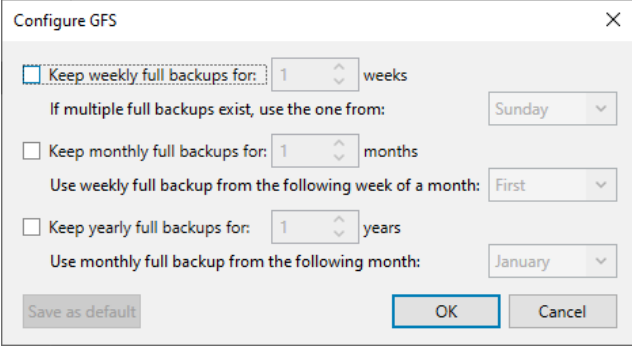
☒ Keep certain full backups longer for archival purposes
GFS retention policy is not configured

☐ 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...](#)

[< Previous](#) [Next >](#) [Finish](#) [Cancel](#)

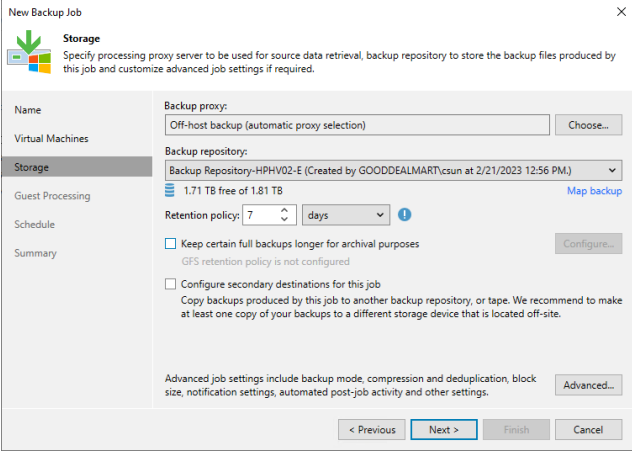
30. Select the Keep weekly full backups for checkbox and specify the number of weeks you want to prevent restore points from being modified and deleted.
31. Select the Keep monthly full backups for checkbox and specify the months you want to prevent restore points from being modified and deleted.
32. Select the Keep yearly full backups for checkbox and specify the years you want to prevent restore points from being modified and deleted.
33. Click OK.



The 'Configure GFS' dialog box contains the following elements:

- ☒ Keep weekly full backups for: 1 weeks
- If multiple full backups exist, use the one from: Sunday
- ☐ Keep monthly full backups for: 1 months
- Use weekly full backup from the following week of a month: First
- ☐ Keep yearly full backups for: 1 years
- Use monthly full backup from the following month: January
- Buttons: Save as default, OK, Cancel

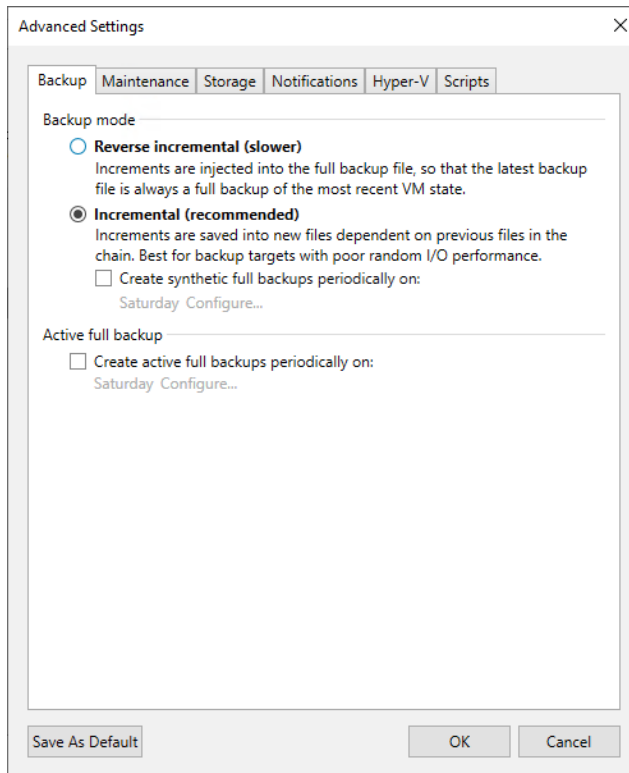
34. On the Storage page, click Advanced.



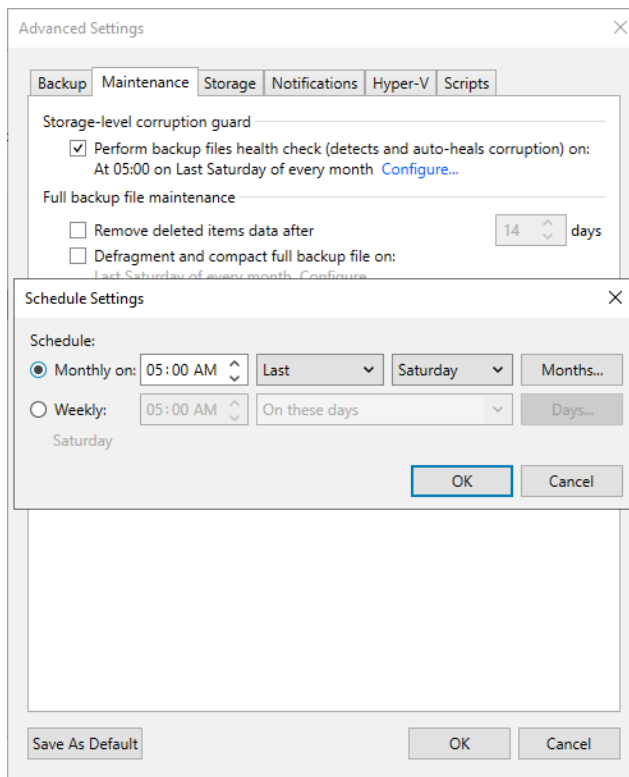
The 'New Backup Job' window, 'Storage' page, includes the following details:

- Storage** (selected in the left sidebar)
- Name:** Backup proxy: Off-host backup (automatic proxy selection) [Choose...]
- Virtual Machines:** Backup repository: Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.) [Map backup]
- Guest Processing:** 1.71 TB free of 1.81 TB
- Schedule:** Retention policy: 7 days [!]
- Summary:**
 - ☐ Keep certain full backups longer for archival purposes (GFS retention policy is not configured) [Configure...]
 - ☐ 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 buttons: < Previous, Next >, Finish, Cancel

35. Select Incremental and disable synthetic full and active full backups to create a forever forward incremental backup chain.



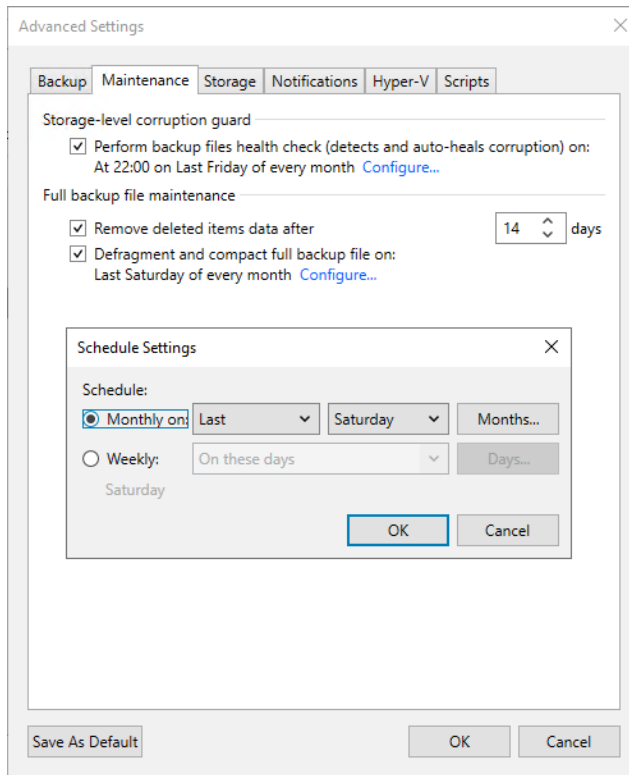
36. On the Advanced Settings, Maintenance.
37. To regularly perform a health check on the backup chain's most recent restore point, select the Perform backup files health check (detects and auto-heals corruption) checkbox in the Storage-level corruption guard section.
38. Click Configure to set a timetable for the health check.



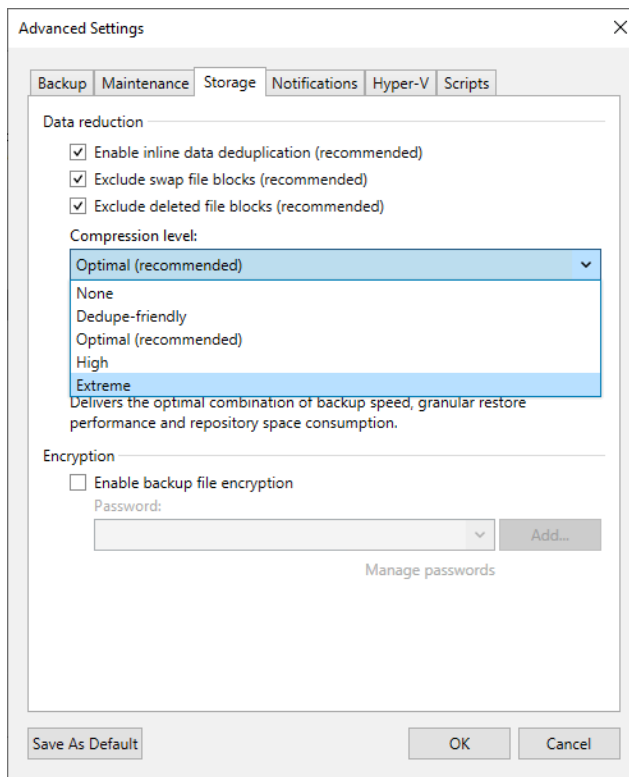
39. Select the Remove deleted items data after the checkbox and enter the few days you want backup data for deleted VMs to be kept.
40. Select the Defragment and compact full backup file checkbox and click Configure.
41. Set the schedule for the compact operation to compact a full backup periodically.

Note:

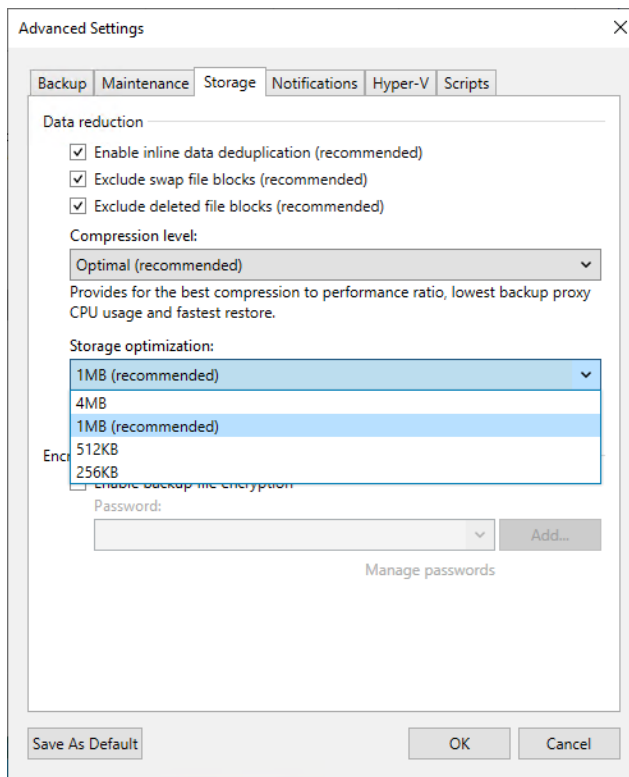
GFS retention is not compatible with defragment and compact functionality.



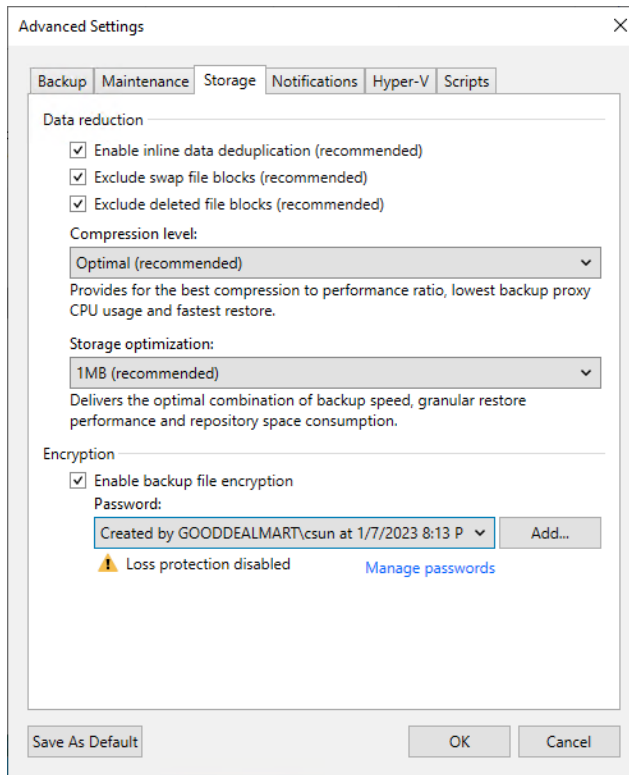
42. On Advanced Settings, select Storage.
43. Select the Enable inline data deduplication (recommended) checkbox.
44. Select the Exclude swap file blocks (recommended) checkbox.
45. Select the Exclude deleted file blocks (recommended) checkbox.
46. Select the compression level for the backup from the drop-down list.



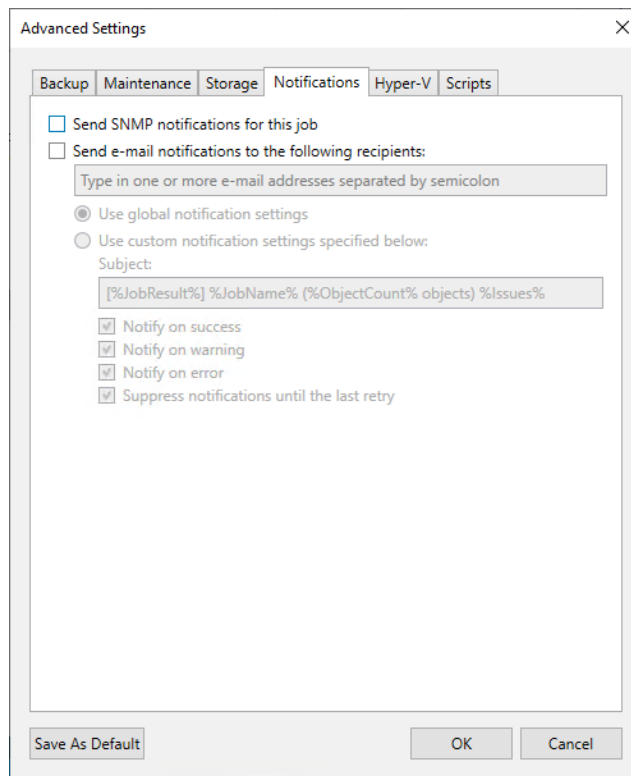
47. Select the Storage optimization for the backup from the drop-down list.



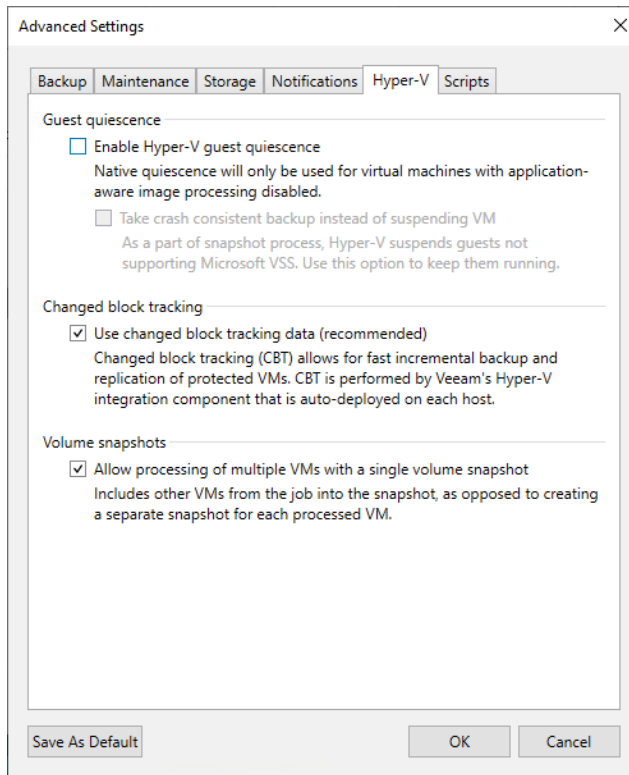
48. Select the Enable backup file encryption checkbox to encrypt the content of backup files.
49. Select a password from the drop-down list. If you still need to do so, click Add or use the Manage passwords link to create a new password.



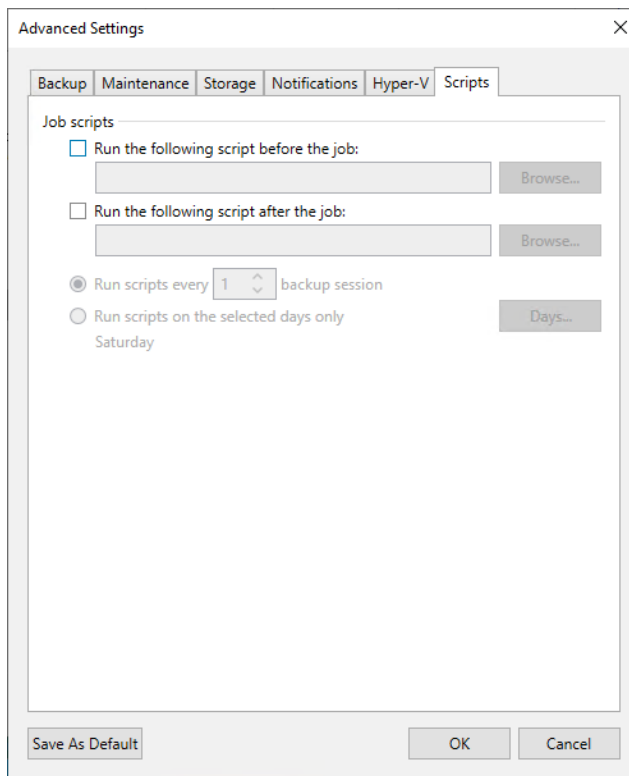
50. On the Advanced Settings, select Notifications.
51. Keep the default settings.



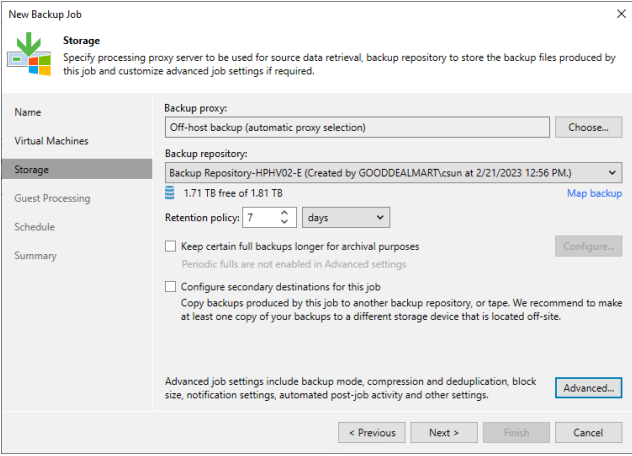
52. On the Advanced Settings, select Hyper-V.
53. Keep the default settings.



54. On the Advanced Settings page, click Scripts and keep the default settings.
55. Click OK.



56. Click Next on the Storage page.



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.

Name

Virtual Machines

Storage

Guest Processing

Schedule

Summary

Backup proxy:
Off-host backup (automatic proxy selection) Choose...

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.) Map backup

1.71 TB free of 1.81 TB

Retention policy: 7 days Configure...

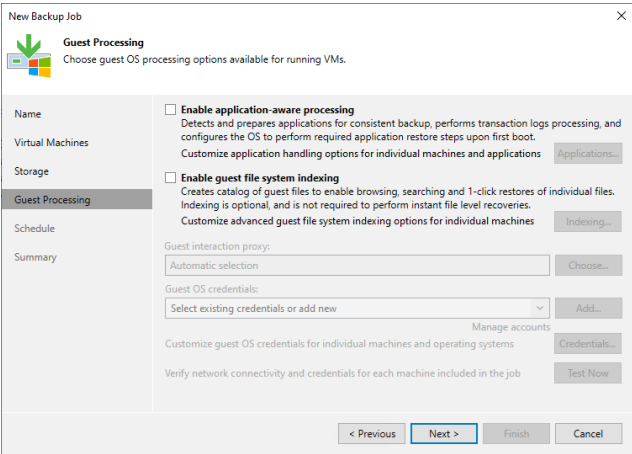
☐ Keep certain full backups longer for archival purposes
Periodic fulls are not enabled in Advanced settings

☐ 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...

< Previous Next > Finish Cancel

57. Click Next on the Guess Processing page.



New Backup Job

Guest Processing
Choose guest OS processing options available for running VMs.

Name

Virtual Machines

Storage

Guest Processing

Schedule

Summary

☐ **Enable application-aware processing**
Detects and prepares applications for consistent backup, performs transaction logs processing, and configures the OS to perform required application restore steps upon first boot.
Customize application handling options for individual machines and applications Applications...

☐ **Enable guest file system indexing**
Creates catalog of guest files to enable browsing, searching and 1-click restores of individual files. Indexing is optional, and is not required to perform instant file level recoveries.
Customize advanced guest file system indexing options for individual machines Indexing...

Guest interaction proxy:
Automatic selection Choose...

Guest OS credentials:
Select existing credentials or add new Add...

Manage accounts
Customize guest OS credentials for individual machines and operating systems Credentials...

Verify network connectivity and credentials for each machine included in the job Test Now

< Previous Next > Finish Cancel

58. Select Run the job automatically checkbox on the Schedule page and select your specified schedule.
59. Define whether Veeam Backup & Replication should retry the backup job if it fails in the Automatic retry section.
60. Define the time interval the backup job must complete in the Backup window section. The backup window ensures that the job does not overlap with production hours and that there is no unnecessary overhead on the production environment.

61. 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

Virtual Machines

Storage

Guest Processing

Schedule

Summary

☒ Run the job automatically

☒ Daily at this time: 10:00 PM

Everyday

Days...

☐ Monthly at this time: 10:00 PM

Fourth

Saturday

Months...

☐ Periodically every: 1

Hours

Schedule...

☐ After this job: DC01-2022 Backup (Created by GOODDEALMART\csun at 2/21/2023)

Automatic retry

☒ Retry failed items processing: 3

times

Wait before each retry attempt for: 10

minutes

Backup window

☒ Terminate the job outside of the allowed backup window

Long running or accidentally started jobs will be terminated to prevent impact on your production infrastructure during busy hours.

Window...

< Previous

Apply

Finish

Cancel

62. Click Finish on the Summary page.

✕

✕

Edit Backup Job HPV01_DC01-2022 Backup



Summary

 You have successfully edited the backup job.

Name

Virtual Machines

Storage

Guest Processing

Schedule

Summary

Summary:

Name: HPV01_Exclude_DC01-2022 Backup

Target Path: E:\Backups

Type: Hyper-V Backup

Source items:

HPHV01 (HPHV01)

Excluded items:

DC01-2022 (HPHV01)

Target repository: Backup Repository-HPHV02-E

Target repository host: HPHV02

Target repository path: E:\Backups

PowerShell cmdlet for starting the job:
Get-VBRJob -Name "HPV01_Exclude_DC01-2022 Backup" | Start-VBRJob

☐ Run the job when I click Finish

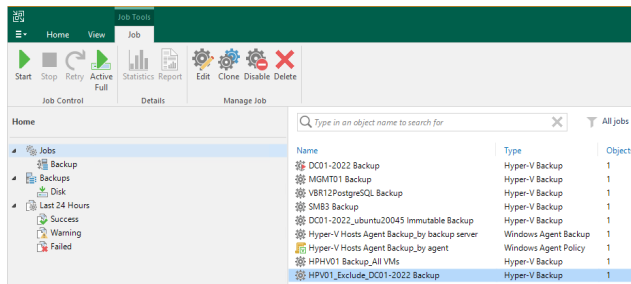
< Previous

Next >

Finish

Cancel

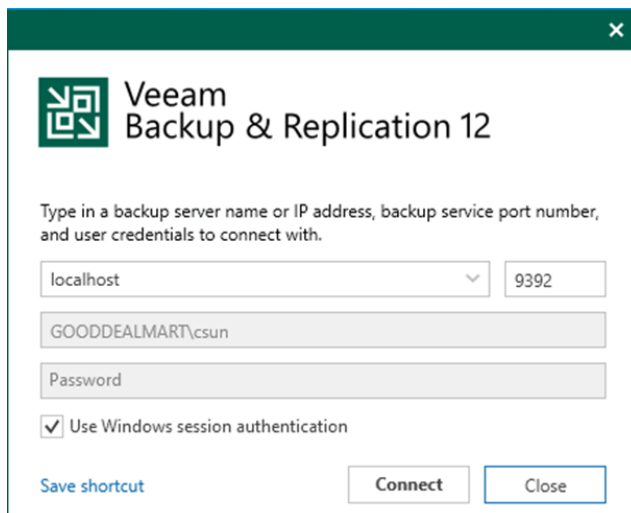
63. Verify that the backup job has been added.



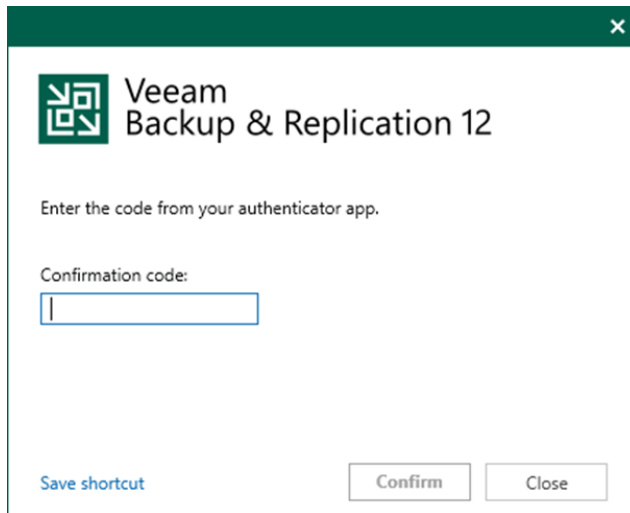
Creating a Backup Copy Job with an Immediate copy from the backup job workload

Immediate copies help reduce your RPO, which is the maximum allowable data loss in the event of a disaster. By creating copies as soon as new data is backed up, you ensure minimal data loss.

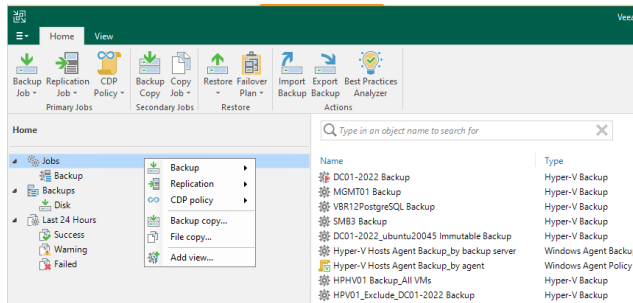
1. Login to the Veeam Backup and replication v12 manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



3. Enter the MFA Confirmation code and click Confirm.



4. On the Home page, select Jobs, right-click Jobs, select Backup copy and click Virtual machine.



5. On the Name page, enter a name in the Name field.
6. Describe the Description field.
7. In the Copy mode session, select Immediate copy (mirroring).
8. Click Next.

New Backup Copy Job

Job

Backup copy job efficiently creates local and remote copies of your backups, making it easy to maintain multiple copies of your data. Type in a name and description for the job, and specify backup copy interval.

Job

Objects

Target

Data Transfer

Schedule

Summary

Name:

DC01-2022 Backup Copy

Description:

Created by GOODDEALMART\csun at 9/23/2023 6:42 PM.

Copy mode:

☒ Immediate copy (mirroring)

Copies every restore point as soon as it appears in the primary backup repository. This mode will copy all backups created by selected backup jobs, including transaction log backups.

☐ Periodic copy (pruning)

Periodically copies the latest available restore point only. This mode also allows for selecting which backups to process, enabling you to further reduce bandwidth usage.

< Previous Next > Finish Cancel

9. On the Objects page, click Add and select From jobs...

New Backup Copy Job

Objects
Add objects which backups should be mirrored to the target repository. Immediate backup copy job will process image-level and transaction log backups.

Job

Objects

Target

Data Transfer

Schedule

Summary

Objects to process:

Name	Type	Size

Add...

From jobs...

From repositories...

Exclusions...

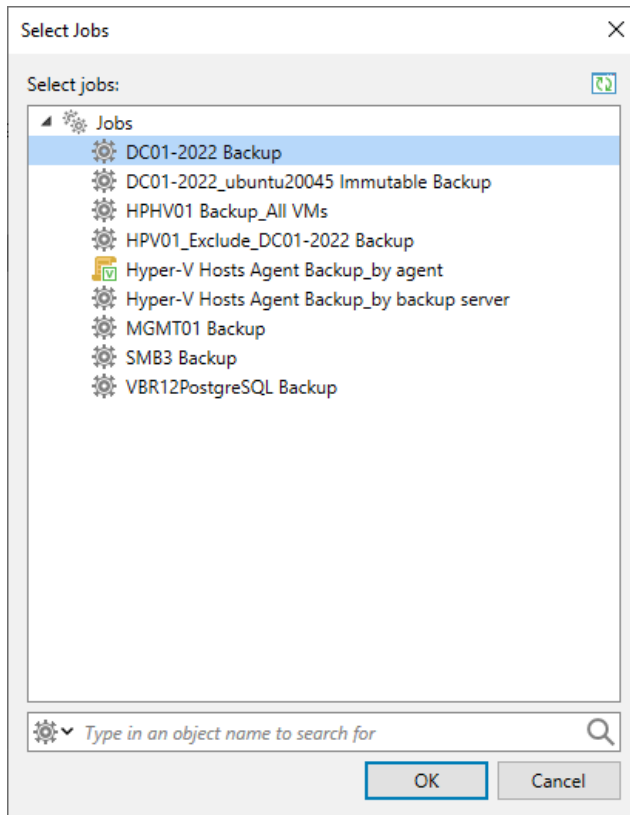
Recalculate

Total size:
0 B

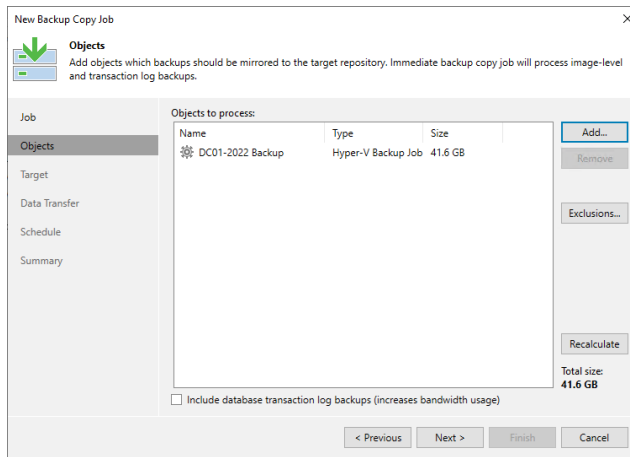
☐ Include database transaction log backups (increases bandwidth usage)

< Previous **Next >** **Finish** **Cancel**

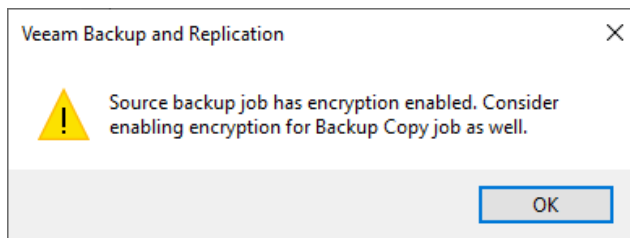
10. Select the job from the jobs list on the Select jobs page and click OK.



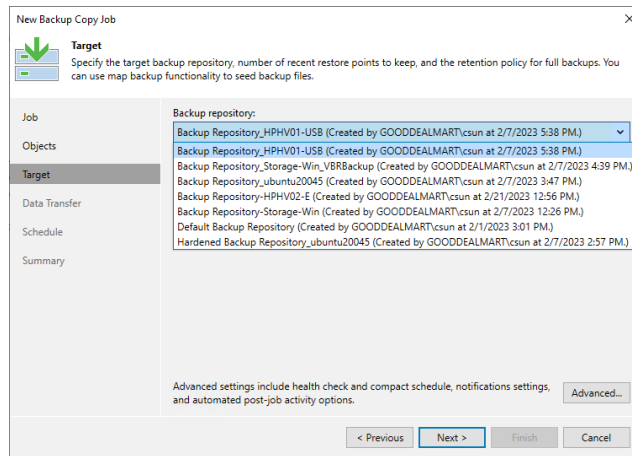
11. On the Objects page, click Next.
12. Select Include database transacting log backups (increases bandwidth usage) If required.



- Click OK in the encryption-enabled warning message if the source backup job has encryption enabled.

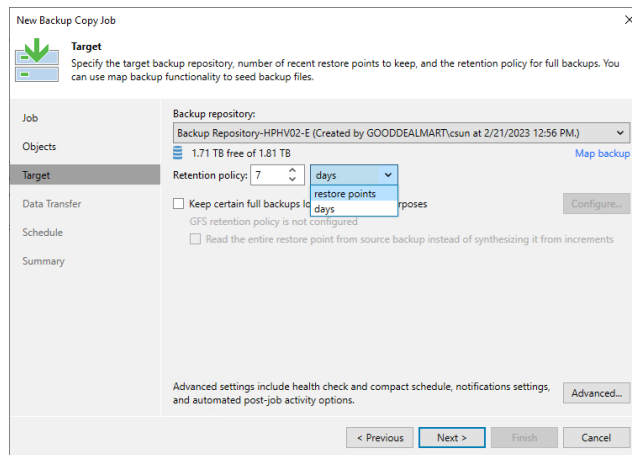


- On the Target page, select the backup repository from the drop-down list.



15. Set the retention policy settings for restore points in the Retention Policy field.

16. Select days or restore points from the drop-down list.



17. You can configure GFS retention policy settings for the backup copy job for long-term archiving.

18. Select Keep specific full backups for longer for archival purposes and click Configure.

New Backup Copy Job

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job
Objects
Target
Data Transfer
Schedule
Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

Retention policy: 7 restore points

☒ Keep certain full backups longer for archival purposes
GFS retention policy is not configured
☐ Read the entire restore point from source backup instead of synthesizing it from increments

[Configure...](#)

Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

19. On the Configure GFS page, select the Keep weekly full backups for checkbox, and specify the number of weeks you want to prevent restore points from being modified and deleted.
20. Select the Keep monthly full backups for checkbox and specify the months you want to prevent restore points from being modified and deleted.
21. Select the Keep yearly full backups for checkbox and specify the years you want to prevent restore points from being modified and deleted.
22. Click OK.

Configure GFS

☒ Keep weekly full backups for: 3 weeks
Create weekly full on this day: Sunday

☒ Keep monthly full backups for: 11 months
Use weekly full backup from the following week of a month: First

☒ Keep yearly full backups for: 5 years
Use monthly full backup from the following month: January

Save as default OK Cancel

23. On the Target page, click Advanced.

The screenshot shows the 'New Backup Copy Job' wizard in the 'Target' step. The left sidebar contains a vertical list of steps: Job, Objects, Target (selected), Data Transfer, Schedule, and Summary. The main area is titled 'Target' and includes a green arrow icon and a description: 'Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.' Below this, the 'Backup repository:' is set to 'Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)' with a dropdown arrow and '1.71 TB free of 1.81 TB' below it. A 'Map backup' link is to the right. The 'Retention policy:' is set to '7' with a dropdown arrow and 'restore points' to its right. Below this, there are two checkboxes: 'Keep certain full backups longer for archival purposes' (checked) and 'Read the entire restore point from source backup instead of synthesizing it from increments' (unchecked). A 'Configure...' button is to the right of the first checkbox. At the bottom, there is a note about advanced settings and an 'Advanced...' button. The bottom of the window has four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

New Backup Copy Job

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job
Objects
Target
Data Transfer
Schedule
Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

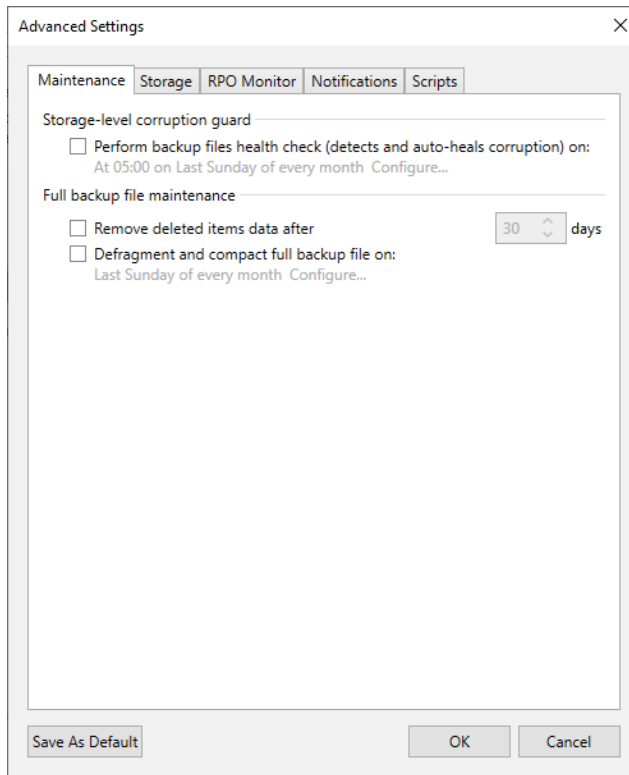
Retention policy: 7 restore points

☒ Keep certain full backups longer for archival purposes
3 weekly, 11 monthly, 5 yearly
☐ Read the entire restore point from source backup instead of synthesizing it from increments [Configure...](#)

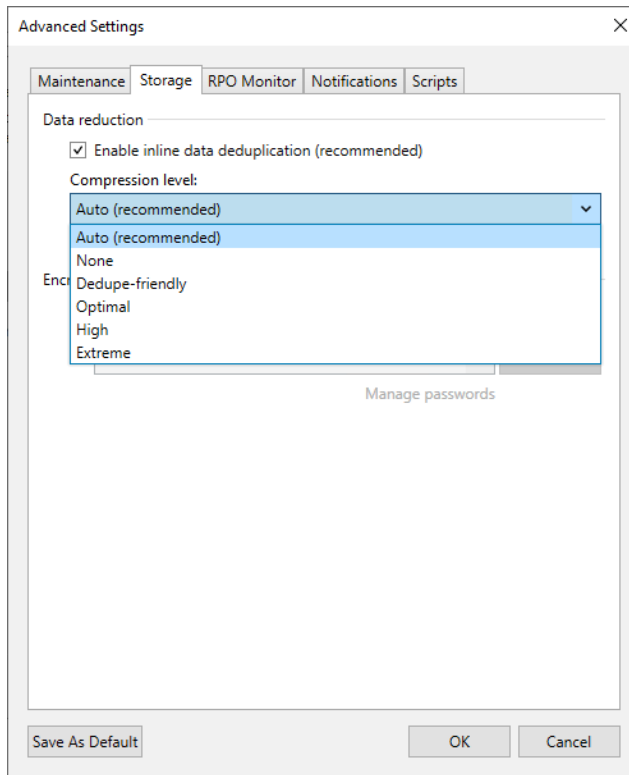
Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

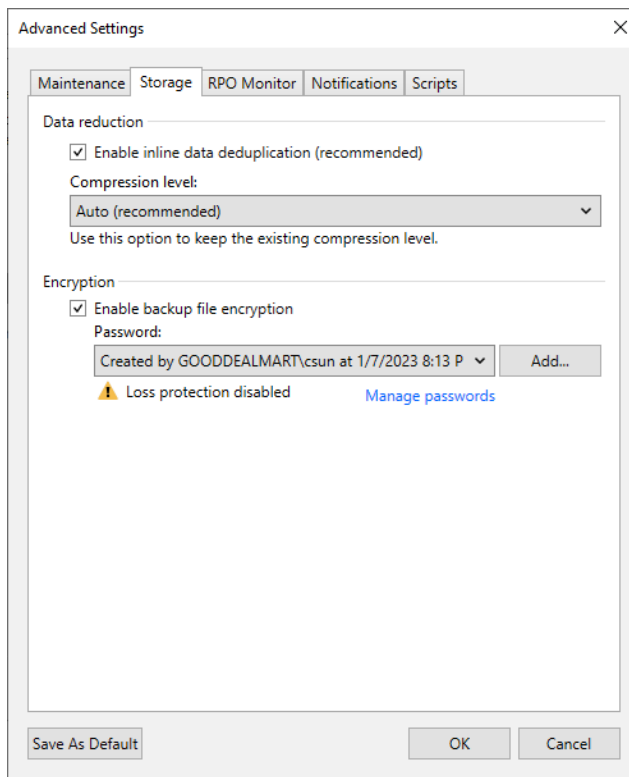
24. On the Advanced Settings, click Maintenance.
25. Select the Perform backup files health check (detects and auto-heals corruption) checkbox and specify the schedule for the health check if required.
26. Select the Remove deleted items data after checkbox and specify the retention days settings for deleted workloads if required.
27. Select the Defragment and compact full backup file checkbox and specify the schedule for the compacting operation if required.



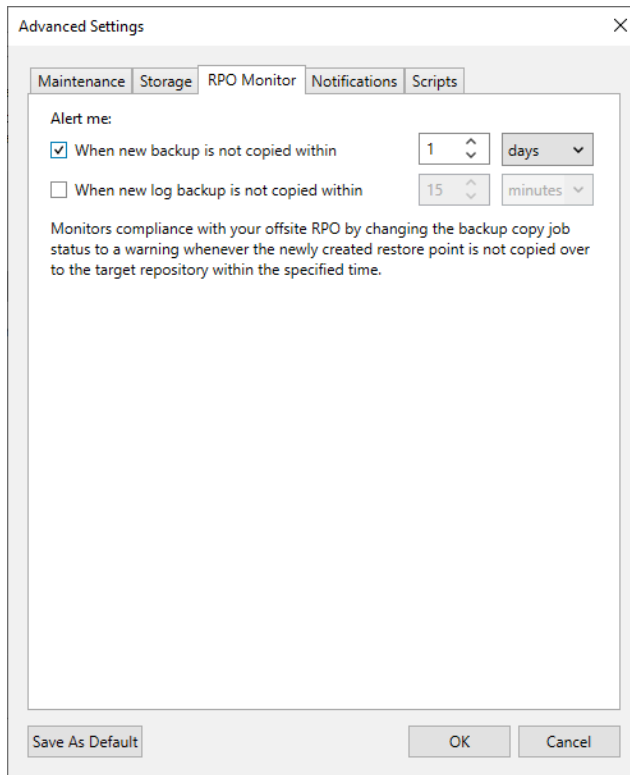
28. On Advanced Settings, click Storage.
29. Select the Enable inline data deduplication checkbox.
30. Select the compression level for the backup copy from the drop-down list.



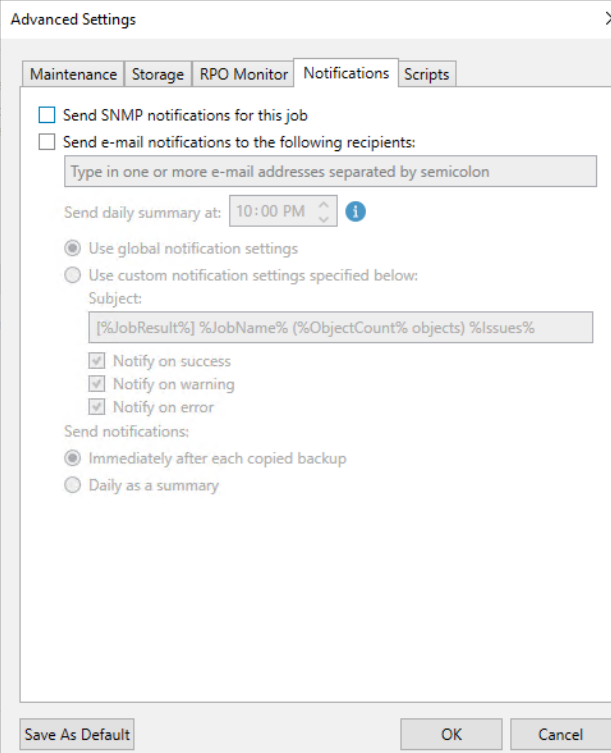
31. Select the Enable backup file encryption checkbox to encrypt the content of backup files.
32. Select a password from the drop-down list. If you haven't done so, click Add or use the Manage passwords link to create a new password.



33. On the Advanced Settings page, select RPO Monitor.
34. Select the Alert me if a backup is not copied within checkbox, and specify the desired RPO in minutes, hours, or days.
35. Select Alert me if log backup is not copied within checkbox.
36. If you have enabled copying of log backups, specify the desired RPO in minutes, hours, or days.



37. On the Advanced Settings, select Notifications.
38. Keep the default settings.

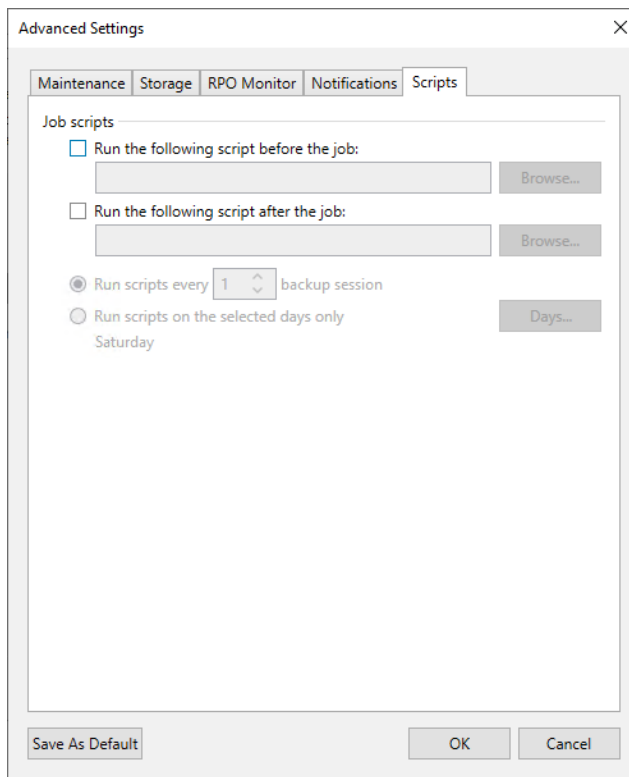


The image shows a screenshot of the 'Advanced Settings' dialog box, specifically the 'Notifications' tab. The dialog has a title bar with a close button (X). Below the title bar are five tabs: 'Maintenance', 'Storage', 'RPO Monitor', 'Notifications' (which is selected), and 'Scripts'. The 'Notifications' tab contains the following settings:

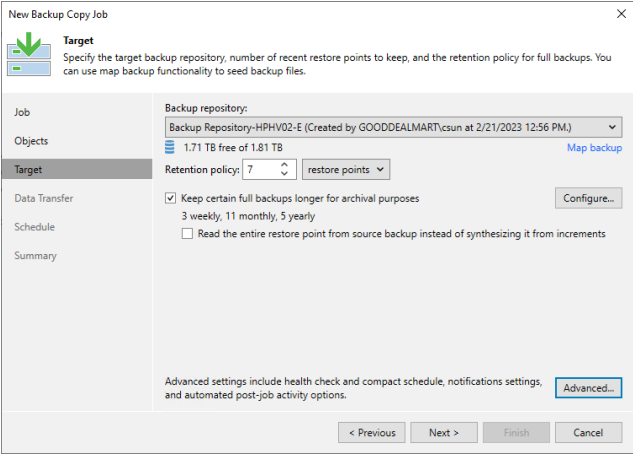
- ☐ Send SNMP notifications for this job
- ☐ Send e-mail notifications to the following recipients:
 - Type in one or more e-mail addresses separated by semicolon
- Send daily summary at: 10:00 PM (with an information icon)
- ☒ Use global notification settings
- ☐ Use custom notification settings specified below:
 - Subject:
 - [%JobResult%] %JobName% (%ObjectCount% objects) %Issues%
 - ☒ Notify on success
 - ☒ Notify on warning
 - ☒ Notify on error
- Send notifications:
 - ☒ Immediately after each copied backup
 - ☐ Daily as a summary

At the bottom of the dialog are three buttons: 'Save As Default', 'OK', and 'Cancel'.

39. On the Advanced Settings page, click Scripts.
40. Keep the default settings and click OK.



41. On the Target page, click Next.



New Backup Copy Job

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job

Objects

Target

Data Transfer

Schedule

Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

Retention policy: 7 restore points

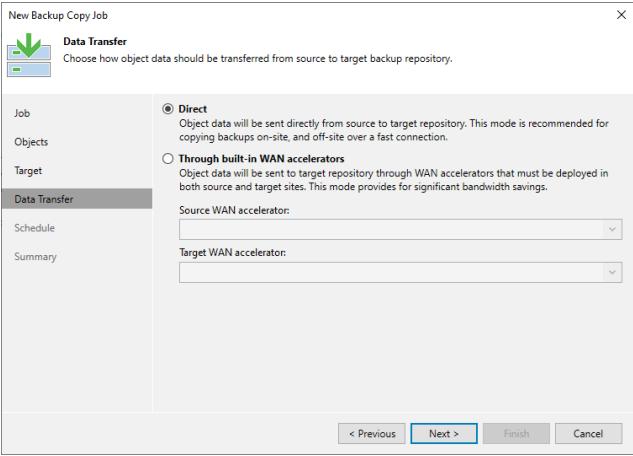
☒ Keep certain full backups longer for archival purposes
3 weekly, 11 monthly, 5 yearly
☐ Read the entire restore point from source backup instead of synthesizing it from increments

[Configure...](#)

Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

42. On the Data Transfer page, Select Direct if you plan to copy backup files over high-speed connections.
43. Click Next.



New Backup Copy Job

Data Transfer
Choose how object data should be transferred from source to target backup repository.

Job

Objects

Target

Data Transfer

Schedule

Summary

☒ **Direct**
Object data will be sent directly from source to target repository. This mode is recommended for copying backups on-site, and off-site over a fast connection.

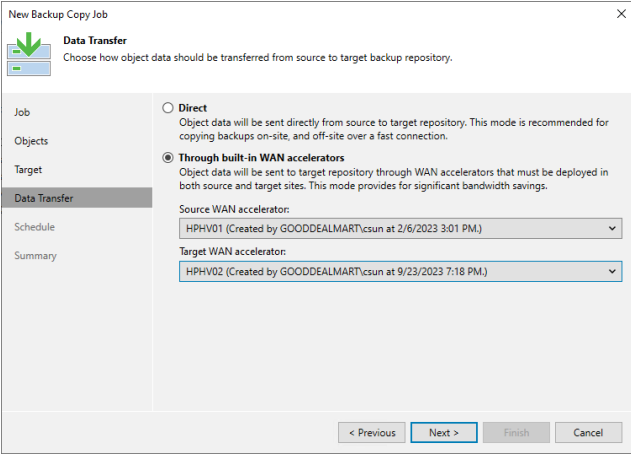
☐ **Through built-in WAN accelerators**
Object data will be sent to target repository through WAN accelerators that must be deployed in both source and target sites. This mode provides for significant bandwidth savings.

Source WAN accelerator:

Target WAN accelerator:

< Previous **Next >** Finish Cancel

44. Select the Through built-in WAN accelerators if you copy backup files over WAN or slow connections.
45. Select a WAN accelerator configured in the source site from the Source WAN accelerator drop-down list.
46. Select a WAN accelerator configured in the target site from the Target WAN accelerator drop-down list.



New Backup Copy Job

Data Transfer
Choose how object data should be transferred from source to target backup repository.

Job
Objects
Target
Data Transfer
Schedule
Summary

☐ **Direct**
Object data will be sent directly from source to target repository. This mode is recommended for copying backups on-site, and off-site over a fast connection.

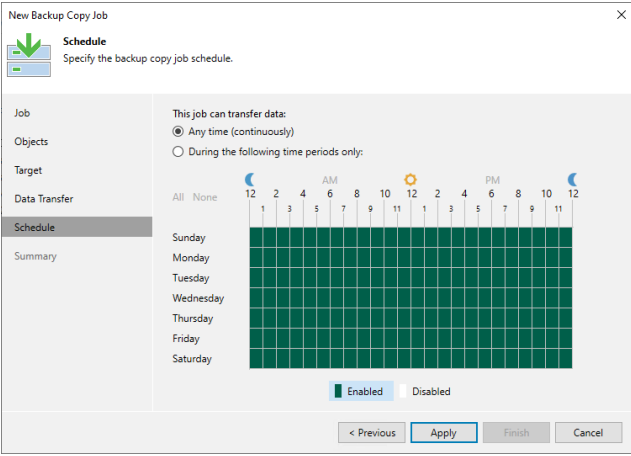
☒ **Through built-in WAN accelerators**
Object data will be sent to target repository through WAN accelerators that must be deployed in both source and target sites. This mode provides for significant bandwidth savings.

Source WAN accelerator:
HPHV01 (Created by GOODDEALMART\csun at 2/6/2023 3:01 PM.)

Target WAN accelerator:
HPHV02 (Created by GOODDEALMART\csun at 9/23/2023 7:18 PM.)

< Previous **Next >** Finish Cancel

47. On the Schedule page, select Any time (continuously) if this job can transfer data at any time.
48. Select During the following periods only if required.
49. Click Apply.



New Backup Copy Job

Schedule
Specify the backup copy job schedule.

Job
Objects
Target
Data Transfer
Schedule
Summary

This job can transfer data:
☒ Any time (continuously)
☐ During the following time periods only:

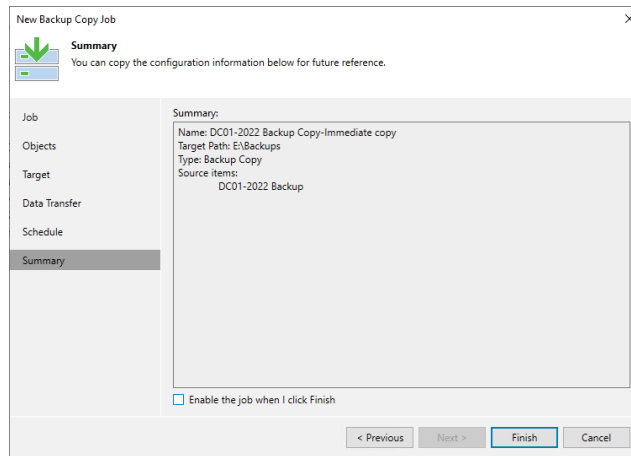
All None

	12	2	4	6	8	10	12	2	4	6	8	10	12
	1	3	5	7	9	11	1	3	5	7	9	11	
Sunday													
Monday													
Tuesday													
Wednesday													
Thursday													
Friday													
Saturday													

Enabled Disabled

< Previous **Apply** Finish Cancel

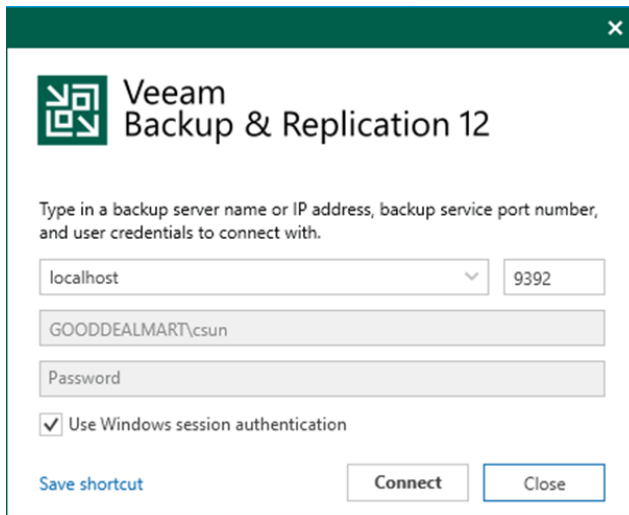
50. Select Enable the job on the Summary page when I click the Finish checkbox. If you want to start the job after creating it, click Finish.



Creating a Backup Copy Job with Periodic copy from the backup job workload

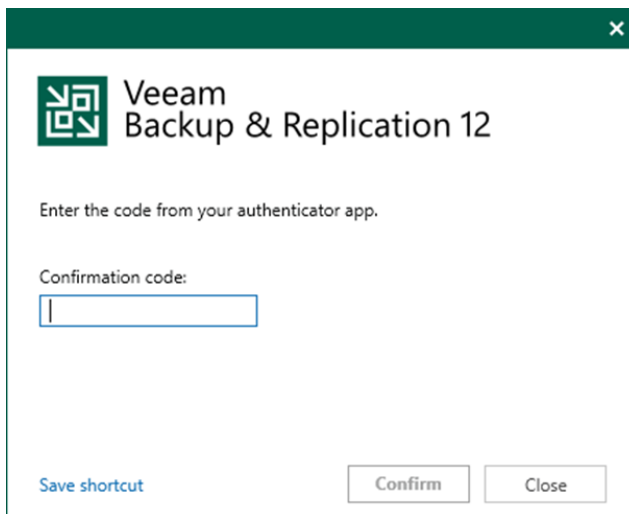
Periodic copy jobs can be scheduled to run during non-business hours or low-activity periods, reducing the impact on production systems. This allows you to efficiently manage backup and copy operations without causing disruption.

1. Login to the Veeam Backup and replication v12 manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



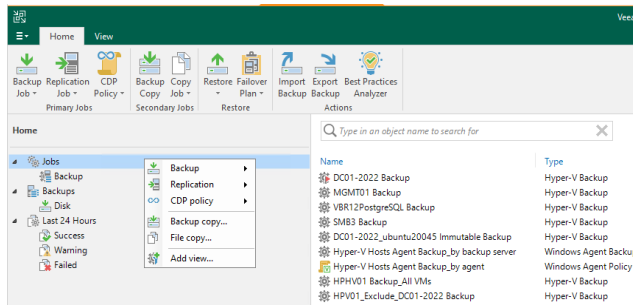
A screenshot of the Veeam Backup & Replication 12 connection dialog box. The window has a dark green title bar with a close button (X). The Veeam logo and title are at the top. Below the title, there is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." The form contains a dropdown menu with "localhost" selected, a port number field with "9392", a text field with "GOODDEALMART\csun", and a password field. There is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom, there are three buttons: "Save shortcut" (blue text), "Connect" (white with blue border), and "Close" (white with blue border).

3. Enter the MFA Confirmation code and click Confirm.

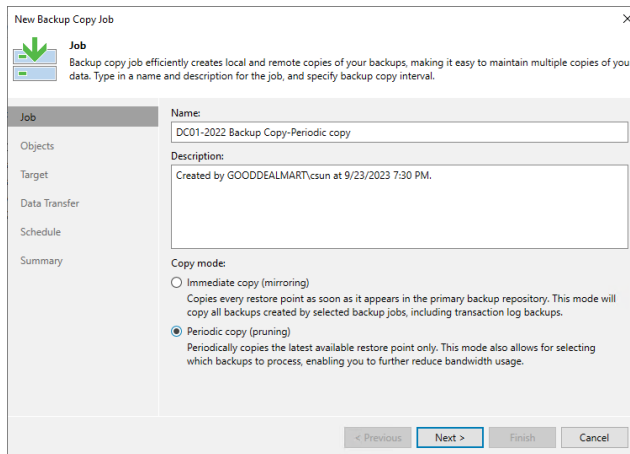


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog box. The window has a dark green title bar with a close button (X). The Veeam logo and title are at the top. Below the title, there is a text prompt: "Enter the code from your authenticator app." Below this, there is a label "Confirmation code:" followed by a text input field. At the bottom, there are three buttons: "Save shortcut" (blue text), "Confirm" (white with blue border), and "Close" (white with blue border).

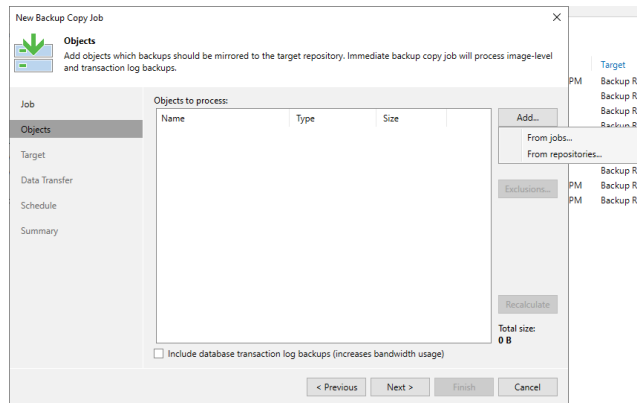
4. On the Home page, select Jobs, right-click Jobs, select Backup copy and click Virtual machine.



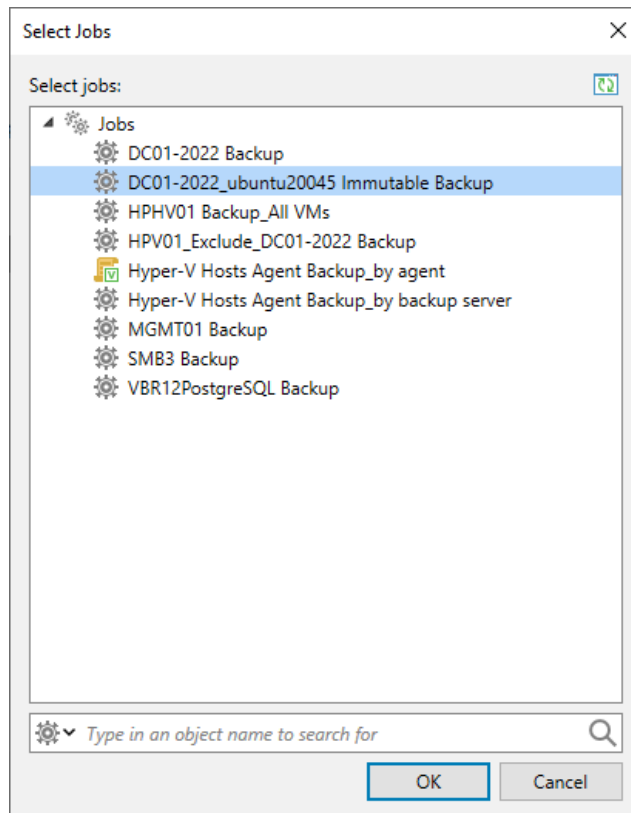
5. On the Name page, enter a name in the Name field.
6. Describe the Description field.
7. In the Copy mode session, select Periodic copy.
8. Click Next.



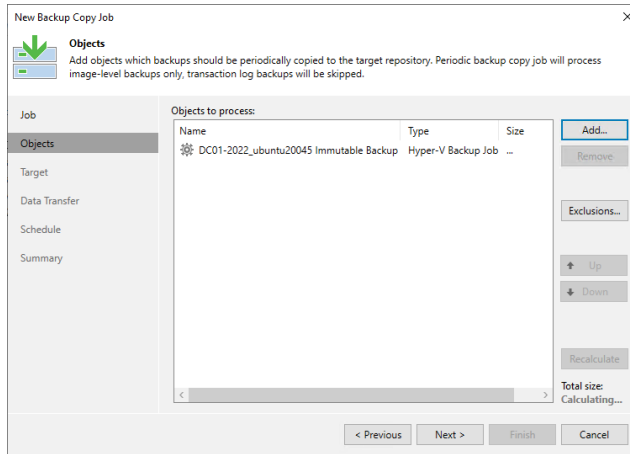
9. On the Objects page, click Add and select From jobs...



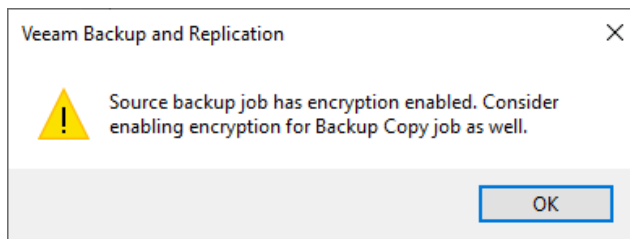
10. Select the job from the jobs list on the Select jobs page and click OK.



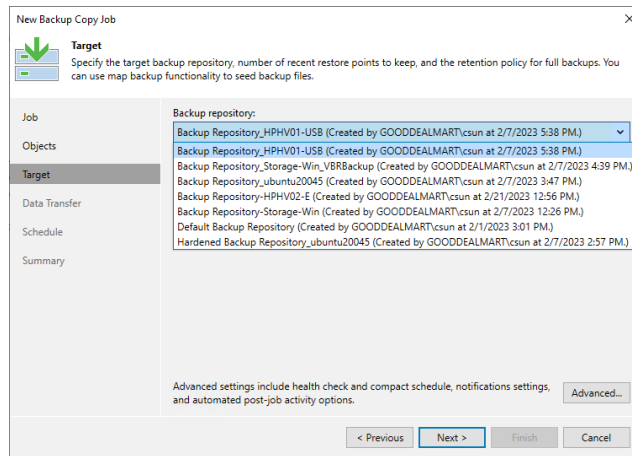
11. On the Objects page, click Next.



12. Click OK in the encryption-enabled warning message if the source backup job has encryption enabled.

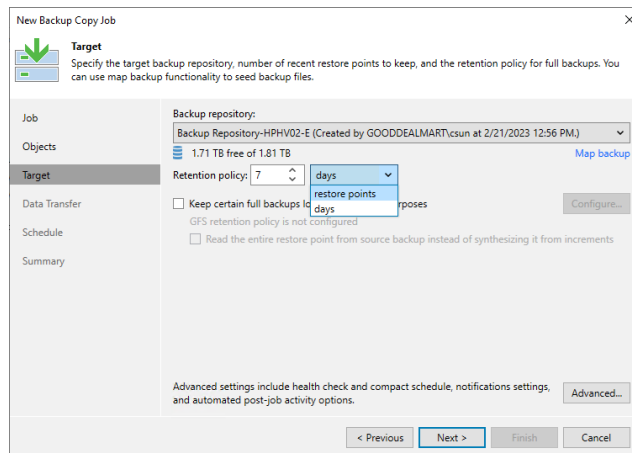


13. On the Target page, select the backup repository from the drop-down list.



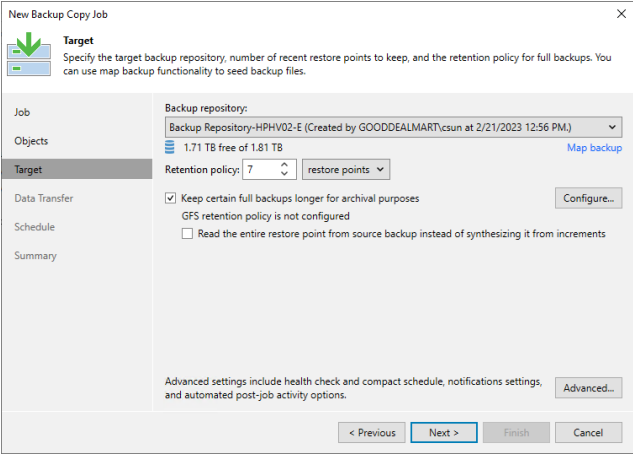
14. Set the retention policy settings for restore points in the Retention Policy field.

15. Select days or restore points from the drop-down list.



16. You can configure GFS retention policy settings for the backup copy job for long-term archiving.

17. Select Keep specific full backups for longer for archival purposes and click Configure.



New Backup Copy Job

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job

Objects

Target

Data Transfer

Schedule

Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

Retention policy: 7 restore points

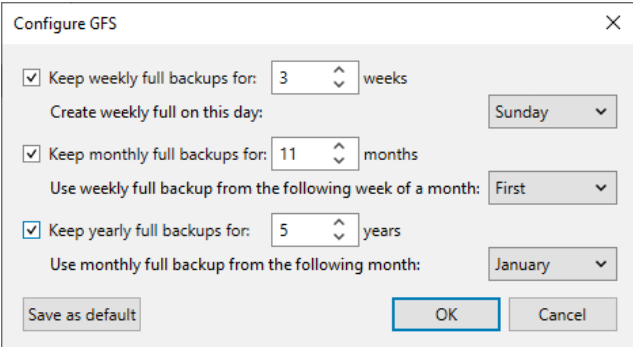
☒ Keep certain full backups longer for archival purposes
GFS retention policy is not configured
☐ Read the entire restore point from source backup instead of synthesizing it from increments

[Configure...](#)

Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

18. On the Configure GFS page, select the Keep weekly full backups for checkbox, and specify the number of weeks you want to prevent restore points from being modified and deleted.
19. Select the Keep monthly full backups for checkbox and specify the months you want to prevent restore points from being modified and deleted.
20. Select the Keep yearly full backups for checkbox and specify the years you want to prevent restore points from being modified and deleted.
21. Click OK.



Configure GFS

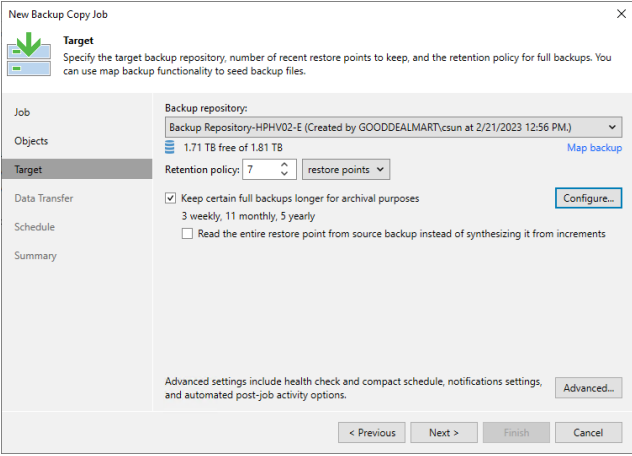
☒ Keep weekly full backups for: 3 weeks
Create weekly full on this day: Sunday

☒ Keep monthly full backups for: 11 months
Use weekly full backup from the following week of a month: First

☒ Keep yearly full backups for: 5 years
Use monthly full backup from the following month: January

[Save as default](#) [OK](#) [Cancel](#)

22. On the Target page, click Advanced.



The screenshot shows the 'New Backup Copy Job' wizard in the 'Target' step. The left sidebar contains a vertical list of steps: Job, Objects, Target (selected), Data Transfer, Schedule, and Summary. The main area is titled 'Target' and includes a green arrow icon and a description: 'Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.' Below this, the 'Backup repository:' is set to 'Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)' with a dropdown arrow and '1.71 TB free of 1.81 TB' below it. A 'Map backup' link is to the right. The 'Retention policy:' is set to '7' with a dropdown arrow and 'restore points' to its right. Below this, there are two checkboxes: 'Keep certain full backups longer for archival purposes' (checked) and 'Read the entire restore point from source backup instead of synthesizing it from increments' (unchecked). A 'Configure...' button is to the right of the first checkbox. At the bottom, there is a note about advanced settings and an 'Advanced...' button. Navigation buttons at the bottom are '< Previous', 'Next >', 'Finish', and 'Cancel'.

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job
Objects
Target
Data Transfer
Schedule
Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

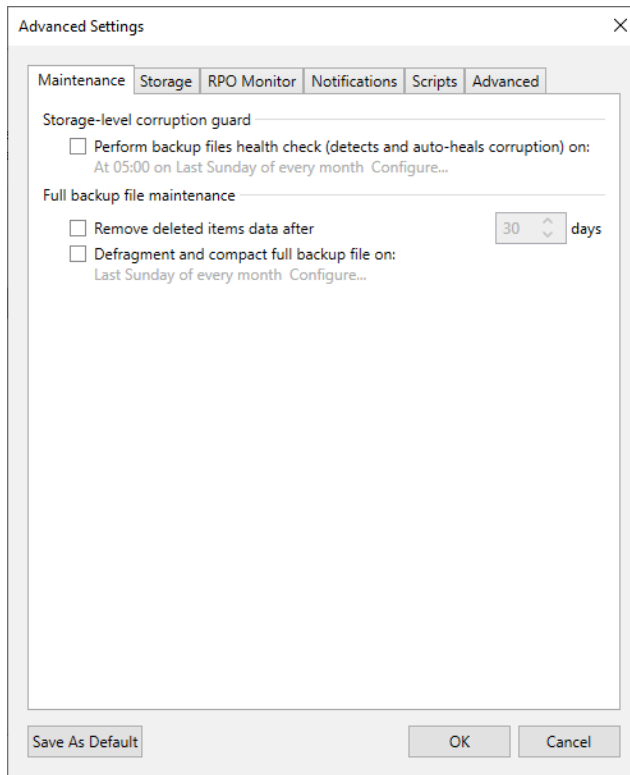
Retention policy: 7 restore points

☒ Keep certain full backups longer for archival purposes
3 weekly, 11 monthly, 5 yearly
☐ Read the entire restore point from source backup instead of synthesizing it from increments [Configure...](#)

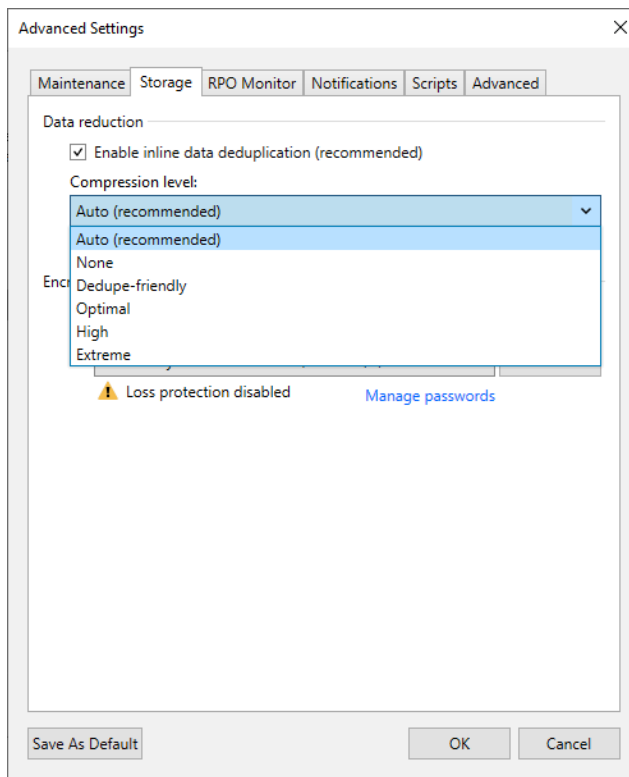
Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

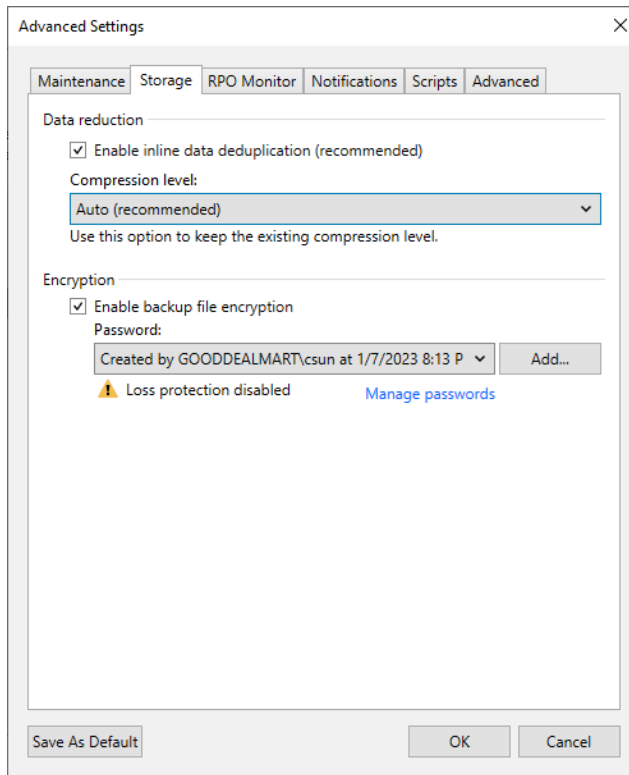
23. On the Advanced Settings, click Maintenance.
24. Select the Perform backup files health check (detects and auto-heals corruption) checkbox and specify the schedule for the health check if required.
25. Select the Remove deleted items data after checkbox and specify the retention days settings for deleted workloads if required.
26. Select the Defragment and compact full backup file checkbox and specify the schedule for the compacting operation if required.



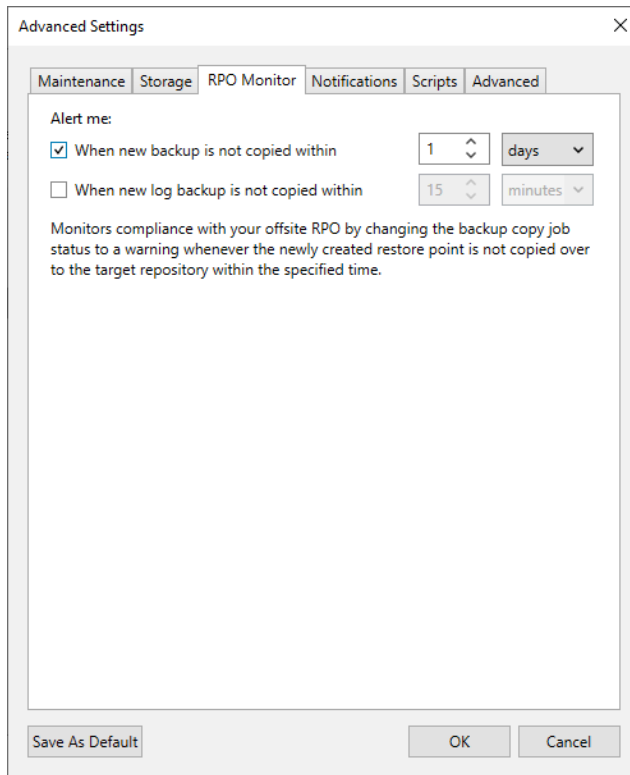
27. On Advanced Settings, click Storage.
28. Select the Enable inline data deduplication checkbox.
29. Select the compression level for the backup copy from the drop-down list.



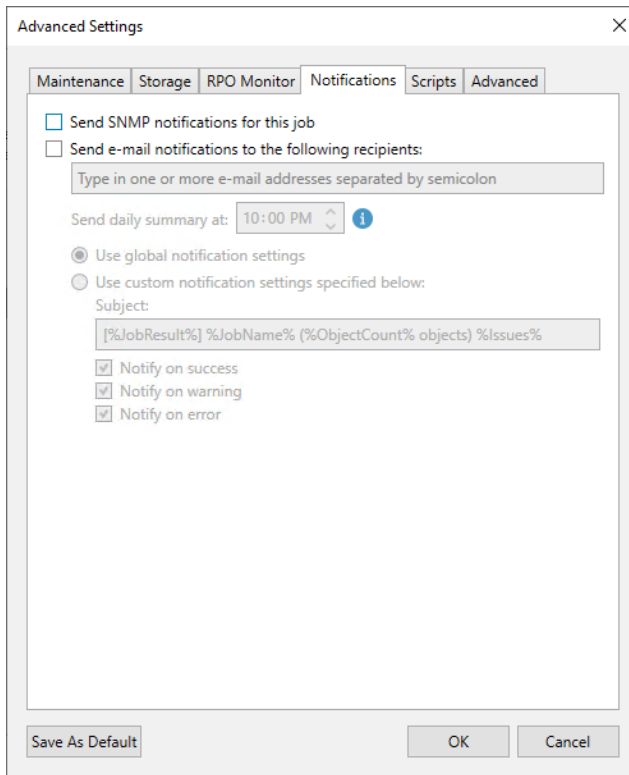
30. Select the Enable backup file encryption checkbox to encrypt the content of backup files.
31. Select a password from the drop-down list. If you haven't done so, click Add or use the Manage passwords link to create a new password.



32. On the Advanced Settings page, select RPO Monitor.
33. Select the Alert me if a backup is not copied within checkbox, and specify the desired RPO in minutes, hours, or days.
34. Select Alert me if log backup is not copied within checkbox.
35. If you have enabled copying of log backups, specify the desired RPO in minutes, hours, or days.



36. On the Advanced Settings, select Notifications.
37. Keep the default settings.

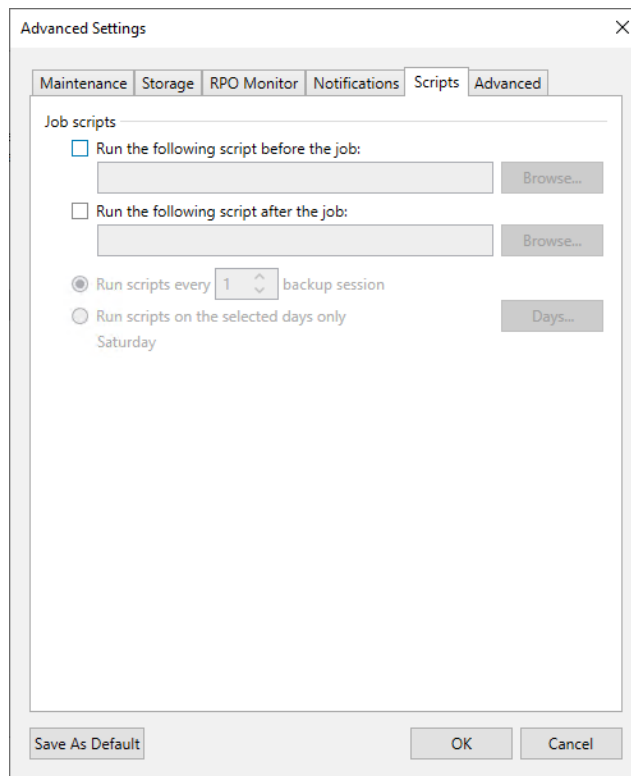


The image shows a screenshot of the 'Advanced Settings' dialog box, specifically the 'Notifications' tab. The dialog has a title bar with a close button (X). Below the title bar is a tabbed interface with tabs for 'Maintenance', 'Storage', 'RPO Monitor', 'Notifications' (selected), 'Scripts', and 'Advanced'. The 'Notifications' tab contains the following settings:

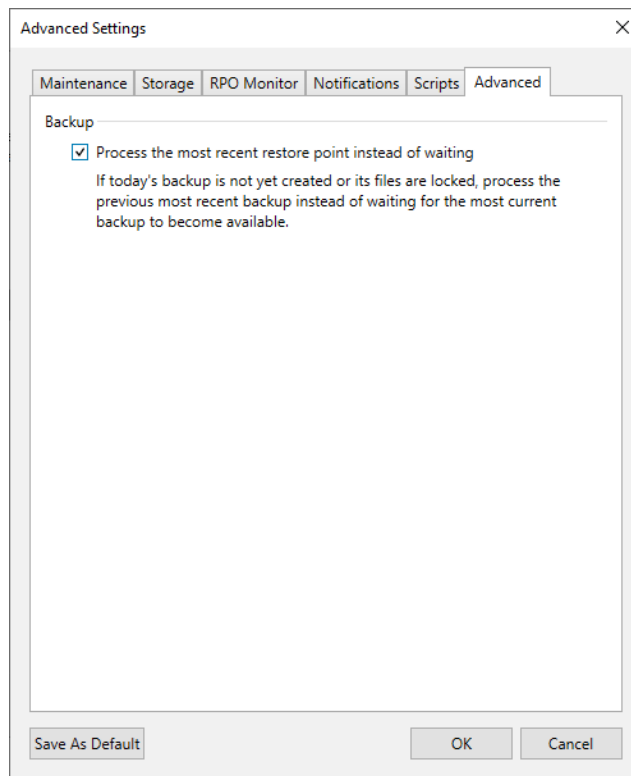
- ☐ Send SNMP notifications for this job
- ☐ Send e-mail notifications to the following recipients:
 - Type in one or more e-mail addresses separated by semicolon
- Send daily summary at: 10:00 PM (with an information icon)
- ☒ Use global notification settings
- ☐ Use custom notification settings specified below:
 - Subject:
 - [%JobResult%] %JobName% (%ObjectCount% objects) %Issues%
 - ☒ Notify on success
 - ☒ Notify on warning
 - ☒ Notify on error

At the bottom of the dialog are three buttons: 'Save As Default', 'OK', and 'Cancel'.

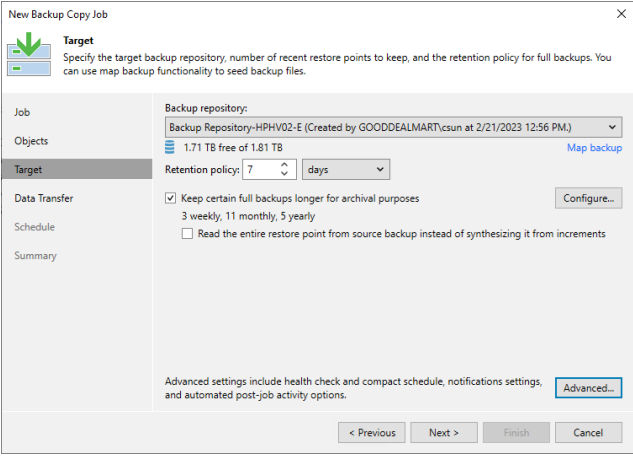
38. On the Advanced Settings page, click Scripts.
39. Keep the default settings.



40. On the Advanced Settings page, click Advanced.
41. Select Process the most recent restore point of waiting checkbox.
42. Click OK.



43. On the Target page, click Next.



New Backup Copy Job

Target
Specify the target backup repository, number of recent restore points to keep, and the retention policy for full backups. You can use map backup functionality to seed backup files.

Job

Objects

Target

Data Transfer

Schedule

Summary

Backup repository:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
1.71 TB free of 1.81 TB [Map backup](#)

Retention policy: 7 days

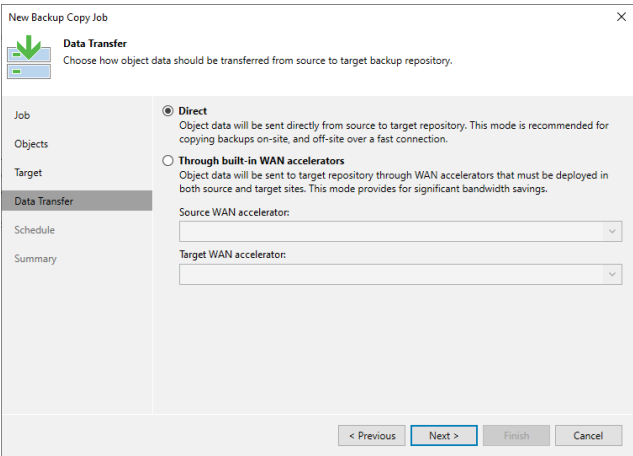
☒ Keep certain full backups longer for archival purposes
3 weekly, 11 monthly, 5 yearly [Configure...](#)

☐ Read the entire restore point from source backup instead of synthesizing it from increments

Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. [Advanced...](#)

< Previous Next > Finish Cancel

44. On the Data Transfer page, Select Direct if you plan to copy backup files over high-speed connections.
45. Click Next.



New Backup Copy Job

Data Transfer
Choose how object data should be transferred from source to target backup repository.

Job

Objects

Target

Data Transfer

Schedule

Summary

☒ **Direct**
Object data will be sent directly from source to target repository. This mode is recommended for copying backups on-site, and off-site over a fast connection.

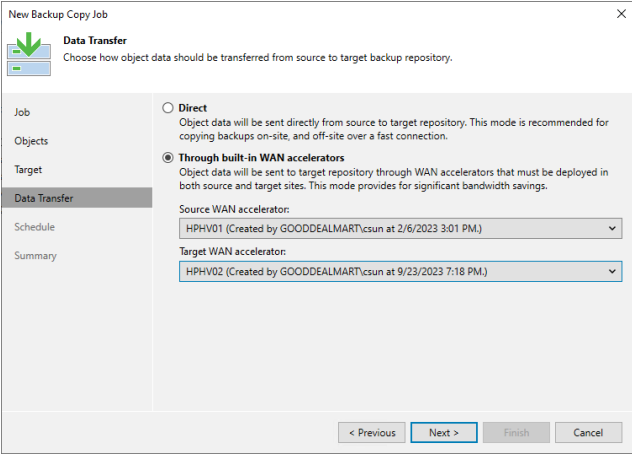
☐ **Through built-in WAN accelerators**
Object data will be sent to target repository through WAN accelerators that must be deployed in both source and target sites. This mode provides for significant bandwidth savings.

Source WAN accelerator:

Target WAN accelerator:

< Previous **Next >** Finish Cancel

46. Select the Through built-in WAN accelerators if you copy backup files over WAN or slow connections.
47. Select a WAN accelerator configured in the source site from the Source WAN accelerator drop-down list.
48. Select a WAN accelerator configured in the target site from the Target WAN accelerator drop-down list.



New Backup Copy Job

Data Transfer
Choose how object data should be transferred from source to target backup repository.

Job
Objects
Target
Data Transfer
Schedule
Summary

☐ **Direct**
Object data will be sent directly from source to target repository. This mode is recommended for copying backups on-site, and off-site over a fast connection.

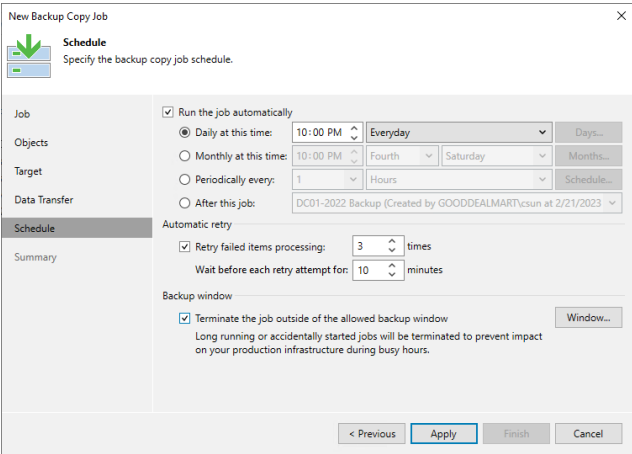
☒ **Through built-in WAN accelerators**
Object data will be sent to target repository through WAN accelerators that must be deployed in both source and target sites. This mode provides for significant bandwidth savings.

Source WAN accelerator:
HPHV01 (Created by GOODDEALMART\csun at 2/6/2023 3:01 PM.)

Target WAN accelerator:
HPHV02 (Created by GOODDEALMART\csun at 9/23/2023 7:18 PM.)

< Previous Next > Finish Cancel

49. Select Run the job automatically checkbox on the Schedule page and select your specified schedule.
50. Define whether Veeam Backup & Replication should retry the backup job if it fails in the Automatic retry section.
51. Define the time interval the backup job must complete in the Backup window section. The backup window ensures that the job does not overlap with production hours and that there is no unnecessary overhead on the production environment.
52. Click Apply.



New Backup Copy Job

Schedule
Specify the backup copy job schedule.

Job
Objects
Target
Data Transfer
Schedule
Summary

☒ Run the job automatically

☒ Daily at this time: 10:00 PM Everyday Days...

☐ Monthly at this time: 10:00 PM Fourth Saturday Months...

☐ Periodically every: 1 Hours Schedule...

☐ After this job: DC01-2022 Backup (Created by GOODDEALMART\csun at 2/21/2023)

Automatic retry

☒ Retry failed items processing: 3 times
 Wait before each retry attempt for: 10 minutes

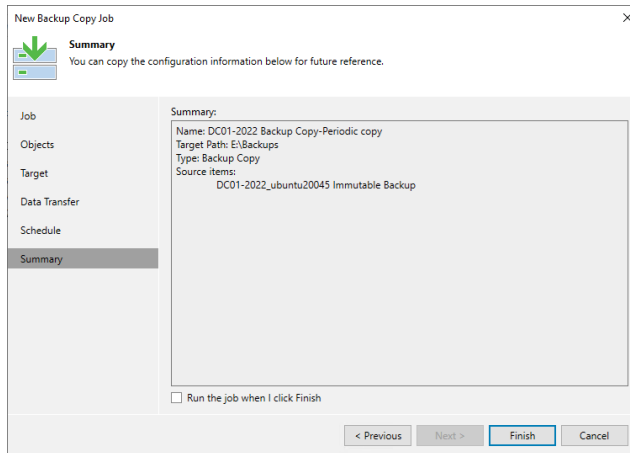
Backup window

☒ Terminate the job outside of the allowed backup window
 Long running or accidentally started jobs will be terminated to prevent impact on your production infrastructure during busy hours.

Window...

< Previous Apply Finish Cancel

53. Select **Enable** the job on the **Summary** page when I click the **Finish** checkbox. If you want to start the job after creating it, click **Finish**.

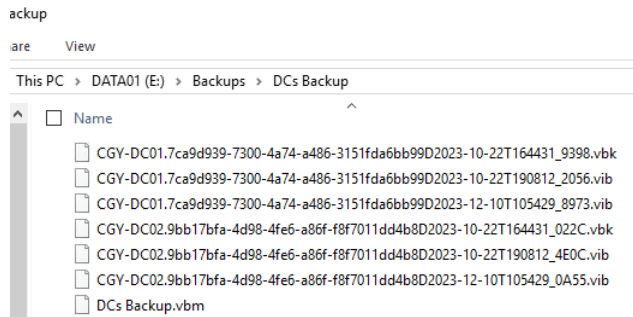


Upgrading Backup Chain Format from Per-Machine Backup with Single Metadata File to Per-Machine with Separate Metadata Files

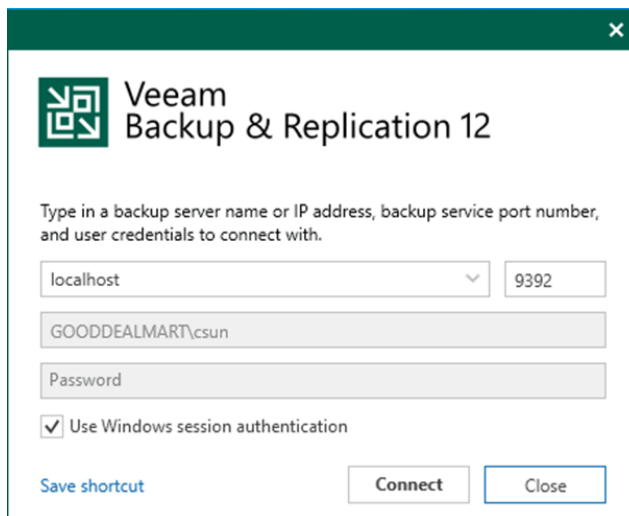
Since Veeam Backup & Replication version 12, the per-machine backup format with individual metadata files has been the default choice for new repositories. Veeam Backup & Replication stores data from each workload into a separate backup file and creates a separate metadata file (.VBM) for each workload.

You can upgrade the existing backup chains format from per-machine backup with single metadata to per-machine with separate metadata files.

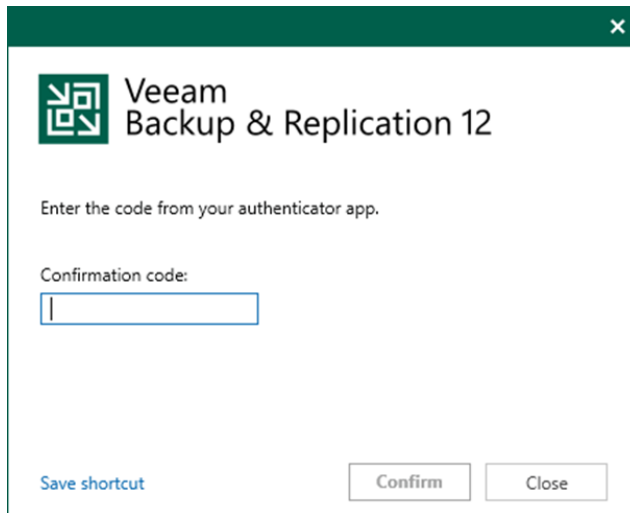
1. Check the existing backup chain files, and you will see the backup chain format is per machine with a single metadata file for each job.



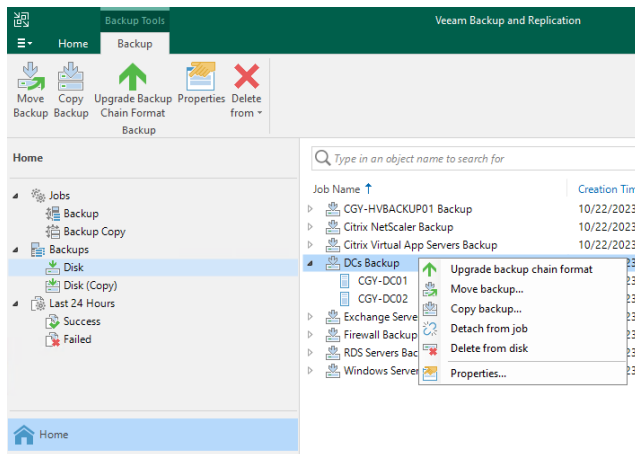
2. Login to the Veeam Backup and replication v12 manager server.
3. Open the Veeam Backup & Replication 12 Console and click Connect.



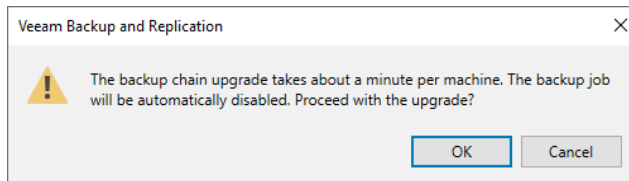
4. Enter the MFA Confirmation code and click Confirm.



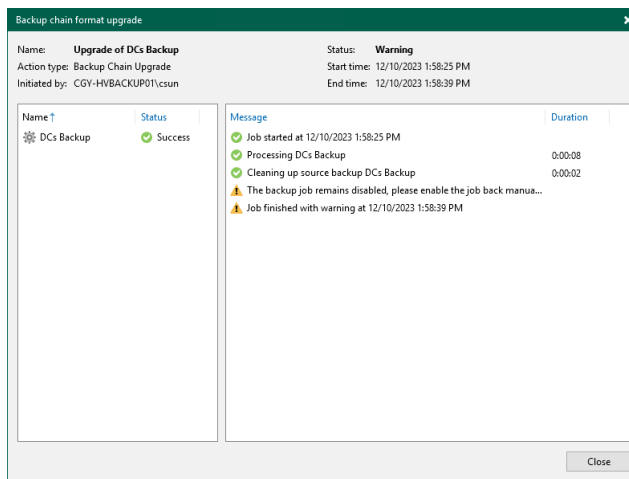
5. On the Home page, expand Backups, select Disk.
6. Right-click the backup job and select Upgrade backup chain format.



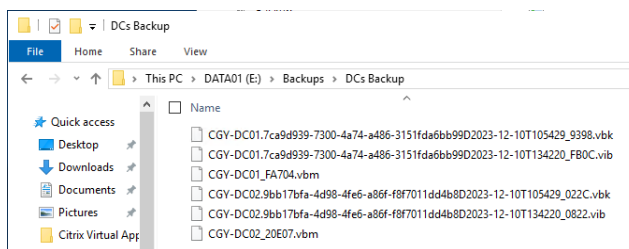
7. Click OK on the backup job will be automatically disabled the warning page.



8. On the Backup chain format upgrade page, ensure the upgrade status is successful and click Close.

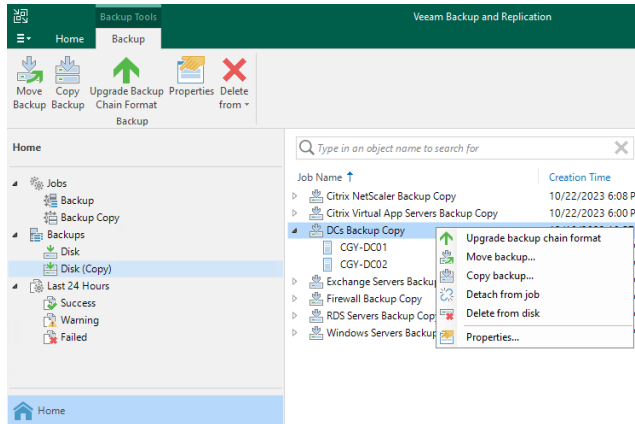


9. Check the backup chain files.
10. The backup chain format is per machine with separate metadata files.

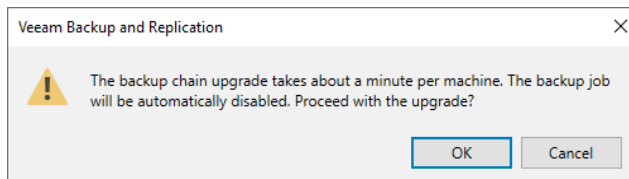


11. You need to upgrade the backup chain format for the backup copy.

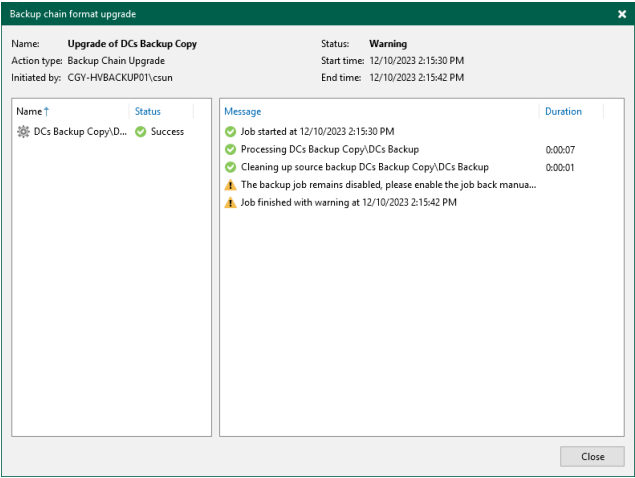
12. On the Home page, expand Backups, select Disk (Copy).
13. Right-click the backup copy job and select Upgrade backup chain format.



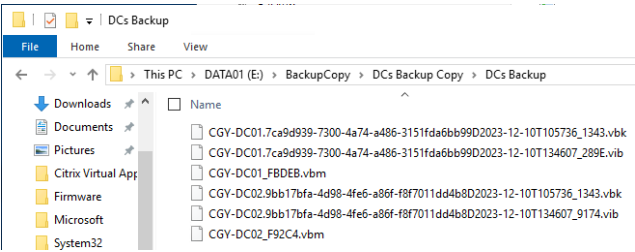
14. Click OK on the backup job will be automatically disabled the warning page.



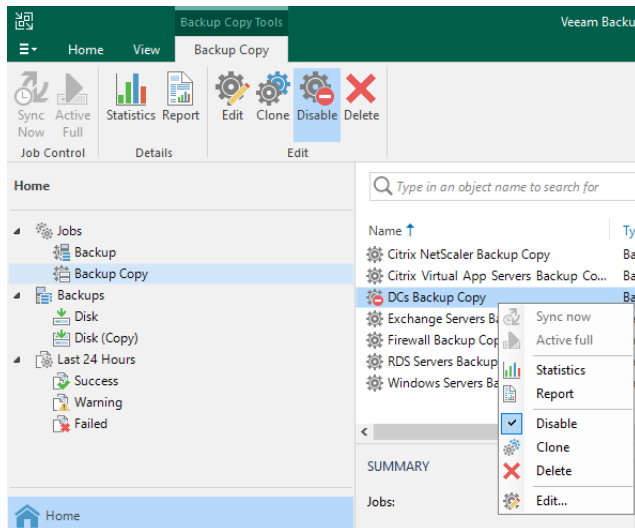
15. On the Backup chain format upgrade page, ensure the upgrade status is successful and click Close.



- 16. Check the backup chain files.
- 17. The backup chain format is per machine with separate metadata files.



- 18. On the Home page, expend Jobs, and select Backup Copy.
- 19. Right-click the backup copy job and unselect the Disable to reenale the backup copy job.

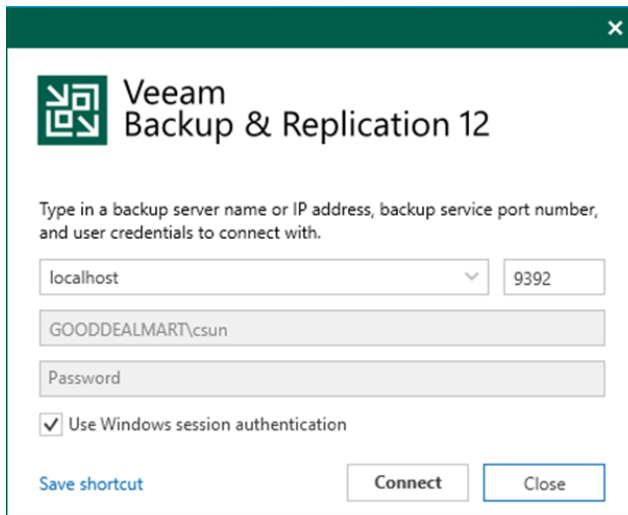


Moving Backups to Another Repository

You can migrate all backups from a backup operation to another repository using Veeam Backup & Replication v12.

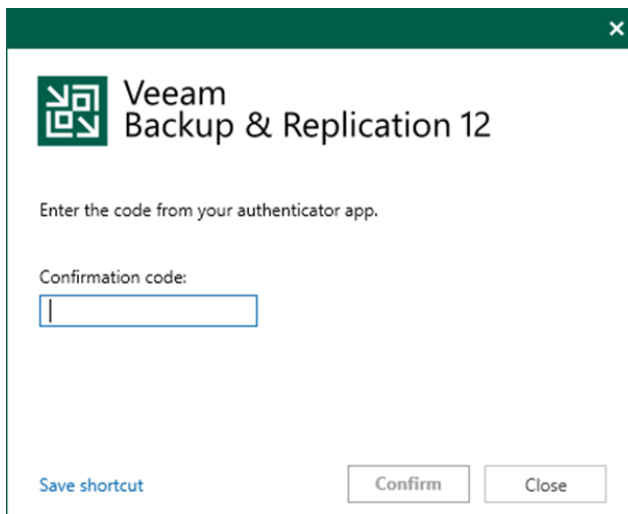
If you run out of free space on a repository and want to migrate all backups made by a backup job to another repository, target the backup job to this repository, and continue the backup chain, moving backups to another repository can be useful.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



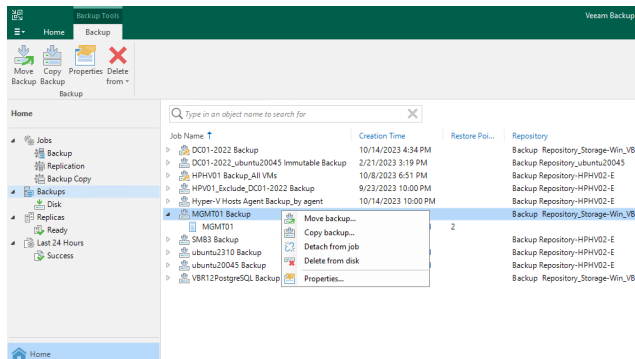
A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are four input fields: a dropdown menu showing "localhost", a text box with "9392", a text box with "GOODDEALMART\csun", and a password field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut" (blue), "Connect" (white), and "Close" (white).

3. Enter the MFA Confirmation code and click Confirm.

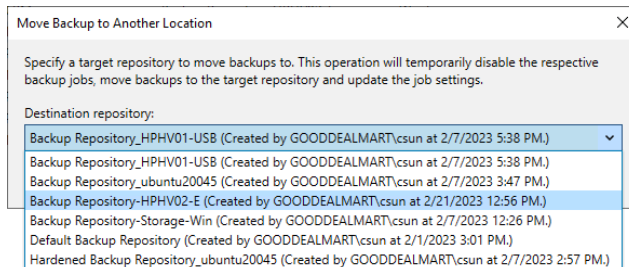


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a single-character input field. At the bottom are three buttons: "Save shortcut" (blue), "Confirm" (white), and "Close" (white).

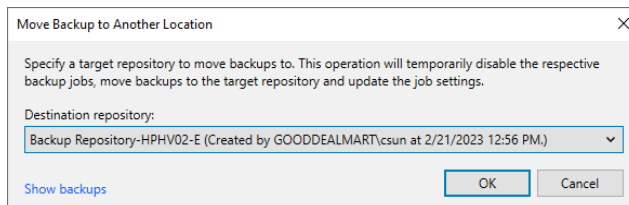
4. On the Home page, select Backups.
5. Right-click the backup job and select Move backup.



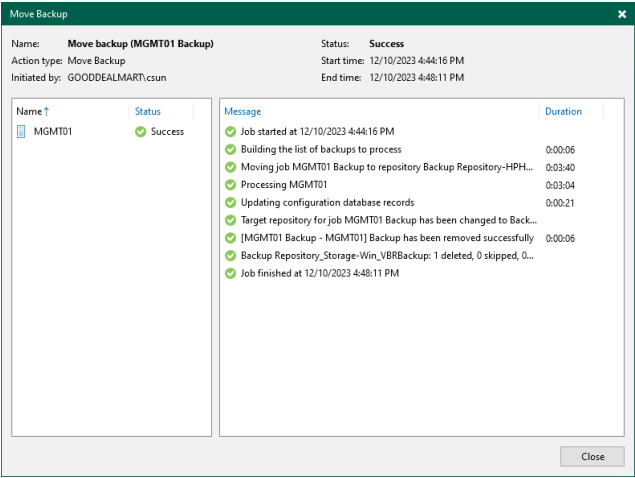
6. On the Move Backup to Another Location page, select the repository from the Destination repository drop-down list.



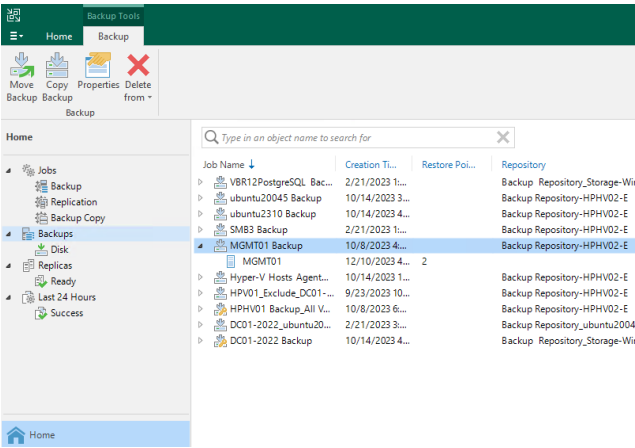
7. Click OK on the Move Backup to Another Location page.



8. On the Move backup page, ensure move backup success and click Close.



- 9. On the Home page, select Backups.
- 10. Ensure the Repository of the job is the new target repository.

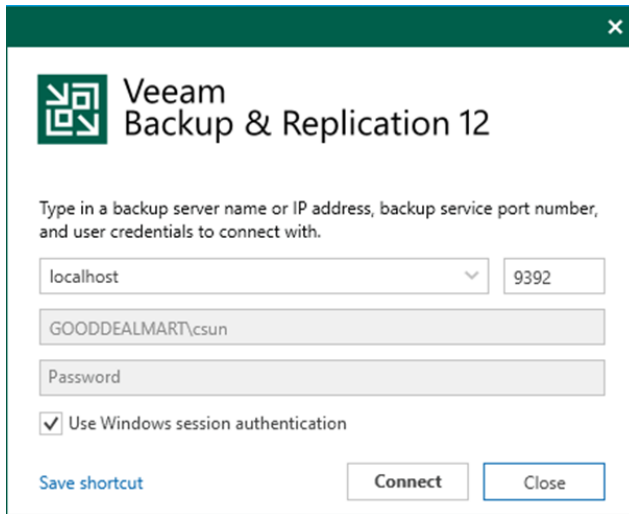


Moving VM Backups to Another Job

Moving workloads and their backups to a different backup job can be useful if you want to split a backup job into multiple backup jobs or alter backup

settings for certain workloads. You also want to keep the existing backup chains for the workloads.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

A screenshot of the Veeam Backup & Replication 12 Connect dialog box. The window has a dark green title bar with a close button (X) in the top right corner. The main area has a white background with the Veeam logo (a green square with a white geometric pattern) and the text "Veeam Backup & Replication 12" in a bold, black font. Below the logo, there is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are three input fields: a dropdown menu with "localhost" selected, a text box with "9392", and a text box with "GOODDEALMART\csun". Below these is a "Password" text box. A checkbox labeled "Use Windows session authentication" is checked. At the bottom left is a blue link "Save shortcut". At the bottom right are two buttons: "Connect" and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

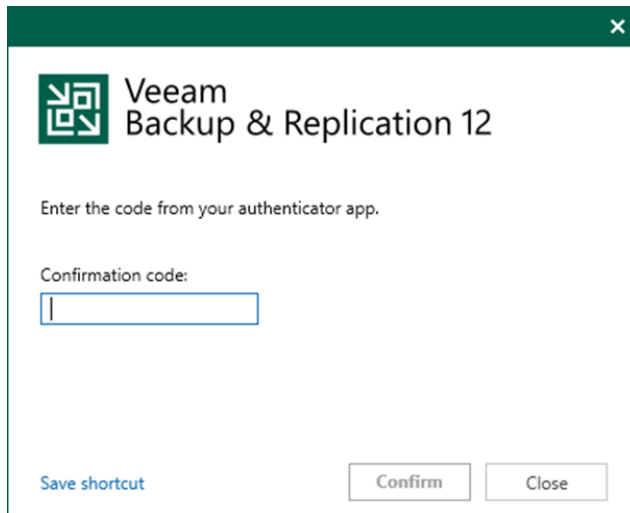
GOODDEALMART\csun

Password

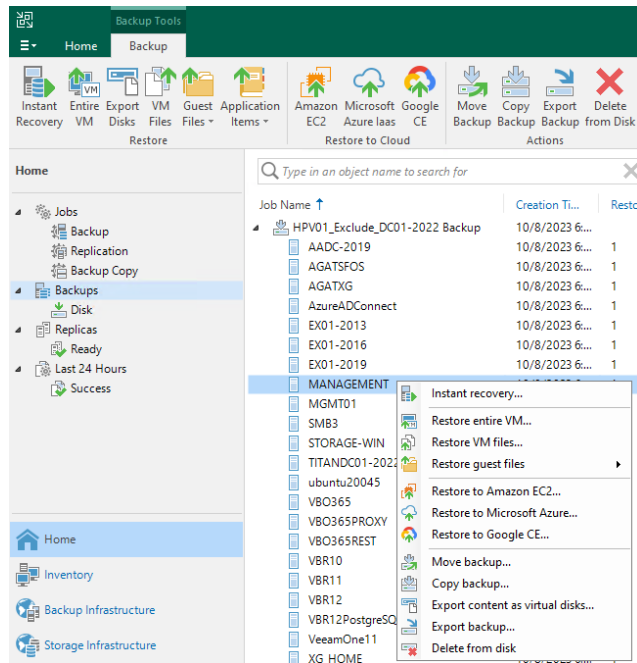
☒ Use Windows session authentication

[Save shortcut](#) **Connect** **Close**

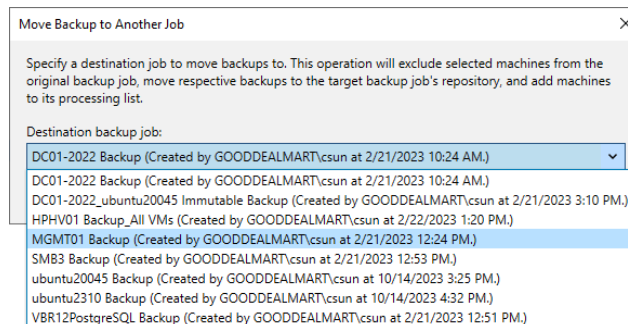
3. Enter the MFA Confirmation code and click Confirm.



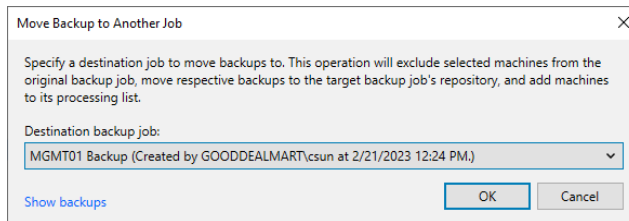
4. On the Home page, select Backups.
5. Expand the backup job, right-click the workload, and select Move backup.



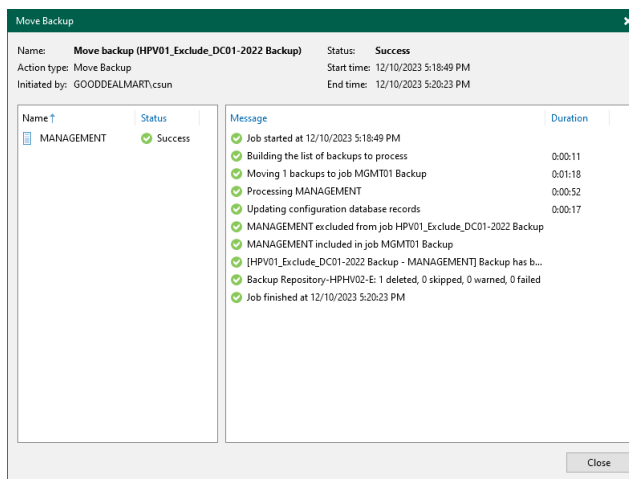
6. Select the backup job from the Destination backup job drop-down list on the Move Backup to Another Job page.



7. Click OK on the Move Backup to Another Job page.



8. On the Move backup page, ensure move backup success, and click Close.
9. Workloads will be added to the selected job and excluded from the original job by Veeam Backup & Replication. The chosen workloads' backup will be migrated to the repository for which the chosen job is destined.



Deleting VM Backup from Disk

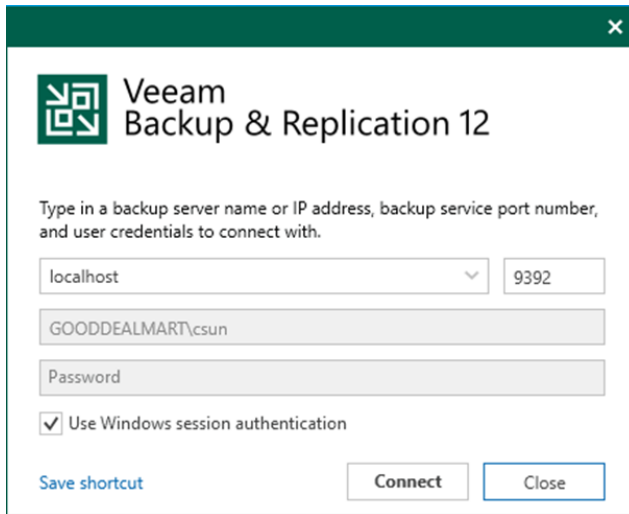
Use the Delete from disk if you want to remove backup records from the Veeam Backup & Replication v12 console and configuration database.

You can delete VM backup files from the repository.

Veeam Backup & Replication v12 deletes the backup chain from the backup repository when you erase backup files from a disk. As a result, the next

time the backup job runs, Veeam Backup & Replication v12 will create full backups of the VMs included in the task.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

The image shows a Windows-style dialog box titled "Veeam Backup & Replication 12". It has a dark green header bar with a close button (X) in the top right corner. The main content area is white and contains the Veeam logo (a green square with a white geometric pattern) followed by the text "Veeam Backup & Replication 12". Below this, there is a prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." The form includes a dropdown menu with "localhost" selected, a text box with "9392", a text box with "GOODDEALMART\csun", and a password field labeled "Password". There is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom left is a link "Save shortcut", and at the bottom right are two buttons: "Connect" and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

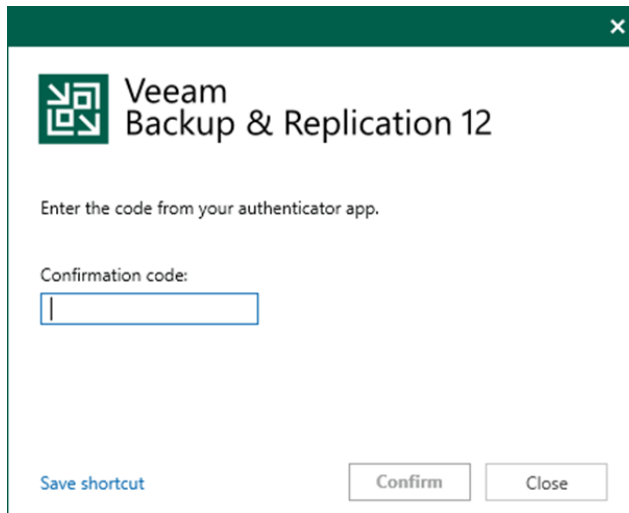
GOODDEALMART\csun

Password

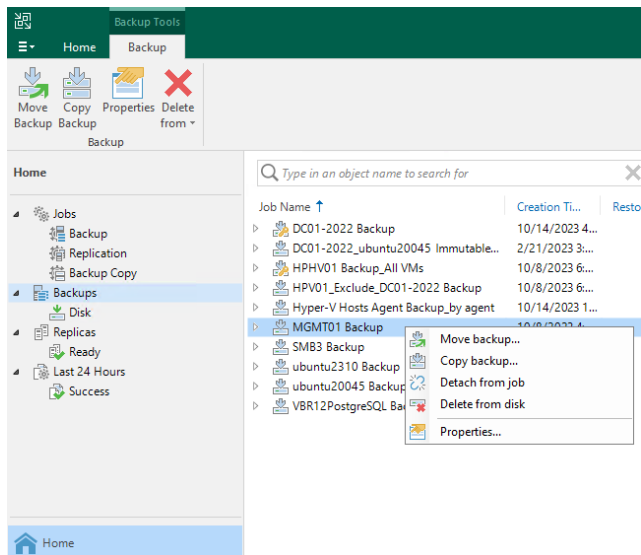
☒ Use Windows session authentication

[Save shortcut](#) **Connect** **Close**

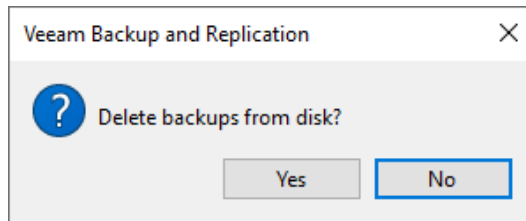
3. Enter the MFA Confirmation code and click Confirm.



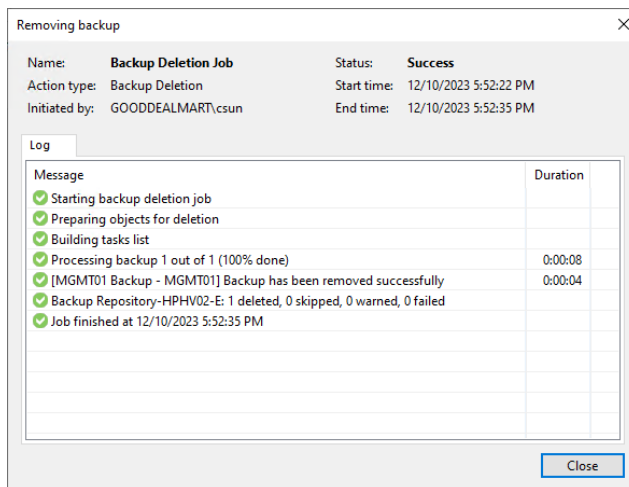
4. On the Home page, select Backups.
5. Right-click the job and select Delete from disk.



6. Click Yes to delete backups from the disk.



7. On the Removing backup page, ensure removing backup success, click Close.



Deleting Entire job back files from the backup repository

If you want to remove backup records from the Veeam Backup & Replication v12 console and configuration database, you must use the Delete from disk.

You can delete all the job backup files from the repository.

Veeam Backup & Replication v12 deletes the backup chain from the backup repository when you erase backup files from a disk. As a result, the next time the backup job runs, Veeam Backup & Replication v12 will create full backups of the VMs included in the task.

Chapter 2: Replication

Veeam replication is a data protection and disaster recovery solution that enables businesses to replicate virtual machines (VMs) and their data in an offsite location. This helps to ensure that critical data is protected and available in case of a disaster or other unexpected events that could disrupt business operations.

Veeam replication creates a copy of the virtual machine and its data on a remote server, which can be located in another data center or a cloud environment. This copy is then kept in sync with the original VM so that any changes made to the original are also reflected in the replica.

The replica can be quickly activated in a disaster to restore services and minimize downtime. Veeam replication also provides several features to ensure the reliability and security of the replicated data, including encryption, compression, and bandwidth throttling.

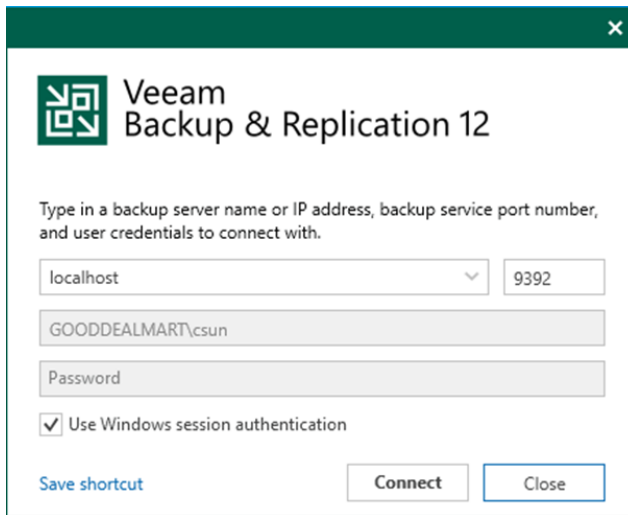
Overall, Veeam replication is a powerful tool for businesses that must ensure the availability and reliability of their critical data. It can help minimize the impact of disasters and other unexpected events.

Creating a Replication job to replicate the specified VMs at the Production Site

A replication job must be configured before you can create VM replicas. The replication job specifies how, where, and when VM data is replicated. A single job can process one or more virtual machines.

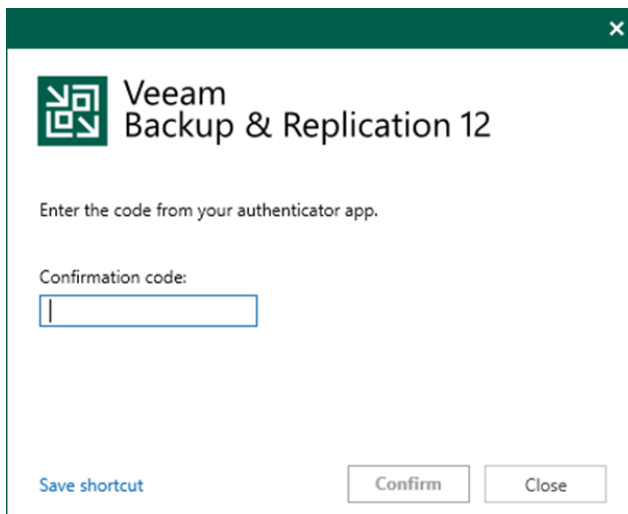
This procedure creates a replication job to replicate the specified production virtual machines at the same production site.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



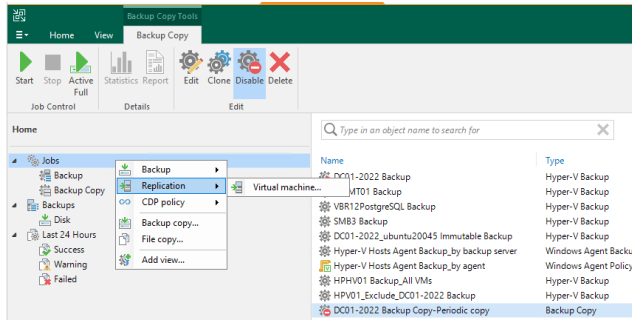
A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are three input fields: a dropdown menu showing "localhost", a text box with "9392", and a text box with "GOODDEALMART\csun". Below these is a "Password" field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut" (blue text), "Connect" (white), and "Close" (white).

3. Enter the MFA Confirmation code and click Confirm.

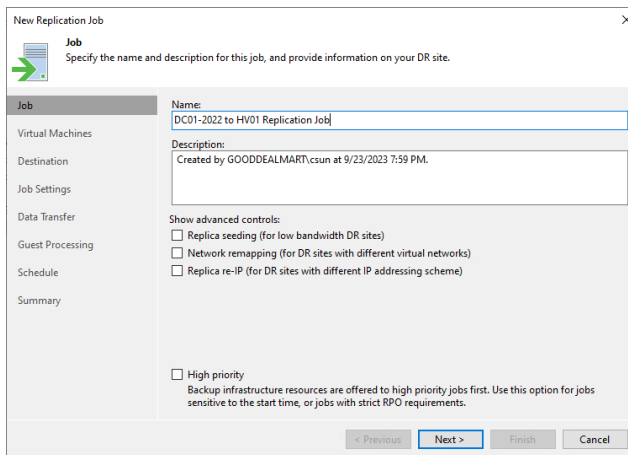


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a single-character input field. At the bottom are three buttons: "Save shortcut" (blue text), "Confirm" (white), and "Close" (white).

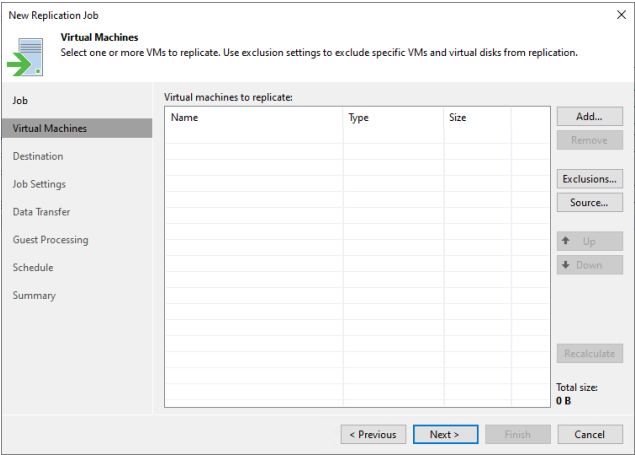
4. On the Home page, select Jobs.
5. Right-click Jobs and select Replication.
6. Click Virtual machine.



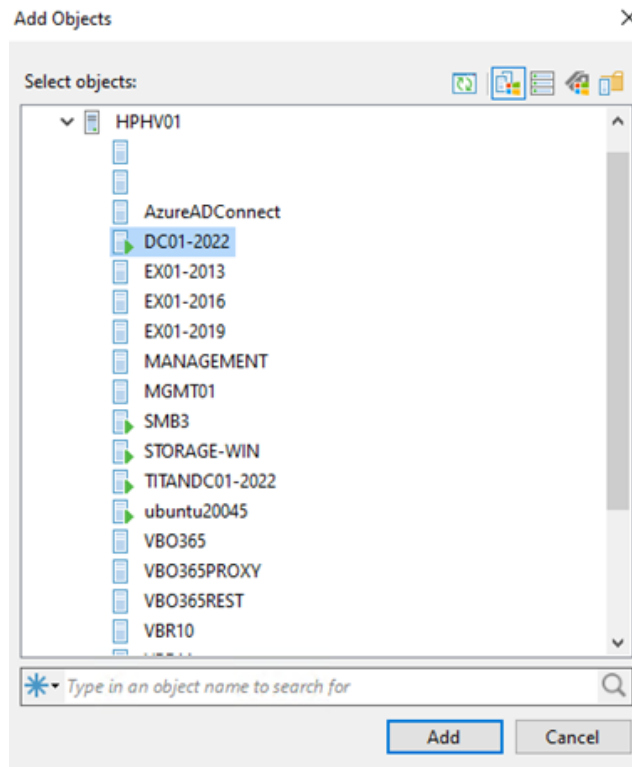
7. Enter a name for the replication job on the Job page in the Name field.
8. Describe the Description field.
9. Select the High priority check box if required.
10. Click Next.



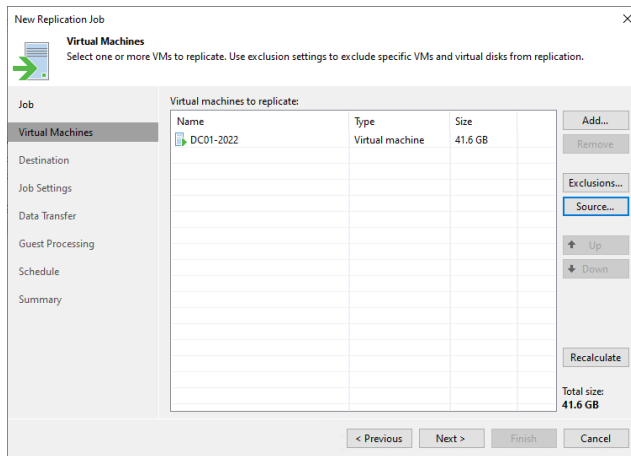
11. On the Virtual Machines page, click Add.



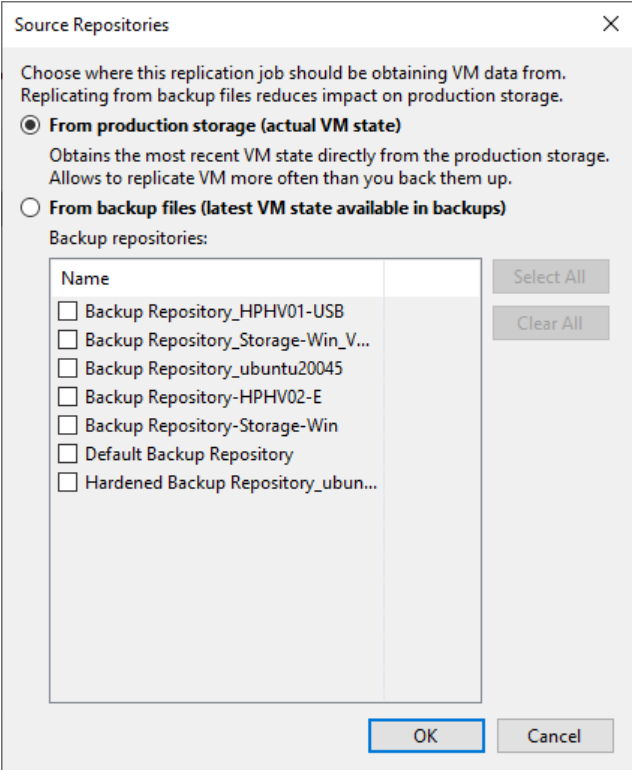
12. Select the objects in the list on the Add Objects page and click Add.



13. On the Virtual machines page, click Source.



14. Select From production storage (actual VM state) on the Source Repositories page. Veeam Replication will retrieve VM data from data stores connected to the source Microsoft Hyper-V host.
15. Select From backup files (latest VM state available in backups) if required. Veeam Replication will read VM data from the backup chain that is already in the selected backup repository.
16. Click OK.



The dialog box is titled "Source Repositories" and has a close button (X) in the top right corner. It contains the following text and controls:

Choose where this replication job should be obtaining VM data from.
Replicating from backup files reduces impact on production storage.

☒ **From production storage (actual VM state)**
Obtains the most recent VM state directly from the production storage.
Allows to replicate VM more often than you back them up.

☐ **From backup files (latest VM state available in backups)**
Backup repositories:

Name
☐ Backup Repository_HPHV01-USB
☐ Backup Repository_Storage-Win_V...
☐ Backup Repository_ubuntu20045
☐ Backup Repository-HPHV02-E
☐ Backup Repository-Storage-Win
☐ Default Backup Repository
☐ Hardened Backup Repository_ubun...

To the right of the table are two buttons: "Select All" and "Clear All". At the bottom of the dialog are "OK" and "Cancel" buttons.

17. On the Virtual Machines page, click Next.

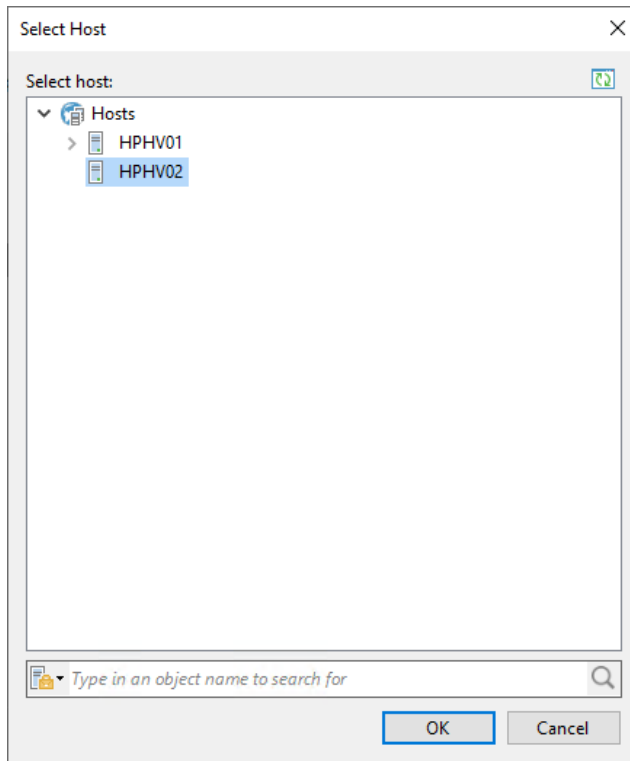
The screenshot shows the 'New Replication Job' dialog box with the 'Virtual Machines' tab selected. The dialog has a sidebar on the left with tabs: Job, Virtual Machines, Destination, Job Settings, Data Transfer, Guest Processing, Schedule, and Summary. The 'Virtual Machines' tab is active, showing a table titled 'Virtual machines to replicate:'. The table has three columns: Name, Type, and Size. One row is visible with 'DC01-2022' as the Name, 'Virtual machine' as the Type, and '41.6 GB' as the Size. To the right of the table are buttons: 'Add...', 'Remove', 'Exclusions...', 'Source...' (highlighted with a blue border), 'Up', 'Down', and 'Recalculate'. Below the table, it says 'Total size: 41.6 GB'. At the bottom of the dialog are buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

Name	Type	Size
DC01-2022	Virtual machine	41.6 GB

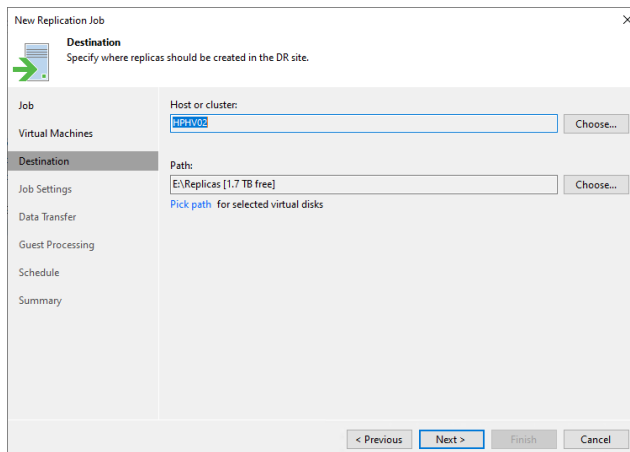
18. On the Destination page, click Choose in the Host or cluster session.

The screenshot shows the 'New Replication Job' dialog box with the 'Destination' tab selected. The dialog has a sidebar on the left with tabs: Job, Virtual Machines, Destination, Job Settings, Data Transfer, Guest Processing, Schedule, and Summary. The 'Destination' tab is active, showing a section titled 'Destination' with the instruction 'Specify where replicas should be created in the DR site.' Below this, there are two input fields: 'Host or cluster:' and 'Path:'. Each field has a 'Choose...' button to its right. Below the 'Path:' field, it says 'Pick path for selected virtual disks'. At the bottom of the dialog are buttons: '< Previous', 'Next >' (highlighted with a blue border), 'Finish', and 'Cancel'.

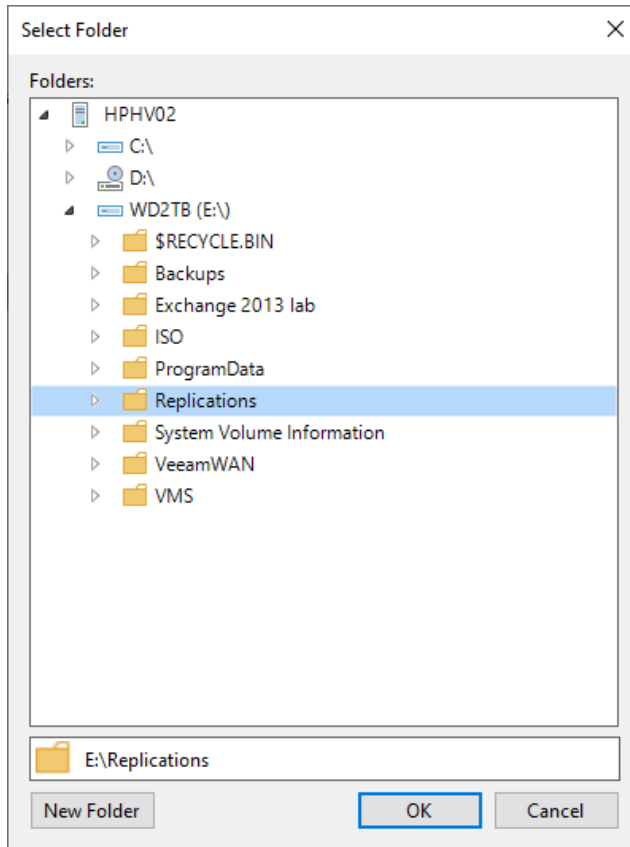
19. Select the destination host server on the Select Host page and click OK.



20. On the Destination page, click Choose in the Path session.



21. On the Folders page, specify a path to the folder where VM replica files must be stored, and click OK.



22. On the Destination page, click Next.

New Replication Job

Destination
Specify where replicas should be created in the DR site.

Job
Host or cluster: HPHV02 Choose...

Virtual Machines

Destination
Path: E:\Replications [1,7 TB free] Choose...
[Pick path](#) for selected virtual disks

Job Settings

Data Transfer

Guest Processing

Schedule

Summary

< Previous Next > Finish Cancel

23. Select the Repository for metadata from the drop-down list on the Job Settings page.

Note:

- This setting must be specified only for snapshot replicas. Legacy replicas do not use a backup repository for storing metadata.
- You cannot store VM replica metadata on deduplicating storage appliances.
- You cannot store replica metadata in a scale-out backup repository.

New Replication Job

Job Settings
Specify backup repository located in the source site to host metadata in, replica suffix and retention policy, and customize advanced job settings if required.

Job

Virtual Machines

Destination

Job Settings
Repository for replica metadata:
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
Backup Repository-HPHV01-USB (Created by GOODDEALMART\csun at 2/7/2023 5:38 PM.)
Backup Repository-Storage-Win_VBRBackup (Created by GOODDEALMART\csun at 2/7/2023 4:39 PM.)
Backup Repository-ubuntu20045 (Created by GOODDEALMART\csun at 2/7/2023 3:47 PM.)
Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)
Backup Repository-Storage-Win (Created by GOODDEALMART\csun at 2/7/2023 12:26 PM.)
Default Backup Repository (Created by GOODDEALMART\csun at 2/1/2023 3:01 PM.)
Hardened Backup Repository-ubuntu20045 (Created by GOODDEALMART\csun at 2/7/2023 2:57 PM.)

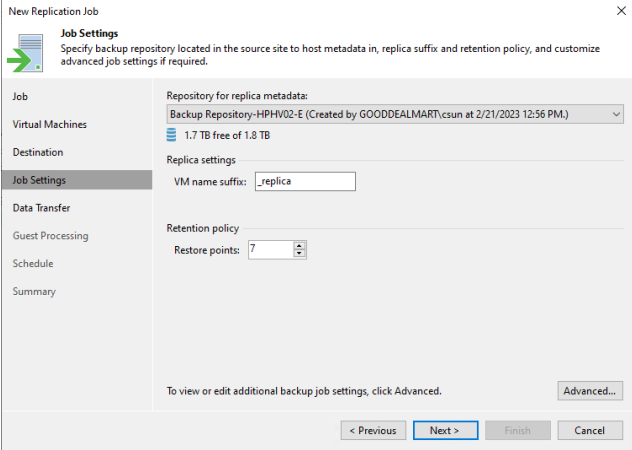
Retention policy
Restore points: 7

To view or edit additional backup job settings, click Advanced.

Advanced...

< Previous Next > Finish Cancel

24. Enter a suffix that will be appended to the original VM names in the Replica name suffix field.
25. Enter the number of restore points in the field.
26. Click Advanced.

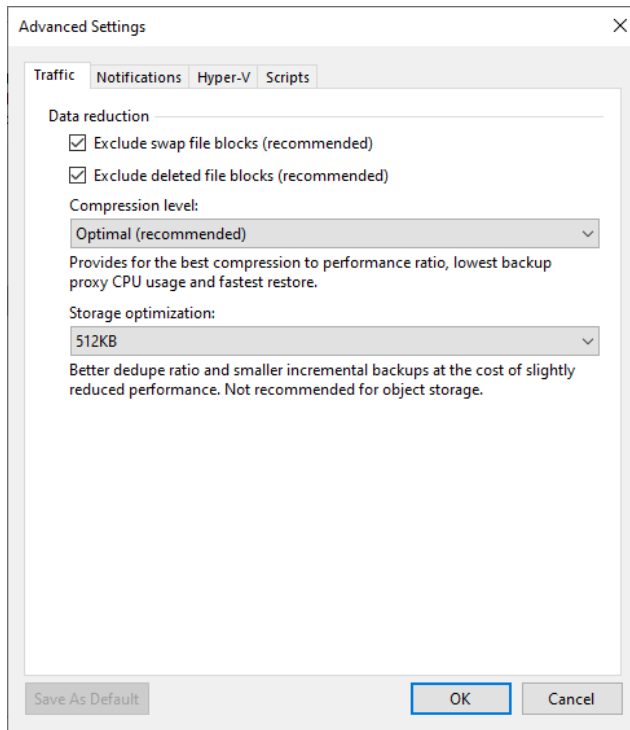


The screenshot shows the 'New Replication Job' dialog box with the 'Job Settings' tab selected. The left sidebar contains a list of tabs: Job, Virtual Machines, Destination, Job Settings (highlighted), Data Transfer, Guest Processing, Schedule, and Summary. The main area displays the following settings:

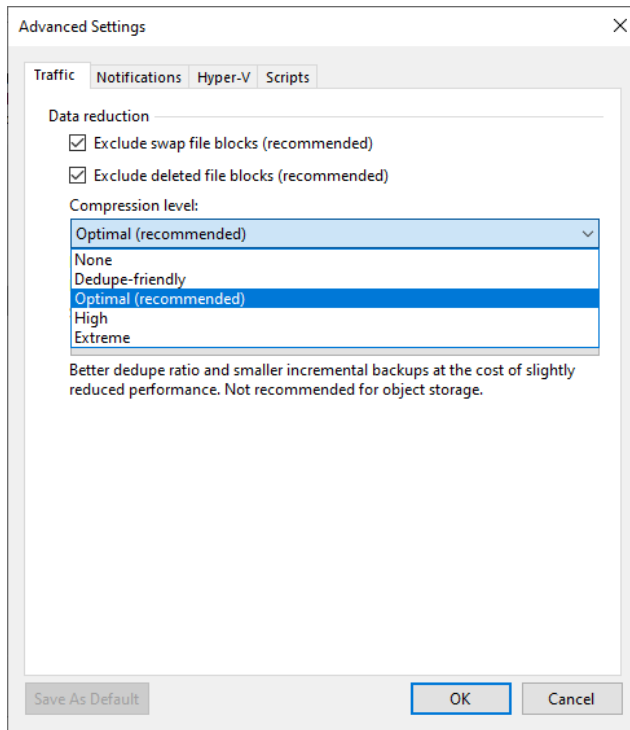
- Repository for replica metadata:** Backup Repository-HPHV02-E (Created by GOODDEALMART:csun at 2/21/2023 12:56 PM.)
- Free space:** 1.7 TB free of 1.8 TB
- Replica settings:** VM name suffix:
- Retention policy:** Restore points:

At the bottom, there is a message: 'To view or edit additional backup job settings, click Advanced.' with an 'Advanced...' button. Below this are navigation buttons: '< Previous', 'Next >' (highlighted), 'Finish', and 'Cancel'.

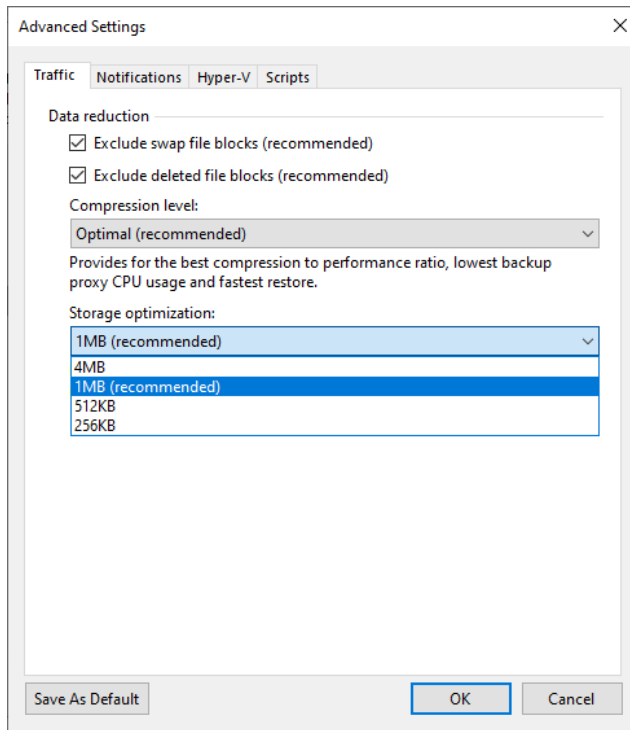
27. On Advanced Settings, click Traffic.
28. Select the Exclude swap file blocks checkbox (recommended).
29. Select the Exclude deleted file blocks (recommended) checkbox.



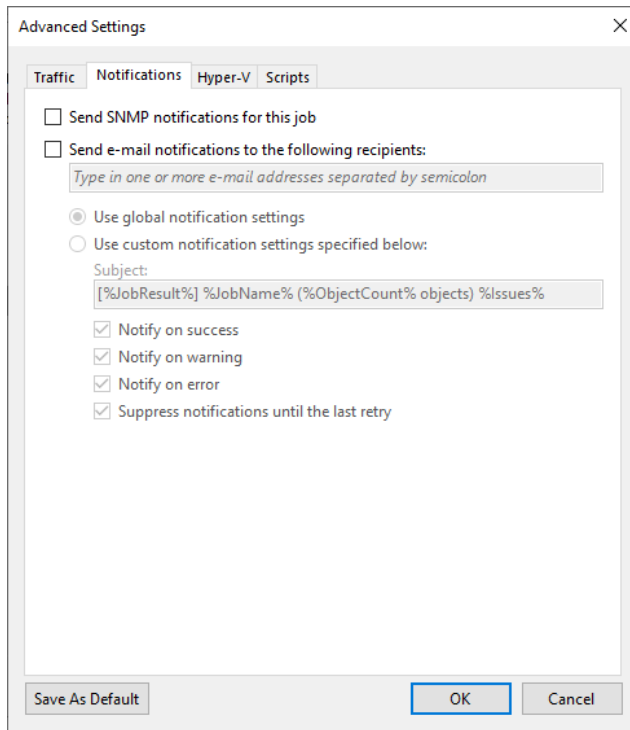
30. Select the compression level for replicas from the drop-down list.



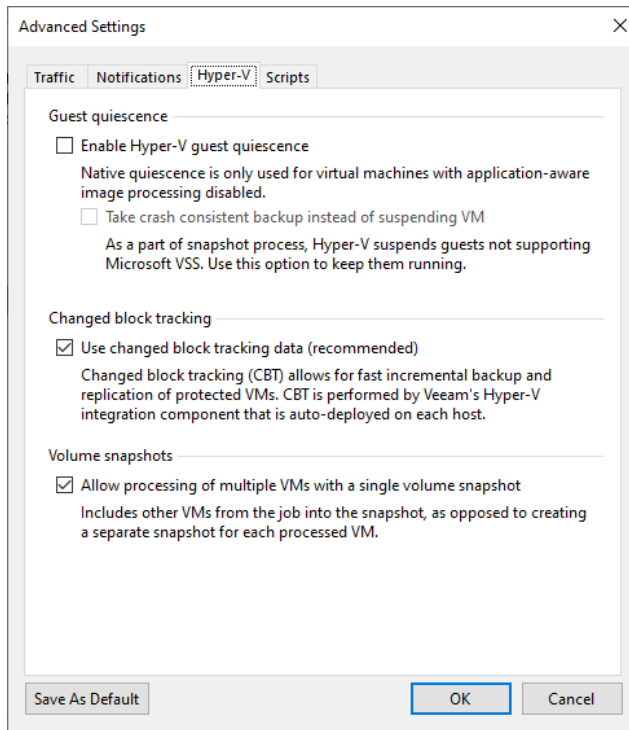
31. Select Storage optimization from the drop-down list.



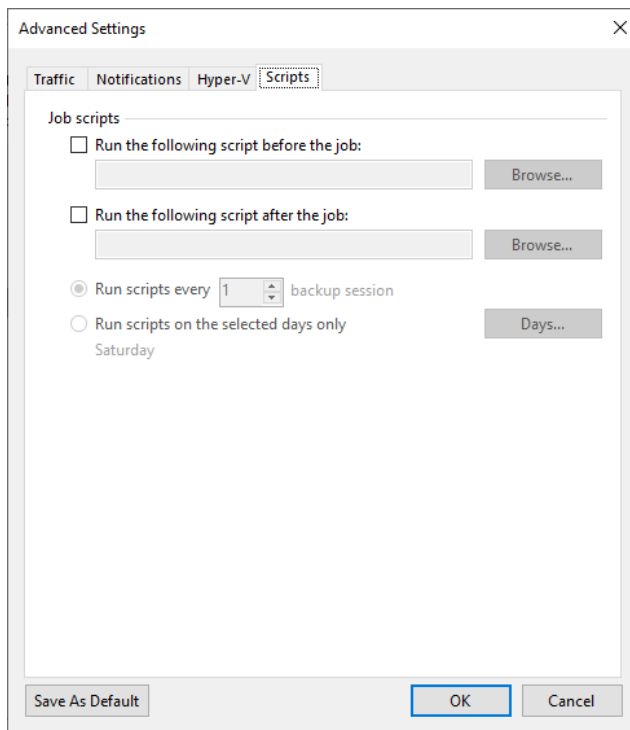
32. On the Advanced Settings, select Notifications.
33. Keep the default settings.



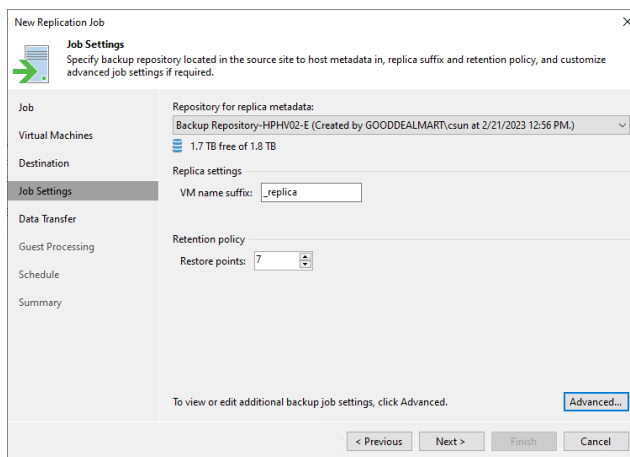
34. On the Advanced Settings, select Hyper-V.
35. Keep the default settings.



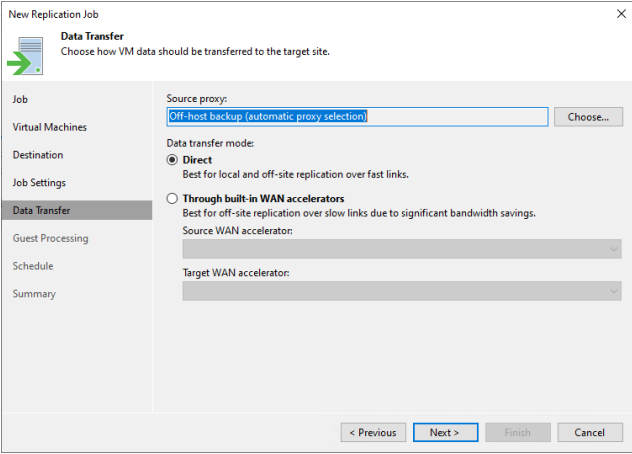
36. On the Advanced Settings page, click Scripts.
37. Keep the default settings and click OK.



38. On the Job Settings page, click Next.



39. Click Choose to specify Source Proxy on the Data Transfer page.



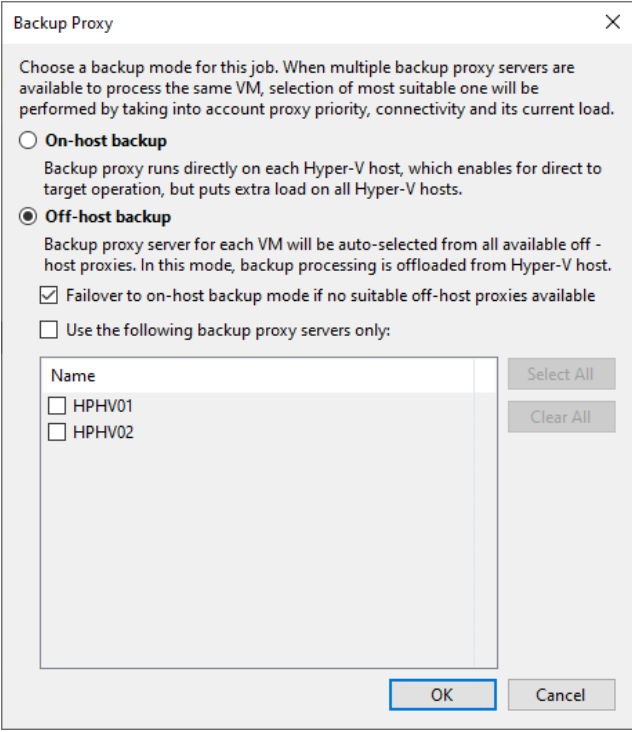
The screenshot shows the 'New Replication Job' dialog box with the 'Data Transfer' tab selected. The left sidebar lists the steps: Job, Virtual Machines, Destination, Job Settings, Data Transfer (highlighted), Guest Processing, Schedule, and Summary. The main area is titled 'Data Transfer' with the subtitle 'Choose how VM data should be transferred to the target site.' It contains the following settings:

- Source proxy:** A text field containing 'Off-host backup (automatic proxy selection)' and a 'Choose...' button.
- Data transfer mode:**
 - ☒ **Direct**
Best for local and off-site replication over fast links.
 - ☐ **Through built-in WAN accelerators**
Best for off-site replication over slow links due to significant bandwidth savings.
- Source WAN accelerator:** A dropdown menu.
- Target WAN accelerator:** A dropdown menu.

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

40. On the Backup Proxy page, keep the default settings.

41. Click OK.



Backup Proxy

Choose a backup mode for this job. When multiple backup proxy servers are available to process the same VM, selection of most suitable one will be performed by taking into account proxy priority, connectivity and its current load.

☐ **On-host backup**
Backup proxy runs directly on each Hyper-V host, which enables for direct to target operation, but puts extra load on all Hyper-V hosts.

☒ **Off-host backup**
Backup proxy server for each VM will be auto-selected from all available off - host proxies. In this mode, backup processing is offloaded from Hyper-V host.

☒ Failover to on-host backup mode if no suitable off-host proxies available

☐ Use the following backup proxy servers only:

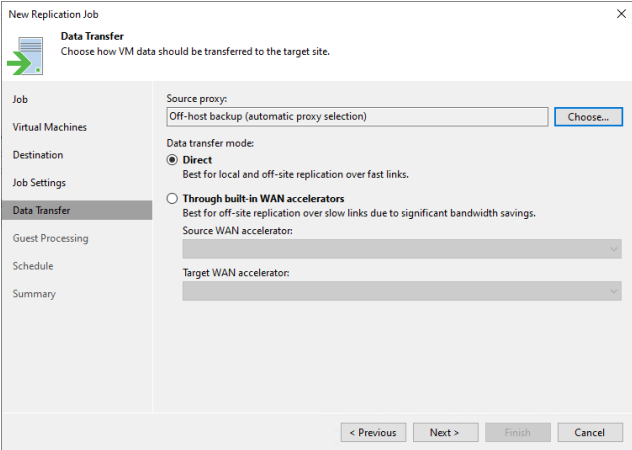
Name
☐ HPHV01
☐ HPHV02

Select All
Clear All

OK Cancel

42. On the Data Transfer mode session, select Direct.

43. Click Next.



New Replication Job

Data Transfer
Choose how VM data should be transferred to the target site.

Job
Virtual Machines
Destination
Job Settings
Data Transfer
Guest Processing
Schedule
Summary

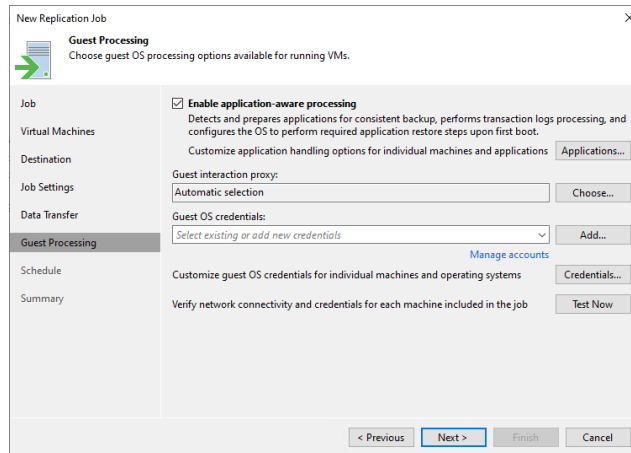
Source proxy:
Off-host backup (automatic proxy selection) Choose...

Data transfer mode:
☒ **Direct**
Best for local and off-site replication over fast links.

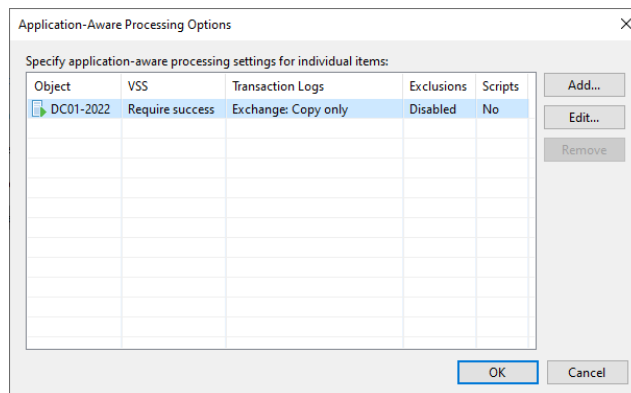
☐ **Through built-in WAN accelerators**
Best for off-site replication over slow links due to significant bandwidth savings.
Source WAN accelerator:
Target WAN accelerator:

< Previous Next > Finish Cancel

44. When you add VMs running VSS-aware applications to the backup job, you can enable application-aware processing to create a transactionally consistent backup. The transactionally consistent backup ensures that applications on VMs can be recovered without data loss.
45. Select the Enable application-aware processing checkbox on the Guest Processing page and click Applications.

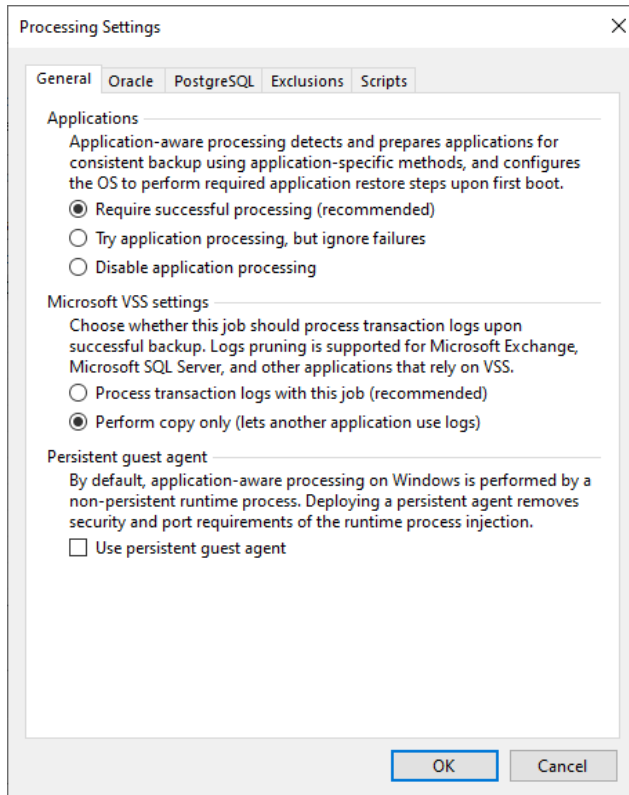


46. On the Application-Aware Processing Options page, select the object and click Edit.

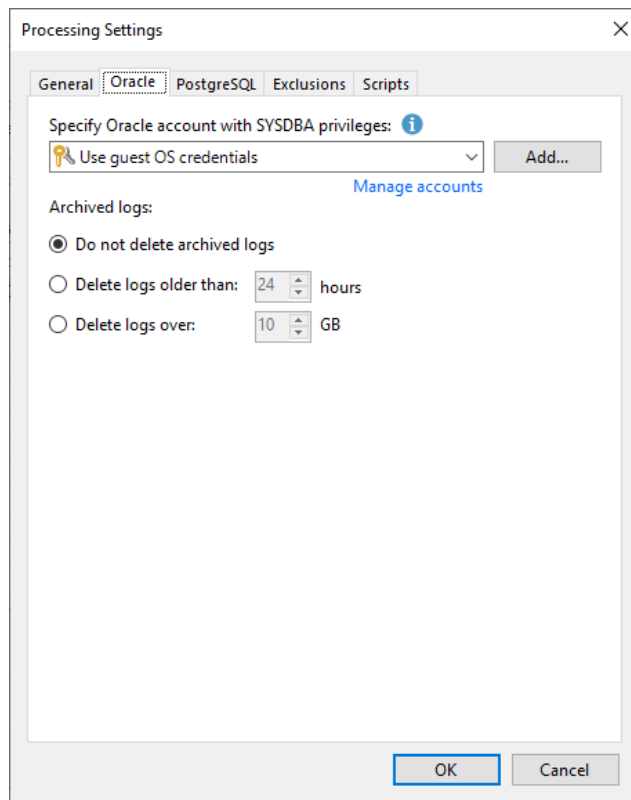


47. On the Processing Settings, click General.

48. Keep the default settings if the VM is not Microsoft Exchange, SQL, and other applications that rely on VSS.

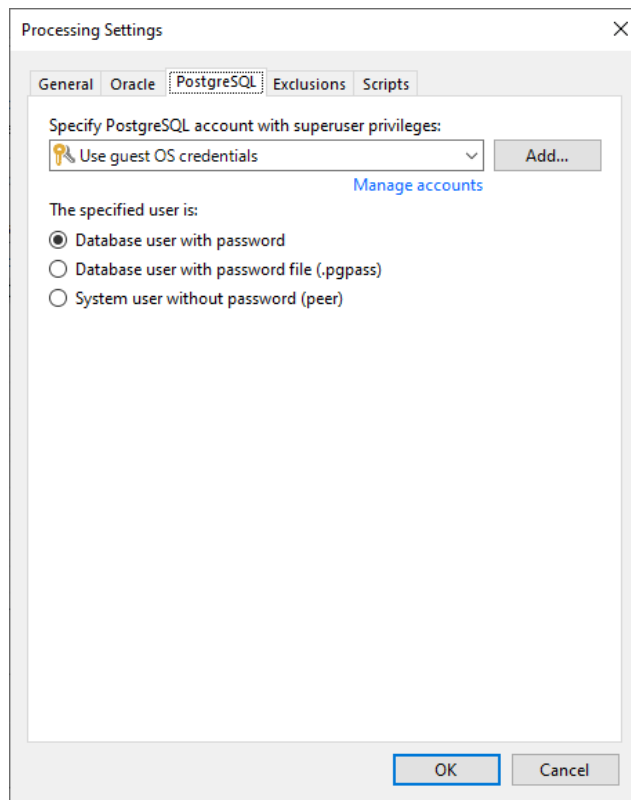


49. On the Processing Settings, click Oracle.
50. Keep the Default settings if the VM is not an Oracle server.

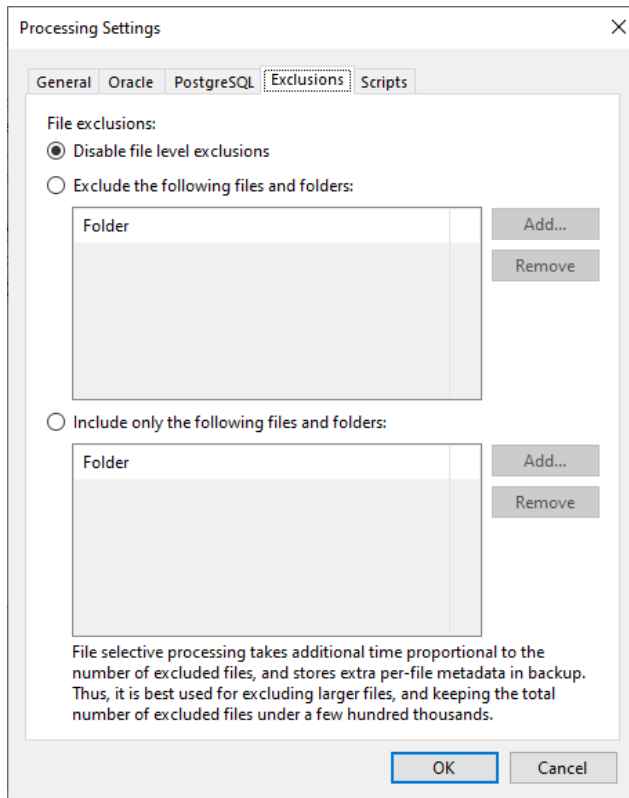


51. On the Processing Settings, click PostgreSQL.

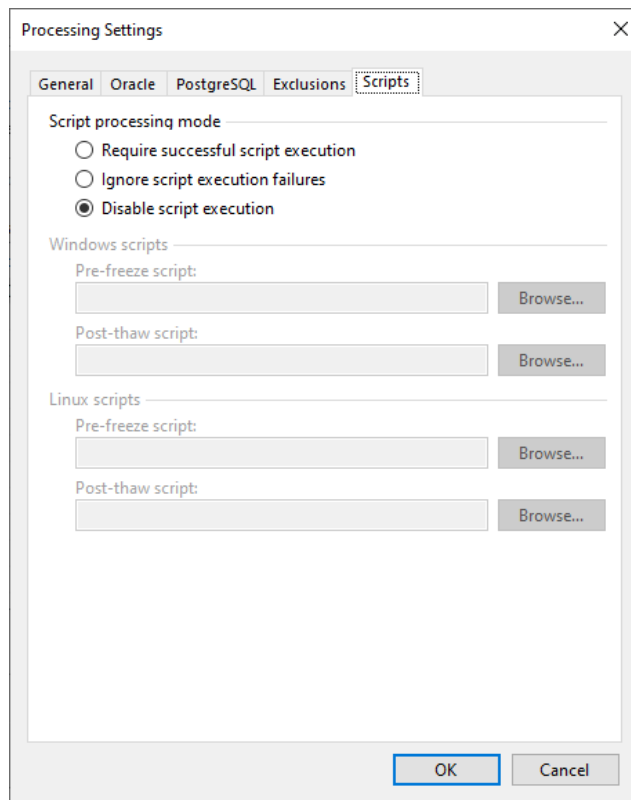
52. Keep the Default settings if the VM is not a PostgreSQL server.



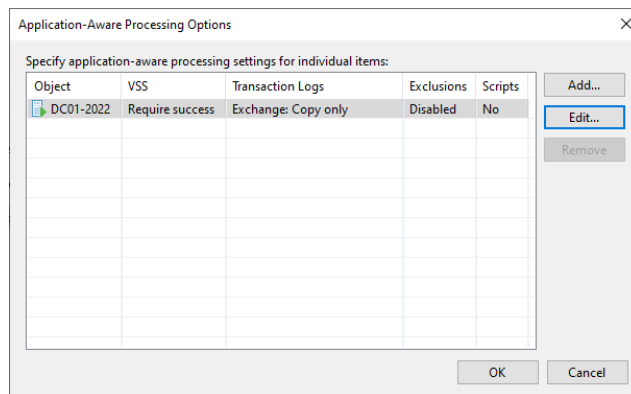
53. On the Processing Settings page, click Exclusions and keep the default settings.



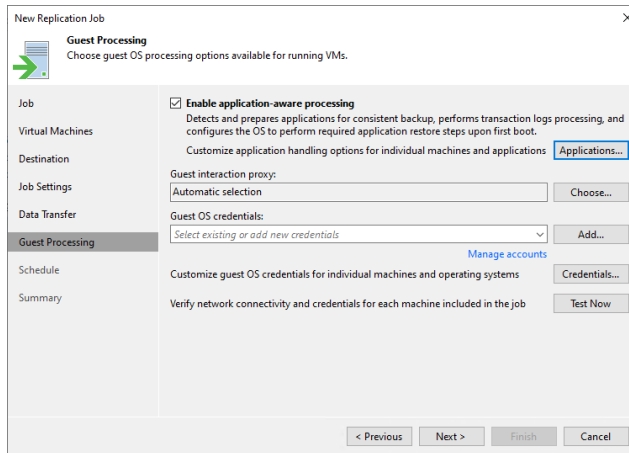
54. On the Processing Settings page, click Scripts.
55. Keep the default settings and click OK.



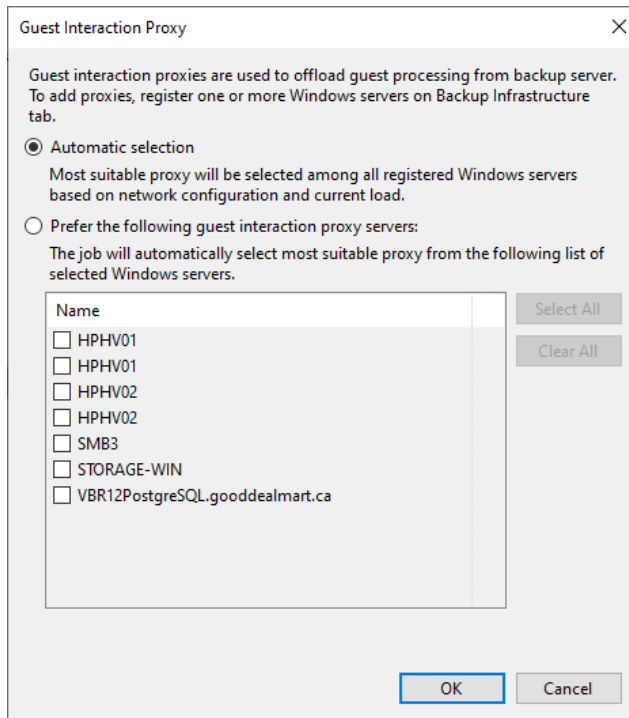
56. On the Application-Aware Processing Options page, click OK.



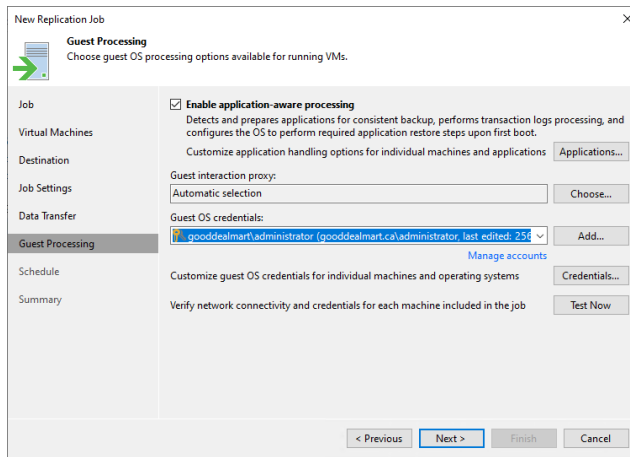
57. Click Choose on the Guest interaction proxy field on the Guest Processing page.



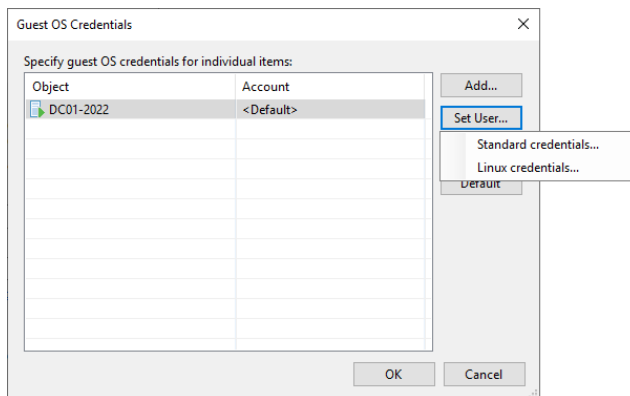
58. On the Guest Interaction Proxy page, you can keep the default setting to select Automatic selection to let Veeam Backup & Replication automatically select the guest interaction proxy.
59. Or select Prefer the following guest interaction proxy servers to explicitly define which servers will perform the guest interaction proxy role.
60. Click OK.



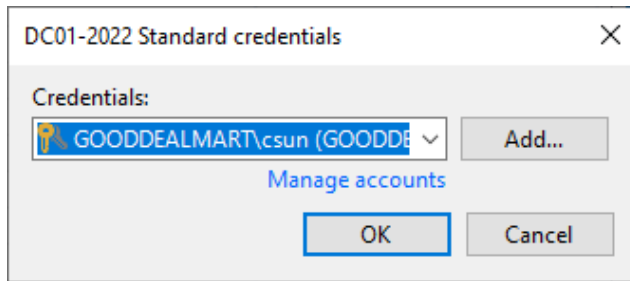
61. Choose a user account on the Guest Processing page with sufficient permissions from the Guest OS credentials drop-down list.
62. Click Credentials to Customize guest OS credentials for individual machines and operating systems.



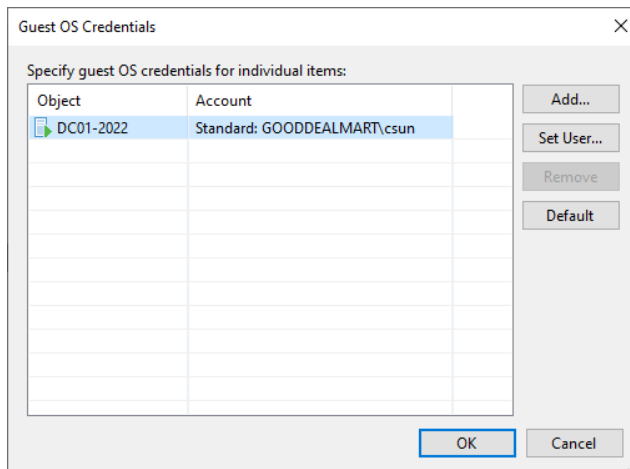
63. On the Guest OS Credentials page, select the VM and click Set User.
64. Select Standard credentials.



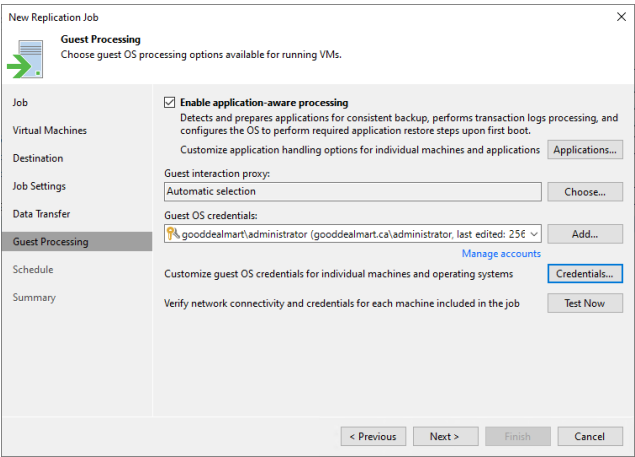
65. Choose a user from the Credentials drop-down list and click OK.
66. Repeat the steps for each VM.



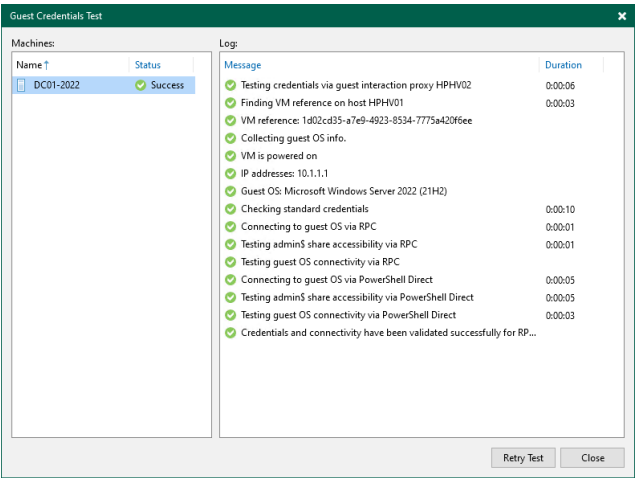
67. On the Guest OS Credentials page, click OK.



68. On the Guest Processing page, click Test Now.



- 69. On the Guest Credentials Test page, ensure each machine’s success.
- 70. Click Close.



- 71. On the Guest Processing page, click Next.

New Replication Job

Guest Processing
Choose guest OS processing options available for running VMs.

Job

☒ **Enable application-aware processing**
Detects and prepares applications for consistent backup, performs transaction logs processing, and configures the OS to perform required application restore steps upon first boot.
Customize application handling options for individual machines and applications [Applications...](#)

Guest interaction proxy:
Automatic selection [Choose...](#)

Guest OS credentials:
[\gooddealmart\administrator \(gooddealmart.ca\administrator, last edited: 256\)](#) [Add...](#)
[Manage accounts](#)

Customize guest OS credentials for individual machines and operating systems [Credentials...](#)

Verify network connectivity and credentials for each machine included in the job [Test Now](#)

< Previous Next > Finish Cancel

72. Select Run the job automatically on the Schedule page and select your specified schedule.
73. Define whether Veeam Backup & Replication should retry the backup job if it fails in the Automatic retry section.
74. Define the time interval the backup job must complete in the Backup window section. The backup window ensures that the job does not overlap with production hours and that there is no unnecessary overhead on the production environment.
75. Click Apply.

New Replication Job

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

Job

☒ **Run the job automatically**

☒ Daily at this time: 10:00 PM Everyday [Days...](#)

☐ Monthly at this time: 10:00 PM Fourth Saturday [Months...](#)

☐ Periodically every: 1 Hours [Schedule...](#)

☐ After this job: DC01-2022 Backup (Created by GOODDEALMART\csun at 2/21/2023) [Schedule...](#)

Automatic retry

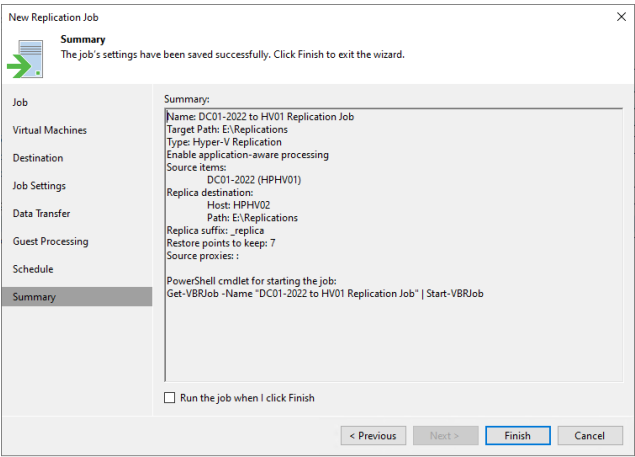
☒ Retry failed items processing: 3 times
Wait before each retry attempt for: 10 minutes

Backup window

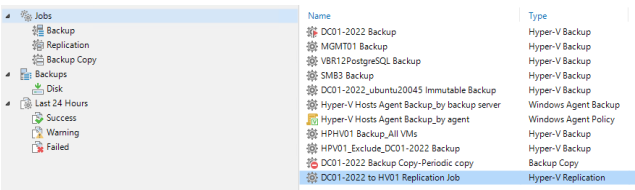
☐ Terminate job outside of the backup window
Prevent long-running or accidentally started job from impacting your production infrastructure during the busy hours. [Window...](#)

< Previous **Apply** Finish Cancel

76. On the Summary page, click Finish.



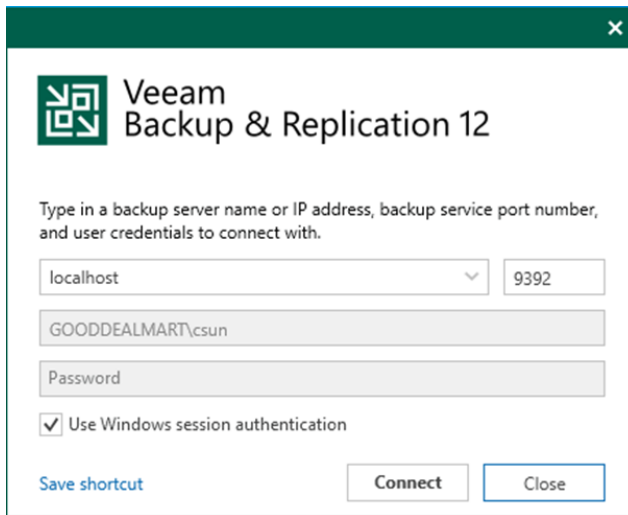
77. Verify the job has been added.



Creating a Replication job to replicate the specified VMs to the Disaster Recovery Site

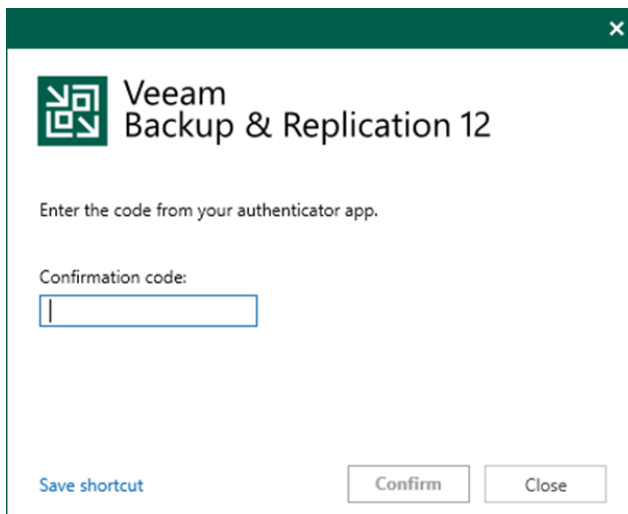
This procedure creates a replication job to replicate the specified VMs to the disaster recovery site. If a disaster strikes and the production VM stops working properly, you can fail over to its replica.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



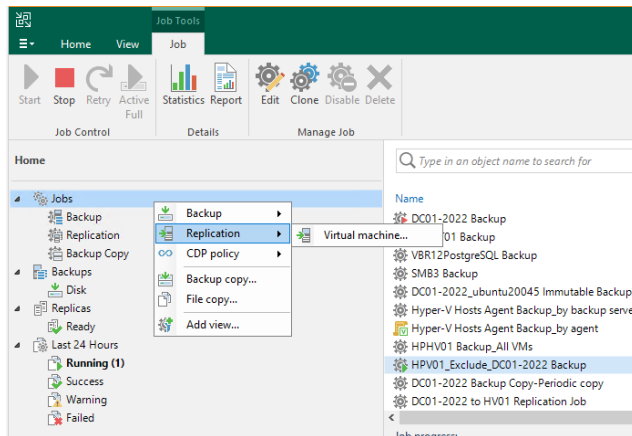
A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are three input fields: a dropdown menu showing "localhost", a text box showing "9392", and a text box showing "GOODDEALMART\csun". Below these is a "Password" field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut" (blue text), "Connect" (white with blue border), and "Close" (white with blue border).

3. Enter the MFA Confirmation code and click Confirm.

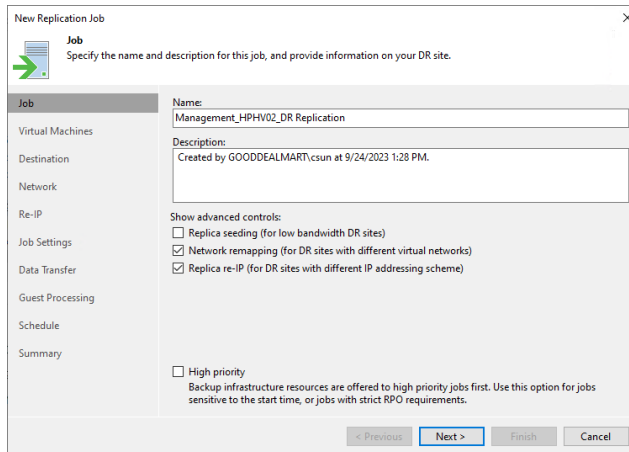


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a text input field. At the bottom are three buttons: "Save shortcut" (blue text), "Confirm" (white with blue border), and "Close" (white with blue border).

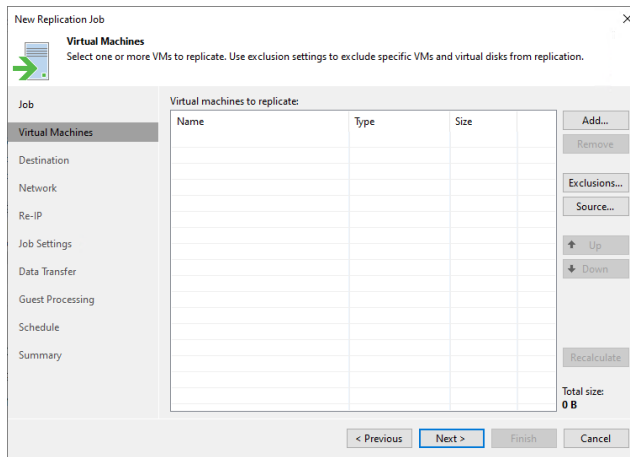
4. On the Home page, select Jobs, right-click Jobs, select Replication and click Virtual machine.



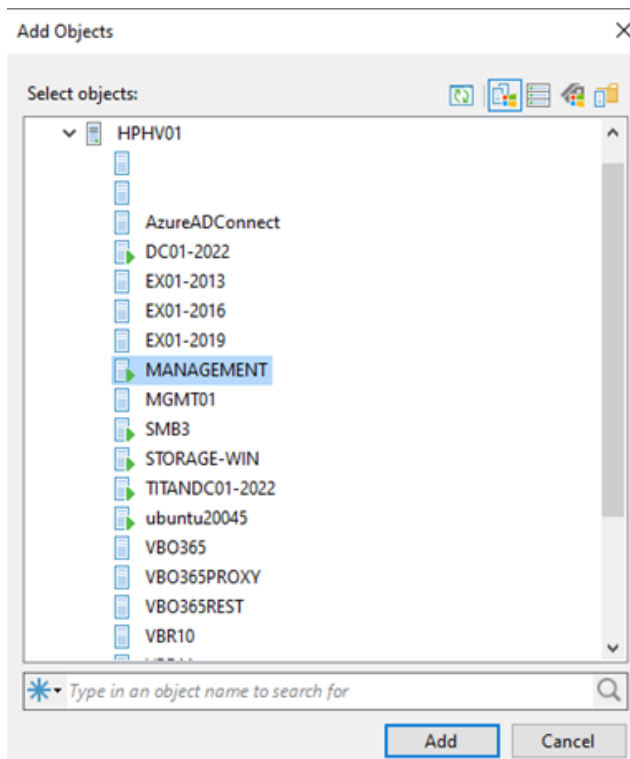
5. Enter a name for the replication job on the Job page in the Name field.
6. Describe the Description field.
7. Select Network remapping (for DR sites with different virtual networks).
8. Replica re-IP (for DR sites with different IP addressing schemes).
9. Select the High priority check box if required.
10. Click Next.



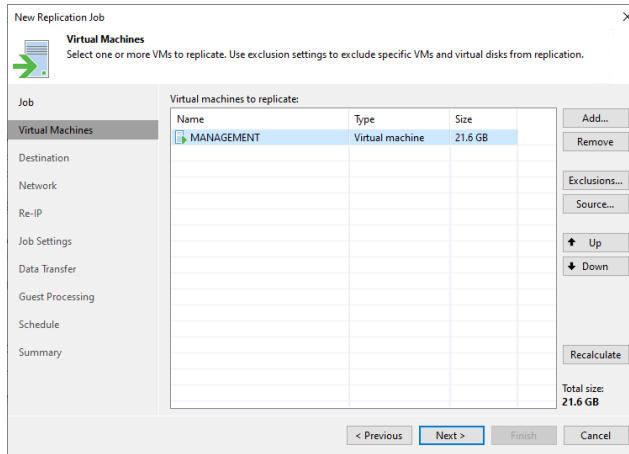
11. On the Virtual Machines page, click Add.



12. Select the objects in the list on the Add Objects page and click Add.



13. On the Virtual machines page, click Source.



14. Select From production storage (actual VM state) on the Source Repositories page. Veeam Replication will retrieve VM data from data stores connected to the source Microsoft Hyper-V host.
15. Or select Form backup files (latest VM state available in backups) if required. Veeam Backup & Replication will read VM data from the backup chain that is already in the selected backup repository.
16. Click OK.

Source Repositories

Choose where this replication job should be obtaining VM data from. Replicating from backup files reduces impact on production storage.

☒ **From production storage (actual VM state)**
Obtains the most recent VM state directly from the production storage. Allows to replicate VM more often than you back them up.

☐ **From backup files (latest VM state available in backups)**
Backup repositories:

Name
☐ Backup Repository_HPHV01-USB
☐ Backup Repository_Storage-Win_V...
☐ Backup Repository_ubuntu20045
☐ Backup Repository-HPHV02-E
☐ Backup Repository-Storage-Win
☐ Default Backup Repository
☐ Hardened Backup Repository_ubun...

Select All

Clear All

OK Cancel

17. On the Virtual Machines page, click Next.

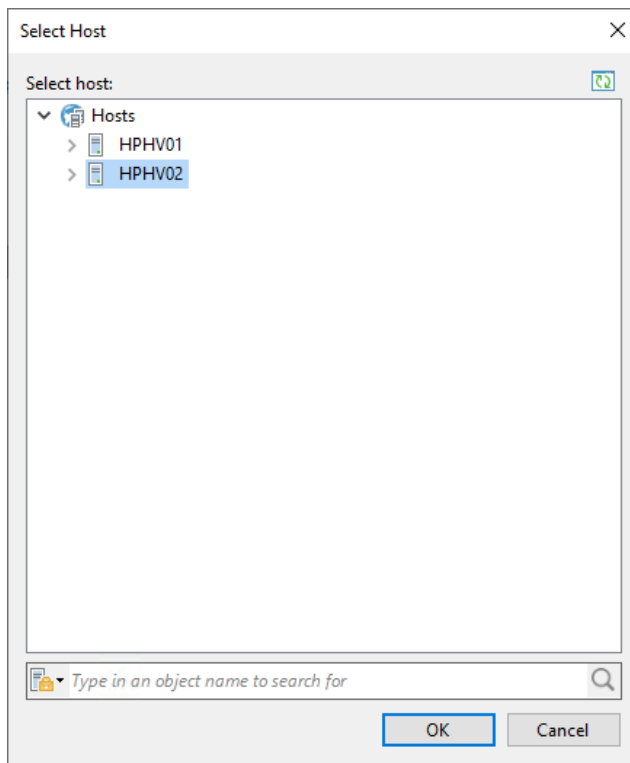
The screenshot shows the 'New Replication Job' dialog box with the 'Virtual Machines' tab selected. The left sidebar lists various job settings, with 'Virtual Machines' highlighted. The main area is titled 'Virtual Machines' and contains a table for 'Virtual machines to replicate:'. The table has columns for Name, Type, and Size. One entry is visible: 'MANAGEMENT' (Virtual machine, 21.6 GB). To the right of the table are buttons for 'Add...', 'Remove', 'Exclusions...', 'Source...', 'Up', 'Down', and 'Recalculate'. At the bottom right, it shows 'Total size: 21.6 GB'. Navigation buttons at the bottom include '< Previous', 'Next >', 'Finish', and 'Cancel'.

Name	Type	Size
MANAGEMENT	Virtual machine	21.6 GB

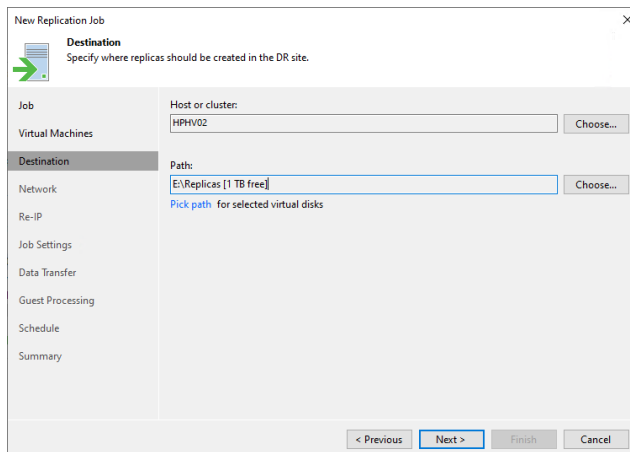
18. On the Destination page, click Choose in the Host or cluster session.

The screenshot shows the 'New Replication Job' dialog box with the 'Destination' tab selected. The left sidebar lists various job settings, with 'Destination' highlighted. The main area is titled 'Destination' and contains a 'Host or cluster:' label with a text input field and a 'Choose...' button. Below this is a 'Path:' label with a text input field and a 'Choose...' button. A note says 'Pick path for selected virtual disks'. Navigation buttons at the bottom include '< Previous', 'Next >', 'Finish', and 'Cancel'.

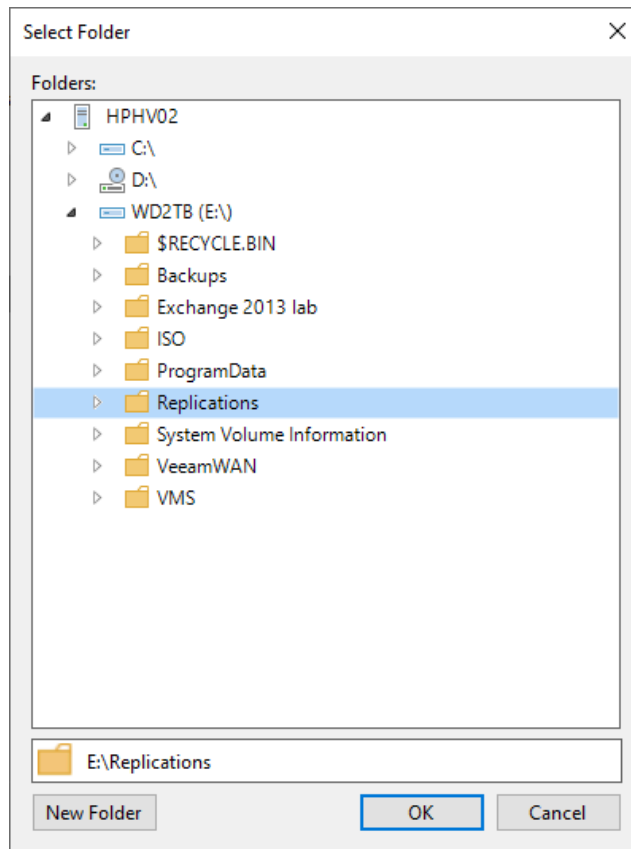
19. Select the destination host server on the Select Host page and click OK.



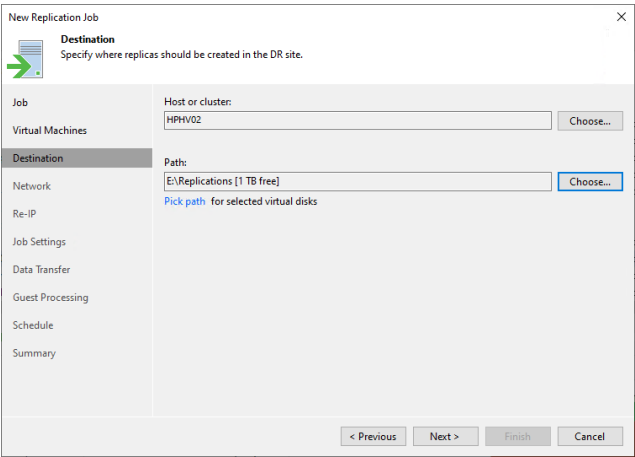
20. On the Destination page, click Choose in the Path session.



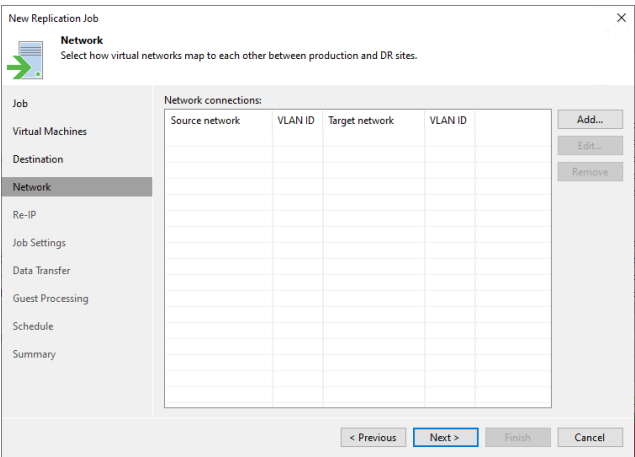
21. On the Folders page, specify a path to the folder where VM replica files must be stored, and click OK.



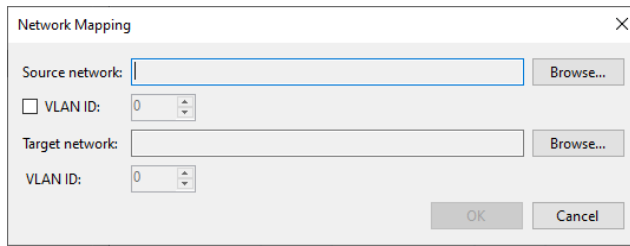
22. On the Destination page, click Next.



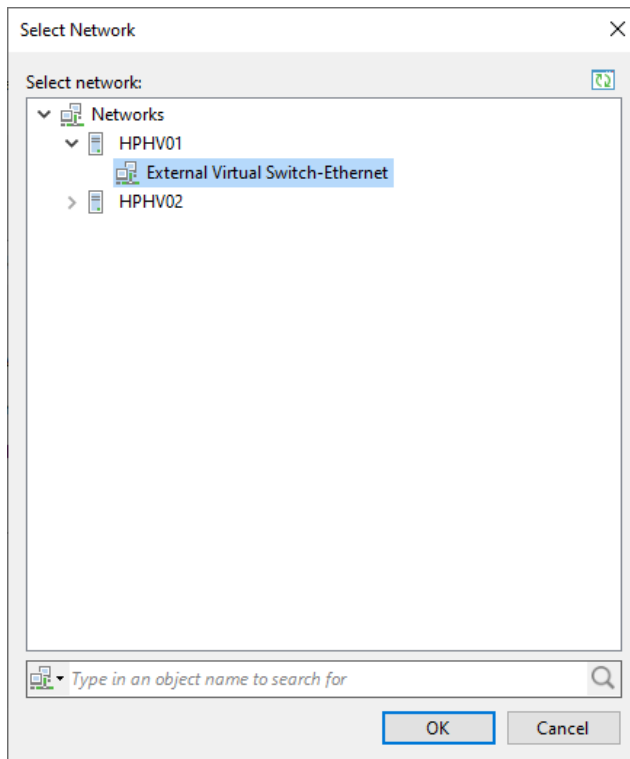
23. On the Network page, click Add.



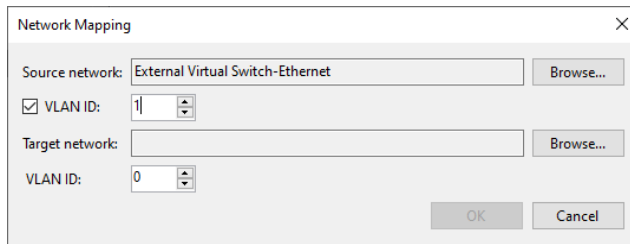
24. On the Network Mapping page, click Browse in the Source network session.



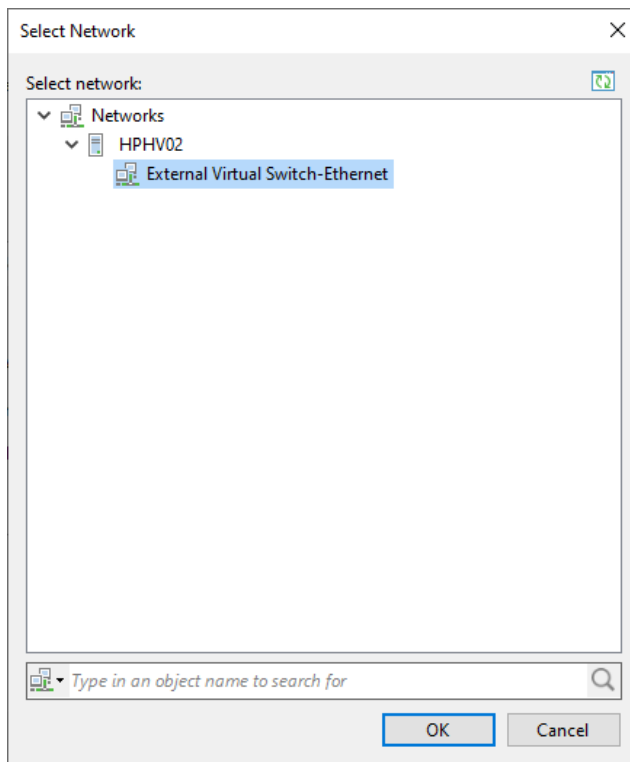
25. Select the production network on the Select Network page to which the original VMs are connected and click OK.



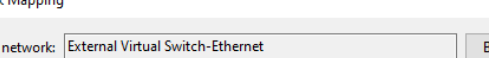
26. If you use VLAN IDs for networking, select the VLAN ID check box and enter the VLAN ID of the source network.
27. On the Network Mapping page, click Browse in the Target network session.



28. Select the DR site network on the Select Network page to which replicas will be connected and click OK.



29. If you use VLAN IDs for networking, select the VLAN ID check box and enter the VLAN ID of the target network.
30. Click OK.



Network Mapping

Source network: External Virtual Switch-Ethernet Browse...

☒ VLAN ID: 1

Target network: External Virtual Switch-Ethernet(switch: [1C1E7CB4-D99C-45D1-8000-000000000000]) Browse...

VLAN ID: 100

OK Cancel

31. On the Network page, click Next.

New Replication Job

Network

Select how virtual networks map to each other between production and DR sites.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Guest Processing

Schedule

Summary

Network connections:

Source network	VLAN ID	Target network	VLAN ID
 External Virtual S...	1	 External Virtual...	100

Add...

Edit...

Remove

< Previous

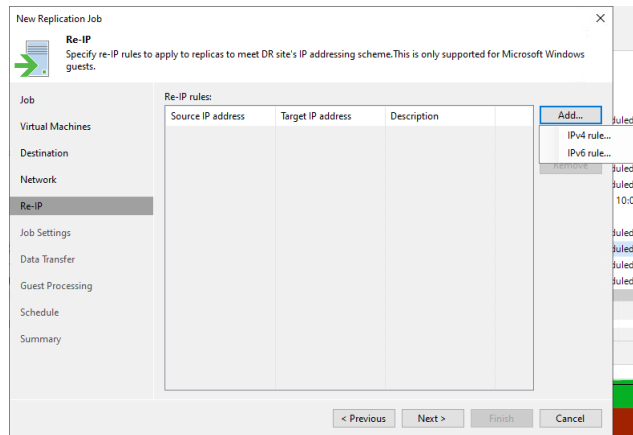
Next >

Finish

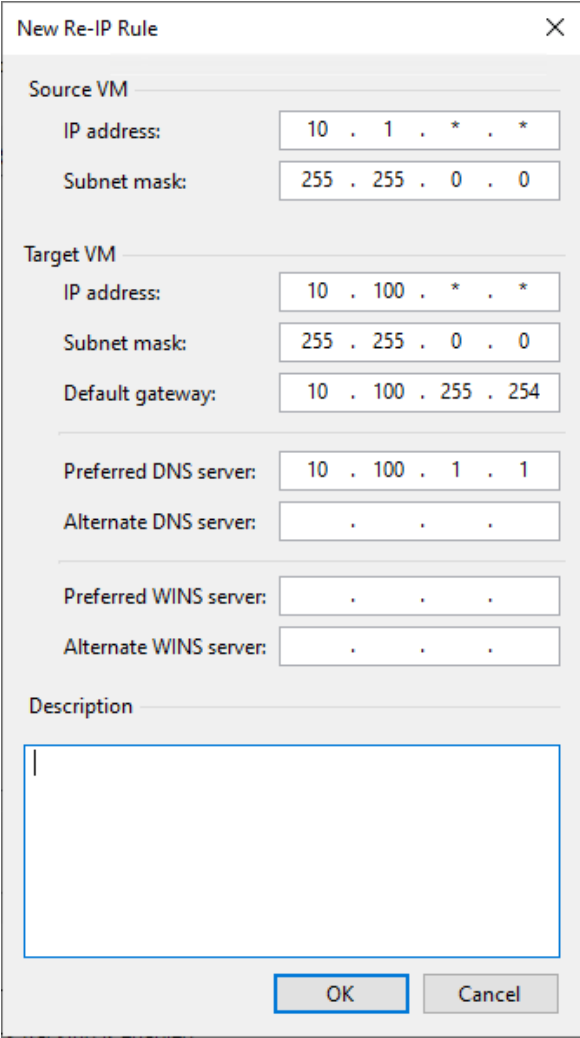
Cancel

32. On the Re-IP page, click Add.

33. Select the IPv4 rule.



34. On the New Re-IP Rule page, Enter the IP numbering scheme used at the production site in the Source VM section.
35. Enter the IP numbering scheme used at the DR site in the Target VM section.
36. Describe the rule in the Description field.
37. Click OK.



The image shows a 'New Re-IP Rule' dialog box with a close button (X) in the top right corner. It is divided into several sections: 'Source VM', 'Target VM', DNS settings, WINS settings, and a 'Description' text area. At the bottom are 'OK' and 'Cancel' buttons.

Source VM	
IP address:	10 . 1 . * . *
Subnet mask:	255 . 255 . 0 . 0

Target VM	
IP address:	10 . 100 . * . *
Subnet mask:	255 . 255 . 0 . 0
Default gateway:	10 . 100 . 255 . 254

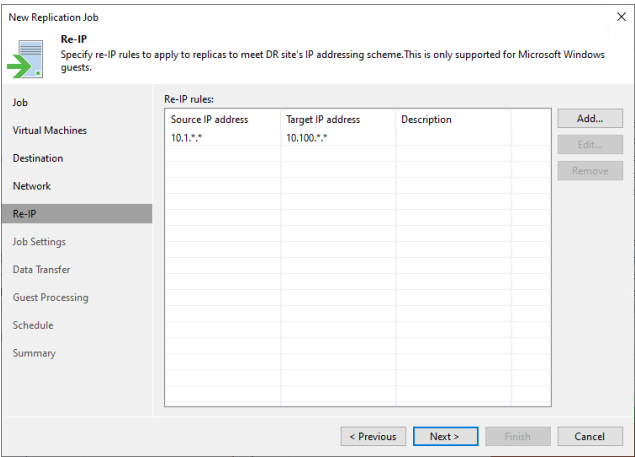
DNS Settings	
Preferred DNS server:	10 . 100 . 1 . 1
Alternate DNS server:	. . .

WINS Settings	
Preferred WINS server:	. . .
Alternate WINS server:	. . .

Description

OK Cancel

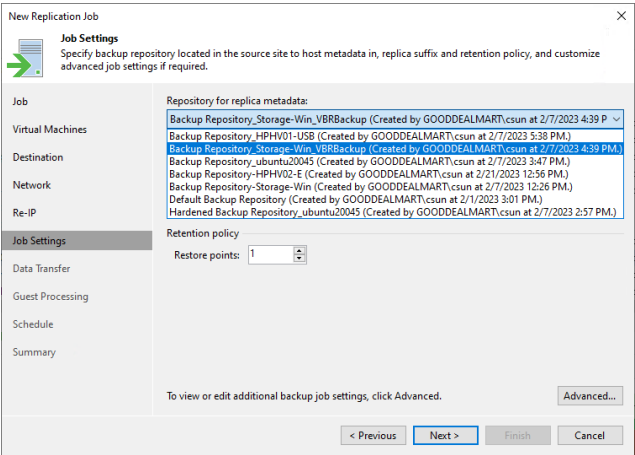
38. On the Re-IP page, click Next.



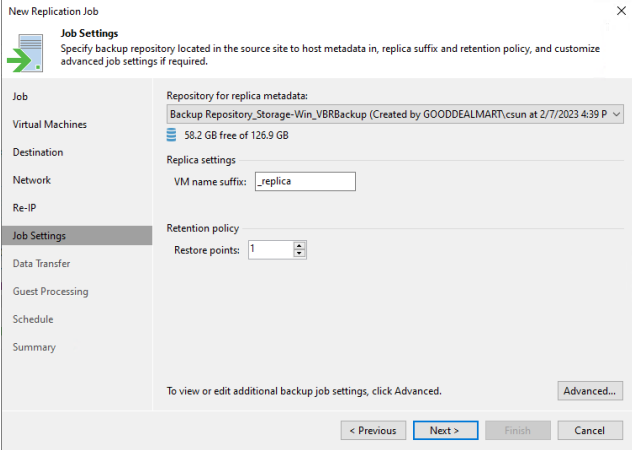
39. Select the Repository for replica metadata from the drop-down list on the Job Settings page.

Note:

- This setting must be specified only for snapshot replicas. Legacy replicas do not use a backup repository for storing metadata.
- You cannot store VM replica metadata on deduplicating storage appliances.
- You cannot store replica metadata in a scale-out backup repository.



40. Enter a suffix that will be appended to the original VM names in the Replica name suffix field.
41. Enter the number of restore points in the field.
42. Click Advanced.

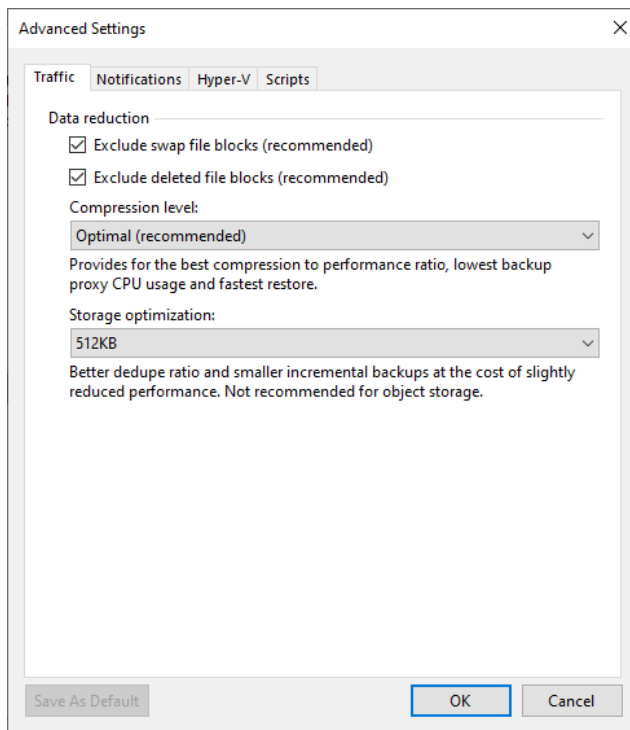


The screenshot shows the 'New Replication Job' dialog box with the 'Job Settings' tab selected. The left sidebar contains a list of tabs: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings (selected), Data Transfer, Guest Processing, Schedule, and Summary. The main area displays the following settings:

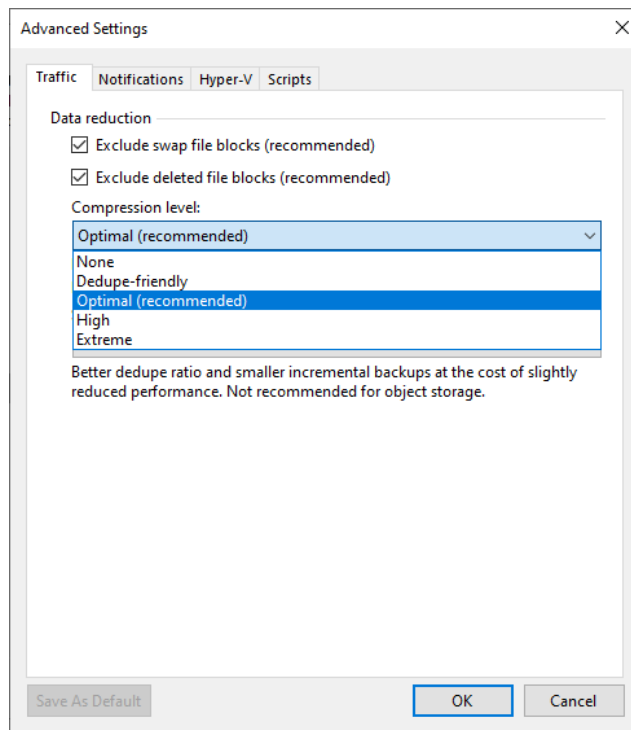
- Repository for replica metadata:** Backup Repository_Storage-Win_VBRBackup (Created by GOODDEALMART:csun at 2/7/2023 4:39 P) [dropdown arrow]
- Free space:** 58.2 GB free of 126.9 GB
- Replica settings:**
 - VM name suffix:** _replica [text input field]
- Retention policy:**
 - Restore points:** 1 [spin box]

At the bottom, there is a message: 'To view or edit additional backup job settings, click Advanced.' followed by an 'Advanced...' button. At the very bottom, there are four buttons: '< Previous', 'Next >' (highlighted with a blue border), 'Finish', and 'Cancel'.

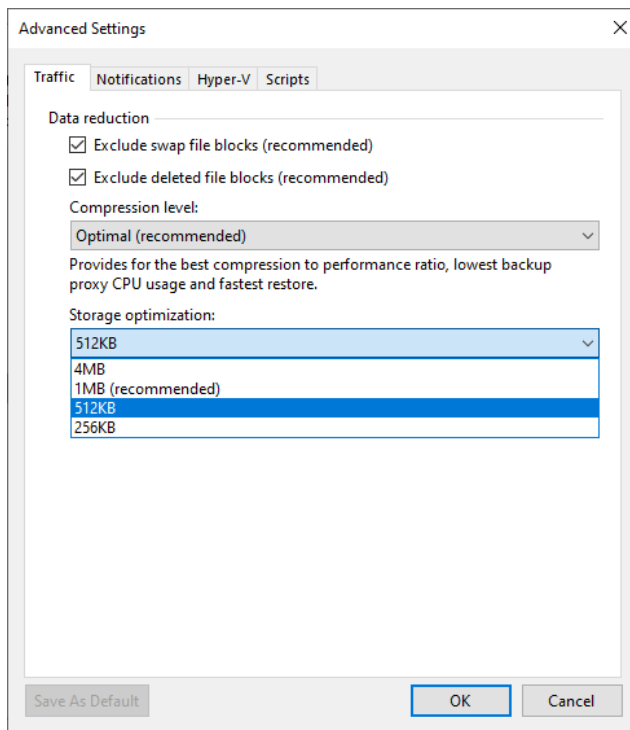
43. On Advanced Settings, click Traffic.
44. Select the Exclude swap file blocks (recommended) checkbox.
45. Select the Exclude deleted file blocks (recommended) checkbox.



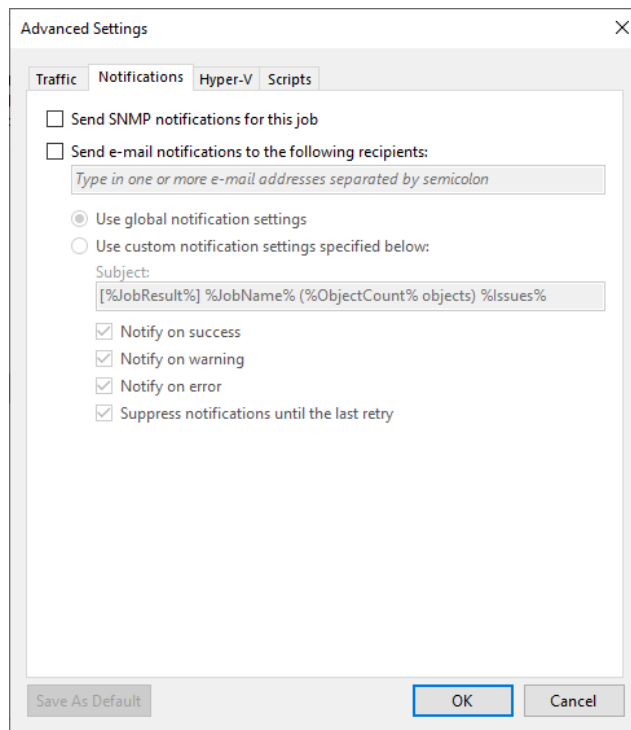
46. Select the compression level for replicas from the drop-down list.



47. Select Storage optimization from the drop-down list.

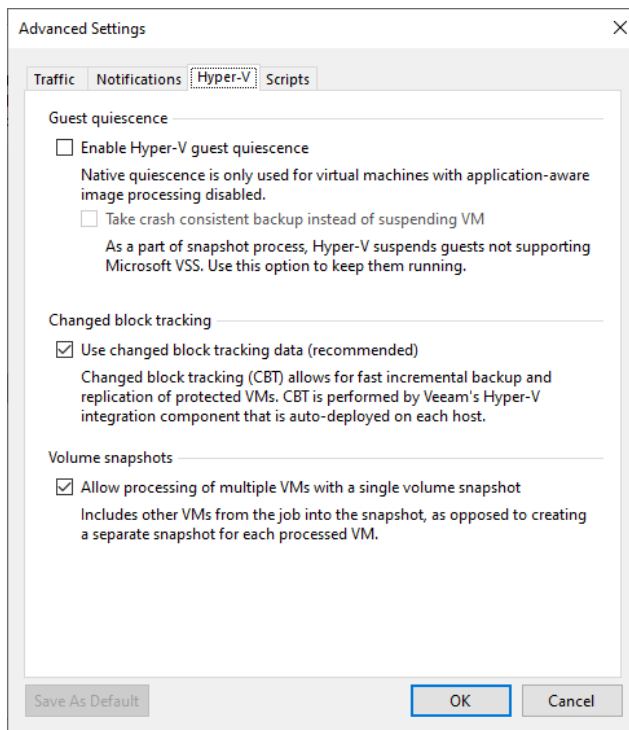


48. On the Advanced Settings, select Notifications.
49. Keep the default settings.

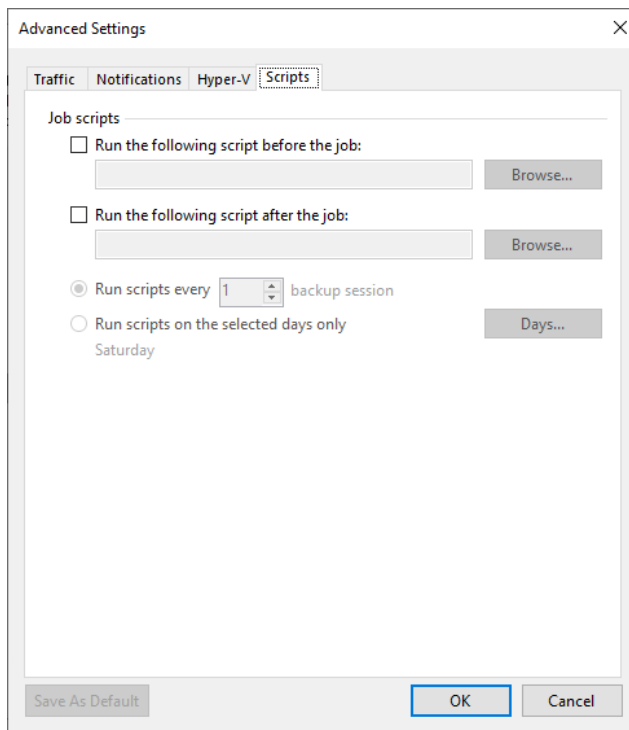


50. On the Advanced Settings, select Hyper-V.

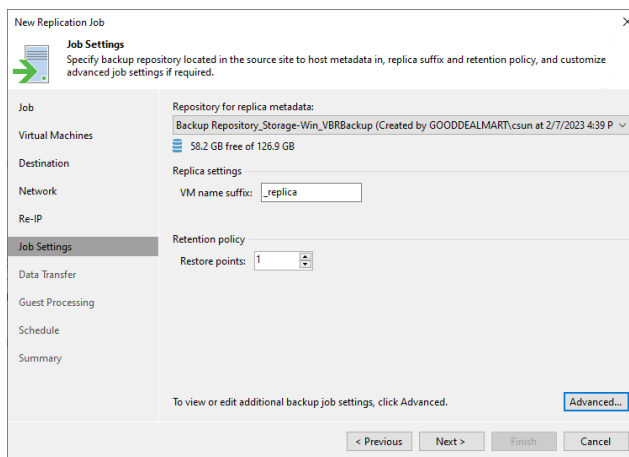
51. Keep the default settings.



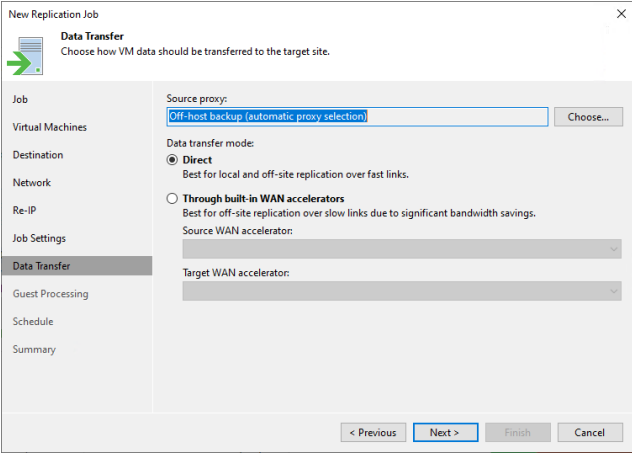
52. On the Advanced Settings page, click Scripts.
53. Keep the default settings and click OK.



54. On the Job Settings page, click Next.



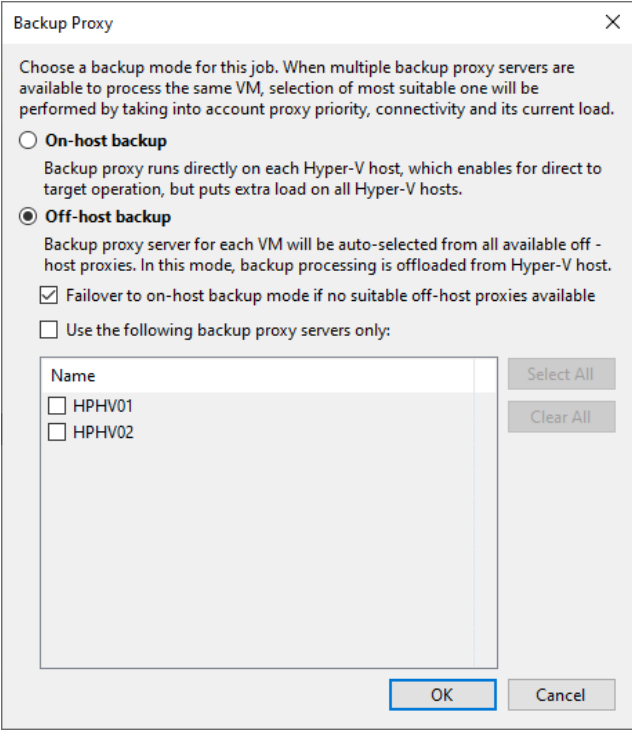
55. Click Choose to specify Source Proxy on the Data Transfer page.



The screenshot shows the 'New Replication Job' wizard, specifically the 'Data Transfer' step. The left sidebar contains a list of steps: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings, Data Transfer (highlighted), Guest Processing, Schedule, and Summary. The main area is titled 'Data Transfer' with the subtitle 'Choose how VM data should be transferred to the target site.' It features a 'Source proxy:' dropdown menu with 'Off-host backup (automatic proxy selection)' selected and a 'Choose...' button. Below this is the 'Data transfer mode' section with two radio buttons: 'Direct' (selected) and 'Through built-in WAN accelerators'. The 'Direct' mode is described as 'Best for local and off-site replication over fast links.' The 'Through built-in WAN accelerators' mode is described as 'Best for off-site replication over slow links due to significant bandwidth savings.' There are also dropdown menus for 'Source WAN accelerator' and 'Target WAN accelerator'. At the bottom, there are four buttons: '< Previous', 'Next >' (highlighted), 'Finish', and 'Cancel'.

56. On the Backup Proxy page, keep the default settings.

57. Click OK.



Backup Proxy

Choose a backup mode for this job. When multiple backup proxy servers are available to process the same VM, selection of most suitable one will be performed by taking into account proxy priority, connectivity and its current load.

☐ **On-host backup**
Backup proxy runs directly on each Hyper-V host, which enables for direct to target operation, but puts extra load on all Hyper-V hosts.

☒ **Off-host backup**
Backup proxy server for each VM will be auto-selected from all available off - host proxies. In this mode, backup processing is offloaded from Hyper-V host.

☒ Failover to on-host backup mode if no suitable off-host proxies available

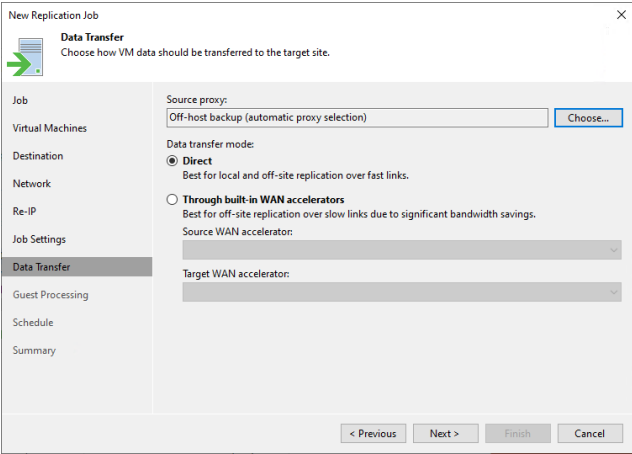
☐ Use the following backup proxy servers only:

Name
☐ HPHV01
☐ HPHV02

Select All
Clear All

OK Cancel

58. Select Direct on the Data Transfer mode session if you plan to copy backup files over high-speed connections.



New Replication Job

Data Transfer
Choose how VM data should be transferred to the target site.

Job
Virtual Machines
Destination
Network
Re-IP
Job Settings
Data Transfer
Guest Processing
Schedule
Summary

Source proxy:
Off-host backup (automatic proxy selection) Choose...

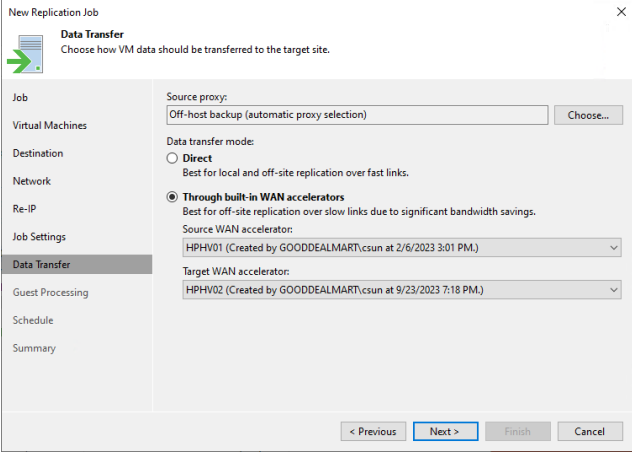
Data transfer mode:
☒ **Direct**
Best for local and off-site replication over fast links.

☐ **Through built-in WAN accelerators**
Best for off-site replication over slow links due to significant bandwidth savings.

Source WAN accelerator:
Target WAN accelerator:

< Previous Next > Finish Cancel

59. Select Direct on the Data Transfer mode session if you plan to copy backup files over high-speed connections.
60. Select the Through built-in WAN accelerators if you transfer data over WAN or slow connections.
61. Select a WAN accelerator configured in the source site from the Source WAN accelerator drop-down list.
62. Select a WAN accelerator configured in the target site from the Target WAN accelerator drop-down list.
63. Click Next.



The screenshot shows the 'New Replication Job' dialog box with the 'Data Transfer' tab selected. The dialog has a sidebar on the left with the following options: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings, Data Transfer (selected), Guest Processing, Schedule, and Summary. The main area contains the following settings:

- Source proxy:** A text box with 'Off-host backup (automatic proxy selection)' and a 'Choose...' button.
- Data transfer mode:**
 - ☐ Direct: Best for local and off-site replication over fast links.
 - ☒ **Through built-in WAN accelerators**: Best for off-site replication over slow links due to significant bandwidth savings.
- Source WAN accelerator:** A dropdown menu showing 'HPHV01 (Created by GOODDEALMART\csun at 2/6/2023 3:01 PM.)'.
- Target WAN accelerator:** A dropdown menu showing 'HPHV02 (Created by GOODDEALMART\csun at 9/23/2023 7:18 PM.)'.

At the bottom of the dialog are four buttons: '< Previous', 'Next >' (highlighted with a blue border), 'Finish', and 'Cancel'.

64. On the Guest Processing page, keep the default settings.
65. Click Next.

New Replication Job

Guest Processing
Choose guest OS processing options available for running VMs.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Guest Processing

Schedule

Summary

☐ **Enable application-aware processing**
Detects and prepares applications for consistent backup, performs transaction logs processing, and configures the OS to perform required application restore steps upon first boot.
Customize application handling options for individual machines and applications **Applications...**

Guest interaction proxy: **Choose...**

Guest OS credentials: **Add...**

Manage accounts

Customize guest OS credentials for individual machines and operating systems **Credentials...**

Verify network connectivity and credentials for each machine included in the job **Test Now**

< Previous **Next >** Finish Cancel

66. Select Run the job automatically on the Schedule page and select your specified schedule.
67. Define whether Veeam Backup & Replication should retry the backup job if it fails in the Automatic retry section.
68. Define the time interval the backup job must complete in the Backup window section. The backup window ensures that the job does not overlap with production hours and that there is no unnecessary overhead on the production environment.
69. Click Apply.

New Replication Job

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

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Guest Processing

Schedule

Summary

☒ **Run the job automatically**

☒ **Daily at this time:** 10:00 PM **Everyday** **Days...**

☐ **Monthly at this time:** 10:00 PM **Fourth** **Saturday** **Months...**

☐ **Periodically every:** 1 **Hours** **Schedule...**

☐ **After this job:** DC01-2022 Backup (Created by GOODDEALMART\csun at 2/21/2023)

Automatic retry

☒ **Retry failed items processing:** 3 **times**

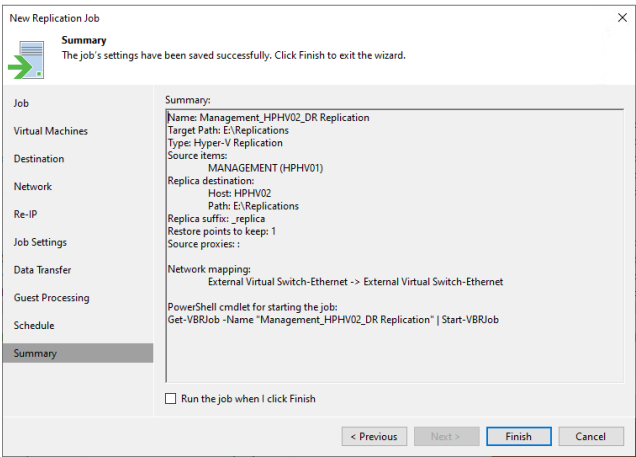
Wait before each retry attempt for: 10 **minutes**

Backup window

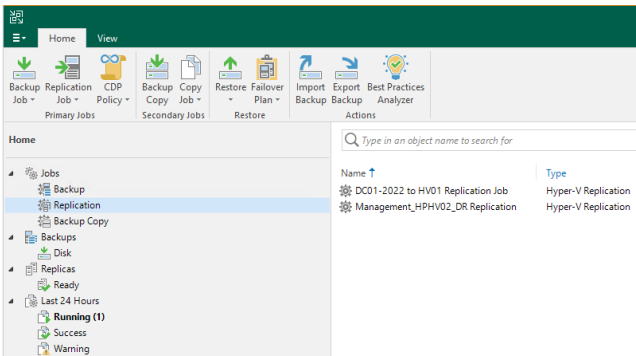
☐ **Terminate job outside of the backup window**
Prevent long-running or accidentally started job from impacting your production infrastructure during the busy hours. **Window...**

< Previous **Apply** Finish Cancel

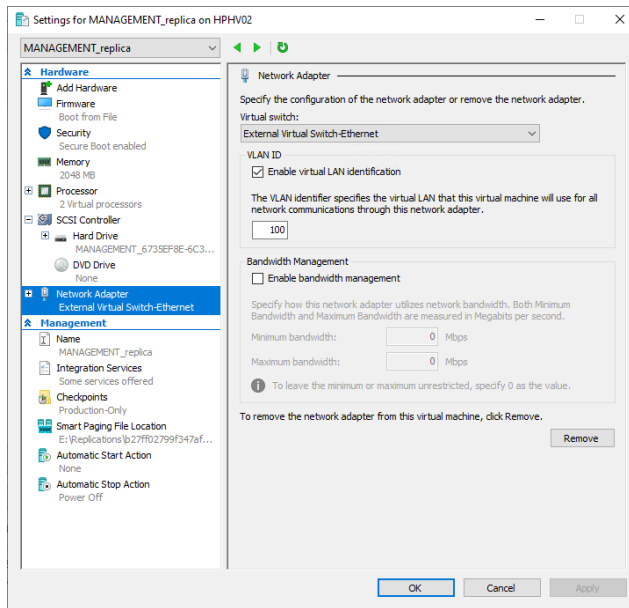
70. On the Summary page, click Finish.



71. Verify the job has been added.



72. Ensure the VLAN ID of the target VM is changed after the replication job is completed.



Creating a Replication job with seeding to the Disaster Recovery Site

This procedure creates a replication job with seeding to replicate the specified VMs to the disaster recovery site. If a disaster strikes and the production VM stops working properly, you can fail over to its replica.

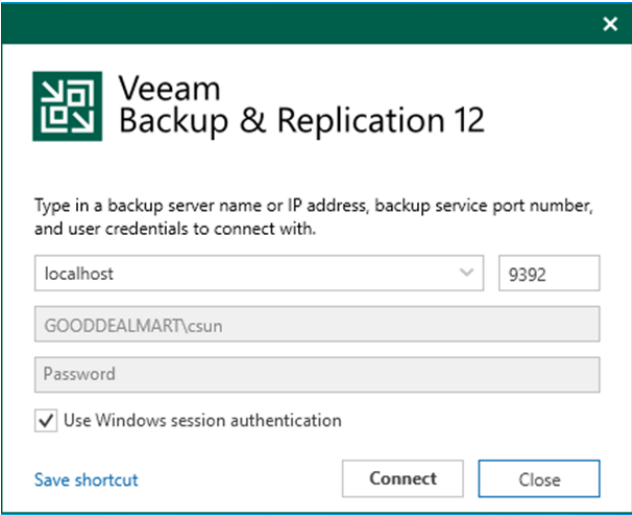
As a prerequisite for replica seeding, you must create a backup of the VM you intend to replicate. Replica seeding and mapping are two technologies that help to reduce network traffic. Veeam Backup & Replication does not need to transfer all VM data from the source host to the target host across sites during the first session of a replication job using these technologies (during the initial replication).

Configure replica mapping if you have ready-to-use copies of the original VMs on the host in the DR site. These can be restored virtual machines (VMs) or replicas created by other replication jobs. Veeam Backup & Replication will use these ready-to-use VMs as replicas after synchronizing their states with the most current state of the original VMs. You can also use replica

mapping to reconfigure or recreate replication jobs, such as splitting one replication job into multiple jobs.

If seeding or mapping is enabled in a replication job, it must be applied to all VMs. It will be skipped if a VM does not have a seed or is not mapped to an existing VM.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

A screenshot of the Veeam Backup & Replication 12 connection dialog box. The window has a dark green title bar with a close button (X) in the top right corner. The main area has a white background with the Veeam logo (a green square with a white geometric pattern) and the text "Veeam Backup & Replication 12" in a bold, black font. Below the logo, there is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are four input fields: a dropdown menu with "localhost" selected, a text box with "9392", a text box with "GOODDEALMART\csun", and a text box with "Password". Below these fields is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom left is a link "Save shortcut" in blue. At the bottom right are two buttons: "Connect" and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

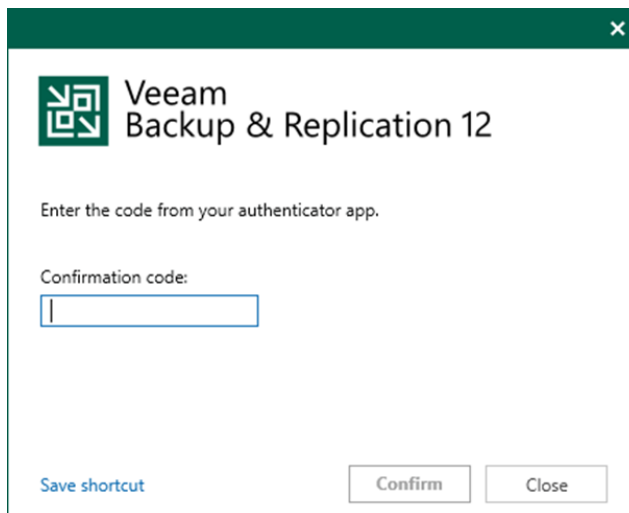
GOODDEALMART\csun

Password

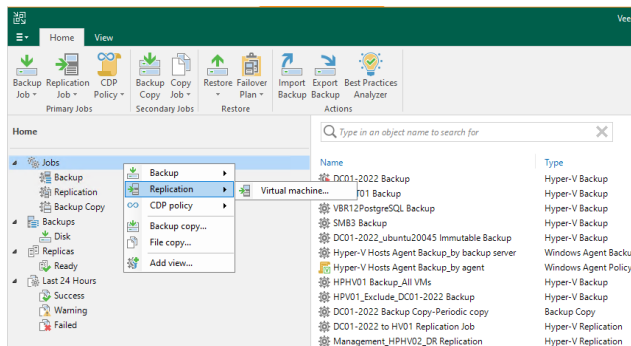
☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

3. Enter the MFA Confirmation code and click Confirm.



4. On the Home page, select Jobs, right-click Jobs, select Replication and click Virtual machine.

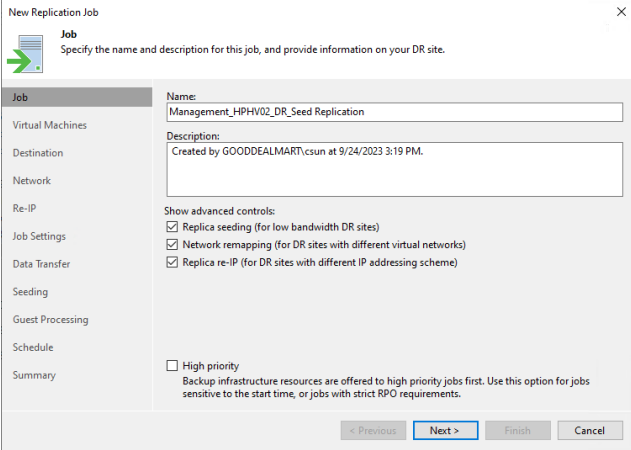


5. Enter a name for the replication job on the Job page in the Name field.
6. Describe the Description field.
7. Select Replica seeding (for low bandwidth DR sites).

Note:

As a prerequisite for replica seeding, you must create a backup of a VM you intend to replicate.

8. Select Network remapping (for DR sites with different virtual networks).
9. Replica re-IP (for DR sites with different IP addressing schemes).
10. Select the High priority check box if required.
11. Click Next.



The screenshot shows the 'New Replication Job' dialog box with the 'Job' tab selected. The 'Name' field contains 'Management_HPHV02_DR_Seed Replication'. The 'Description' field contains 'Created by GOODDEALMART\csun at 9/24/2023 3:19 PM.' The 'Show advanced controls' section has three checked options: 'Replica seeding (for low bandwidth DR sites)', 'Network remapping (for DR sites with different virtual networks)', and 'Replica re-IP (for DR sites with different IP addressing scheme)'. The 'High priority' option is unchecked. The 'Next >' button is highlighted.

New Replication Job

Job
Specify the name and description for this job, and provide information on your DR site.

Job

Name: Management_HPHV02_DR_Seed Replication

Description: Created by GOODDEALMART\csun at 9/24/2023 3:19 PM.

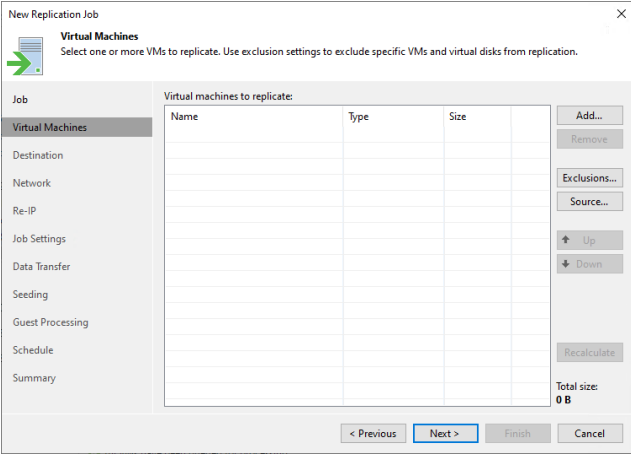
Show advanced controls:

- ☒ Replica seeding (for low bandwidth DR sites)
- ☒ Network remapping (for DR sites with different virtual networks)
- ☒ Replica re-IP (for DR sites with different IP addressing scheme)

☐ 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

12. On the Virtual Machines page, click Add.



The screenshot shows the 'New Replication Job' dialog box with the 'Virtual Machines' tab selected. The 'Virtual machines to replicate' table is empty. The 'Add...' button is highlighted. The 'Total size' is 0 B.

New Replication Job

Virtual Machines
Select one or more VMs to replicate. Use exclusion settings to exclude specific VMs and virtual disks from replication.

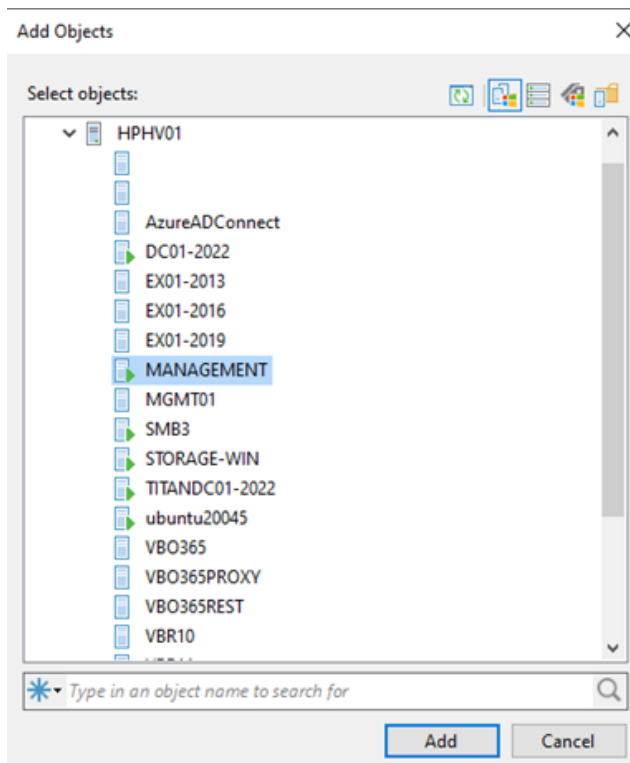
Virtual machines to replicate:

Name	Type	Size
------	------	------

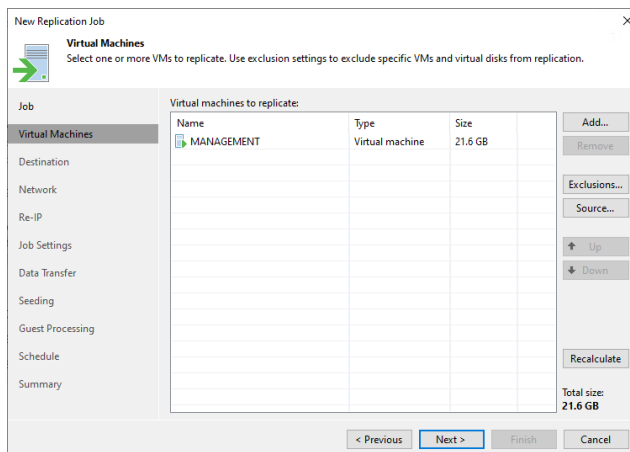
Add...
Remove
Exclusions...
Source...
Up
Down
Recalculate
Total size: 0 B

< Previous Next > Finish Cancel

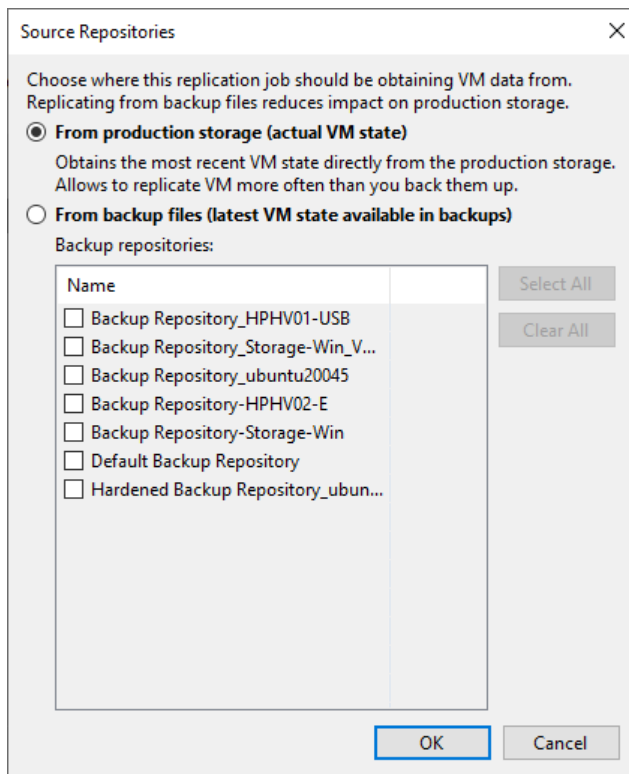
13. Select the objects in the list on the Add Objects page and click Add.



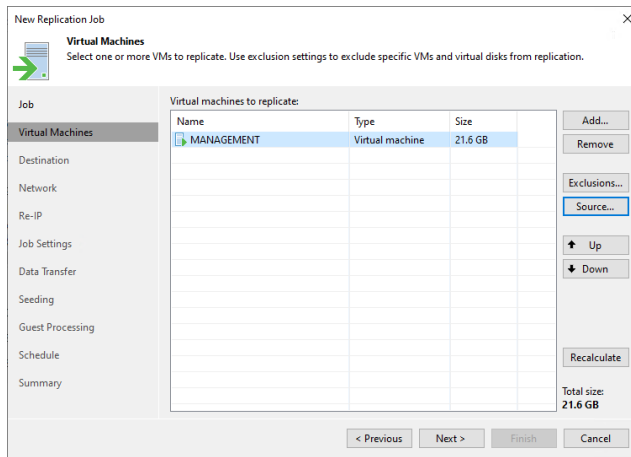
14. On the Virtual Machines page, click Source.



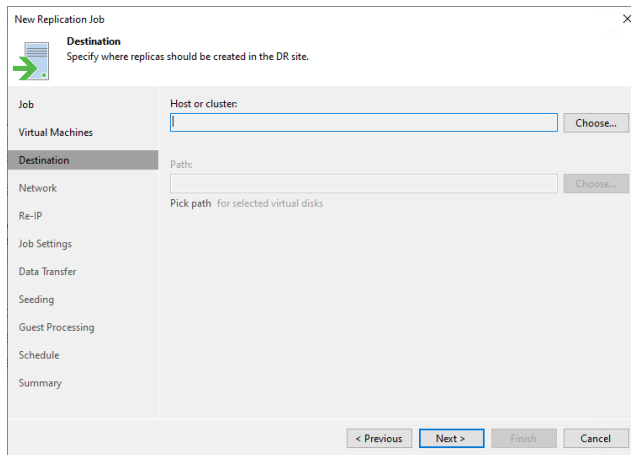
15. Select From production storage (actual VM state) on the Source Repositories page. Veeam Replication will retrieve VM data from data stores connected to the source Microsoft Hyper-V host.
16. Or select From backup files (latest VM state available in backups) if required. Veeam Backup & Replication will read VM data from the backup chain that is already in the selected backup repository.
17. Click OK.



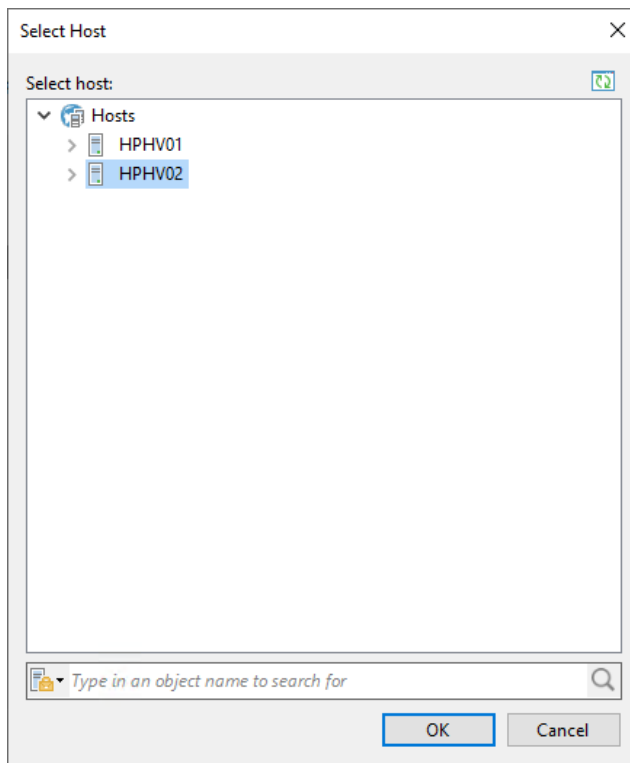
18. On the Virtual Machines page, click Next.



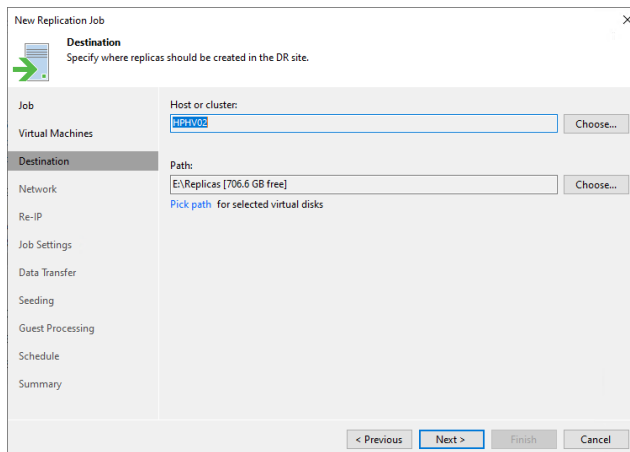
19. On the Destination page, click Choose in the Host or cluster session.



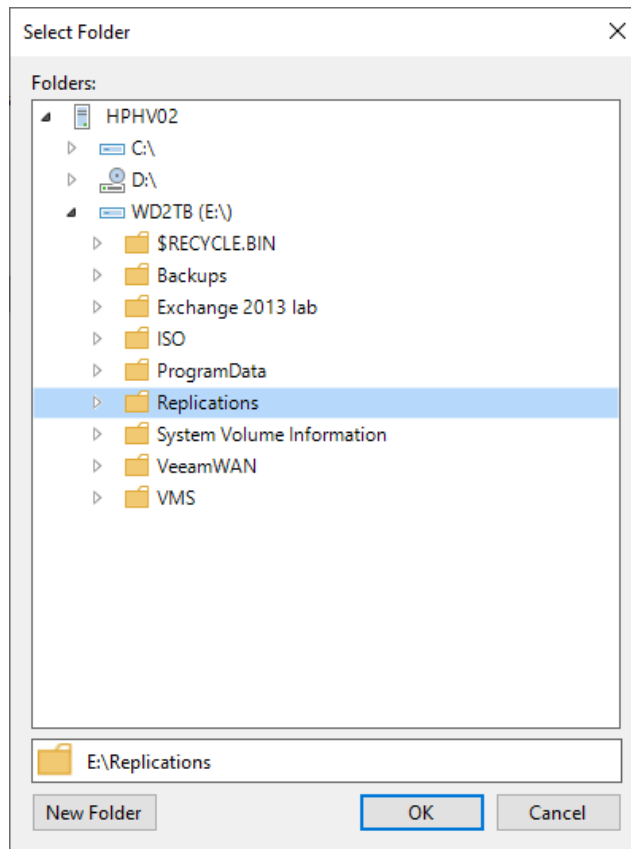
20. Select the destination host server on the Select Host page and click OK.



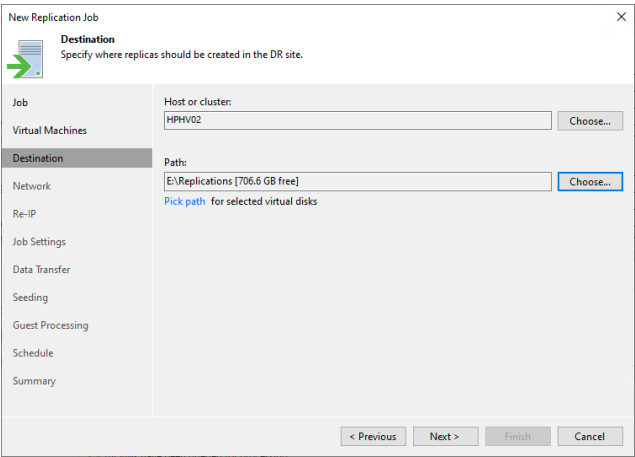
21. On the Destination page, click Choose in the Path session.



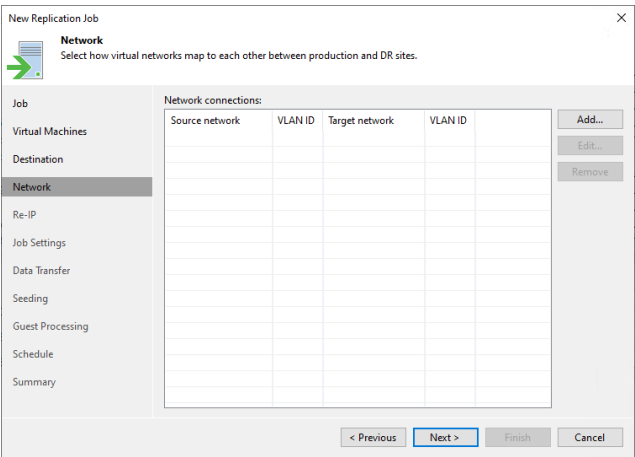
22. On the Folders page, specify a path to the folder where VM replica files must be stored, and click OK.



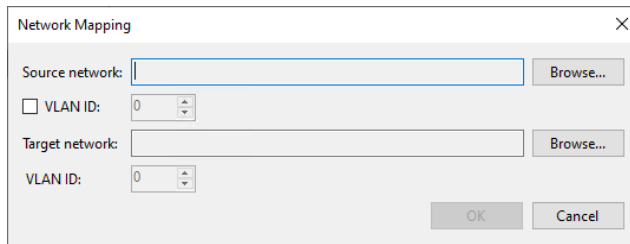
23. On the Destination page, click Next.



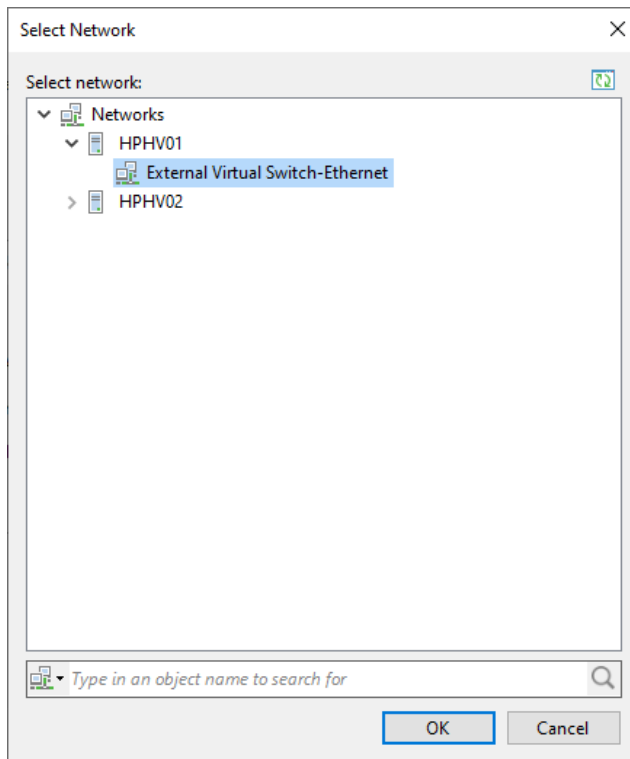
24. On the Network page, click Add.



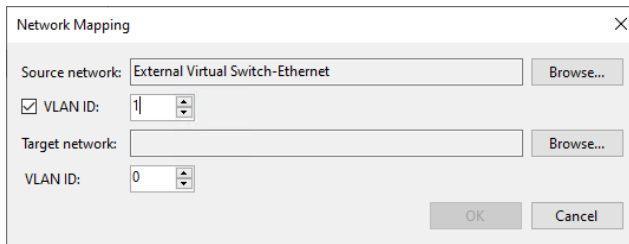
25. On the Network Mapping page, click Browse in the Source network session.



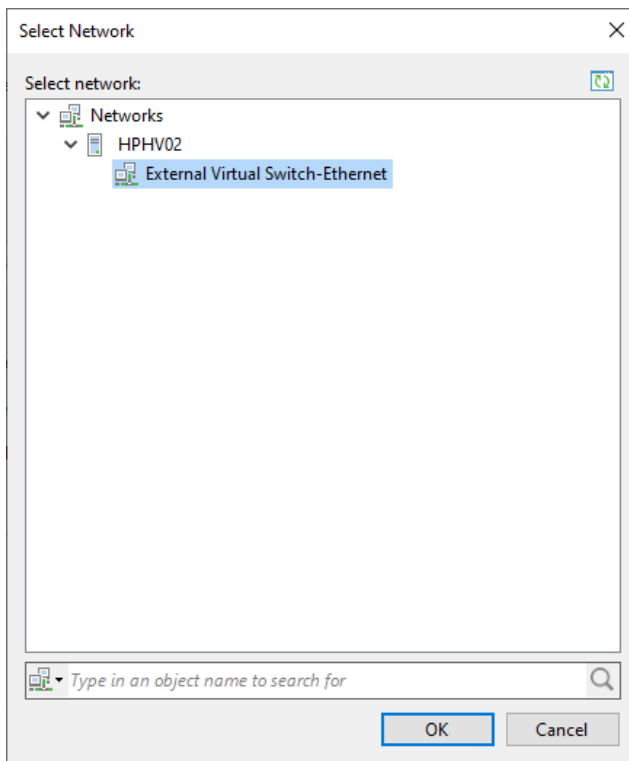
26. Select the production network on the Select Network page to which the original VMs are connected and click OK.



27. If you use VLAN IDs for networking, select the VLAN ID check box and enter the VLAN ID of the source network.
28. On the Network Mapping page, click Browse in the Target network session.



29. Select the DR site network on the Select Network page to which replicas will be connected and click OK.



30. If you use VLAN IDs for networking, select the VLAN ID check box and enter the VLAN ID of the target network.
31. Click OK.

Network Mapping

Source network: External Virtual Switch-Ethernet Browse...

☒ VLAN ID: 1

Target network: External Virtual Switch-Ethernet(switch: [1C1E7CB4-D99C-45D1-8000-000000000000]) Browse...

VLAN ID: 100

OK Cancel

32. On the Network page, click Next.

New Replication Job

Network

Select how virtual networks map to each other between production and DR sites.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Seeding

Guest Processing

Schedule

Summary

Network connections:

Source network	VLAN ID	Target network	VLAN ID
 External Virtual S...	1	 External Virtual...	100

Add...

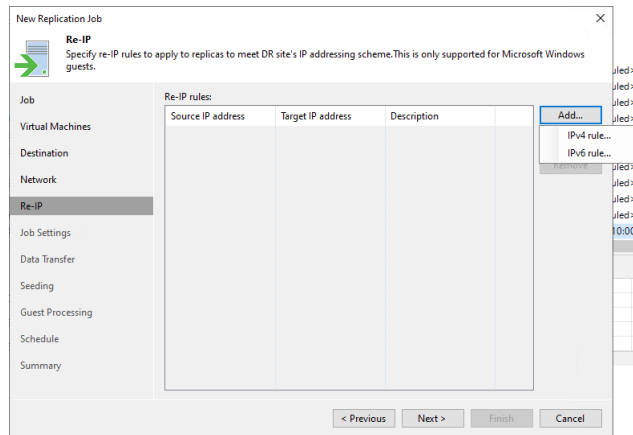
Edit...

Remove

< Previous **Next >** **Finish** **Cancel**

33. On the Re-IP page, click Add.

34. Select the IPv4 rule.



35. On the New Re-IP Rule page, Enter the IP numbering scheme used at the production site in the Source VM section.
36. Enter the IP numbering scheme used at the DR site in the Target VM section.
37. Describe the rule in the Description field.
38. Click OK.

New Re-IP Rule [X]

Source VM

IP address: 10 . 1 . * . *

Subnet mask: 255 . 255 . 0 . 0

Target VM

IP address: 10 . 100 . * . *

Subnet mask: 255 . 255 . 0 . 0

Default gateway: 10 . 100 . 255 . 254

Preferred DNS server: 10 . 100 . 1 . 1

Alternate DNS server: . . .

Preferred WINS server: . . .

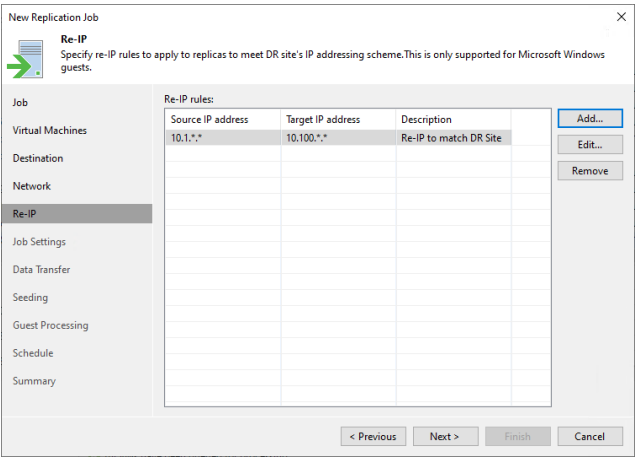
Alternate WINS server: . . .

Description

Re-IP to match DR Site

OK Cancel

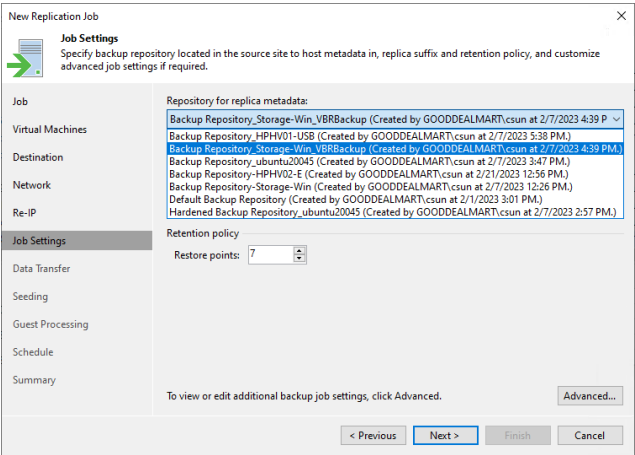
39. On the Re-IP page, click Next.



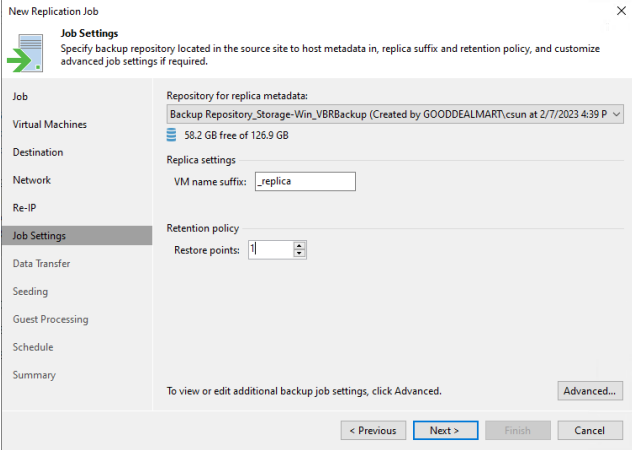
40. Select the Repository for replica metadata from the drop-down list on the Job Settings page.

Note:

- This setting must be specified only for snapshot replicas. Legacy replicas do not use a backup repository for storing metadata.
- You cannot store VM replica metadata on deduplicating storage appliances.
- You cannot store replica metadata in a scale-out backup repository.



41. Enter a suffix that will be appended to the original VM names in the Replica name suffix field.
42. Enter the number of restore points in the field.
43. Click Advanced.

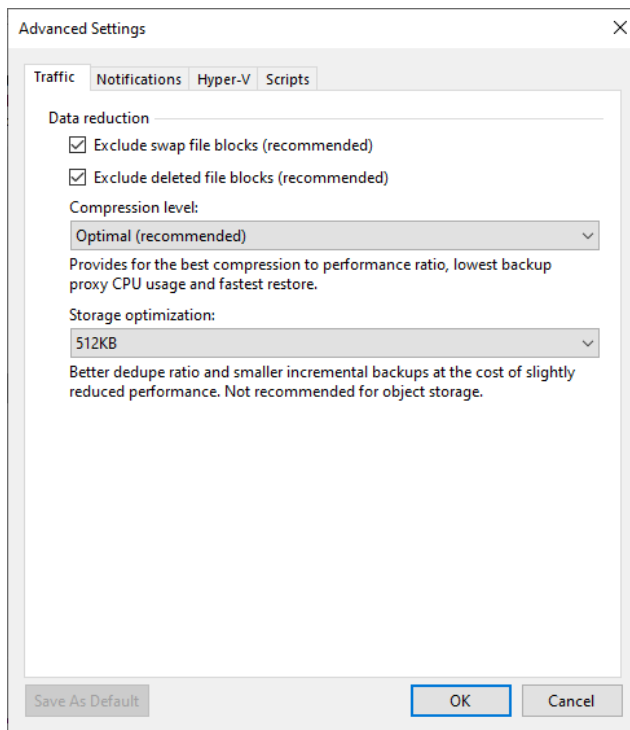


The screenshot shows the 'New Replication Job' dialog box with the 'Job Settings' tab selected. The left sidebar lists various settings: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings (selected), Data Transfer, Seeding, Guest Processing, Schedule, and Summary. The main area displays the following configuration:

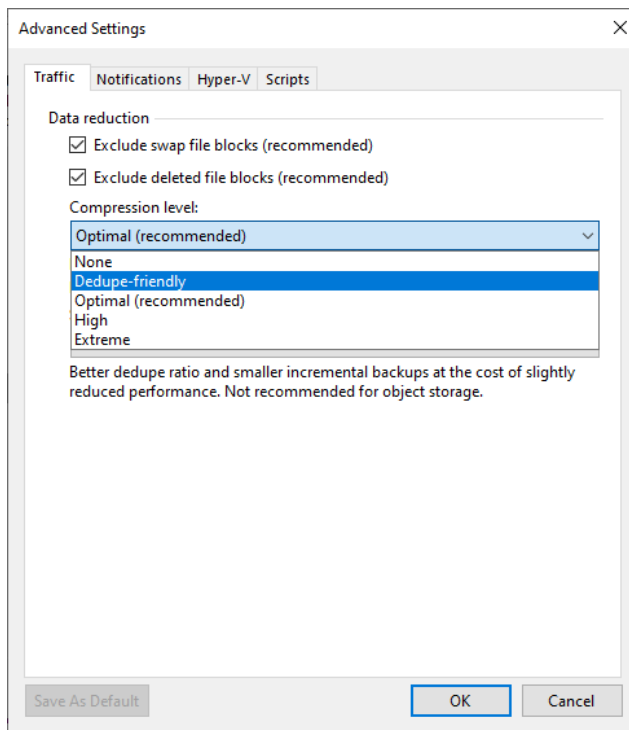
- Repository for replica metadata:** Backup Repository_Storage-Win_VBRBackup (Created by GOODDEALMART:csun at 2/7/2023 4:39 P) with 58.2 GB free of 126.9 GB.
- Replica settings:** VM name suffix:
- Retention policy:** Restore points:

At the bottom, there is a message: 'To view or edit additional backup job settings, click Advanced.' with an 'Advanced...' button. Navigation buttons at the very bottom are '< Previous', 'Next >' (highlighted), 'Finish', and 'Cancel'.

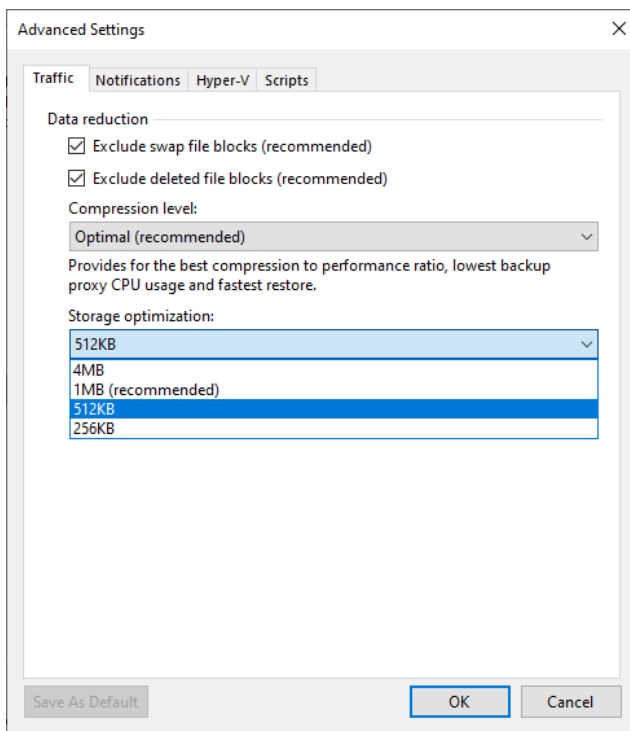
44. On Advanced Settings, click Traffic.
45. Select the Exclude swap file blocks (recommended) checkbox.
46. Select the Exclude deleted file blocks (recommended) check box.



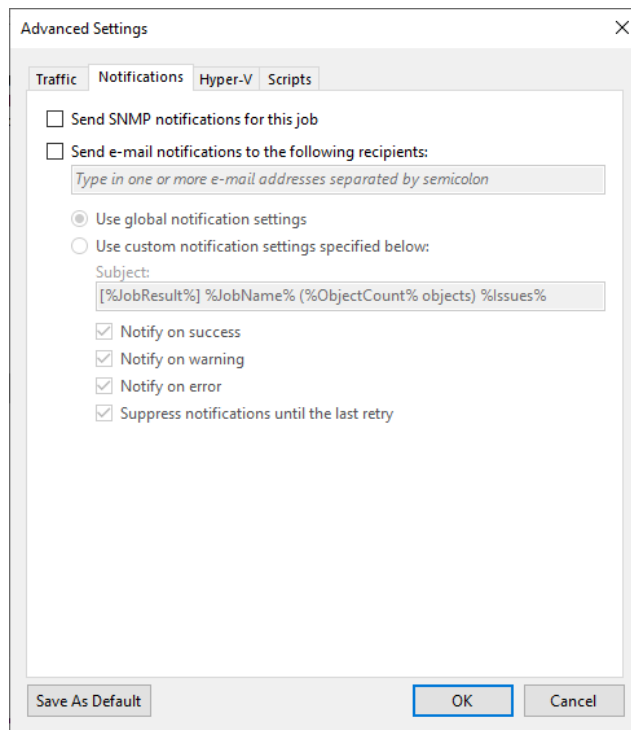
47. Select the compression level for replicas from the drop-down list.



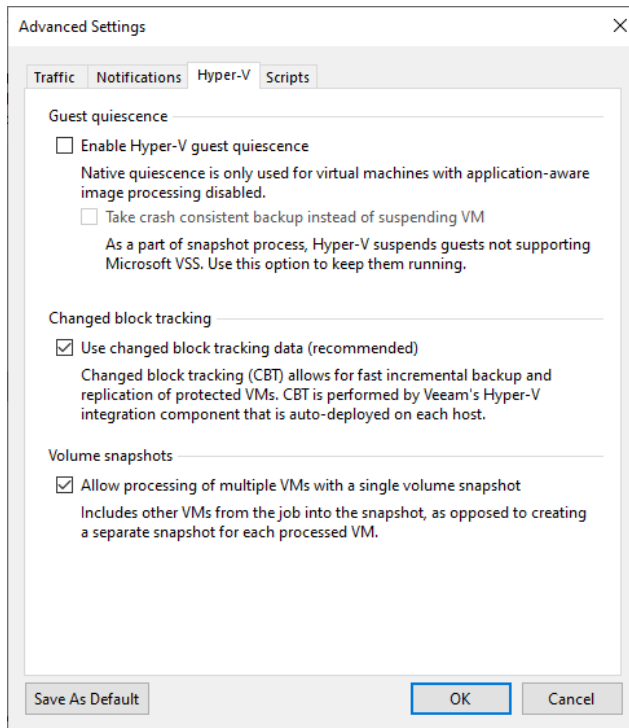
48. Select Storage optimization from the drop-down list.



49. On the Advanced Settings, select Notifications.
50. Keep the default settings.

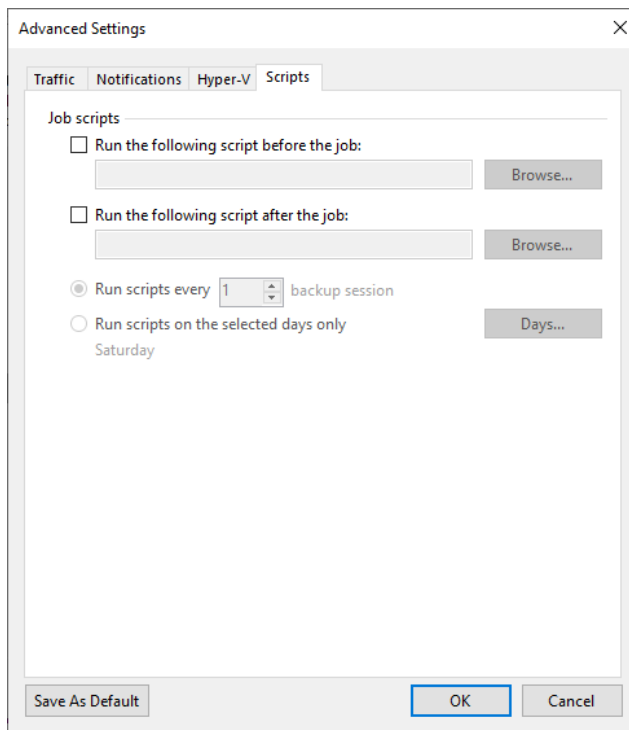


51. On the Advanced Settings, select Hyper-V.
52. Keep the default settings.

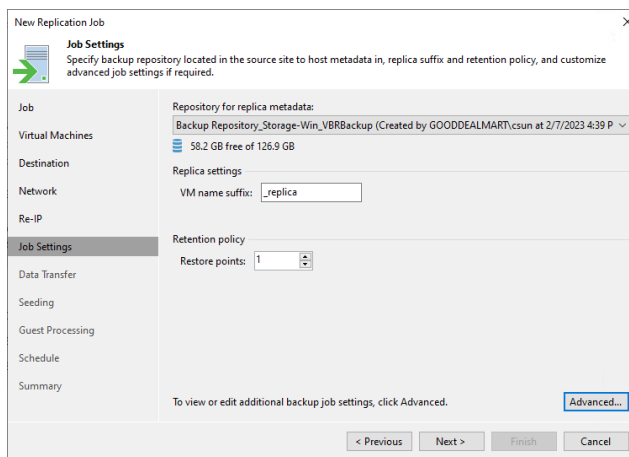


53. On the Advanced Settings page, click Scripts.

54. Keep the default settings and click OK.



55. On the Job Settings page, click Next.



56. Click Choose to specify Source Proxy on the Data Transfer page.

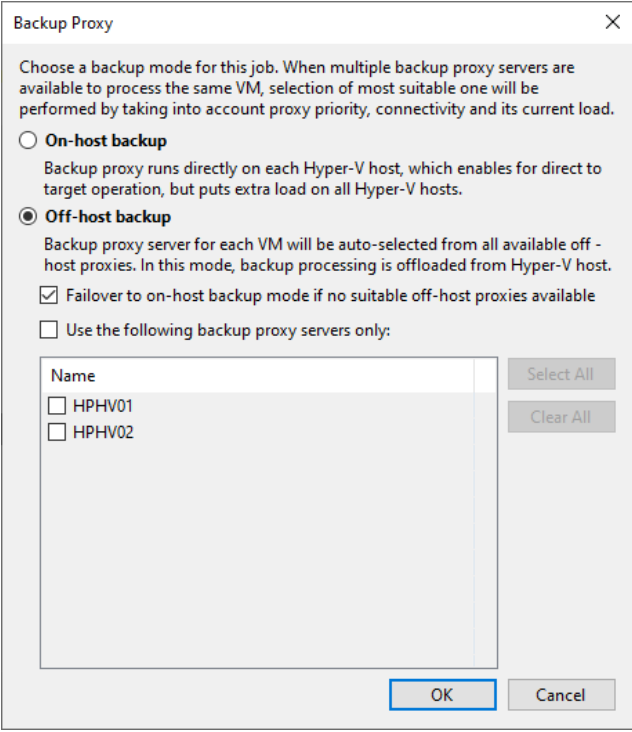
The screenshot shows the 'New Replication Job' dialog box with the 'Data Transfer' tab selected. The left sidebar lists the steps: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings, Data Transfer (selected), Seeding, Guest Processing, Schedule, and Summary. The main area is titled 'Data Transfer' with the subtitle 'Choose how VM data should be transferred to the target site.' It contains the following fields:

- Source proxy:** A text box containing 'Off-host backup (automatic proxy selection)' and a 'Choose...' button.
- Data transfer mode:**
 - ☒ **Direct**: Best for local and off-site replication over fast links.
 - ☐ **Through built-in WAN accelerators**: Best for off-site replication over slow links due to significant bandwidth savings.
- Source WAN accelerator:** A dropdown menu.
- Target WAN accelerator:** A dropdown menu.

At the bottom right, there are four buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

57. On the Backup Proxy page, keep the default settings.

58. Click OK.



Backup Proxy

Choose a backup mode for this job. When multiple backup proxy servers are available to process the same VM, selection of most suitable one will be performed by taking into account proxy priority, connectivity and its current load.

☐ **On-host backup**
Backup proxy runs directly on each Hyper-V host, which enables for direct to target operation, but puts extra load on all Hyper-V hosts.

☒ **Off-host backup**
Backup proxy server for each VM will be auto-selected from all available off - host proxies. In this mode, backup processing is offloaded from Hyper-V host.

☒ Failover to on-host backup mode if no suitable off-host proxies available

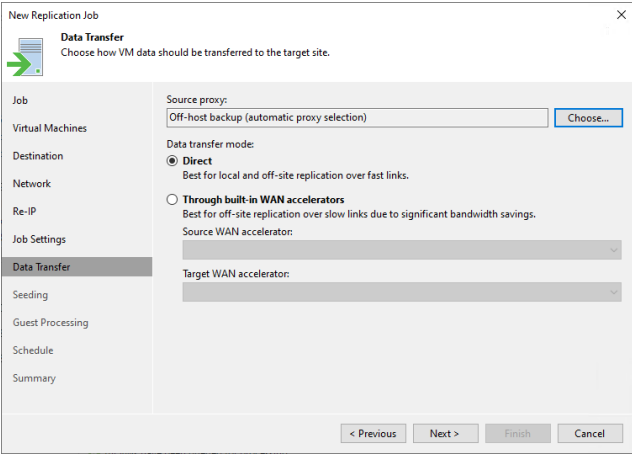
☐ Use the following backup proxy servers only:

Name
☐ HPHV01
☐ HPHV02

Select All
Clear All

OK Cancel

59. Select Direct on the Data Transfer mode session if you plan to copy backup files over high-speed connections.



New Replication Job

Data Transfer
Choose how VM data should be transferred to the target site.

Job
Virtual Machines
Destination
Network
Re-IP
Job Settings
Data Transfer
Seeding
Guest Processing
Schedule
Summary

Source proxy:
Off-host backup (automatic proxy selection) Choose...

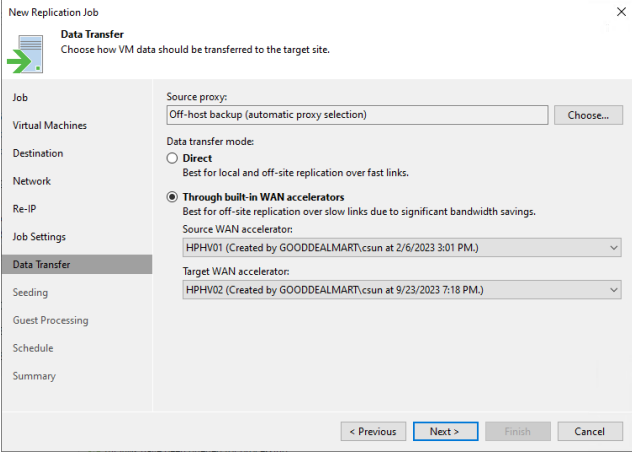
Data transfer mode:
☒ **Direct**
Best for local and off-site replication over fast links.

☐ **Through built-in WAN accelerators**
Best for off-site replication over slow links due to significant bandwidth savings.

Source WAN accelerator:
Target WAN accelerator:

< Previous Next > Finish Cancel

60. Select Direct on the Data Transfer mode session if you plan to copy backup files over high-speed connections.
61. Select the Through built-in WAN accelerators if you transfer data over WAN or slow connections.
62. Select a WAN accelerator configured in the source site from the Source WAN accelerator drop-down list.
63. Select a WAN accelerator configured in the target site from the Target WAN accelerator drop-down list.
64. Click Next.



The screenshot shows the 'New Replication Job' dialog box with the 'Data Transfer' tab selected. The dialog has a sidebar on the left with the following options: Job, Virtual Machines, Destination, Network, Re-IP, Job Settings, Data Transfer (selected), Seeding, Guest Processing, Schedule, and Summary. The main area of the dialog is titled 'Data Transfer' and contains the instruction 'Choose how VM data should be transferred to the target site.' Below this, there are two sections: 'Source proxy:' with a dropdown menu set to 'Off-host backup (automatic proxy selection)' and a 'Choose...' button; and 'Data transfer mode:' with two radio buttons. The 'Direct' option is unselected, and the 'Through built-in WAN accelerators' option is selected. Below the radio buttons, there are two dropdown menus: 'Source WAN accelerator:' set to 'HPHV01 (Created by GOODDEALMART\csun at 2/6/2023 3:01 PM.)' and 'Target WAN accelerator:' set to 'HPHV02 (Created by GOODDEALMART\csun at 9/23/2023 7:18 PM.)'. At the bottom of the dialog, there are four buttons: '< Previous', 'Next >' (highlighted with a blue border), 'Finish', and 'Cancel'.

65. Select Get seed from the following backup repository checkbox in the Initial seeding.
66. Choose the repository where your replica seeds are stored from the list of available backup repositories.

New Replication Job

Seeding
Specify the backup repository with backup files of production VMs. The backup repository must be located in the DR site.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Seeding

Guest Processing

Schedule

Summary

Initial seeding

☒ Get seed from the following backup repository:

Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

706.6 GB free of 1.8 TB

Replica mapping

☐ Map replicas to existing VMs

Original VM	Replica VM
MANAGEMENT	No mapping

Edit...
Remove

Detect

If you already have replicas in the target site, replication job can reuse them. This way, only differences will be transferred over WAN by the first job run.

< Previous Next > Finish Cancel

67. Configure replica mapping if you have ready-to-use copies of the original VMs on the host in the DR site. These can be restored virtual machines (VMs) or replicas created by other replication jobs. Veeam Backup & Replication will use these ready-to-use VMs as replicas after synchronizing their states with the most current state of the original VMs. You can also use replica mapping to reconfigure or recreate replication jobs, such as splitting one replication job into multiple jobs.
68. Select Map replicas to existing VMs and click Detect.

New Replication Job

Seeding
Specify the backup repository with backup files of production VMs. The backup repository must be located in the DR site.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Seeding

Guest Processing

Schedule

Summary

Initial seeding

☒ Get seed from the following backup repository:

Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

706.6 GB free of 1.8 TB

Replica mapping

☒ Map replicas to existing VMs

Original VM	Replica VM
MANAGEMENT	No mapping

Edit...
Remove

Detect

If you already have replicas in the target site, replication job can reuse them. This way, only differences will be transferred over WAN by the first job run.

< Previous Next > Finish Cancel

69. On the Seeding page, click Next.

New Replication Job

Seeding
Specify the backup repository with backup files of production VMs. The backup repository must be located in the DR site.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Seeding

Guest Processing

Schedule

Summary

Initial seeding

☒ Get seed from the following backup repository:

Backup Repository-HPHV02-E (Created by GOODDEALMART\csun at 2/21/2023 12:56 PM.)

706.6 GB free of 1.8 TB

Replica mapping

☒ Map replicas to existing VMs

Original VM	Replica VM
MANAGEMENT	MANAGEMENT_replica

If you already have replicas in the target site, replication job can reuse them. This way, only differences will be transferred over WAN by the first job run.

70. On the Guest Processing page, keep the default settings.
71. Click Next.

New Replication Job

Guest Processing
Choose guest OS processing options available for running VMs.

Job

Virtual Machines

Destination

Network

Re-IP

Job Settings

Data Transfer

Seeding

Guest Processing

Schedule

Summary

☐ **Enable application-aware processing**
Detects and prepares applications for consistent backup, performs transaction logs processing, and configures the OS to perform required application restore steps upon first boot.
Customize application handling options for individual machines and applications

Guest interaction proxy:
Automatic selection

Guest OS credentials:

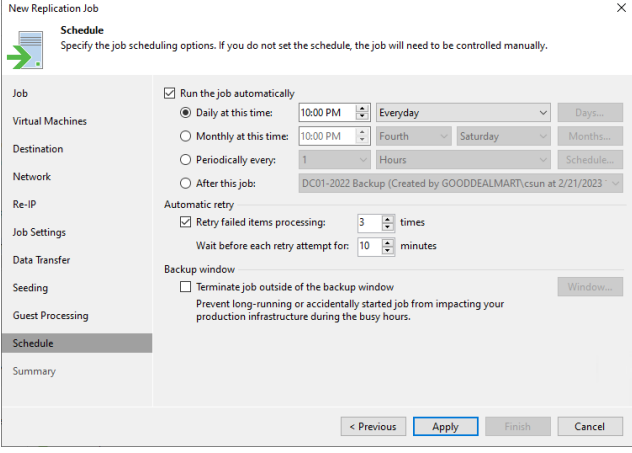
Manage accounts

Customize guest OS credentials for individual machines and operating systems

Verify network connectivity and credentials for each machine included in the job

72. Select Run the job automatically on the Schedule page and select your specified schedule.
73. Define whether Veeam Backup & Replication should retry the backup job if it fails in the Automatic retry section.
74. Define the time interval the backup job must complete in the Backup window section. The backup window ensures that the job does not overlap with production hours and that there is no unnecessary overhead on the production environment.

75. Click Apply.



New Replication Job

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

Job

☒ Run the job automatically

☐ Daily at this time: 10:00 PM Everyday Days...

☐ Monthly at this time: 10:00 PM Fourth Saturday Months...

☐ Periodically every: 1 Hours Schedule...

☐ After this job: DC01-2022 Backup (Created by GOODDEALMART\csun at 2/21/2023)

Automatic retry

☒ Retry failed items processing: 3 times

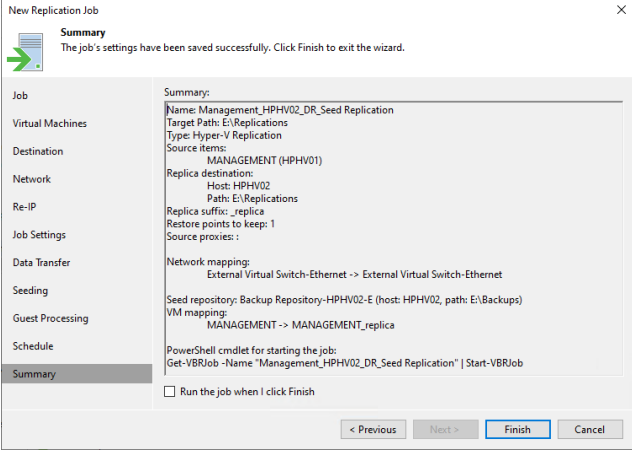
Wait before each retry attempt for: 10 minutes

Backup window

☐ Terminate job outside of the backup window
Prevent long-running or accidentally started job from impacting your production infrastructure during the busy hours. Window...

< Previous Apply Finish Cancel

76. On the Summary page, click Finish.



New Replication Job

Summary
The job's settings have been saved successfully. Click Finish to exit the wizard.

Job

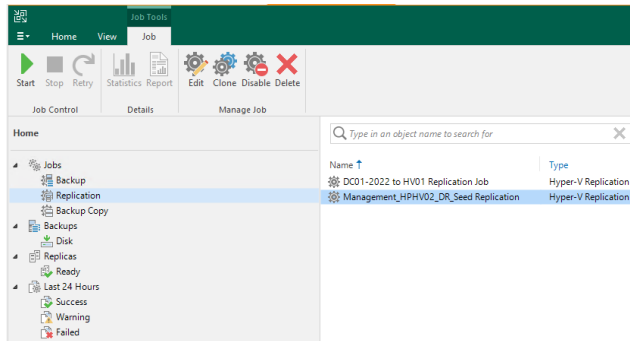
Summary:

Name: Management_HPHV02_DR_Seeds Replication
Target Path: E:\Replications
Type: Hyper-V Replication
Source items: MANAGEMENT (HPHV01)
Replica destination:
Host: HPHV02
Path: E:\Replications
Replica suffix: _replica
Restore points to keep: 1
Source proxies: :
Network mapping:
External Virtual Switch-Ethernet -> External Virtual Switch-Ethernet
Seed repository: Backup Repository-HPHV02-E (host: HPHV02, path: E:\Backups)
VM mapping:
MANAGEMENT -> MANAGEMENT_replica
PowerShell cmdlet for starting the job:
Get-VBRJob -Name "Management_HPHV02_DR_Seeds Replication" | Start-VBRJob

☐ Run the job when I click Finish

< Previous Next > Finish Cancel

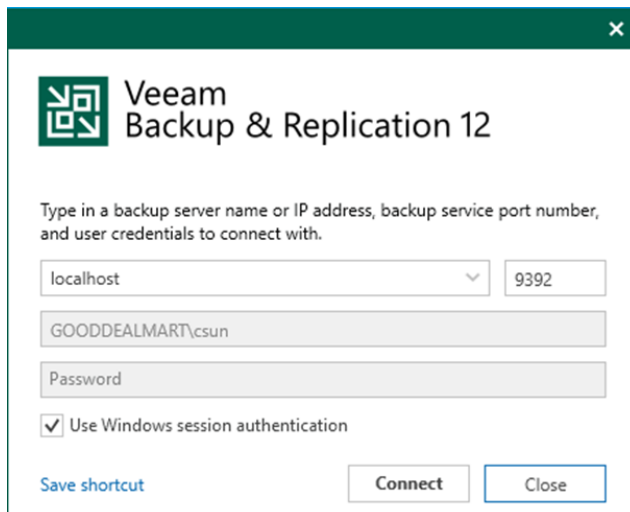
77. Verify the job has been added.



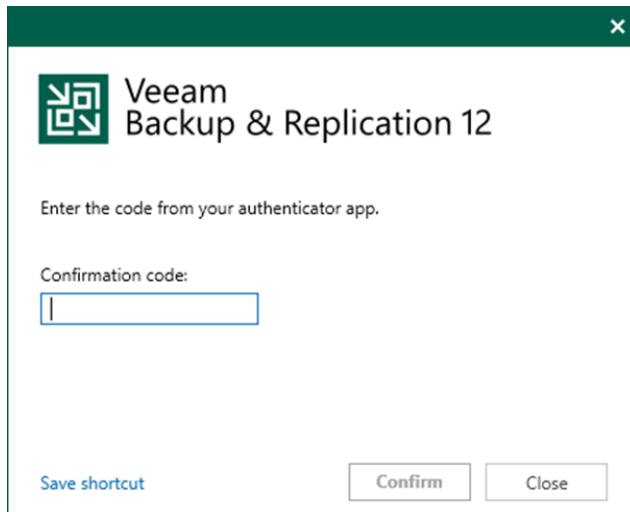
Failover Virtual Machine to Disaster Recovery Site

Failing over a virtual machine to a disaster recovery site involves replicating the virtual machine and its data to the disaster recovery site and activating the replicated copy in case of a disaster or other disruptive event that renders the original virtual machine unavailable.

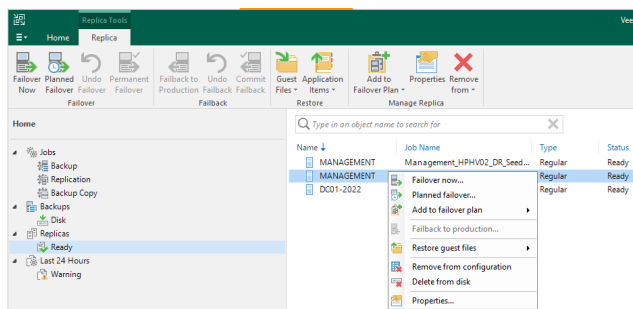
1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



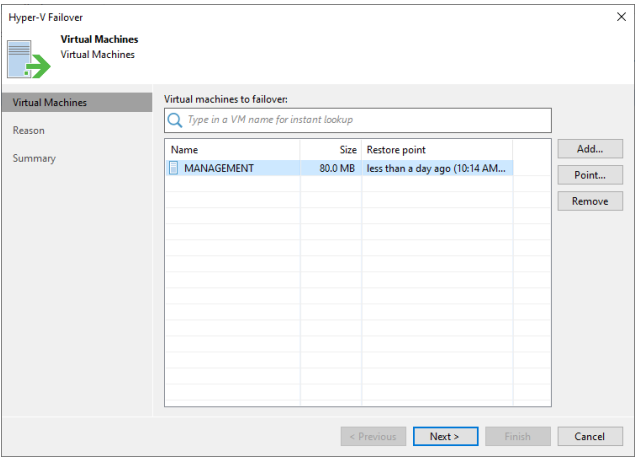
3. Enter the MFA Confirmation code and click Confirm.



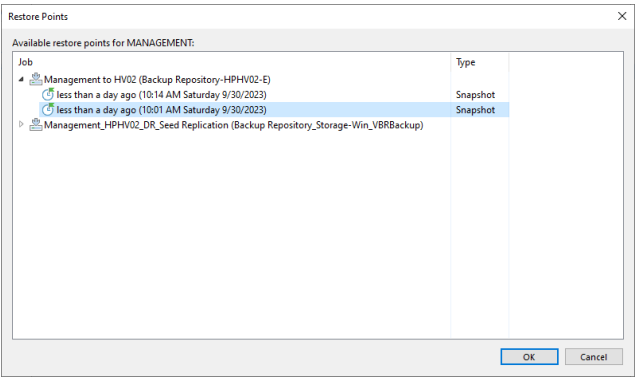
4. On the Home page, expand Replicas and select Ready.
5. Right-click the virtual machine and select Failover now.



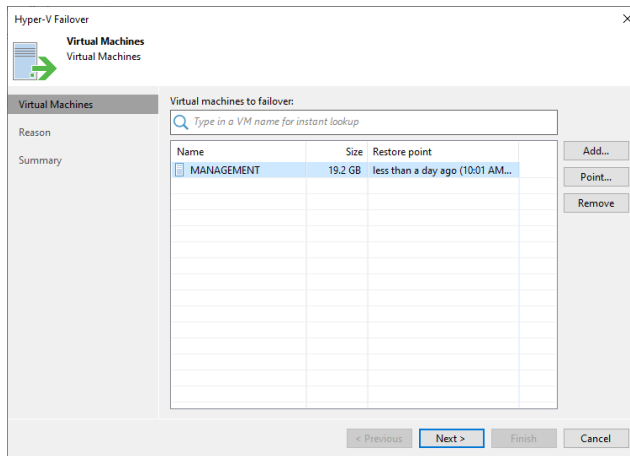
6. Select the virtual machine and click Point on the Virtual Machines page.



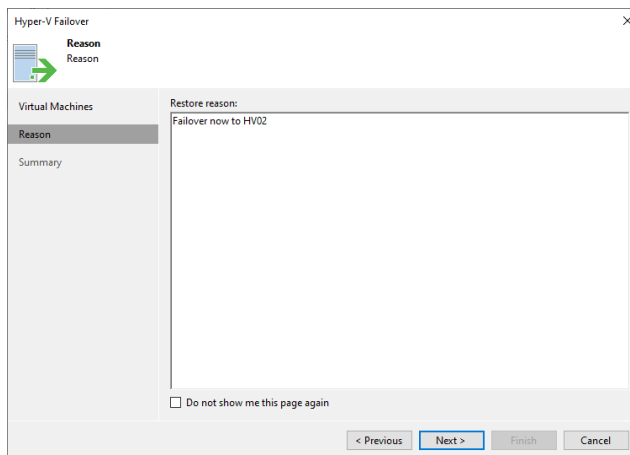
- 7. Expand the Job name on the Restore Point page, select the necessary restore point, and click OK.



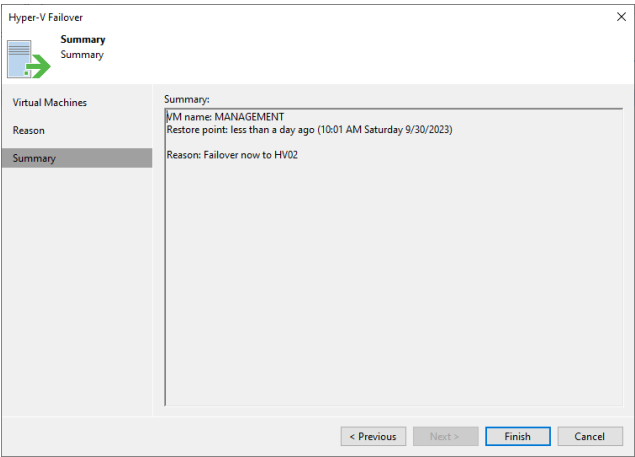
- 8. On the Virtual Machines page, click Next.



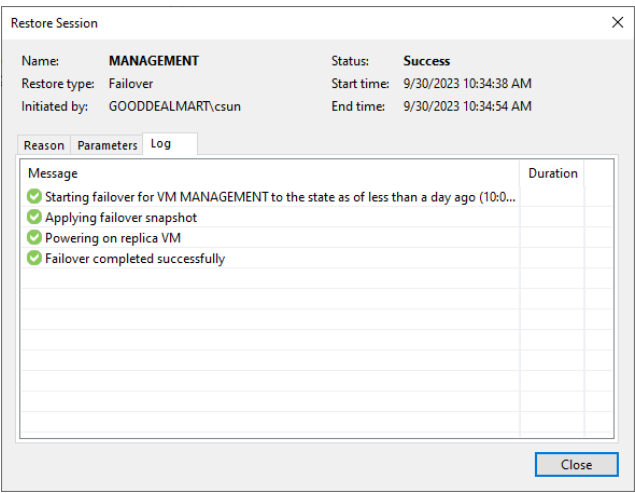
9. On the Reason page, the Restore reason, click Next.



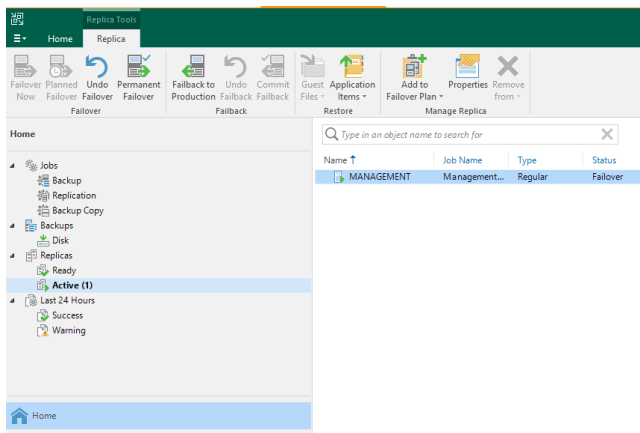
10. On the Summary page, click Finish.



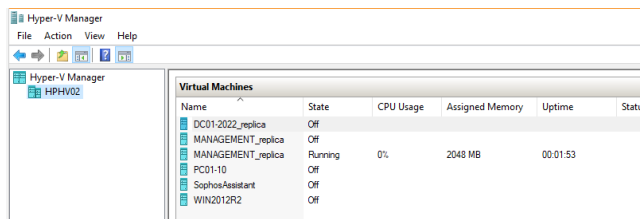
11. Select Log on the Restore Session page, ensure the failover completed processes successfully, and click Closed.



12. On the Home page, expend Replicas and select Active. The virtual machine status shows Failover.



13. The Machine is now failover and running on the DR Host (HV02).

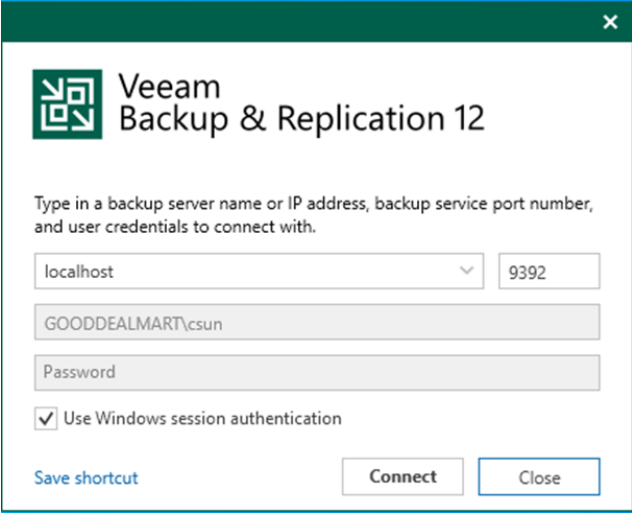


Planned Failover Virtual Machine to Disaster Recovery Site

Planned failover is the smooth manual switching from a primary VM to its replica with minor downtime. Planned failover is proper when you know primary VMs are planning to go offline, and you need to switch the workload from the original VMs to their replicas as soon as possible. For example, you can use planned failover to perform data center migration, maintenance, or software upgrades on primary VMs. You can also perform a planned failover if you see signs of an impending disaster.

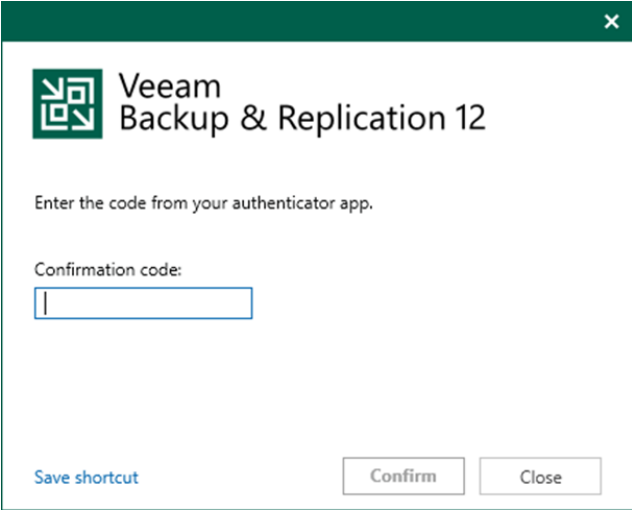
- 1. Login to the Veeam Backup and replication manager server.

2. Open the Veeam Backup & Replication 12 Console and click Connect.



The image shows a Windows-style dialog box titled "Veeam Backup & Replication 12". It has a green header bar with a close button (X) in the top right corner. The Veeam logo is in the top left. The main text says: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." Below this are four input fields: a dropdown menu with "localhost" selected, a text box with "9392", a text box with "GOODDEALMART\csun", and a password field labeled "Password". There is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom, there are three buttons: "Save shortcut" (in blue text), "Connect", and "Close".

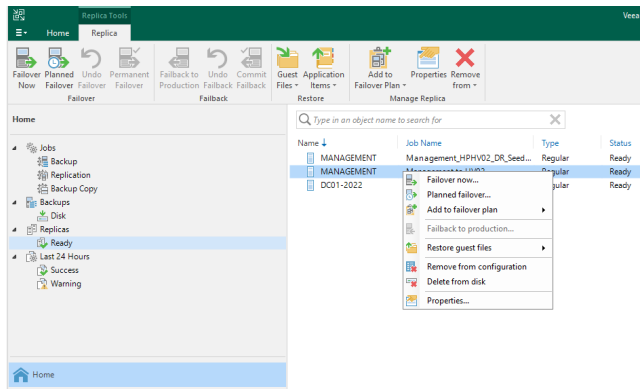
3. Enter the MFA Confirmation code and click Confirm.



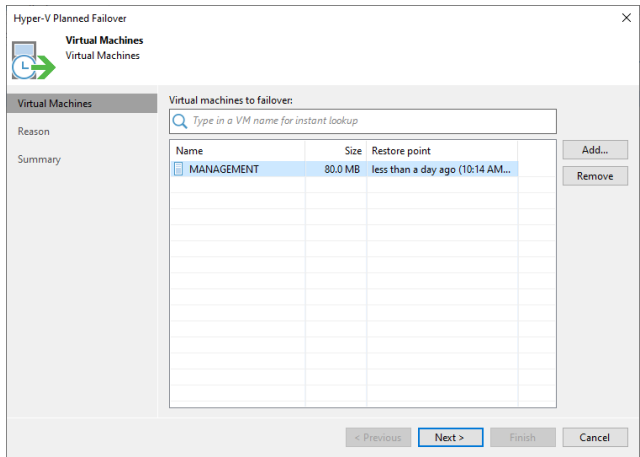
The image shows a Windows-style dialog box titled "Veeam Backup & Replication 12". It has a green header bar with a close button (X) in the top right corner. The Veeam logo is in the top left. The main text says: "Enter the code from your authenticator app." Below this is a label "Confirmation code:" followed by a single-character input field. At the bottom, there are three buttons: "Save shortcut" (in blue text), "Confirm", and "Close".

4. On the Home page, expand Replicas and select Ready.

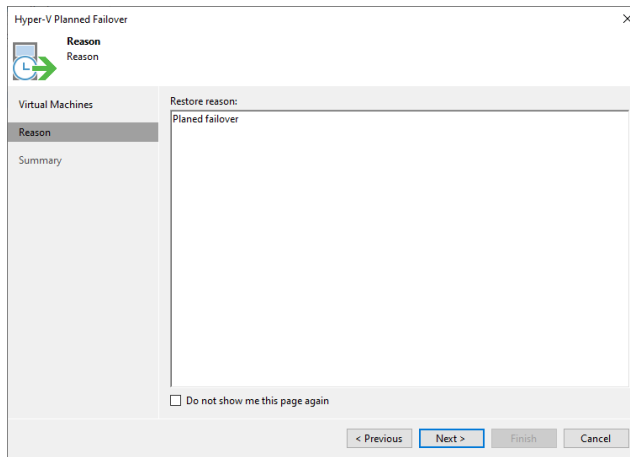
5. Right-click the virtual machine and select Planned failover.



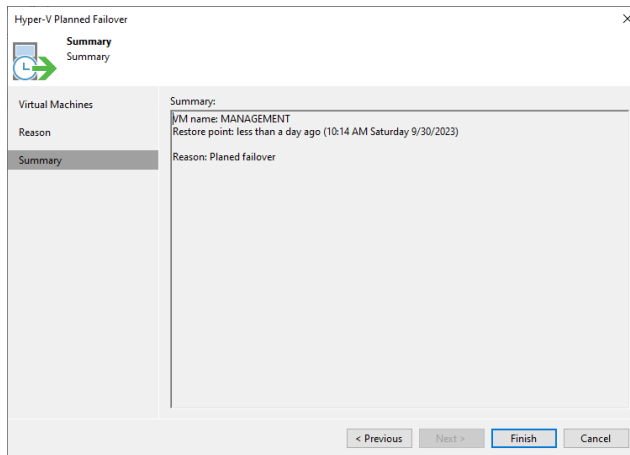
6. On the Virtual Machines page, click Next.



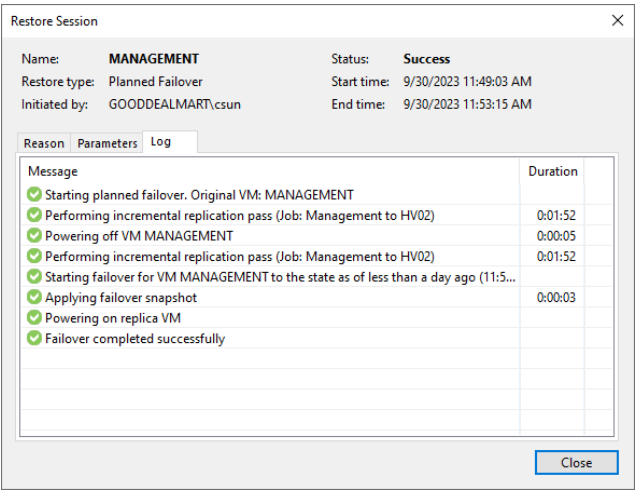
7. On the Reason page, the Restore reason, click Next.



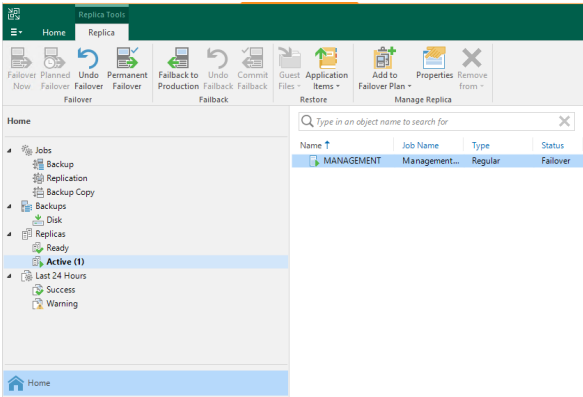
8. On the Summary page, click Finish.



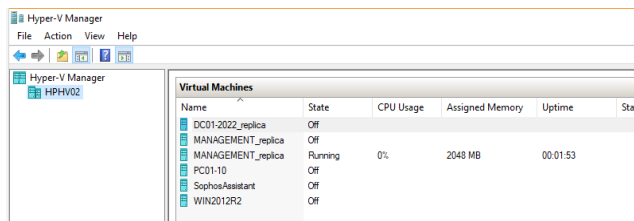
9. On the Restore Session page, select the log.
10. It performs replication before powering off the virtual machine.
11. It performs replication again after powering off the virtual machine.
12. Ensure the processes of the planned failover are completed successfully and click Closed.



13. On the Home page, expand Replicas and select Active. The virtual machine status shows Failover.



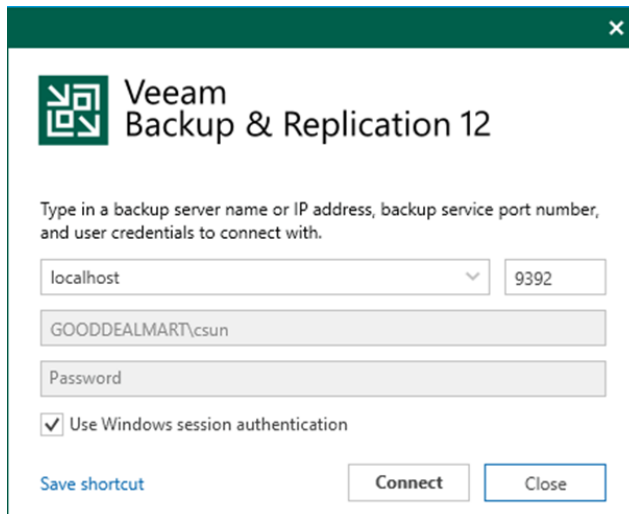
14. The Machine is now failover and running on the DR Host (HV02).



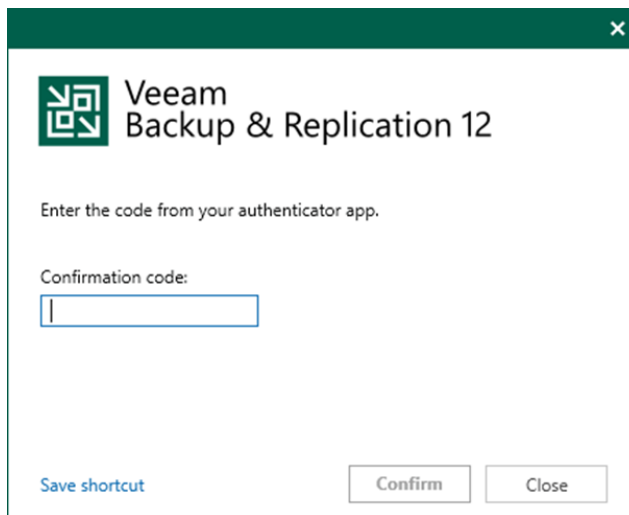
Failover Undo the Virtual Machine to Production Site

One method for completing failover is to use failover undo. When you undo failover, you return to the original VM from a VM replica. When a virtual machine replica is in the Failover state, Veeam Backup & Replication discards all changes made to the replica. This is because the Failover state is intended to temporarily restore the virtual machine to operation quickly in the event of a disaster.

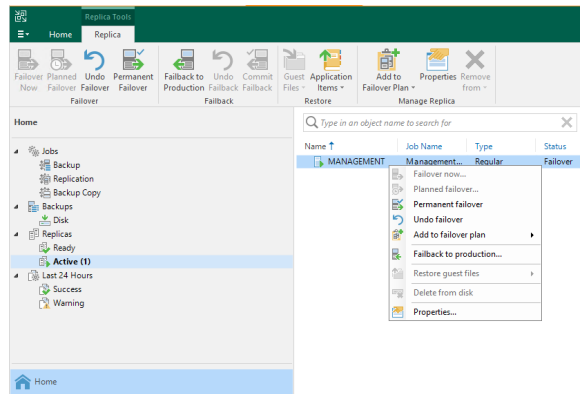
1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



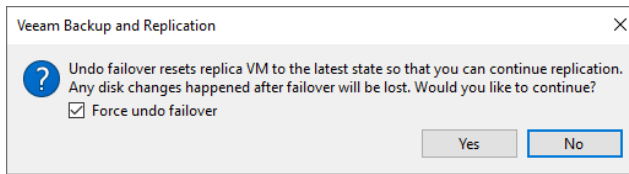
3. Enter the MFA Confirmation code and click Confirm.



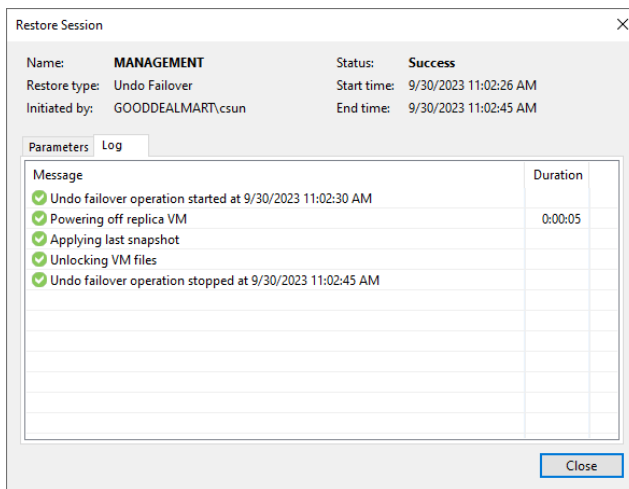
4. On the Home page, expand Replicas and select Active.
5. Right-click the virtual machine and select Undo failover.



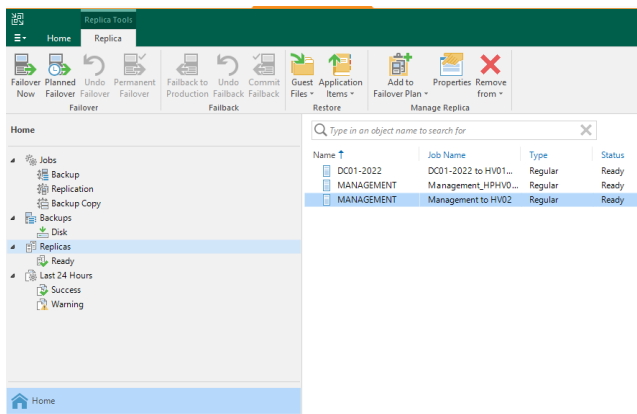
6. Select the Force undo failover checkbox on the Veeam Backup and Replication display windows and click Yes.



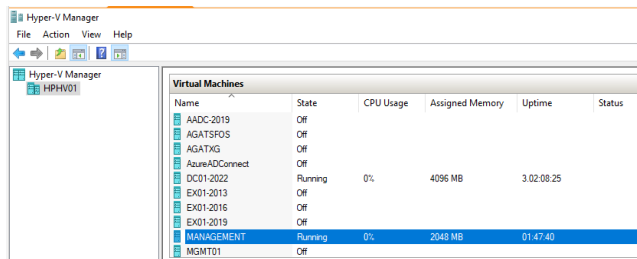
7. On the Restore Session page, select Log.
8. Ensure the undo failover is completed successfully and click Closed.



9. Expand Replicas and the virtual machine on the Home page to regular type and Ready status.



10. The Machine is running on the Production Site Host (HV01) now.



Failback to the Original Virtual Machine of the Production Site

Failback is returning operations to the primary site after a disaster recovery event. It reverses the failover process by replicating any changes made to the virtual machine during the Failover state back to the primary site and then redirecting users and applications to the primary site.

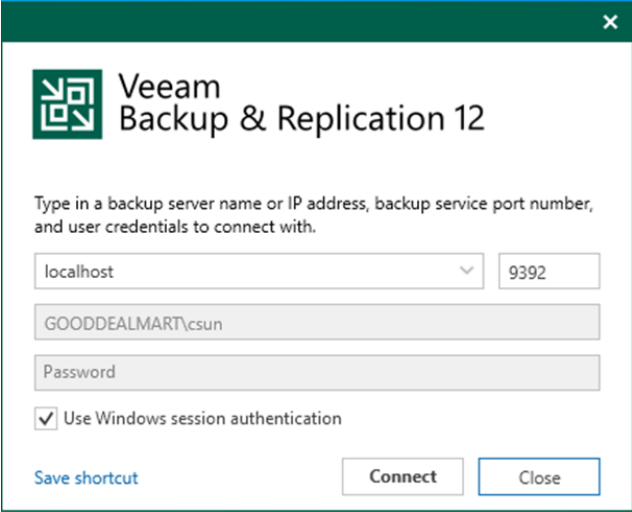
Veeam Backup & Replication provides the following failback options:

- Failback to the original VM in the original location.
- Failback to a VM already recovered to a new location. This VM must be retrieved before you perform failback.

- Failback to a VM from a replica in a different location or to any site with different settings. During the failback process, the VM will be recovered from the replica.

Because Veeam Backup & Replication only needs to transfer differences between the original/recovered VM and VM replica, the Failback to the original VM in the original location option helps reduce recovery time and network traffic.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

A screenshot of the Veeam Backup & Replication 12 Connect dialog box. The dialog has a dark green header with the Veeam logo and title. Below the header, there is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." The form contains a dropdown menu with "localhost" selected, a port number field with "9392", a username field with "GOODDEALMART\csun", and a password field labeled "Password". There is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom, there is a "Save shortcut" link and two buttons: "Connect" and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

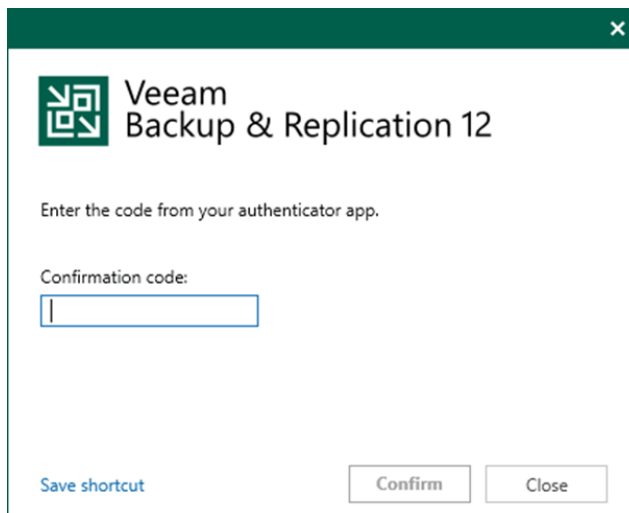
GOODDEALMART\csun

Password

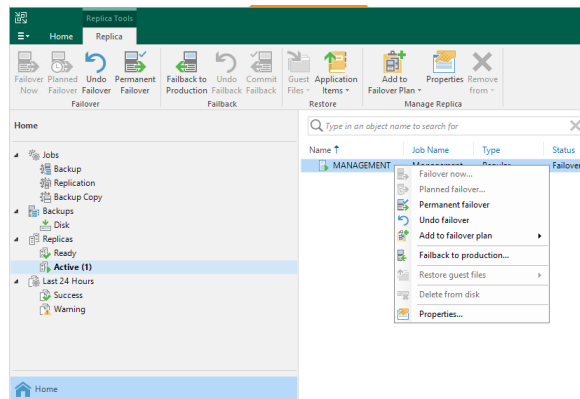
☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

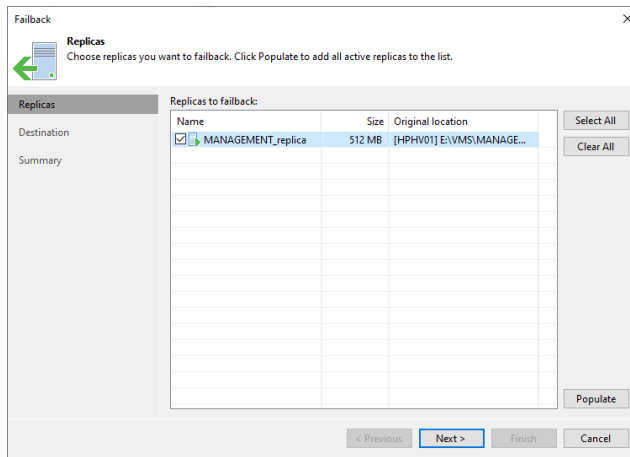
3. Enter the MFA Confirmation code and click Confirm.



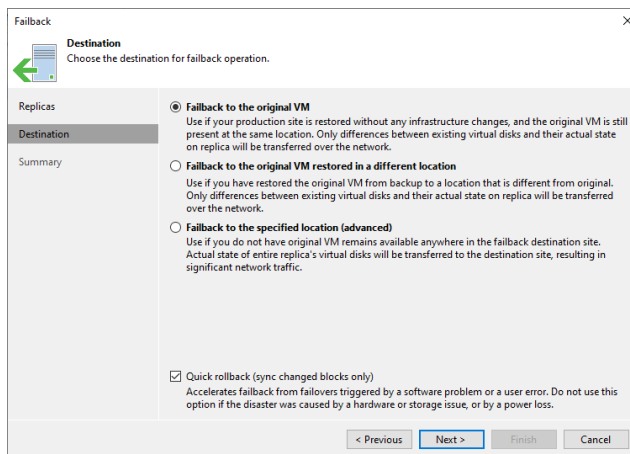
4. On the Home page, expand Replicas and select Active.
5. Right-click the virtual machine and select Failback to production.



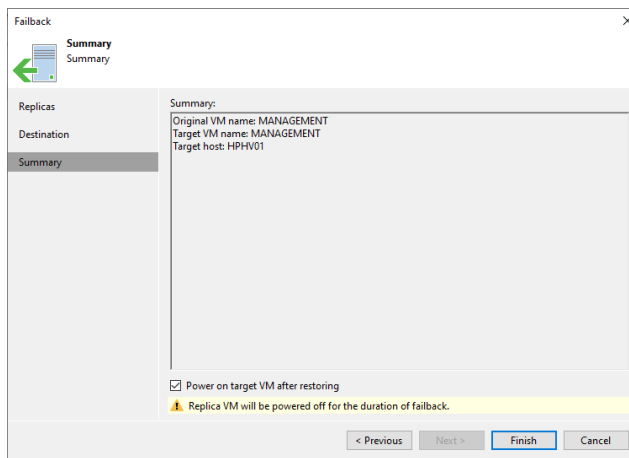
6. Click Populate on the Virtual Machine page to update the replicas ready for the failback list.
7. Select the replicas and click Next.



8. On the Destination page, select Failback to the original VM.
9. Select Quick rollback (sync changed blocks only) If you want to fasten failback, and the original VMs had problems at the guest OS level.
10. Click Next.

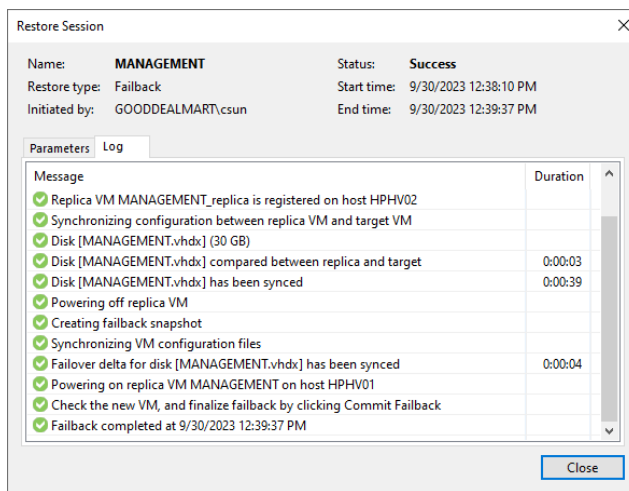


11. Select Power on the target VM after restoring and click Finish on the Summary page.

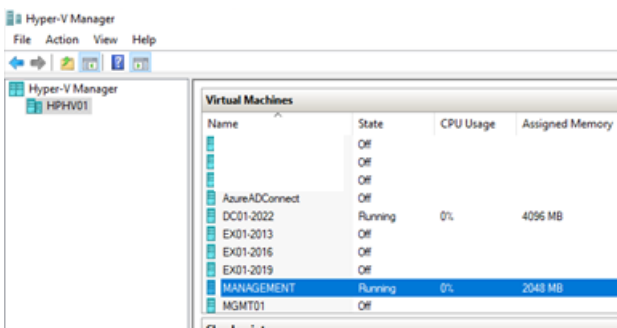


12. On the Restore Session page, select Log.

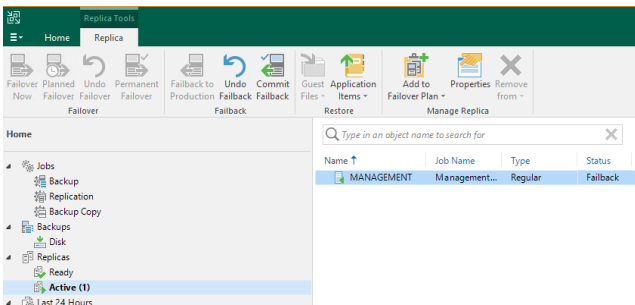
13. Ensure the failback is completed successfully and click Closed.



14. The virtual machine is running on the production site host. Ensure the virtual machine functions are working properly.



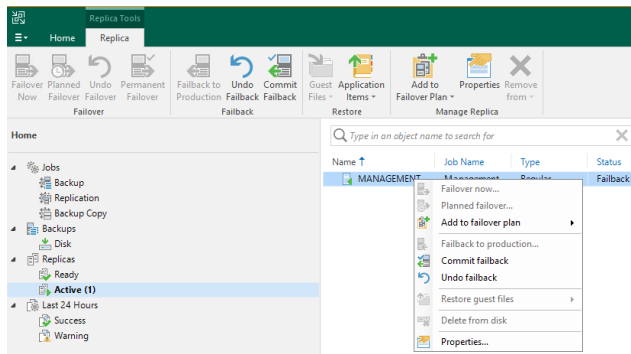
- 15. On the Home page, expand Replicas and select Active.
- 16. The VM status changed from Failover to Failback.



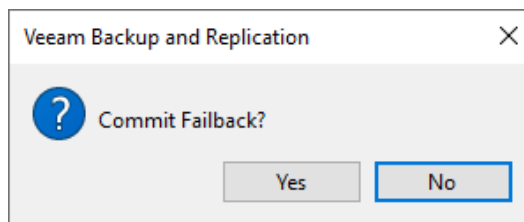
- 17. Right-click the VM and select Commit failback.

Note:

Select Undo failback if the virtual machine is not working properly.

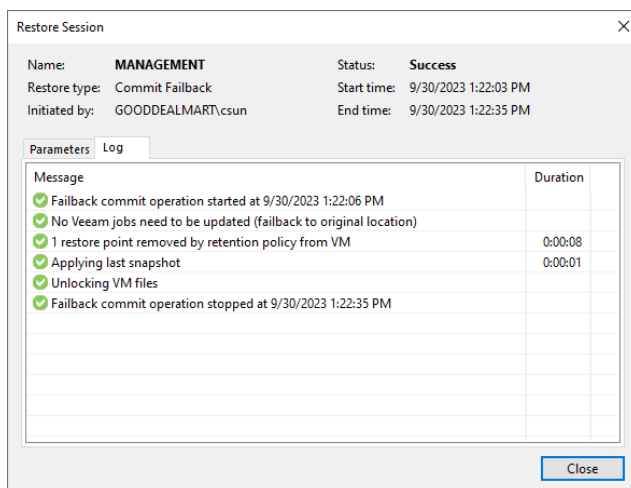


18. Click Yes in the Commit Failback display windows.

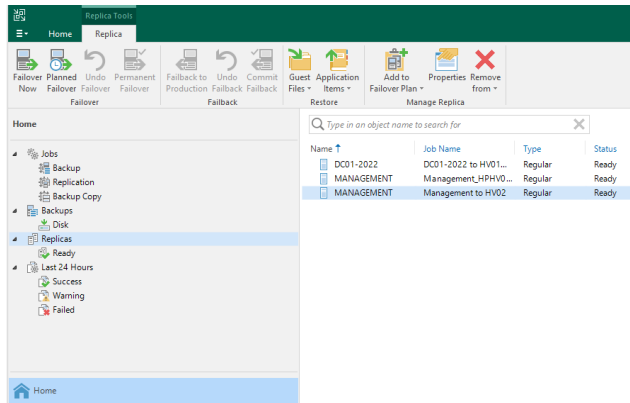


19. On the Restore Session page, select the log.

20. Ensure the Commit Failback is completed successfully and click Closed.



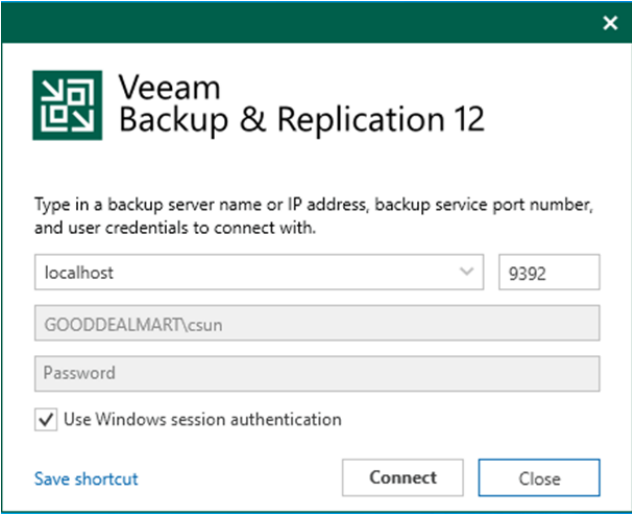
21. Expand Replicas and the virtual machine on the Home page back to regular type and Ready status.



Failback to the Original Virtual Machine restored in a different location

Because Veeam Backup & Replication only needs to transfer differences between the original/recovered VM and VM replica, the failback to the original virtual machine restored in a different location helps reduce recovery time and network traffic.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

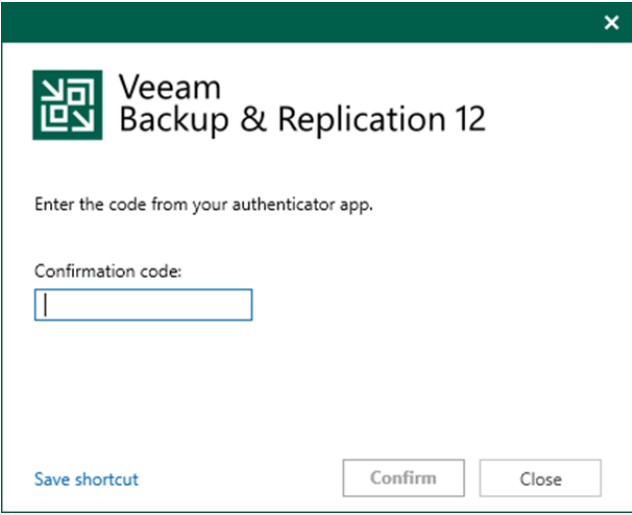
GOODDEALMART\csun

Password

☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

3. Enter the MFA Confirmation code and click Confirm.



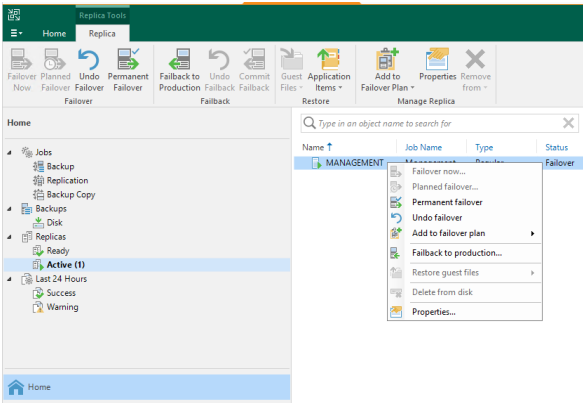
Veeam Backup & Replication 12

Enter the code from your authenticator app.

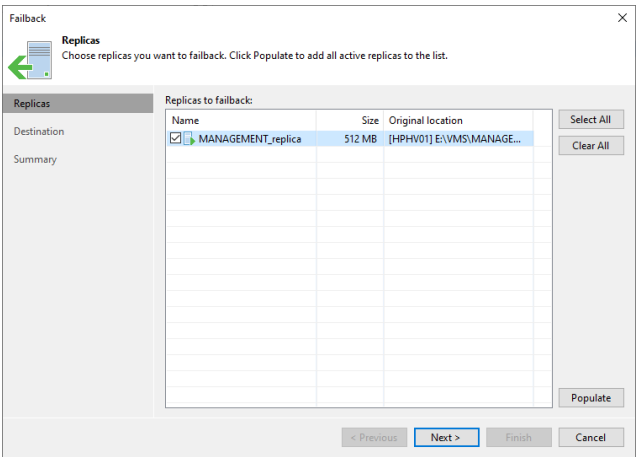
Confirmation code:

[Save shortcut](#) [Confirm](#) [Close](#)

4. On the Home page, expand Replicas and select Active.
5. Right-click the virtual machine and select Failback to production.



6. Click Populate on the Virtual Machine page to update the replicas ready for the failback list.
7. Select the replicas and click Next.



8. If the original VMs have already been recovered to a new location and you want to switch to the recovered VMs from their replicas.
9. Select Failback to the original VM restored in a different location on the Destination page.
10. Click Next.

The screenshot shows the 'Failback Destination' dialog box. It has a sidebar with 'Replicas', 'Destination', 'Target VM', and 'Summary'. The 'Destination' tab is selected. The main area contains three radio button options: 'Failback to the original VM', 'Failback to the original VM restored in a different location' (which is selected), and 'Failback to the specified location (advanced)'. Below these is a checkbox for 'Quick rollback (sync changed blocks only)'. At the bottom are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

Failback

Destination
Choose the destination for failback operation.

Replicas
Destination
Target VM
Summary

☐ **Failback to the original VM**
Use if your production site is restored without any infrastructure changes, and the original VM is still present at the same location. Only differences between existing virtual disks and their actual state on replica will be transferred over the network.

☒ **Failback to the original VM restored in a different location**
Use if you have restored the original VM from backup to a location that is different from original. Only differences between existing virtual disks and their actual state on replica will be transferred over the network.

☐ **Failback to the specified location (advanced)**
Use if you do not have original VM remains available anywhere in the failback destination site. Actual state of entire replica's virtual disks will be transferred to the destination site, resulting in significant network traffic.

☐ **Quick rollback (sync changed blocks only)**
Accelerates failback from failovers triggered by a software problem or a user error. Do not use this option if the disaster was caused by a hardware or storage issue, or by a power loss.

< Previous **Next >** Finish Cancel

11. On the Target VM page, select the replica VM and click Edit.

The screenshot shows the 'Failback Target VM' dialog box. It has a sidebar with 'Replicas', 'Destination', 'Target VM', and 'Summary'. The 'Target VM' tab is selected. The main area contains a table with two columns: 'Replica VM' and 'Production VM'. The first row is highlighted with a blue selection bar. To the right of the table is an 'Edit' button. At the bottom are buttons for '< Previous', 'Next >', 'Finish', and 'Cancel'.

Failback

Target VM
Specify existing failback destination VM for each replica VM.

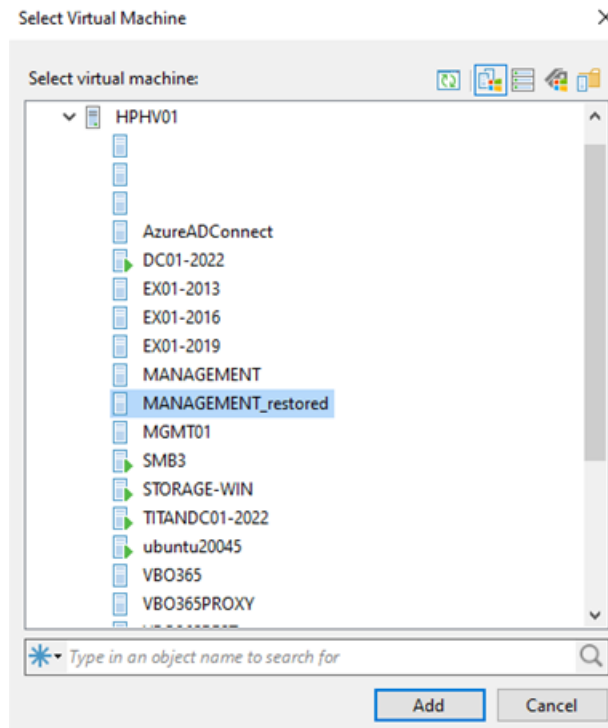
Replicas
Destination
Target VM
Summary

Replica VM	Production VM
MANAGEMENT	MANAGEMENT

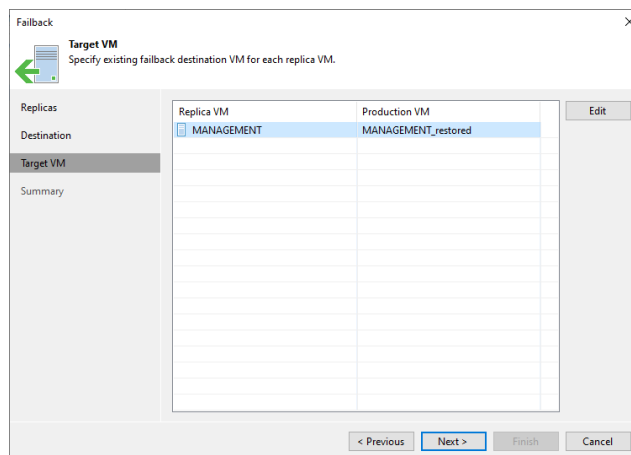
Edit

< Previous **Next >** Finish Cancel

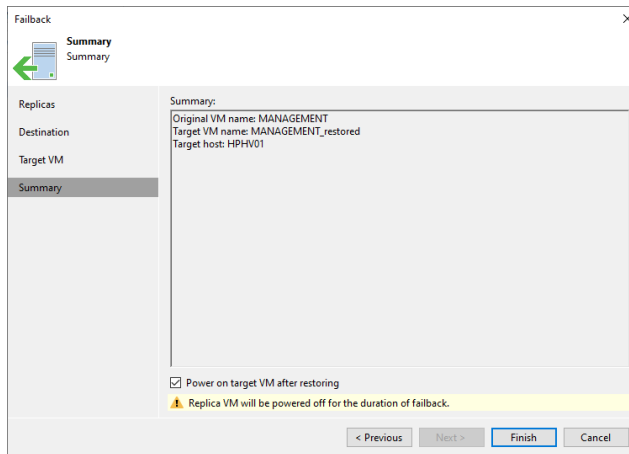
12. On the Select Virtual Machine page, select the recovered VM and click Add.



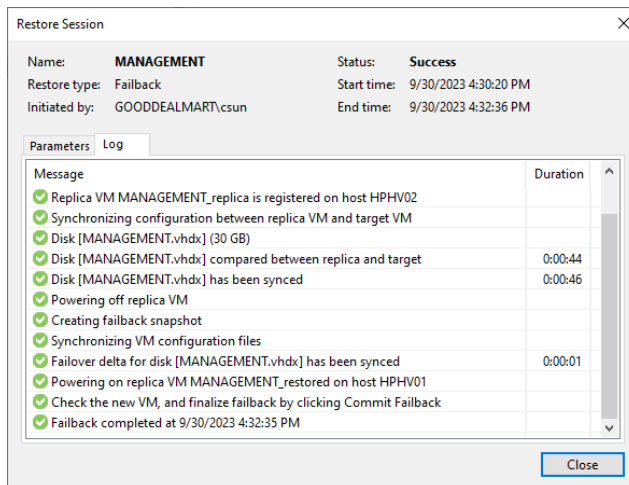
13. On the Target VM page, click Next.



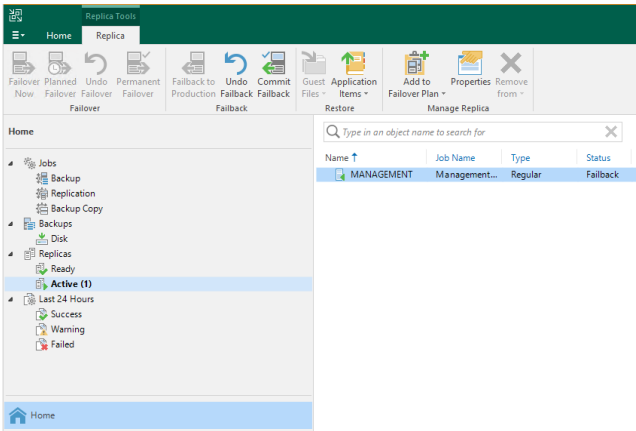
14. Select Power on the target VM after restoring and click Finish on the Summary page.



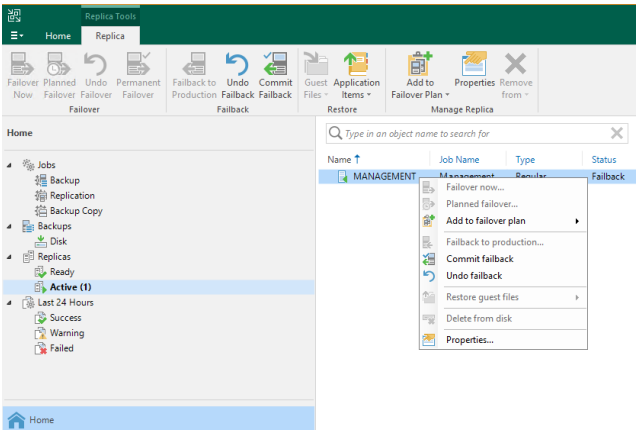
15. On the Restore Session page, select Log.
16. Ensure the failback is completed successfully and click Closed.



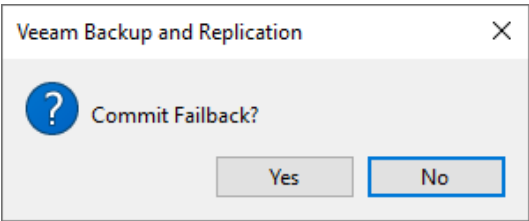
17. On the Home page, expand Replicas and select Active.
18. The VM status changed from Failover to Failback.



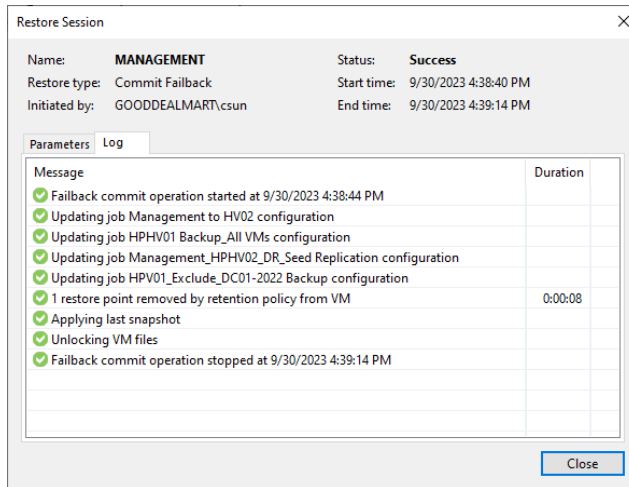
19. Right-click the VM and select Commit failback.



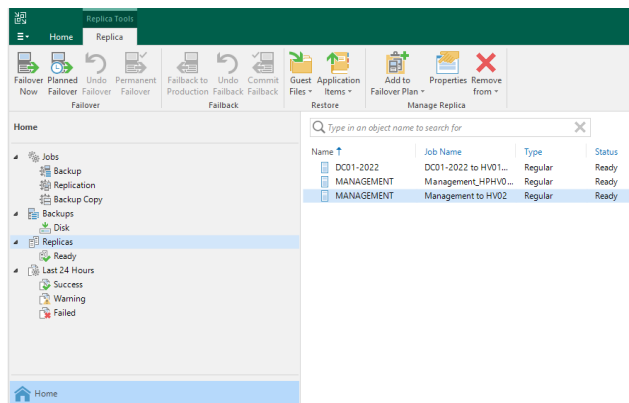
20. Click Yes in the Commit Failback display windows.



21. On the Restore Session page, select the log.
22. Veeam Backup & Replication will synchronize the recovered VMs' states with the current states of the VM replicas to apply any changes that occurred to the replicas while they were running in the DR site.
23. Ensure the Commit Failback is completed successfully and click Closed.



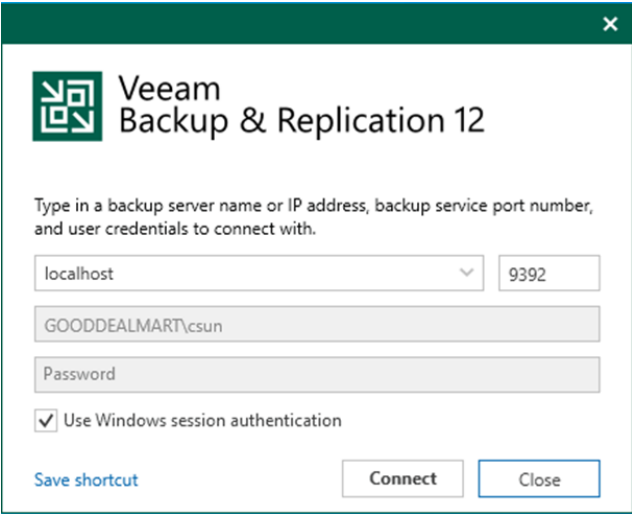
24. Expand Replicas and the virtual machine on the Home page back to regular type and Ready status.



Failback to the specified location of the Production Site

Veeam Backup & Replication must transfer all of the VM data, including its configuration and virtual disc content, for the failback to the specified location. Choose this option if you cannot use the original VM or restore it from a backup.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

A screenshot of the Veeam Backup & Replication 12 Connect dialog box. The window has a dark green title bar with a close button (X) in the top right corner. The main area has a white background with the Veeam logo (a green square with a white geometric pattern) and the text "Veeam Backup & Replication 12". Below this, there is a prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are three input fields: a dropdown menu with "localhost" selected, a text box with "9392", and a text box with "GOODDEALMART\csun". Below these is a "Password" text box. A checkbox labeled "Use Windows session authentication" is checked. At the bottom left is a "Save shortcut" link. At the bottom right are two buttons: "Connect" and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

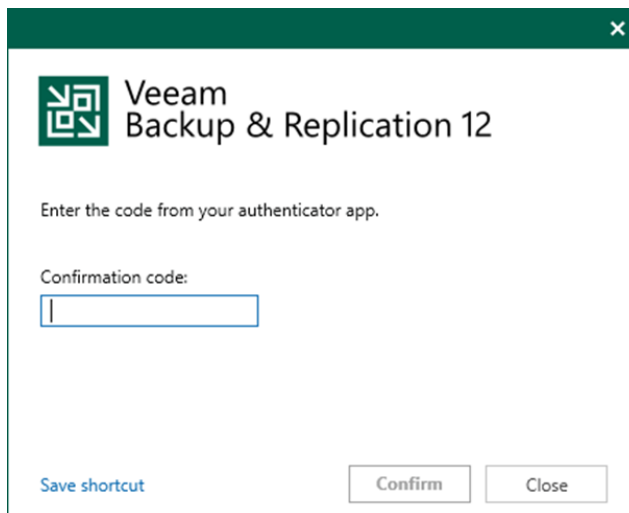
GOODDEALMART\csun

Password

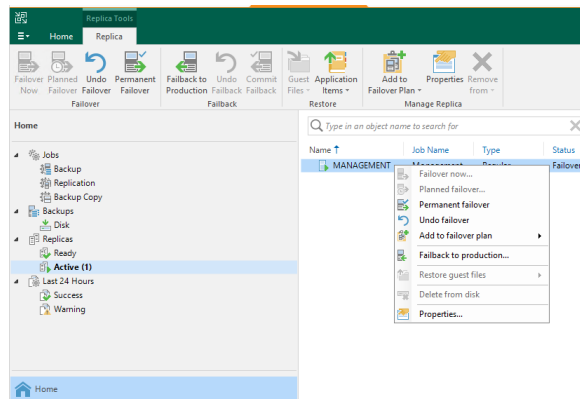
☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

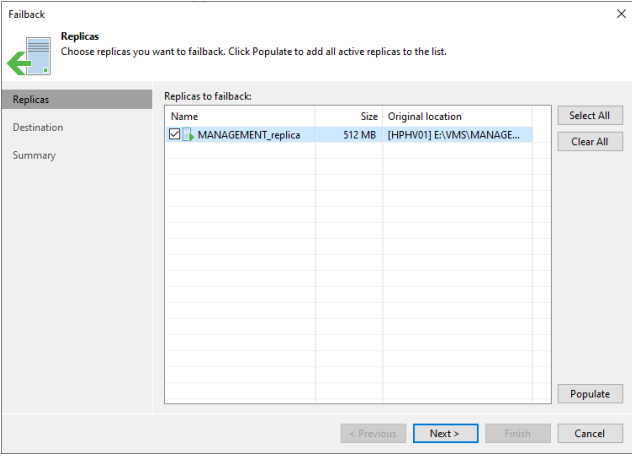
3. Enter the MFA Confirmation code and click Confirm.



4. On the Home page, expand Replicas and select Active.
5. Right-click the virtual machine and select Failback to production.



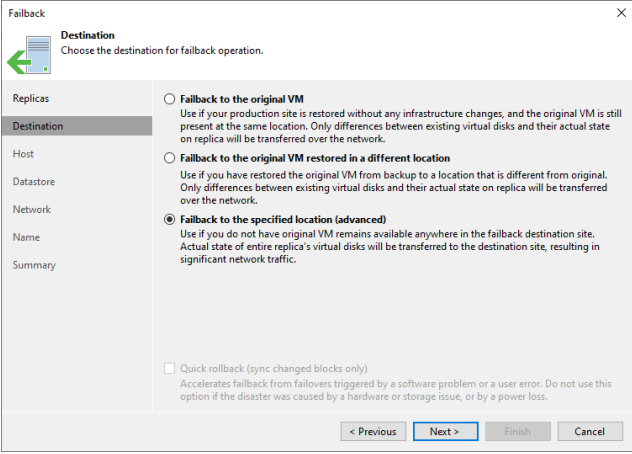
6. Click Populate on the Virtual Machine page to update the replicas ready for the failback list.
7. Select the replicas and click Next.



The screenshot shows the 'Failback' dialog box with the 'Replicas' tab selected. The title bar says 'Failback' and there is a close button. Below the title bar is a green arrow icon and the text 'Replicas Choose replicas you want to failback. Click Populate to add all active replicas to the list.' The main area is divided into a left sidebar and a right table. The sidebar has 'Replicas' (selected), 'Destination', and 'Summary'. The table has columns 'Name', 'Size', and 'Original location'. One row is visible: 'MANAGEMENT_replica' with size '512 MB' and location '[H:\PHV01] E:\VMS\MANAGE...'. To the right of the table are buttons 'Select All' and 'Clear All'. At the bottom right is a 'Populate' button. At the bottom are navigation buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

Name	Size	Original location
☒ MANAGEMENT_replica	512 MB	[H:\PHV01] E:\VMS\MANAGE...

8. Select Failback to the specified location (advanced) on the Destination page.
9. Click Next.



The screenshot shows the 'Failback' dialog box with the 'Destination' tab selected. The title bar says 'Failback' and there is a close button. Below the title bar is a green arrow icon and the text 'Destination Choose the destination for failback operation.' The main area is divided into a left sidebar and a right content area. The sidebar has 'Replicas', 'Destination' (selected), 'Host', 'Datastore', 'Network', 'Name', and 'Summary'. The content area has three radio button options: 'Failback to the original VM' (unselected), 'Failback to the original VM restored in a different location' (unselected), and 'Failback to the specified location (advanced)' (selected). Below these is a checkbox for 'Quick rollback (sync changed blocks only)' which is unselected. At the bottom are navigation buttons: '< Previous', 'Next >', 'Finish', and 'Cancel'.

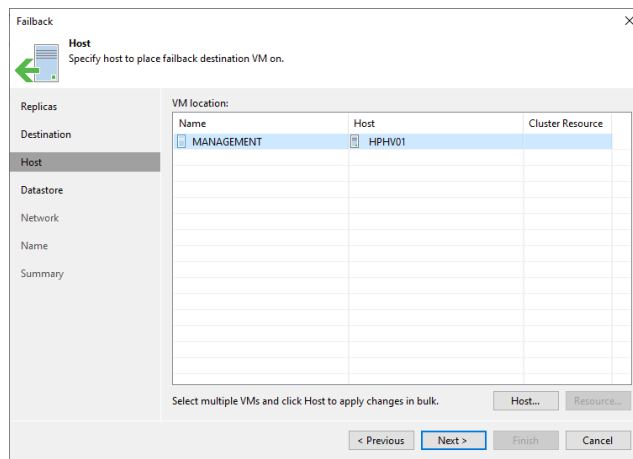
☐ **Failback to the original VM**
Use if your production site is restored without any infrastructure changes, and the original VM is still present at the same location. Only differences between existing virtual disks and their actual state on replica will be transferred over the network.

☐ **Failback to the original VM restored in a different location**
Use if you have restored the original VM from backup to a location that is different from original. Only differences between existing virtual disks and their actual state on replica will be transferred over the network.

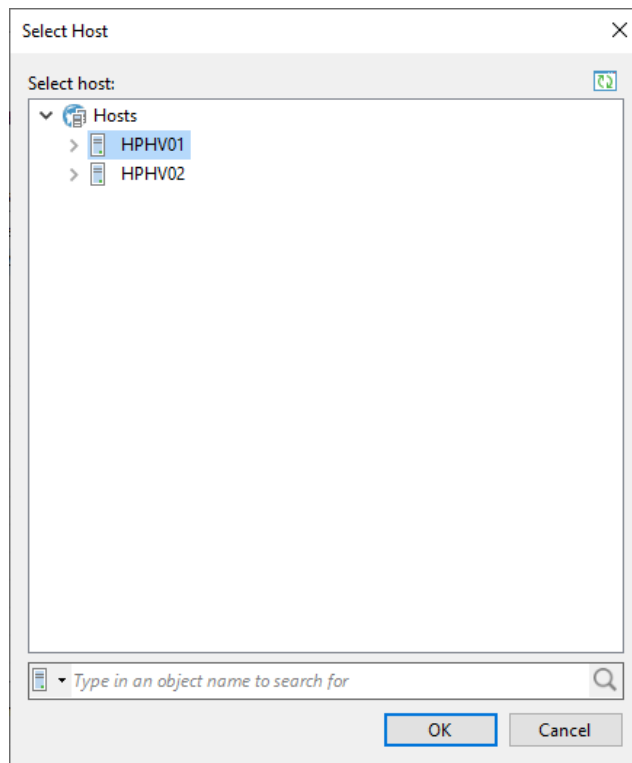
☒ **Failback to the specified location (advanced)**
Use if you do not have original VM remains available anywhere in the failback destination site. Actual state of entire replica's virtual disks will be transferred to the destination site, resulting in significant network traffic.

☐ **Quick rollback (sync changed blocks only)**
Accelerates failback from failovers triggered by a software problem or a user error. Do not use this option if the disaster was caused by a hardware or storage issue, or by a power loss.

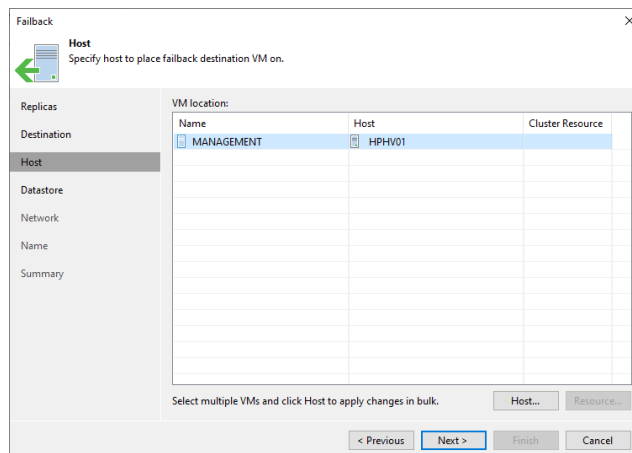
10. On the Host page, Select the VM and click Host.



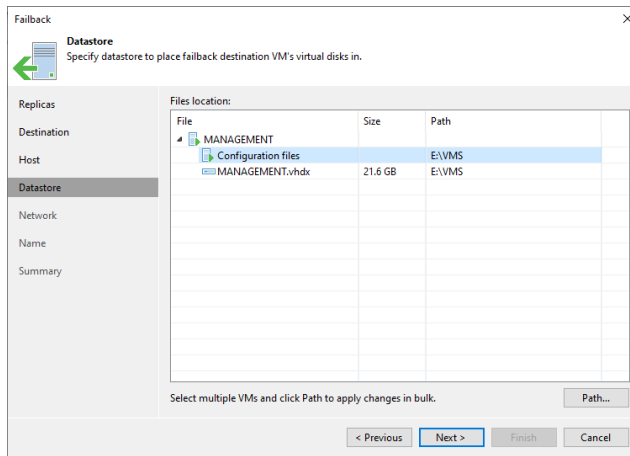
11. Select the failback destination host on the Select Host page and click OK.



12. Click Next on the Host page.

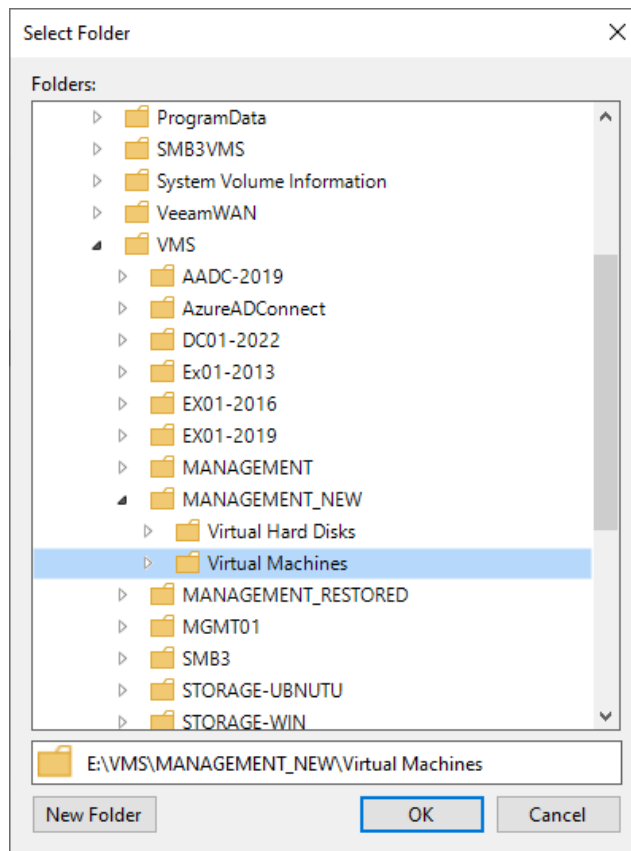


13. On the Datastore page, select Configuration files and click Path.

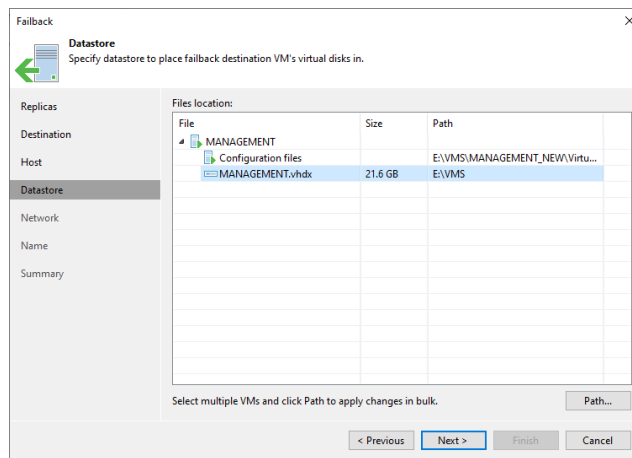


14. Expand and select the failback destination folder for configuration files on the Select Folder page.

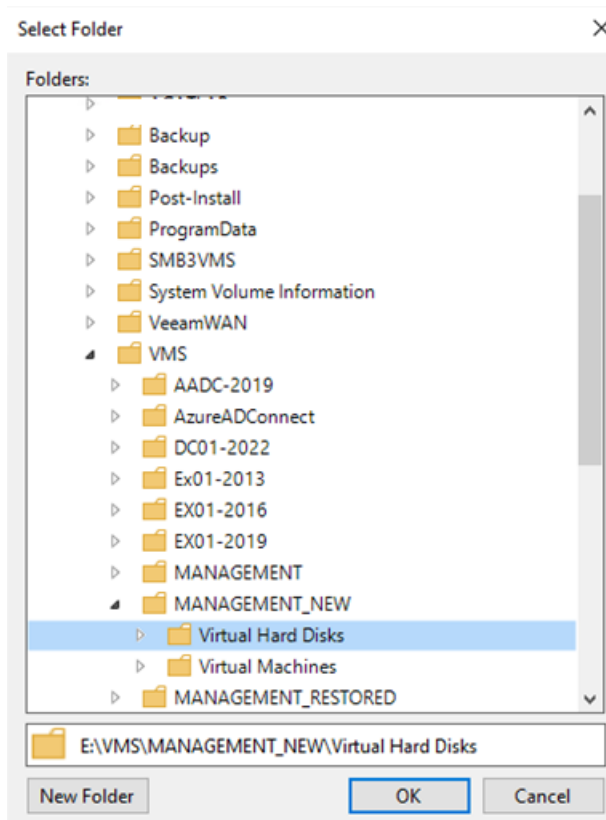
15. Click OK.



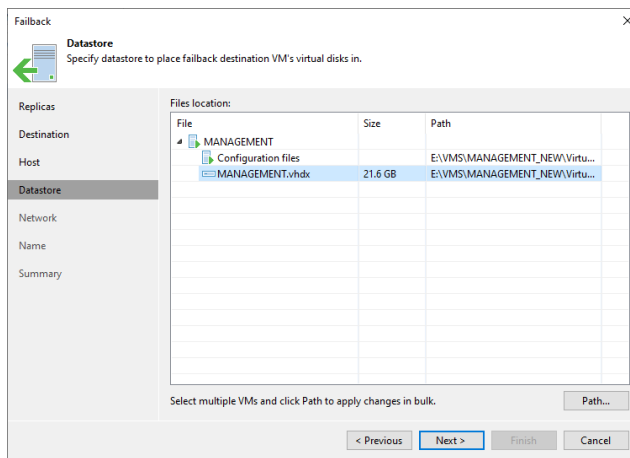
16. On the Datastore page, select the vhdx file and click Path.



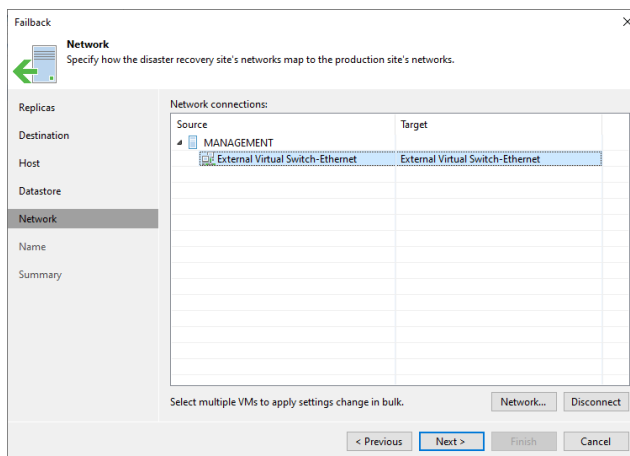
17. Expand and select the failback destination folder for vhdx files on the Select Folder page.
18. Click OK.



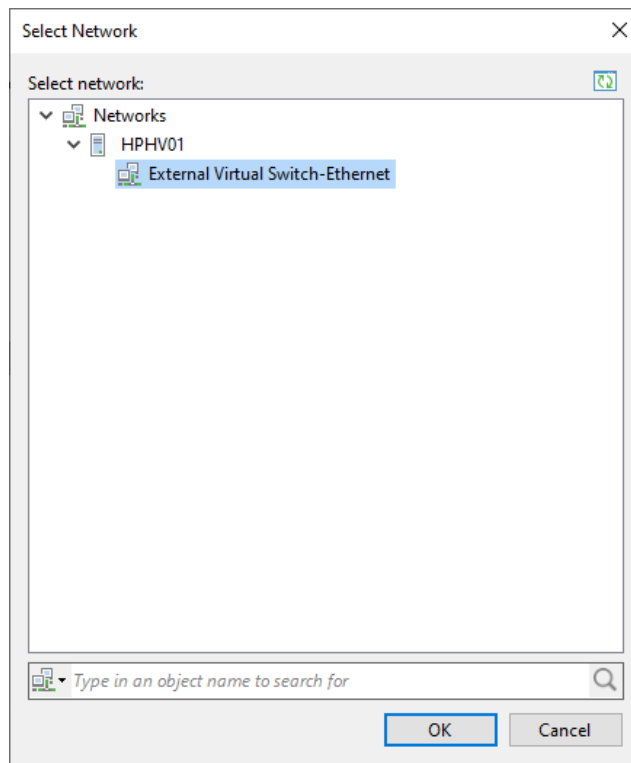
19. Click Next on the Datastore page.



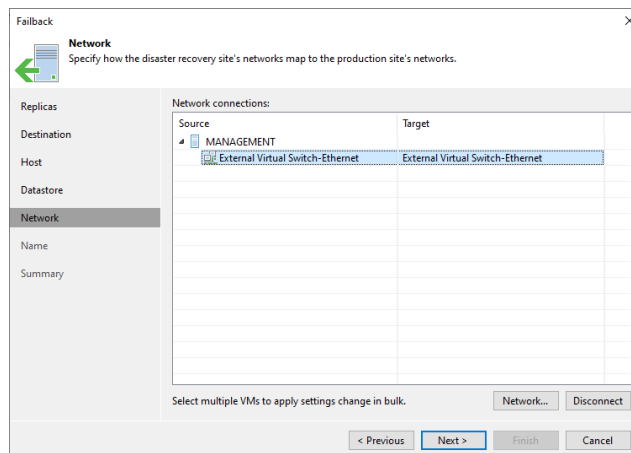
20. On the Network page, select the Network connections of VM and click Network.



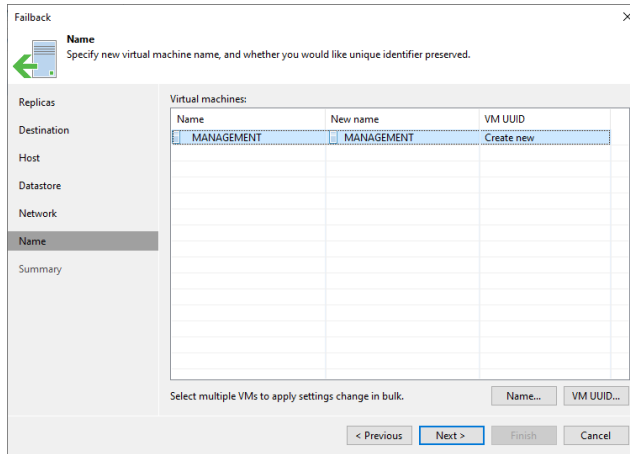
21. Expand and select the failback destination for Network connections on the Select Network page.
22. Click OK.



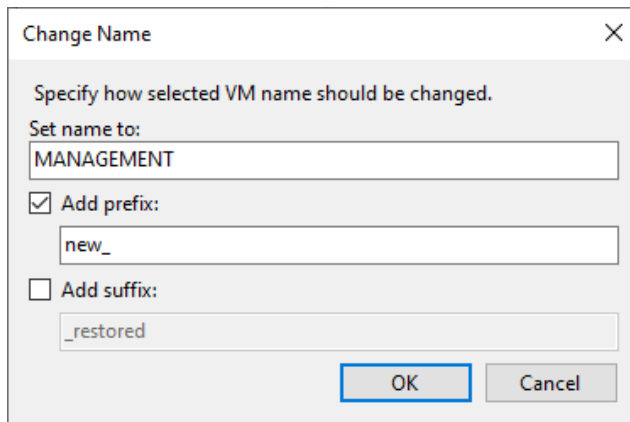
23. Click Next on the Network page.



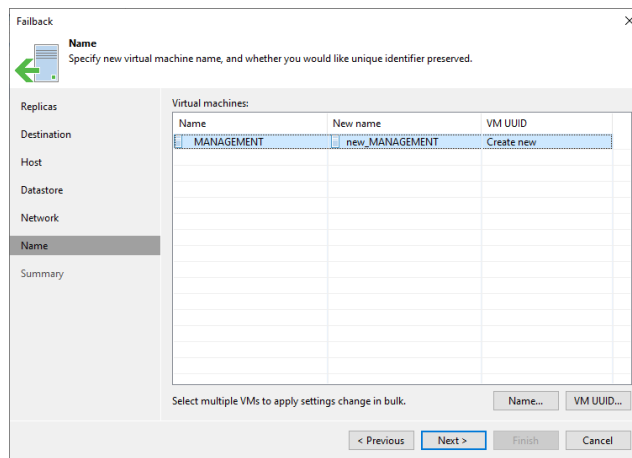
24. On the Name page, select the virtual machine and click Name.



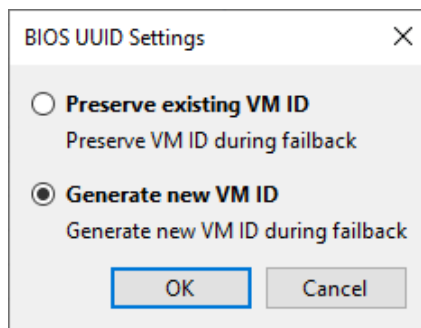
25. On the Change Name page, select the Add prefix checkbox and click OK.



26. Click VM UUID on the Name page.



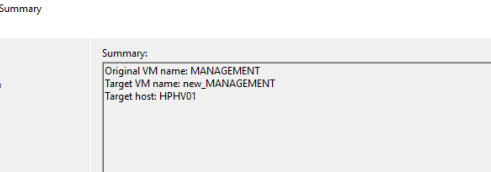
27. On the BIOS UUID Settings page, select Generate new VM ID and click OK.



28. Click Next on the Name page.

[illegible]

29. Select Power on the target VM after restoring and click Finish on the Summary page.



Failback Summary

Replicas

Destination

Host

Datastore

Network

Name

Summary

Summary:

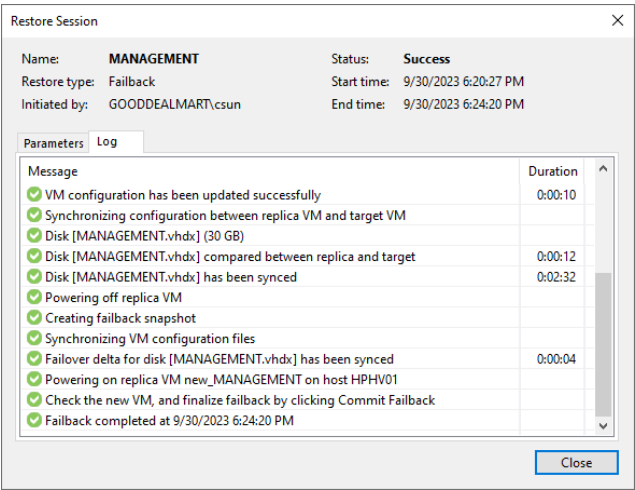
Original VM name: MANAGEMENT
 Target VM name: new_MANAGEMENT
 Target host: HPHV01

☒ Power on target VM after restoring

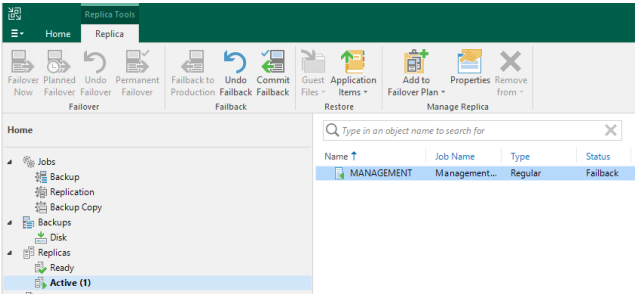
⚠️ Replica VM will be powered off for the duration of failback.

< Previous Next > **Finish** Cancel

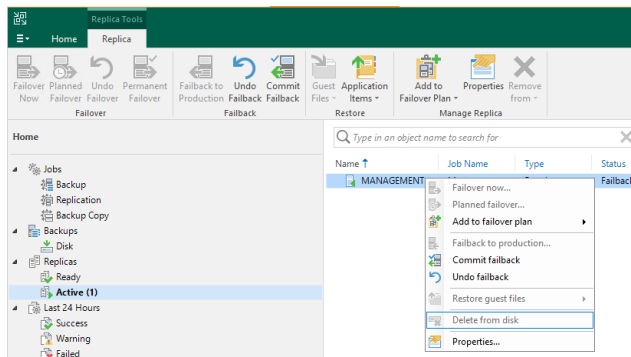
30. On the Restore Session page, select Log.
31. Ensure the failback is completed successfully and click Closed.



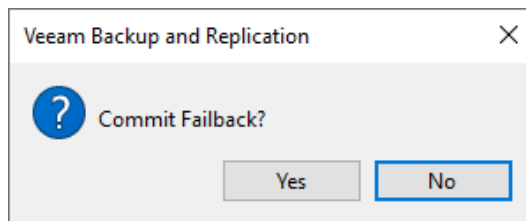
- 32. On the Home page, expand Replicas and select Active.
- 33. The VM status changed from Failover to Failback.



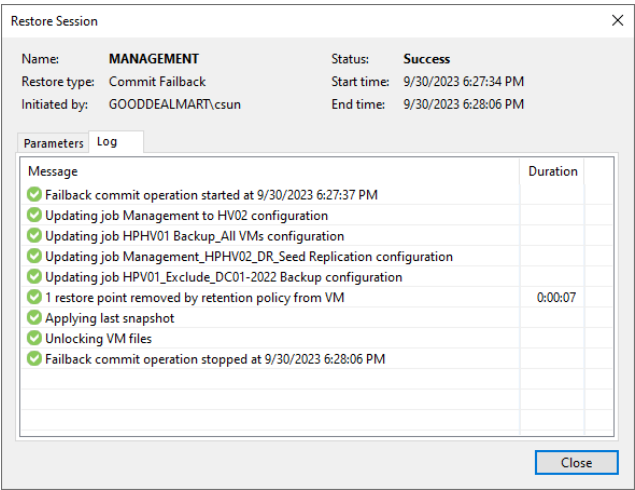
- 34. Right-click the VM and select Commit failback.



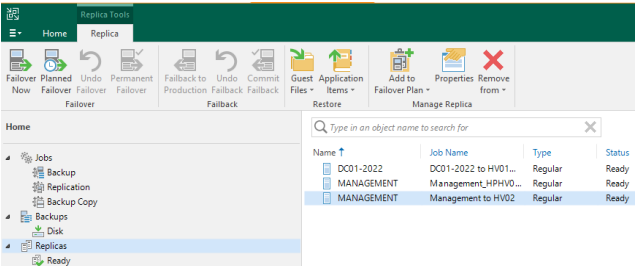
35. Click Yes in the Commit Failback display windows.



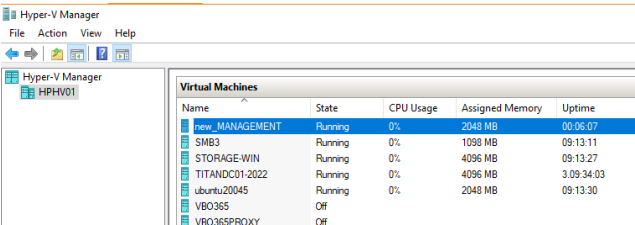
36. On the Restore Session page, select Log.
37. Veeam Backup & Replication will synchronize the recovered VMs' states with the current states of the VM replicas to apply any changes that occurred to the replicas while they were running in the DR site.
38. Ensure the undo failover is completed successfully and click Closed.



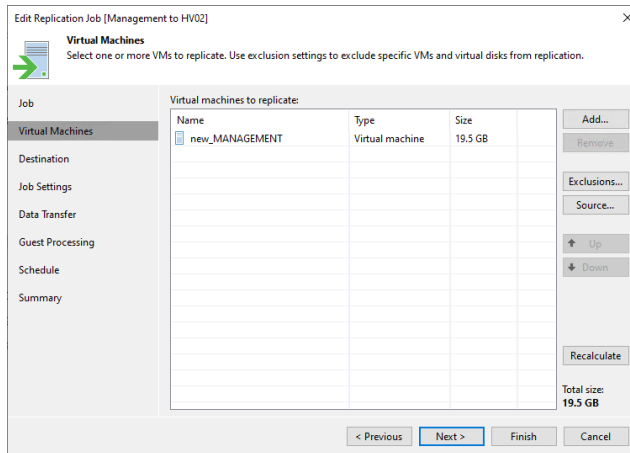
- 39. On the Home page, select Replicas.
- 40. The virtual machine back to regular type and Ready status.



- 41. The new_MANAGEMENT is running at the HPHV01 host.



42. Review the Virtual Machines' settings of replication jobs and ensure the Virtual machines replicate the change to the new VM.

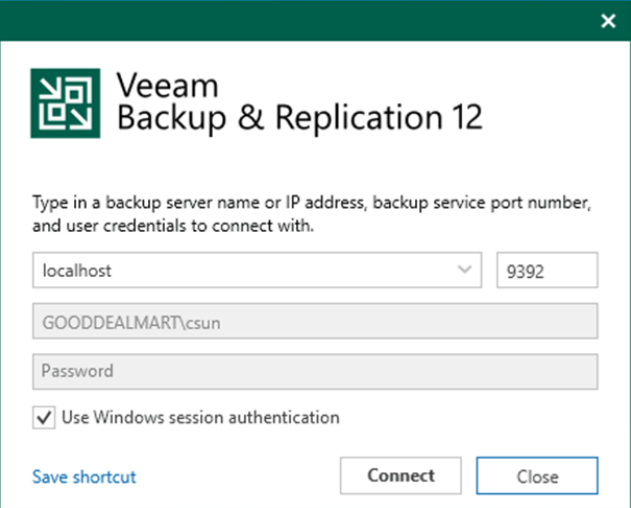


Permanent Failover of the Virtual Machine

Permanent failover is one method of completing failover. Permanent failover means permanently switching from the original VM to its replica.

The VM replica ceases to be a replica due to permanent failover and becomes the production VM.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

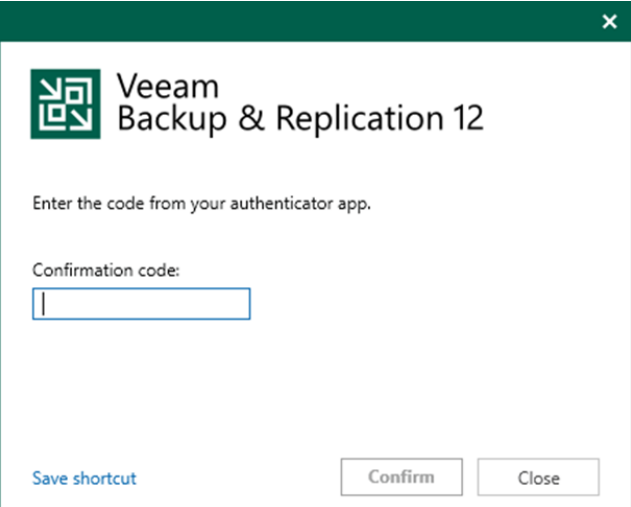
GOODDEALMART\csun

Password

☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

3. Enter the MFA Confirmation code and click Confirm.



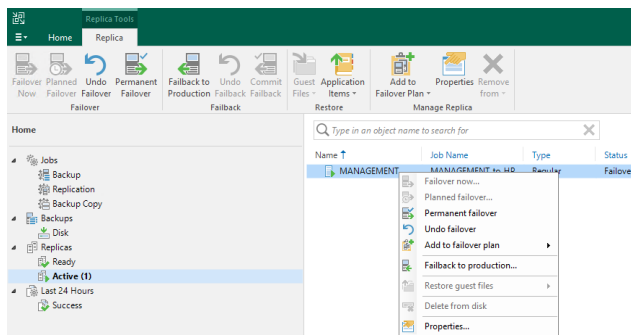
Veeam Backup & Replication 12

Enter the code from your authenticator app.

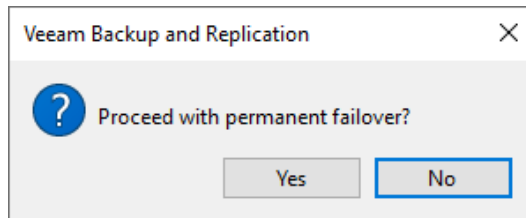
Confirmation code:

[Save shortcut](#) [Confirm](#) [Close](#)

4. On the Home page, expand Replicas. Select the Active.
5. Right-click the virtual machine and select the Permanent failover.



6. Click Yes in the Process with the permanent failover display window.



7. On the Restore Session page, select Log.
8. Ensure the permanent failover is completed successfully and click Closed.
9. Delete the existing replication job and create a new one for the VM.

Restore Session

Name:MANAGEMENT

Restore type:Permanent Failover

Initiated by:GOODDEALMART\csun

Status:Success

Start time:10/5/2023 11:25:54 AM

End time:10/5/2023 11:26:07 AM

Parameters

Log

Message	Duration
✔ Starting permanent failover at 10/5/2023 11:25:57 AM	
✔ Adding original VM MANAGEMENT to exclude list of the replication job	
✔ Permanent failover completed at 10/5/2023 11:26:07 AM.	

Close

Chapter 3: Data Restore

Veeam Backup & Replication supports the following recovery methods:

- VM recovery entails restoring entire virtual machines (VMs) to various data protection environments, such as VMware vSphere, Hyper-V, Amazon EC2, etc.
- Disk export enables you to convert discs from various workloads (EC2 instances, Microsoft Azure VMs, and so on) to VMDK, VHD, or VHDX formats.
- Recovery of VM files, guest OS files and folders, and application items.
- Veeam Data Integration API — to retrieve backup content via iSCSI or FUSE and analyze data stored in this backup.
- Secure restore entails scanning data with antivirus software before restoring it to production.

Note:

Backward compatibility is provided by Veeam Backup & Replication: backups created with previous product versions can be restored with later product versions. Backups created with later product versions, on the other hand, cannot be restored with previous product versions.

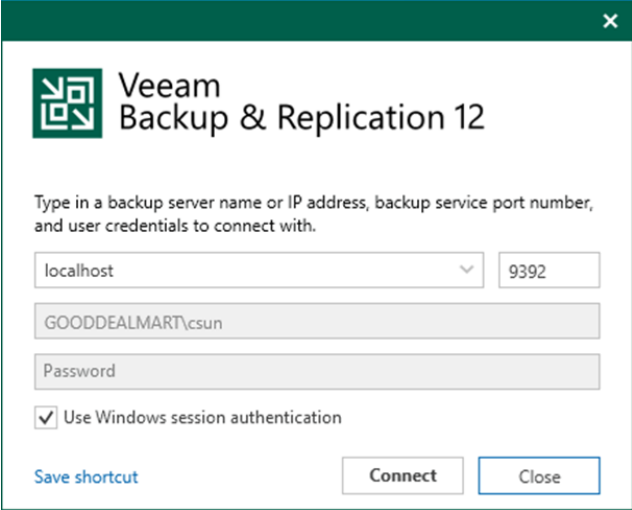
Secure Restore the Entire VM to the Original Location

If the original VM fails, you can use Veeam Backup & Replication to restore an entire VM from a backup file to the most recent state or a previous point.

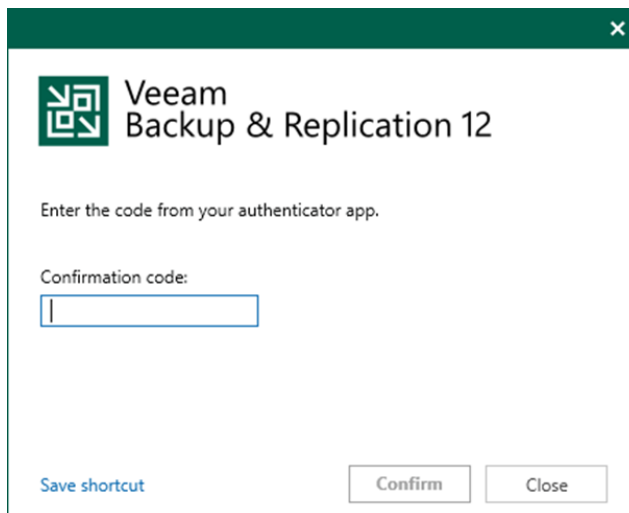
Before the entire VM restore can occur, the VM image must be fully extracted to the production storage. Veeam Backup & Replication copies the VM data from the backup repository to the chosen storage, registers the VM on the desired Hyper-V host, and, if necessary, powers it on.

Veeam Backup & Replication supports secure restore, which involves scanning machine data with antivirus software before restoring the computer to the production environment.

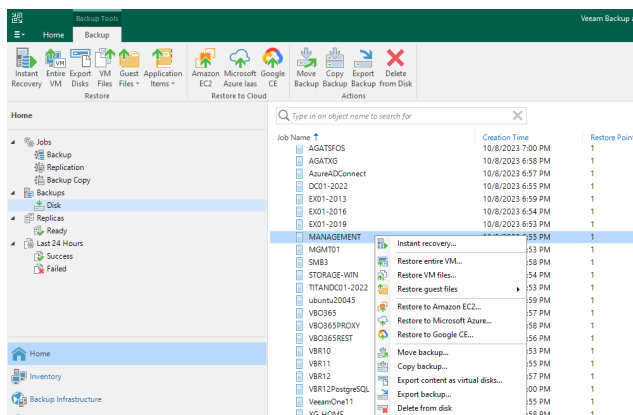
1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.

A screenshot of the Veeam Backup & Replication 12 connection dialog box. The window has a dark green title bar with a close button (X) in the top right corner. The main area has a white background. At the top left is the Veeam logo (a green square with a white geometric pattern) followed by the text "Veeam Backup & Replication 12". Below this is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are three input fields: a dropdown menu showing "localhost" with a downward arrow, a text box containing "9392", and a text box containing "GOODDEALMART\csun". Below these is a password field labeled "Password". At the bottom left is a checkbox labeled "Use Windows session authentication" which is checked. At the bottom right are two buttons: "Connect" and "Close". At the bottom left of the dialog is a link that says "Save shortcut".

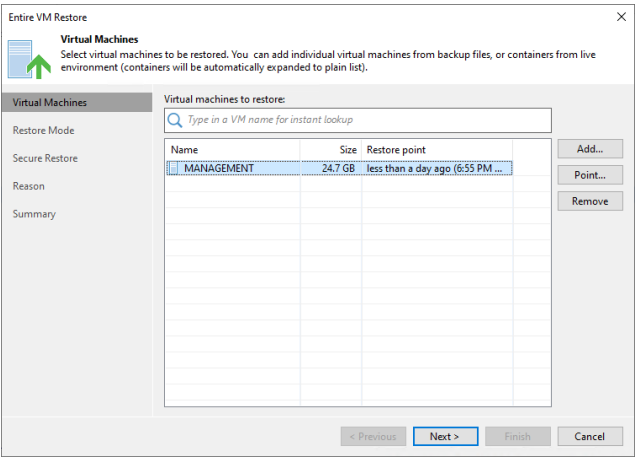
3. Enter the MFA Confirmation code and click Confirm.



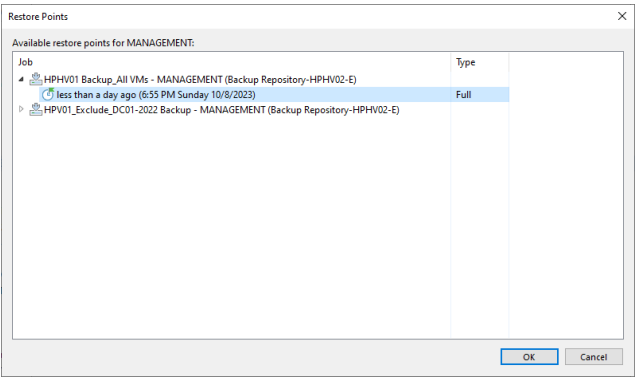
4. On the Home page, expand Backups. Select the Disk.
5. Expand the backup job name, right-click the virtual machine, and select Restore the entire VM.



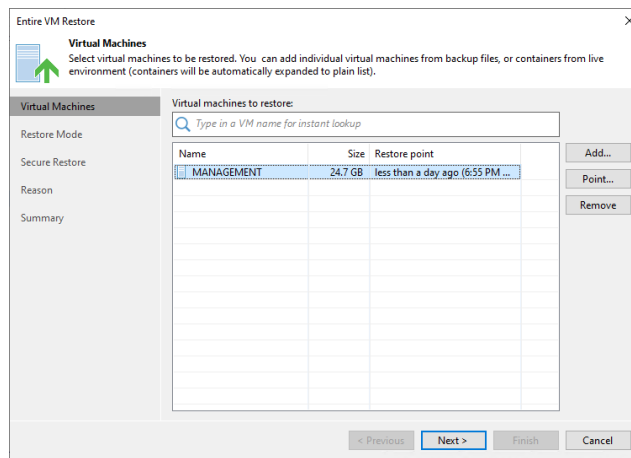
6. Select the virtual machine and click Point on the Virtual Machine page.



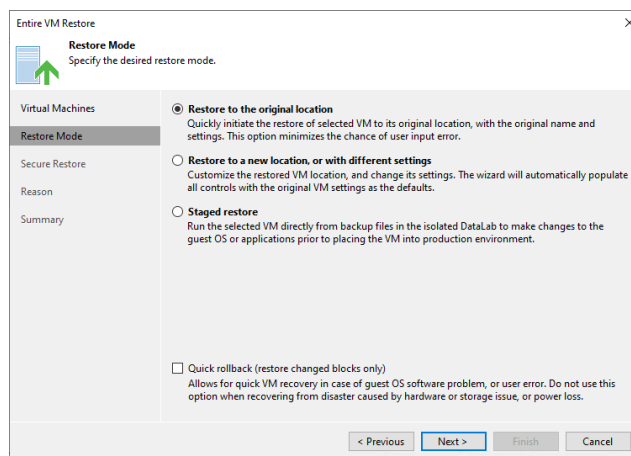
- 7. Expand the backup job on the Restore Point page, select the restore point, and click OK.



- 8. On the Virtual Machines page, click Next.



9. On the Restore Mode page, select Restore to the original location.
10. Select the Quick rollback (restore changed blocks only) checkbox If you restore a VM following a problem at the VM guest OS level.
11. Click Next.

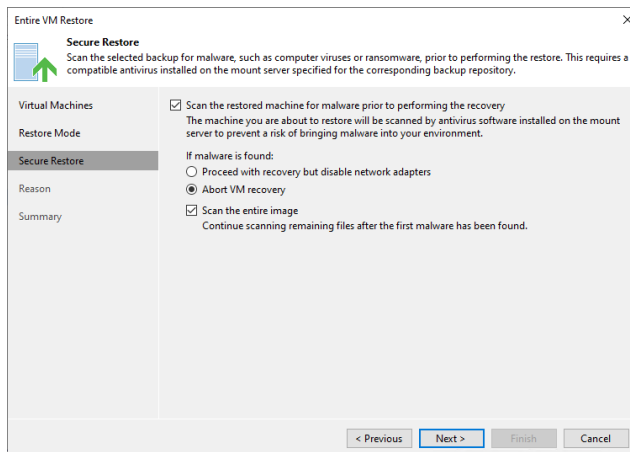


12. Select the Scan the restored machine for malware before performing the recovery checkbox.
13. Select Abort VM recovery if malware is found.
14. Select Scan the entire image checkbox.

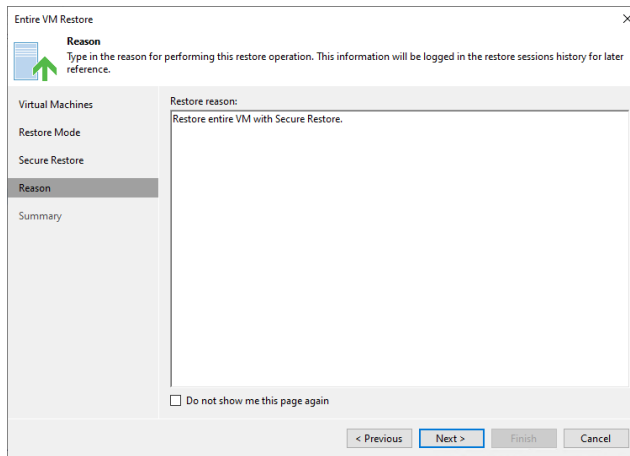
15. Click Next.

Note:

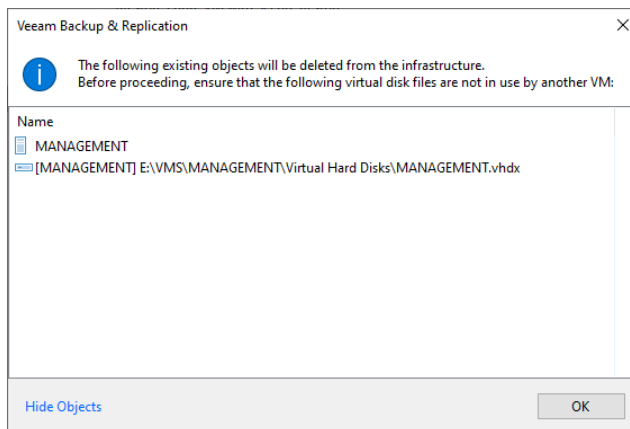
- Support Microsoft Windows only.
- The antivirus software must be installed on the mount server and support the command line interface (CLI).
- The antivirus configuration file must be configured on the mount server.
- Veeam Backup & Replication does not perform malware scans for disks or volumes that cannot be mounted to the mount server.



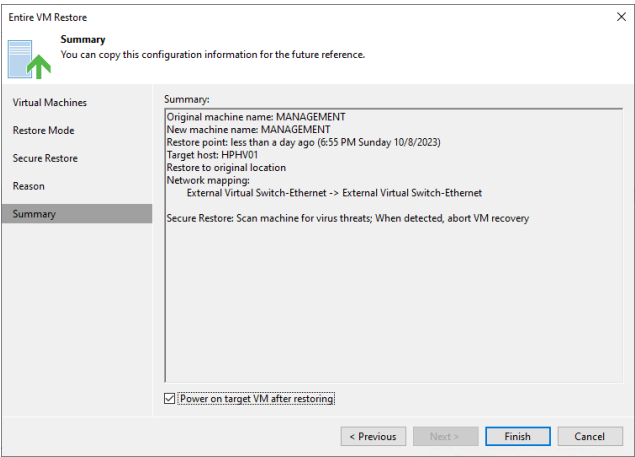
16. On the Reason page, enter a reason for restoring the selected VMs.



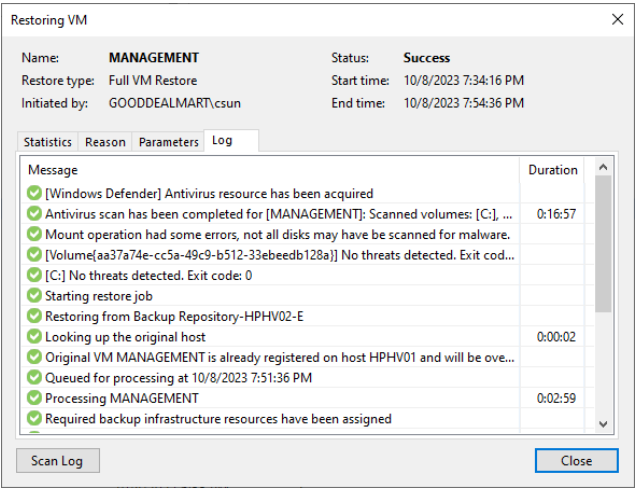
17. Click OK on the object to delete the warning message.



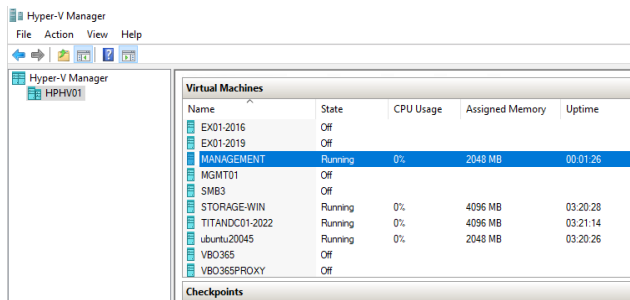
18. Select Power on the target VM after restoring and click Finish on the Summary page.



- 19. On the Restoring VM page, select Log.
- 20. Ensure the restore VM is completed without threats detected and click Closed.



- 21. Verify the VM is up and running.

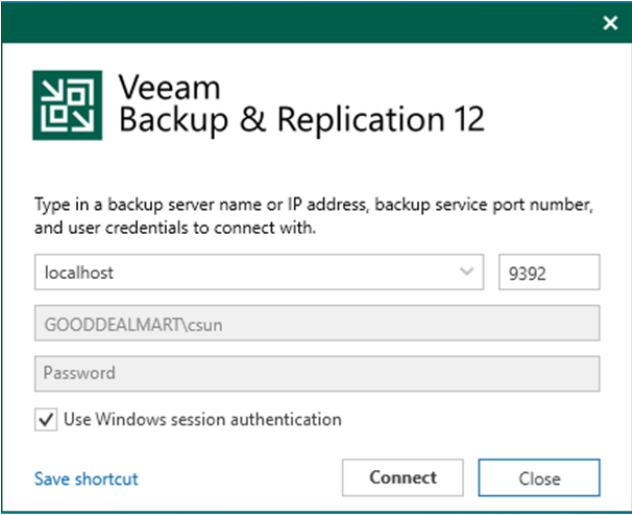


Secure Restore the Entire VM to the New Location

Existing jobs that process the original/recovered VMs do not need to be updated if you restore them to the same host and choose to preserve VM UUIDs. If you configure restore differently and want to process the recovered VMs, you must edit existing jobs or create new ones.

Veeam Backup & Replication supports secure restore, which involves scanning machine data with antivirus software before restoring the computer to the production environment.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

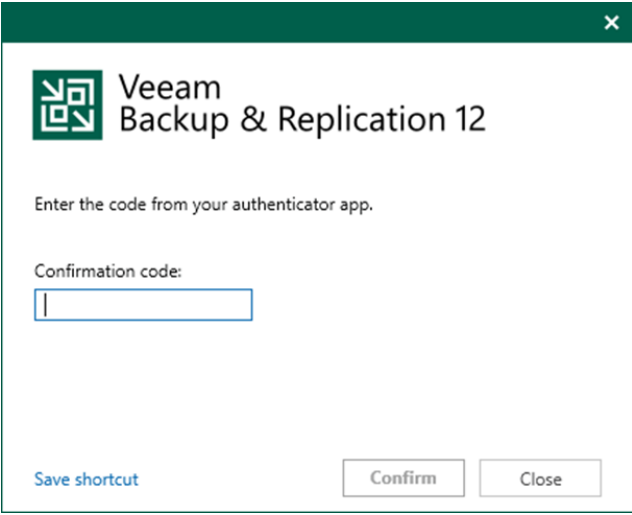
GOODDEALMART\csun

Password

☒ Use Windows session authentication

[Save shortcut](#) [Connect](#) [Close](#)

3. Enter the MFA Confirmation code and click Confirm.



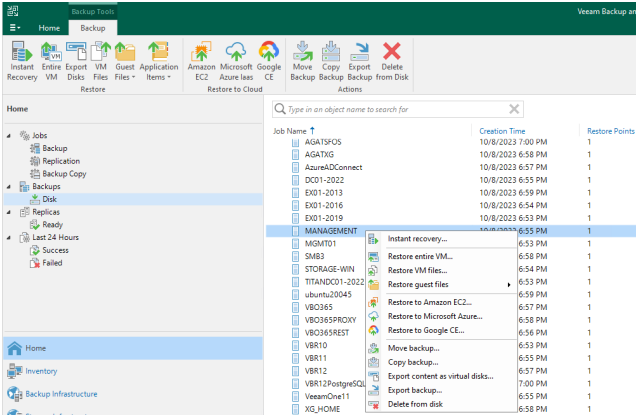
Veeam Backup & Replication 12

Enter the code from your authenticator app.

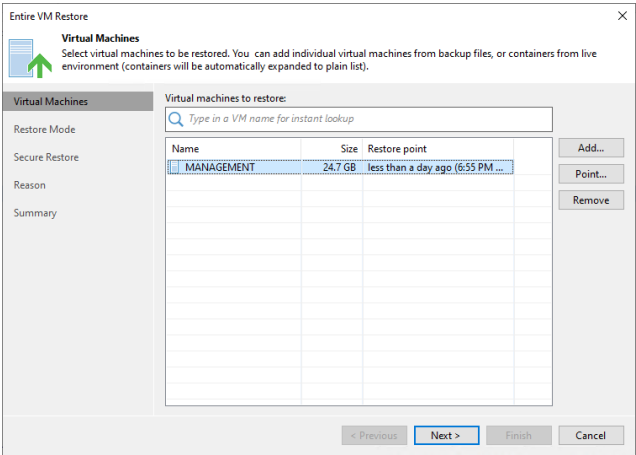
Confirmation code:

[Save shortcut](#) [Confirm](#) [Close](#)

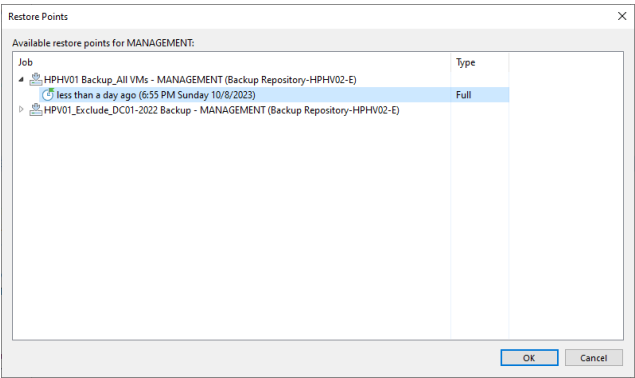
4. On the Home page, expand Backups. Select the Disk.
5. Expand the backup job name, right-click the virtual machine, and select Restore the entire VM.



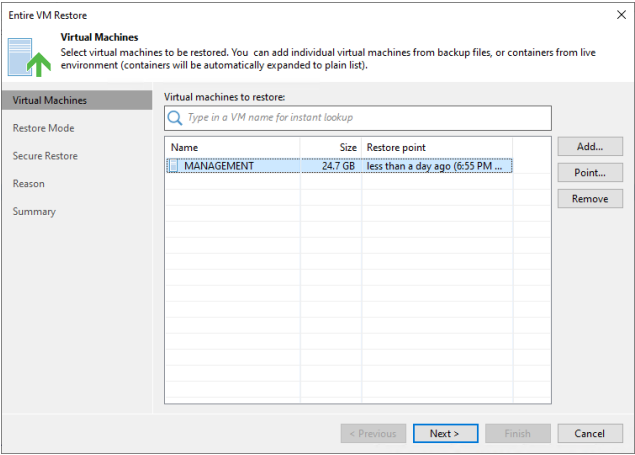
6. Select the virtual machine and click Point on the Virtual Machine page.



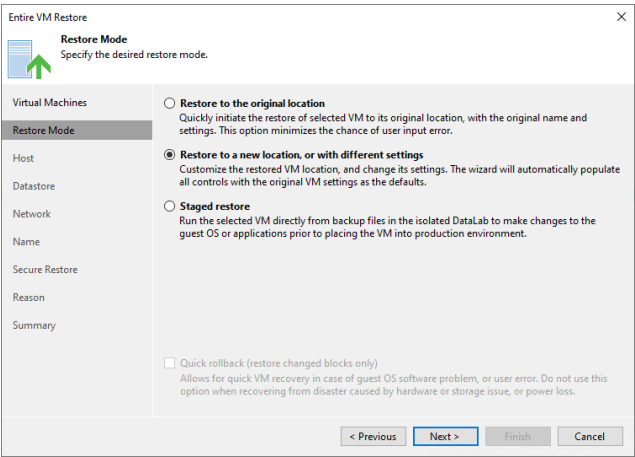
7. Expand the backup job on the Restore Point page, select the restore point, and click OK.



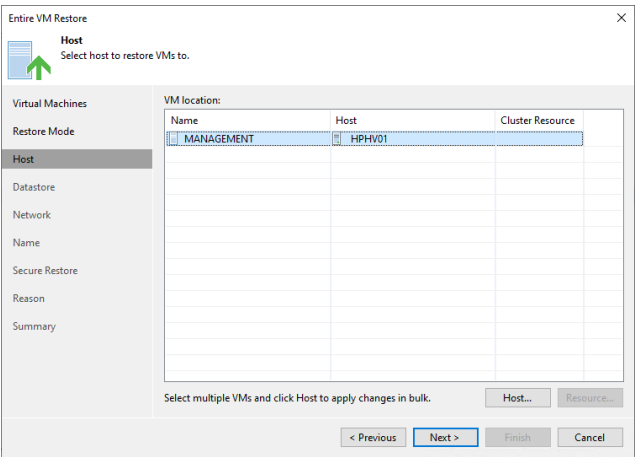
8. On the Virtual Machines page, click Next.



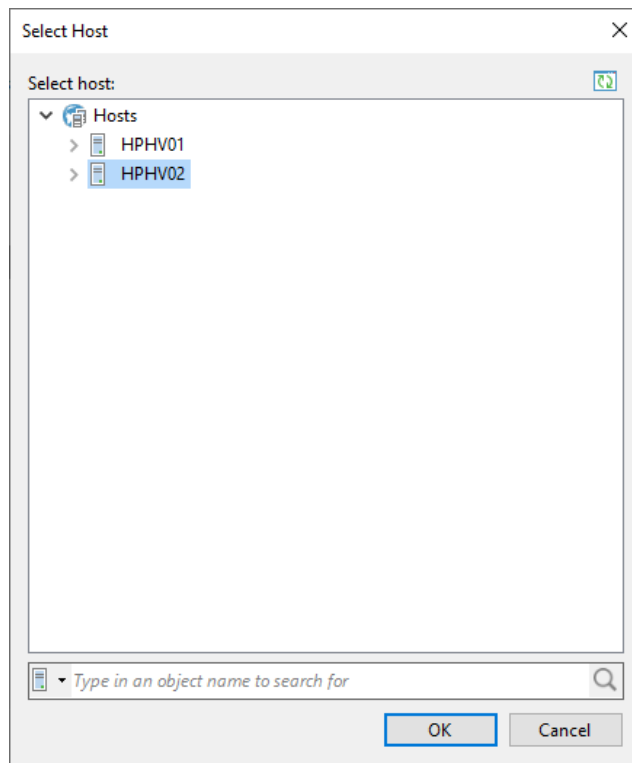
9. Select Restore to a new location or with different settings on the Restore Mode page and click Next.



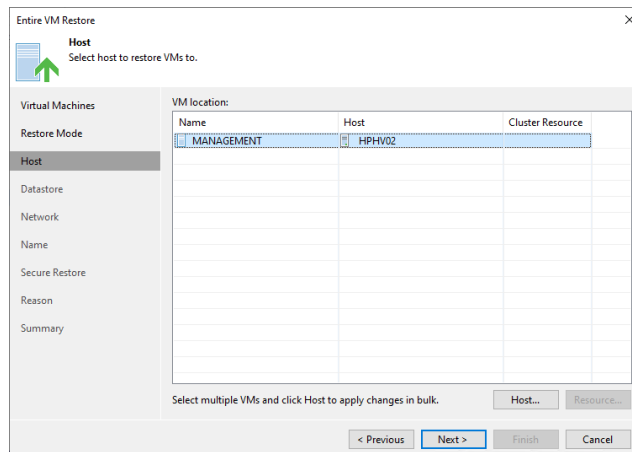
10. On the Host page, select the virtual machine and click Host.



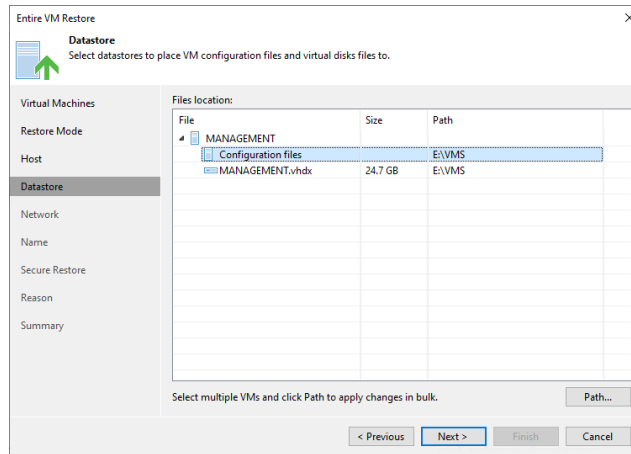
11. On the Host page, select the target host and click OK.



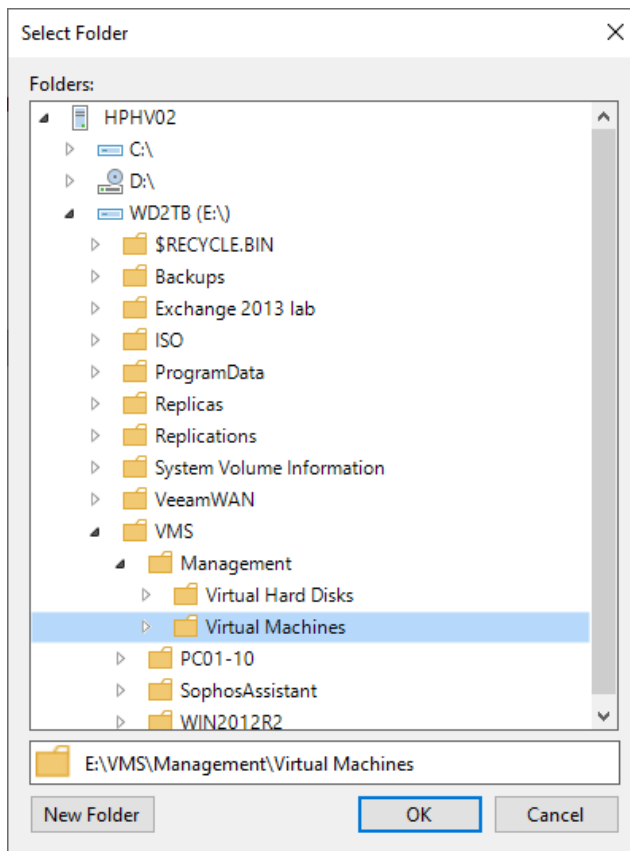
12. On the Host page, click Next.



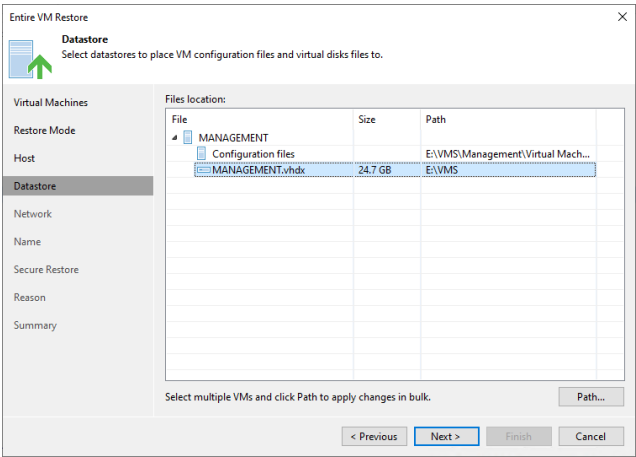
13. On the Datastore page, select the virtual machine's Configuration files and click Path.



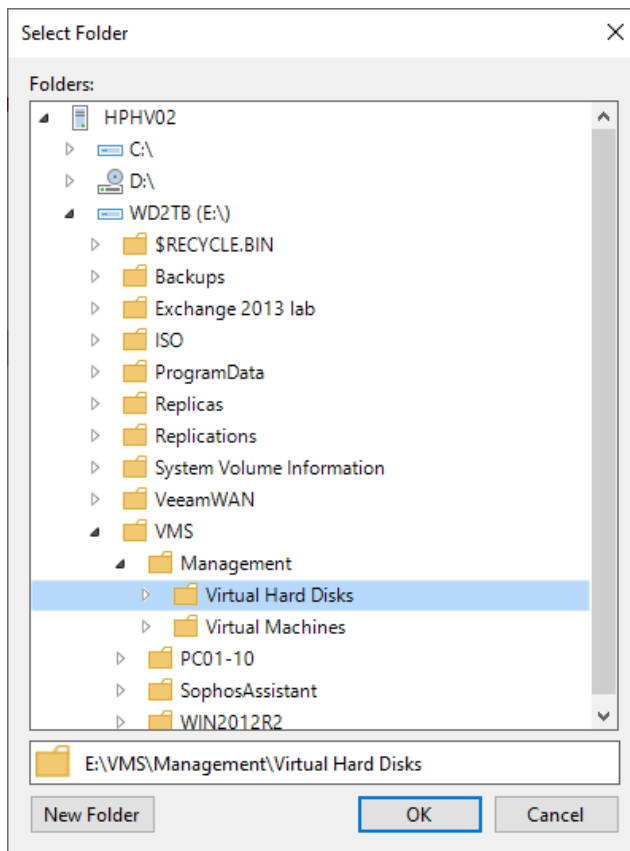
14. Select the target folder and click OK on the Select Folder page.



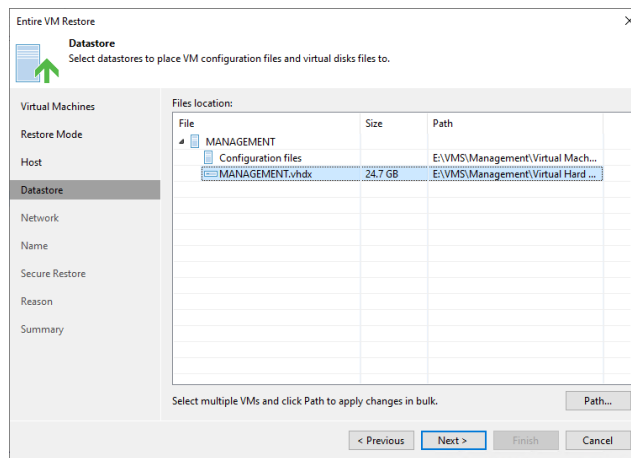
15. On the Datastore page, select the VHDX file of the virtual machine and click Path.



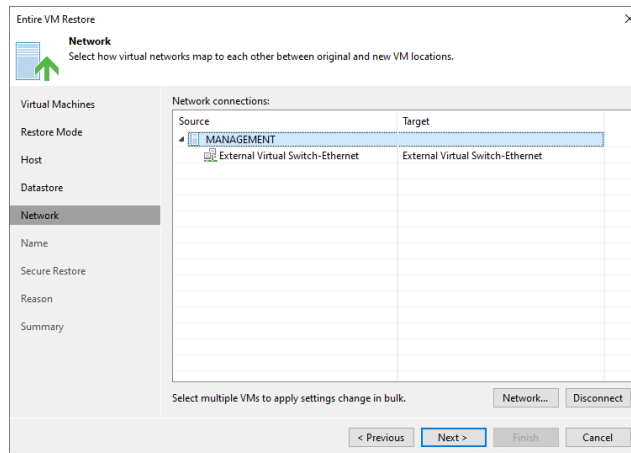
16. Select the target folder and click OK on the Select Folder page.



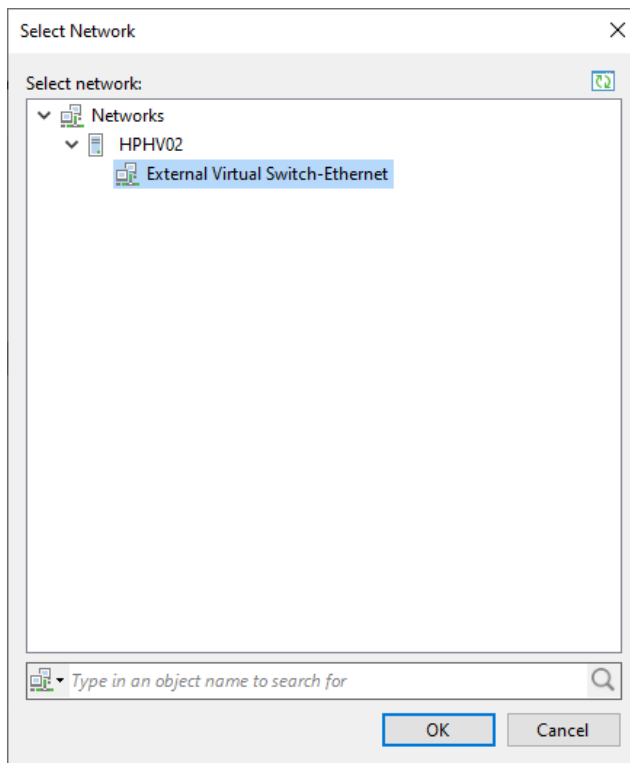
17. On the Datastore page, click Next.



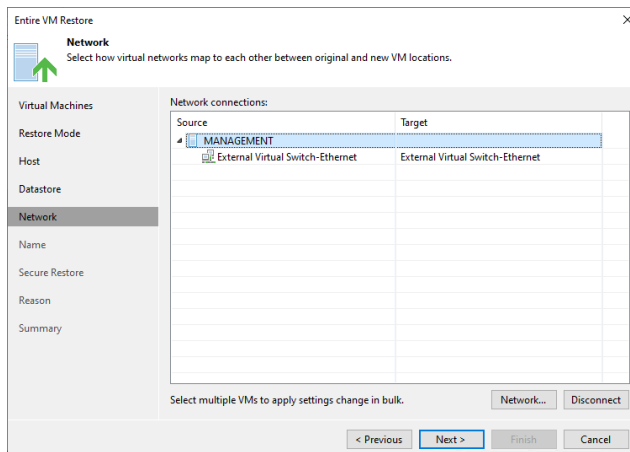
18. On the Network page, select the virtual machine and click Network.
19. If the restored VM does not need to connect to any virtual network, select the VM in the list and click Disconnected.



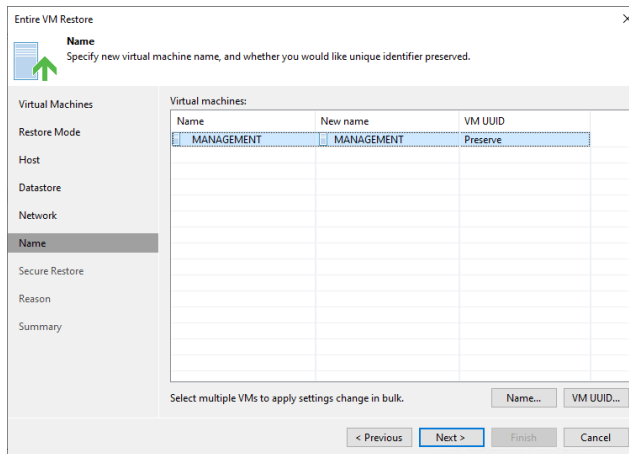
20. On the Select Network page, select the target network for restoring the VM and click OK.



21. On the Network page, click Next.

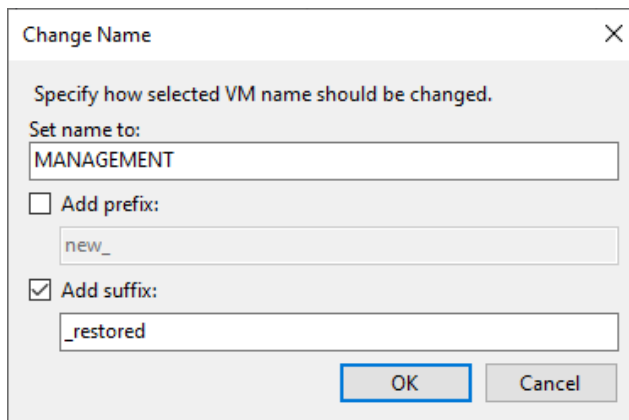


22. On the Name page, select the virtual machine and click Name.

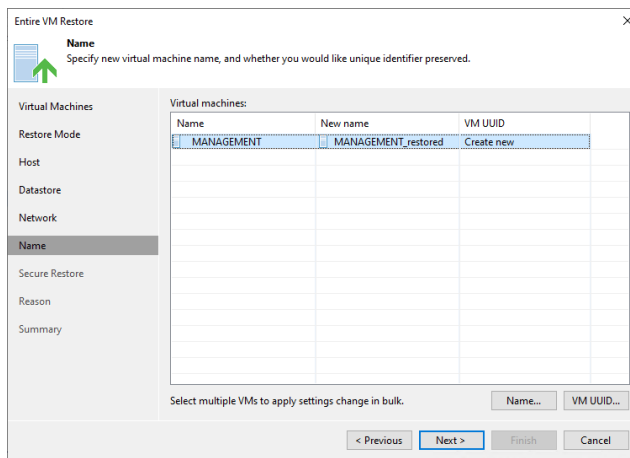


23. On the Change Name page, enter a new name or change the name by adding a prefix and suffix to the regular VM name.

24. Click OK.



25. On the Name page, select the virtual machine and click VM UUID.

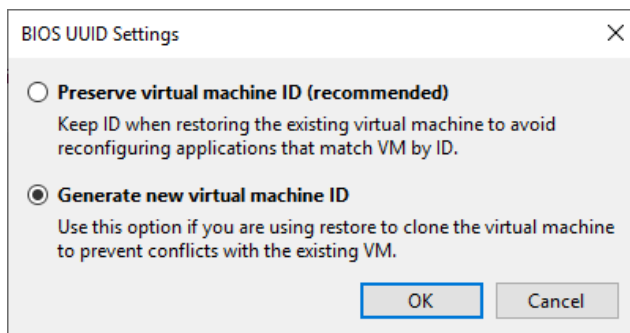


26. In BIOS UUID Settings, select Generate new virtual machine ID.

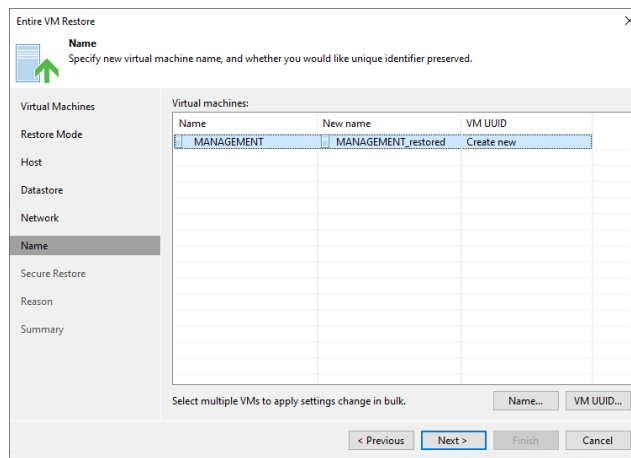
Note:

Select Preserve existing VM ID if the original VM was decommissioned.

27. Click OK.



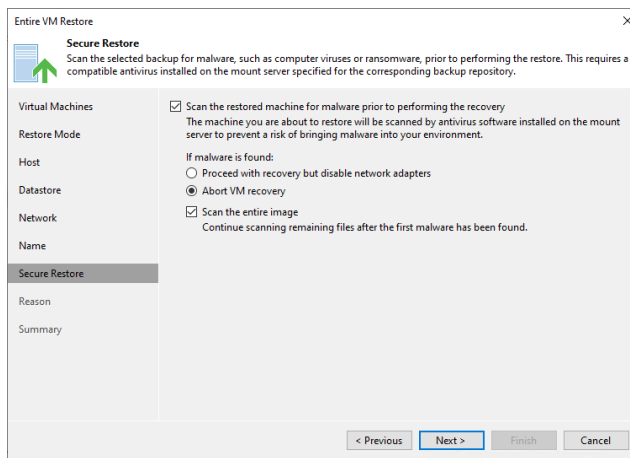
28. On the Name page, click Next.



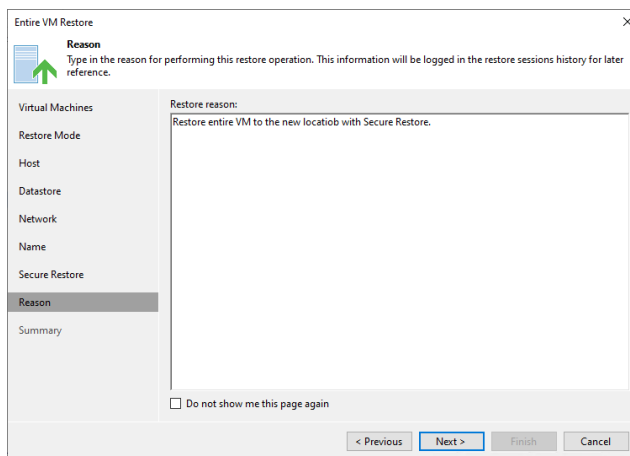
29. Select the Scan the restored machine for malware before performing the recovery checkbox.
30. On the if malware is found session, select Abort VM recovery.
31. Select Scan the entire image checkbox.
32. Click Next.

Note:

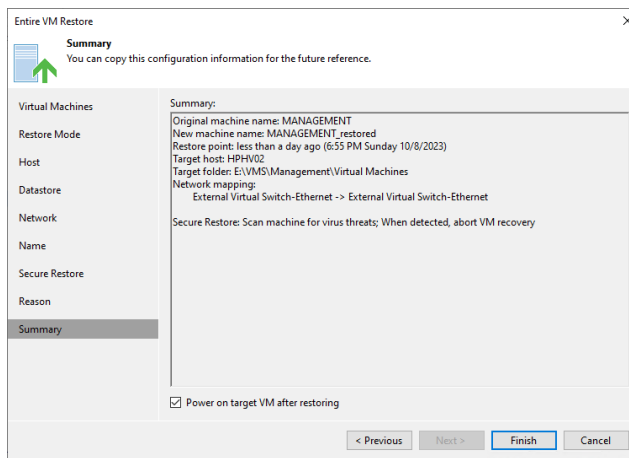
- Support Microsoft Windows only.
- The antivirus software must be installed on the mount server and support the command line interface (CLI).
- The antivirus configuration file must be configured on the mount server.
- Veeam Backup & Replication does not perform malware scans for disks or volumes that cannot be mounted to the mount server.



33. On the Reason page, enter a reason for restoring the selected VMs and click Next.

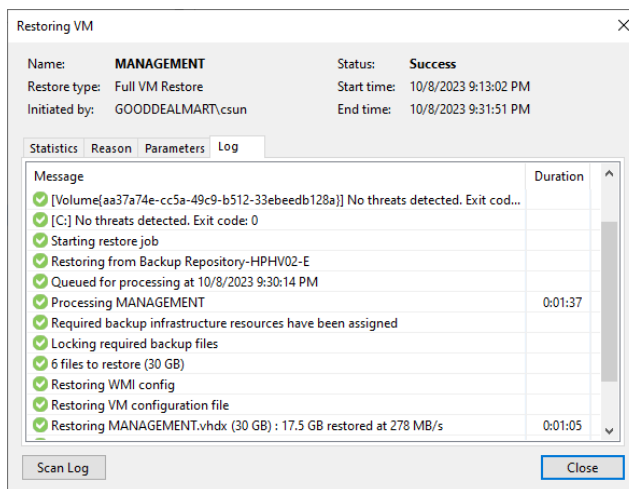


34. Select Power on target VM on the Summary page after restoring and click Finish.

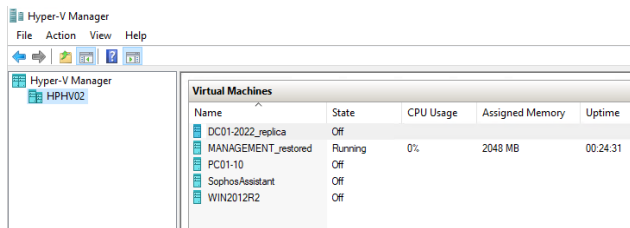


35. On the Restoring VM page, select Log.

36. Ensure the restore VM is completed successfully and click Closed.



37. Verify the VM is up and running.



Restore VM Files

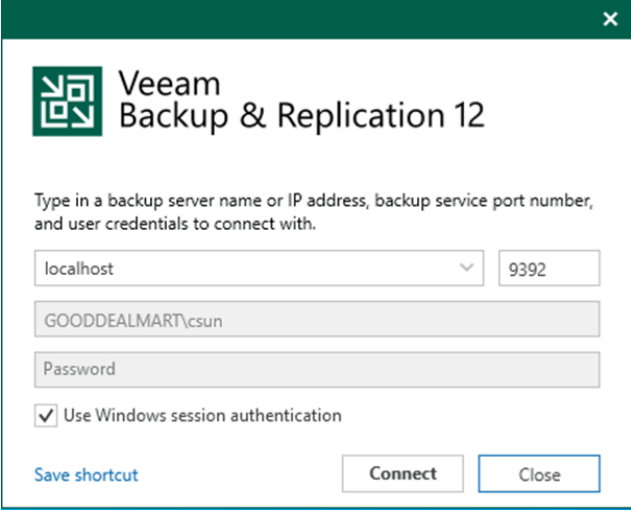
If corrupted, you can restore VM files (.XML, .VMCX, .VMRS, .VMGS, .VHD, .VHDX). This option is an excellent alternative to restoring the entire VM. You can only restore a single VM file.

When you perform a VM file restore, the VM file is restored directly from regular image-level backups without de-staging VM images from backups first. VM files can be converted to either the original or a new location.

Note:

If you recover a .VMCX file and import it to Microsoft Hyper-V, the VM will be registered under the Veeam Recovery Checkpoint-(<GUID>) name. After import, you can rename the VM if required.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and product name are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are four input fields: a dropdown menu showing "localhost", a text box with "9392", a text box with "GOODDEALMART\csun", and a password field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut", "Connect", and "Close".

Veeam Backup & Replication 12

Type in a backup server name or IP address, backup service port number, and user credentials to connect with.

localhost 9392

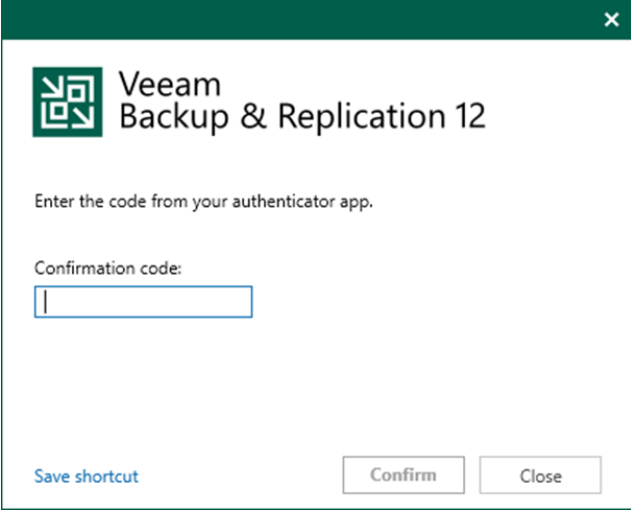
GOODDEALMART\csun

Password

☒ Use Windows session authentication

Save shortcut Connect Close

3. Enter the MFA Confirmation code and click Confirm.



A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and product name are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a single-character input field. At the bottom are three buttons: "Save shortcut", "Confirm", and "Close".

Veeam Backup & Replication 12

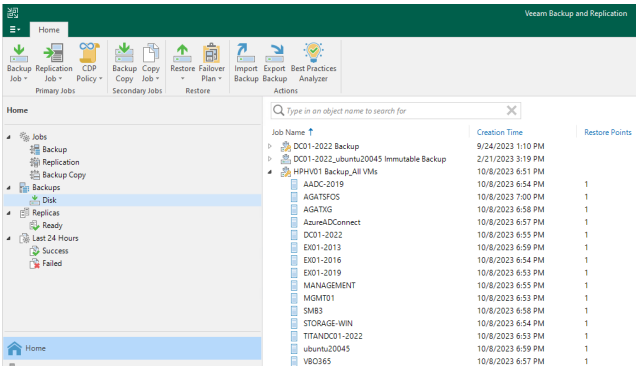
Enter the code from your authenticator app.

Confirmation code:

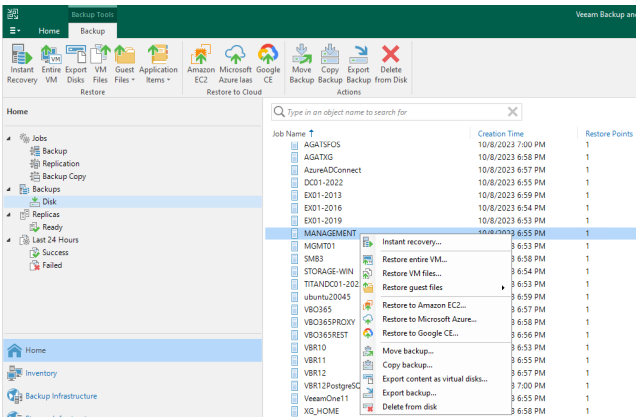
|

Save shortcut Confirm Close

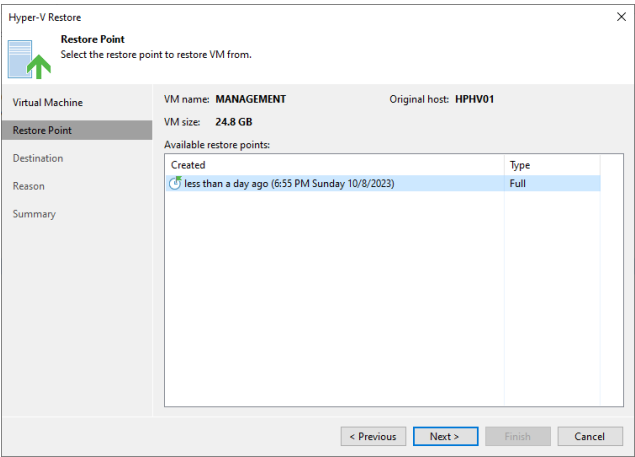
4. On the Home page, expand Backups.
5. Select the Disk and expand the backup job name.



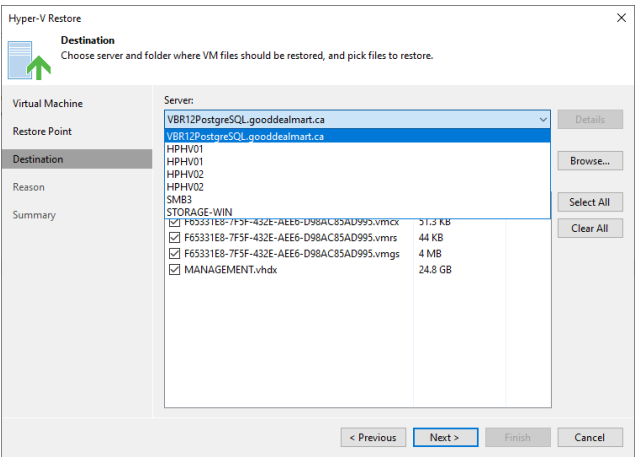
6. Right-click the virtual machine and select Restore VM files.



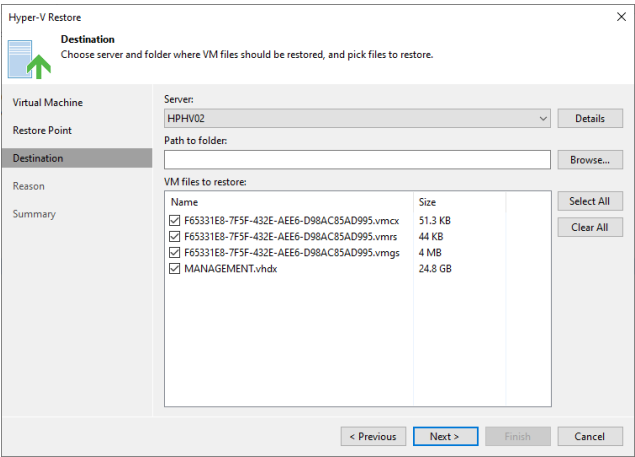
7. Select the restore point on the Restore Point page and click Next.



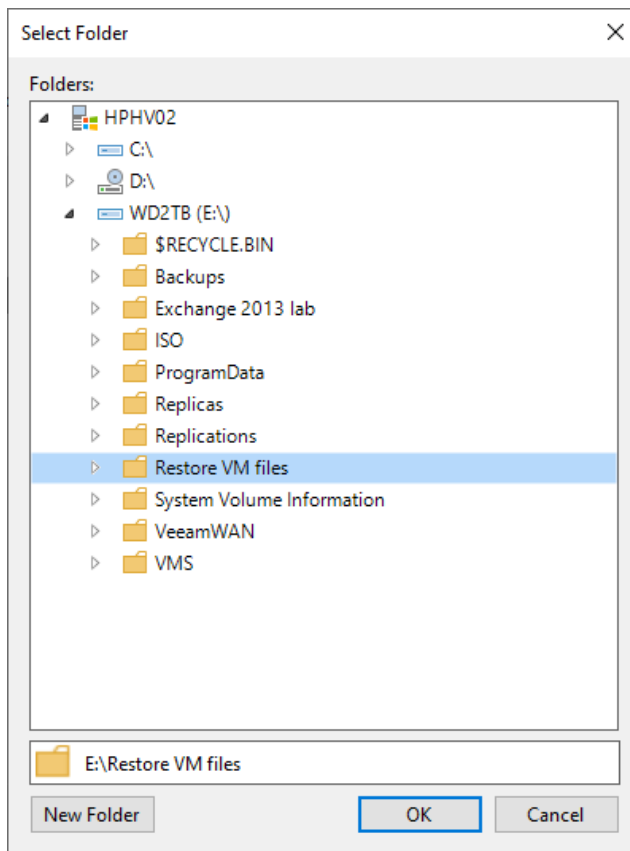
8. On the Destination page, select the server from the drop-down list.



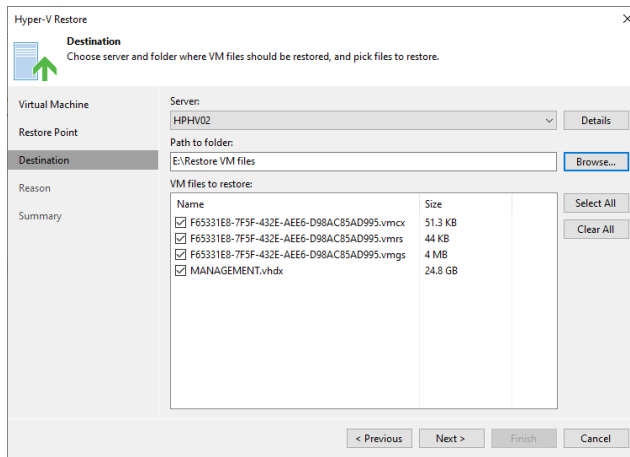
9. Click Browser in the path to folder session.



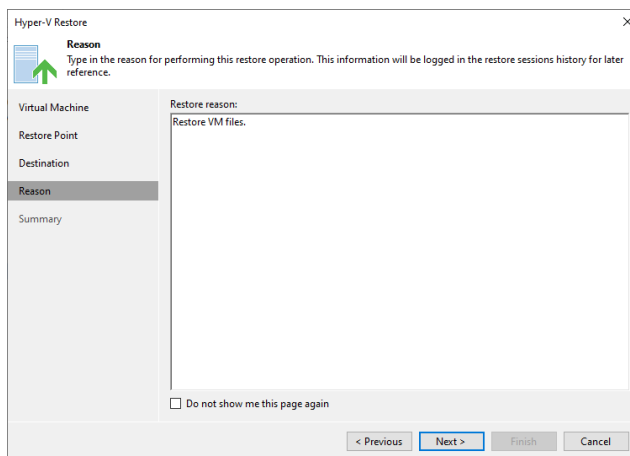
10. On the Select Folder page, select the target folder. Click OK.



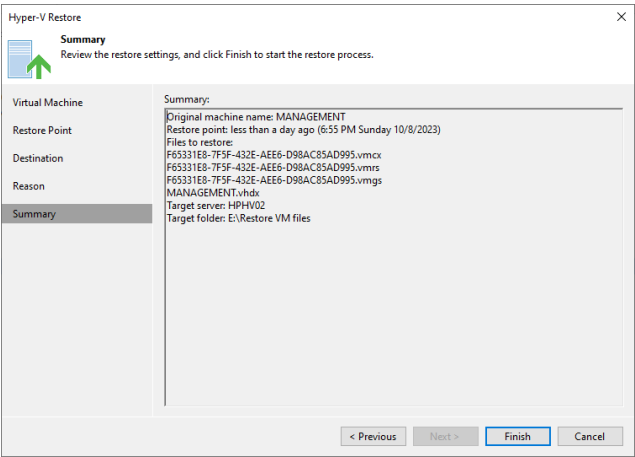
11. Select the files checkbox from the VM files to restore list and click Next.



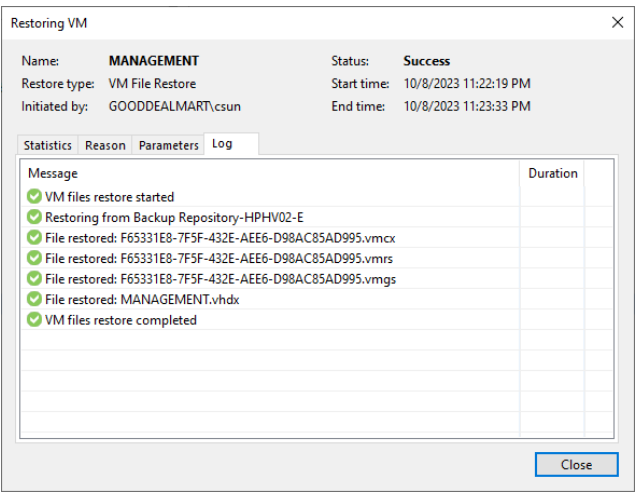
12. Enter the reason for restoring the selected VMs on the Reason page and click Next.



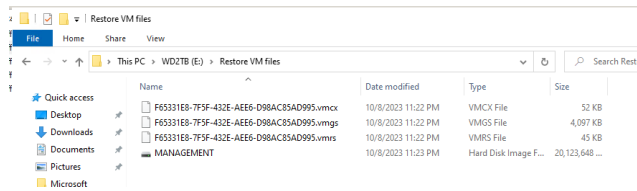
13. On the Summary page, click Finish.



14. Select log on the Restoring VM page, ensure the restore VM files are completed successfully, and click Closed.



15. Verify restored VM files.

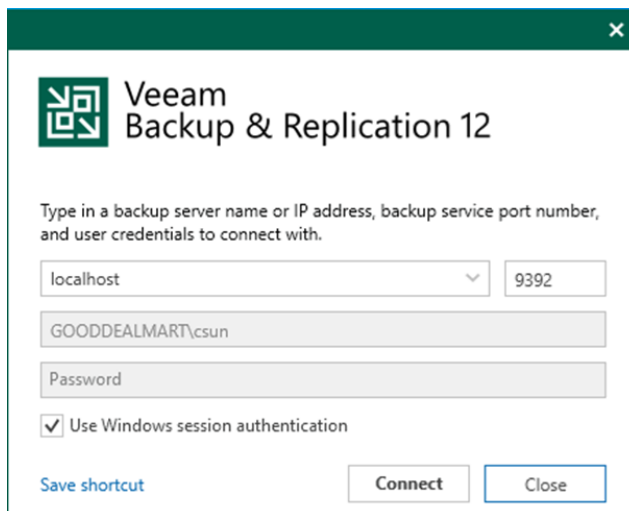


Restore Guest Files (or Folder) for Microsoft Windows

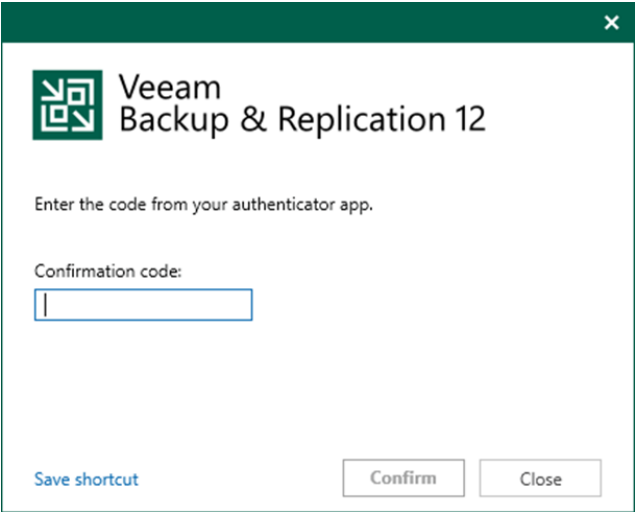
You can restore files from Microsoft Windows VMs with NTFS, FAT, and ReFS file systems using the restore from FAT, NTFS, and ReFS methods.

You can restore files to their original or new location, use Microsoft Windows File Explorer to work with the converted files or launch application item restore for the files.

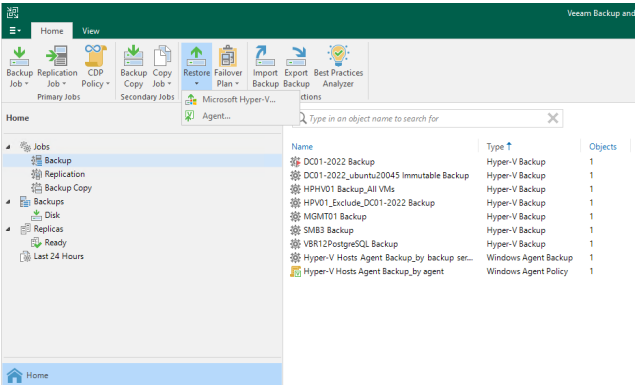
1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



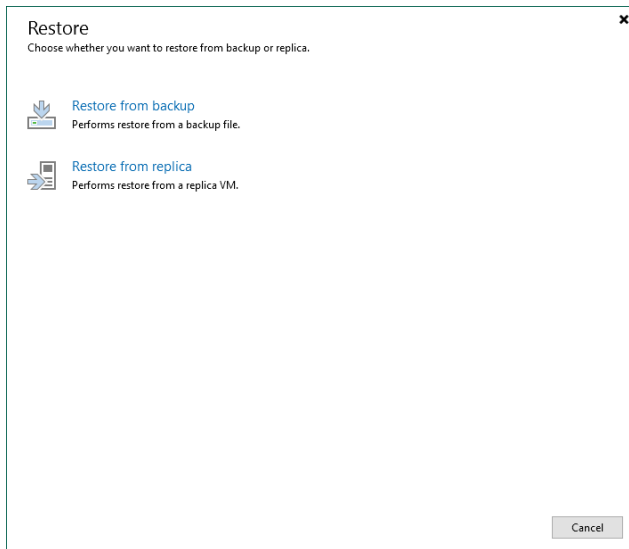
3. Enter the MFA Confirmation code and click Confirm.



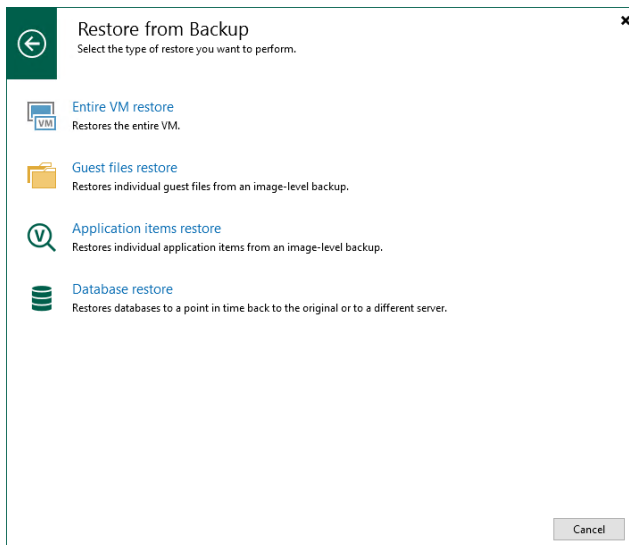
4. On the Home page, click Restore and select Microsoft Hyper-V.



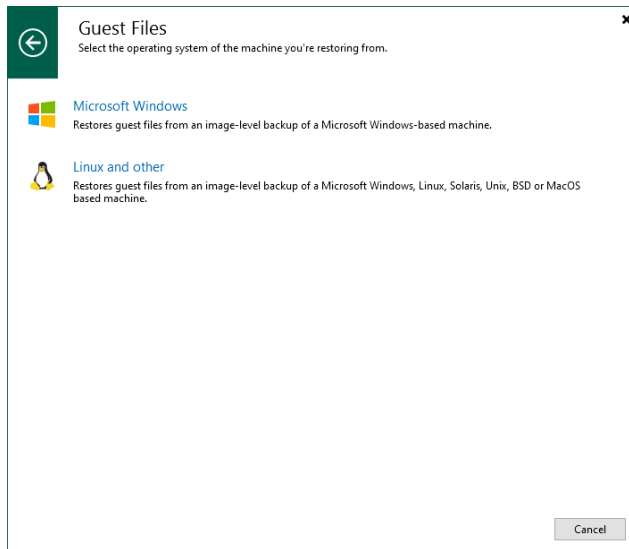
5. On the Restore page, select Restore from backup.



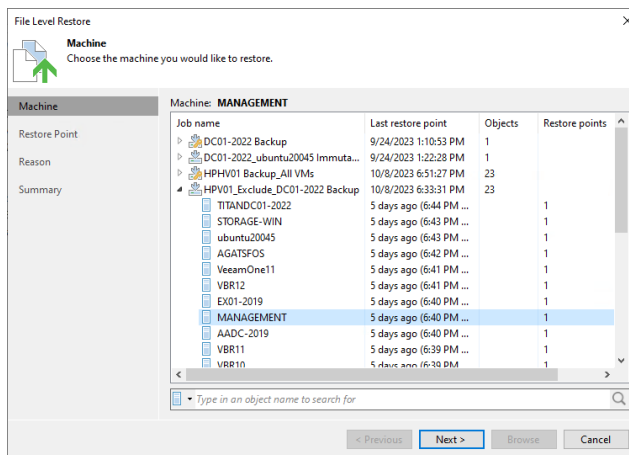
6. On the Restore from Backup page, select Guest files restore.



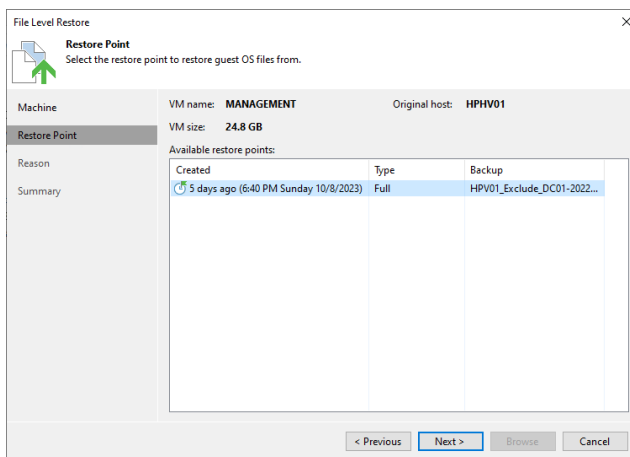
7. On the Guest files page, select Microsoft Windows.



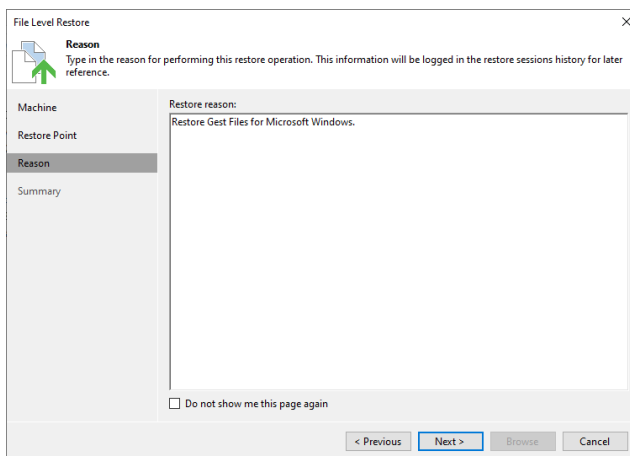
8. On the Machine page, expand the backup job.
9. Select the machine and click Next.



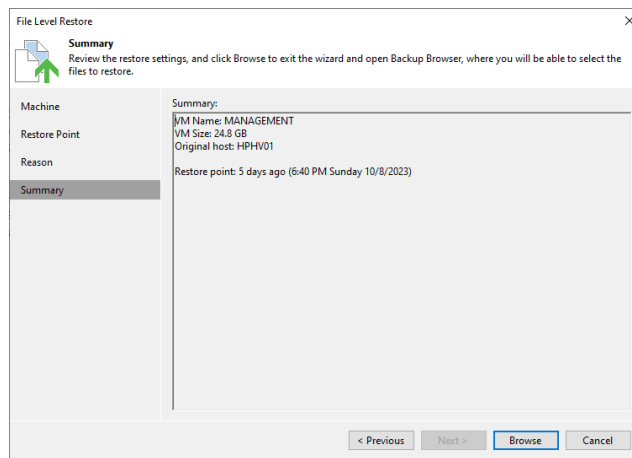
10. Select the restore point on the Restore Point page and click Next.



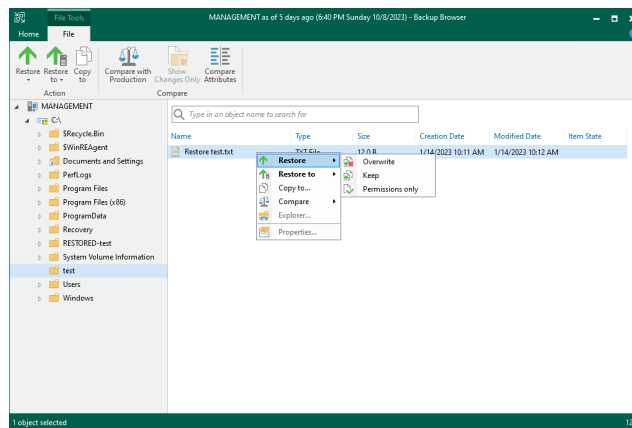
11. Enter the reason for restoring the selected VMs on the Reason page and click Next.



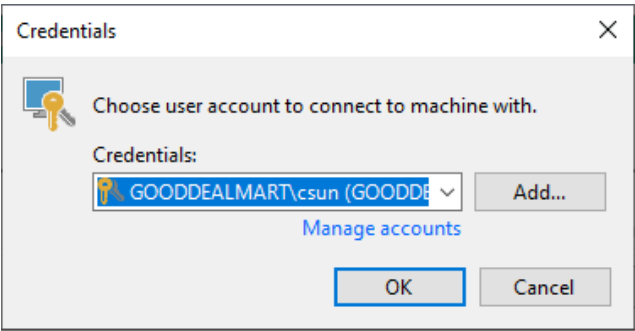
12. On the Summary page, click Browse.



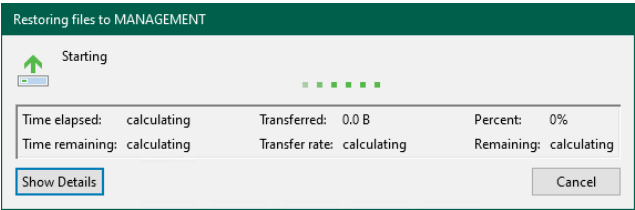
13. On the Backup Browser page, expand the disk, select the file, and right-click the file.
14. Select Restore and click Keep.



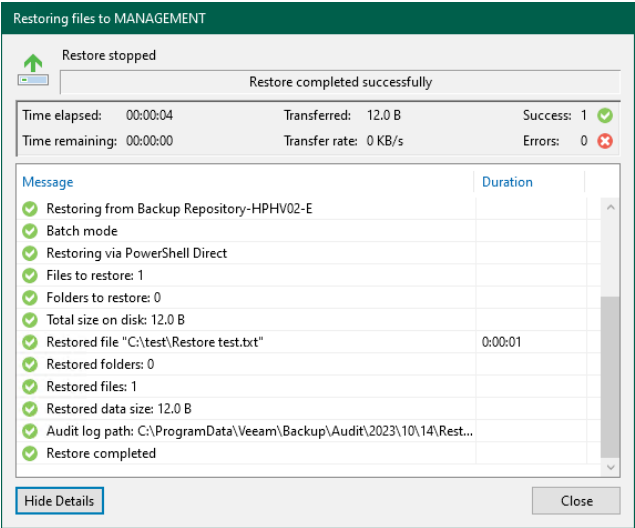
15. Select an account from the Credentials drop-down list on the Credentials page and click OK.



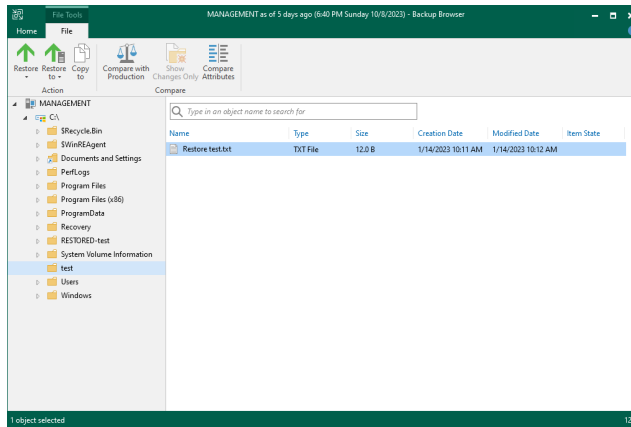
16. On the Restoring files page, click Show Details.



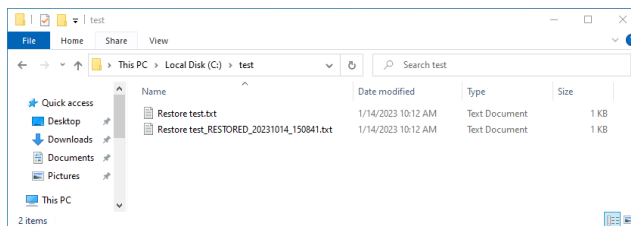
17. On the Restoring files page, ensure the restore is successful and click Close.



18. Close the Backup Browser.



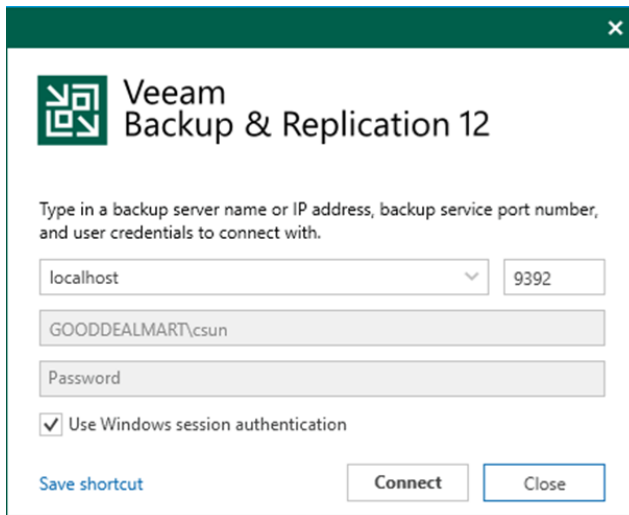
19. Verify the restored file.



Restore Guest Files (or Folder) for Linux with Host

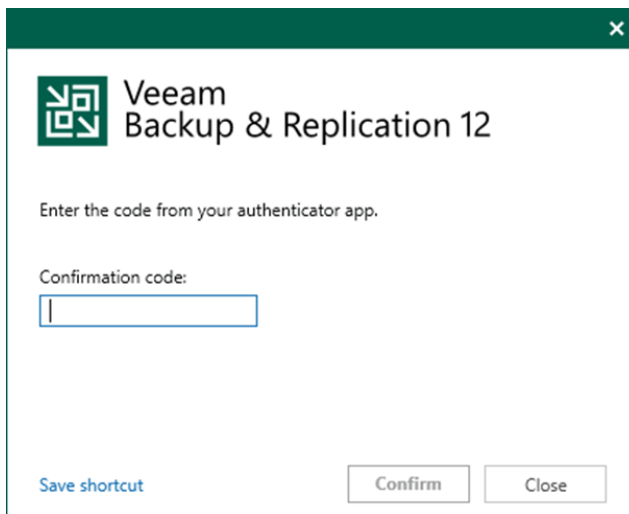
You can restore files from Linux, Unix and other file systems to their original or new location.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



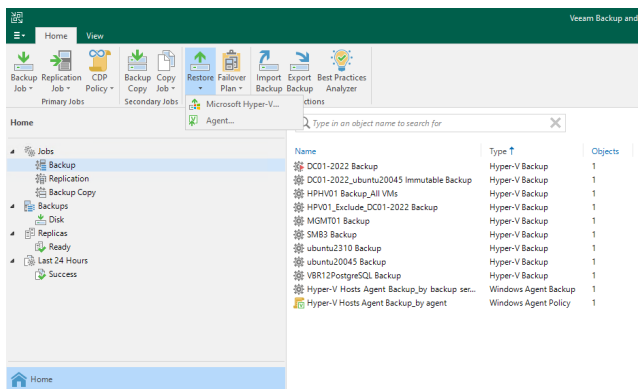
A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and product name are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are four input fields: a dropdown menu showing "localhost", a text box with "9392", a text box with "GOODDEALMART\csun", and a password field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut" (blue text), "Connect" (white with green border), and "Close" (white with blue border).

3. Enter the MFA Confirmation code and click Confirm.

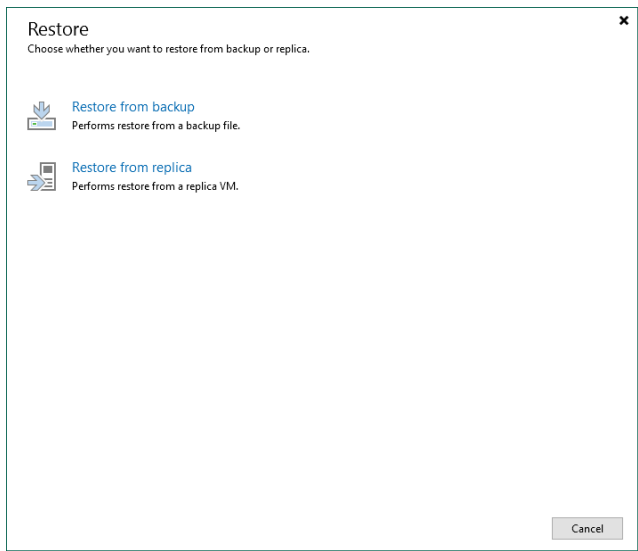


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and product name are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a single-character input field. At the bottom are three buttons: "Save shortcut" (blue text), "Confirm" (white with green border), and "Close" (white with blue border).

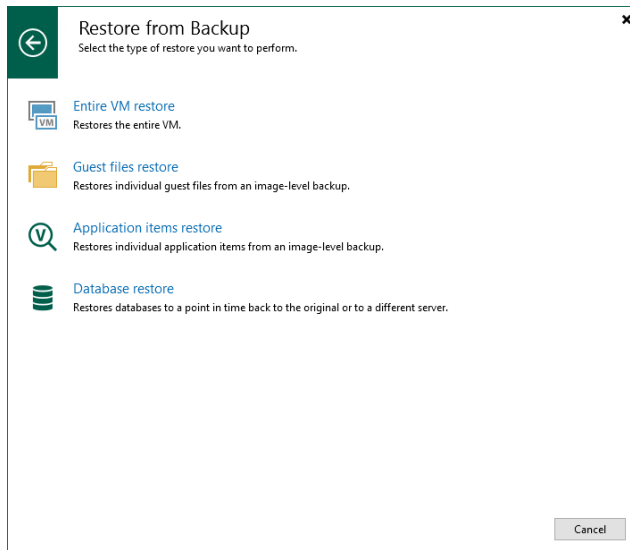
4. On the Home page, click Restore and select Microsoft Hyper-V.



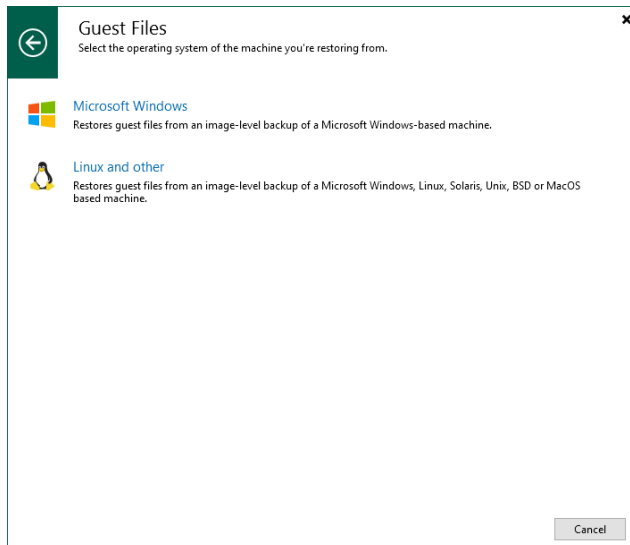
5. On the Restore page, select Restore from backup.



6. On the Restore from Backup page, select Guest files restore.

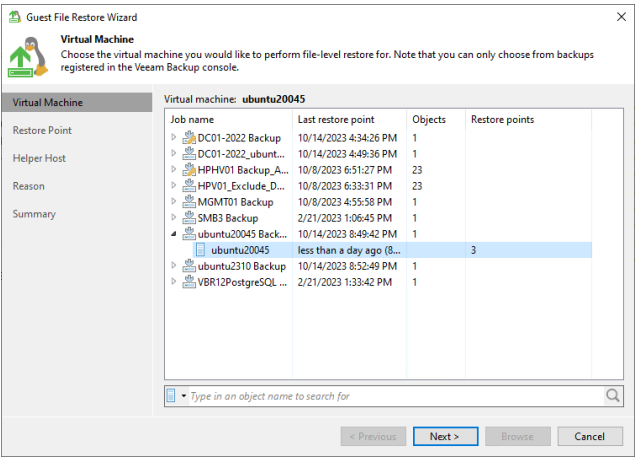


7. On the Guest files page, select Linux and other.

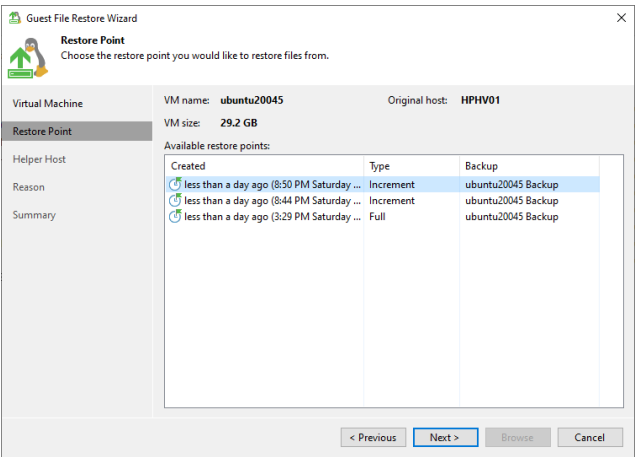


8. On the Virtual Machine page, expand the backup job.

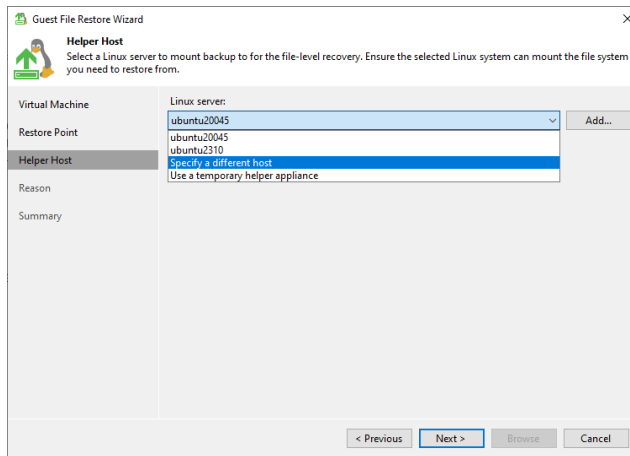
9. Select the machine and click Next.



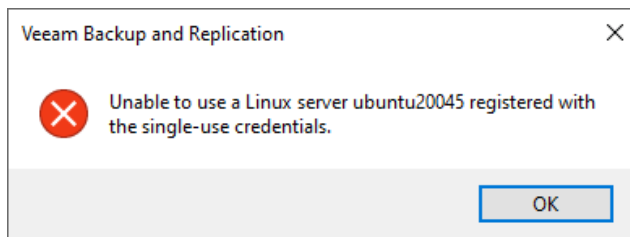
10. Select the restore point on the Restore Point page and click Next.



11. Select Specify a different host from the drop-down list on the Helper Host page and click Next.



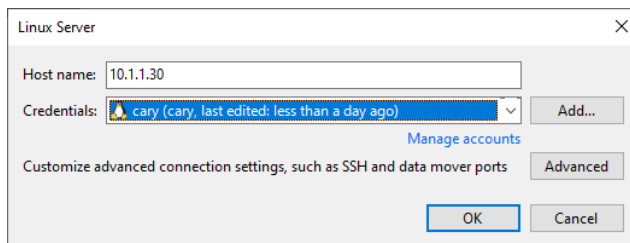
12. The Helper Host cannot use the single-use credential.



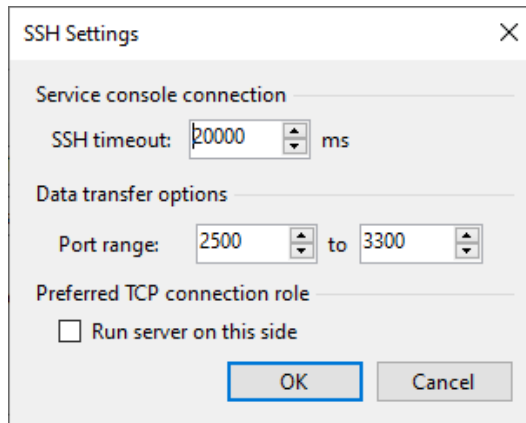
13. Enter the IP address of non-hardened repositories to the Host name.

14. Select the credential from the Credentials drop-down list.

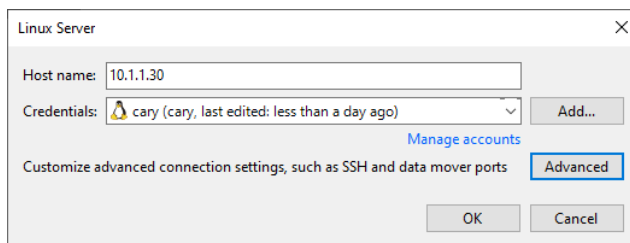
15. Click Advance.



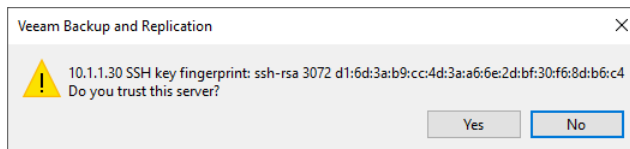
16. On the SSH Settings page, keep the default settings and click OK.



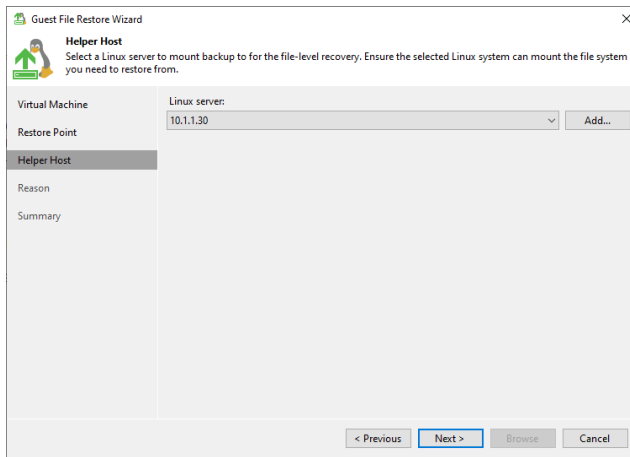
17. Click OK on the Linux Server page.



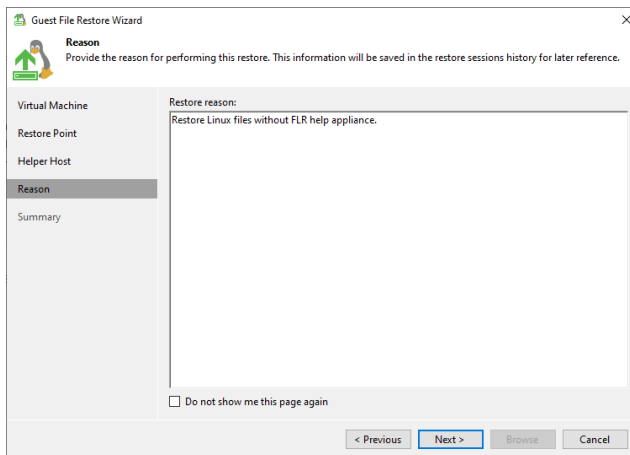
18. Click Yes on the Trust this Server warning page.



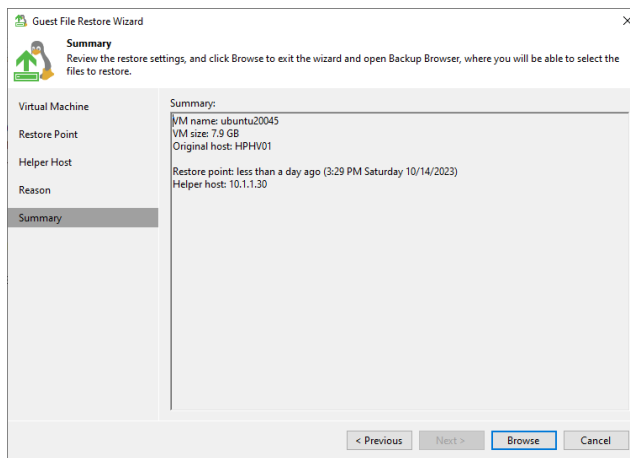
19. Click Next on the Helper Host page.



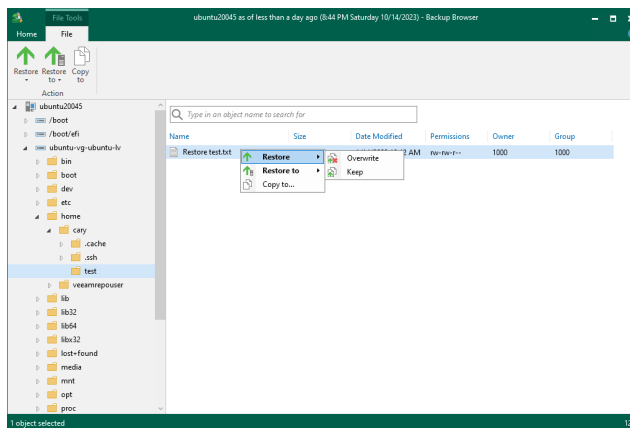
20. Enter the reason for restoring the selected VMs on the Reason page and click Next.



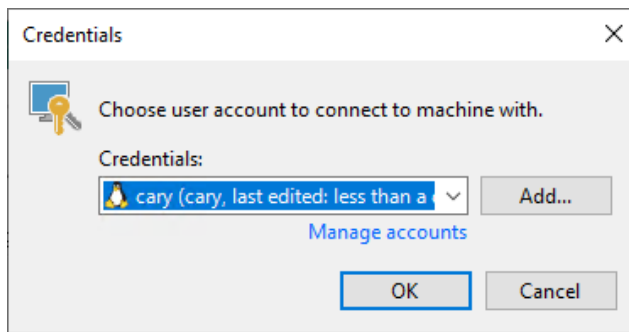
21. On the Summary page, click Browse.



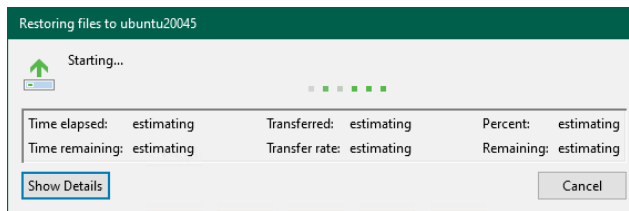
22. On the Backup Browser page, expand the disk, select the file, and right-click the file.
23. Select Restore and click Keep.



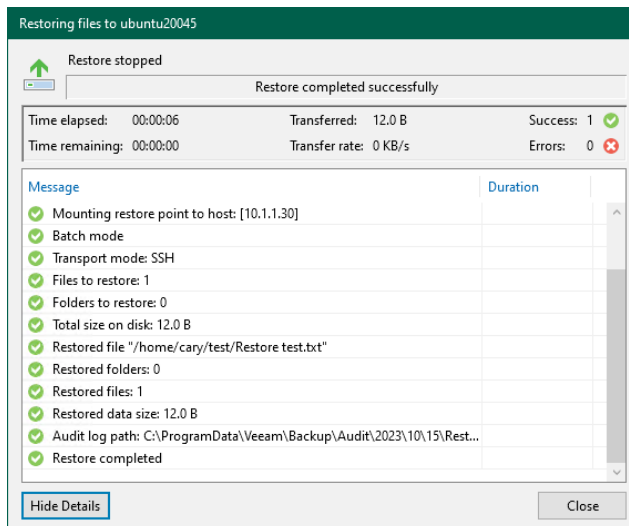
24. Select an account from the Credentials drop-down list on the Credentials page and click OK.



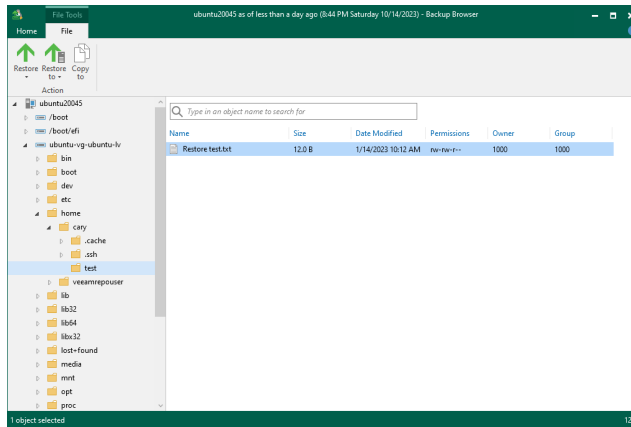
25. On the Restoring Files page, click Show Details.



26. On the Restoring files page, ensure the file restore is successful and click Close.



27. Close the Backup Browser.



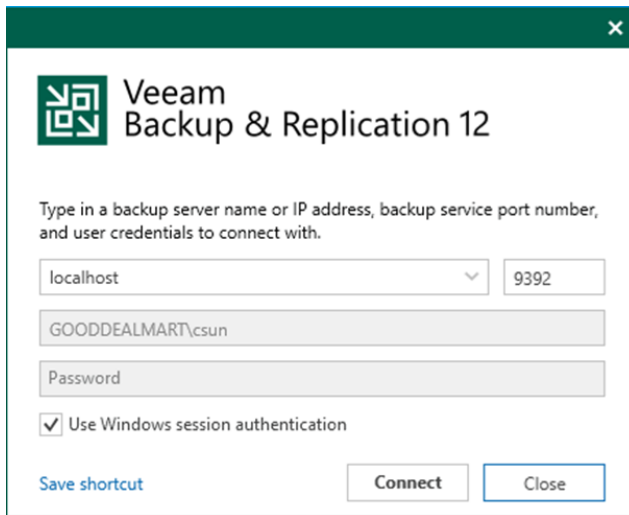
28. Verify the restored file.

```
cary@ubuntu20045:~/test$ ls
'Restore test_RESTORED_20231014_215248.txt'  'Restore test.txt'
cary@ubuntu20045:~/test$
```

Restore Guest Files (or Folder) for Linux with Helper Appliance

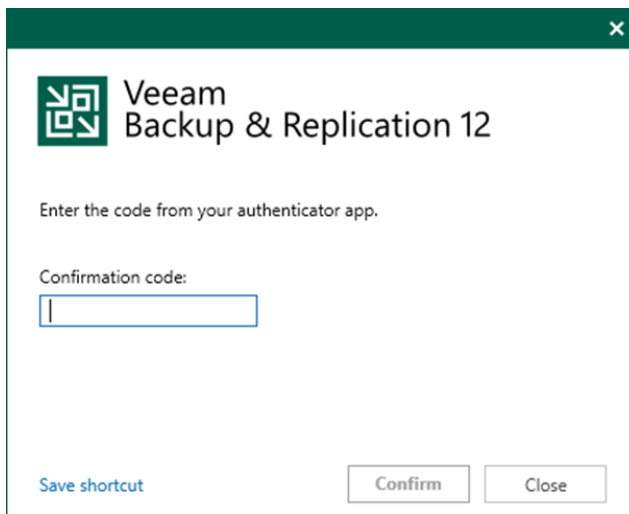
You can restore files from Linux, Unix and other file systems to their original or new location.

1. Login to the Veeam Backup and replication manager server.
2. Open the Veeam Backup & Replication 12 Console and click Connect.



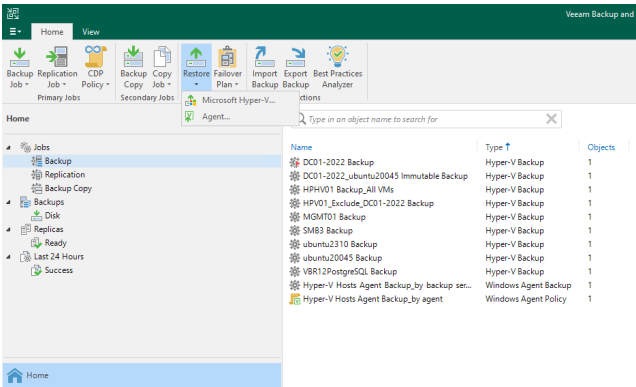
A screenshot of the Veeam Backup & Replication 12 connection dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Type in a backup server name or IP address, backup service port number, and user credentials to connect with." There are four input fields: a dropdown menu showing "localhost", a text box with "9392", a text box with "GOODDEALMART\csun", and a password field. A checkbox labeled "Use Windows session authentication" is checked. At the bottom are three buttons: "Save shortcut", "Connect", and "Close".

3. Enter the MFA Confirmation code and click Confirm.

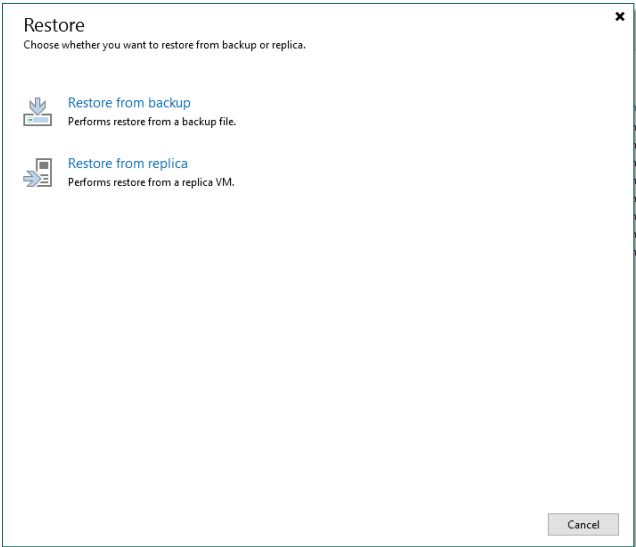


A screenshot of the Veeam Backup & Replication 12 MFA confirmation dialog. The window has a dark green title bar with a close button. The Veeam logo and title are at the top. Below is a text prompt: "Enter the code from your authenticator app." There is a label "Confirmation code:" followed by a single-character input field. At the bottom are three buttons: "Save shortcut", "Confirm", and "Close".

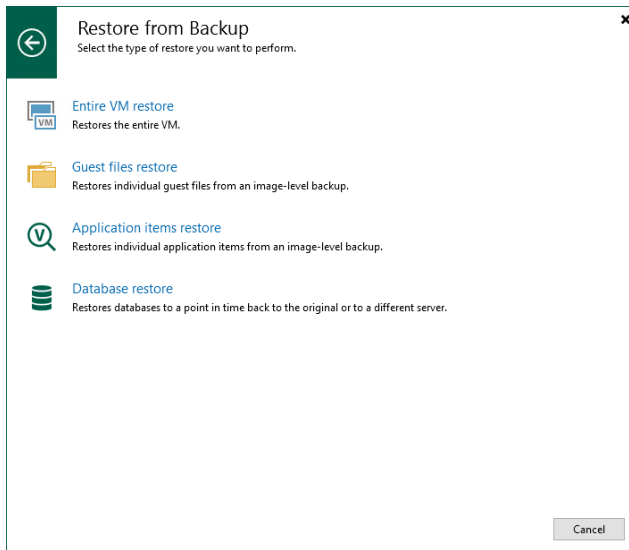
4. On the Home page, click Restore and select Microsoft Hyper-V.



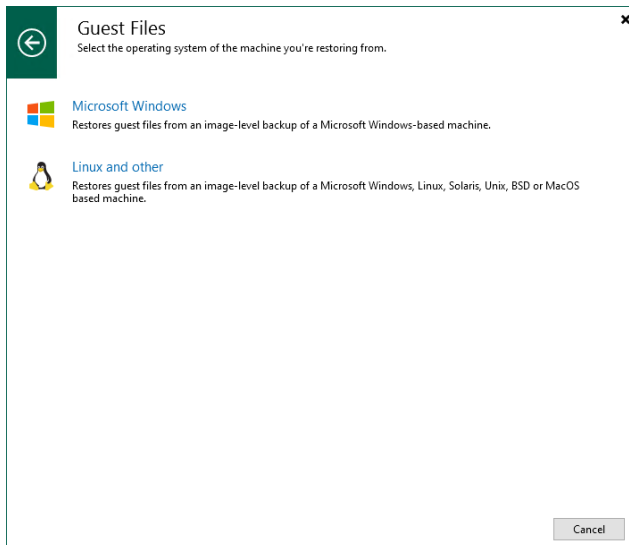
5. On the Restore page, select Restore from backup.



6. On the Restore from Backup page, select Guest files restore.

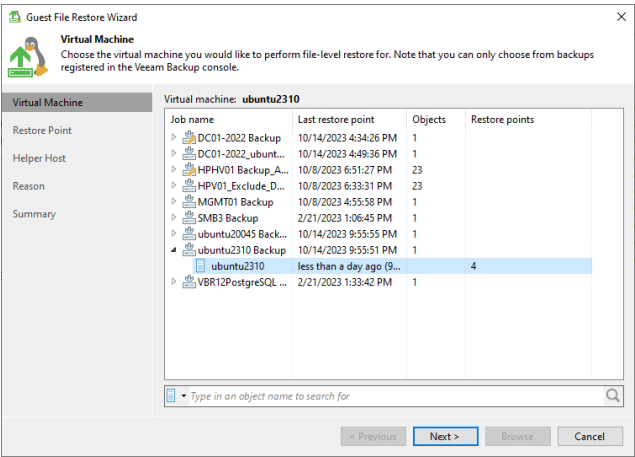


7. On the Guest files page, select Linux and other.

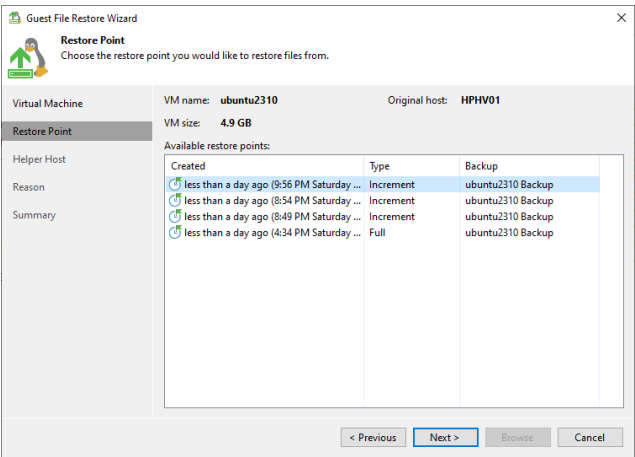


8. On the Virtual Machine page, expand the backup job.

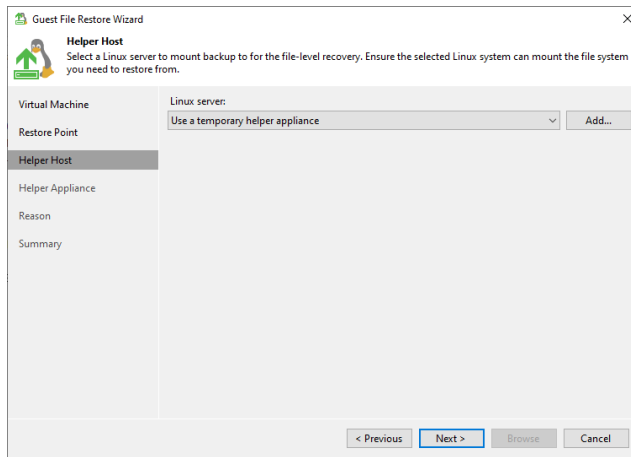
9. Select the machine and click Next.



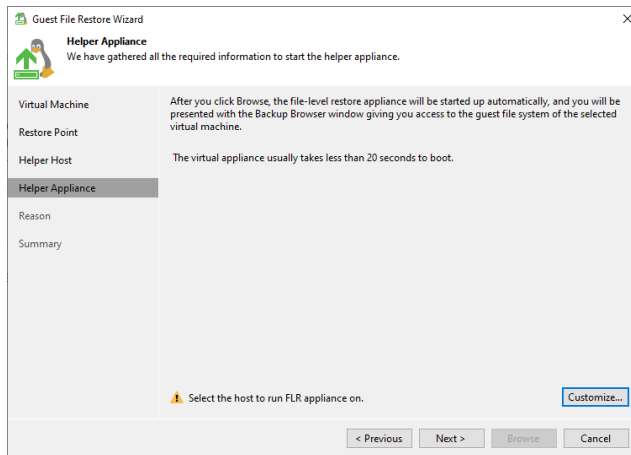
10. Select the restore point on the Restore Point page and click Next.



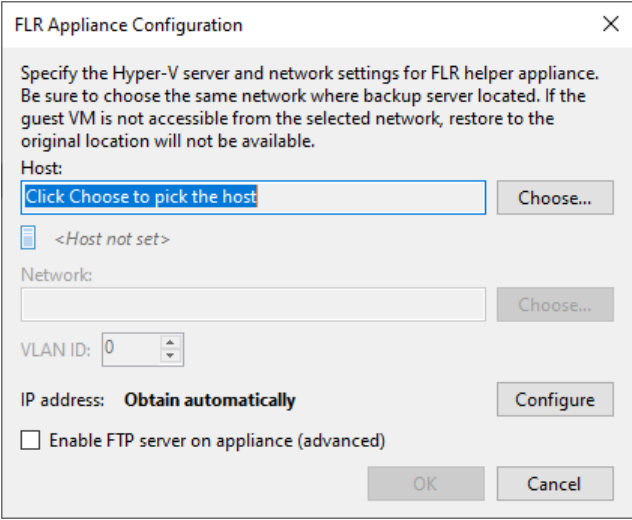
11. Select Use a temporary helper appliance from the drop-down list on the Helper Host page and click Next.



12. Click Customize on the Helper Appliance page.



13. On the FLR Appliance Configuration page, click Choose to pick the host.



The screenshot shows a dialog box titled "FLR Appliance Configuration" with a close button (X) in the top right corner. The dialog contains the following text and controls:

Specify the Hyper-V server and network settings for FLR helper appliance. Be sure to choose the same network where backup server located. If the guest VM is not accessible from the selected network, restore to the original location will not be available.

Host:

Click Choose to pick the host

Choose...

<Host not set>

Network:

Choose...

VLAN ID: 0

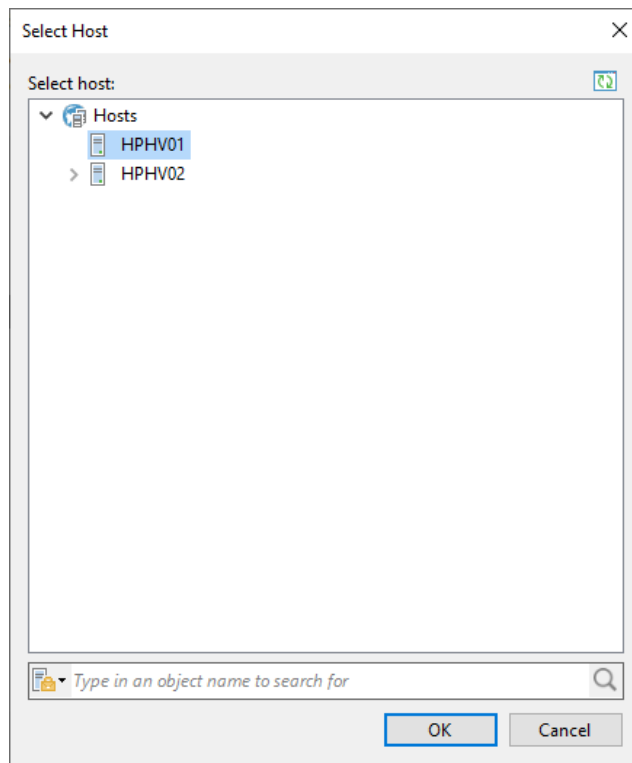
IP address: Obtain automatically

Configure

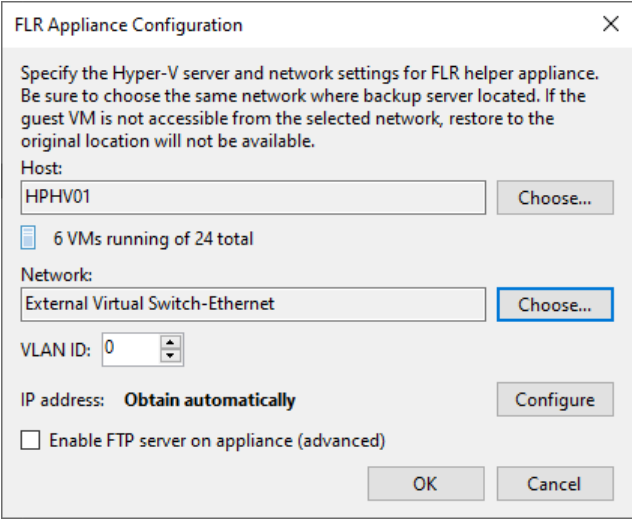
☐ Enable FTP server on appliance (advanced)

OK Cancel

14. Select the host on the Select Host page and click OK.



15. Click Choose to pick the Network.



The screenshot shows a dialog box titled "FLR Appliance Configuration" with a close button (X) in the top right corner. The dialog contains the following text and controls:

Specify the Hyper-V server and network settings for FLR helper appliance. Be sure to choose the same network where backup server located. If the guest VM is not accessible from the selected network, restore to the original location will not be available.

Host:

HPHV01 Choose...

6 VMs running of 24 total

Network:

External Virtual Switch-Ethernet Choose...

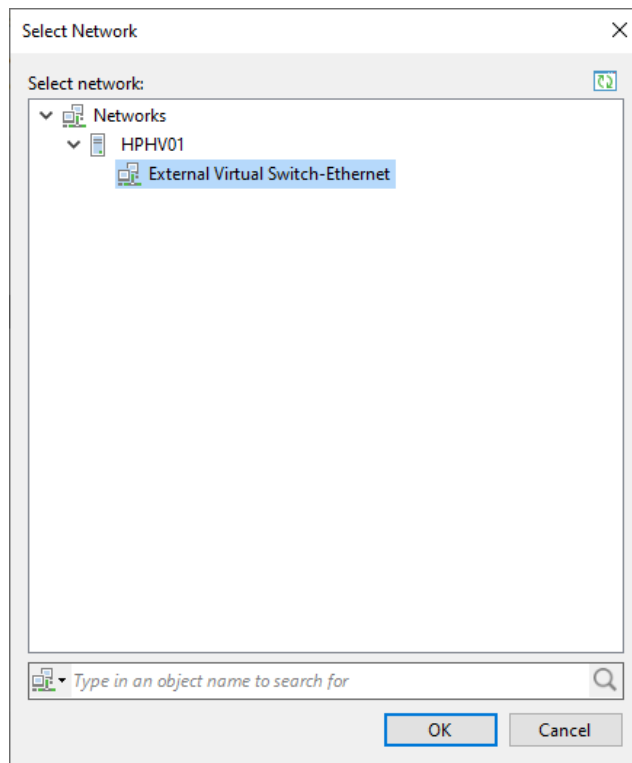
VLAN ID: 0

IP address: **Obtain automatically** Configure

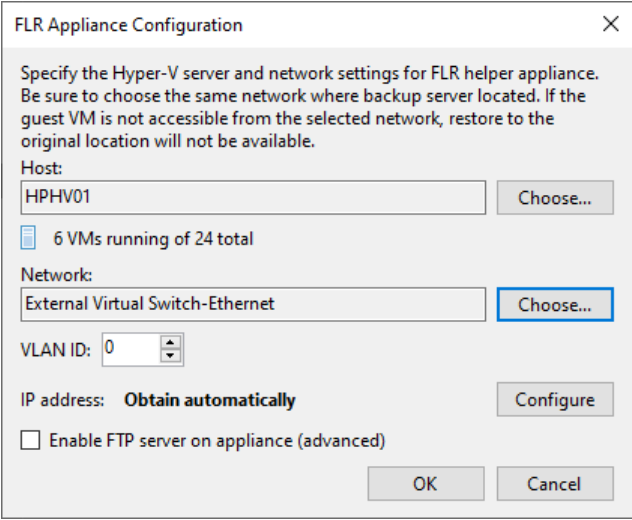
☐ Enable FTP server on appliance (advanced)

OK Cancel

16. Select the network on the Select Network page.



17. Enter the VLAN ID on the FLR Appliance Configuration page.
18. Click Configure to configure the IP address of the Appliance if you don't use the DHCP.



The screenshot shows the 'FLR Appliance Configuration' dialog box. It contains instructions to specify Hyper-V server and network settings. The 'Host' field is set to 'HPHV01'. Below it, a status bar indicates '6 VMs running of 24 total'. The 'Network' field is set to 'External Virtual Switch-Ethernet'. The 'VLAN ID' is set to '0'. The 'IP address' is set to 'Obtain automatically'. There is an unchecked checkbox for 'Enable FTP server on appliance (advanced)'. At the bottom are 'OK' and 'Cancel' buttons.

FLR Appliance Configuration

Specify the Hyper-V server and network settings for FLR helper appliance. Be sure to choose the same network where backup server located. If the guest VM is not accessible from the selected network, restore to the original location will not be available.

Host: HPHV01 Choose...

6 VMs running of 24 total

Network: External Virtual Switch-Ethernet Choose...

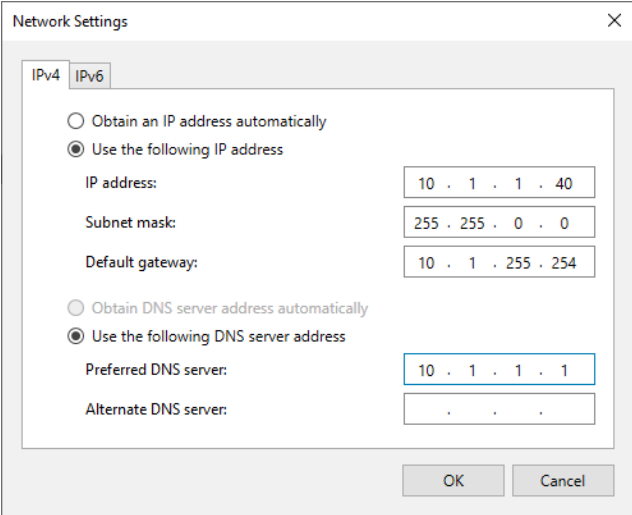
VLAN ID: 0

IP address: Obtain automatically Configure

☐ Enable FTP server on appliance (advanced)

OK Cancel

19. On the Network Settings page, enter the IP address and DNS settings.
20. Click OK.



The screenshot shows the 'Network Settings' dialog box with the 'IPv4' tab selected. It has two radio buttons: 'Obtain an IP address automatically' (unselected) and 'Use the following IP address' (selected). Below are fields for 'IP address' (10 . 1 . 1 . 40), 'Subnet mask' (255 . 255 . 0 . 0), and 'Default gateway' (10 . 1 . 255 . 254). There are also two radio buttons for DNS: 'Obtain DNS server address automatically' (unselected) and 'Use the following DNS server address' (selected). Below are fields for 'Preferred DNS server' (10 . 1 . 1 . 1) and 'Alternate DNS server' (. . .). At the bottom are 'OK' and 'Cancel' buttons.

Network Settings

IPv4 IPv6

☐ Obtain an IP address automatically

☒ Use the following IP address

IP address: 10 . 1 . 1 . 40

Subnet mask: 255 . 255 . 0 . 0

Default gateway: 10 . 1 . 255 . 254

☐ Obtain DNS server address automatically

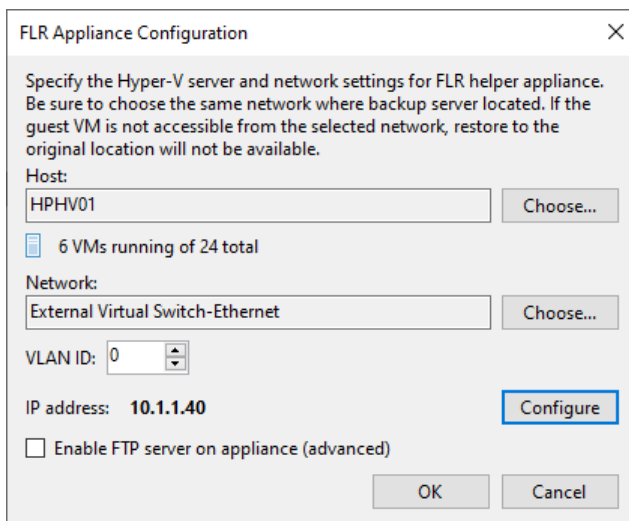
☒ Use the following DNS server address

Preferred DNS server: 10 . 1 . 1 . 1

Alternate DNS server: . . .

OK Cancel

21. Click OK on the FLR Appliance Configuration page.



FLR Appliance Configuration

Specify the Hyper-V server and network settings for FLR helper appliance. Be sure to choose the same network where backup server located. If the guest VM is not accessible from the selected network, restore to the original location will not be available.

Host:

6 VMs running of 24 total

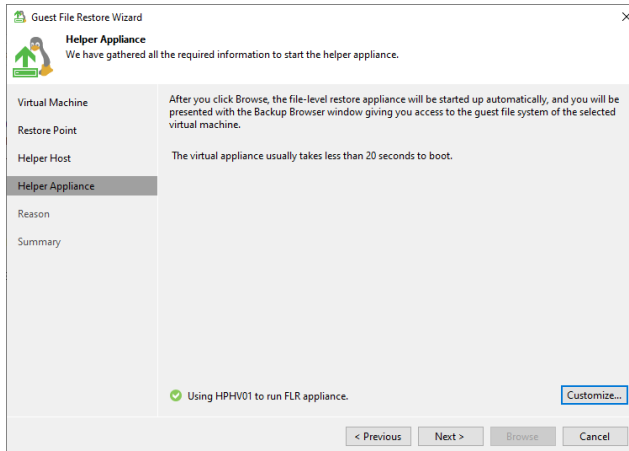
Network:

VLAN ID:

IP address: 10.1.1.40

☐ Enable FTP server on appliance (advanced)

22. Click Next on the Helper Appliance page.



Guest File Restore Wizard

Helper Appliance
We have gathered all the required information to start the helper appliance.

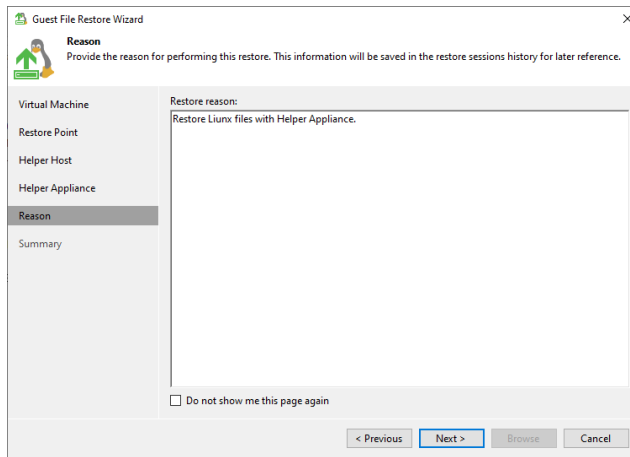
Virtual Machine
Restore Point
Helper Host
Helper Appliance
Reason
Summary

After you click Browse, the file-level restore appliance will be started up automatically, and you will be presented with the Backup Browser window giving you access to the guest file system of the selected virtual machine.

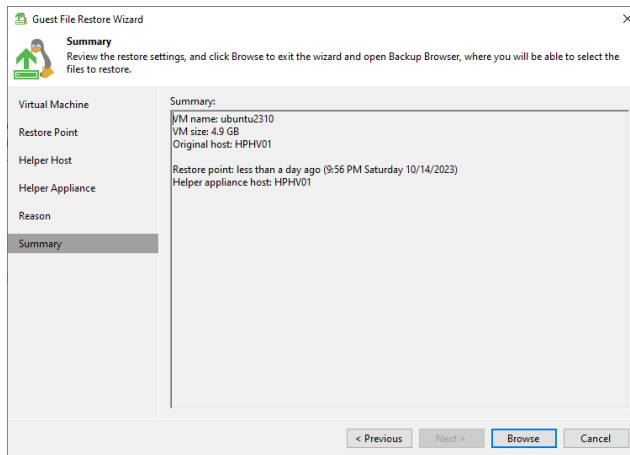
The virtual appliance usually takes less than 20 seconds to boot.

✔ Using HPHV01 to run FLR appliance.

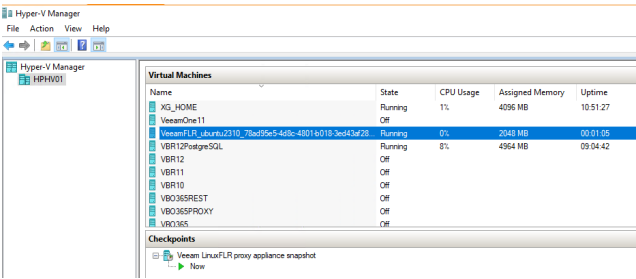
23. Enter the reason for restoring the selected VMs on the Reason page and click Next.



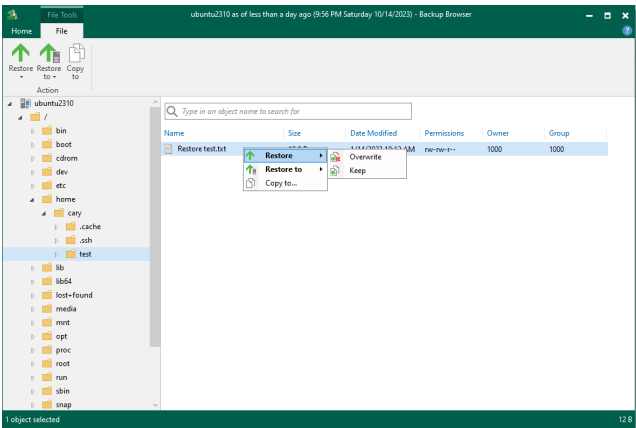
24. On the Summary page, click Browse.



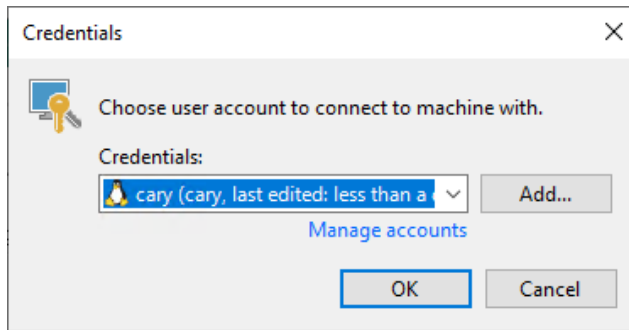
25. The Helper Appliance VM is running at the host.



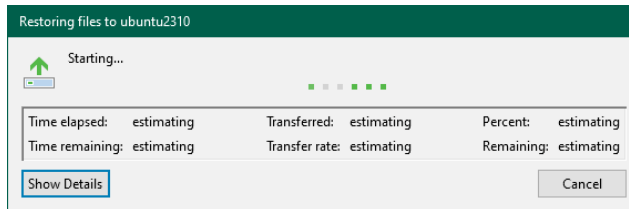
- 26. Expand the disk on the File Tools page, select the file, and right-click the file.
- 27. Select Restore and click Keep.



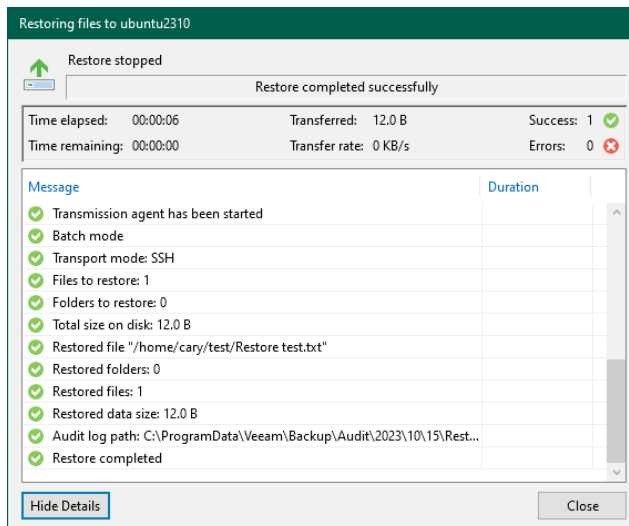
- 28. Select an account from the Credentials drop-down list on the Credentials page and click OK.



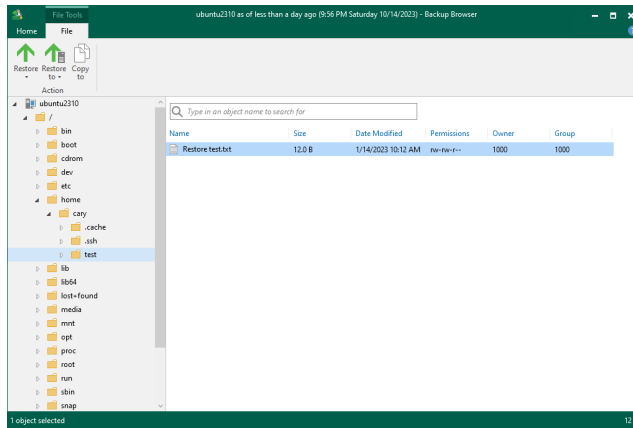
29. On the Restoring Files page, click Show Details.



30. On the Restoring files page, ensure the file restore is successful and click Close.



31. Close the Backup Browser.



32. Verify the restored file.

```
cary@ubuntu2310:~/test$ ls
'Restore test RESTORED_20231014_235306.txt'  'Restore test.txt'
cary@ubuntu2310:~/test$
```

Chapter 4: Join us at MVPDays and meet great MVP's like this in person

If you liked their book, you would love to hear them in person.

Live Presentations

Dave frequently speaks at Microsoft conferences around North America, such as TechEd, VeeamOn, TechDays, and MVPDays Community Roadshow.

Cristal runs the MVPDays Community Roadshow.

You can find additional information on the following blog:

www.checkyourlogs.net¹

www.mvpdays.com²

Video Training

For video-based training, see the following site:

www.mvpdays.com

Live Instructor-led Classes

Dave has been a Microsoft Certified Trainer (MCT) for over 15 years, and presents scheduled instructor-led classes in the US and Canada. For current dates and locations, see the following sites:

¹<http://www.checkyourlogs.net>

²<http://www.mvpdays.com>

- www.truesec.com
- www.checkyourlogs.net

Consulting Services

Dave and Cristal have worked with some of the largest companies in the world and have a wealth of experience and expertise. Customer engagements are typically between two weeks and six months.