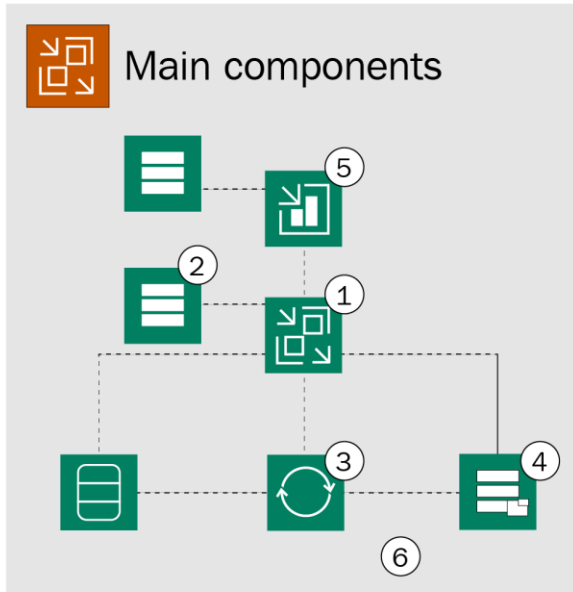


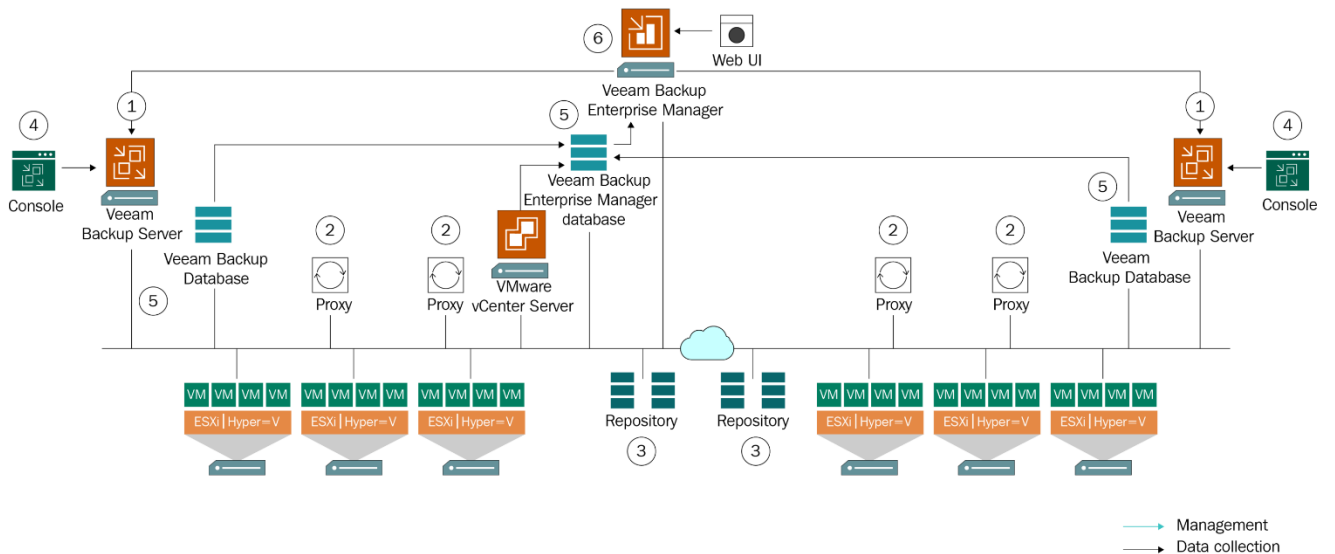
Chapter 1: Installation – Best Practices and Optimization



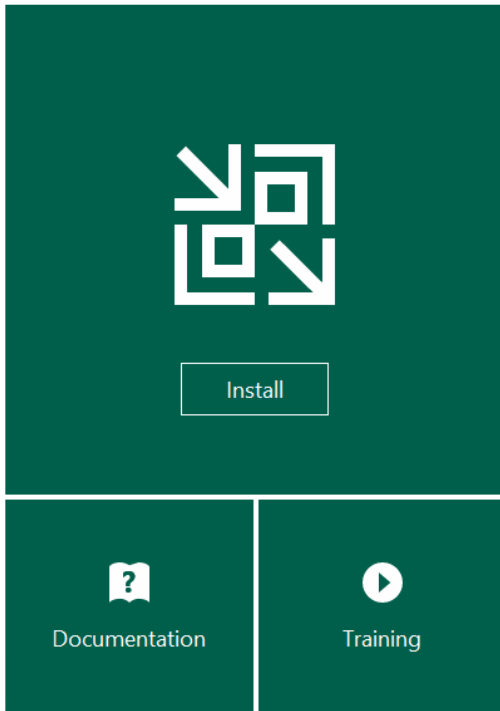
Veeam Backup and Replication

1. Veeam backup server
2. Database server(s)
3. Proxy server
4. Repository server
5. Veeam Backup Enterprise Manager
6. Combo server (proxy + repository)

Major Veeam components overview



Veeam Backup & Replication 10a



Standalone components:



Veeam Backup & Replication
[Install](#)



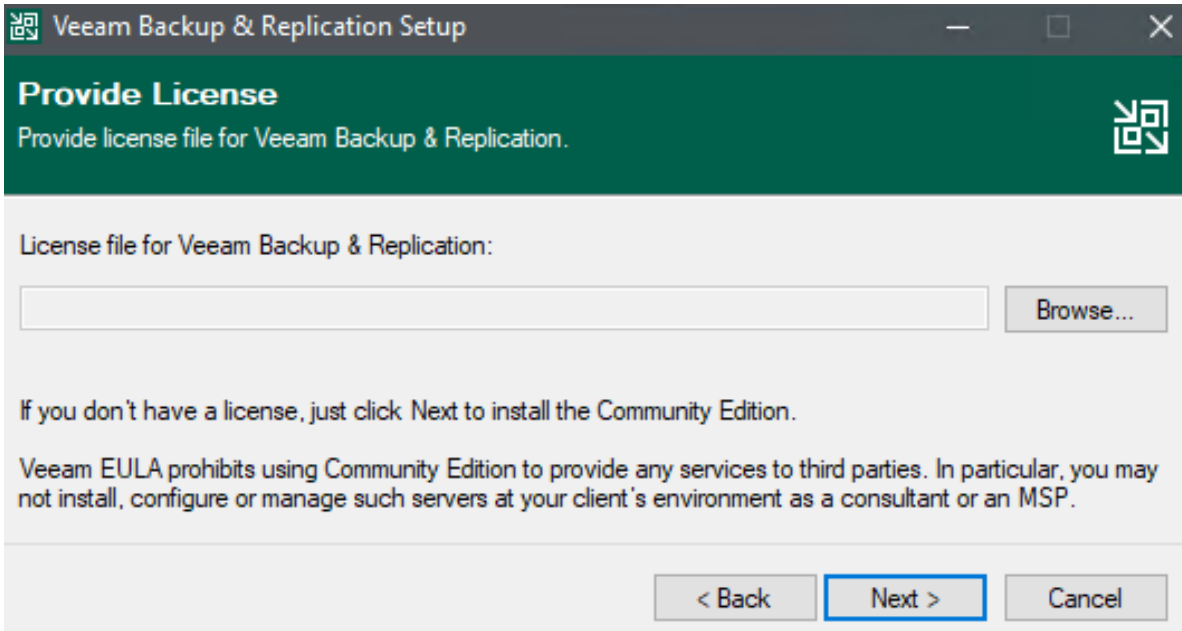
Veeam Backup Enterprise Manager
[Install](#)



Veeam Backup & Replication Console
[Install](#)



Enterprise Applications Plug-ins
[Open](#)



Veeam Backup & Replication Setup

System Configuration Check

Verification of your system for potential installation problems.

Requirement	Status
Microsoft System CLR Types for SQL Server 2014	❌ Failed
Microsoft SQL Server 2014 Management Objects	❌ Failed
Microsoft Report Viewer Redistributable 2015	❌ Failed
Microsoft PowerShell v2.0	✅ Passed
Microsoft Universal C Runtime	✅ Passed

⚠️ Your computer does not meet minimum requirements. Click the "Install" button to deploy missing features.

Install Re-check

< Back Next > Cancel


Veeam Backup & Replication Setup

Service Account

Specify the account for Veeam Backup & Replication service.

LOCAL SYSTEM account (recommended)

The following user account:

 Type in the user name in the DOMAIN\USERNAME format. The specified user account must have local administrator privileges on this server.

User name: HOME-VBK01\Veeambackup

Password:

< Back **Next >** Cancel

Veeam Backup & Replication Setup

SQL Server Instance

Choose SQL Server instance to create Veeam Backup & Replication databases on.

Install new instance of SQL Server (localhost\VEEAMSQL2016)

Use existing instance of SQL Server (HOSTNAME\INSTANCE)

HOME-VBK01\VEEAMSQL2016 Browse...

Veeam Backup & Replication database:

Connect to SQL Server using

Windows authentication credentials of service account

SQL Server authentication using the Login ID and password below:

Login ID:

Password:

< Back Next > Cancel


Veeam Backup & Replication Setup

Data Locations

Specify the guest file system catalog (persistent data), and the instant recovery write cache (non-persistent data) storage locations.

Instant recovery write cache


Write cache folder:

 E:\ProgramData\Veeam\Backup\IRCach Browse...

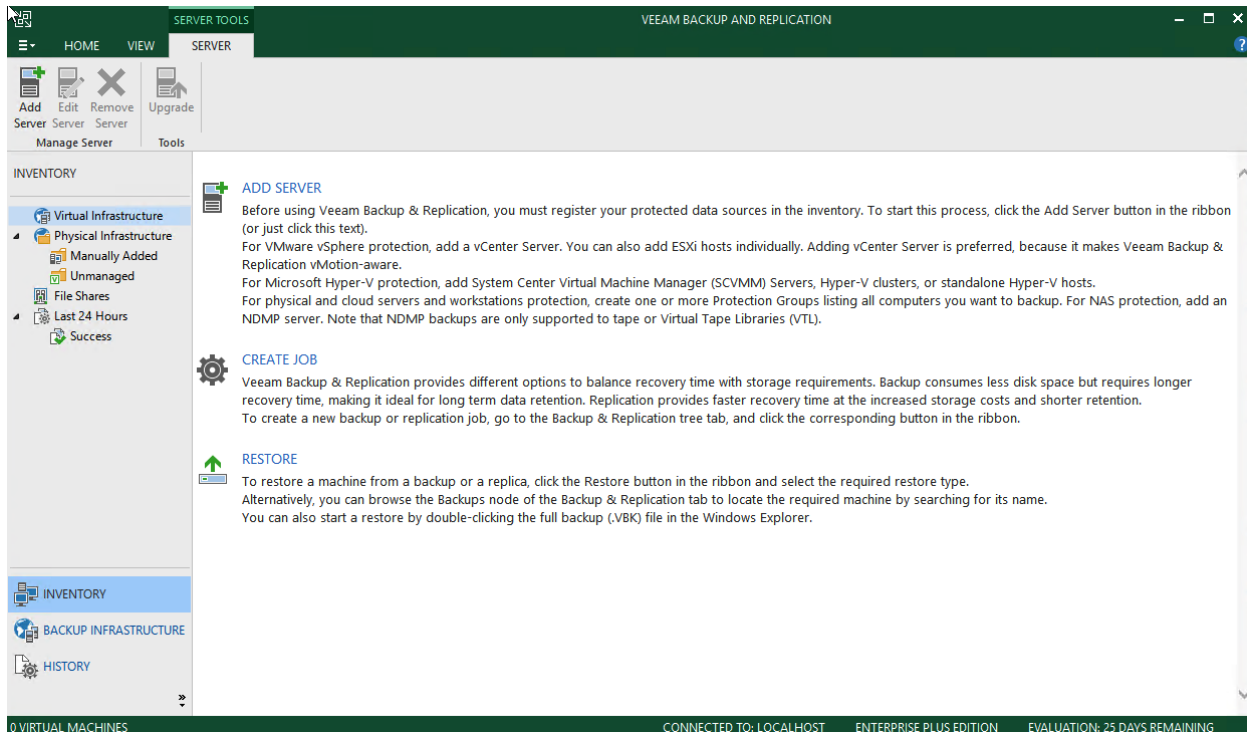
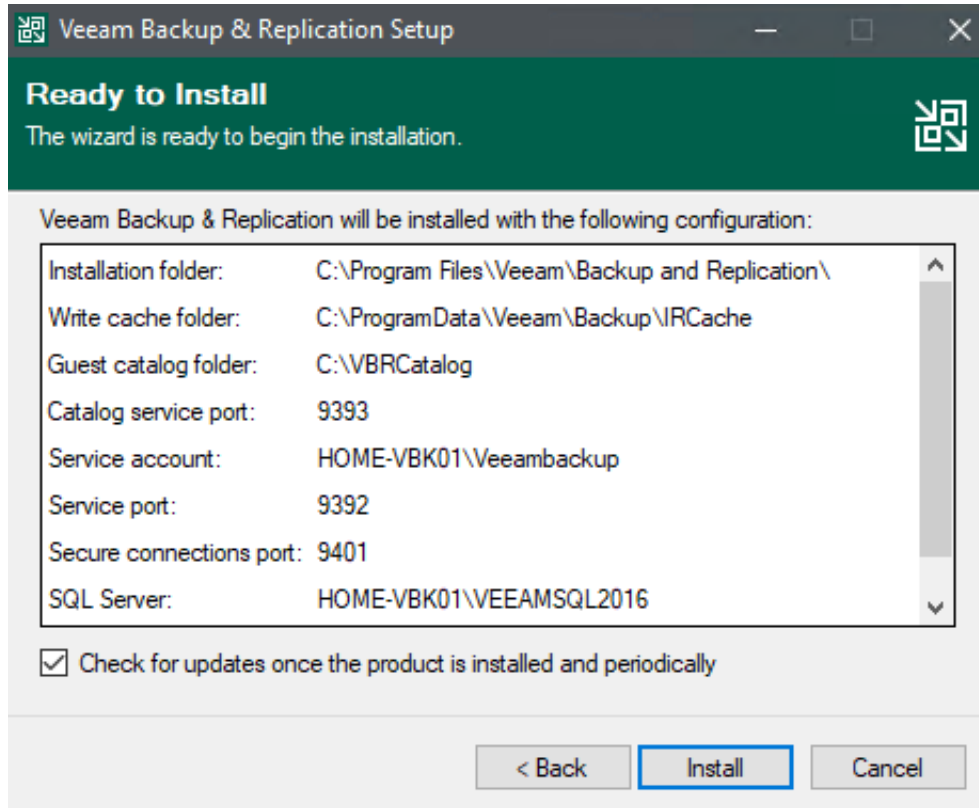
Ensure that the selected volume has sufficient free disk space to store changed disk blocks of instantly recovered VMs, otherwise VMs will stop due to being unable to perform a disk write. We recommend placing the write cache on an SSD drive.

Guest file system catalog

Catalog folder:

 E:\VBRCatalog Browse...

< Back Next > Cancel





VMware vSphere



Select the type of a VMware server you want to add to the inventory.



vSphere

Adds vCenter Server (recommended), or standalone vSphere Hypervisor (ESXi) to the inventory.



vCloud Director

Adds VMware vCloud Director server to the inventory.

Add Backup Repository



Select the type of backup repository you want to add.



Direct attached storage

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



Network attached storage

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



Deduplicating storage appliance

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



Object storage

On-prem object storage system or a cloud object storage provider. Object storage can only be used as a Capacity Tier of scale-out backup repositories, backing up directly to object storage is not currently supported.

Cancel



Server

Choose a server for VMware backup proxy. You can choose between any Microsoft Windows or Linux servers added to the Managed Servers which are not assigned a VMware backup proxy role already.

Server

Traffic Rules

Apply

Summary

Choose server:

home-vbk01 (Backup server)

Proxy description:

Created by Veeam Backup & Replication

Transport mode:

Automatic selection

Connected datastores:

Automatic detection (recommended)

Max concurrent tasks:

2

< Previous

Next >

Finish

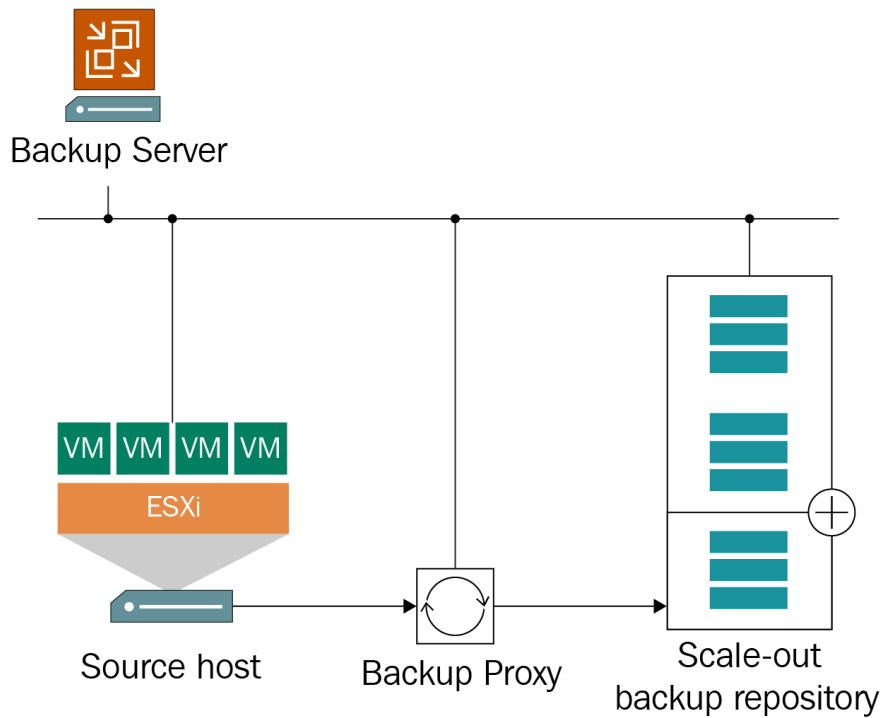
Cancel

New Backup Repository [X]

Repository
Type in path to the folder where backup files should be stored, and set repository load control options.

Name	Location
Server	Path to folder: F:\Backups Browse...
Repository	Capacity: 499.9 GB Free space: 496.8 GB Populate
Mount Server	
Review	Load control Running too many concurrent tasks against the repository may reduce overall performance, and cause I/O timeouts. Control storage device saturation with the following settings:
Apply	<input checked="" type="checkbox"/> Limit maximum concurrent tasks to: 4
Summary	<input type="checkbox"/> Limit read and write data rate to: 1 MB/s
	Click Advanced to customize repository settings Advanced...

< Previous Next > Finish Cancel



Edit Scale-out Backup Repository



Placement Policy

Choose a backup files placement policy for this performance tier. When more than one extent matches the placement policy, backup job will chose extent with the most free disk space available.

Name

Performance Tier

Placement Policy

Capacity Tier

Summary

Data locality

All dependent backup files are placed on the same extent. For example, incremental backup files will be stored together with the corresponding full backup file. However, the next full backup file can be created on another extent (except extents backed by a deduplicating storage).

Performance

Incremental backup files are placed on a different extent from the corresponding full backup file, providing for better backup file transformation performance with raw storage devices. Note that losing an extent with a full backup makes restoring from increments impossible.

Specify the placement policy for full and incremental backup files.

Customize...

< Previous

Next >

Finish

Cancel



Object Storage



Select the type of object storage you want to use as a backup repository.



S3 Compatible

Adds an on-premises object storage system or a cloud object storage provider.



Amazon S3

Adds S3 object storage or an AWS Snowball Edge appliance.



Microsoft Azure Blob Storage

Adds Microsoft Azure blob storage. Both Azure Blob Storage and Azure Data Box are supported.



IBM Cloud Object Storage

Adds IBM Cloud object storage. S3 compatible versions of both on-premises and IBM Cloud storage offerings are supported.

Cancel

New Scale-out Backup Repository ✕

Capacity Tier
 Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name Extend scale-out backup repository capacity with object storage:
 Add...

Performance Tier

Placement Policy Define time windows when uploading to object storage is allowed Window...

Capacity Tier Copy backups to object storage as soon as they are created
 Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

Move backups to object storage as they age out of the operational restore window
 Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.
 Move backup files older than days (your operational restore window) Override...

Encrypt data uploaded to object storage
 Password: Add...
Manage passwords

SCALE-OUT REPOSITORY TOOLS

HOME SCALE-OUT REPOSITORY

Manage Scale-out Repository | Manage Settings | Tools

BACKUP INFRASTRUCTURE

NAME ↑

- Backup Proxies
- Backup Repositories
- External Repositories
- Scale-out Repositories**
- WAN Accelerators
- Service Providers
- SureBackup
 - Application Groups
 - Virtual Labs
- Managed Servers
 - VMware vSphere
 - Microsoft Windows

New Scale-out Backup Repository

Performance Tier
Select backup repositories to use as the landing zone and for the short-term retention.

Performance Tier
 Placement Policy
 Capacity Tier
 Summary

Extents:

Name

Click Advanced to specify additional scale-out backup repository options.

New Scale-out Backup Repository

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name
 Performance Tier
 Placement Policy
 Capacity Tier
 Summary

Extend scale-out backup repository capacity with object storage:
 CLOUDIAN

Define time windows when uploading to object storage is allowed

Copy backups to object storage as soon as they are created
 Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

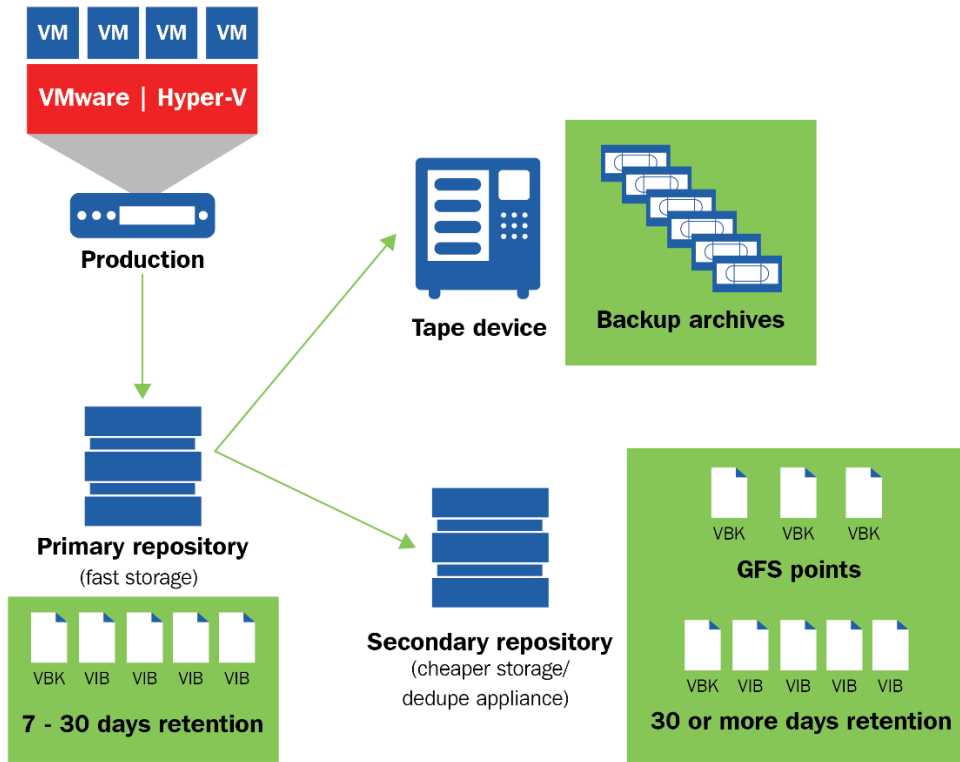
Move backups to object storage as they age out of the operational restore window
 Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.
 Move backup files older than 14 days (your operational restore window)

Encrypt data uploaded to object storage
 Password:
 Manage passwords

BACKUP INFRASTRUCTURE

NAME ↑	TYPE	HOST	PATH	CAPACITY	FREE	USED SPACE
Backup Repository 1	Windows	home-vbk01.home.lab	F:\Backups	499.9 GB	496.8 GB	0 B
CLOUDIAN	S3-compatible		amazonS3://s3-...	N/A	N/A	0 B

Chapter 2: The 3-2-1 Rule – Keeping Data Safe



	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Week 1	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 2	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 3	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 4	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Light Green
Week 5	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 6	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 7	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green
Week 8	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Dark Green	Light Green

Regular Backup Cycle
 Weekly Backup Cycle
 Monthly Backup Cycle

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:
Automatic selection Choose...

Backup repository:
Scale-out Backup Repository 1 (Created by HOME-VBK01\Administrator at 2020-05) ▼
496 GB free of 499 GB Map backup

Retention policy: 7 restore points ▼ i
 Keep certain full backups longer for archival purposes Configure...
GFS retention policy is not configured

Configure secondary backup 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

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:
Automatic selection Choose...

Backup repository:
Scale-out Backup Repository 1 (Created by HOME-VBK01\Administrator at 2020-05) ▼
496 GB free of 499 GB Map backup

Retention policy: 7 restore points ▼ i
 Keep certain full backups longer for archival purposes Configure...
GFS retention policy is not configured

Configure secondary backup 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


Configure GFS ✕

Keep weekly full backups for: weeks
 If multiple full backups exist, use the one from:

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

Keep yearly full backups for: years
 Use monthly full backup for the following month:

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	Backup repository:
Objects	Cloud repository 1 (Cloud repository) ▼
Target	4.86 TB free of 5.00 TB Map backup
Data Transfer	Restore points to keep: <input type="text" value="8"/>
Schedule	<input checked="" type="checkbox"/> Keep the following restore points as full backups for archival purposes
Summary	Weekly backup: <input type="text" value="4"/> Saturday Schedule...
	Monthly backup: <input type="text" value="0"/> First Sunday of the month
	Quarterly backup: <input type="text" value="0"/> First Sunday of the quarter
	Yearly backup: <input type="text" value="0"/> First Sunday of the year
	Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. ⚙️ Advanced

Edit Scale-out Backup Repository

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name

Performance Tier

Placement Policy

Capacity Tier

Summary

Extend scale-out backup repository capacity with object storage:

CLOUDIAN ▼ Add...

Define time windows when uploading to object storage is allowed Window...

Copy backups to object storage as soon as they are created
Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

Move backups to object storage as they age out of the operational restore window
Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.
Move backup files older than days (your operational restore window) Override...

Encrypt data uploaded to object storage
Password: Chris default password (Last edited: 6 days ago) ▼ Add...
[Manage passwords](#)

< Previous Apply Finish Cancel

Edit Backup Job [Backup Job 1]

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: Automatic selection Choose...

Backup repository: Block Storage - Local SAN ▼
95.8 GB free of 99.9 GB Map backup

Retention policy: restore points ▼ i

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

Configure secondary backup 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



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	Backup repository:
Objects	Backup Copy - Block Storage Tier 3 Map backup
Target	95.8 GB free of 99.9 GB
Data Transfer	Restore points to keep: 3
Schedule	<input type="checkbox"/> Keep the following restore points as full backups for archival purposes Weekly backup: 4 Sunday Schedule... Monthly backup: 0 First Sunday of the month Quarterly backup: 0 First Sunday of the quarter Yearly backup: 0 First Sunday of the year
Summary	Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options. Advanced
< Previous Next > Finish Cancel	

New Backup to Tape Job ✕

Media Pool

Specify the media pool to perform backup to.

Name	Media pool:
Backups	Atlanta Web Servers Backups (Multiple libraries) Add New...
Media Pool	Schedule...
Incremental Backup	Tapes: 16
Options	Free space: 88.0 GB
Schedule	Media set: Do not create, always continue using current media set
Summary	Retention: Protect data for 24 Months
	Parallel processing: 2 drives, multiple backup chains
	Encryption: Disabled
	Export to vault: do not export
	WORM: False

< Previous Next > Finish Cancel

Advanced Settings

Backup Maintenance Storage Notifications vSphere Integration Scripts

Primary storage integration

- Enable backup from storage snapshots
Use storage snapshots (instead of VM snapshots) as the data source for this job. Using storage snapshots reduces impact on the production environment from VM snapshot commit.
- Limit processed VM count per storage snapshot to
By default, the job will process all included VMs located on the same datastore from a single storage snapshot.
- Failover to standard backup
Perform standard backup from VM snapshot if backup from storage snapshot fails.

Save As Default OK Cancel

New Replication Job


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

Name	Host or cluster: <input type="text" value="esx01.tech.local"/> <input type="button" value="Choose..."/>
Virtual Machines	
Destination	Resource pool: <input type="text" value="Replicas"/> <input type="button" value="Choose..."/> Pick resource pool for selected replicas
Network	
Re-IP	
Job Settings	VM folder: <input type="text" value="vm"/> <input type="button" value="Choose..."/> Pick VM folder for selected replicas
Data Transfer	
Seeding	Datastore: <input type="text" value="esx01-das3 [752.3 GB free]"/> <input type="button" value="Choose..."/> Pick datastore for selected virtual disks
Guest Processing	
Schedule	
Summary	

< Previous Next > Finish Cancel

Edit Scale-out Backup Repository ✕

Performance Tier
Select backup repositories to use as the landing zone and for the short-term retention.




Name	Extents:																				
Performance Tier	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">Name</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>Backup Repository 1</td> <td style="text-align: center;">Add...</td> </tr> <tr> <td> </td> <td style="text-align: center;">Remove</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Name		Backup Repository 1	Add...		Remove														
Name																					
Backup Repository 1	Add...																				
	Remove																				
Placement Policy	Click Advanced to specify additional scale-out backup repository options. Advanced																				
Capacity Tier																					
Summary																					

< Previous Next > Finish Cancel

Edit Scale-out Backup Repository ✕

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.



Name	<input checked="" type="checkbox"/> Extend scale-out backup repository capacity with object storage:
Performance Tier	<div style="border: 1px solid #ccc; padding: 2px; display: flex; align-items: center;"> CLOUDIAN ▼ Add... </div>
Placement Policy	Define time windows when uploading to object storage is allowed Window...
Capacity Tier	<input checked="" type="checkbox"/> Copy backups to object storage as soon as they are created Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.
Summary	<input checked="" type="checkbox"/> Move backups to object storage as they age out of the operational restore window Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups. Move backup files older than <input style="width: 30px; text-align: center;" type="text" value="7"/> days (your operational restore window) Override...
	<input checked="" type="checkbox"/> Encrypt data uploaded to object storage Password: <div style="border: 1px solid #ccc; padding: 2px; display: flex; align-items: center;"> Chris default password (Last edited: 12 days ago) ▼ Add... </div> <p style="text-align: right;">Manage passwords</p>

< Previous Apply Finish Cancel

Service Provider

Type in DNS name or IP address and a port number received from the service provider. If you are using more than one service provider, add a custom description to more easily distinguish between them.

Service Provider	DNS name or IP address:	Port:
Credentials	backups.serviceprovider.com	6180
Apply	Description:	
Summary	Created by HOME-VBK01\Administrator at 2020-09-15 8:14 PM,	

Allow this Veeam Backup & Replication installation to be managed by the service provider
Select this check box if you have managed backup contract with the service provider you are adding, and want to allow it to manage your installation remotely.

< Previous **Next >** Finish Cancel

Edit Backup Job [Backup Job 1]

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:	Automatic selection	Choose...
Virtual Machines	Backup repository:	Cloud repository 1 (Cloud repository)	
Storage		4.78 TB free of 5.00 TB	Map backup
Secondary Target	Retention policy:	8 restore points	i
Guest Processing	<input checked="" type="checkbox"/> Keep certain full backups longer for archival purposes	2 weekly	Configure...
Schedule	<input checked="" type="checkbox"/> Configure secondary backup 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.	
Summary	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

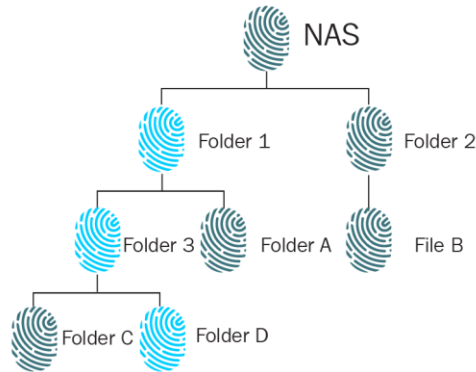
Chapter 3: NAS Backup

v10 NAS Backup

Flexible

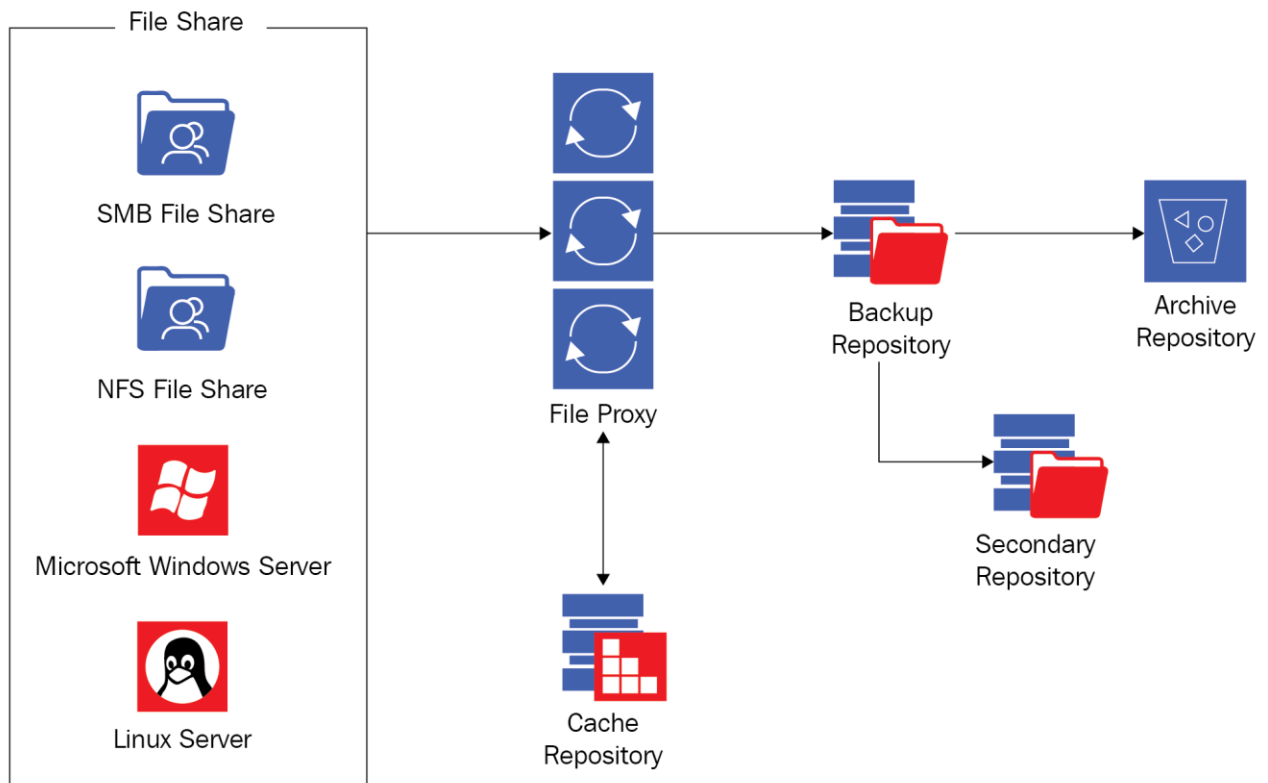
- SMB v1, 2, 3
- NFS v3, 4, 1
- Windows File Server
- Linux File Server

Changed File Tracking

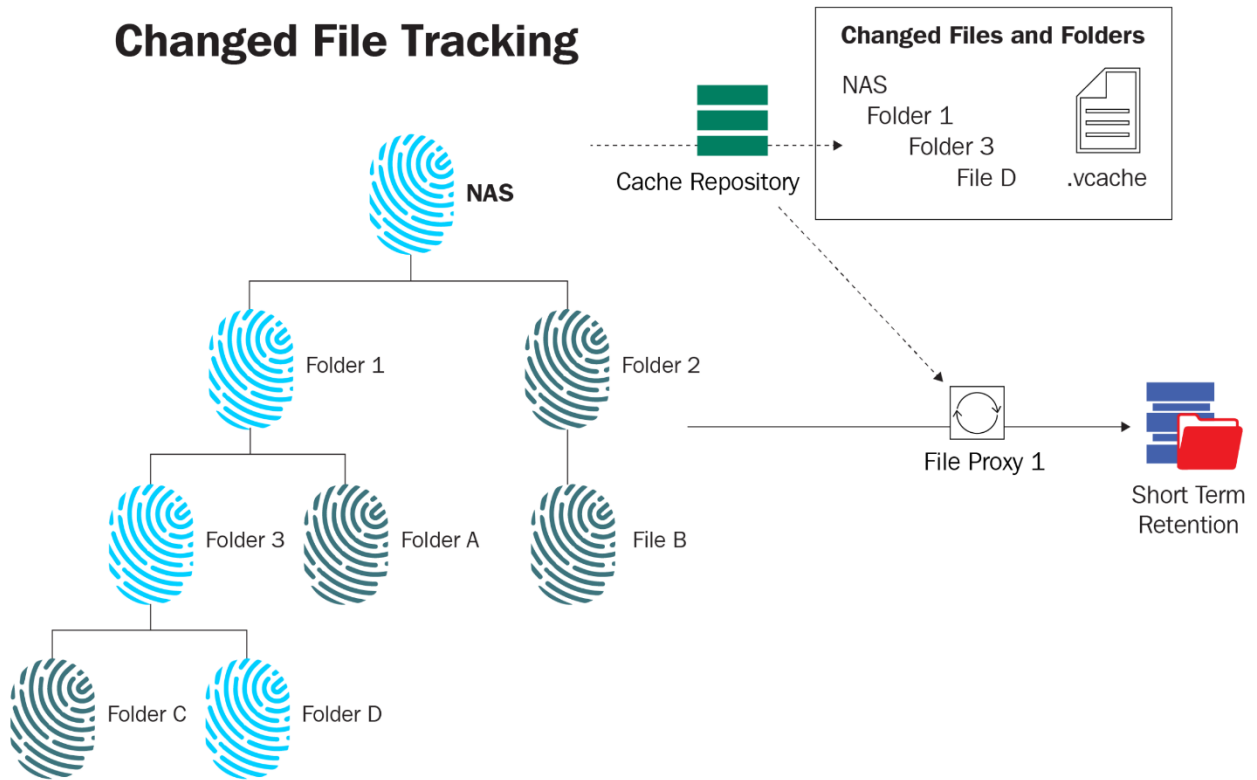


Snapshot-friendly

- No File Locks
- Point in Time
- Offload Performance



Changed File Tracking



VEEAM BACKUP AND REPLICATION

FILE SHARE TOOLS

HOME VIEW FILE SHARE

Add File Share Edit File Share Delete File Share Upgrade

Manage File Share Tools

INVENTORY

Virtual Infrastructure VMware vSphere vCenter Servers home-vcsa01.home Physical Infrastructure Manually Added Unmanaged File Shares Last 24 Hours Warning Failed

HOME INVENTORY

ADD FILE SHARE

Add a file share or a server containing files you want to protect to the inventory. You can protect files residing in SMB (CIFS) or NFS file shares, and on Microsoft Windows or Linux servers.

CREATE BACKUP JOB

Create file backup job and include one or more data sources added on the previous step to automate their protection. File backup jobs can be used for both data protection and disaster recovery, as well as for long-term archival of permanently deleted or older file versions.

RESTORE

Perform the entire file share restore (in case of a complete storage loss), rollback the file share state to a point-in-time (in case of a ransomware attack), restore individual accidentally deleted files or older file versions.

Add File Share



Select the type of a file share you want to add to inventory.



File server

Adds a managed Windows or Linux server. This is the recommended way to access files and file shares hosted on regular servers, as opposed to NAS devices.



NFS share

Adds an NFS file share hosted on a NAS device. Supported NFS protocol versions are 3.0 and 4.1.



SMB share

Adds an SMB (CIFS) file share hosted on a NAS device. Backup from Microsoft VSS snapshots requires SMB protocol version 3.0 or later.

Cancel

New File Share



File Server

Add Managed Server as a file server.

File Server

Managed Server:

home-vbk01.home.lab (Backup server)



Add New...

Processing

Review

Apply

Summary


< Previous

Next >

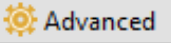
Finish

Cancel

New File Share ✕


 **NFS File Share**
Specify file share path and credentials.

NFS File Share	NFS path: <input type="text"/> <i>Use server./folder format</i>
Processing	
Apply	
Summary	


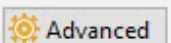
To specify storage snapshot integration options, click Advanced. 

< Previous Next > Finish Cancel

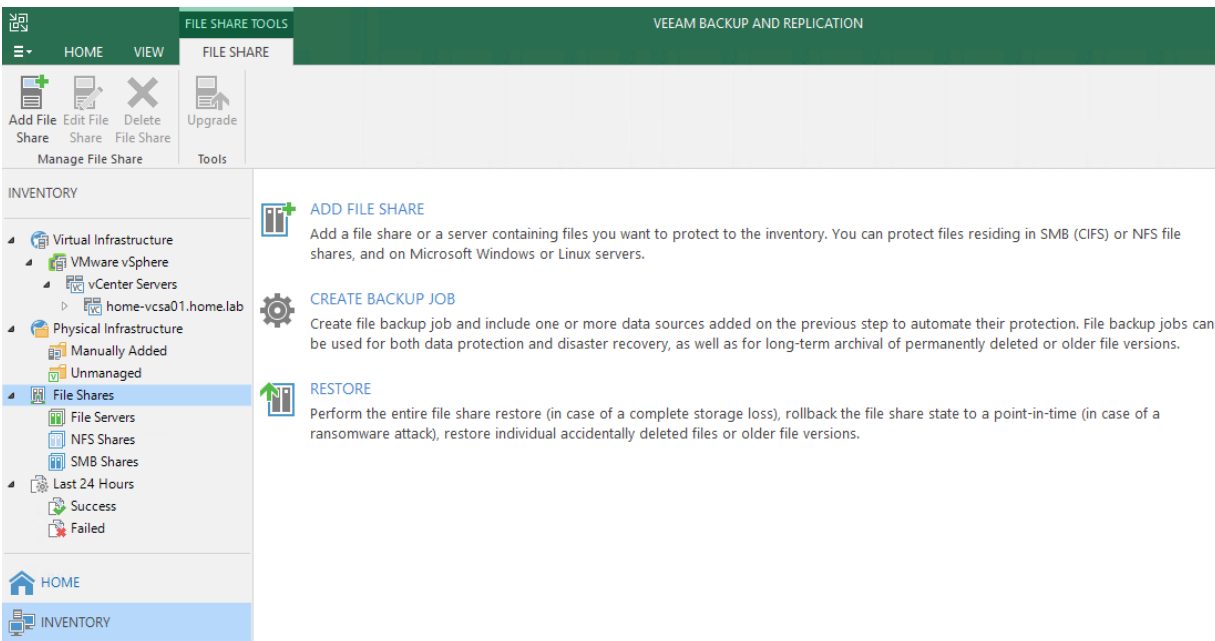
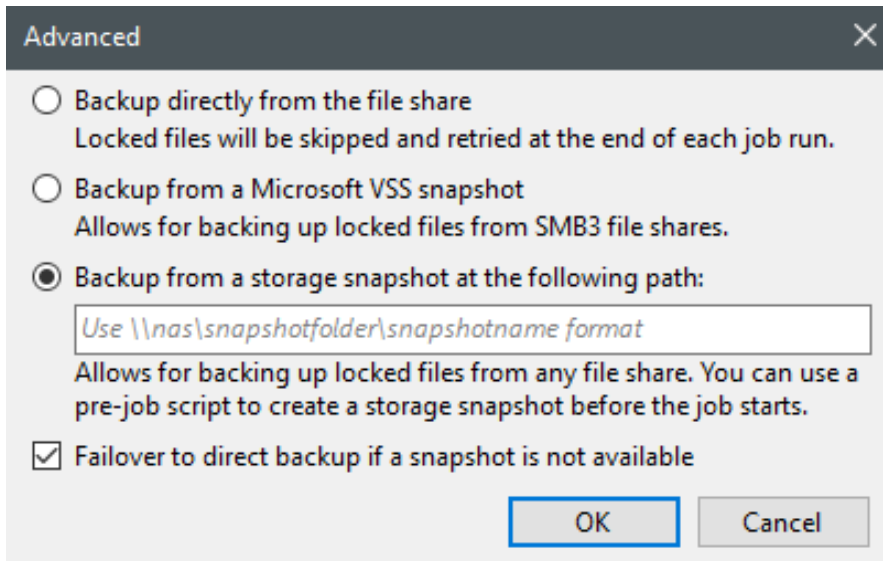
New File Share ✕

 **SMB File Share**
Specify file share path and credentials.

SMB File Share	Shared folder: <input type="text"/> Browse... <i>Use \\server\folder format</i>
Processing	
Apply	<input type="checkbox"/> This share requires access credentials: <input type="text"/> Add...
Summary	Manage accounts

To specify storage snapshot integration options, click Advanced.  

< Previous Next > Finish Cancel



VEEAM BACKUP AND REPLICATION

FILE SHARE TOOLS

HOME VIEW FILE SHARE

Add File Share Edit File Share Delete File Share Upgrade Tools

MANAGE FILE SHARE

INVENTORY

- Virtual Infrastructure
 - VMware vSphere
 - vCenter Servers
 - home-vcsa01.home.lab
 - Physical Infrastructure
 - Manually Added
 - Unmanaged
 - File Shares**
 - File Servers
 - NFS Shares
 - SMB Shares
 - Last 24 Hours
 - Success
 - Failed

HOME

INVENTORY

ADD FILE SHARE
Add a file share or a server containing files you want to protect to the inventory. You can protect files residing in SMB (CIFS) or NFS file shares, and on Microsoft Windows or Linux servers.

CREATE BACKUP JOB
Create file backup job and include one or more data sources added on the previous step to automate their protection. File backup jobs can be used for both data protection and disaster recovery, as well as for long-term archival of permanently deleted or older file versions.

RESTORE
Perform the entire file share restore (in case of a complete storage loss), rollback the file share state to a point-in-time (in case of a ransomware attack), restore individual accidentally deleted files or older file versions.

New File Backup Job

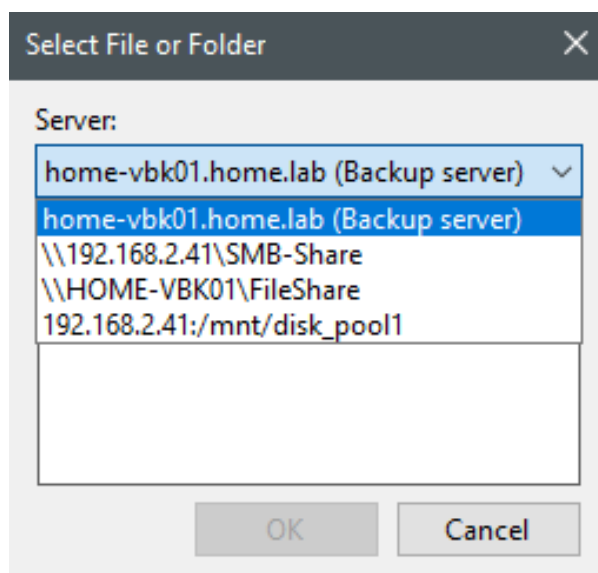
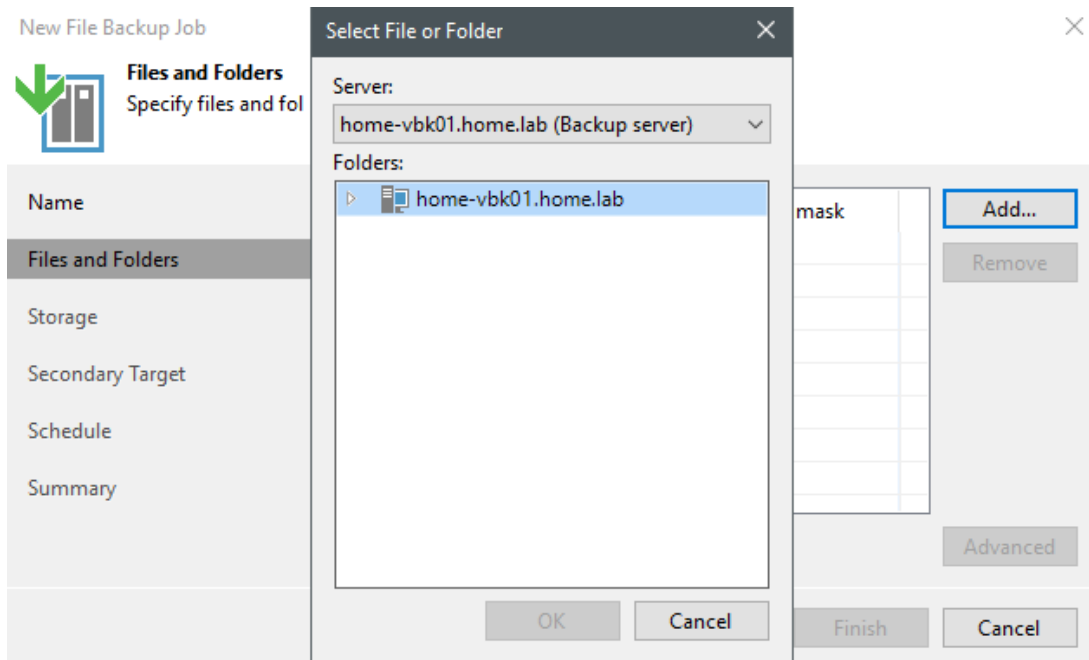


Name

Type in name and description for this job.

Name	<p>Name:</p> <input type="text" value="File Backup Job 1"/>
Files and Folders	<p>Description:</p> <input type="text" value="Created by HOME-VBK01\Administrator at 2020-09-30 7:19 PM."/>
Storage	
Secondary Target	
Schedule	
Summary	

< Previous **Next >** Finish Cancel





Storage

Specify target backup repository and file retention policy for this job.

Name	Backup repository: Scale-out Backup Repository 1 (Created by HOME-VBK01\Administrator at 2020-09-09 8:00 PM.)
Files and Folders	472 GB free of 499 GB Map backup
Storage	Keep all file versions for the last: 28 days Retains recent versions of each file for the specified time period, allowing for restore of entire file shares to a point-in-time state, restore of deleted files, and restore of earlier file versions.
Secondary Target	<input checked="" type="checkbox"/> Keep previous file versions for: 3 years Archives older versions of active and permanently deleted files after they are no longer covered by the recent versions retention policy. For scalability reasons, we recommend using object storage.
Schedule	Archive repository: CLOUDIAN (Created by HOME-VBK01\Administrator at 2020-09-09 7:41 PM.)
Summary	Files to archive: All Choose...
Advanced job settings include notification settings, automated post-job activity and other settings. Advanced	

File Archive Settings

Limit number of file versions to keep:

Active file versions: 10

Deleted file versions: 3

Files to archive:

All files

All files except the following extensions:

[Add...](#)

[Remove](#)

Files with the following extensions only:

[Add...](#)

[Remove](#)

[OK](#) [Cancel](#)

Advanced Settings

ACL Handling **Storage** Maintenance Notifications Scripts

Permissions and attributes backup:

Folder-level only (recommended)
Only folder permissions and attributes will be backed up. Restored files will be set to inherit permissions from the target folder.

Files and folders (slower)
Permissions and attributes will be backed up from both folders and files. Using this option significantly reduces incremental backup performance.

[Save As Default](#) [OK](#) [Cancel](#)



Secondary Target

We can create additional copies of the short-term file store for redundancy, using the same or different retention policy. The data copy process will start automatically after each primary job run.

Name

Files and Folders

Storage

Secondary Target

Schedule

Summary

Secondary repositories:

Name	Capacity	Retention	

Add...

Edit...

Remove

Data duplication to each secondary repository is performed automatically. You can customize retention, encryption and copy window settings by selecting the repository and clicking Edit.

< Previous

Next >

Finish

Cancel

Secondary Copy Settings



Retention and encryption settings will be inherited from the primary job, unless you override them using the following controls.

Use custom retention policy

Keep all versions of each file for:

Use custom data encryption settings

Password:

Add...

Manage passwords

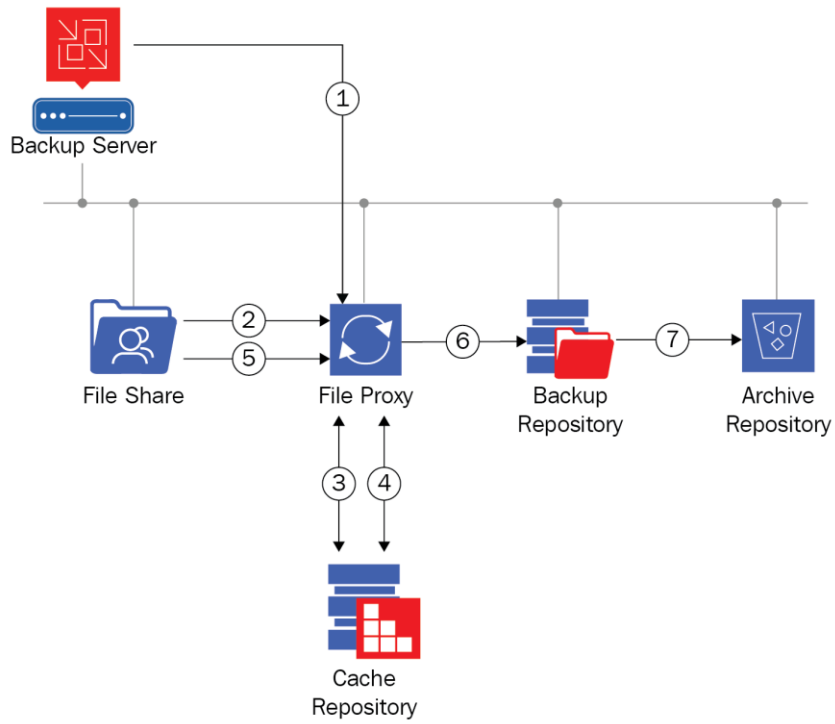
Data can be copied to this repository:

Any time (continuously)

During the following time periods only

OK

Cancel



Edit File Share [Close]

Processing
Define the list of file proxies to be used for this file share processing and cache repository to store the metadata for faster backup performance.

SMB File Share	File proxy: <input type="text" value="All proxies"/> <input data-bbox="1256 1352 1378 1383" type="button" value="Choose..."/>
Processing	Cache repository: Default Backup Repository (Created by Veeam Backup) [v]
Apply	Caching helps to improve incremental backup performance and reduce NAS load. Select a repository located in close proximity to the file share. If lost, cache will be rebuilt automatically.
Summary	Backup I/O control: <input type="range" value="50"/> Lower impact Faster backup Controls how aggressively backup jobs can fetch contents of the share. Lower impact is achieved by pacing read requests of a single thread, while faster performance is gained by using multiple threads.

VEEAM BACKUP AND REPLICATION

PROXY TOOLS

HOME BACKUP PROXY

Add Proxy Edit Proxy Disable Proxy Remove Proxy Upgrade Proxy

VMware vSphere...
Microsoft Hyper-V...
File share...

Backup Proxies
Backup Repositories
External Repositories
Scale-out Repositories
Scale-out Backup Repository 1
WAN Accelerators
Service Providers
SureBackup
Application Groups
Virtual Labs
Managed Servers
VMware vSphere
VMware vCloud
Microsoft Windows

HOME
INVENTORY
BACKUP INFRASTRUCTURE

Type in an object name to search for

NAME	TYPE	HOST	DESCRIPTION
VMware Backup Proxy	VMware vSphere	home-vbk01.ho...	Created by Veeam Backup & Replication
File Backup Proxy	File share	home-vbk01.ho...	Created by Veeam Backup & Replication

New File Proxy

Server

Choose a server for file proxy. You can choose between any Microsoft Windows servers added to the Managed Servers which are not assigned a file proxy role already.

Server

Traffic Rules

Review

Apply

Summary

Choose server:
home-vbk01.home.lab (Backup server) Add New...

Proxy description:
Created by HOME-VBK01\Administrator at 2020-10-01 7:49 PM.

Max concurrent tasks:
4

< Previous Next > Finish Cancel

Restore from File Backup ✕

Select the type of restore you want to perform.



Restore entire share

Restores the latest version of all files to the selected location. Use this option in case of a complete loss of storage service, or major storage-level corruption impacting unknown number of files.



Rollback to a point in time

Reverts all files modified since the specific date and time to the previous version, and restores all files that were deleted. Use this option to recover from ransomware, virus or insider attack.




Restore individual files and folders

Restores the required file version, or point-in-time state of a folder to the specified location. Use this option to find and restore missing files or folders, or fetch previous file versions.

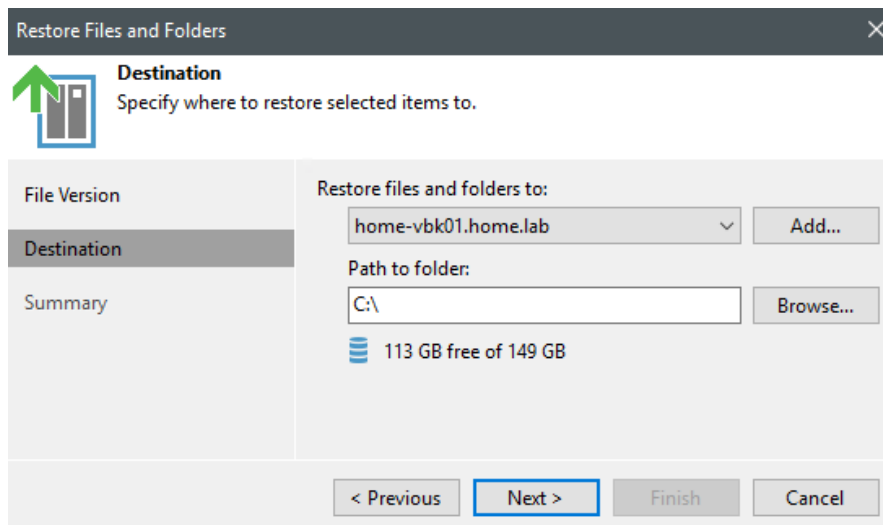
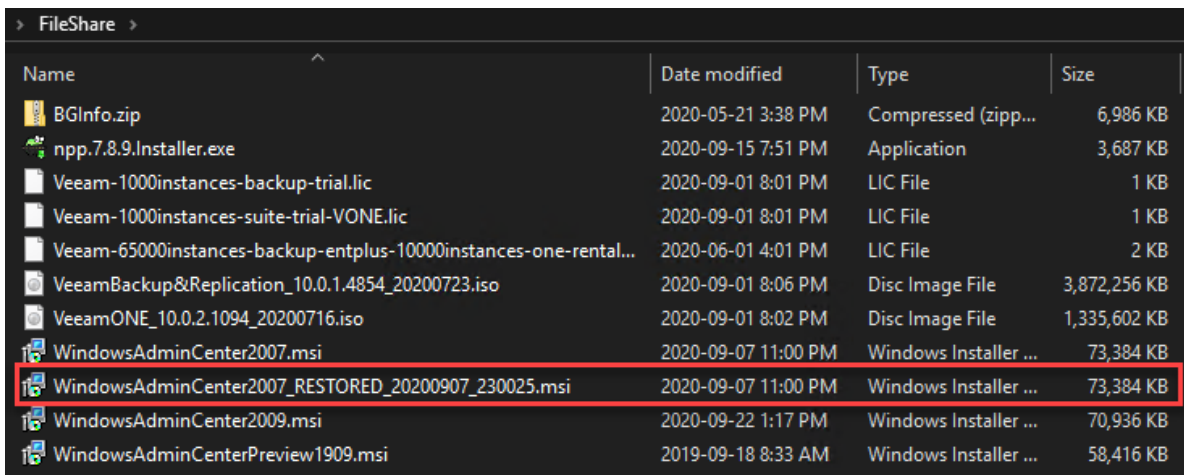
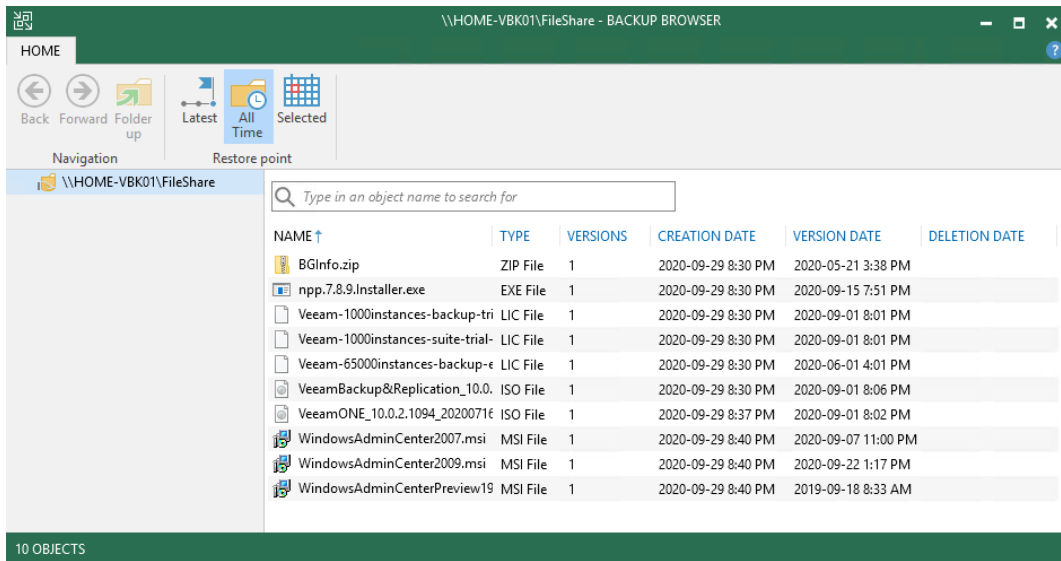
Cancel

File restore ✕

 **Backup**
Select a backup to restore files from.

Backup	Object to restore:						
Restore Point	<table border="1"><thead><tr><th>Job name</th><th>Last restore point</th></tr></thead><tbody><tr><td>File Backup Job 1</td><td>5 days ago</td></tr><tr><td>\\HOME-VBK01\FileShare</td><td>2020-09-30 7:47:21 PM</td></tr></tbody></table>	Job name	Last restore point	File Backup Job 1	5 days ago	\\HOME-VBK01\FileShare	2020-09-30 7:47:21 PM
Job name	Last restore point						
File Backup Job 1	5 days ago						
\\HOME-VBK01\FileShare	2020-09-30 7:47:21 PM						
Summary	<input type="text" value="Type in an object name to search for"/>						

< Previous **Next >** Finish Cancel



Chapter 4: Scale-Out Repository and Object Storage – New Copy Policy

NAME ↑	TYPE	HOST	PATH	CAPACITY	FREE	USED SPACE
Backup Repository 1	Windows	home-vbk01.home.lab	F:\Backups	499.9 GB	463.4 GB	28.1 GB

NAME ↑	TYPE	HOST	PATH	CAPACITY	FREE	USED SPACE
CLOUDIAN	S3-compatible		amazonS3://s3-nubav.thinko...	N/A	N/A	0 B

BACKUP INFRASTRUCTURE

Backup Proxies

Backup Repositories

External Repositories

Scale-out Repositories

Scale-out Backup Repository 1

Type in an object name to search for

NAME ↑	TYPE	HOST	PATH	CAPACITY	FREE	USED SPACE
Backup Repository 1	Windows	home-vbk01.home.lab	F:\Backups	499.9 GB	463.4 GB	28.1 GB
CLOUDIAN	S3-compatible		amazonS3://s3-nubav.thinko...	N/A	N/A	0 B

Backup Repository 1 is the Capacity Extent and CLOUDIAN is the Object Storage for Capacity Tier

Add Backup Repository



Select the type of backup repository you want to add.



Direct attached storage

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



Network attached storage

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



Deduplicating storage appliance

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



Object storage

On-prem object storage system or a cloud object storage provider. Object storage based repositories can only be used for Capacity Tier of scale-out backup repositories, backing up directly to object storage is not currently supported.

Cancel



Direct Attached Storage



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



Microsoft Windows

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




Linux

Adds local server storage, or locally mounted NFS share. The Linux server must use bash shell, and have SSH and Perl installed.

Cancel


New Backup Repository ✕

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

Name	Name: Backup Repository 2
Server	Description: Clients X, Y, Z
Repository	
Mount Server	
Review	
Apply	
Summary	

< Previous **Next >** Finish Cancel

New Windows Server ✕

 **Name**
Specify DNS name or IP address of Microsoft Windows server.

Name	DNS name or IP address: <input type="text"/>
Credentials	Description: Created by GUBOV-DEV-VBK01\Administrator at 2020-10-16 8:54 PM.
Review	
Apply	
Summary	

< Previous **Next >** Finish Cancel

New Linux Server [Close]

Name
Specify DNS name or IP address of Linux server. The server must have SSH and Perl installed.

Name | DNS name or IP address:

SSH Connection

Summary | Description:
 Created by GUBOV-DEV-VBK01\Administrator at 2020-10-16 8:56 PM.

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

New Backup Repository [Close]

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


Name | Repository server:
 home-vbk01.home.lab (Backup server) [Add New...]

Server | **Populate**

Path	Capacity	Free
C:\	149.5 GB	111.4 GB
E:\	499.9 GB	463 GB
F:\	499.9 GB	469.4 GB

< Previous | Next > | Finish | Cancel

New Backup Repository ✕

 **Repository**
Type in path to the folder where backup files should be stored, and set repository load control options.

Name	Location
Server	Path to folder: F:\Backups Browse...
Repository	Capacity: Free space: Populate
Mount Server	Load control
Review	Running too many concurrent tasks against the repository may reduce overall performance, and cause I/O timeouts. Control storage device saturation with the following settings:
Apply	<input checked="" type="checkbox"/> Limit maximum concurrent tasks to: 4
Summary	<input type="checkbox"/> Limit read and write data rate to: 1 MB/s

Click Advanced to customize repository settings Advanced...

< Previous
Next >
Finish
Cancel

Storage Compatibility Settings ✕

Align backup file data blocks
Allows to achieve better deduplication ratio on deduplicating storage devices leveraging constant block size deduplication. Increases the backup size when backing up to raw disk storage.


Decompress backup data blocks before storing
VM data is compressed by backup proxy according to the backup job compression settings to minimize LAN traffic. Uncompressing the data before storing allows for achieving better deduplication ratio on most deduplicating storage appliances at the cost of backup performance.

This repository is backed by rotated hard drives
Backup jobs pointing to this repository will tolerate the disappearance of previous backup files by creating new full backup, clean up backup files no longer under retention on the newly inserted hard drives, and track backup repository location across unintended drive letter changes.

Use per-VM backup files
Per-VM backup files may improve performance with storage devices benefiting from multiple I/O streams. This is the recommended setting when backing up to deduplicating storage appliances.

OK
Cancel


New Backup Repository ✕

 **Mount Server**
Specify a server to mount backups to when performing advanced restores (file, application item and instant VM recoveries). Instant recoveries require a write cache folder to store changed disk blocks in.

Name	Mount server:
Server	home-vbk01.home.lab (Backup server) Add New...
Repository	Instant recovery write cache folder: F:\ProgramData\Veeam\Backup\IRCache\ Browse...
Mount Server	Ensure that the selected volume has sufficient free disk space to store changed disk blocks of instantly recovered VMs. We recommend placing write cache on an SSD drive.
Review	<input checked="" type="checkbox"/> Enable vPower NFS service on the mount server (recommended) Ports...
Apply	Unlocks instant recovery of any backup (physical, virtual or cloud) to a VMware vSphere VM. vPower NFS service is not used for instant recovery to a Microsoft Hyper-V VM.
Summary	

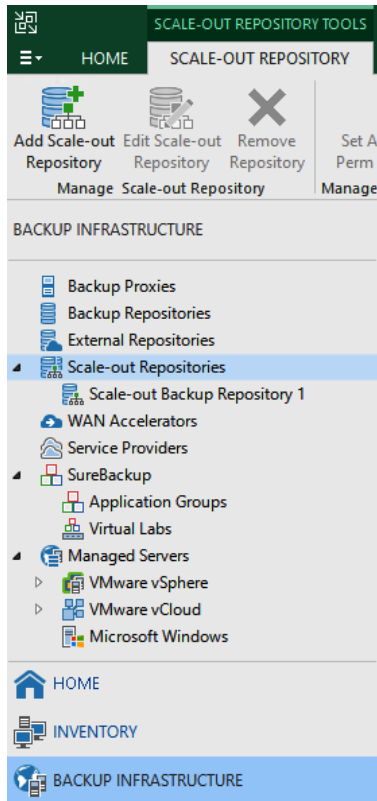
< Previous
Next >
Finish
Cancel

New Backup Repository ✕


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

Name	The following components will be processed on server home-vbk01.home.lab:	
Server	Component name	Status
Repository	Transport	already exists
Mount Server	vPower NFS	already exists
Review	Mount Server	already exists
Apply		
Summary	<input checked="" type="checkbox"/> Search the repository for existing backups and import them automatically <input checked="" type="checkbox"/> Import guest file system index data to the catalog	

< Previous
Apply
Finish
Cancel



New Scale-out Backup Repository ✕

 **Name**
Type in a name and description for this scale-out backup repository.

Name	Name: <input type="text" value="Scale-out Backup Repository 2"/>
Performance Tier	Description: <input type="text" value="Scale-Out Repository for Client X,Y,Z"/>
Placement Policy	
Capacity Tier	
Summary	

< Previous Next > Finish Cancel

SCALE-OUT REPOSITORY TOOLS

HOME SCALE-OUT REPOSITORY

Add Scale-out Repository Manage Scale-out Repository Edit Scale-out Repository Remove Repository Set Access Permissions Manage Settings Rescan Repository Tools

BACKUP INFRASTRUCTURE

Backup Proxies Backup Repositories External Repositories Scale-out Repositories Scale-out Backup Repository 1 Scale-out Backup Repository 2

Type in an object name to search for

NAME ↑	TYPE
Scale-out Backup Repository 1	Scale-out
Scale-out Backup Repository 2	Scale-out

Add Backup Repository

Select the type of backup repository you want to add.



Direct attached storage

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



Network attached storage

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



Deduplicating storage appliance

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



Object storage

On-prem object storage system or a cloud object storage provider. Object storage can only be used as a Capacity Tier of scale-out backup repositories, backing up directly to object storage is not currently supported.

Cancel



Object Storage



Select the type of object storage you want to use as a backup repository.



S3 Compatible

Adds an on-premises object storage system or a cloud object storage provider.



Amazon S3

Adds S3 object storage or an AWS Snowball Edge appliance.



Microsoft Azure Blob Storage

Adds Microsoft Azure blob storage. Both Azure Blob Storage and Azure Data Box are supported.




IBM Cloud Object Storage

Adds IBM Cloud object storage. S3 compatible versions of both on-premises and IBM Cloud storage offerings are supported.

Cancel

New Object Storage Repository




Name
Type in a name and description for this object storage repository.

Name	Name: <input type="text" value="Object storage repository 2"/>
Account	Description: <input type="text" value="Cloudian Storage"/>
Bucket	
Summary	


< Previous **Next >** Finish Cancel

New Object Storage Repository ✕

 **Account**
Specify account to use for connecting to S3 compatible storage system.

Name	Service point: <input type="text"/>
Account	Region: <input type="text" value="us-east-1"/>
Bucket	Credentials: <input type="text"/> Add...
Summary	<p style="text-align: right;">Manage cloud accounts</p> <p><input type="checkbox"/> Use the following gateway server:</p> <p style="background-color: #f2f2f2; padding: 2px;">home-vbk01.home.lab (Backup server) ▼</p> <p><small>Select a gateway server to proxy access to the object storage system. If no gateway server is specified, all scale-out backup repository extents must have direct network access to the storage system.</small></p>




New Object Storage Repository ✕

 **Bucket**
Specify object storage

Name	
Account	
Bucket	
Summary	

Select Folder ✕

Folders:

-  veeam-repo01
-  CHRIS_POC
-  SOBR1_OBJSTORE

configured limit is exceeded, no new tasks will be started.

malicious insiders and support S3 Object Lock

New Object Storage Repository

Bucket
Specify object storage system bucket to use.

Name	Bucket:	veeam-repo01	
Account			
Bucket	Folder:	CHRIS_POC2	Browse...
Summary	<input checked="" type="checkbox"/> Limit object storage consumption to:	10	TB
	This is a soft limit to help control your object storage spend. If the specified limit is exceeded, already running backup offload tasks will be allowed to complete, but no new tasks will be started.		
	<input checked="" type="checkbox"/> Make recent backups immutable for:	30	days (increases costs)
	Protects recent backups from modification or deletion by ransomware, malicious insiders and hackers using native object storage capabilities. Object storage must support S3 Object Lock feature.		

< Previous **Next >** Finish Cancel

Edit Scale-out Backup Repository

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name	<input type="checkbox"/> Extend scale-out backup repository capacity with object storage:	Object storage repository 2	Add...
Performance Tier			
Placement Policy		Define time windows when uploading to object storage is allowed	Window...
Capacity Tier	<input type="checkbox"/> Copy backups to object storage as soon as they are created	Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.	
Summary	<input checked="" type="checkbox"/> Move backups to object storage as they age out of the operational restore window	Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.	
		Move backup files older than	14 days (your operational restore window) Override...
	<input type="checkbox"/> Encrypt data uploaded to object storage	Password:	Add...
		Manage passwords	

< Previous **Apply** Finish Cancel

Edit Scale-out Backup Repository ✕

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Time Periods ✕

12 • 2 • 4 • 6 • 8 • 10 • 12 • 2 • 4 • 6 • 8 • 10 • 12

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

Permitted
 Denied

OK Cancel

< Previous Apply Finish Cancel

Edit Scale-out Backup Repository ✕

Capacity Tier
Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Capacity Tier

Extend scale-out backup repository capacity with object storage:
Object storage repository 2 Add...

Define time windows when uploading to object storage is allowed Window...

Copy backups to object storage as soon as they are created
Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

Move backups to object storage as they age out of the operational restore window
Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.
Move backup files older than 14 days (your operational restore window) Override...

Override ✕

Move oldest backup files sooner if scale-out backup repository is reaching capacity
Offload until used space is below: 80 %

OK Cancel

< Previous Apply Finish Cancel



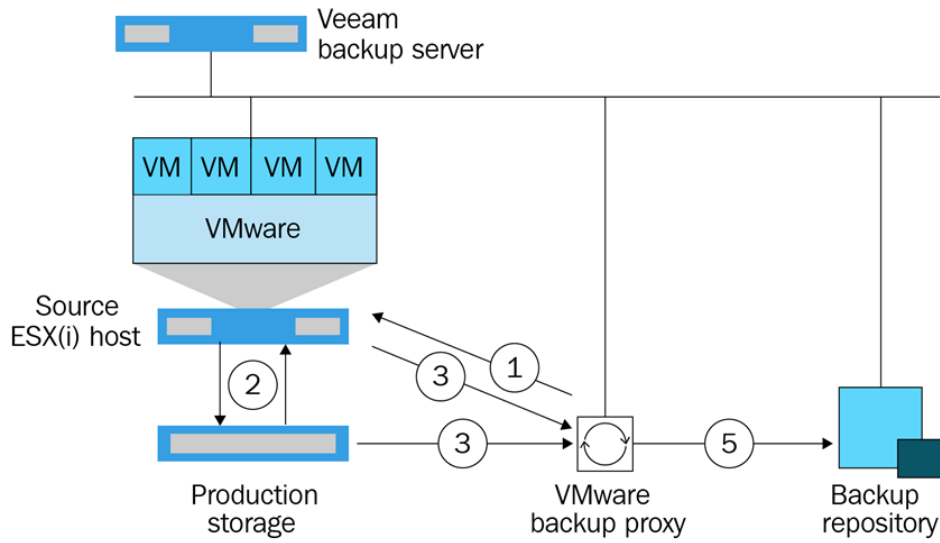
Capacity Tier

Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

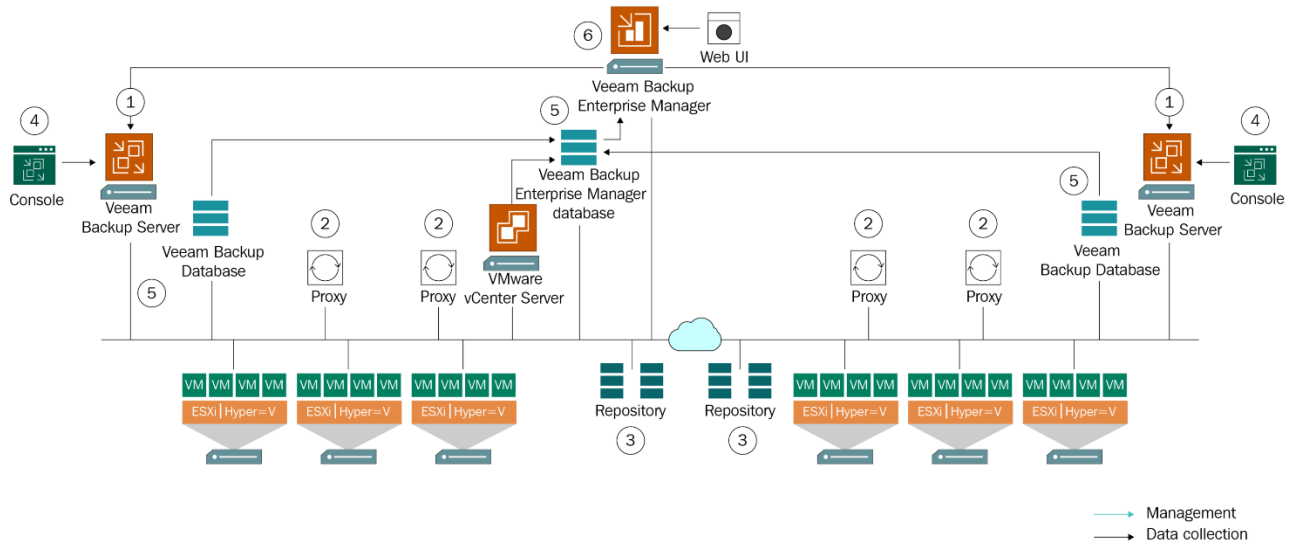
Name	<input checked="" type="checkbox"/> Extend scale-out backup repository capacity with object storage: Object storage repository 2 ▼ Add...
Performance Tier	
Placement Policy	Define time windows when uploading to object storage is allowed Window...
Capacity Tier	<input checked="" type="checkbox"/> Copy backups to object storage as soon as they are created Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.
Summary	<input checked="" type="checkbox"/> Move backups to object storage as they age out of the operational restore window Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups. Move backup files older than 14 ▾ days (your operational restore window) Override...
	<input checked="" type="checkbox"/> Encrypt data uploaded to object storage Password: Object Storage Password (Last edited: less than a day ago) ▼ Add... Manage passwords



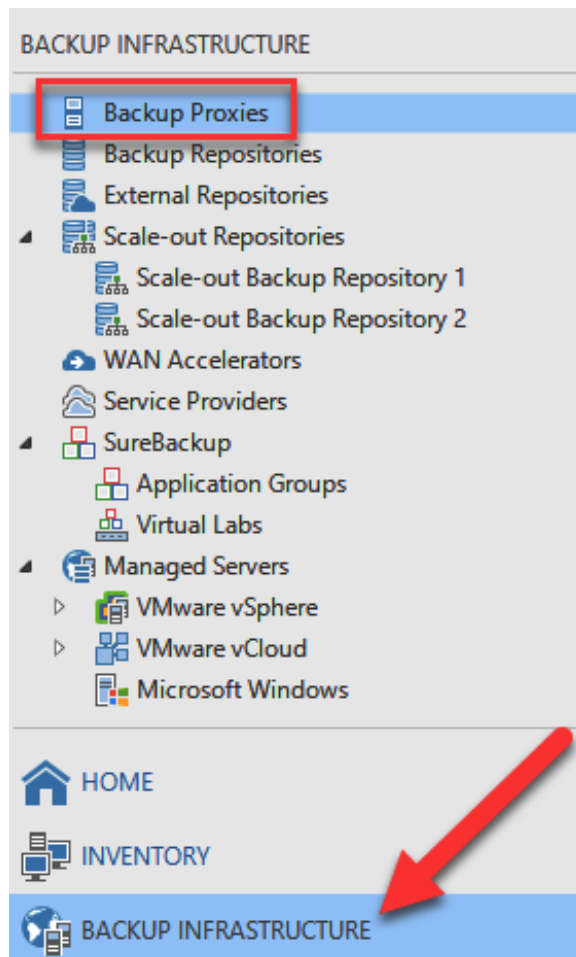
Chapter 5: Windows and Linux – Proxies and Repositories



Major Veeam components overview



Production Storage Type	Direct Storage Access	Virtual Appliance	Network Mode
Fiber Channel (FC) SAN	Install a backup proxy on a physical server with direct FC access to the SAN.	Install a backup proxy on a VM running on an ESXi host connected to the storage device.	This mode is <i>not recommended</i> on 1 GB Ethernet but works well with 10 GB Ethernet. Install a backup proxy on any machine on the storage network.
iSCSI SAN	Install a backup proxy on a physical or virtual machine.		
NFS Storage			
vSAN	Not supported.	Install a backup proxy on a VM running on an ESXi host connected to the vSAN storage device.	
VVol		Install a backup proxy on a VM running on an ESXi host connected to the vVol storage.	
Local Storage		Install a backup proxy on a VM on every ESXi host.	



The screenshot shows the 'Backup Infrastructure' management console. In the top-left toolbar, the 'Add Proxy' button is highlighted with a red box. A red dashed arrow points from this button to a context menu that appears over the 'VMware Backup Proxy' entry in the main list. This context menu contains three options: 'Add VMware backup proxy...', 'Add Hyper-V off-host backup proxy...', and 'Add File backup proxy...'. The main list shows two proxies: 'VMware Backup Proxy' (Type: VMware vSphere) and 'File Backup Proxy' (Type: File share).

NAME	TYPE
VMware Backup Proxy	VMware vSphere
File Backup Proxy	File share

The screenshot shows the 'New VMware Proxy' wizard. The 'Server' step is active, with instructions: 'Choose a server for VMware backup proxy. You can choose between any Microsoft Windows or Linux servers added to the Managed Servers which are not assigned a VMware backup proxy role already.' A dropdown menu for 'Choose server:' is open, showing two entries: 'home-vbk01.home.lab (Backup server)'. The 'Choose...' button for the 'Transport mode' field is highlighted with a red box. A red arrow points to the 'Summary' section on the left. At the bottom, the 'Next >' button is highlighted.

Server
Choose a server for VMware backup proxy. You can choose between any Microsoft Windows or Linux servers added to the Managed Servers which are not assigned a VMware backup proxy role already.

Choose server:
home-vbk01.home.lab (Backup server) [v]
home-vbk01.home.lab (Backup server)

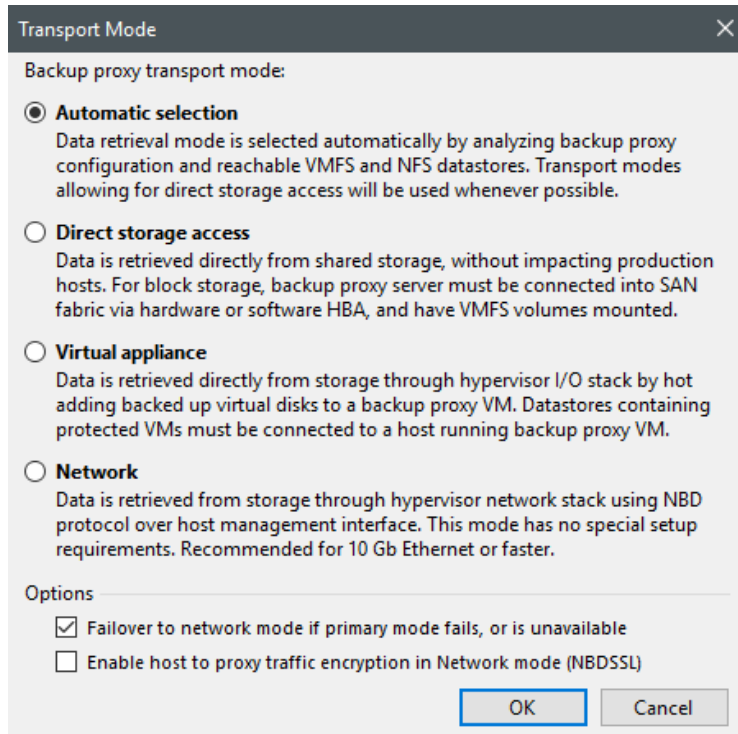
Created by HOME-VBK01\Administrator at 2020-10-29 3:41 PM.

Transport mode:
Automatic selection [Choose...]

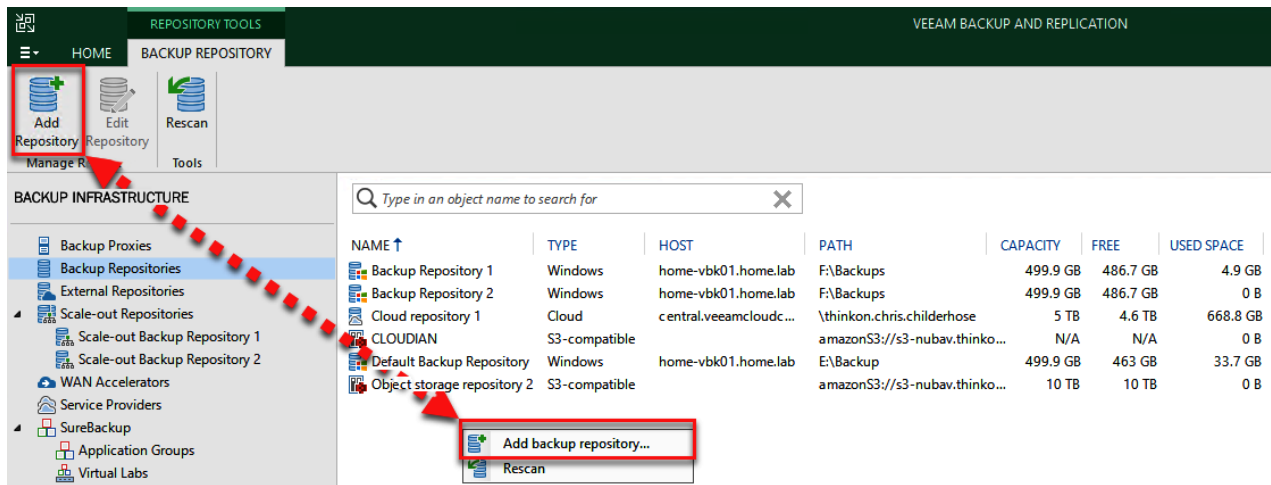
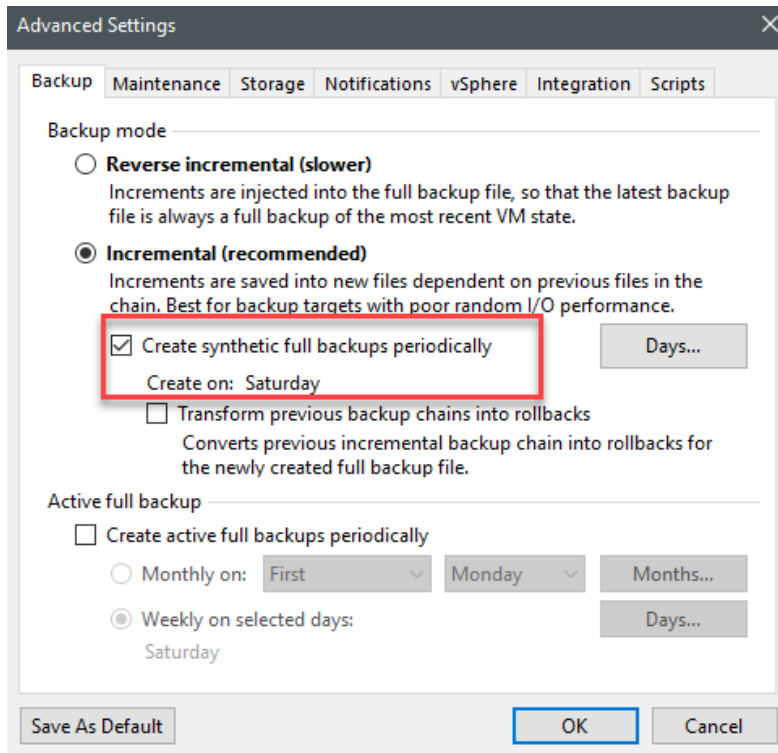
Connected datastores:
Automatic detection (recommended) [Choose...]

Max concurrent tasks:
4 [v] [✓]

< Previous [Next >] Finish Cancel



Physical Servers	Virtual Machines
Large upfront costs	Small upfront costs
No need for licensing purchase	VM software licenses
Physical servers and additional equipment take a lot of space	A single physical server can host multiple VMs, thus saving space
Has a short life-cycle	Supports legacy applications
No on-demand scalability	On-demand scalability
Hardware upgrades are difficult to implement and can lead to considerable downtime	Hardware upgrades are easier to implement; the workload can be migrated to a backup site for the repair period to minimize downtime
Difficult to move or copy	Easy to move or copy
Poor capacity optimization	Advanced capacity optimization is enabled by load balancing
Doesn't require any overhead layer	Some level of overhead is required for running VMs
Perfect for organizations running services and operations which require highly productive computing hardware for their implementation	Perfect for organizations running multiple operations or serving multiple users, which plan to extend their production environment in the future



Add Backup Repository



Select the type of backup repository you want to add.



Direct attached storage

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



Network attached storage

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



Deduplicating storage appliance

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



Object storage

On-prem object storage system or a cloud object storage provider. Object storage can only be used as a Capacity Tier of scale-out backup repositories, backing up directly to object storage is not currently supported.

Cancel



Direct Attached Storage



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



Microsoft Windows

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




Linux

Adds local server storage, or locally mounted NFS share. The Linux server must use bash shell, and have SSH and Perl installed.

Cancel


New Backup Repository ✕

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

Name	Name: Backup Repository 3
Server	
Repository	Description: Created by HOME-VBK01\Administrator at 2020-11-06 5:16 PM.
Mount Server	
Review	
Apply	
Summary	

< Previous **Next >** Finish Cancel

New Backup Repository ✕

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

Name	Repository server:		Add New...
Server			Populate
Repository	Path	Capacity	
Mount Server			
Review			
Apply			
Summary			

< Previous Next > Finish Cancel



SSH Connection

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

Name

SSH Connection

Summary

Credentials:

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

[Manage accounts](#)

Veeam Backup and Replication

home-ubuntu01.home.lab SSH key fingerprint: ssh-rsa 3072 5c:cef:c5d:92:bc:54:2b:e9:2a:99:25:71:49:08:72
Do you trust this server?

Yes
No

< Previous
Apply
Finish
Cancel



Server

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

Name

Server

Repository

Mount Server

Review

Apply

Summary

Repository server:

home-ubuntu01.home.lab (Created by HOME-VBK01\Administrator at 2020-11-06 !)

Add New...

Path	Capacity	Free
/ (/dev/mapper/ubuntu--vg-ubuntu--lv)	18.6 GB	11.2 GB
/backups (/dev/sdb)	100 GB	99.2 GB
/boot (/dev/sda2)	975.9 MB	798.9 MB
/dev/shm (tmpfs)	1.9 GB	1.9 GB
/run (tmpfs)	393.2 MB	392.1 MB
/run/lock (tmpfs)	5 MB	5 MB
/run/user/1000 (tmpfs)	393.2 MB	393.2 MB
/sys/fs/cgroup (tmpfs)	4 MB	4 MB

Populate

< Previous
Next >
Finish
Cancel

New Backup Repository

Repository
Type in path to the folder where backup files should be stored, and set repository load control options.

Name

Server

Repository

Mount Server

Review

Apply

Summary

Location
Path to folder:
Capacity:
Free space:

Use fast cloning on XFS volumes
Reduces storage consumption and improves synthetic backup performance.

Load control
Running too many concurrent tasks against the repository may reduce overall performance, and cause I/O timeouts. Control storage device saturation with the following settings:

Limit maximum concurrent tasks to:
 Limit read and write data rate to: MB/s

Click Advanced to customize repository settings

New Backup Job

Storage
Specify job and

Virtual Machines

Storage

Guest Processing

Schedule

Summary

Advanced Settings

Backup Maintenance Storage Notifications vSphere Integration Scripts

Backup mode

Reverse incremental (slower)
Increments are injected into the full backup file, so that the latest backup file is always a full backup of the most recent VM state.

Incremental (recommended)
Increments are saved into new files dependent on previous files in the chain. Best for backup targets with poor random I/O performance.

Create synthetic full backups periodically
Create on: Saturday

Transform previous backup chain into rollbacks
Converts previous incremental backup chain into rollbacks for the newly created full backup file.

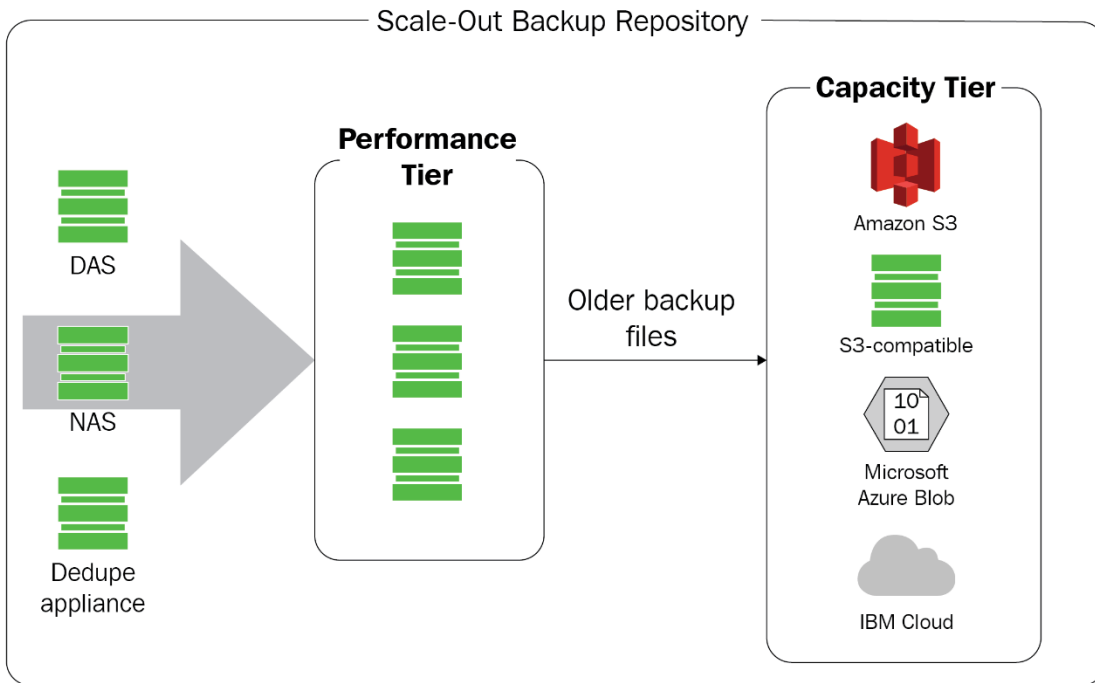
Active full backup

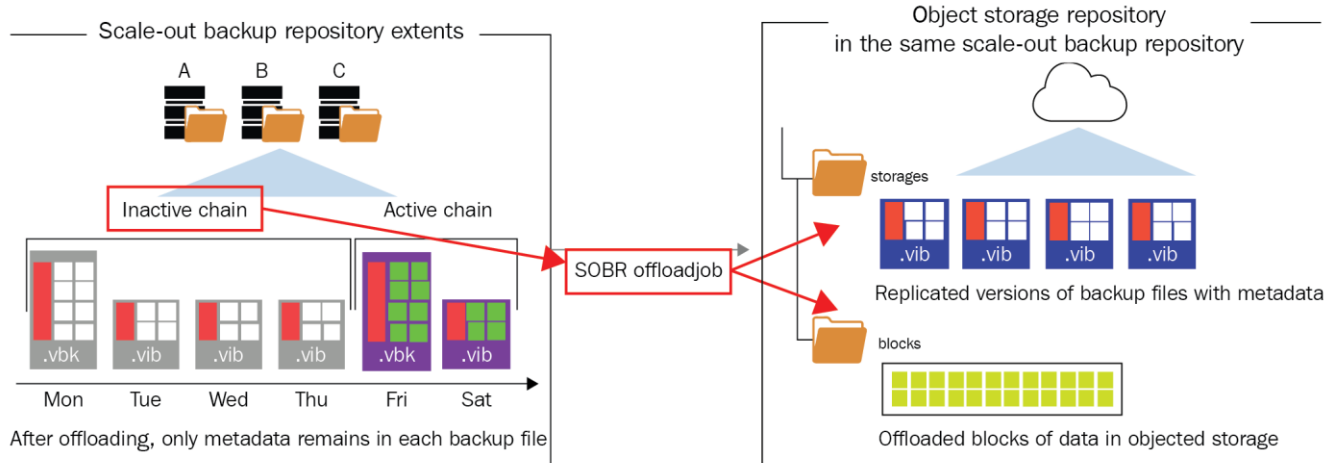
Create active full backups periodically

Monthly on: First Monday M

Weekly on selected days: Saturday

Chapter 6: Object Storage –Immutability





Backup Properties AD (Storage 2)

Objects:

NAME	ORIGINAL SIZE
DLDC	60.0 GB

Total size: 60.0 GB

Restore points:

DATE	TYPE	STATUS
Restore points: 0		

Files:

NAME	DATA SIZE	BACKUP SIZE	DEDUPLICATION	COMPRESSION	DATE	RETENTION
DLDC.503D2020-02-11T032648_1E36....	60.0 GB	10.3 GB	3.6 x	1.6 x	2/11/2020 3:26:48 AM	
DLDC.503D2020-02-11T030038_3E58....	74.0 MB	34.6 MB	0.9 x	2.3 x	2/11/2020 3:00:38 AM	
DLDC.503D2020-02-11T022932_3D83...	120 MB	48.9 MB	1.0 x	2.6 x	2/11/2020 2:29:32 AM	
DLDC.503D2020-02-11T011407_A501...	60.0 GB	9.52 GB	3.8 x	1.6 x	2/11/2020 1:14:07 AM	

Backup size: 19.9 GB

Copy path

- Move to capacity tier
 - This backup
 - This backup and all dependent increments

Copy path Copy to performance tier Move to capacity tier

Close

Edit Scale-out Backup Repository



Capacity Tier

Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name

Performance Tier

Placement Policy

Capacity Tier

Summary

Extend scale-out backup repository capacity with object storage:

CLOUDIAN

Add...

Define time windows when uploading to object storage is allowed

Window...

Copy backups to object storage as soon as they are created

Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

Move backups to object storage as they age out of the operational restore window

Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.

Move backup files older than 7 days (your operational restore window)

Override...

Encrypt data uploaded to object storage

Password:

Chris default password (Last edited: 65 days ago)

Add...

[Manage passwords](#)

< Previous

Apply

Finish

Cancel

Backup Properties AD (Amazon)

Objects:

NAME	ORIGINAL SIZE
DLDC	60.0 GB

Total size: 60.0 GB

Restore points:

DATE	TYPE	STATUS
------	------	--------

Restore points: 0

Files:

NAME	DATA SIZE	BACKUP SIZE	DEDUPLICATION	COMPRESSION	DATE	RETENTION
DLDC.503D2020-02-11T032648_1E36...	60.0 GB	10.3 GB	3.6 x	1.6 x	2/11/2020 3:26:48 AM	
DLDC.503D2020-02-11T030038_3E58...	74.0 MB	34.6 MB	0.9 x	2.3 x	2/11/2020 3:00:38 AM	
DLDC.503D2020-02-11T022932_3D83...	120 MB	48.9 MB	1.0 x	2.6 x	2/11/2020 2:29:32 AM	
Copy path	60.0 GB	9.52 GB	3.0 x	1.6 x	2/11/2020 1:14:07 AM	
Copy to performance tier	This backup and its dependencies					1.6 x 2/11/2020 12:37:36 AM

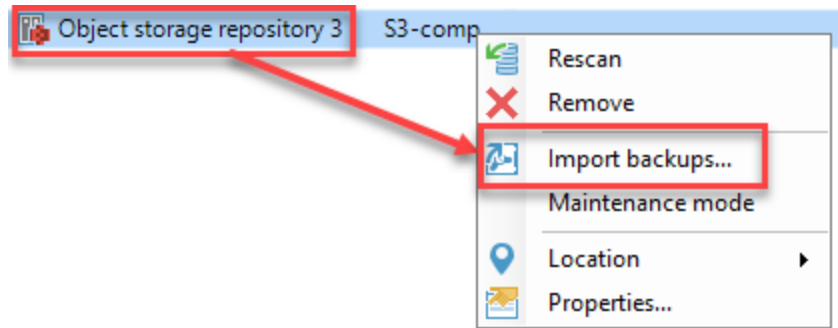
Backup size: 29.5 GB

Copy path

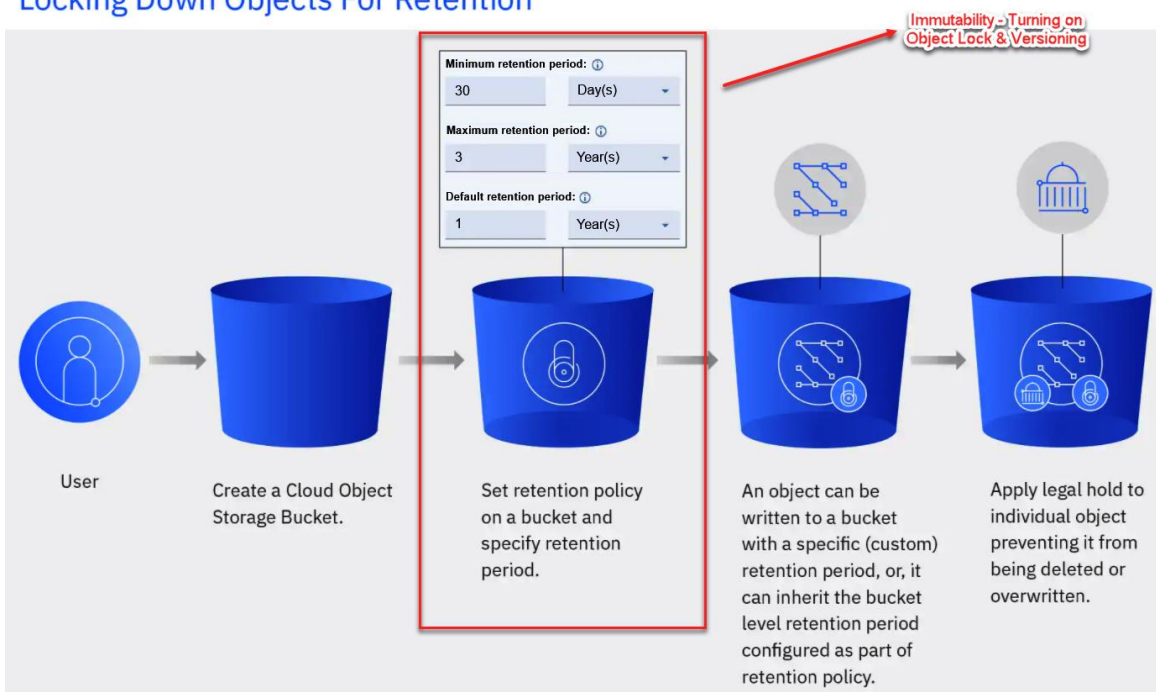
Copy to performance tier

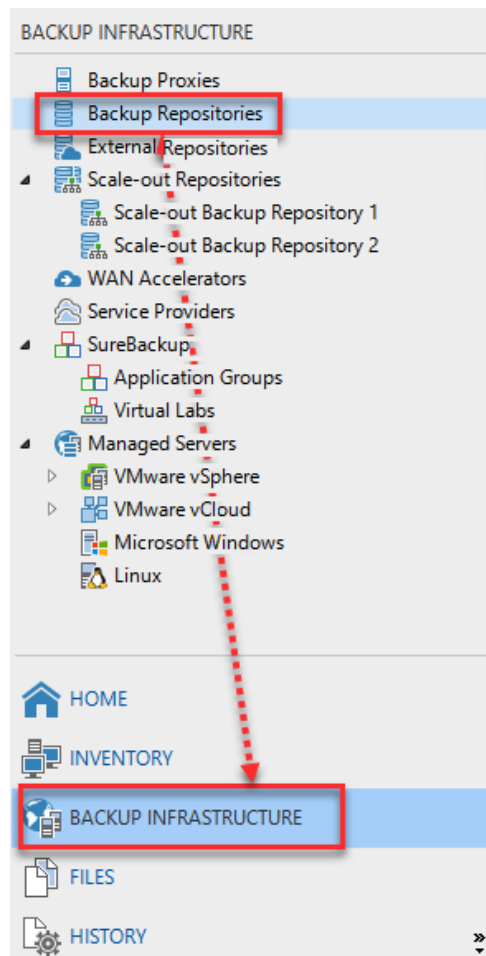
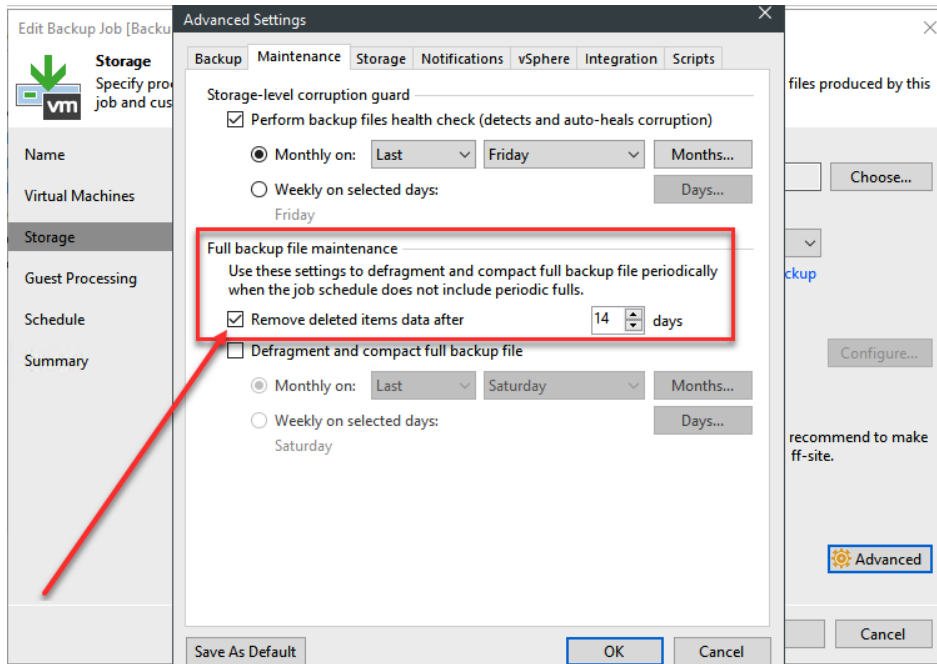
Move to capacity tier

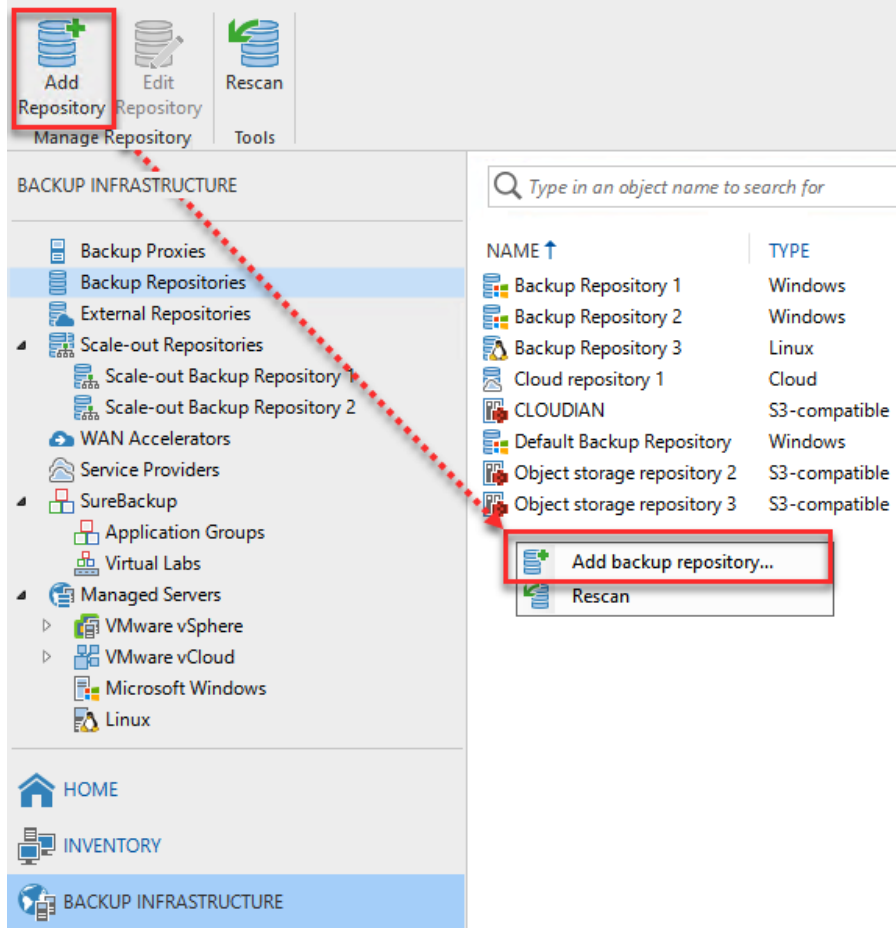
Close



Locking Down Objects For Retention







Add Backup Repository

Select the type of backup repository you want to add.



Direct attached storage

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



Network attached storage

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



Deduplicating storage appliance

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



Object storage

On-prem object storage system or a cloud object storage provider. Object storage can only be used as a Capacity Tier of scale-out backup repositories, backing up directly to object storage is not currently supported.

Cancel

Object Storage

Select the type of object storage you want to use as a backup repository.

- S3 Compatible**
Adds an on-premises object storage system or a cloud object storage provider.
- Amazon S3**
Adds S3 object storage or an AWS Snowball Edge appliance.
- Microsoft Azure Blob Storage**
Adds Microsoft Azure blob storage. Both Azure Blob Storage and Azure Data Box are supported.
- IBM Cloud Object Storage**
Adds IBM Cloud object storage. S3 compatible versions of both on-premises and IBM Cloud storage offerings are supported.

Cancel

New Object Storage Repository

Name
Type in a name and description for this object storage repository.

Name

Description:
Created by HOME-VBK01\Administrator at 2020-11-16 9:20 PM.

< Previous **Next >** Finish Cancel

New Object Storage Repository

Account
Specify account to use for connecting to S3 compatible storage system.

Name	Service point:
Account	s3-nubav.thinkon.com:443
Bucket	Region:
Summary	us-east-1
	Credentials:
	6607300bbfba06a21f9e (last edited: 68 days ago) Add...
	Manage cloud accounts
	<input type="checkbox"/> Use the following gateway server:
	home-vbk01.home.lab (Backup server)

Select a gateway server to proxy access to the object storage system. If no gateway server is specified, all scale-out backup repository extents must have direct network access to the storage system.

< Previous Next > Finish Cancel

New Object Storage Repository

Bucket
Specify object storage system bucket to use.

Name	Bucket:
Account	veeam-repo01
Bucket	Folder:
Summary	CHRIS_POC2 Browse...
	<input checked="" type="checkbox"/> Limit object storage consumption to: 10 TB
	This is a soft limit to help control your object storage spend. If the specified limit is exceeded, already running backup offload tasks will be allowed to complete, but no new tasks will be started.
	<input checked="" type="checkbox"/> Make recent backups immutable for: 30 days (increases costs)
	Protects recent backups from modification or deletion by ransomware, malicious insiders and hackers using native object storage capabilities. Object storage must support S3 Object Lock feature.

Immutability Feature

< Previous Next > Finish Cancel

Edit Scale-out Backup Repository



Capacity Tier

Specify object storage to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage completely to reduce long-term retention costs while preserving the ability to restore directly from offloaded backups.

Name

Extend scale-out backup repository capacity with object storage:

Performance Tier

CLOUDIAN

Add...

Placement Policy

Define time windows when uploading to object storage is allowed

Window...

Capacity Tier

Copy backups to object storage as soon as they are created

Create additional copy of your backups for added redundancy by having all backups copied to the capacity tier as soon as they are created on the performance tier.

Move backups to object storage as they age out of the operational restore window

Reduce your long-term retention costs by moving older backups to object storage completely while preserving the ability to restore directly from offloaded backups.

Move backup files older than 3 days (your operational restore window)

Override...

Summary

Encrypt data uploaded to object storage

Password:

Chris default password (Last edited: 68 days ago)

Add...

[Manage passwords](#)

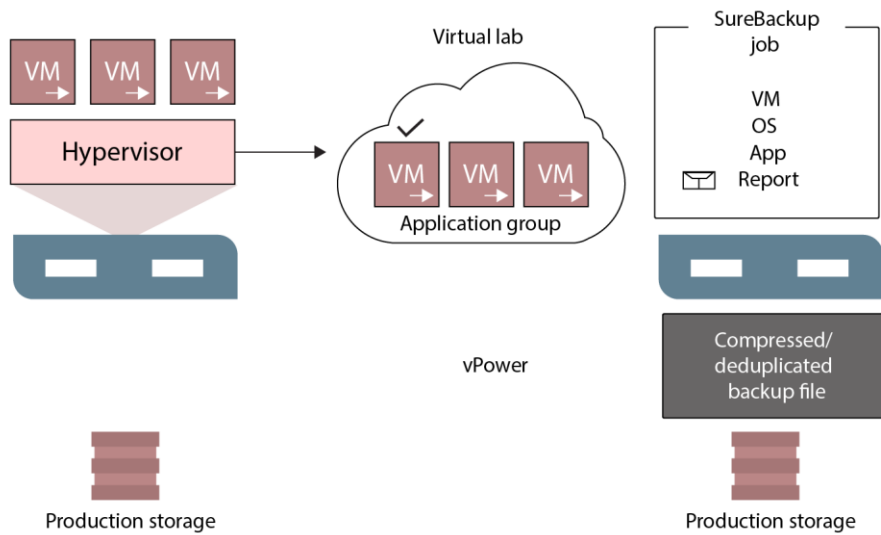
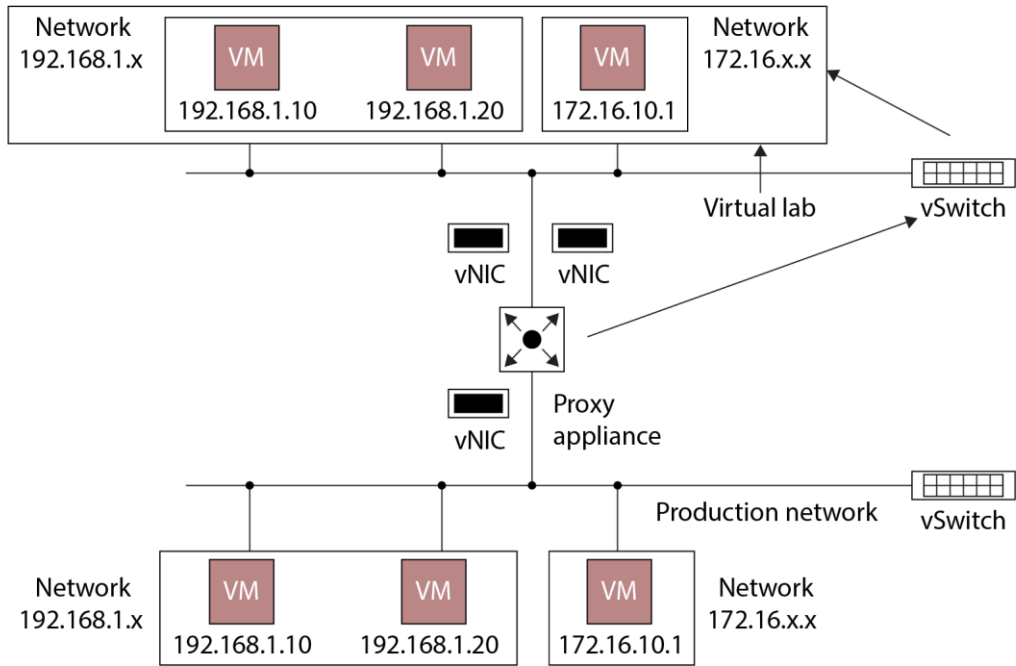
< Previous

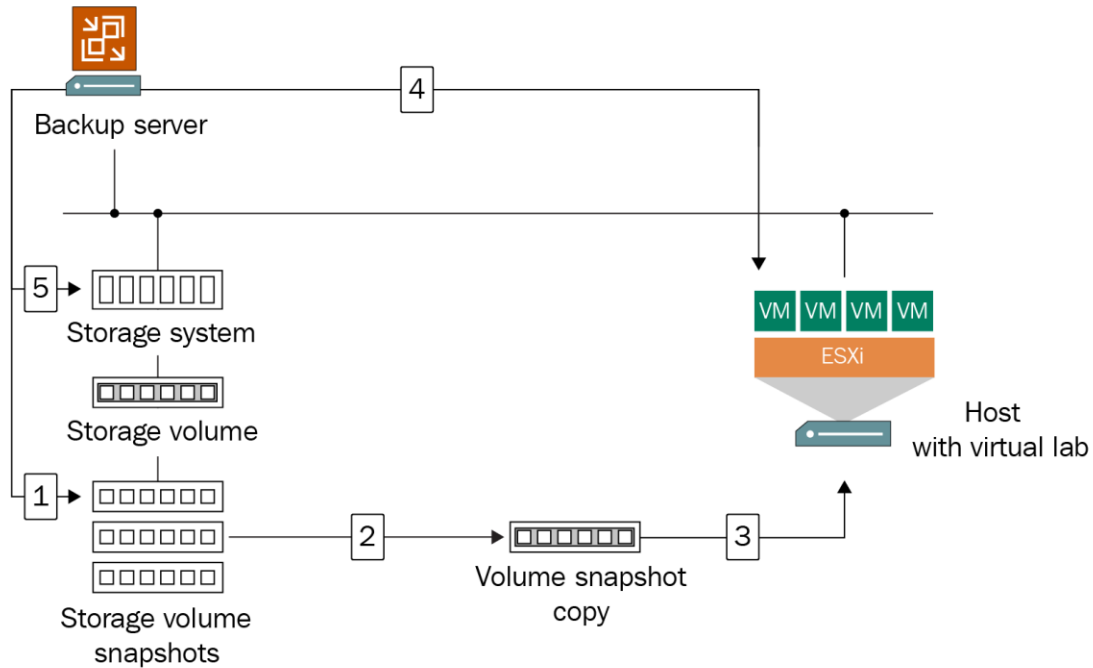
Apply

Finish

Cancel

Chapter 7: Veeam DataLabs





HOME SUREBACKUP

Add App Group Add Virtual Lab Connect Virtual Lab Manage SureBackup

BACKUP INFRASTRUCTURE

- Backup Proxies
- Backup Repositories
- External Repositories
- Scale-out Repositories
 - Scale-out Backup Repository 1
 - Scale-out Backup Repository 2
- WAN Accelerators
- Service Providers
- SureBackup**
 - Application Groups
 - Virtual Labs
- Managed Servers
 - VMware vSphere
 - VMware vCloud
 - Microsoft Windows
 - Linux

ADD VIRTUAL LAB
A Virtual Lab requires a host on which to run virtual machines (VMs), and a datastore to store disk changes produced while automatically created based on the production network selected to be mirrored in the lab. VMs in the isolated virtual lab network are accessible from the production network through a helper proxy appliance that is of Virtual Lab creation.

ADD APPLICATION GROUP
An Application Group defines virtual machine (VM) dependencies by specifying the required boot order of VMs supporting includes a domain controller, a DNS server, and a DHCP server (unless static IP addresses are used). All VMs in the Application Group selected for a given SureBackup job are started in the specified order and remain running

ADD SUREBACKUP JOB
To set up a SureBackup job, select the Application Group containing the core infrastructure services that the virtual machines which backup jobs you want to use. While the SureBackup job runs in recovery verification mode, all VMs from the selected backup jobs are started and verified request, only the required VM from the specified backup job(s) is started (in addition to the VMs in the specified Application

RUN SUREBACKUP JOB
To start a SureBackup job against the latest backup, go to the Jobs node in the Backup & Replication tree tab, select and point, use the Start To command and select the desired date and time. For each SureBackup job run, a new session is created listing all processed virtual machines (VMs). Clicking a running VM in a VM provides options to restart the VM or invoke an Application Item Recovery wizard (available for certain VM roles only).

HOME SUREBACKUP

Add App Group Add Virtual Lab Connect Virtual Lab Manage SureBackup

BACKUP INFRASTRUCTURE

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ADD VIRTUAL LAB
 A Virtual Lab requires a host on which to run virtual machines (VMs), and a datastore to store disk changes produced automatically created based on the production network selected to be mirrored in the lab. VMs in the isolated virtual lab network are accessible from the production network through a helper proxy appliance of Virtual Lab creation.

ADD APPLICATION GROUP
 An Application Group defines virtual machine (VM) dependencies by specifying the required boot order of VMs includes a domain controller, a DNS server, and a DHCP server (unless static IP addresses are used). All VMs in the Application Group selected for a given SureBackup job are started in the specified order and remain

ADD SUREBACKUP JOB
 To set up a SureBackup job, select the Application Group containing the core infrastructure services that the virtual which backup jobs you want to use. While the SureBackup job runs in recovery verification mode, all VMs from the selected backup jobs are started and request, only the required VM from the specified backup job(s) is started (in addition to the VMs in the specified

RUN SUREBACKUP JOB
 To start a SureBackup job against the latest backup, go to the Jobs node in the Backup & Replication tree tab, select point, use the Start To command and select the desired date and time. For each SureBackup job run, a new session is created listing all processed virtual machines (VMs). Clicking a running a VM provides options to restart the VM or invoke an Application Item Recovery wizard (available for certain VM role

New Virtual Lab

Name
 Type in a name and description for this virtual lab.

Name: Virtual Lab 1

Description: Created by HOME-VBK01\Administrator at 2020-11-29 8:43 PM.

Host

Datastore

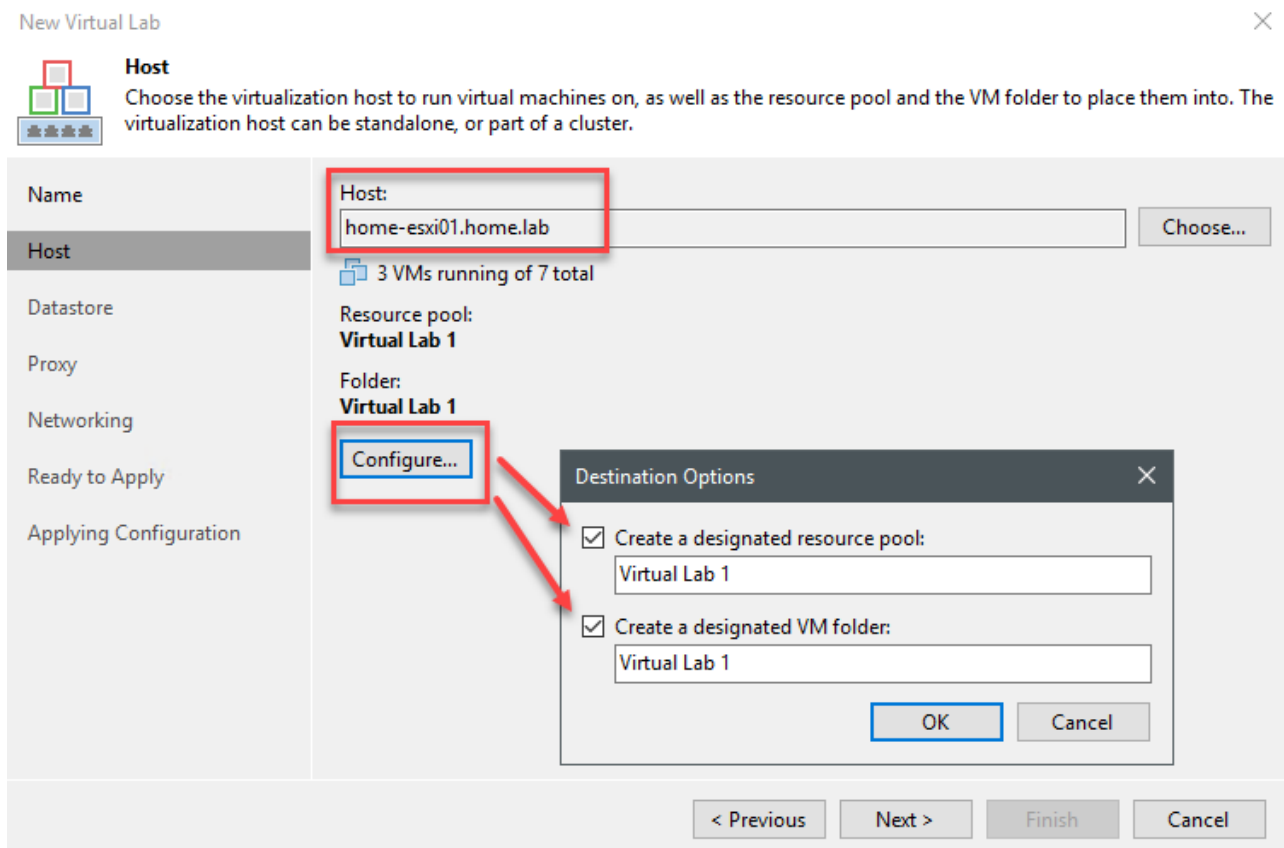
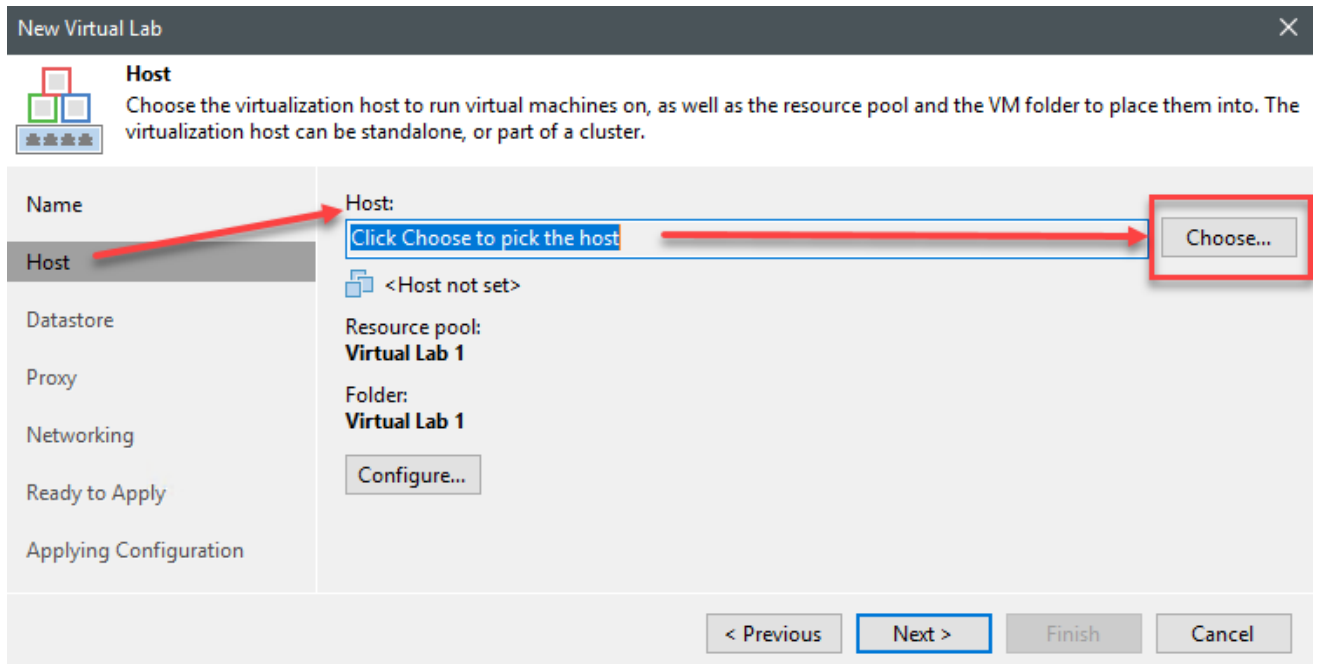
Proxy

Networking

Ready to Apply

Applying Configuration

< Previous Next > Finish Cancel



New Virtual Lab

Datastore

By default, changed blocks are stored in the vPower NFS cache. You may select a different datastore for performance or capacity reasons, however this may disable Storage vMotion for the VM (Quick Migration will still be available).

Name

Host

Datastore

Proxy

Networking

Ready to Apply

Applying Configuration

Redirect write cache

Datastore: VMDatastore-Local01

408.3 GB free of 465.5 GB

Choose...

< Previous Next > Finish Cancel

New Virtual Lab

Proxy

Configure proxy appliance to be used for this virtual lab. Proxy appliance is required to enable functionality such as automated recovery verification and universal application item restore (U-AIR).

Name

Host

Datastore

Proxy

Networking

Ready to Apply

Applying Configuration

The proxy appliance provides Veeam Backup server with access to virtual machines running in the isolated virtual lab. Without proxy appliance, recovery verification and item restore operations can only be performed manually, through the VM console.

Use proxy appliance in this virtual lab (recommended)

Name: Virtual_Lab_1

Datastore: USB-Datastore2

Production network: Management Network

IP address: Obtain automatically

DNS server: Obtain automatically

Allow proxy appliance to act as internet proxy for virtual machines in this lab

HTTP port: 8080

Production proxy:

Edit...

Configure...

< Previous Next > Finish Cancel

Proxy Appliance VM Settings

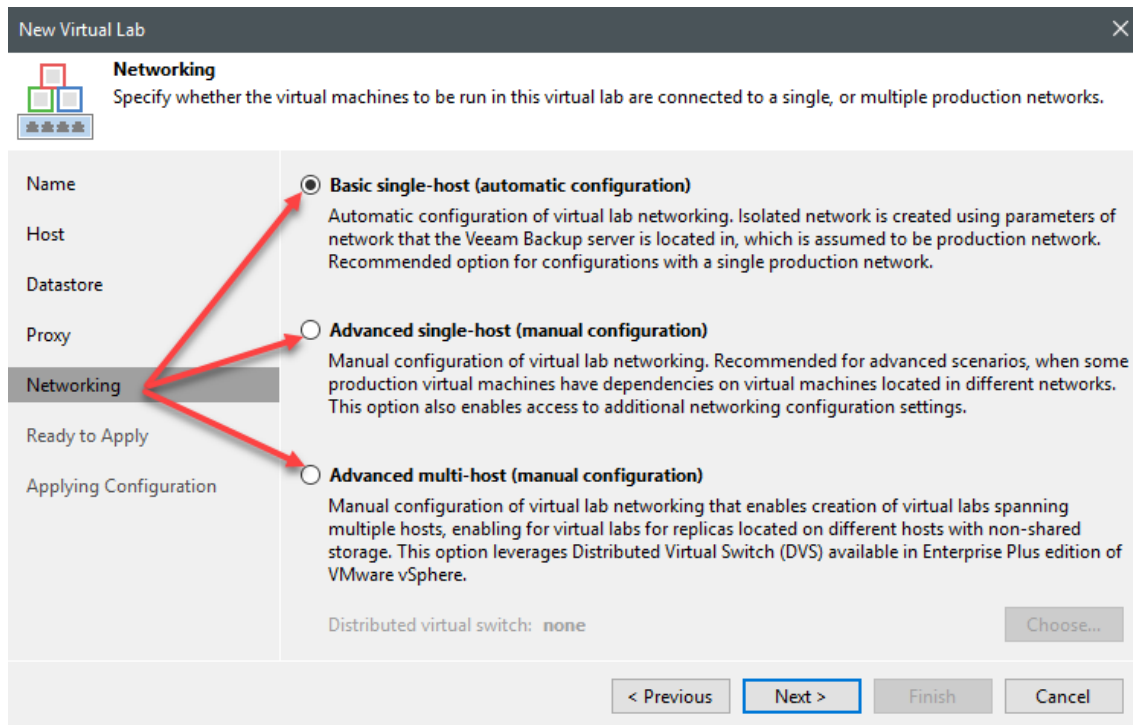
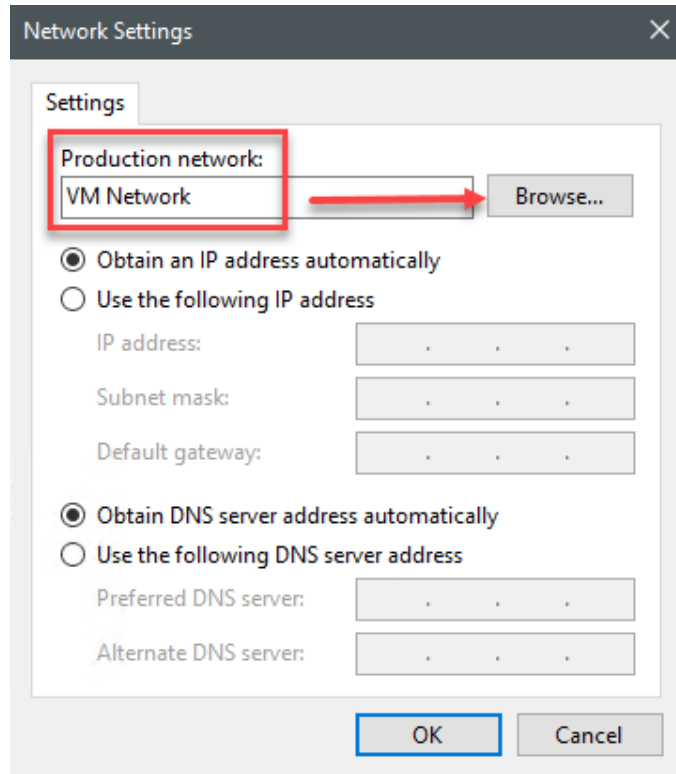
Name: Virtual_Lab_1

Datastore: USB-Datastore2

1.7 TB free of 1.8 TB

Choose...

OK Cancel



New Virtual Lab

Networking
Specify whether the virtual machines to be run in this virtual lab are connected to a single, or multiple production networks.

Name

Host

Datastore

Proxy

Networking

Isolated Networks

Network Settings

Static Mapping

Ready to Apply

Applying Configuration

Basic single-host (automatic configuration)
Automatic configuration of virtual lab networking. Isolated network is created using parameters of network that the Veeam Backup server is located in, which is assumed to be production network. Recommended option for configurations with a single production network.

Advanced single-host (manual configuration)
Manual configuration of virtual lab networking. Recommended for advanced scenarios, when some production virtual machines have dependencies on virtual machines located in different networks. This option also enables access to additional networking configuration settings.

Advanced multi-host (manual configuration)
Manual configuration of virtual lab networking that enables creation of virtual labs spanning multiple hosts, enabling for virtual labs for replicas located on different hosts with non-shared storage. This option leverages Distributed Virtual Switch (DVS) available in Enterprise Plus edition of VMware vSphere.

Distributed virtual switch: vDS-Home Choose...

< Previous Next > Finish Cancel

New Virtual Lab

Networking
Specify whether the virtual machines to be run in this virtual lab are connected to a single, or multiple production networks.

Name

Host

Datastore

Proxy

Networking

Isolated Networks

Network Settings

Static Mapping

Ready to Apply

Applying Configuration

Basic single-host (automatic configuration)
Automatic configuration of virtual lab networking. Isolated network is created using parameters of network that the Veeam Backup server is located in, which is assumed to be production network. Recommended option for configurations with a single production network.

Advanced single-host (manual configuration)
Manual configuration of virtual lab networking. Recommended for advanced scenarios, when some production virtual machines have dependencies on virtual machines located in different networks. This option also enables access to additional networking configuration settings.

Advanced multi-host (manual configuration)
Manual configuration of virtual lab networking that enables creation of virtual labs spanning multiple hosts, enabling for virtual labs for replicas located on different hosts with non-shared storage. This option leverages Distributed Virtual Switch (DVS) available in Enterprise Plus edition of VMware vSphere.

Distributed virtual switch: **vDS-Home** Choose...

< Previous Next > Finish Cancel

New Virtual Lab [Close]

Ready to Apply
Please review the settings for correctness, and click Apply to continue.

Progress: [Progress bar]

Left sidebar: Name, Host, Datastore, Proxy, Networking, **Ready to Apply**, Applying Configuration

Virtual lab will be created with the following parameters:

```

Lab name: Virtual Lab 1
ESX name: home-esxi01.home.lab
Datastore: VMDatastore-Local01

Appliance:
Name: Virtual_Lab_1
Pool name: Virtual Lab 1
Folder name: Virtual Lab 1
IP: <Obtain automatically>
DNS: <Obtain automatically>

Network configuration type: basic single-host

Network options:
Isolated network: Virtual Lab 1 VM Network
Masquerade IP: 192.168.255.0
Appliance IP: 192.168.2.1
DHCP: enabled

Network mapping:
VM Network --> Virtual Lab 1 VM Network
  
```

Buttons: < Previous, **Apply**, Finish, Cancel

New Virtual Lab [Close]

Isolated Networks
Specify isolated networks to be created in this virtual lab, and how they map on production networks.

Progress: [Progress bar]

Left sidebar: Name, Host, Datastore, Proxy, Networking, **Isolated Networks**, Network Settings, Static Mapping, Ready to Apply, Applying Configuration

Network mapping table:

Production network	Isolated network	VLAN ID
VM Network	Virtual Lab 1 VM Network	0

Buttons: Add..., **Edit...**, Remove

Network Mapping dialog:

Production network: Browse...

Isolated network:

VLAN ID:

Buttons: OK, Cancel

Bottom buttons: < Previous, Next >, Finish, Cancel

New Virtual Lab

Network Settings

Specify how isolated networks should be connected to proxy appliance VM.

Connect each isolated network to proxy appliance VM, as you would connect your physical networks to a router. Network masquerading will allow access to virtual lab VMs from production environment.

Proxy appliance connectivity:

vNIC	Isolated network	Masquerade IP	Appliance IP	DHCP
vNIC1	Virtual Lab 1 VM Network	192.168.255.x	192.168.2.1	Yes

Buttons: Add..., Edit..., Remove

vNIC Connection Settings

Virtual NIC

Choose isolated network to connect this vNIC to:
 Virtual Lab 1 VM Network (VM Network)

Proxy appliance IP address in the isolated network (typically the same as gateway IP address in the corresponding production network):

IP address: 192 . 168 . 2 . 1
 Mask: 255 . 255 . 255 . 0

Masquerade network address for accessing virtual machines running in this virtual lab from production network:

IP address: 192 . 168 . 255 . 0

Enable DHCP service on this interface

Buttons: OK, Cancel, DNS Servers

DNS Servers

DNS servers:

IP address

Buttons: Add, Edit, Remove, OK, Cancel

New Virtual Lab

Static Mapping

Define IP address mapping between production and isolated networks for specific IP addresses. Coupled with the corresponding DNS updates, this will provide convenient access to specific virtual lab VMs for scenarios such as user directed recovery.

Static IP address mapping makes corresponding virtual lab VMs accessible from any computer in the production environment. This enables implementation of unique capabilities such as user directed universal application item restore (U-AIR), developer access to previous copy of database, and other.

Define static IP address mapping

Isolated IP	Access IP	Notes
-------------	-----------	-------

Buttons: Add..., Edit..., Remove

IP Address Mapping

Production network:
 VM Network

Isolated IP: 192 . 168 . 2 . 22
 Access IP: 192 . 168 . 2 . 1

Notes:

Buttons: OK, Cancel

< Previous Next > Finish Cancel

VEEAM BACKUP AND REPLICATION

VIRTUAL LAB TOOLS

HOME VIRTUAL LAB

Add Virtual Lab Connect Virtual Lab Edit Virtual Lab Remove Virtual Lab Manage Virtual Lab

BACKUP INFRASTRUCTURE

- Backup Proxies
- Backup Repositories
- External Repositories
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 - Scale-out Backup Repository 1
 - Scale-out Backup Repository 2
- WAN Accelerators
- Service Providers
- SureBackup
- Application Groups
- Virtual Labs**

NAME ↑	HOST	PLATFORM	DESCRIPTION
Virtual Lab 1	home-esxi01.home.lab	VMware	Created by HOME-VBK01\Administrator at 2020-1... .1...

VEEAM BACKUP AND REPLICATION

SUREBACKUP TOOLS

HOME SUREBACKUP

Add App Group Add Virtual Lab Connect Virtual Lab Manage SureBackup

BACKUP INFRASTRUCTURE

- Backup Proxies
- Backup Repositories
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- WAN Accelerators
- Service Providers
- SureBackup**
- Application Groups
- Virtual Labs
- Managed Servers
 - VMware vSphere
 - VMware vCloud
 - Microsoft Windows
 - Linux

ADD VIRTUAL LAB

A Virtual Lab requires a host on which to run virtual machines (VMs), and a datastore to store disk network is automatically created based on the production network selected to be mirrored in the lab. VMs in the isolated virtual lab network are accessible from the production network through a helper as part of Virtual Lab creation.

ADD APPLICATION GROUP

An Application Group defines virtual machine (VM) dependencies by specifying the required boot order includes a domain controller, a DNS server, and a DHCP server (unless static IP addresses are used). All VMs in the Application Group selected for a given SureBackup job are started in the specified order

ADD SUREBACKUP JOB

To set up a SureBackup job, select the Application Group containing the core infrastructure services that specify which backup jobs you want to use. While the SureBackup job runs in recovery verification mode, all VMs from the selected backup jobs are request, only the required VM from the specified backup job(s) is started (in addition to the VMs in the

RUN SUREBACKUP JOB

To start a SureBackup job against the latest backup, go to the Jobs node in the Backup & Replication restore point, use the Start To command and select the desired date and time. For each SureBackup job run, a new session is created listing all processed virtual machines (VMs). clicking a VM provides options to restart the VM or invoke an Application Item Recovery wizard

New Application Group ✕

Name
Type in a name and description for this application group.

Name Name:

Virtual Machines Description:

Summary

New Application Group ✕

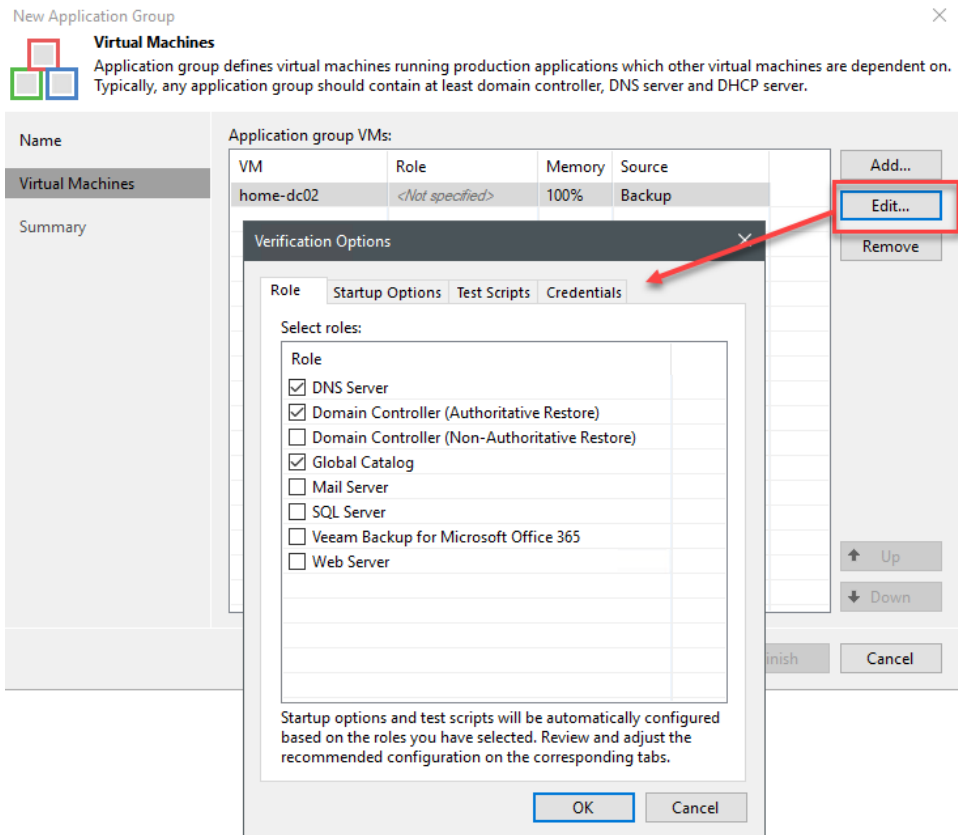
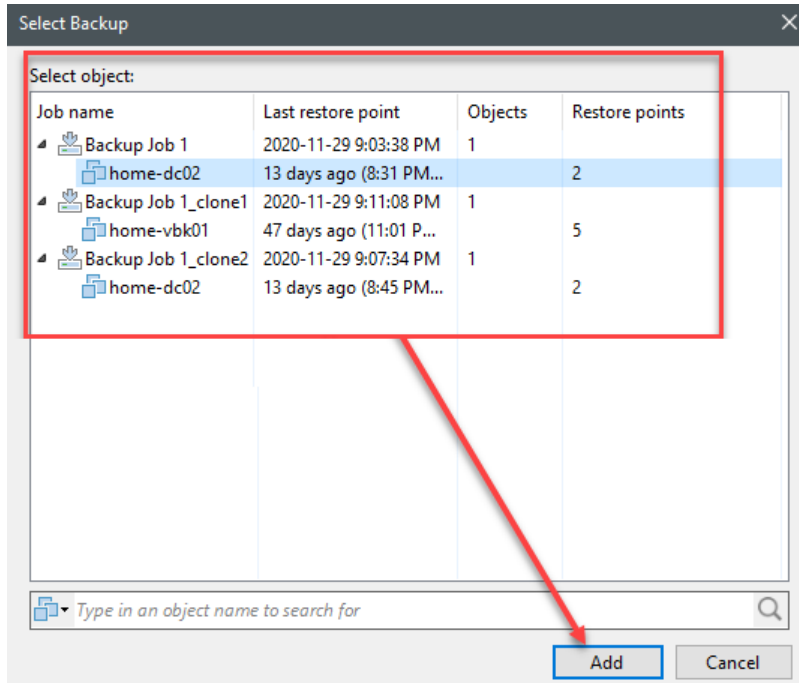
Virtual Machines
Application group defines virtual machines running production applications which other virtual machines are dependent on. Typically, any application group should contain at least domain controller, DNS server and DHCP server.

Virtual Machines

Application group VMs:

VM	Role	Memory	Source

-
-
-



Verification Options

Role Startup Options Test Scripts Credentials

Memory

Amount of memory to allocate to VM: 100 percent

Startup time

Maximum allowed boot time: 2100 sec

Application initialization timeout: 120 sec

Boot verification

Consider VM to have successfully booted when:

- VM heartbeat is present
- VM responds to ping on any network interface

OK Cancel

Verification Options

Role Startup Options Test Scripts Credentials

Specify test scripts for this VM:

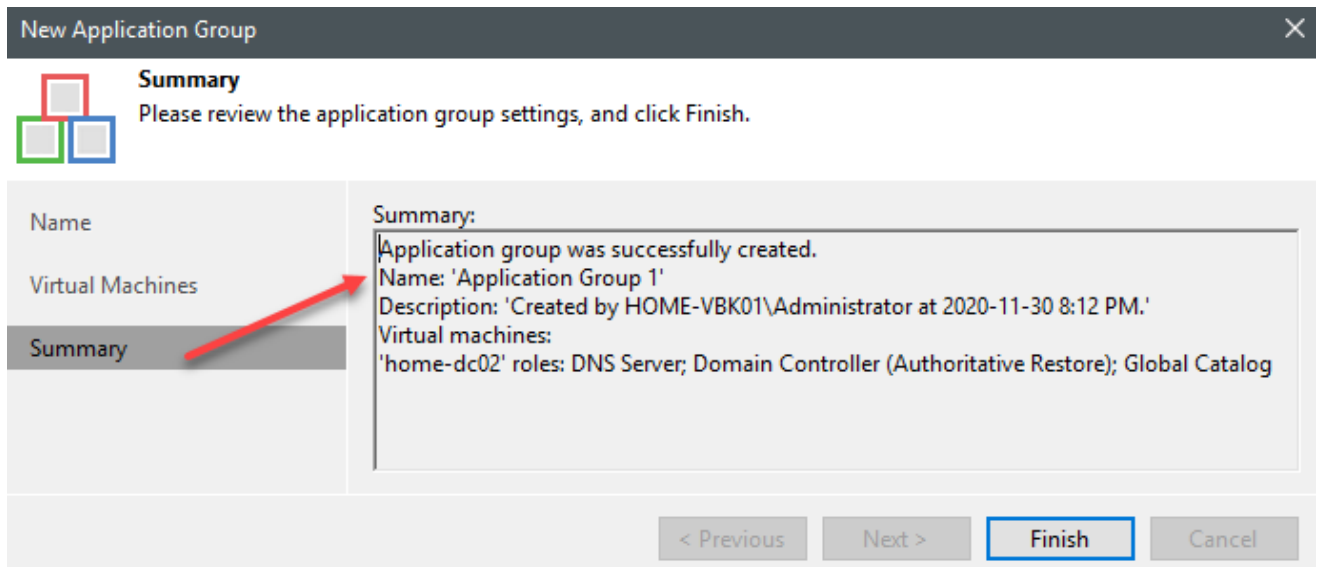
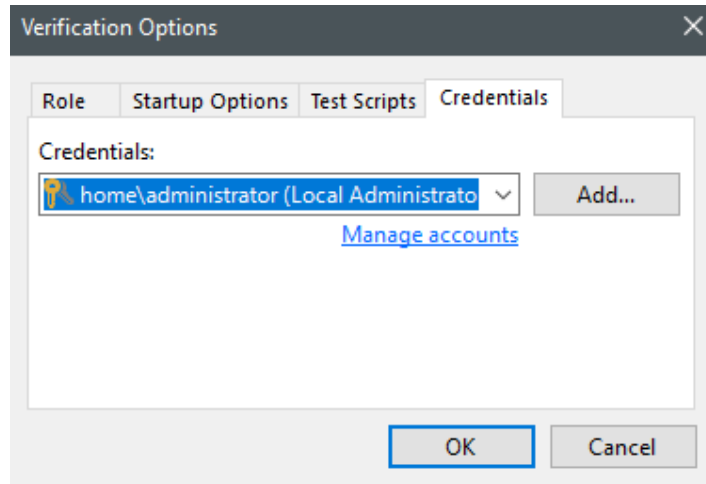
Name	Arguments
DNS Server	%vm_ip% 53
Domain Controller	%vm_ip% 389
Global Catalog	%vm_ip% 3268

Add

Edit

Remove

OK Cancel



VEEAM BACKUP AND REPLICATION

APP GROUP TOOLS

HOME APPLICATION GROUP

Add Group Edit Group Remove Group

Manage Application Group

BACKUP INFRASTRUCTURE

- Backup Proxies
- Backup Repositories
- External Repositories
- Scale-out Repositories
 - Scale-out Backup Repository 1
 - Scale-out Backup Repository 2
- WAN Accelerators
- Service Providers
- SureBackup
 - Application Groups**
 - Virtual Labs
- Managed Servers
 - VMware vSphere
 - VMware vCloud
 - Microsoft Windows
 - Linux

NAME ↑	PLATFORM	VM COUNT	DESCRIPTION
Application Group 1	VMware	1	Created by HOME-VBK01\Administrator at 2020-1...

VEEAM BACKUP AND REPLICATION

SUREBACKUP TOOLS

HOME SUREBACKUP

Add App Group Add Virtual Lab Connect Virtual Lab

Manage SureBackup

BACKUP INFRASTRUCTURE

- Backup Proxies
- Backup Repositories
- External Repositories
- Scale-out Repositories
 - Scale-out Backup Repository 1
 - Scale-out Backup Repository 2
- WAN Accelerators
- Service Providers
- SureBackup**
 - Application Groups
 - Virtual Labs
- Managed Servers
 - VMware vSphere
 - VMware vCloud
 - Microsoft Windows
 - Linux

ADD VIRTUAL LAB

A Virtual Lab requires a host on which to run virtual machines (VMs), and a datastore to store disk changes produce network is automatically created based on the production network selected to be mirrored in the lab. VMs in the isolated virtual lab network are accessible from the production network through a helper proxy appliance as part of Virtual Lab creation.

ADD APPLICATION GROUP

An Application Group defines virtual machine (VM) dependencies by specifying the required boot order of VMs includes a domain controller, a DNS server, and a DHCP server (unless static IP addresses are used). All VMs in the Application Group selected for a given SureBackup job are started in the specified order and remain


ADD SUREBACKUP JOB

To set up a SureBackup job, select the Application Group containing the core infrastructure services that the virtual specify which backup jobs you want to use. While the SureBackup job runs in recovery verification mode, all VMs from the selected backup jobs are started and request, only the required VM from the specified backup job(s) is started (in addition to the VMs in the specified

RUN SUREBACKUP JOB

To start a SureBackup job against the latest backup, go to the Jobs node in the Backup & Replication tree tab, select restore point, use the Start To command and select the desired date and time. For each SureBackup job run, a new session is created listing all processed virtual machines (VMs). Clicking a running cking a VM provides options to restart the VM or invoke an Application Item Recovery wizard (available for certain

New SureBackup Job ✕

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

Name → Name:

Virtual Lab

Application Group

Linked Jobs

Settings


Schedule

Summary

Description:
Created by HOME-VBK01\Administrator at 2020-11-30 9:16 PM.

< Previous **Next >** Finish Cancel

New SureBackup Job ✕

 **Virtual Lab**
Choose the virtual lab to run this job in.

Name

Virtual Lab → Virtual lab:

Application Group

Linked Jobs

Settings

Schedule

Summary

Created by HOME-VBK01\Administrator at 2020-11-30 4:31 PM.

Virtual lab info

Host:	home-esxi01.home.lab	Datastore:	USB-Datastore2
Total VMs:	9 total	Capacity:	1.8 TB
Running VMs:	4 running	Free space:	1.7 TB

< Previous **Next >** Finish Cancel

New SureBackup Job

Application Group

Choose the application group for this job and verify that all required backups are available.

Name: Application group: Application Group 1

Virtual Lab: Application Group 1

Application Group: Created by HOME-VBK01\Administrator at 2020-11-30 8:12 PM.

Application group info:

VM	Role	Source	Source Status
home-dc02	DNS Server; Domai...	Backup	OK (14 days ...)

Keep the application group running after the job completes
 This option enables performing additional manual verification, or user-directed application item recovery for virtual machines in this application group.

< Previous Next > Finish Cancel

New SureBackup Job

Linked Jobs

Select one or more jobs to link to this SureBackup job. All virtual machines from the selected backup jobs will be processed sequentially once the specified application group is initialized.

Name: Link jobs

Virtual Lab: Link jobs

Application Group: Link jobs

Linked Jobs:

Name	Role	Ping	Heartbeat
Backup Job 1_clone1	<Not specified>	Yes	Yes

Process simultaneously up to: 3 VMs

Add... Edit... Remove

Advanced

New SureBackup Job

Settings
Choose DR verification job settings.

Name

Virtual Lab

Application Group

Linked Jobs

Settings

Schedule

Summary

Backup file integrity scan

- Validate entire virtual disk content (detects silent data corruption)
- Skip validation for application group VMs

Malware scan

- Scan the selected restore point for malware
- Scan the entire image
- Continue scanning remaining files after the first malware has been found.
- Skip application group machines from malware scan

Notifications

Job session results are saved in SureBackup job session history. In addition, you can configure e-mail and SNMP notifications.

- Send SNMP trap
- Send e-mail notifications to the following recipients:

Type in one or more e-mail addresses separated by semicolon

< Previous Next > Finish Cancel

New SureBackup Job

Schedule
Specify scheduling settings if you want this SureBackup job to run periodically in an automated fashion.

Name

Virtual Lab

Application Group

Linked Jobs

Settings

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...
- After this job: Backup Job 1 (Created by HOME-VBK01\Administrator at 2020-09-15)

Wait for backup jobs

- If some linked backup jobs are still running, wait for up to: 180 minutes

< Previous **Apply** Finish Cancel

1. Select restore point to be scanned by anti-virus



Veeam Backup and Replication



Backup repository



2. Mounts restored disks directly from the backup file to the mount server

Anti-virus software installed with latest definitions

3. Triggers an anti-virus check of mounted volumes



4a. If no infections found, continue restore



4b. If infection is found, add to a secure network and security group



4c. If infection found, disregard process

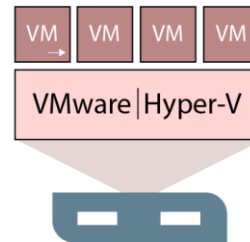


Script injection

Virtual Lab

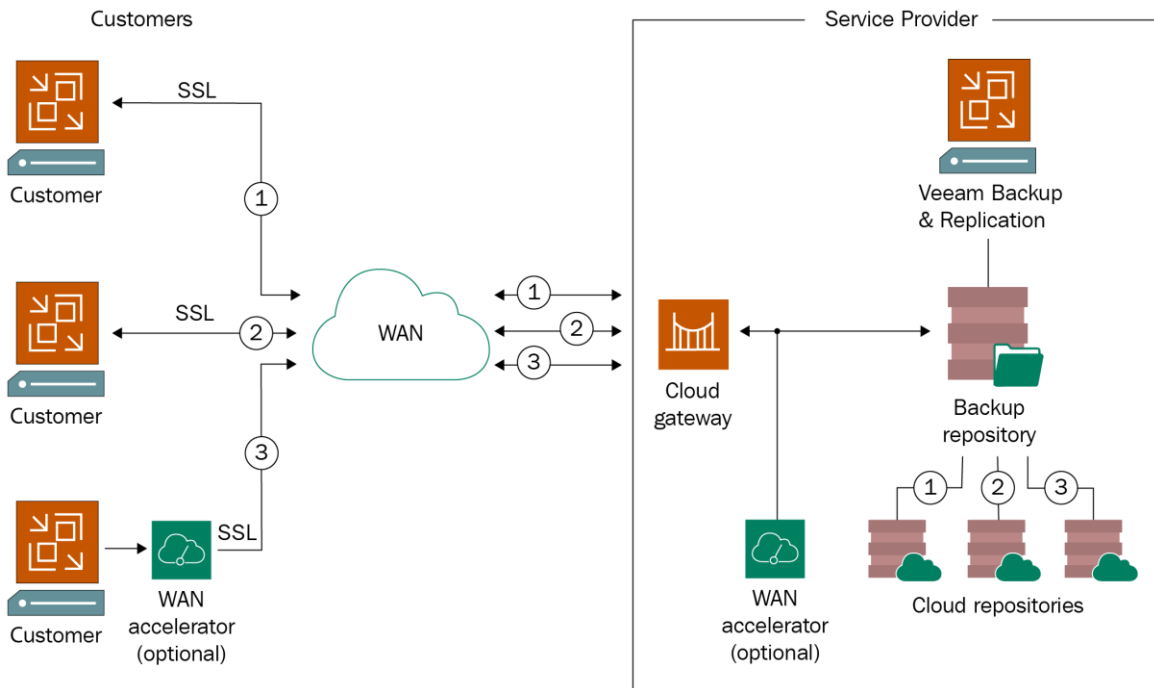


Backup repository



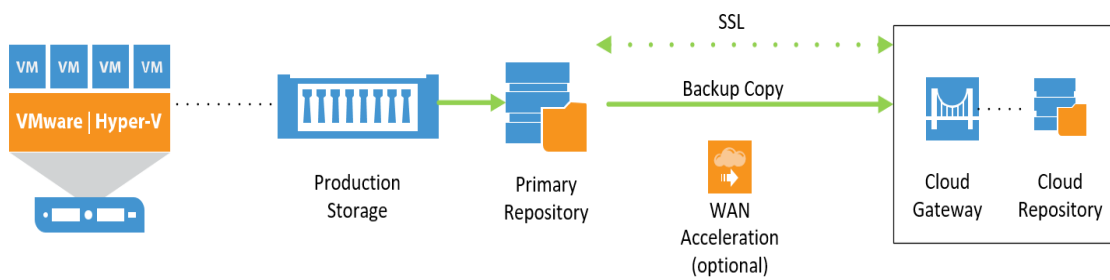
Virtualised environment

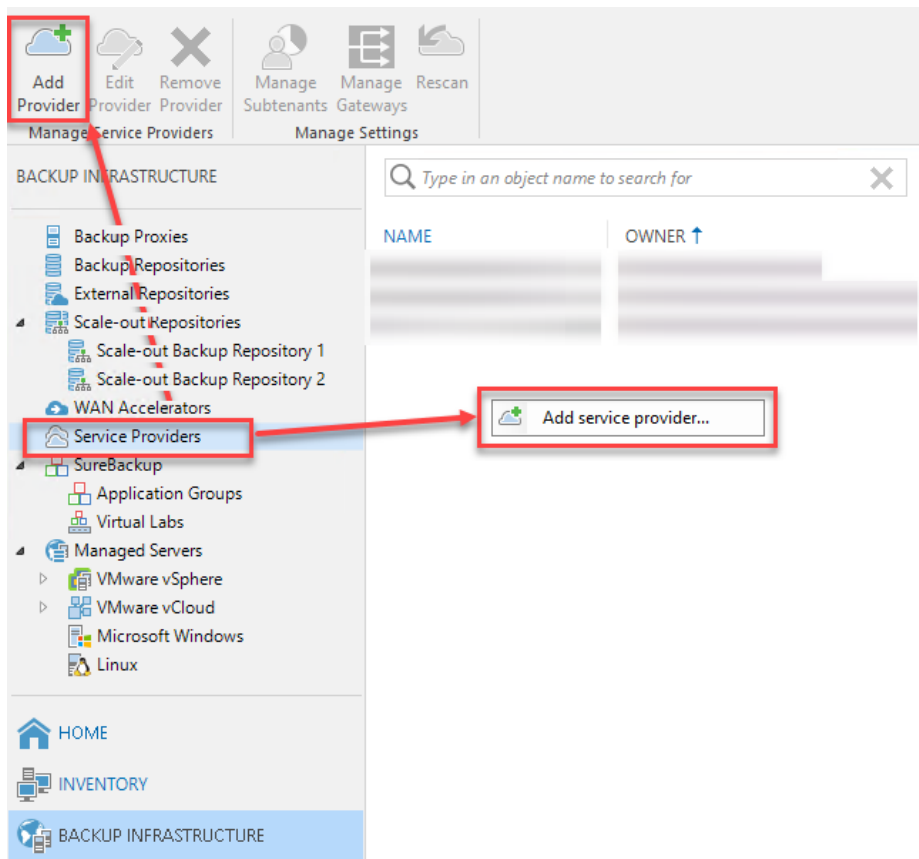
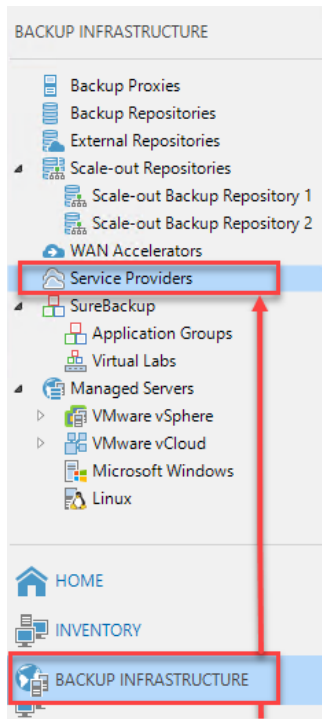
Chapter 8: Cloud Backup & Recovery using Veeam Cloud Connect Provider and Insider Protection Feature



Customer On-Premises Infrastructure

Service Provider Infrastructure





Service Provider

Service Provider

Type in DNS name or IP address and a port number received from the service provider. If you are using more than one service provider, add a custom description to more easily distinguish between them.

Service Provider
Credentials
Apply
Summary

DNS name or IP address:

Port: 6180

Description:
Created by HOME-VBK01\Administrator at 2020-12-14 9:23 PM.

Allow this Veeam Backup & Replication installation to be managed by the service provider
Select this check box if you have managed backup contract with the service provider you are adding, and want to allow it to manage your installation remotely.

< Previous Next > Finish Cancel

Service Provider

Service Provider

Type in DNS name or IP address and a port number received from the service provider. If you are using more than one service provider, add a custom description to more easily distinguish between them.

Service Provider
Credentials
Apply
Summary

DNS name or IP address:

Port: 6180

Description:
Created by HOME-VBK01\Administrator at 2020-12-14 9:23 PM.

Allow this Veeam Backup & Replication installation to be managed by the service provider
Select this check box if you have managed backup contract with the service provider you are adding, and want to allow it to manage your installation remotely.

< Previous Next > Finish Cancel

Service Provider

Credentials

Specify credentials that you have received from the service provider, and validate the certificate.

Service Provider

Credentials

Apply

Summary

You have connected to service provider central.veeamcloudconnect.ca

Verified by: [CN=RapidSSL TLS DV RSA Mixed SHA256 2020 CA-1, O=DigiCert Inc, C=US](#)

Thumbprint:

Certificate is verified by third party.

Verify

Add or select credentials issued to you by the service provider

Credentials:

[thinkon.chris.childerhose \(thinkon.chris.childerhose, last edited: 90 day\)](#) Add...

[Manage accounts](#)

< Previous Apply Finish Cancel

Service Provider

Summary

Review the results, and click Finish to exit the wizard.

Service Provider

Credentials

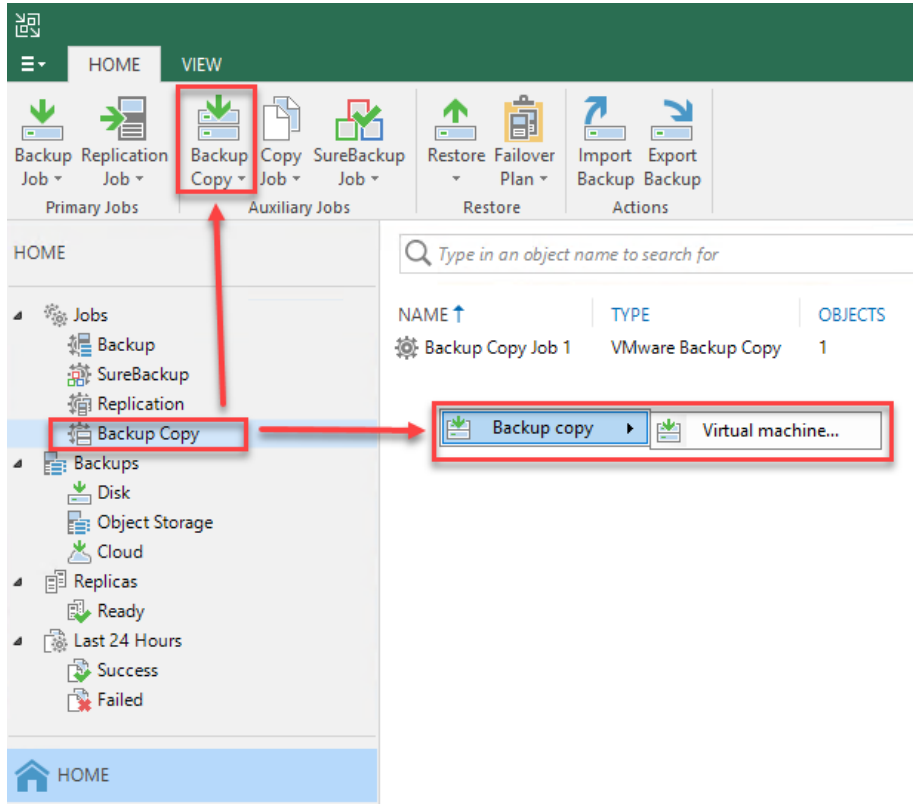
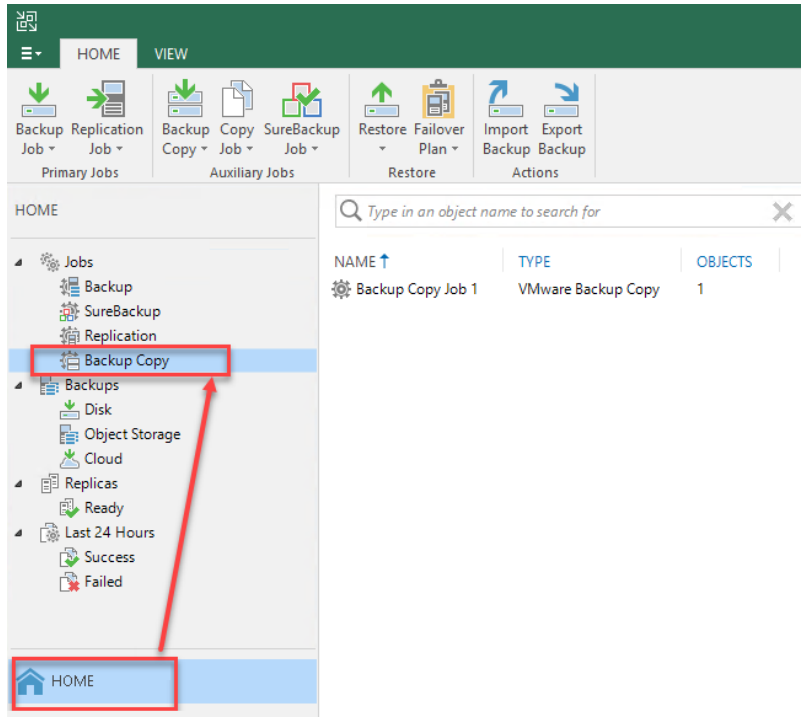
Replica Resources

Apply


Summary


Summary:

< Previous Next > Finish 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	Backup repository:	Cloud repository 1 (Cloud repository) ▼
Objects		4.88 TB free of 5.00 TB Map backup
Target	Restore points to keep:	7 ▲▼
Data Transfer	<input checked="" type="checkbox"/> Keep the following restore points as full backups for archival purposes	
Schedule	Weekly backup:	4 ▲▼ Saturday Schedule...
Summary	Monthly backup:	0 ▲▼ First Sunday of the month
	Quarterly backup:	0 ▲▼ First Sunday of the quarter
	Yearly backup:	0 ▲▼ First Sunday of the year
		<input checked="" type="checkbox"/> 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

New Backup Copy Job ✕

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

Job	<input checked="" type="radio"/> 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.
Objects	<input type="radio"/> 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.
Target	Source WAN accelerator:	
Data Transfer	 ▼	
Schedule	Target WAN accelerator:	
Summary	Service Provider's WAN Accelerator (Unavailable) ▼	

< Previous Next > Finish Cancel

New Backup Copy Job

Schedule
Specify when this job is allowed to transfer data over the network. Backup copy jobs run continuously, starting data transfers according to copy interval and/or as the new object restore points appear.

Job
Objects
Target
Data Transfer
Schedule
Summary

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

12 · 2 · 4 · 6 · 8 · 10 · 12 · 2 · 4 · 6 · 8 · 10 · 12

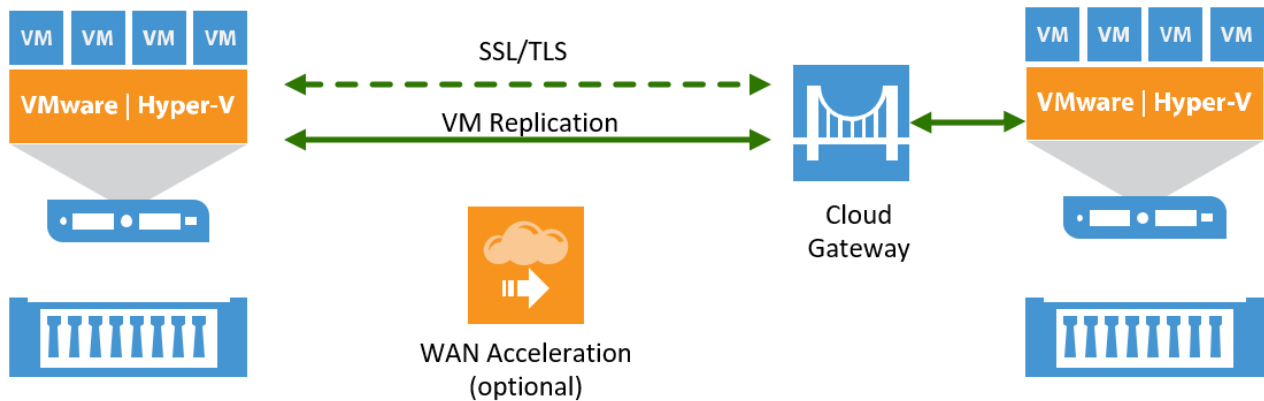
All																								
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								

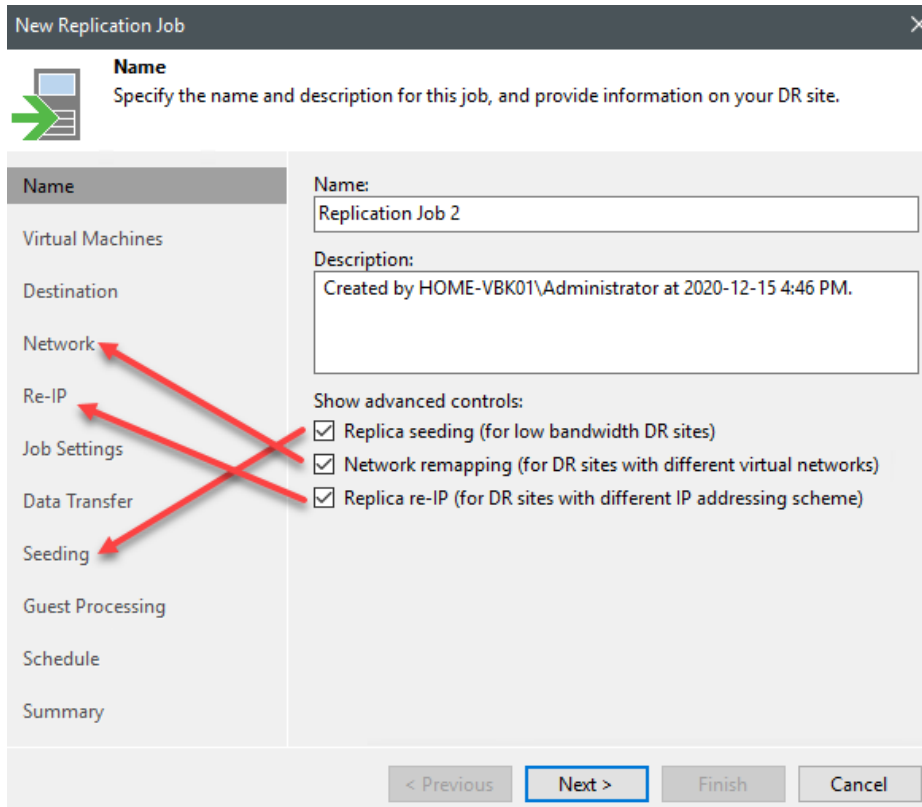
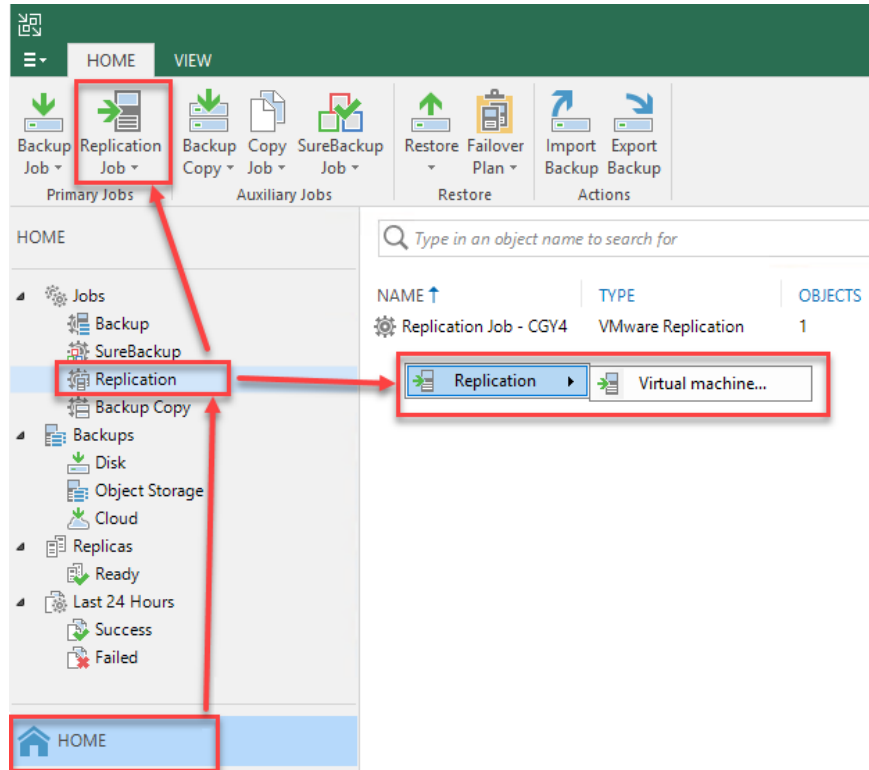
Enable
Disable

< Previous Apply Finish Cancel

Customer On-Premises Infrastructure


Service Provider Infrastructure





New Replication Job ✕

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




Name	Organization vDC:	<input type="text" value="-CHRIS-"/> Choose...
Virtual Machines		
Destination	vApp:	<input type="text" value="Cloud Connect 1 (Default)"/> Choose...
Network		
Job Settings	Storage policy:	<input type="text" value="Production T2 (Default) [500 GB free]"/> Choose...
Data Transfer		
Seeding		
Guest Processing		
Schedule		
Summary		

Re-IP turned off

< Previous Next > Finish Cancel

New Replication Job ✕

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



Name	Network mapping:		Add...
Virtual Machines	Source network	Target network	Edit...
Destination			Remove
Network			
Job Settings			
Data Transfer			
Seeding			
Guest Processing			
Schedule			
Summary			

Network Mapping ✕

Source network: Browse...

Target network: Browse...

OK Cancel

< Previous Next > Finish Cancel

New Replication Job [Close]

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.

Name Repository for replica metadata:
Default Backup Repository (Created by Veeam Backup) [v]
462 GB free of 499 GB

Virtual Machines

Destination

Network

Job Settings Replica settings:
Replica name suffix:
Restore points to keep:

Data Transfer

Seeding

Guest Processing

Schedule

Summary

Advanced job settings include traffic compression, block size, notification settings, automated post-job activity and other options.

< Previous Next > Finish Cancel

New Replication Job [Close]

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

Name When replicating between remote sites, we highly recommended that you deploy at least one backup proxy server locally in both sites to allow for direct access to storage.

Virtual Machines Source proxy:

Destination Target proxy:

Network

Job Settings

Data Transfer
 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:

Seeding

Guest Processing

Schedule

Summary

< Previous Next > Finish Cancel

New Replication Job [X]

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

Initial seeding
 Get seed from the following backup repository:
 Default Backup Repository (Created by Veeam Backup)
 462 GB free of 499 GB

Replica mapping
 Map replicas to existing VMs

Original VM	Replica VM
home-dc02	No mapping

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.

New Replication Job [X]

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

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:
 home\administrator (Local Administrator, last edited: 83 days ago)
[Manage accounts](#)

Customize guest OS credentials for individual machines and operating systems

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

New Replication Job [X]

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

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: Backup Job 1 (Created by HOME-VBK01\Administrator at 2020-09-15)

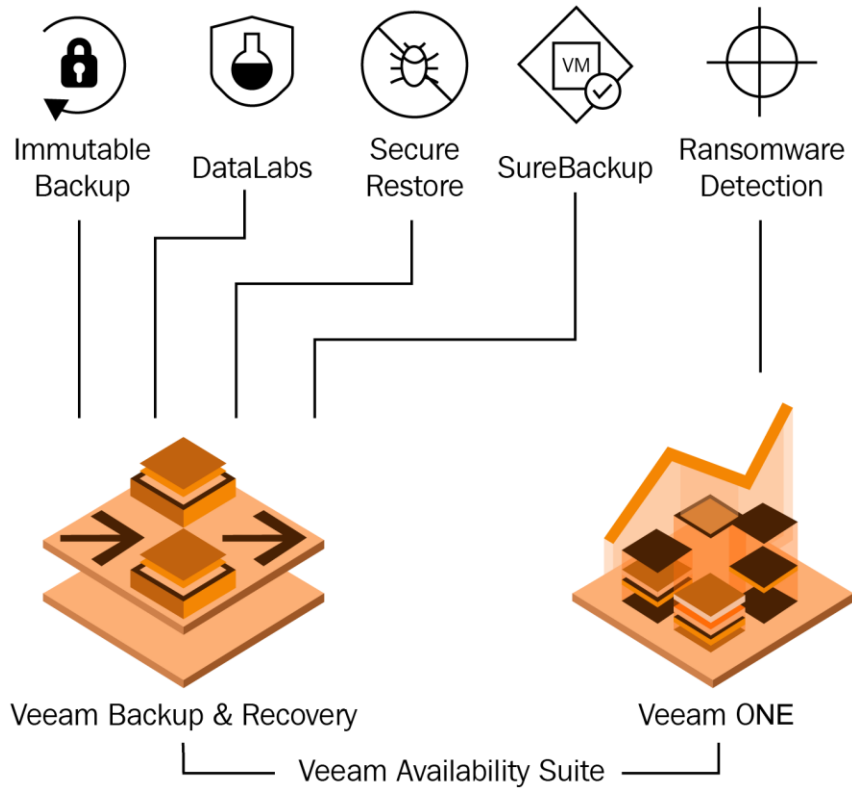
Automatic retry

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

Backup window

Terminate job if it exceeds allowed backup window Window...
 If the job does not complete within allocated backup window, it will be terminated to prevent snapshot commit during production hours.

< Previous Apply Finish Cancel





Backup Resources

Add one or more cloud repositories for this tenant to use.

Tenant

Bandwidth

Backup Resources

Summary

Cloud repositories:

Repository	Friendly name	Quota	Free	WAN
Scale-out Backup Re...	Cloud repositor...	4.00 TB	83.4 TB fre...	Not set

Add...

Edit...

Remove

Keep deleted backup files for 30 days

For added tenant protection against insider attacks, we will preserve all deleted backup files for the set number of days. The deleted backups will not count towards tenant's quota consumption, and cannot be managed by the tenant.

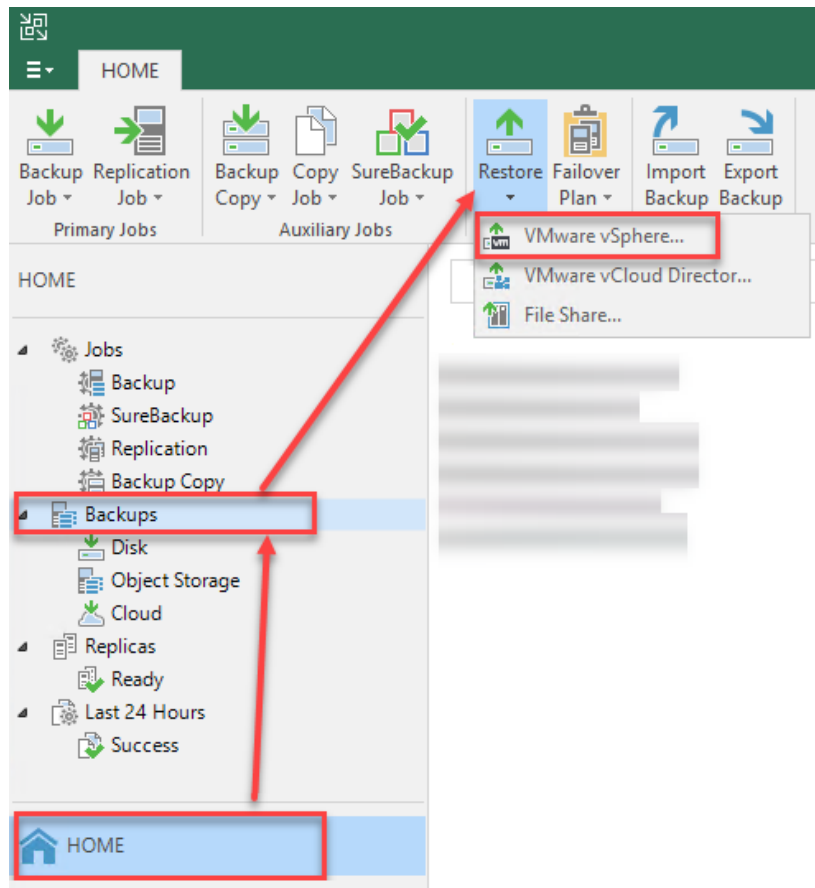
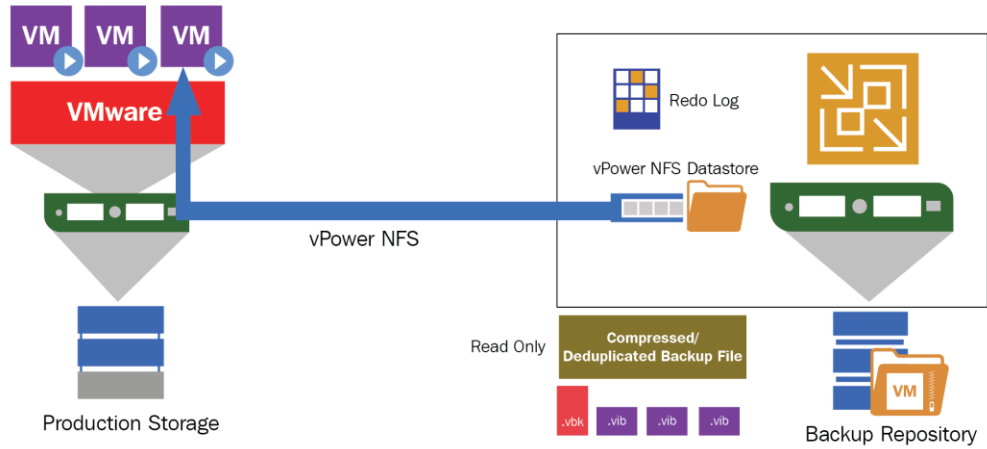
< Previous

Next >

Finish


Cancel


Chapter 9: Instant VM Recovery




Restore ✕


Choose whether you want to restore from backup or replica.


 **Restore from backup**
Performs restore from a backup file.


 **Restore from replica**
Performs restore from a replica VM.


 **Restore from Backup** ✕

Select the type of restore you want to perform.

 **Entire VM restore**
Restores the entire VM or its individual components, such as virtual disks.

 **Volume restore**
Restores the content of individual volumes.

 **Guest files restore**
Restores individual guest files from an image-level backup.


 **Application items restore**
Restores individual application items from an image-level backup.



Restore from Backup

Select the type of restore you want to perform.

Launches the Instant VM Recovery wizard

 **Instant VM recovery**
Instantly recovers a virtual machine by running it directly from backup. Remember to finalize the restore by moving the VM to your production storage.



Entire VM restore

Restores entire VM to the original or a new location, and registers it with the vSphere infrastructure.



VM files restore (VMX, NVRAM)

Restores individual VM files to the specified location.



Restore to Amazon EC2

Restores any backup to the Amazon EC2 virtual machine, contains options for on-prem and cloud restores.



Restore to Microsoft Azure

Restores any backup to the Microsoft Azure infrastructure as a service (IaaS) virtual machine, contains options for on-prem and cloud restores.

Cancel

Instant Recovery to VMware



Machines

Select machines to be restored. You can add individual machines from backup files, or containers from live environment (containers will be automatically expanded into plain list).

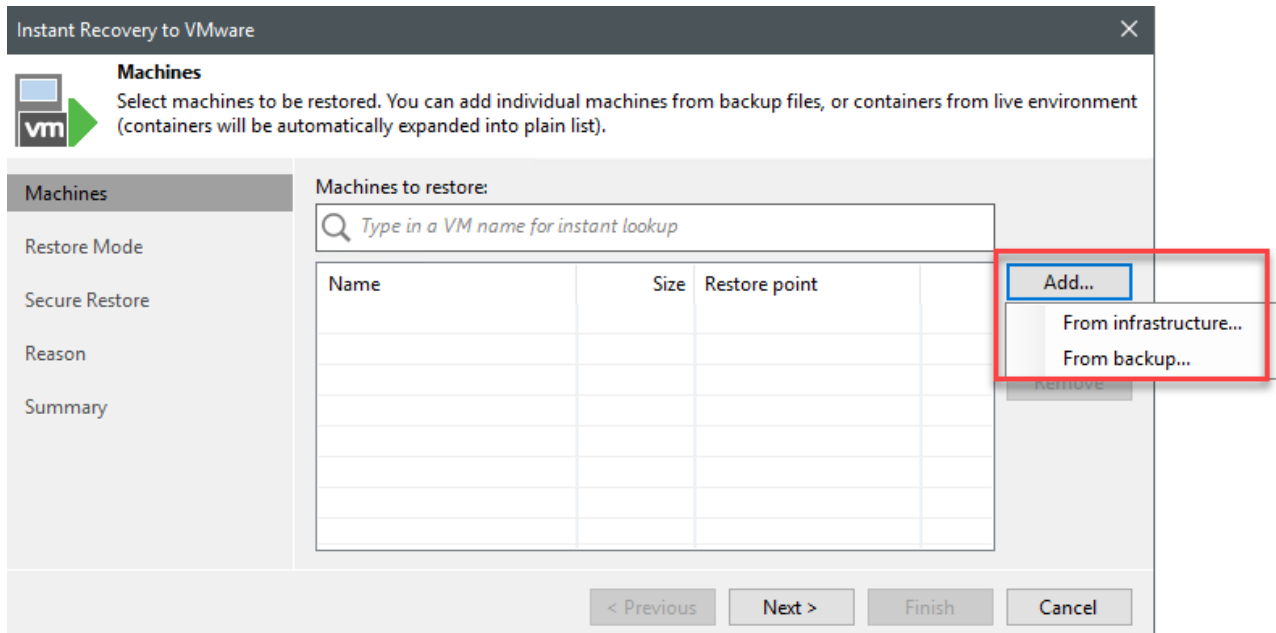
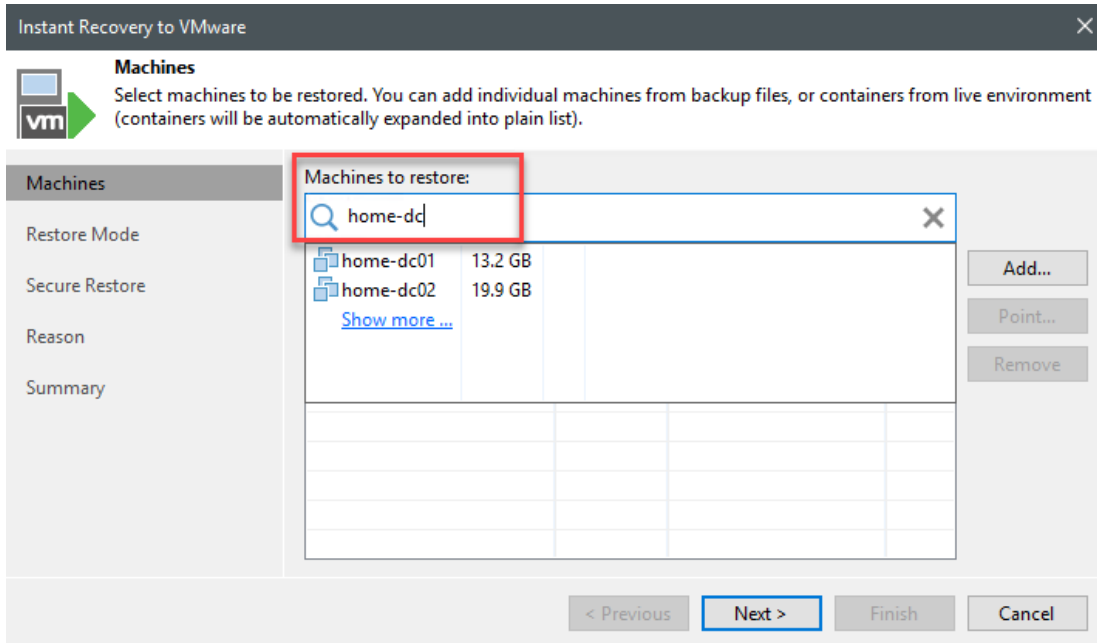
- Machines
- Restore Mode
- Secure Restore
- Reason
- Summary

Machines to restore:


Name	Size	Restore point

Add...
Point...
Remove

< Previous Next > Finish Cancel



Instant Recovery to VMware ✕


 **Restore Mode**
Specify whether selected VMs should be restored back to the original location, or to a new location or with different settings.

Machines	<input checked="" type="radio"/> Restore to the original location Quickly initiate the restore of selected VM to its original location, with the original name and settings. This option minimizes the chance of user input error.
Restore Mode	<input type="radio"/> Restore to a new location, or with different settings Customize the restored VM location, and change its settings. The wizard will automatically populate all controls with the original VM settings as the defaults.
Secure Restore	
Reason	
Summary	

Restore VM tags

< Previous Next > Finish Cancel

Instant Recovery to VMware ✕

 **Restore Mode**
Specify whether selected VMs should be restored back to the original location, or to a new location or with different settings.

Machines	<input type="radio"/> Restore to the original location Quickly initiate the restore of selected VM to its original location, with the original name and settings. This option minimizes the chance of user input error.
Restore Mode	<input checked="" type="radio"/> Restore to a new location, or with different settings Customize the restored VM location, and change its settings. The wizard will automatically populate all controls with the original VM settings as the defaults.
Destination	
Datastore	
Secure Restore	
Reason	
Summary	

Restore VM tags

< Previous Next > Finish Cancel

Instant Recovery to VMware

Destination
Choose ESX server to run the recovered virtual machine on. You can choose to power on VM automatically, unless you need to adjust VM settings first (such as change VM network).

Machines Restored VM name: home-dc02-restored

Restore Mode Host: home-esxi01.home.lab Choose...

Destination VM folder: Discovered virtual machine Choose...

Datastore Resource pool: Resources Choose...

Secure Restore

Reason

Summary

To customize machine BIOS UUID click Advanced. **Advanced**

< Previous Next > Finish Cancel

Advanced

Preserve BIOS UUID
Preserving system UUID for the restored VM prevents issues with applications that match system by UUID.

Generate new BIOS UUID
Generating new UUID prevents possible conflicts between the restored clone and the original machine.

OK Cancel

Instant Recovery to VMware

Datastore
By default, changed virtual disk blocks are stored in the vPower NFS cache folder on the backup repository's mount server. If desired for performance or capacity reasons, you can redirect this write cache to a different datastore.

Machines Redirect write cache

Restore Mode Datastore: VM-Datastore2 Choose...

Destination 122.8 GB free of 149.8 GB

Datastore

Secure Restore

Reason

Summary

< Previous Next > Finish Cancel

Instant Recovery to VMware

Secure Restore

Scan the selected backup for malware, such as computer viruses or ransomware, prior to performing the restore. This requires a compatible antivirus installed on the mount server specified for the corresponding backup repository.

Machines

Restore Mode

Destination

Datastore

Secure Restore

Reason

Summary

- Scan machine for virus threats prior performing recovery
Machine you are about to restore will be scanned by antivirus software installed on the mount host to ensure resulting machine will not cause virus spread across all your infrastructure.
- When virus threat is detected:
 - Proceed to recovery but disable VM network adapters
 - Abort VM recovery
- Scan entire VM for virus threats
Continue scanning the remaining files after the first virus threat has been found.

< Previous Next > Finish Cancel

Instant Recovery to VMware

Reason

Type in the reason for performing this restore operation. This information will be logged in the restore sessions history for later reference.

Machines

Restore Mode

Destination

Datastore

Secure Restore

Reason

Summary

Restore reason:
Restore of Active Directory for troubleshooting server replication,

Do not show me this page again

< Previous Next > Finish Cancel

Instant Recovery to VMware

Summary

You can copy this configuration information for the future reference.

Machines

Restore Mode

Destination

Datastore

Secure Restore

Reason


Summary

Summary:
VM: home-dc02, backed up 10 days ago (8:31 PM Friday 2020-12-18).
Host: home-esxi02.home.lab
Datastore: create on datastore "VM-Datastore2"
New VM name: home-dc02-restored
Secure Restore: Disabled

After you click Finish, the selected VM will be instantly recovered into your production environment. To finalize the recovery, use Storage VMotion to move running VM to the production storage. Alternatively, you can perform cold VM migration during your next maintenance window.

If you are performing manual recovery testing, remember to change VM network to non-production before powering on the VM.

Connect VM to network
 Power on target VM after restoring

 Make sure original server is powered off. Recovering server into production network with original server still running may affect some applications.

< Previous Next > **Finish** Cancel

home-esxi02.home.lab ACTIONS

Summary Monitor Configure Permissions VMs Datastores

Name ↑

- datastore1
- VeeamBackup_home-vbk01.HOME.LAB**
- VM-Datastore1
- VM-Datastore2

VEEAM BACKUP AND REPLICATION

HOME

Backup Job, Replication Job, Backup Copy Job, SureBackup Job, Restore, Failover Plan, Import Backup, Export Backup

HOME

VM NAME ↑	TYPE	HOST	STATUS	RESTORE POINT	BACKUP NAME
home-dc02-restored	Instant VM Recovery	home-esxi02.home.lab	Mounted	2020-12-18 8:31:46 PM	Backup Job 1

Instant Recovery (1)

- Jobs
 - Backup
 - SureBackup
 - Replication
 - Backup Copy
- Backups
 - Disk
 - Object Storage
 - Cloud
- Replicas
 - Ready
- Last 24 Hours
 - Running (1)
 - Success

HOME

VEEAM BACKUP AND REPLICATION

RECOVERY TOOLS

HOME INSTANT VM RECOVERY

Migrate to Production, Open VM Console, Stop Publishing, Properties

HOME

VM NAME ↑	TYPE	HOST	STATUS	RESTORE POINT	BACKUP NAME
home-dc02-restored	Instant VM Recovery	home-esxi02.home.lab	Mounted	2020-12-18 8:31:46 PM	Backup Job 1

Instant Recovery (1)

- Jobs
 - Backup
 - SureBackup
 - Replication
 - Backup Copy
- Backups
 - Disk
 - Object Storage
 - Cloud
- Replicas
 - Ready
- Last 24 Hours
 - Running (1)
 - Success

Migrate to production...
Open VM console
Stop publishing
Properties...

Quick Migration

Destination
Choose destination host, resource pool, VM folder and datastore.

Destination
Transfer
Ready

Host or cluster:
Home-Lab Choose...

Resource pool:
Resources Choose...

VM folder:
Discovered virtual machine Choose...

Datastore:
VM-Datastore2 [122.8 GB free] Choose...
[Pick datastore](#) for selected virtual disks

< Previous Next > Finish Cancel

Quick Migration

Transfer
If desired, select specific source and target backup proxy to perform the operation with.

Destination
Transfer
Ready

Data transfer
When remote migrating between sites, for best migration performance you should deploy at least one backup proxy server in each site.

Source proxy:
Automatic selection Choose...

Target proxy:
Automatic selection Choose...

Force Veeam transport usage
Move virtual disks using Veeam data transport engine even if VMware Storage vMotion is licensed and available for the given migration scenario.

< Previous Next > Finish Cancel

VEEAM BACKUP AND REPLICATION

RECOVERY TOOLS

INSTANT VM RECOVERY

Migrate to Production | Open VM Console | **Stop Publishing** | Properties

HOME

VM NAME ↑	TYPE	HOST	STATUS	RESTORE POINT	BACKUP NAME
home-dc02-restored	Instant VM Recovery	home-esxi02.home.lab	Mounted	2020-12-18 8:31:46 PM	Backup Job 1

Instant Recovery (1)

- Jobs
 - Backup
 - SureBackup
 - Replication
 - Backup Copy
- Backups
 - Disk
 - Object Storage
 - Cloud
- Replicas
 - Ready
 - Last 24 Hours
 - Running (1)
 - Success

Veeam Backup & Replication

Stop publishing the following machines?

Show objects | **Yes** | No

Dismount finished

All VMs were dismounted 1/1

Log:

Message	Duration
✓ Connecting to host home-esxi02.home.lab	0:00:01
✓ Checking if VM home-dc02-restored was moved	
✓ Removing VM from inventory	
✓ Dismounting VM files	0:00:01
✓ Unlocking VM backup file	
✓ Deleting mount folder	
✓ Deleting change storage folder	0:00:11
✓ VM home-dc02-restored dismounted successfully	

OK

VEEAM BACKUP AND REPLICATION

RECOVERY TOOLS

HOME INSTANT VM RECOVERY

Migrate to Production Open VM Console Stop Publishing Properties

HOME

VM NAME ↑	TYPE	HOST	STATUS	RESTORE POINT	BACKUP NAME
home-dc02-restored	Instant VM Recovery	home-esxi02.home.lab	Mounted	2020-12-18 8:31:46 PM	Backup Job 1

Instant Recovery (1)

- Jobs
 - Backup
 - SureBackup
 - Replication
 - Backup Copy
- Backups
 - Disk
 - Object Storage
 - Cloud
- Replicas
- Ready
- Last 24 Hours
 - Running (1)
 - Success

HOME

INVENTORY

Restore Session

Name: **home-dc02** Status: **In progress**

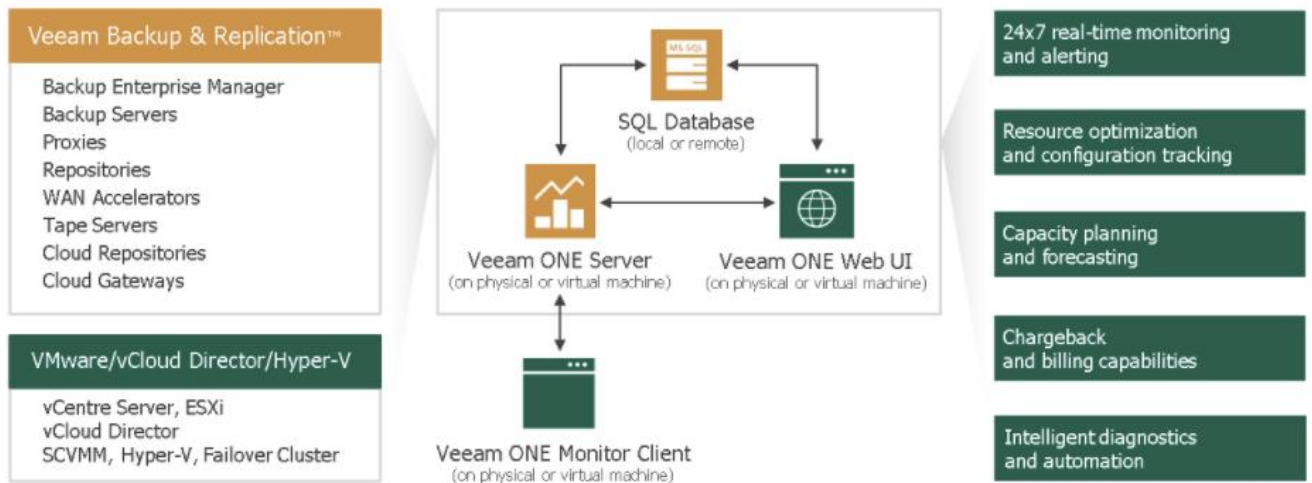
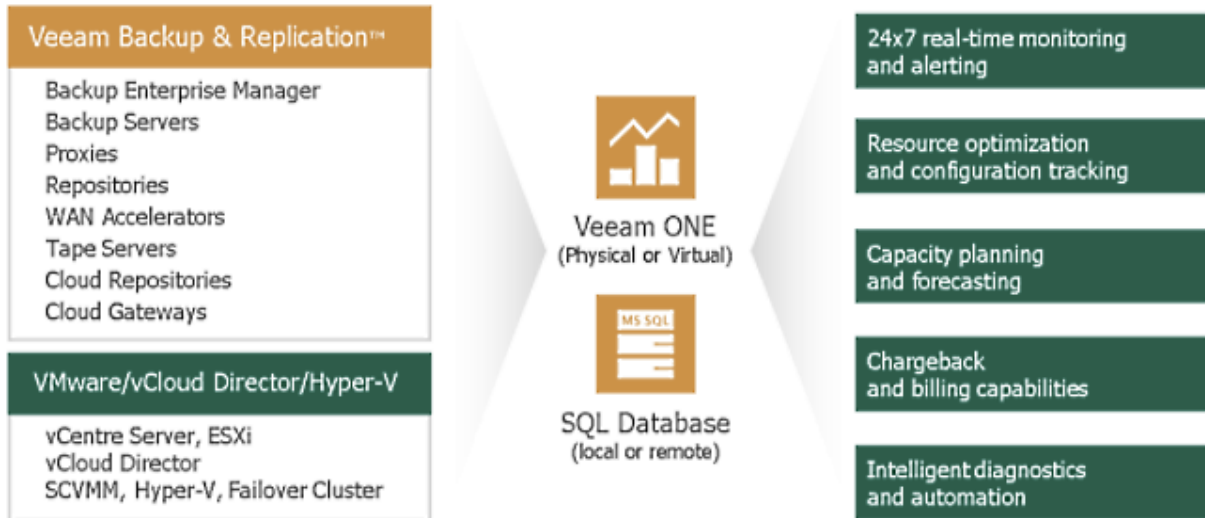
Restore type: Instant VM Recovery Start time: 2020-12-29 4:17:26 PM

Initiated by: HOME-VBK01\Administrator

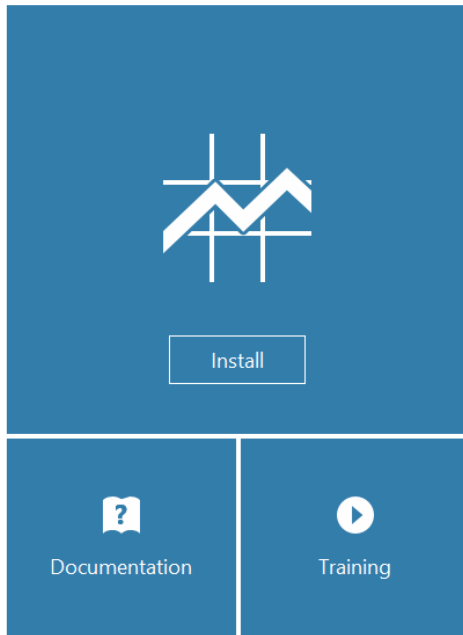
Reason	Parameters	Log
Message		Duration
✓	Checking if vPower NFS datastore is mounted on host	0:00:05
✓	Locking backup file	
✓	Publishing VM	0:00:10
✓	Preparing change storage	0:00:04
✓	Updating VM configuration	0:00:04
✓	Checking free disk space available to vPower NFS server.	
✓	Registering VM	0:00:09
✓	No VM tags to restore	0:00:01
✓	Creating VM snapshot	0:00:02
✓	Updating session history	
✓	home-dc02-restored has been recovered successfully	
✓	Waiting for user to start migration	

[Open console](#) [Close](#)

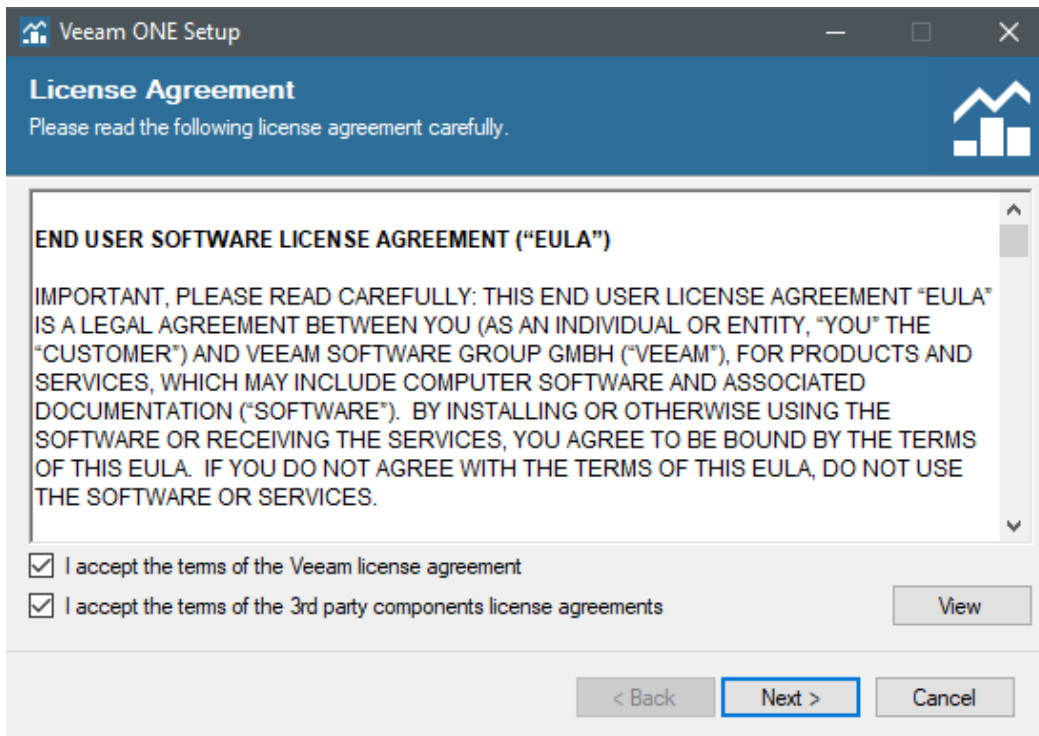
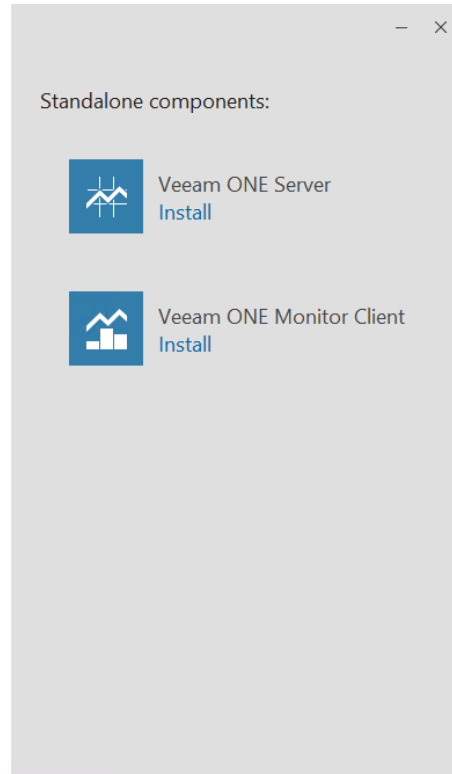
Chapter 10: Veeam ONE



Veeam ONE 10a



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Veeam ONE Setup

License Agreement

Please read the following license agreement carefully.

END USER SOFTWARE LICENSE AGREEMENT ("EULA")

IMPORTANT, PLEASE READ CAREFULLY: THIS END USER LICENSE AGREEMENT "EULA" IS A LEGAL AGREEMENT BETWEEN YOU (AS AN INDIVIDUAL OR ENTITY, "YOU" THE "CUSTOMER") AND VEEAM SOFTWARE GROUP GMBH ("VEEAM"), FOR PRODUCTS AND SERVICES, WHICH MAY INCLUDE COMPUTER SOFTWARE AND ASSOCIATED DOCUMENTATION ("SOFTWARE"). BY INSTALLING OR OTHERWISE USING THE SOFTWARE OR RECEIVING THE SERVICES, YOU AGREE TO BE BOUND BY THE TERMS OF THIS EULA. IF YOU DO NOT AGREE WITH THE TERMS OF THIS EULA, DO NOT USE THE SOFTWARE OR SERVICES.

I accept the terms of the Veeam license agreement

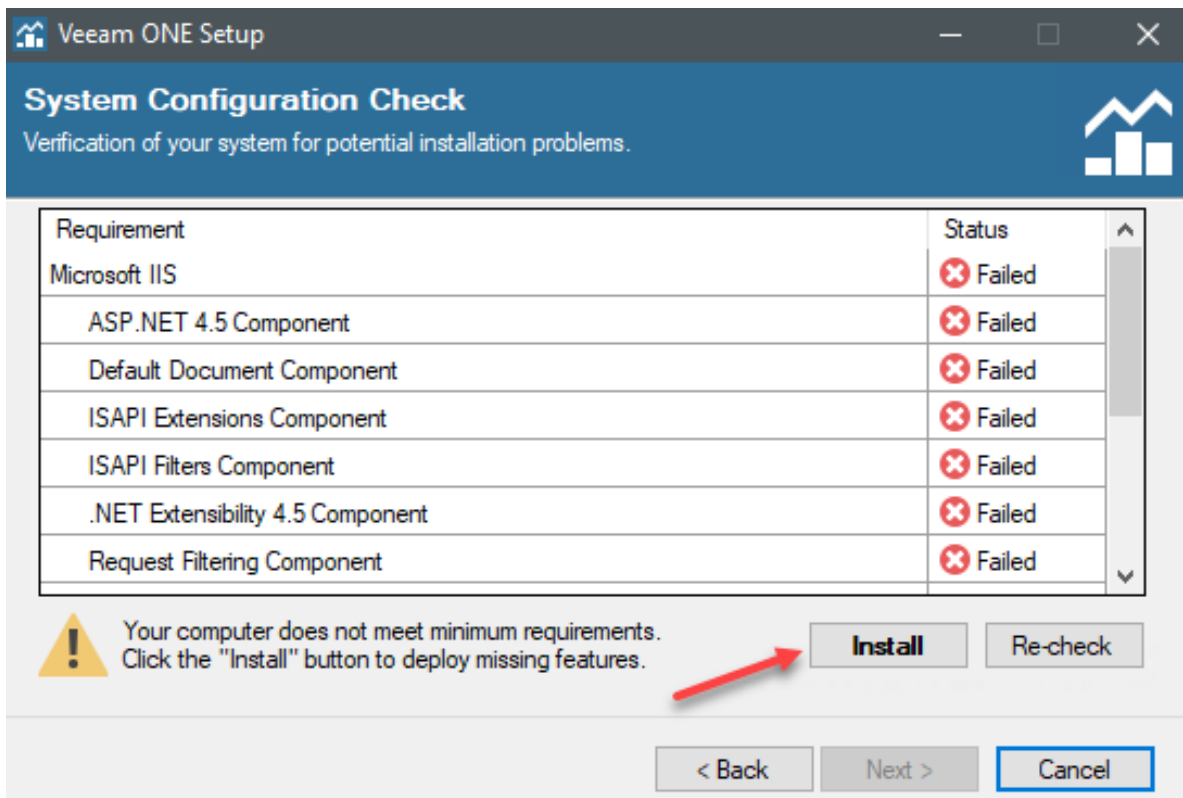
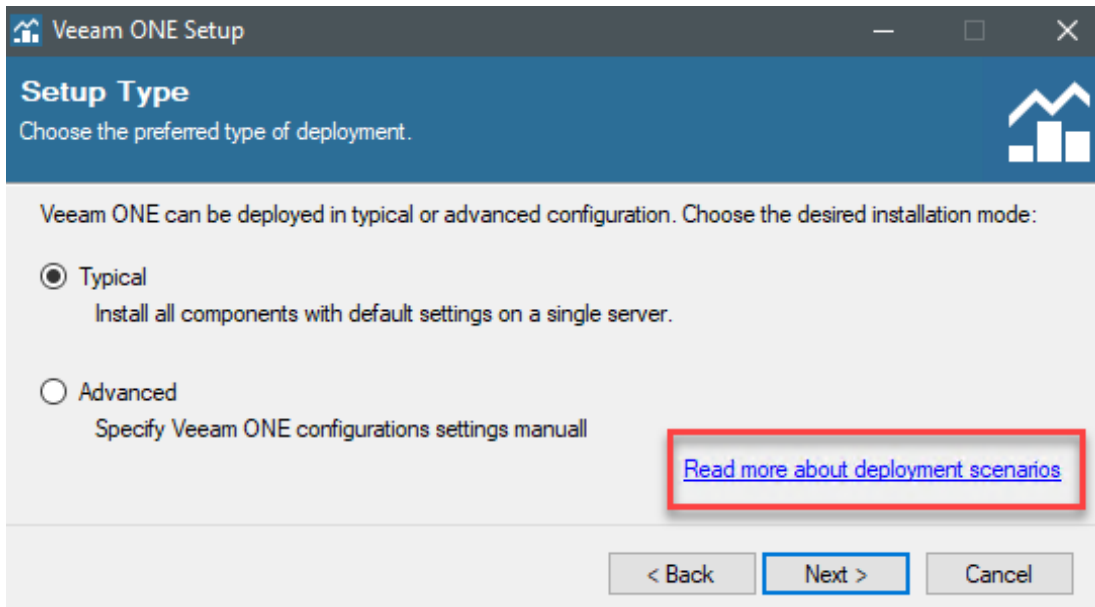
I accept the terms of the 3rd party components license agreements

View

< Back

Next >

Cancel



Veeam ONE Setup

Installation Path

Select Veeam ONE installation folder.

Install Veeam ONE to the following folder:

C:\Program Files\Veeam\Veeam ONE\ Browse...


Installation requires 441.38 MB of free disk space. Available space on selected disk is 114.6 GB.

< Back Next > Cancel


Veeam ONE Setup

Service Account Credentials

Specify Veeam ONE service account credentials.

 Enter the user name in the DOMAIN\USERNAME format. The supplied user account must have database owner rights to the Veeam ONE. "Log on as a service" right will be granted to the specified account automatically.

User name: HOME-VBK01\Veeambackup Browse...

Password: 

< Back Next > Cancel

Veeam ONE Setup

SQL Server Instance

Choose SQL Server instance to create Veeam ONE database on.

Install new instance of SQL Server (localhost\VEEAMSQL2016)

Use existing instance of SQL Server (HOSTNAME\INSTANCE)

HOME-VBK01\VEEAMSQL2016 Browse...

Database name: VeeamONE Browse...

Connect to SQL Server using

Windows authentication credentials of service account

SQL Server authentication using the Login ID and password below:

Login ID:

Password:

< Back Next > Cancel

Veeam ONE Setup

Provide License

Provide license file or proceed in Community Edition mode.

Install Veeam ONE in:

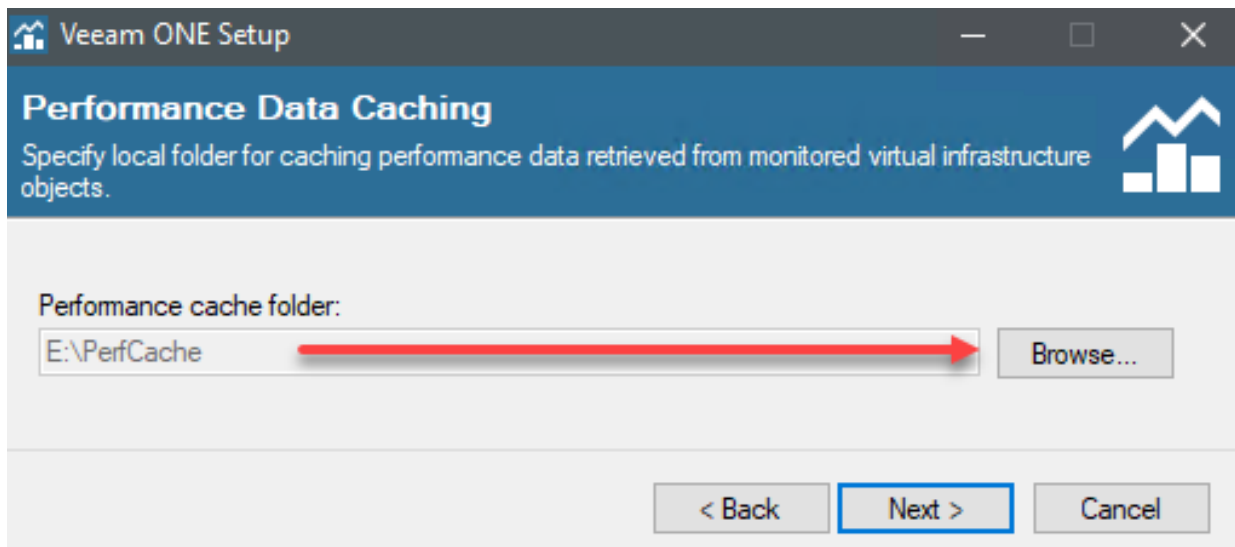
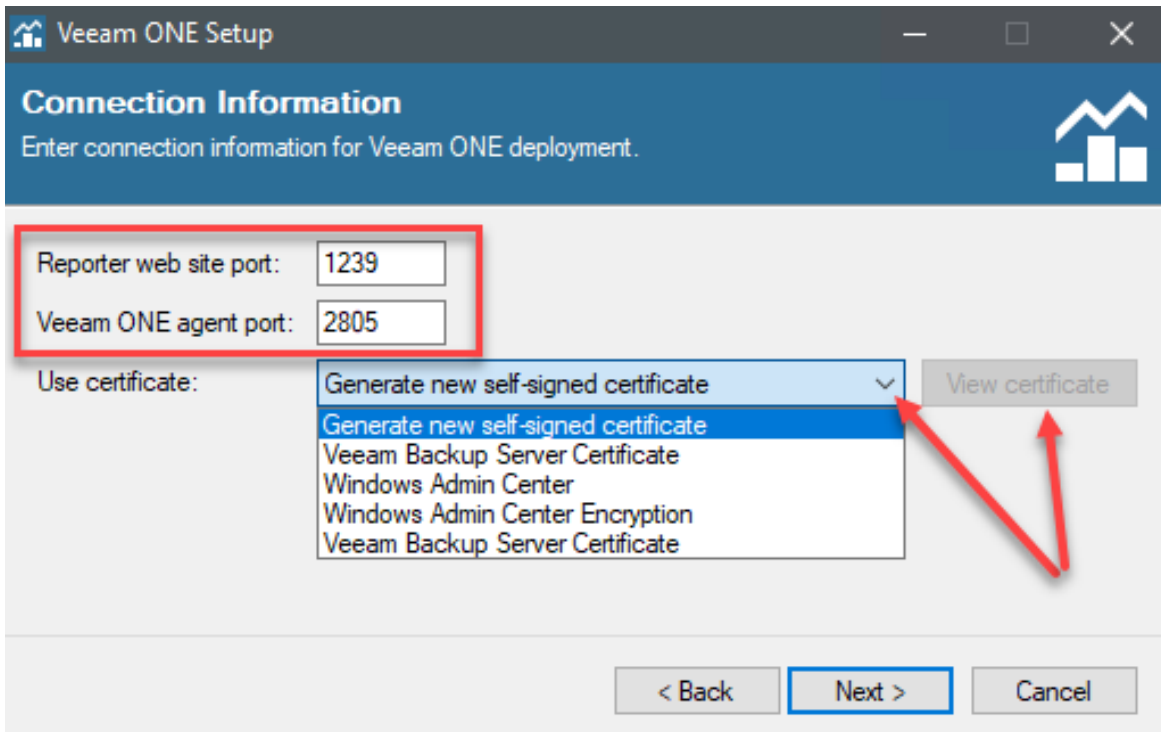
Full functionality mode

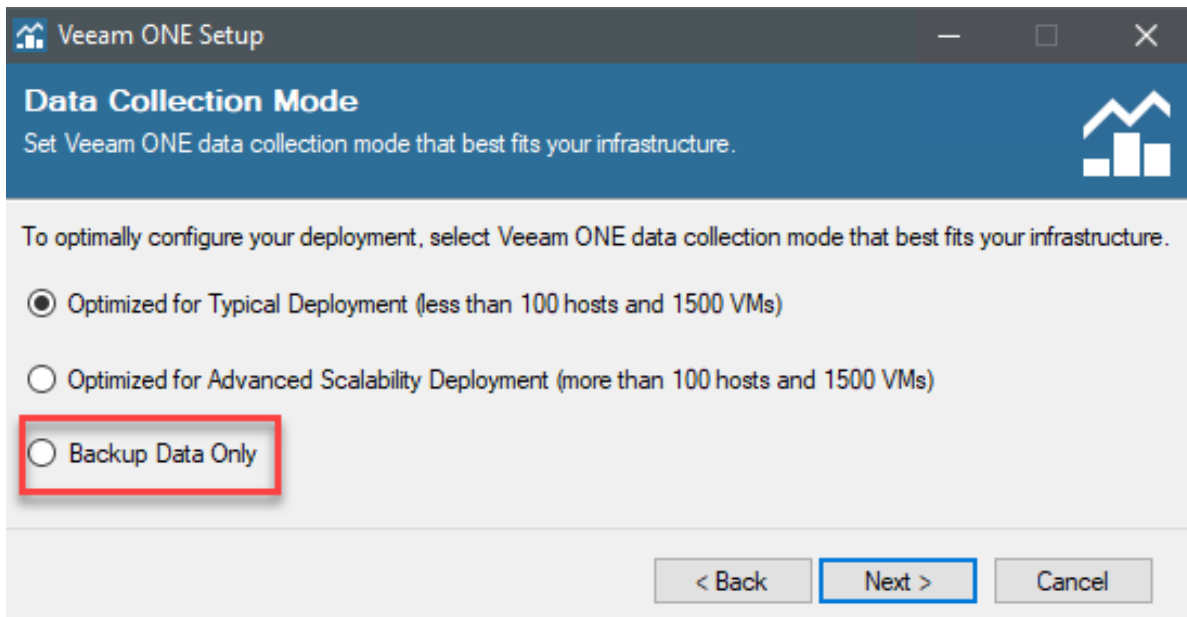
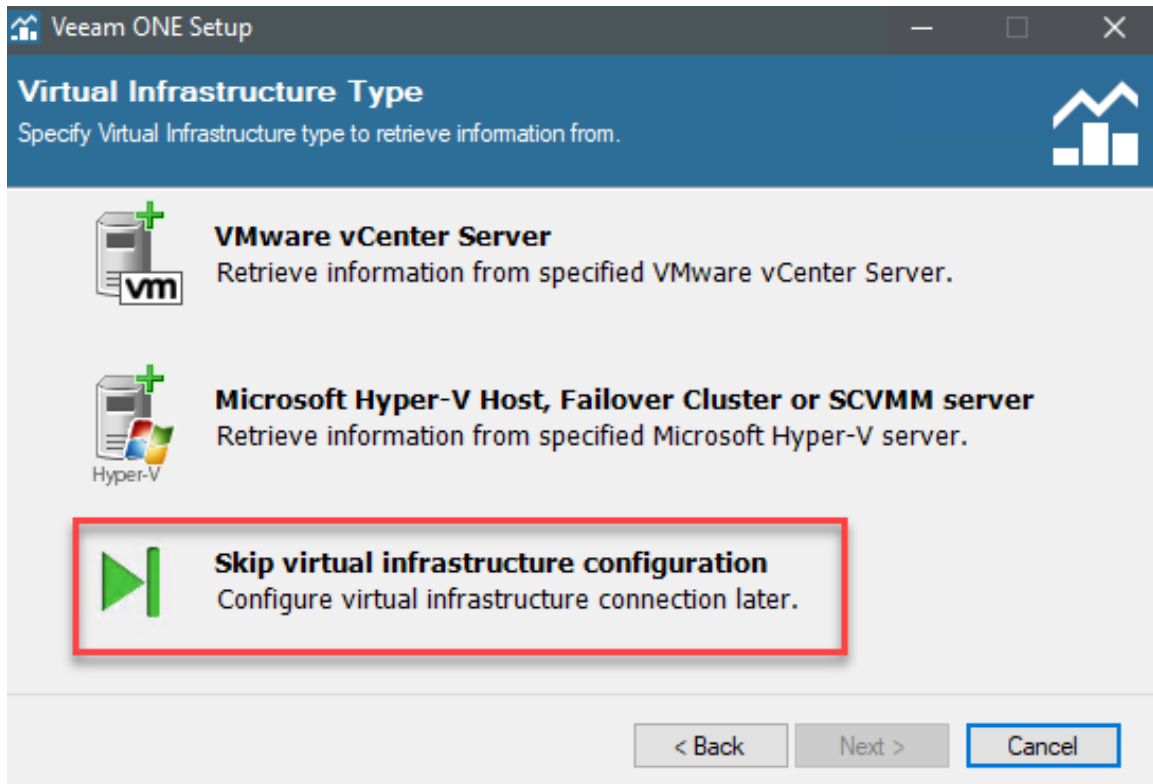
License file: Browse...

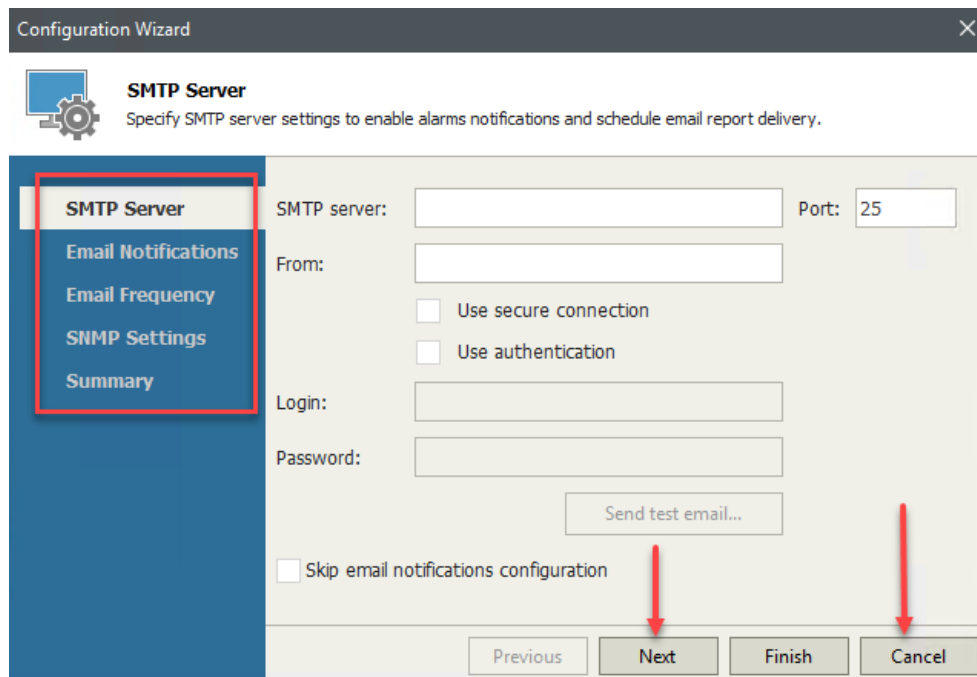
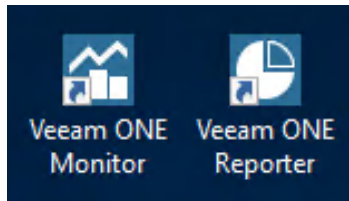
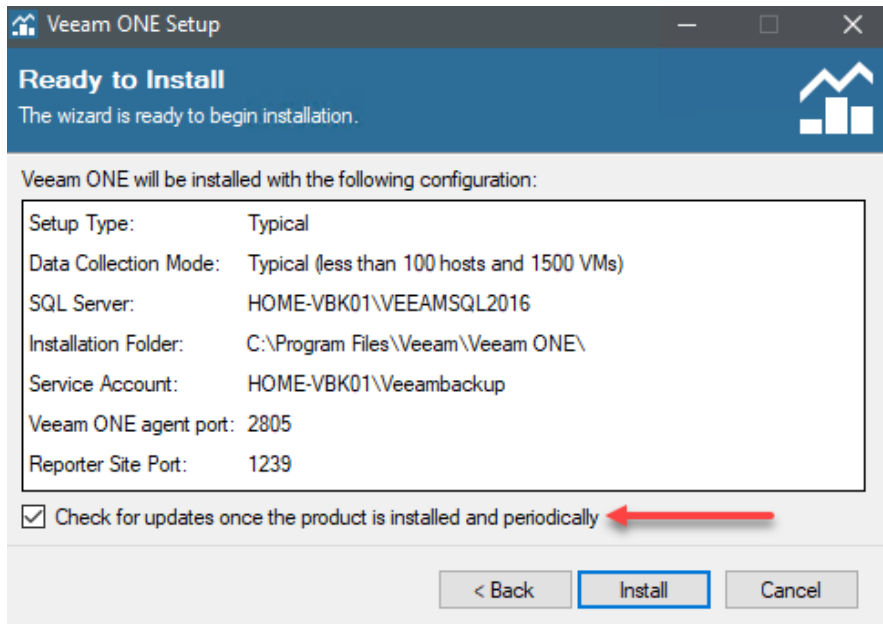
Community Edition mode

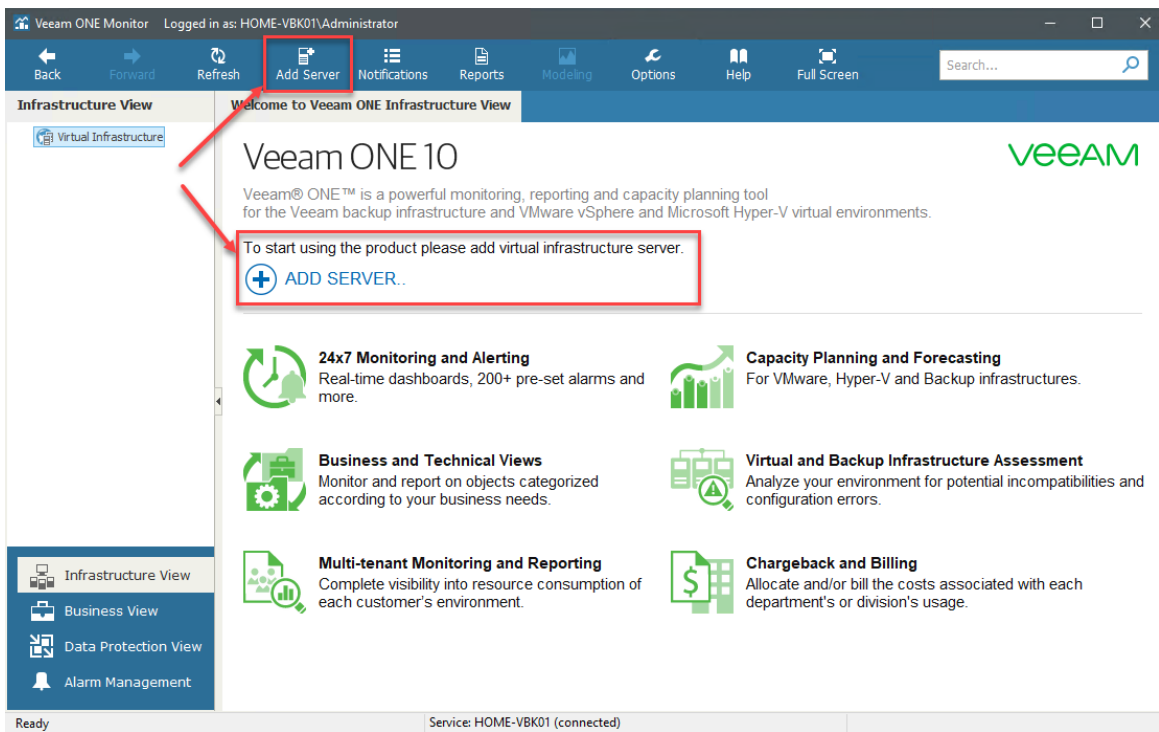
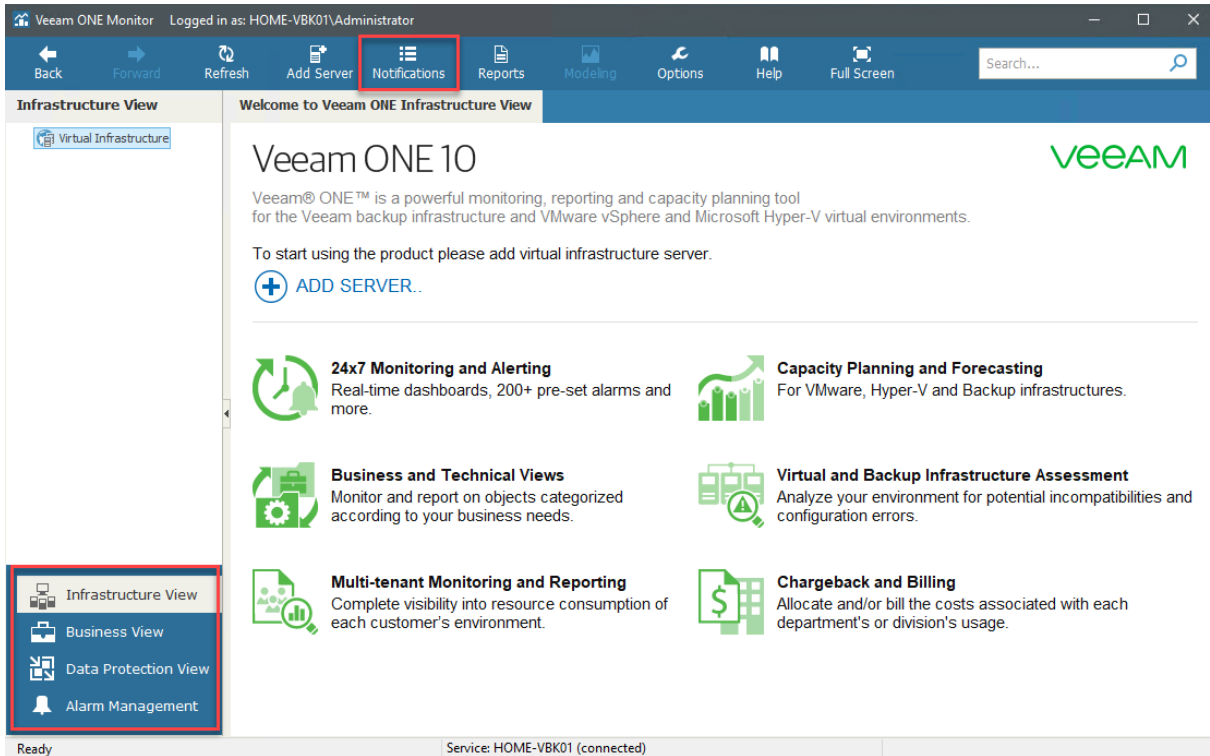
[Review Community Edition mode limitations](#)

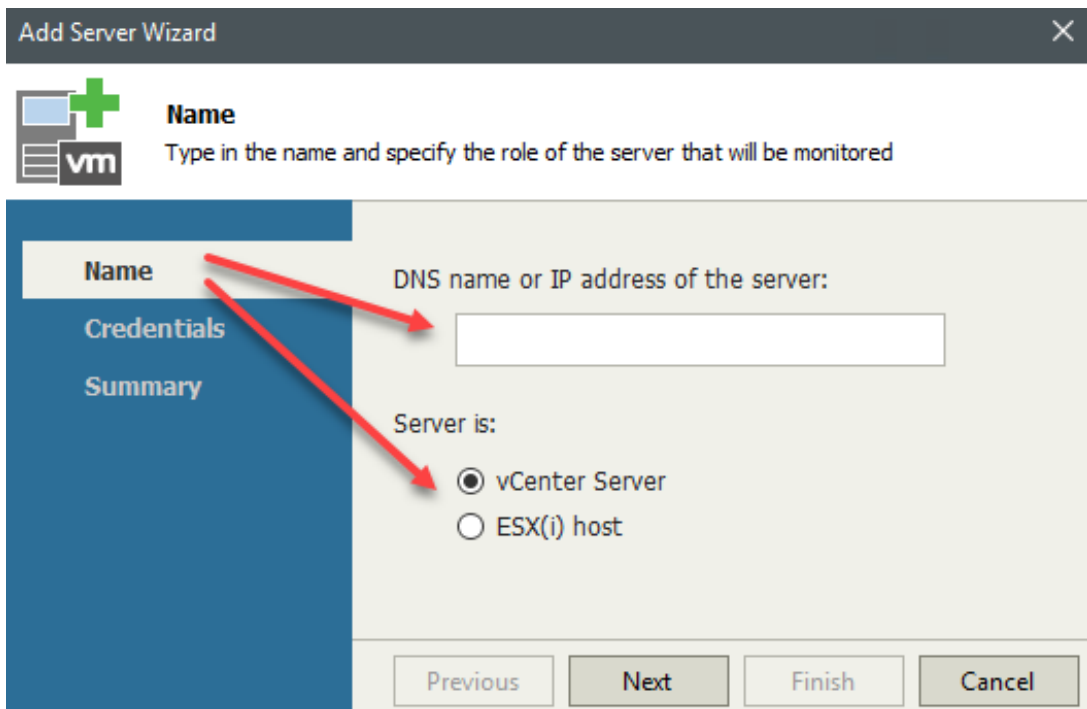
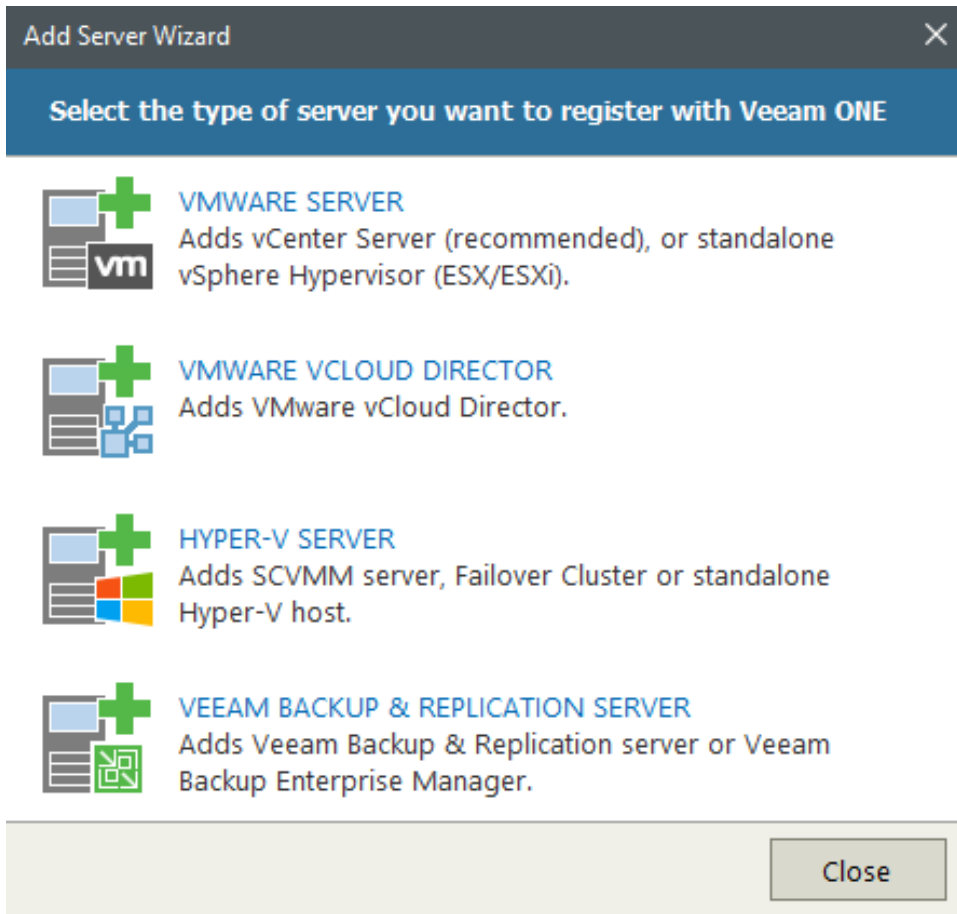
< Back Next > Cancel











Add Server Wizard

Credentials
Provide user credentials to connect to the specified server

Name
 Credentials
 Summary

Type in user credentials in the DOMAIN\USERNAME format to connect to the server:

Username: administrator@vsphere.local

Password: ●●●●●●

Port: 443

Previous Next Finish Cancel

Veeam ONE Monitor Logged in as: HOME-VBK01\Administrator

Back Forward Refresh Add Server Notifications Reports Modeling Options Help Full Screen

Infrastructure View Summary Alarms VMs Hosts Datastores Overall CPU Memory Network Datastore Top VMs

Virtual Infrastructure
home-vcsa01

Selected Object: home-vcsa01 (version: 7.0.1) - 0 errors, 0 warnings

HOSTS STATUS

2

DATASTORES STATUS

1
6

■ Healthy
 ■ Warning
 ■ Error

LATEST ALARMS

Status	Time	Source	Name
Warning	2:18:38 PM	VM-Datastore 1	Datastore over-allocation

Ready Service: HOME-VBK01 (connected)

Veeam ONE Monitor - Logged in as: HOME-VBK01\Administrator

Back Forward Refresh Add Server Notifications Reports Modeling Options Help Full Screen Search...

Data Protection View

- Backup Infrastructure
 - home-vbk01

Summary Alarms VM Jobs File Jobs **Veeam ONE Agent**

Veeam ONE agent version 10.0.2.1094 | Signatures version 1.3.36.0 | Last signatures update: 2021-01-04 2:26:38 PM Success

Update signatures Import signatures...

Backup Se...	Age...	Remediati...	Log ...	Log Analysis ...	Log Analysis Se...	Port ...
home-vbk01 (...)	Connected	Enabled	Enabled	7:00 AM		2805

Veeam ONE Agent Settings

Veeam ONE agent features

Remediation actions
This functionality allows to perform predefined actions for triggered alarm

Backup log analysis
This functionality allows to analyze backup server logs to detect potential problems

Select port number for communication between Veeam ONE agents

Port number:

Save Cancel

ACTIONS

Veeam ONE agent

- Install
- Remove
- Repair
- Settings...**

Log analysis

- Start
- Stop
- Schedule...

Ready Service: HOME-VBK01 (connected) Collector state: stopped

Veeam ONE Monitor - Logged in as: HOME-VBK01\Administrator

Back Forward Refresh Add Server Notifications Reports Modeling Options Help Full Screen

Data Protection View

- Backup Infrastructure
 - home-vbk01
 - Backup Repositories
 - Backup Proxies

Summary **Alarms** VM Jobs File Jobs CPU Memory Disk Network Tasks & Events

Selected Object: home-vbk01 (version: 10.0.1.4854) - 2 errors, 0 warnings

VM JOBS STATUS

Legend: Success (green), Warning (yellow), Failed (red), Running (blue)

AGENT JOBS AND POLICIES STATUS

No data available

Legend: Success (green), Warning (yellow), Failed (red), Running (blue)

TOP REPOSITORY SERVERS BY USED SPACE

Legend: Used space (TB) (dark blue), Free space (TB) (light blue)

Repository	Used space (TB)	Free space (TB)
Cloud repository 1	~5.2	~0.8
Scale-out Backup Rep...	~0.5	~0.5
Scale-out Backup Rep...	~0.5	~0.5
Default Backup Rep...	~0.5	~0.5
Backup Repository 3	~0.2	~0.2

TOP PROXY

Ready Service: HOME-VBK01 (connected)

- Nutanix AHV Protection
- Infrastructure Chargeback
- Veeam Cloud Connect
- Veeam Backup Assessment
- Veeam Backup Billing
- Veeam Backup Capacity Planning
- Veeam Backup Monitoring
- Veeam Backup Overview
- Veeam Backup Tape Reports
- Veeam Backup Agents
- Public Cloud Data Protection
- VMware Infrastructure Assessment
- VMware Overview
- VMware Monitoring
- VMware Optimization
- VMware Capacity Planning
- VMware Configuration Tracking
- Hyper-V Infrastructure Assessment
- Hyper-V Overview
- Hyper-V Monitoring
- Hyper-V Optimization
- Hyper-V Capacity Planning
- Custom Reports
- vCloud Director
- Offline Reports

Veeam ONE Monitor Logged in as: HOME-VBK01\Administrator

Back Forward Refresh Add Server Notifications Reports Modeling Options Help Full Screen

Infrastructure View Summary Alarms VMs Hosts

Virtual Infrastructure Selected Object: home-vcsa01 (

home-vcsa01

HOSTS STATUS

DATASTORES STATUS

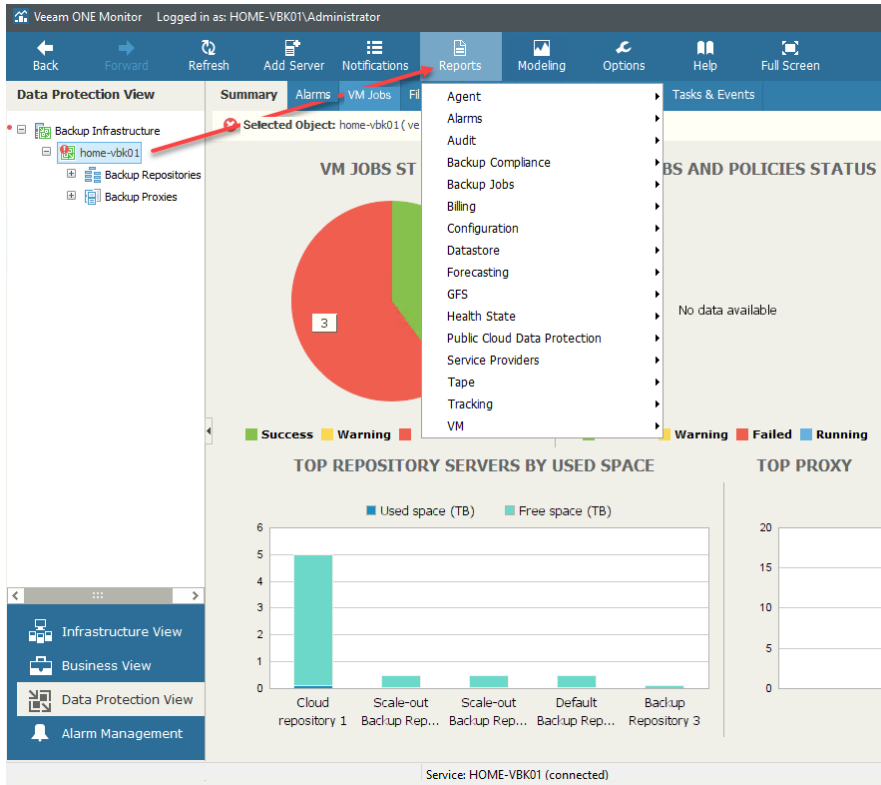
Alarms Audit Backup Jobs Billing Cluster Configuration Datastore Forecasting Health State Host Performance Permissions Raw data VM vCloud Director vSphere

Healthy Warning Error

LATEST ALARMS

Status	Time	Source	Name
Error	2:26:19 PM	home-vbk01	Orphaned VM backup snapshot
Error	2:23:38 PM	This object (home-vcsa01)	Bad vCenter Server username logon...
Warning	2:18:38 PM	VM-Datastore1	Datastore over-allocation

Service: HOME-VBK01 (connected) Collector



Veeam ONE REPORTER - Advanced monitoring, reporting and capacity planning

Navigation: DASHBOARDS, WORKSPACE, CONFIGURATION

Search folders: [Search Box]

ALL FOLDERS

- All Folders
 - My Reports
 - Veeam Backup Agents
 - Infrastructure Chargeback
 - Veeam Backup Assessment
 - Veeam Backup Billing
 - Veeam Backup Capacity Planning
 - Veeam Backup Monitoring
 - Veeam Backup Overview
 - Veeam Backup Tape Reports
 - VMware Infrastructure Assessment
 - VMware Overview
 - VMware Monitoring
 - VMware Optimization
 - VMware Capacity Planning
 - VMware Configuration Tracking
 - Hyper-V Infrastructure Assessment
 - Hyper-V Overview
 - Hyper-V Monitoring
 - Hyper-V Capacity Planning
 - Hyper-V Optimization
 - Custom Reports
 - Offline Reports
 - All Deployment Projects
 - User Reports

ALL FOLDERS

Actions: New folder, Rename folder, Delete folder, Schedule folder

Name:

- Active Checkpoints**
This report shows a list of all VMs with checkpoints, including the oldest and
- Active Snapshots**
This report shows a list of all VMs with snapshots, including the oldest and the
- Agent Backup Job and Policy History**
This report provides historical information for Veeam agent backup policies and
- Alarms Current State Overview**
This report shows all currently unresolved alarms for the virtual infrastructure.
- Alarms Current State Overview**
This report shows all currently unresolved alarms for the virtual infrastructure.
- Alarms Overview**
This report provides an overview of your virtual environment current health.
- Alarms Overview**
This report provides an overview of your virtual environment current health.
- AutoRestore**
This report provides audit information on all types of restores performed by a
- Backup Alarms Overview**
This report provides an overview of your data protection health state that

Veeam ONE REPORTER Advanced monitoring, reporting and capacity planning

You logged in as: home-vbk01 Administrator Sign out

DASHBOARDS WORKSPACE CONFIGURATION

Search folders

- All Folders
 - My Reports
 - Infrastructure Chargeback
 - Veeam Backup Assessment
 - Veeam Backup Billing
 - Veeam Backup Capacity Planning
 - Veeam Backup Monitoring**
 - Veeam Backup Overview
 - Veeam Backup Tape Reports
 - VMware Infrastructure Assessment
 - VMware Overview
 - VMware Monitoring
 - VMware Optimization
 - VMware Configuration Tracking
 - VMware Capacity Planning
 - Custom Reports
 - Offline Reports
 - All Deployment Projects
 - User Reports

BACKUP INFRASTRUCTURE AUDIT

Show description

PARAMETERS

Scope: Backup Infrastructure

Interval: 1 Interval Type: Weeks

Start Date: January 04, 2021 End Date: January 04, 2021

Object Type: All items

User: All items

Group by: Object

ACTIONS

Preview Save as...

Preview Save as...

Alarm Management

- All Alarms
 - VMware
 - vCenter Server
 - Cluster
 - Host
 - Resource Pool
 - Virtual Machine
 - Datastore
 - Any Object
 - vCloud Director vApp
 - vCloud Director Organization
 - vCloud Director Org VDC
 - vCloud Director Provider VDC
 - Hyper-V
 - Host
 - Virtual Machine
 - Cluster
 - CSV
 - Local storage
 - Any Object
 - Backup & Replication
 - Enterprise Manager
 - Backup Server
 - Repository
 - Proxy
 - WAN Accelerator
 - Tape Server
 - Cloud Repository
 - Cloud Gateway
 - Intelligent Diagnostics
 - Internal

Alarm Management

All Alarms

- VMware
 - vCenter Server
 - Cluster
 - Host
 - Resource Pool
 - Virtual Machine**
 - Datastore

Filters: All [bell icon] [user icon]

Type	Name
[VM icon]	VMware VM tools state
[VM icon]	VM WWN conflict
[VM icon]	VM with no replica
[VM icon]	VM with no backup

Alarm Settings

General | Rules | Assignment | Notifications | **Actions** | Suppress | Knowledge base

Actions are performed when alarms with the corresponding severity are triggered. Click Add to define actions.

Action:	Add VM to backup job	Execution type:	Automatic
Backup server:	home-vbk01	Job:	Backup Job 1_clone1
Severity:	Warning		

Suppress if original VM location does not match target repository location

Add

Remove

Save Cancel

Alarm Settings

General Rules Assignment Notifications **Actions** Suppress Knowledge base

Actions are performed when alarms with the corresponding severity are triggered. Click Add to define actions.

Action: **Add VM to backup job** Execution type: Automatic

Backup server: **Add VM to backup job** Job: Backup Job 1_clone1

Severity: **Add to backup job and run**

Suppress if **Run parent backup job** target repository location

Run script

Start Quick backup

Start VeeamZIP

Add Remove

Save Cancel

Veeam ONE Monitor Logged in as: HOME-VBK01\Administrator

Back Forward Refresh Add Server Notifications Reports Modeling Options Help Full Screen

Infrastructure View Summary Alarms VMs Hosts Datastores Overall CPU Memory Network Datastore Top VMs Top Hosts

Virtual Infrastructure

home-vcvsa01

Selected Object: home-vcvsa01 (version: 7.0.1) - 1 error, 0 warnings

HOSTS STATUS

2

DATASTORES STATUS

1 6

Healthy Warning Error

LATEST ALARMS

Status	Time	Source	Name
Warning	4:51:33 PM	home-ubuntu01	VM with no backup
Warning	4:51:33 PM	home-vbk01	VM with no backup
Warning	4:51:33 PM	home-storeonce	VM with no backup
Warning	4:51:33 PM	k8s-server	VM with no backup
Warning	4:51:33 PM	k8s-node1	VM with no backup
Warning	4:51:33 PM	Virtual_Lab_1	VM with no backup
Warning	4:51:33 PM	vCLS (14)	VM with no backup
Warning	4:51:33 PM	vCLS (15)	VM with no backup
Warning	4:51:33 PM	vCLS (16)	VM with no backup
Warning	4:51:33 PM	home-dc01	VM with no backup

Infrastructure View Business View Data Protection View Alarm Management

