

Veeam Backup & Replication

Version 12

Quick Start Guide for Microsoft Hyper-V

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Contents

CONTACTING VEEAM SOFTWARE	5
GETTING STARTED	5
ABOUT VEEAM BACKUP & REPLICATION	7
VEEAM BACKUP & REPLICATION UI 8	3
BACKUP INFRASTRUCTURE)
Backup Infrastructure Components)
Deployment Scenarios1	1
PLANNING AND PREPARATION	3
System Requirements14	4
Used Ports1	5
DEPLOYMENT	5
Step 1. Installing Veeam Backup & Replication1	7
Step 2. Adding Virtual Infrastructure Servers2	1
Step 3. Configuring Backup Proxy	1
Step 4. Configuring Backup Repository	5
Step 5. Configuring Object Storage Repositories3	1
Step 6. Configuring Scale-Out Backup Repositories	õ
VM BACKUP	1
Backup Methods	2
Creating Backup Job44	1
Monitoring Job Performance in Real Time4	9
Start Backup Job Manually)
Locating Backup Files5	1
Creating Application-Aware Backup Job5	2
DATA RECOVERY	5
Restoring Entire VM	7
Restoring VM Files6	1
Restoring Guest OS Files	1
Restoring VM Guest OS Files (FAT, NTFS, ReFS)6	5
Restoring VM Guest OS Files (Linux, Unix, etc)6	7
Restoring Application Items)
BACKUP COPY	3
VM REPLICATION	7
Creating Replication Job	3
Monitoring Job Performance in Real Time8	5
Start Replication Job Manually80	ō

Replica Failover and Failback	
Performing Replica Failover	
Performing Permanent Failover	91
Undoing Failover	
Performing Failback	
Committing Failback	95
Undoing Failback	96
ENTERPRISE MANAGER	97
Installing Veeam Back up Enterprise Manager	98
Adding Backup Servers	102
Managing Jobs	104
Performing 1-Click File Restore	106
Performing Self-Restore of VM Guest OS Files	108
BACKING UP PHYSICAL MACHINES	112
Creating Protection Group	113
Creating Veeam Agent Back up Job	117
RESTORING DATA OF PHYSICAL MACHINES	122

Contacting Veeam Software

At Veeam Software we value feedback from our customers. It is important not only to help you quickly with your technical issues, but it is our mission to listen to your input and build products that incorporate your suggestions.

Customer Support

Should you have a technical concern, suggestion or question, visit the Veeam Customer Support Portal to open a case, search our knowledge base, reference documentation, manage your license or obtain the latest product release.

Company Contacts

For the most up-to-date information about company contacts and office locations, visit the Veeam Contacts Webpage.

Online Support

If you have any questions about Veeam products, you can use the following resources:

- Full documentation set: veeam.com/documentation-guides-datasheets.html
- Veeam R&D Forums: forums.veeam.com

Getting Started

Document Structure

The guide contains instructions on the following:

- Veeam Backup & Replication functionality: how to deploy Veeam Backup & Replication, perform backup, replication, and restore operations.
- Integration with Veeam Backup Enterprise Manager: a free tool for managing distributed infrastructure.
- Agent management: built-in Veeam Backup & Replication feature to back up physical machines using Veeam Agents.

Help and Support

This guide provides a high-level overview of Veeam Backup & Replication primary features and should be regarded as a supplement to existing technical documentation. The complete set of documentation can be found on the Veeam Technical Documentation page.

For technical support and assistance, use the following resources:

- Veeam R&D Forums
- Customer Support Portal

About Veeam Backup & Replication

What is Veeam Backup & Replication?

Veeam Backup & Replication is a data protection and disaster recovery solution for virtual, physical and cloud environments. With Veeam Backup & Replication you can:

- Create crash-consistent and application-consistent backups of virtual and physical machines.
- Quickly restore physical machines, EC2 instances, Microsoft Azure VMs, Google VM instances, VMs, VM disks, guest OS files and application items.
- Perform backup health check to verify that backups are not corrupted and are ready for restoring.
- Create VM replicas and switch to them in case of a disaster.
- Automate transferring of backups to tapes and other external repositories.

Note that in this guide, we will not overview all the Veeam Backup & Replication capabilities. You can find them in the Veeam Backup & Replication User Guide.

What Else Can I Do?

Veeam Backup & Replication provides utilities not mentioned in this guide that can help you secure and manage your data:

- Veeam Backup for Microsoft 365: backup and restore solution for Microsoft 365 data.
- Veeam Backup for Nutanix AHV: backup and restore solution for Nutanix AHV VMs.
- Plug-in for Veeam Backup for AWS: extension for integration with Veeam Backup for AWS.
- Plug-in for Veeam Backup for Microsoft Azure: extension for integration with Veeam Backup for Microsoft Azure.
- Plug-in for Veeam Backup for Google Cloud: extension for integration with Veeam Backup for Google Cloud.

Veeam Backup & Replication also provides the following tools for monitoring and management:

- Veeam ONE: real-time monitoring, reporting, alerting and managing tool for virtual and physical environments.
- Veeam Management Pack for Microsoft System Center: Microsoft System Center extension for managing and monitoring VMware vSphere, Microsoft Hyper-V, and Veeam Backup & Replication.
- Veeam Availability Orchestrator: a tool for automated creation and testing of DR plans that comply regulatory requirements.

Veeam Backup & Replication UI

The user interface of Veeam Backup & Replication is designed to let you quickly find commands that you need and perform data protection and disaster recovery tasks.

	Tabs			Ribbon	Working area	
	闷	Veear	n Backup and Replication			– 🗆 ×
Main menu —	• ∃▼ Home ↓					?
	Backup Replication CDP Job + Job + Policy + Primary Jobs	Restore Failover Plan ~ Restore Analyzer Restore Actions				
Navigation pane	Home	${\bf Q}$ Type in an object name to search for	×			
	▲ 後 Jobs 細目 Backup ▲ ■ Backups	Job name ↑ ▶ 🔮 Backup Job 1	Repository Default Backup Repository	Platform VMware		
Inventory	Snapshots Disk					
pane	Disk (Orphaned) Zonov (Encrypted) Disk (Distance) Distance Distance					
	A Home					
Buttons	E Inventory					
switching between views	Backup Infrastructure					
	Storage Infrastructure					
	🚘 Tape Infrastructure					
	Files					
	C⊚ ₽					
	1 backup					

TIP:

To open online help, press [F1] in any Veeam Backup & Replication wizard or window. You will be redirected to the corresponding section of the Veeam Backup & Replication User Guide.

Reference

For details, see Veeam Backup & Replication UI section in the Veeam Backup & Replication User Guide.

Backup Infrastructure

This section describes main Veeam Backup & Replication infrastructure components and deployment scenarios.

Backup Infrastructure Components

To start working with Veeam Backup & Replication, you must set up the backup infrastructure. The basic Veeam Backup & Replication infrastructure consists of the following core components:

• Backup server

A Microsoft Windows-based machine on which Veeam Backup & Replication is installed. The backup server performs main management operations: coordinates backup, replication and restore tasks, controls job scheduling and resource allocation.

• Backup repository

A server where Veeam Backup & Replication keeps backup files, backup copies and metadata of replicated VMs.

• Backup proxy (on-host or off-host)

A component that retrieves data from the source host, processes it and transfers to the backup repository.

• Infrastructure servers and hosts

Microsoft Hyper-V servers that you plan to use as source and target for backup, replication and other activities. Microsoft Windows and Linux servers for which you plan to assign roles of a backup proxy or backup repository.

Reference

For details on all backup infrastructure components, see the Backup Infrastructure Components section in the Veeam Backup & Replication User Guide.

Deployment Scenarios

You can use Veeam Backup & Replication in virtual environments of any size and complexity. The architecture of the solution supports onsite and offsite data protection, operations across remote sites and geographically dispersed locations. Veeam Backup & Replication provides flexible scalability and easily adapts to the needs of your virtual environment.

Veeam Backup & Replication supports several deployment scenarios, and each one includes the core infrastructure components: backup server, backup proxy and backup repository. Depending on the size of your virtual environment, you can use one of the following scenarios:

• Simple deployment

For small virtual environments. In this scenario, the roles of all components required for data protection tasks are assigned to one machine.

• Advanced deployment

For medium-sized and large-scale virtual environments. In this scenario, the roles of components required for data protection tasks are assigned to dedicated machines.

Veeam Backup & Replication also supports the distributed deployment scenario for large geographically dispersed environments with multiple backup servers. We omit detailed description of this scenario because this guide is aimed for quick overview of basic features. For details on the distributed scenario, see the Distributed Deployment section in the Veeam Backup & Replication User Guide.

Simple Deployment

In the simple deployment scenario, the roles of the backup server, backup proxy and backup repository are assigned to a single machine. These roles are assigned automatically to the machine where you install Veeam Backup & Replication.



The drawback of the simple deployment scenario is that only the backup server handles and stores all data. For medium-sized or large-scale environments, the capacity of a single backup server may not be enough. To take the load off the backup server and balance it throughout your backup infrastructure, it is recommended to use the advanced deployment scenario.

Advanced Deployment

In the advanced deployment scenario, the roles of the backup server, backup proxy and backup repository are assigned to different machines. This gives the following advantages:

- The processing load is moved from backup server to backup proxy.
- Increased fault tolerance: you can store data on a separate machine (the backup repository).

Note that this scenario requires that you assign the roles of the proxy and repository manually.



Depending on production environment and backup and replication scenarios you plan to use, the advanced deployment scenario may include multiple backup proxies and backup repositories, both on-site and off-site, controlled by a single backup server.

Planning and Preparation

Before you install Veeam Backup & Replication, you must make sure that the virtual environment and machines that you plan to use as backup infrastructure components meet product hardware recommendations and system requirements.

System Requirements

Make sure that servers that you plan to use as backup infrastructure components meet the system requirements listed in the following sections of the Veeam Backup & Replication User Guide:

- System Requirements for Backup Server
- System Requirements for Backup Repository Server
- System Requirements for Enterprise Manager
- System Requirements for Supported Applications
- System Requirements for Veeam Explorer for Microsoft Active Directory
- System Requirements for Veeam Explorer for Microsoft Exchange
- System Requirements for Veeam Explorer for Microsoft SharePoint
- System Requirements for Veeam Explorer for Microsoft SQL Server
- System Requirements for Veeam Explorer for Oracle

Reference

For the full list of system requirements, see the System Requirements section in the Veeam Backup & Replication User Guide.

Used Ports

On backup infrastructure components, Veeam Backup & Replication automatically creates firewall rules for the required ports. These rules allow communication between the components.

You can find the lists of the ports in the following sections of the Veeam Backup & Replication User Guide:

- Backup Server Connections
- Microsoft Windows Server Connections
- Linux Server Connections
- Backup Proxy Connections
- Backup Repository Connections
- Mount Server Connections
- VM Guest OS Connections
- Veeam Backup Enterprise Manager Connections
- Veeam Explorer for Microsoft Active Directory Connections
- Veeam Explorer for Microsoft Exchange Connections
- Veeam Explorer for Microsoft SharePoint Connections
- Veeam Explorer for Microsoft SQL Server Connections
- Veeam Explorer for Oracle Connections
- Veeam Agent for Microsoft Windows Connections
- Veeam Agent for Linux Connections

Reference

For the full list of ports, see the Used Ports section in the Veeam Backup & Replication User Guide.

Deployment

To start using Veeam Backup & Replication, do the following:

- 1. Install Veeam Backup & Replication
- 2. Add virtual infrastructure servers
- 3. Configure backup proxy
- 4. Configure backup repository
- 5. Configure object storage repository (optional)
- 6. Configure scale-out backup repository (optional)

NOTE:

In the simple deployment scenario, Veeam Backup & Replication uses the backup server also as the backup proxy and backup repository. For this reason, you can skip the third and fourth steps.

Step 1. Installing Veeam Backup & Replication

Install Veeam Backup & Replication on a Microsoft Windows-based physical or virtual machine.

Before You Begin

Before you install Veeam Backup & Replication, check the following prerequisites:

- The machine on which you plan to install Veeam Backup & Replication must meet the system requirements for the backup server. For details, see System Requirements.
- A user account that you plan to use for installation must have local Administrator permissions.

Installing Veeam Backup & Replication

To install Veeam Backup & Replication, do the following:

1. Download the latest version of the Veeam Backup & Replication installation image from the Download Veeam products page.

You must sign in with your Veeam account. If you do not have the account, register with your business email address.

2. Mount the installation image to the machine on which you plan to install Veeam Backup & Replication or burn the image file to a flash drive or other removable storage device.

If you plan to install Veeam Backup & Replication on a VM, use built-in tools of the virtualization management software to mount the installation image to the VM.

3. Run the Setup.exe file from the image or disk to open the splash screen.

4. In the Veeam Backup & Replication section of the splash screen, click Install.

Veeam Backup & Replication 12	- ×
	Standalone components:
	Veeam Backup & Replication Install
	Veeam Backup Enterprise Manager Install
Install	Veeam Backup & Replication Console
	Enterprise Applications Plug-ins Open
Documentation Training	
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5. At the **License Agreement** step of the wizard, read the license agreements and click **I Accept**.

6. At the License step of the wizard, specify the path to the license key.

If you skip this step, Veeam Backup & Replication will operate in the Community edition mode. You can switch to the full version of the product if you install the license. For more information, see Veeam Backup & Replication Community Edition.

실고 Veeam Backup & Replication	- ×	*
License		
Provide license file for Veeam Backup & Replication.		
License file:		
C:\ProgramData\Veeam\Setup\Licenses\vbr12_license.lic	Browse	
✓ Update license automatically (enables usage reporting)		
Download and install new licenses automatically when you renew or expand your contract. T sending the license ID, the installation ID, and workload usage counters to the Veeam licensi periodically. Successful usage reporting doubles the number of workloads you can exceed yo license by.	his requires ng servers our installed	
If you don't have a license simply click Next to install Community Edition.		
Veeam EULA prohibits using Community Edition to provide any services to third parties. In you may not install, configure or manage such backup servers at your client's environment consultant or an MSP.	particular, : as a	
Back Next	Cancel	

7. At the System Configuration Check step of the wizard, install missing software components, if any.

NOTE:

If all required components are already installed on the machine, the **System Configuration Check** step is skipped.

8. At the **Ready to Install** step of the wizard, click **Install** to begin the installation.

Starting Veeam Backup & Replication

To start Veeam Backup & Replication, do the following:

1. In the Microsoft Windows **Start** menu, select **Apps** > **Veeam > Veeam Backup & Replication Console**.

2. In the authentication window, click **Connect**.

		×					
Veeam Backup & Replication 12							
Type in a backup server name or IP add and user credentials to connect with.	lress, backup servic	e port number, 9392					
TECH\madison.gray							
Password							
✓ Use Windows session authenticatio	n						
Save shortcut	Connect	Close					

Step 2. Adding Virtual Infrastructure Servers

To protect virtual machines with Veeam Backup & Replication, you must add the virtual infrastructure servers hosting these machines to the backup infrastructure.

You can add standalone Hyper-V hosts, Hyper-V clusters or SCVMM servers. If a Hyper-V host is a part of a cluster, it is recommended that you add the cluster, not a standalone Hyper-V host, to the backup infrastructure.

Before You Begin

Check the following prerequisites:

- The version of your Microsoft Hyper-V platform must be supported. For details, see Platform Support in the Veeam Backup & Replication User Guide.
- You must enable file and printer sharing in the network connection settings of the host. Without sharing enabled, Veeam Backup & Replication fails to deploy the required components.

Adding Infrastructure Server

To add the server, do the following:

1. In the inventory pane of the **Backup Infrastructure** view, right-click the **Managed Servers** node and select **Add Server**.



2. In the Add Server window, click Microsoft Hyper-V > Hyper-V to launch the New Hyper-V Server wizard.

3. At the **Name** step of the wizard, specify the DNS name or IP address of the server.

	New Hyper-V Server	x
Name Specify DNS name or	IP address of Microsoft Hyper-V server.	
Name Type Credentials Apply Results Summary	DNS name or IP address: cluster01.tech.local Description: Microsoft Hyper-V Cluster	
	< Previous Next > Finish Cance	:

4. At the **Type** step of the wizard, select the server type that you want to add.

	New Hyper-V Server
Type Select the type of se	rver you want to add.
Name Type	 Microsoft System Center Virtual Machine Manager (SCVMM) If you are using SCVMM to manage your Hyper-V infrastructure, we can pull all Hyper-V hosts and clusters information from SCVMM, and add them to managed servers automatically.
Credentials Apply Results	Microsoft Hyper-V cluster Use this option to register Hyper-V cluster that is not managed by SCVMM. Registering Hyper-V cluster instead of individual cluster nodes provides for Live Migration awareness.
Summary	 Microsoft Hyper-V server (standalone) Use this option to register standalone Hyper-V server that is not a part of a cluster, and not managed by SCVMM.
	< Previous Next > Finish Cancel

5. At the **Credentials** step of the wizard, specify credentials for the user account with Administrator permissions on the added server.

To add the account, do the following:

- a. Click Add.
- b. In the **Credentials** window, specify the username and password used to connect to the added server.
- c. Click OK.

	New Hyper-V Server	x
Credentials Select server adr	ninistrator credentials.	
Name	Select an account with local administrator privileges on the server you are adding. Use DOMAIN\USER format for domain accounts, or HOST\USER for local accounts.	
Credentials	Credentials: Add <u>Manage accounts</u>	
Apply	Credentials	
Results Summary	Username: tech\john.smith Browse Password: ••••••• Description: tech\john.smith OK Cancel	
	< Previous Next > Finish Cance	1

- 6. Follow the next steps of the wizard. At the **Summary** step, click **Finish**.
- 7. Open the **Backup Infrastructure** view and click the **Managed Servers** node. The added server must be available in the working area.

Reference

For details on adding virtual infrastructure servers, see the Virtualization Servers and Hosts section in the Veeam Backup & Replication User Guide.

Step 3. Configuring Backup Proxy

The backup proxy compresses, deduplicates and sends data to the backup repository. By default, the role of the backup proxy is assigned to the host. The on-host backup proxy does not need any manual configuration.

You can deploy an off-host backup proxy to remove unwanted overhead on the production Hyper-V host. The off-host backup proxy is used in complicated scenarios, that is why we omit its configuration in this guide. For more information, see the Off-Host Backup Proxy section in the Veeam Backup & Replication User Guide.

Step 4. Configuring Backup Repository

The backup repository is a storage where Veeam Backup & Replication keeps backup files and, in case of replication, metadata for replicated VMs. You can use different types of storage as the backup repository. The full list of storage types is available in the Backup Repository section in the Veeam Backup & Replication User Guide.

In this section, you will learn how to use a Microsoft Windows server as the backup repository. To configure the backup repository, you must add the server to the backup infrastructure and assign the role of the backup repository to it.

Before You Begin

Check the following prerequisites:

- The Microsoft Windows machine that you plan to use as a backup repository must meet system requirements. For details, see System Requirements in the Veeam Backup & Replication User Guide.
- File and printer sharing must be enabled in network connection settings of the added Microsoft Windows machine. On this machine, Veeam Backup & Replication deploys the required components. Without sharing enabled, Veeam Backup & Replication fails to deploy these components.

Adding a Server

To add a server to the Veeam Backup & Replication infrastructure, do the following.

1. In the inventory pane of the **Backup Infrastructure** view, right-click the **Managed Servers** node and select **Add Server**.



2. In the Add Server window, select Microsoft Windows to launch the New Windows Server wizard.

3. At the **Name** step of the wizard, specify the DNS name or IP address of the server that will perform the role of the backup repository.

	New Windows Server	x
Specify DNS name or	IP address of Microsoft Windows server.	
Name Credentials Review Apply Summary	DNS name or IP address: fileserver01.tech.local Description: Windows-based backup repository	
	< Previous Next > Finish Cance	I

4. At the **Credentials** step of the wizard, enter credentials for the user account with local Administrator permissions to the added server.

To add the account, do the following:

- a. Click Add.
- b. Specify the username and password used to connect to the added server.

c. Click OK.

	New Windows Server
Credentials Specify server creder	itials
Name Credentials	Select an account with local administrator privileges on the server you are adding. Use DOMAIN\USER format for domain accounts, or HOST\USER for local accounts. Credentials:
Review	Manage accounts
Apply	Credentials
Summary	Username: fileserver01\Administrator Browse Password: ••••••• Description: fileserver01\Administrator
	OK Cancel
	Ports
	< Previous Next > Finish Cancel

- 5. Follow the next steps of the wizard. At the last step of the wizard, click **Finish** to add the server.
- 6. Open the **Backup Infrastructure** view and click the **Managed Servers** node. The added server must be available in the working area.

Assigning Backup Repository Role to Added Server

To assign the role of the backup repository:

1. In the inventory pane, right-click the **Backup Repositories** node and select **Add Backup Repository** to launch the **New Backup Repository** wizard.

記 =- U	Repository Tools			Veeam Ba	ckup and Replication			-	8	×
Add Ed Repository Reposit	t Rescan ory Tools									•
Backup Infrastrue	ture		Q Type in an object name to s	earch for	×					
🔒 Backup Pr	oxies		Name	Туре	Path 🕇					
 Backup Re Scale-out WAN Acce Service Pri Service Pri Service Pri Managed Microso 	positories Repositories Jerators Servers Servers oft Windows		Rescan	Windows	C:\Backup					
A Home										
Inventory										
🕋 Backup Infra	structure									
	[à ¥								
1 repository				Connected to: localhost	Build: 11.0.0.825	Enterprise Plus Edition	License expires: 9 day	s rema	aining	

- 2. In the Add Backup Repository window, click Direct attached storage > Microsoft Windows.
- 3. At the **Name** step of the wizard, specify the name for the added backup repository.

	New Backup Repository
Name Type in a name and a	description for this backup repository.
Name Server Repository Mount Server Review Apply Summary	Name: Backup Volume 01 Onsite backup repository
	< Previous Next > Finish Cancel

4. At the **Server** step of the wizard, select the machine that you have added.

	New Backup Repository			x
Server Choose repository ser	rver. You can select server from the list of managed s	ervers added to the co	nsole.	
Name	Repository server:			
Samar	fileserver01.tech.local (File Server 01)		~	Add New
Repository	Path C(\	Capacity 129.5 GB	Free 94.9 GB	Populate
Mount Server Review				
Apply				
Summary				
	< Previo	us Next >	Finish	Cancel

5. At the **Repository** step of the wizard, specify a path to the folder where backup files will be stored. In addition to them, auxiliary replica files will be placed in this folder.

	New Backup Repository	x
Repository Type in path to the f	older where backup files should be stored, and set repository load control options.	
Name	Location — Path to folder:	
Server	C:\Backups Browse	
Repository	Capacity: Popula	te
Mount Server	Load control	
Review	Running too many concurrent tasks against the same repository may reduce overall performand and cause I/O operations to timeout. Control storage device saturation with the following settin	ce, igs:
Apply	Limit maximum concurrent tasks to:	
Summary	☐ Limit read and write data rates to: AB/s	
	Click Advanced to customize repository settings Advance	d
	< Previous Next > Finish Cance	.I

6. At the **Mount Server** step of the wizard, keep the default settings.

- 7. Follow the next steps of the wizard. At the **Summary** step, click **Finish**.
- 8. Open the **Backup Infrastructure** view and click the **Backup Repositories** node. The added backup repository must be available in the working area.

Reference

For details on the backup repository, see the Backup Repository section in the Veeam Backup & Replication User Guide.

Step 5. Configuring Object Storage Repositories

An object storage repository is a repository intended for long-term data storage. It can be based on either a cloud solution or an S3 compatible storage solution. Configuring an object storage repositories is an optional step.

Veeam Backup & Replication supports the following types of object storage repositories:

- S3 compatible
- Amazon S3, Amazon S3 Glacier and Amazon Snowball Edge
- Google Cloud
- IBM Cloud
- Microsoft Azure Blob, Azure Archive Storage and Azure Data Box

In this section, you will learn how to configure Amazon S3 Compatible storage system as a backup repository.

Before You Begin

Before you add an object storage repository, check limitations. To learn about limitations for different storage repositories, see Considerations and Limitations in the Veeam Backup & Replication User Guide.

Configuring Object Storage Repository

To add an object storage repository to the Veeam Backup & Replication infrastructure, do the following:

1. Open the **Backup Infrastructure** view. In the inventory pane, right-click the **Backup Repositories** node and select **Add Backup Repository**. In the **Add Backup Repository** dialog, select **Object Storage**.



2. In the **Object Storage** dialog, select **Amazon S3**.

(€	Object Storage Select the type of object storage you want to use as a backup repository.	×
	P	S3 Compatible Adds an on-premises object storage system or a cloud object storage provider.	
	aws	Amazon S3 Adds Amazon cloud object storage. Amazon S3, Amazon S3 Glacier (including Deep Archive) and Amazon Snowball Edge are supported.	
	2	Google Cloud Storage Adds Google Cloud storage. Both Standard and Nearline storage classes are supported.	
	٢	IBM Cloud Object Storage Adds IBM Cloud object storage. S3 compatible versions of both on-premises and IBM Cloud storage offerings ar supported.	e
	1	Microsoft Azure Blob Storage Adds Microsoft Azure blob storage. All tiers of Azure Blob Storage and Azure Data Box are supported.	
		Cancel	

3. At the **Name** step of the wizard, specify the name and description for the object storage repository.

	New Object Storage Repository	x
Name Type in a name and	description for this object storage repository.	
Name Account Bucket Mount Server Review Apply Summary	Name: Object storage repository 1 Description: Created by SERV2049\Administrator at 7/29/2022 12:15 PM.	
	✓ Limit concurrent tasks to: 2 ↓ Use this setting to limit the maximum number of tasks that can be processed concurrently in cases when your object storage is overloaded or cannot keep up with the number of API requests issued by multiple object storage offload tasks.	у
	< Previous Next > Finish Cancel	

- 4. At the **Account** step of the wizard, specify the connection settings:
 - a. [For AWS Snowball Edge, Azure Data Box, S3 Compatible, IBM Cloud] In the **Service point / Service** endpoint field, specify a service point address of your object storage.
 - b. From the Credentials drop-down list, select user credentials to access your object storage. If you already have a credentials record that was configured in advance, select such a record from the drop-down list. Otherwise, click Add and provide your access and secret keys. For more information, see Cloud Credentials Manager in the Veeam Backup & Replication User Guide.
 - c. In the **Region / Data center region** drop-down list, select a region type.

If your organization has NAT or different types of firewalls and your access to the internet is limited, you may want to use a gateway server. To do so, select the **Use the following gateway server** check box and choose a server from the list.

	New Object Storage Repository
Account Specify account to u	use for connecting to S3 compatible storage system.
Name	Service point:
Account	172.24.174.27:443
P. L.	Region:
Bucket	Credentiale
Mount Server	Credentials:
Review	Manage cloud accounts
Apply	
Summary	
	Connection twee
	Direct Choose
	Specify whether object storage should be accessed directly or via selected gateway servers.
	< Previous Next > Finish Cancel

- 5. At the **Bucket** step of the wizard, specify how your data will be stored.
 - a. [For Amazon S3] From the Data center region drop-down list, select a region.
 - b. From the **Bucket** drop-down list, select a bucket. Make sure that the bucket you want to use to store your backup data was created in advance.

[For Azure Blob, Azure Data Box] From the **Container** drop-down list, select a container. Make sure that the container you want to use to store your backup data was created in advance.

c. In the Folder / Select Folder field, select a cloud folder to which you want to map your object storage repository. To do it, click Browse and either select an existing folder or create a new one by clicking New Folder.

To define a soft limit for your object storage consumption that can be exceeded temporarily, select the **Limit object storage consumption to** check box and provide the value in TB or PB.

[For Amazon S3, S3 Compatible] To prohibit deletion of blocks of data from object storage, select the **Make recent backups immutable for** check box and specify the immutability period.

[For Amazon S3] If you plan to access your backup data rarely, select the **Use infrequent access storage class** check box. To enable Amazon S3 One Zone-Infrequent Access, select the **Store backups in a single availability zone only** check box. For more information, see this Amazon article.

	New Object Storage Repository
Bucket Specify object storage	je system bucket to use.
Name	Bucket:
Account	
Bucket	tw Browse
Mount Server	✓ Limit object storage consumption to: 10
Review	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.
Apply	✓ Make recent backups immutable for: 30
Summary	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

- 6. At the **Mount Server** step, leave the default settings.
- 7. At the **Summary** step of the wizard, review the settings and click **Finish**.
- 8. Open the **Backup Infrastructure** view and click the **Backup Repositories** node. The added object storage repository must be available in the working area.

Reference

For details on adding object storage repositories, see the Adding Object Storage Repositories section in the Veeam Backup & Replication User Guide.

Step 6. Configuring Scale-Out Backup Repositories

A scale-out backup repository is a repository system for multi-tier storage of data, where the capacities of all the added storage devices and systems are summarized. A scale-out backup repository consists of one or more backup repositories called performance extents, and can be expanded with an object repository called capacity extent.

Configuring a scale-out backup repository is an optional step. For more information on scale-out backup repositories, see the Scale-Out Backup Repository section in the Veeam Backup & Replication User Guide.

Before You Begin

Before you add a scale-out backup repository to the backup infrastructure, check the following prerequisites:

- Backup repositories that you plan to add as performance extents to the scale-out backup repository must be added to the backup infrastructure. For more information, see Configuring Backup Repository.
- If you wish to use the capacity tier option of the scale-out backup repository, an object storage repository that you plan to add as a capacity extent to the scale-out backup repository must be added to the backup infrastructure. For more information, see Configuring Object Storage Repository.
- Check limitations for scale-out backup repositories. For more information, see Limitations for Scale-Out Backup Repositories in the Veeam Backup & Replication User Guide.
Configuring Scale-Out Backup Repository

To add a scale-out backup repository to the Veeam Backup & Replication infrastructure, do the following:

1. In the inventory pane, right-click Scale-out Repositories and select Add Scale-out Backup Repository.

Scale-out Repository Tools			Veear	n Backup and Replicat	tion		– = ×
∃							?
Add Scale-out Edit Scale-out Remove Repository Repository Manage Scale-out Repository Man	Set Access ermissions nage Settings						
Backup Infrastructure	Q. Type in an object na.	me to search for	×				
 Backup Proxies Backup Repositories External Repositories 	Name	Туре	Host 🕇	Path	Capacity	Free Description	
Scale-out P Add scale-out backup	o repository						
Service Providers							
 SureBackup Canaged Servers 							
A Home							
Inventory							
📬 Backup Infrastructure							
Storage Infrastructure							
🚵 Tape Infrastructure							
🗗 Files							
Ľ⊛ ¥							
0 repositories			Conr	ected to: localhost	Build: 11.0.0.817	Enterprise Plus Edition	Support expires: 26 days remaining

2. At the **Name** step of the wizard, specify a name and an optional description for the scale-out backup repository.

	New Scale-out Backup Repository
Name Type in a name and	description for this scale-out backup repository.
Name Performance Tier Placement Policy Capacity Tier Summary	Name: Scale-out Backup Repository Extensible Backup Repository
	< Previous Next > Finish Cancel

3. At the **Performance Tier** step of the wizard, specify which backup repositories you want to add as performance extents, and configure options for the scale-out backup repository. To do it, on the right side of the **Extents** list, click **Add**. In the **Extents** window, select check boxes next to backup repositories that you want to add as performance extents. Afterwards, click **OK**.

	New Scale-out Backup Repository
Performance 1 Select backup r	f ier epositories to use as the landing zone and for the short-term retention.
Name	Extents:
Deufermannen Tier	Name Add
Performance Tier Placement Policy	Extents Remove
Capacity Tier Summary	Select backup repositories to include in this scale-out backup repository. Backup repositories: Name Select All Image: Select All Clear All
	Click Advanced to specify additional scale-out backup repository options. Advanced
	< Previous Next > Finish Cancel

- 4. At the **Policy** step of the wizard, specify how you want to store backup files at the performance extents of the scale-out backup repository:
 - Select **Data locality** if you want to store backup files that belong to the same backup chain at the same performance extent.

• Select **Performance** if you want to store full and incremental backup files at different performance extents of the scale-out backup repository.

	New Scale-out Backup Repository
Placement Policy Choose a backup file backup job will chos	ss placement policy for this performance tier. When more than one extent matches the placement policy, e extent with the most free disk space available.
Name Performance Tier Placement Policy Capacity Tier Archive Tier	 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

5. At the **Capacity Tier** step of the wizard, select an object storage repository that you want to add as a capacity extent and specify when to move and/or copy data. This is an optional step.

To configure the capacity tier, do the following:

- a. Select the Extend scale-out backup repository capacity with object storage check box.
- b. From the drop-down list, select an object storage repository to which you want to offload your data.
- c. Click **Window** and specify when it is allowed or prohibited to move or copy data to object storage.
- d. Select the **Copy backups to object storage as soon as they are created** check box to copy new backups as soon as they are created.
- e. Select the **Move backups to object storage as they age out of the operational restores window** check box to move inactive backup chains to the capacity extent.

f. To offload data encrypted, select the Encrypt data uploaded to object storage check box and provide a strong password. If you have not created the password beforehand, click Add or use the Manage passwords link to specify a new password.

	New Scale-out Backup Repository
Capacity Tier Specify object storage completely to reduce	ge to copy backups to for redundancy and DR purposes. Older backups can be moved to object storage e 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	Amazon S3 v Add
Placement Policy	Define time windows when uploading to object storage is allowed Window
Capacity Tier Summary	 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 perfomance 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 add days (your operational restore window) Override
	Password:
	Administrator (Last edited: less than a day ago) Add Manage passwords
	< Previous Apply Finish Cancel

- 6. At the **Summary** step of the wizard, review the settings and click **Finish**.
- 7. Open the **Backup Infrastructure** view and click the **Scale-Out Repositories** node. The added scale-out backup repository must be available in the working area.

Reference

For details on adding scale-out backup repositories, see the Adding Scale-Out Backup Repositories section in the Veeam Backup & Replication User Guide.

VM Backup

When you perform a backup, Veeam Backup & Replication retrieves VM data from the source storage, compresses and deduplicates it. After that, Veeam Backup & Replication writes data to the backup repository in Veeam proprietary format.

In Veeam Backup & Replication, backup is a job-driven process. To perform the backup, you need to configure a backup job. For details, see Creating Backup Job.

During runs of backup jobs, Veeam Backup & Replication creates backup chains. The chain consists of the following backup files:

- Full backup file (.VBK) that contains a copy of the entire VM.
- Incremental backup file (.VIB or .VRB) that contains only those data blocks that have changed since the last backup job session.
- Metadata file (.VBM) that contains information on the backup job, VMs in the backup, number and structure of backup files, restore points and so on.

The amount of these files and how Veeam Backup & Replication places them depend on the chosen backup method. For details, see Backup Methods.

After you performed backups, you can use them to restore the following instances: entire VM, VM files, guest OS files and application items. For details on restore, see Data Restore.

Reference

For details, see the About Backup section in the Veeam Backup & Replication User Guide.

Backup Methods

Veeam Backup & Replication provides three methods for creating backup chains:

- Forever forward incremental backup
- Forward incremental backup
- Reverse incremental backup

Forever Forward Incremental Backup Method

The forever forward incremental backup method produces a backup chain that consists of the first full backup file (.VBK) and a set of forward incremental backup files (.VIB) following it.

During the first session of a backup job, Veeam Backup & Replication creates a full backup file on the backup repository. During subsequent backup job sessions, Veeam Backup & Replication copies only VM data blocks that have changed since the last backup job session and saves these blocks as an incremental backup file in the backup chain.

After adding a new restore point to the backup chain, Veeam Backup & Replication checks the retention policy for the job and deletes outdated restore points. For details, see Forever Forward Incremental Backup Retention Policy in the Veeam Backup & Replication User Guide.



Forward Incremental Backup Method

The forward incremental backup method produces a backup chain that consists of the first full backup file (.VBK) and a set of forward incremental backup files (.VIB) following it.

Additionally, the forward incremental backup chain contains full backup files that "split" the backup chain into shorter series. The subsequent full backup files can be the following:

• Active

The active full backup contains the copy of a VM. This backup is similar to the full backup created when you run a job for the first time. Veeam Backup & Replication retrieves data for the whole VM from the source, compresses and deduplicates it and stores it to the active full backup file.

• Synthetic

The synthetic full backup also contains the copy of a VM. However, this copy is created from the backup files that you already have on the backup repository. Veeam Backup & Replication does not retrieve VM data from the source datastore.

During the first backup job session, Veeam Backup & Replication creates a full backup file. During subsequent backup job sessions, Veeam Backup & Replication copies only VM data blocks that have changed since the last backup job session and saves these blocks as an incremental backup file in the backup chain. On a day when the synthetic or active full backup is scheduled, Veeam Backup & Replication creates a full backup file and adds it to the backup chain.

After adding a new restore point to the backup chain, Veeam Backup & Replication checks the retention policy and deletes outdated restore points. For details, see Forward Incremental Backup Retention Policy in the Veeam Backup & Replication User Guide.



Reverse Incremental Backup Method

The reverse incremental backup method produces a backup chain that consists of the last full backup file (.VBK) and a set of reverse incremental backup files (.VRB) preceding it.

During the first backup job session, Veeam Backup & Replication creates a full backup file on the backup repository. During subsequent backup job sessions, Veeam Backup & Replication copies only VM data blocks that have changed since the last backup job session. Veeam Backup & Replication "injects" copied data blocks into the full backup file to rebuild it to the most recent state of the VM. Additionally, Veeam Backup & Replication saves the changed block in the reverse incremental backup file and places this file before the full backup file.

After adding a new restore point to the backup chain, Veeam Backup & Replication checks the retention policy and deletes outdated restore points. For details, see Reverse Incremental Backup Retention Policy in the Veeam Backup & Replication User Guide.



Reference

For details, see the following section in the Veeam Backup & Replication User Guide:

- Retention Policy
- Active Full Backup
- Synthetic Full Backup
- Backup Methods

Creating Backup Job

Before You Begin

Make sure that all backup infrastructure components that take part in the backup process are added to the backup infrastructure. These components include Microsoft Hyper-V hosts on which VMs are registered, backup proxy and backup repository.

Creating Backup Job

To back up VMs, do the following:

1. In the inventory pane of the Home view, right-click Jobs and select Backup > Virtual Machine > Microsoft Hyper-V to launch the New Backup Job wizard.



2. At the Name step of the wizard, specify a name and description for the backup job.

	New Backup Job	x
Name Type in a name and o	description for this backup job.	
Name Virtual Machines Storage Guest Processing Schedule Summary	Name: DBs Backup Description: Daily Backup Job	
	< Previous Next > Einish Cancel	

3. At the Virtual Machines step of the wizard, click Add. From the list, select VMs that you want to back up.

You can also back up VM containers: Hyper-V hosts, clusters, SCVMM and so on. If you add a new VM to the container after the backup job is created, Veeam Backup & Replication automatically updates the job to include the new VM.

[Add Objects	x
Virtual Machines Select virtual machin as you add new VM	Select objects:	0	automatically changes
Name	Name sqlsrv03 sqlsrv14	Type VM VM	Add
Storage			Remove
Guest Processing			Exclusions
Schedule			t Up
Summary			Down
			Recalculate
	★ sqlsrv		Total size: 70.7 GB
		Add	Cancel

- 4. At the **Storage** step of the wizard, do the following:
 - From the **Backup repository** list, select the backup repository that you configured in the Configure Backup Repository section.
 - In the **Restore points to keep on disk**, define the number of restore points to keep.

When the number of restore points exceeds the allowed value, Veeam Backup & Replication automatically removes the earliest restore point from the backup chain. For more information, see Retention Policy in the Veeam Backup & Replication User Guide.

	New Backup Job
Storage Specify processing p job and customize a	roxy server to be used for source data retrieval, backup repository to store the backup files produced by this dvanced job settings if required.
Name	Back <u>u</u> p proxy:
Virtual Machines	Off-host backup (automatic proxy selection)
	Backup <u>r</u> epository:
Storage	Backup Volume 01 🗸 🗸
Guest Processing	844 GB free of 1.24 TB Map backup
Schedule	Retention policy: 14 💭 restore points 🗸 🚺
Summary	Keep some periodic full backups longer for archival purposes Configure GFS retention policy is not configured Configure
	 Configure secondary destinations for this job Copy backups produced by this job to another backup repository, or to tape. Best practices recommend maintaining at least 2 backups of production data, with one of them being off-site. Advanced job settings include backup mode, compression and deduplication, block size, notification settings, automated post-job activity and other settings.
	< <u>Previous</u> <u>N</u> ext > <u>Finish</u> Cancel

 Click the Advanced button and, in the Backup tab, specify the backup method or leave the default settings. For details, see Backup Methods.

	Advanced Settings	
Storage Specify pr	Backup Maintenance Storage Notifications Hyper-V Scripts	files produced by this
Name	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.	Choose
Virtual Machines Storage	 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 Days 	 ▼
Guest Processing	Create on: Saturday	kup
Schedule	Active full backup Create active full backups periodically	
Summary	 Monthly on: First v Monday Months Weekly on selected days: Days 	Configure
	Saturday	ng backups to tape,
		^{:k} 🔅 Advanced
	Save As Default OK Cancel	Cancel

5. At the **Guest Processing** step of the wizard, leave the default settings.

The settings of this step are detailed in the Creating Application-Aware Backup Job section.

- 6. At the **Schedule** step of the wizard, do the following:
 - a. Select the **Run the job automatically** check box. If you do not select this check box, you will have to launch the job manually. For details, see **Start Backup Job Manually**.
 - b. Select the schedule type: daily, monthly or periodically.
 - c. Make sure the **Retry failed VM processing** check box is selected.

d. Click Apply.

New Backup Job								
Schedule Specify the job scheduling options. If you do not set the schedule, the job will need to be controlled manually.								
Name	🗹 Run the job automatically	y						
Virtual Machines	Daily at this time:	10:00 PM	Everyday	✓ Days				
Storage	O <u>M</u> onthly at this time:	10:00 PM	Fourth 🗸 Saturday	✓ Months				
Secondary Target	O Periodically every:	1 v	Hours	✓ Sc <u>h</u> edule				
Guest Processing	○ <u>A</u> fter this job: Automatic retry	Apache Backup	(Apache Backup Job)	×				
Schedule	Retry failed VMs proces	ssing: 3	🗘 times					
Summary	Wait <u>b</u> efore each retry	attempt for: 10	minutes					
	Backup window							
	<u>T</u> erminate job if it exce	eds allowed backu	ıp window	<u>W</u> indow				
	If the job does not con terminated to prevent :	nplete within alloc: snapshot commit	ated backup window, it will be during production hours.					
		< <u>P</u> r	evious App <u>ly</u> Ein	iish Cancel				

- 7. At the **Summary** step of the wizard, select the **Run the job when I click Finish** check box and click the **Finish** button.
- 8. In the inventory pane of the **Home** view, expand the **Last 24 Hours** node to see the created job.

Reference

For more information on backup creation, see Creating Backup Jobs in the Veeam Backup & Replication User Guide.

Monitoring Job Performance in Real Time

When the job is running, you can view job statistics in real time. Statistics include job progress, duration, processing rate, performance bottlenecks, the amount of read and transferred data, and other details of the job performance.

To view the job statistics, do the following:

- 1. In the inventory pane of the **Home** view, select the **Jobs** node.
- 2. In the working area, right-click a running job and click **Statistics**.
- 3. In the opened window, select a VM to view its statistics.

🕒 DBs Backup (Increme	ental)						×
Job progress:			82%				0 of 2 VMs
SUMMARY		DATA		STATUS			
Duration:	02:51	Processed:	20.2 GB (82%)	Success:	0		
Processing rate:	182 MB/s	Read:	2 0 .2 GB	Warnings:	0		
Bottleneck:	Source	Transferred:	7.0 GB (2.9×)	Errors:	0		
THROUGHPUT (LAST 5	5 MIN)						
	N					Spe	ed: 188.6 MB/s
	¹ S Read spectrum Transfer s Time: Weat Click to sv	ed: 196 MB/s peed: 75 MB/s Inesday, February 20, 20 vich to all time view	719 7:21:10 AM				
Name	Status	Action				Duration	Ê
sqlsrv09	● 57%	🥝 Queued for proc	cessing at 2/20/2019 7:1	19:28 AM			
📄 sqlsrv17	66%	 Required backup VM processing stress VM size: 120.0 G 	p infrastructure resourc started at 2/20/2019 7:1 B (10.3 GB used)	es have been assigned 9:34 AM			
		💙 VM is now in the	e required state for pro	cessing		00:00	_
		🥝 Preparing to cre	ate snapshot			00:00	-
		🛛 📀 Creating snapsh Sing source pro	1 ot Microsoft Software oxy hyperv02.tech.local	Shadow Copy provide (onhost)	er 1.0 (m	00:11	
		Saving 1699124	3-C036-4928-A0AB-CE	05227C4380.×m1		00:01	
		📀 Updating auxilia	iry data backup_doc			00:00	
		🥝 Updating auxilia	iry data writer_doc			00:00	
		💟 Hard disk 1 (120	0.0 GB) 10.3 GB read at 1	03 MB/s		01:44	×
Hide Details							ОК

Note that the job must complete with the *Success* or *Warning* status. If the job completes with the *Failed* status, Veeam Backup & Replication does not create the backup file is not able to perform restore operations.

You can configure email notifications to get job results. For details, see Configuring Global Email Notification Settings in the Veeam Backup & Replication User Guide.

Start Backup Job Manually

If you do not schedule a backup job, you must start it manually. To start the job, do the following:

- 1. Open the **Home** view.
- 2. In the inventory pane, select the **Jobs** node.
- 3. In the working area, right-click the job and select **Start**. Wait for the job to complete. Note that the job must complete with the *Success* or *Warning* status.

卽	Job Tools	Veeam Backup and Replication -					– 🗗 🗙	
∃ • Home View	Job							?
Start Stop Retry Active Job Control	Statistics Deta	Report Edit Clone Dis	Job					
Home		Q Type in an object n	ame to search for		×			
a 🐐 Jobs		Name 🕇	Туре	Target				
🚛 Backup		🎯 Backup Job Daily	🕨 Start	Default	Backup Repository			
 Backups East 24 Hours 		₩ parkup job DP	Stop 'S Retry Active full Statistics B Report Disable		Backup Repúsitory			
A Home		SUMMARY	X Delete	DATA		STATUS		THROUGHPUT
Inventory		Duration:	Edit	Processed:	33.4 GB (100%)	Success:	1 🕑	
Backup Infrastructure		Processing rate:	1 MB/s	Read:	98 MB	Warnings:	0	
	j (*	Bottleneck:	Source	Transferred:	5.7 MB (17.3x)	Errors:	0	Speed: 0 KB/s
1 job selected			Connecte	d to: localhost	Build: 11.0.0.825 E	nterprise Plus Edition	Support expires: 1	09 days remaining

Locating Backup Files

When a backup job finishes, Veeam Backup & Replication saves backup files in the backup repository that you specified as a backup target.

To locate backup files using the Veeam Backup & Replication console, do the following:

- 1. Open the **Files** view.
- 2. In the inventory pane, expand the backup repository file tree and open the **Backup** folder.
- 3. In the **Backup** folder, find the subfolder with the backup job name and open it. It must contain a .VBK and .VBM files. If the job was run several times, the subfolder also contains .VIB or .VRB files.

記	File Tools				Veeam Backup a	nd Replication			-	₽ ×
≣≁ Hom	ne File									?
Copy Paste	Rename Delete	Open Ed	it Add to File Copy Job •							
Clipboard	File	Edit	Jobs							
Files			Name 🕇	Туре	Si	ze				
🖌 🕞 Micros	oft Windows	^	🚡 Backup Job Daily.vb	vbm	22.4	КВ				
🖌 📄 bac	kupsrv31.tech.local		Backup Job DailyD2	vbk	9.4	GB				
4 📼 (Ci\		Backup Job DailyD2	VIb	7.8	мв				
	\$Recycle.Bin 9432ee596ab162	ed7e5e0								
4	Backup	curesco								
Þ	📁 Backup Job D	aily 🗸								
nter Home										
Inventory	y									
🕋 Backup li	nfrastructure									
Files										
		[* ≥								
3 objects				Connec	cted to: localhost	Build: 11.0.0.825	Enterprise Plus Edition	Support expires: 109 day	/s remai	ning

Creating Application-Aware Backup Job

Application-aware processing allows you to create transactionally consistent backups. These backups allow you to further restore application items: emails for mail agents, tables for DB servers, accounts for domain controllers.

Veeam Backup & Replication can create transactionally consistent backups of VMs that run the following applications:

- Microsoft Exchange
- Active Directory
- SharePoint
- SQL Server
- Oracle Database

In this section, you will learn how to create the application-aware backup job for a Microsoft SQL Server.

IMPORTANT!

Application-aware processing is supported only for VSS-aware applications and applications listed above. If an application that you want to back up is not supported, you can use Microsoft Hyper-V guest quiescence with pre-freeze and post-thaw scripts. For more information, see Microsoft Hyper-V Guest Quiescence and Pre-Freeze and Post-Thaw Scripts in the Veeam Backup & Replication User Guide.

Before You Begin

Make sure that the version of your Microsoft SQL Server is supported. For details, see the System Requirements section in the Veeam Backup & Replication User Guide.

Creating Application-Aware Backup

To create the application-aware backup job for the Microsoft SQL Server, do the following:

- In the inventory pane of the Home view, right-click Jobs and select Backup > Virtual Machine > Microsoft Hyper-V to launch the New Backup Job wizard.
- 2. At the Name step of the wizard, specify a name and description for the backup job.
- 3. At the Virtual Machines step of the wizard, select the VM.
- 4. At the **Storage** step of the wizard, select a backup repository or keep the default settings.
- 5. At the **Guest Processing** step of the wizard, do the following:
 - Select the **Enable application-aware processing** check box.
 - Select the **Enable guest file system indexing** check box.

VM guest OS file indexing allows you to search for VM guest OS files inside VM backups and perform 1-click restore in Veeam Backup Enterprise Manager. For details, see VM Guest OS File Indexing in the Veeam Backup & Replication User Guide.

- In the **Guest OS credentials** section, specify credentials of a user account to connect to the VM guest OS. The user account must have Administrator permissions on the Microsoft SQL Server.
- Click the **Applications** button at the top of the window.

	New Backup Job	x
Guest Processing Choose guest OS pro	ocessing options available for running VMs.	
Name Virtual Machines Storage Secondary Target Guest Processing Schedule Summary	✓ Enable application-aware processing Detects and prepares applications for consistent backup, performs transaction logs processing, a configures the OS to perform required application restore steps upon first boot. Customize application handling options for individual VMs and applications ✓ Enable guest file system indexing Creates catalog of guest files to enable browsing, searching and 1-click restores of individual files Indexing is optional, and is not required to perform instant file level recoveries. Customize advanced guest file system indexing options for individual VMs Guest OS credentials • TECH\Administrator (TECH\Administrator, last edited: 2 days ago) • Add Manage accounts Customize guest OS credentials for individual VMs and operating systems Guest interaction proxy: Automatic selection	nd
	< Previous Next > Finish Cancel	

- 6. In the opened window, select the Microsoft SQL Server from the list and click Edit.
- 7. In the **Processing Settings** windows, do the following:
 - In the Transaction logs section of the General tab, check that the Process transaction logs with this job option is selected.

• On the SQL tab, select Backup log periodically option.

Veeam Backup & Replication will create an auxiliary job that runs continuously and ships database transaction logs. Transaction logs are shipped to the backup repository and saved in .VLB files next to other backup job files. Thus, you have a chain of restore points and a set of transaction logs that cover intervals between these restore points.

		sglsrv03 Processing Settings		x
	Guest Proce	· · · · · · · · · · · · · · · · · · ·		
	Choose gue:	General SQL Oracle File Exclusions Scripts		
Name Virtual Ma	Specify a: Object	Choose how this job should process Microsoft SQL Server transaction logs. O Truncate logs (prevents logs from growing forever)	Add	nd
Chaine and	sqlsr	Do not truncate logs (requires simple recovery model)	Edit cations.	
Storage	📑 dbvn	 Backup logs periodically (backed up logs are truncated) 	Persona	
Guest Pro		Backup logs every: 15 😴 minutes	ial files.	
Schedule		Retain log backups:	xing	
Summary		Until the corresponding image-level backup is deleted		_
		Keep only last 15 🙀 days of log backups Log shipping servers:	dd	
		Automatic selection Choose	entials	
			2054	
			Cancel t Now	
l				_
		OK Cancel	Finish Cancel	

- 8. At the **Schedule** step of the wizard, define scheduling settings for the job.
- 9. At the **Summary** step of the wizard, select the **Run the job when I click Finish** check box and click the **Finish** button.

10. In the inventory pane of the **Home** view, expand the **Last 24 Hours** node to see the created jobs. You must see two jobs: one that processes the Microsoft SQL Server and the other one that ships transaction logs.

闾	Session Tools			Veeam Backup	o and Replication			- @ ×
∃• Home View	Session							?
Stop Statistics Report								
Actions Details								
Home		Q Type in an object na	me to search for		×			
🔺 🖏 Jobs		Job Name 🕇			Session Type	Status		
🚛 Backup		📑 SQL Server backup (Fi	all)		Backup	18% completed		
in Replication		🗅 🖒 SQL Server backup SC	L Server Transaction L	og Backup	SQL Log Backup	Working		
Ta File Come								
Backups								
 Backaps Replicas 								
Last 24 Hours								
🐴 Running (2)								
🔯 Success								
🙀 Failed								
		Job progress:			18%			0 of 1 VMs
A Home								
Inventory		SUMMARY		DATA		STATUS		THROUGH
Backup Infrastructure		Duration:	03:15	Processed:	12.7 GB (18%)	Success:	0	
	🍵 🗅 🕼	Processing rate:	99 MB/s	Read:	12.7 GB	Warnings:	0	
1 session selected			Connected to:	localhost B	uild: 11.0.0.819 Er	nterprise Plus Edition	License expires: 101 da	ys remaining

Reference

For more information on application-aware backups, see the Application-Aware Processing section in the Veeam Backup & Replication User Guide.

Data Recovery

Veeam Backup & Replication allows you to restore the following instances:

- Entire VM
- Guest OS files
- VM files
- Application items

Restoring Entire VM

If a VM fails, you can restore it from a backup file. You can restore a single VM or multiple VMs to the original or new location.

In this section, you will learn how to restore a VM to the original location. For more information on how to restore the VM to another location, see Restoring Entire VM in the Veeam Backup & Replication User Guide.

Before You Begin

Before you restore a VM from a backup, consider the following:

• You can restore the VM from a backup that has at least one successfully created restore point.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Backups** node. Then, expand the backup job and verify that there is at least one restore point available for the VM.

• When you restore the VM to its original location, and the original VM is still running, Veeam Backup & Replication powers off the original VM and deletes it before the restore.

Restoring Entire VM

To restore an entire VM to its original location, do the following.

- 1. Open the **Home** view.
- 2. In the inventory pane, select the **Backups** > **Disk** node. Expand the backup job in the working area, rightclick a VM in a backup job and select **Restore entire VM** to launch the **Full VM Restore** wizard.



3. At the Virtual Machines step of the wizard, select the VM from the list, click the **Point** button and choose a restore point.

If you select an incremental restore point, Veeam Backup & Replication automatically restores data blocks from the full backup file and the chain of incremental backup files.

Full VM Restore						
	/irtual Machines					
	Restore Po	pints		×		
	Available restore points for sqlsrv14:					
Virtual M	Job	Туре	Location			
Restore N	🔺 🚢 Apache Backup					
	🕑 less than a day ago (12:01 AM Saturday 12/29/2018)	Increment	Tech Storage 01		h	
Secure Re	🕑 less than a day ago (10:01 PM Friday 12/28/2018)	Increment	Tech Storage 01	_	E	
	🕑 less than a day ago (8:01 PM Friday 12/28/2018)	Increment	Tech Storage 01			
Reason	🔮 less than a day ago (6:01 PM Friday 12/28/2018)	Increment	Tech Storage 01		E I	
Summan	🔮 less than a day ago (4:01 PM Friday 12/28/2018)	Increment	Tech Storage 01			
Summary	🕑 less than a day ago (3:55 PM Friday 12/28/2018)	Full	Tech Storage 01			
			OK	Cancel	h	

- 4. At the **Restore mode** step of the wizard, do the following:
 - Select the **Restore to the original location** option.
 - Select the **Quick rollback** check box.

Veeam Backup & Replication will get data blocks that are necessary to revert the VM to an earlier point in time and will restore only these data blocks from the backup. Quick rollback significantly reduces the restore time.

IMPORTANT!

Do not enable the **Quick rollback** option if the problem occurred at the VM hardware level, storage level or due to a power loss.

Full VM Restore						
Restore Mode Specify whether selected VMs should be restored back to the original location, or to a new location or with different settings.						
Virtual Machines Restore Mode	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.					
Secure Restore Reason	 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. 					
Summary	 Staged restore Run the selected VM directly from backup files in the isolated DataLab to make changes to the guest OS or applications prior to placing the VM into production environment. Pick proxy to use Quick rollback (restore changed blocks only) Allows for quick VM recovery in case of guest OS software problem, or user error. Do not use this option when recovering from disaster caused by hardware or storage issue, or power loss. 					
	< Previous Next > Finish Cancel					

5. At the **Secure Restore** step of the wizard, enable scanning of the machine or leave the default settings.

If secure restore is enabled, Veeam Backup & Replication uses antivirus software to scan machine data before restoring the machine to the production environment. For details, see Secure Restore in the Veeam Backup & Replication User Guide.

	Full VM Restore				
Secure Restore Scan the selected ba compatible antivirus	ckup for malware, such as computer viruses or ransomware, prior to performing the restore. This requires a installed on the mount server specified for the corresponding backup repository.				
Virtual Machines Restore Mode	Scan the restored machine for malware prior to performing the recovery The machine you are about to restore will be scanned by antivirus software installed on the mount server to prevent a risk of bringing malware into your environment.				
Secure Restore	If malware is found:				
Reason	 Proceed with recovery but disable network adapters Abort VM recovery 				
Summary	Scan the entire image Continue scanning remaining files after the first malware has been found.				
	< Previous Next > Finish Cancel				

- 6. At the **Reason** step of the wizard, specify the reason for restoring the VM.
- 7. At the **Summary** step of the wizard, select the **Power on VM after restoring** check box and click **Finish**.

Restoring VM Files

Veeam Backup & Replication can help you restore VM files: XML, VMCX, VMRS, VMGS, VHD and VHDX. For example, your VM configuration file is missing and you need to restore it. Instead of restoring the entire VM image, you can restore a single VM file.

You can restore VM files to the latest state or any valid point in time. You can also restore them to the original or new location.

Before You Begin

Before you restore VM files from a backup, consider the following:

• You can restore VM files a backup that has at least one successfully created restore point.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Backups** node. Then, expand the backup job and verify that there is at least one restore point available for the VM.

• The server on which you plan to save the restored VM files must be added to the backup infrastructure.

Restoring VM Files

To recover VM files, do the following.

- 1. Open the **Home** view.
- 2. In the inventory pane, select the **Backups** > **Disk** node. Expand a backup job in the working area, right-click a VM and choose **Restore VM files** to launch the **Hyper-V Restore** wizard.

Backup Tools		Veeam Backup and Replication	– – ×
E▼ Home Backup			()
Instant Instant Disk Entire Virtual Export Recovery Recovery VM Disks Disks Restore	VM Guest Application Files Files v Items v	Wicrosoft Google Wove Copy Export Azure laas CE Backup Backup Backup Backup Backup Backup Backup Backup	
Home	Q Type in an object name to search	for 🗙	
▲ 物 Jobs 健 Backup	Job Name 🚽 a 😤 Daily Backup Job winsrv29	Repository Default Backup Repository	
 Image: Second second	Cloud Director Backup Job	 Instant recovery Instant disk recovery Restore entire VM Restore VM files Restore YM files Restore State to Amazon EC2 Restore to Microsoft Azure Restore to Google CE Move backup Copy backup Copy backup 	
A Home		Export backup Delete from disk	
Inventory	L		
Cara Backup Infrastructure			
🚰 Storage Infrastructure			
🖞 🖗 🖇			
1 backup selected			

3. At the **Restore Point** step of the wizard, select a restore point.

If you select an incremental restore point, Veeam Backup & Replication automatically restores data blocks from the full backup file and the chain of incremental backup files.

	Hyper-V I	Restore		x
Restore Point Select the restore po	int to restore VM from.			
Virtual Machine	VM name: sqlsrv03	Original host: I	yperv02	
Restore Point	VM size: 119.2 GB Available restore points:			
Restore Destination	Created	Туре	Location	
Restore Reason	🕑 less than a day ago (4:01 PM We	dnesda Increment	Default Backup Repository	
Summary	U less than a day ago (3:01 PM We Iess than a day ago (2:46 PM We	dnesda Increment dnesda Full	Default Backup Repository Default Backup Repository	
		< <u>P</u> revious <u>N</u> ext >	• <u>F</u> inish Cance	:

- 4. At the **Restore Destination** step of the wizard, do the following:
 - a. In the **Server** list, select the server to which you want to restore VM files.
 - b. In the **Path to folder** field, specify the path to the folder where you want to restore files.

c. In the VM files to restore section, select the required files.

	Hyper-V Rest	tore		x		
Restore Destination Choose server and folder where VM files should be restored, and pick files to restore.						
Virtual Machine	Server:					
Dantana Daint	hyperv01		~	Details		
Restore Point	Path to folder:					
Restore Destination	D:\Storage			Browse		
Restore Reason	VM files to restore:					
Summary	Name ✓ 7E088B4D-0ACB-4F89-8907-AA089 □ sqlsrv03.vhdx	Size 15.8 KB 119.2 GB		Select All Clear All		
	[< Previous Ne	xt > Finish	Cancel		

- 5. At the **Reason** step of the wizard, specify the reason for restoring files.
- 6. At the **Summary** step of the wizard, click **Finish** to restore the VM files.

Reference

For more information on restoring VM files, see VM Files Restore in the Veeam Backup & Replication User Guide.

Restoring Guest OS Files

Veeam Backup & Replication allows you to recover individual guest OS files and folders. You can restore files and folders directly from a backup. This makes the restore process fast and does not require additional storage resources.

Veeam Backup & Replication supports recovering files for the following file systems:

- Microsoft Windows file systems (FAT, NTFS and ReFS)
- File systems of Linux-based OSes
- Other file systems

In this guide, we omit restoring files from other file systems. This is an advanced scenario that requires additional actions. For details, see the Restore from Other File Systems section in the Veeam Backup & Replication User Guide.

Restoring VM Guest OS Files (FAT, NTFS, ReFS)

You can restore individual files from the backup of a Microsoft Windows VM. For this purpose, Veeam Backup & Replication provides the **File-Level Restore** wizard.

Before You Begin

Consider the following:

• You can restore guest OS files from a backup that has at least one successfully created restore point.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Backups** node. Then, expand the backup job and verify that there is at least one restore point available for the VM.

- You cannot restore files from a backup created in the reverse incremental mode if the backup job is being performed. If the backup is created in the incremental backup mode and the backup job is being performed, you can restore files from any available restore point.
- You cannot restore VM guest OS files from a running replica or if the replication job with the necessary VM is being performed.

Restoring Guest OS Files

To restore guest OS files from a Microsoft Windows VM:

- 1. Open the **Home** view.
- 2. In the inventory pane, select the **Backups** > **Disk** node. Expand a backup job in the working area, right-click a VM and choose **Restore guest files** > **Microsoft Windows** to launch the **File Level Restore** wizard.

記 Backup Tools	Veeam Backup and Replication	×
E▼ Home Backup		•
Instant Instant Disk Entire Virtual Export Recovery Recovery VM Disks Disks Restore	VM Guest Application Files Files * Items * Restore to Cloud Restore to Cloud Actions	
Home	Q. Type in an object name to search for	
 Jobs Heads Backup Heads Backups ▲ Disk Beckups ▲ Disk Beckups ▲ Replicas Ready ▷ Last 24 Hours 	Job Name 4 Repository	indows her
A Home	Export backup Export backu	
Inventory		
Call Backup Infrastructure		
Storage Infrastructure		
چ چا آ		
1 backup selected		

3. At the **Restore Point** step of the wizard, select the necessary restore point.

	File Level Restor	re	×
Restore Point Select the restore poi	nt to restore guest OS files from.		
Machine	VM name: fileserv06	Original host:	hyperv02.tech.local
Restore Point	VM size: 93.3 GB Available restore points:		
Reason	Created Typ	pe Backup	Location
Summary	 Iess than a day ago (4:02 AM Sat Incr Iess than a day ago (2:01 AM Sat Incr Iess than a day ago (12:02 AM S Full Iess than a day ago (10:00 PM Fr Incr Iess than a day ago (8:02 PM Fri Incr Iess than a day ago (6:01 PM Fri Incr Iess than a day ago (4:02 PM Fri Incr Iess than a day ago (3:56 PM Fri Full 	rement Fileserver Backup Job rement Fileserver Backup Job I Fileserver Backup Job rement Fileserver Backup Job rement Fileserver Backup Job rement Fileserver Backup Job I Fileserver Backup Job	Storage 01 Storage 01 Storage 01 Storage 01 Storage 01 Storage 01 Storage 01 Storage 01
	<	Previous Next > Finis	h Cancel

- 4. At the **Reason** step of the wizard, specify the reason for restoring VM guest OS files.
- 5. At the last step of the wizard, click **Finish**.
- 6. Veeam Backup & Replication will display the **Backup Browser** window with the file system tree of the VM. Right-click the necessary file or folder, select **Copy To**.
- 7. In the opened window, specify the location to which you want to restore files or folders. This location is a network shared folder or folder on the backup server.

Reference

For more information on restoring guest OS files, see Restore from FAT, NTFS or ReFS in the Veeam Backup & Replication User Guide.

Restoring VM Guest OS Files (Linux, Unix, etc)

You can restore individual files and folders from file systems of Linux-based OSes. For this purpose, Veeam Backup & Replication provides the multi-OS **File-Level Restore** wizard. The multi-OS restore wizard allows you to restore guest OS files for such OSes as Linux, Unix, BSD, macOS and others.

To restore files from VM guest OS, Veeam Backup & Replication uses a helper appliance. The helper appliance is a helper VM running a stripped-down Linux kernel that has a minimal set of components. When you perform file-level restore, Veeam Backup & Replication automatically starts the appliance and mounts VM disks to the helper appliance as virtual hard drives. Virtual disks are mounted directly from backup files, without prior extraction of the backup content. This makes the restore process much faster.

Before You Begin

Consider the following:

- Check the supported file systems. For details, see the File-Level Restore section in the Veeam Backup & Replication User Guide.
- You can restore guest OS files from a backup that has at least one successfully created restore point.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Backups** node. Then, expand the backup job and verify that there is at least one restore point available for the VM.

- You cannot restore files from reverse incremental backups.
- You cannot restore files from a VM being currently backed up or replicated.

Restoring Guest OS Files

To restore guest OS files from a Linux-based VM, do the following.

1. Open the **Home** view.

2. In the inventory pane, select the **Backups** > **Disk** node. Expand a backup job in the working area, right-click a VM and select **Restore guest files** > **Linux and other** to launch the **Guest File Restore** wizard.



3. At the Restore Point step of the wizard, select a restore point.

4	Guest File Rest	ore Wizard		X			
Restore Point Choose the restore p	oint you would like to restore files from						
Virtual Machine	VM name: serv60	Original host:	hyperv02				
Restore Point	VM size: 21.3 GB Available restore points:						
Helper Host	Created	Туре	Backup				
Helper Appliance	🕑 less than a day ago (1:01 AM Th	ursday Increment	ubuntu04_backup				
Reason	(4) less than a day ago (11:46 AM W (5) less than a day ago (11:21 AM W	'ednes Increment 'ednes Full	ubuntu04_backup ubuntu04_backup				
Summary							
< Previous Next > Browse Cancel							

4. At the Helper Host leave the default settings.

5. At the **Helper Appliance** step of the wizard, click **Customize** to specify settings for the helper appliance. Select the Hyper-V host and network on which the helper appliance will run.

4	Guest File Restore Wizard	x
Helper Appliance	FLR Appliance Configuration	
we have gathered	Specify the Hyper-V server and network settings for FLR helper appliance. Be sure to choose the same network where backup server located. If the	
Restore Point	guest VM is not accessible from the selected network, restore to the original location will not be available. system of the select	be ted
Helper Host	Host: hyperv01.tech.local Choose	
Helper Appliance	8 VMs running of 16 total	
Reason Summary	Network: Choose Intel(R) 1350 Gigabit Network Connection - Virtual Switch Choose VLAN ID: • • Obtain an IP address automatically • Use the following IP address: IP address: . Subnet mask: . Default gateway: .	
	Enable FTP server on appliance (advanced) OK Cancel Custor	nize
	< Previous Next > Browse Can	el

- 6. At the **Reason** step of the wizard, specify the reason for restoring.
- 7. At the last step of the wizard, click **Finish**. Note that the helper appliance can boot about 20 seconds.
- 8. Veeam Backup & Replication will display the **Backup Browser** with the file system tree of the VM. Rightclick a file or folder, select **Copy To**.
- 9. In the **Select Destination** window, do the following:
 - a. In the Server field, select the server to which you want to restore files.
 - b. In the Path to folder field, specify a destination folder.
- 10. Click Restore.

Reference

For more information on restoring guest OS files, see Restore from Linux, Unix and Other File Systems in the Veeam Backup & Replication User Guide.

Restoring Application Items

If you have an application-aware backup, you can restore application items for Microsoft SQL Server, Microsoft Active Directory, Microsoft Exchange, Microsoft SharePoint, and Oracle Database. To restore application items, Veeam Backup & Replication uses special built-in tools – Veeam Explorers.

Veeam Explorers mount the file system of the backed up VM, detect available applications and display their content in the convenient interface. You can then browse for necessary application items and restore them to the original or new location. For details, see Veeam Backup Explorers User Guide.

In this section, you will learn how to restore application items for the Microsoft SQL Server. For this purpose, you will use the backup created in the Creating Application-Aware Backup Job section.

- 1. In the inventory pane of the Home view, click the Backups node.
- In the working area, expand the backup job that processes the VM with Microsoft SQL Server. Select the VM and click Restore application items > Microsoft SQL Server databases on the ribbon to open the Microsoft SQL Server Database Restore wizard.



- 3. At the Restore Point step of the wizard, select the required restore point.
- 4. At the Reason step of the wizard, specify the reason for restoring.
- 5. At the last step of the wizard, click **Finish** to start the recovery process.
- 6. Veeam Backup & Replication will display the **Veeam Explorer for Microsoft SQL Server** window with available databases.

7. In the **Databases** pane of the window, right-click a database and select **Restore point-in-time state to** <**Microsoft SQL Server****Instance Name**>.

ale	sha as of less than a day ago (10:02 PM Sunday 2/14/2021) - Veeam Explorer for Microsoft SQL Server	-		×
. ≡ * Home Database				
Recovery Database Database Sci	hema 🖷 Backup 🖛 Files 🐨 Schema 🖛			
Instant Recovery Publish Restore	Export			
Databases	Database Info			
🔺 🔜 ALPHA	Name: AccountSystem			
🔺 🔚 Default Instance	Backup created: 2/14/2021 10:02 PM			
AccountSystem	Recovery model: Full			
📒 📑 Instant recovery 🔸	Read-only: No			
🗧 🚰 Publish database 🔸 📃	·			
🚽 🧢 Restore database 🔸 希	Restore latest state to ALPHA			
🧧 🐖 Restore schema 🔸 🛲	Restore point-in-time state to ALPHA 💦 AM			
📒 🔝 Export backup 🔹 📲	Restore to another server			
🚽 🕜 Export files 🔹 🕨	Primary database file			
🕨 🦰 Other : 📴 Export schema 🔹	c:\data\accountsystemdat1.mdf			
	Secondary database and log files c:\data\accountsystemlog1.ldf BLOB stores c:\data\filestream1			
			vee	AM

- 8. At the **Specify restore point** step of the wizard:
 - a. Select the Restore to a specific point in time option.
 - b. Use the slider to define the exact point in time to which you want to restore the database.
 - c. Select the **Perform restore to the specific transaction** check box and click **Next**.

RESTORE WIZARD	×
Specify restore point	
Speeny restore point	
Specify point in time you want to restore the database to:	
Restore to the point in time of the selected image-level backup	
Restore to a specific point in time (requires transaction log backups)	
7:41 AM 4/16/2019	7:54 AM 4/16/2019
Tuesday, April 16, 2019 7:47 AM	
Perform restore to the specific transaction	
Enables you to review major database transactions around the selected time, and r the database to the moment in time right before the unwanted change.	estore :
Back Next	Cancel

9. At the **Fine-tune the restore point** step of the wizard, select the transaction to which you want to restore the database and click **Restore**.

Veeam Backup & Replication will start restoring the database to the selected transaction. When the restore process is complete, Veeam Explorer for Microsoft SQL Server will display a popup message with the results of the restore operation.

Reference

For more information on restoring application items, see Application Items Restore in the Veeam Backup & Replication User Guide.
Backup Copy

Backup copy allows you to create several instances of the same backup data in different locations. This is the mechanism that Veeam Backup & Replication provides to help you follow the the 3-2-1 rule:

- 3: You must have at least three copies of your data: the original production data and two backups.
- 2: You must use at least two different types of media to store copies of your data, for example, local disk and cloud.
- 1: You must keep at least one backup offsite (for example, in the cloud or in a remote site).

In Veeam Backup & Replication, backup copy is a job-driven process. When the backup copying job starts, Veeam Backup & Replication accesses backup files on the source backup repository, retrieves data blocks for a specific machine from the backup file, copies them to the target backup repository, and composes copied blocks into a backup file on the target backup repository. This backup file has the same format as the primary backup file.

Before You Begin

Before you create a backup copy job, consider the following:

- The source and target backup repositories that take part in the backup copy process must be added to the backup infrastructure.
- You must have a backup that has been successfully run at least once.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Backups** node. Then, expand the backup job and verify that there is at least one restore point available.

Creating Backup Copy Job

To create a backup copy job, do the following:

1. Open the **Home** view.

2. In the inventory pane, right-click Jobs and select Backup Copy > Image-level backup to launch the New Backup Copy Job wizard.

闿	Veeam Backup and Replication	– 🗆 🗙
∃• Home View		?
Backup Replication CDP Job * Job * Policy * Primary Jobs	Image: A constraint of the sector of the	
Home	Q Type in an object name to search for	
 Ze Backup Backup Backups Backups Backups Backups Backups Backups Last 24 Hours 	Backup + Replication + CDP policy + Backup copy + VM copy + File copy + X Add view +	
A Home		
Inventory		
Backup Infrastructure		
📬 Storage Infrastructure		
4 jobs		

- 3. At the **Job** step of the wizard, do the following:
 - $\circ~$ Specify a name and description for the backup copy job.

• In the **Copy mode** field, check that the **Immediate copy** is selected.

In the immediate copy mode, Veeam Backup & Replication copies new data as soon as it appears on the source repository. For more information, see Backup Copy Modes in the Veeam Backup & Replication User Guide.

	New Backup Copy Job
Job Backup copy job effi data. Type in a name	ciently creates local and remote copies of your backups, making it easy to maintain multiple copies of your and description for the job, and specify backup copy interval.
Job	Name:
	DB Backup Copy Job
Objects	Description
Target	Daily Backup Copy Job
Data Transfer	
Schedule	
Summary	Copy mode:
	Immediate copy (mirroring)
	Copies every restore point as soon as it appears in the primary backup repository. This mode will copy all backups created by selected backup jobs, including transaction log backups.
	O Periodic copy (pruning)
	Periodically copies the latest available restore point only. This mode also allows for selecting which backups to process, enabling you to further reduce bandwidth usage.
	< Previous Next > Finish Cancel

4. At the **Objects** step of the wizard, click **Add** and select backup jobs that you want to copy.

	Select Jobs	x
Objects Add objects to the No matter how yo	Select Jobs	amic selection scope.
Job	😂 🄯 Backup Job	Add
Target		Remove
Data Transfer Schedule		Source
Summary		the second
		Recalculate
	₩ Type in an object name to search for	Q Total size: 0 B
	OK Cance	sh Cancel

5. At the **Target** step of the wizard, select the backup repository where you want to store the backup copy. For other settings, keep the default values.

	New Backup Copy Job	x
Target Specify the target ba use map backup fun	ckup repository, number of recent restore points to keep, and the retention policy for full backups. You c ctionality to seed backup files.	:an
Job	Backup repository:	_
Objects	Backup Repository UI 0 Image: State of 249 GB Map backu	¥_ Ip
Target Data Transfer Schedule	Retention policy: 7 restore points Keep certain full backups longer for archival purposes Configure GFS retention policy is not configured	
Summary	Advanced settings include health check and compact schedule, notifications settings, and automated post-job activity options.	1
	< Previous Next > Finish Cancel	

- 6. At the **Data Transfer** step of the wizard, keep the default settings.
- 7. At the **Schedule** step of the wizard, define the period of time when the backup copy job is allowed to transport data over the network.
- 8. At the last step of the wizard, select the **Enable the job when I click Finish** check box and click **Finish**. The job will start running in the continuous mode.

Reference

For more information on the backup copy, see the Backup Copy section in the Veeam Backup & Replication User Guide.

VM Replication

When you replicate a VM, Veeam Backup & Replication creates the exact copy of the VM in the native Microsoft Hyper-V format on a spare Hyper-V host and keeps this copy synchronized with the original VM.

Replication provides the best recovery time objective (RTO) values. You actually have the copy of a VM in the ready-to-start state. That is why replication is recommended for VMs running most critical applications.

Replication is a job-driven process. During the first run of a replication job, Veeam Backup & Replication copies data of the original VM running on the source host and creates its full replica on the target host. During next job runs, Veeam Backup & Replication copies only those data blocks that have changed since the last replication job session. Veeam Backup & Replication writes these changes to restore points, so that you can further publish this replica in the required state.

Veeam Backup & Replication supports several replication scenarios. Depending on the location of the host where you plan to store replicas, you can choose the following scenarios:

• Onsite replication

The target host is located in the same site as the source host.

• Offsite replication

The target host is located on another site.

In this section, you will learn how to work with onsite replicas. For more information on offsite replication, see Replication Scenarios in the Veeam Backup & Replication User Guide.

Reference

For more information on replication, see Replication in the Veeam Backup & Replication User Guide.

Creating Replication Job

Before You Begin

Before you replicate a VM, consider the following:

- You must add all components needed for the replication process to the backup infrastructure. These components are source and target Microsoft Hyper-V hosts, backup proxy and backup repository.
- You cannot replicate VMs with shared VHDX and VHDS disks.

Creating Replication Job

To replicate a VM, do the following:

- 1. Open the **Home** view.
- 2. In the inventory pane of the Home view, right-click the Jobs node and select Replication > Virtual machine > Microsoft Hyper-V to launch the New Replication Job wizard.

習	Veeam Backup and Replication	– a ×
∃• Home View		?
Backup Replication CDP Job - Job - Policy Primary Jobs	Backup Copy SureBackup Copy × Job × Job × Auxiliary Jobs Restore Failover Restore Import Export Restore	
Home	Q Type in an object name to search for X TM Backup Jobs (1 out of 27 jobs shown)	
🔺 🐁 Jobs	Name 🕇 Type Target	
🚛 Backup	😤 Backup 🕨 VMware Backup Backup Repository 01	
瘤 Replication 結 Backup Conv	Replication	
行 File Copy	CDP policy 🦂 Microsoft Hyper-V	
👘 VM Backup Jobs	🚠 SureBackup	
Backups	Backup copy	
Ready	File copy	
East 24 Hours	Add view	
	יעד	
^		
1 Home		
Inventory		
Backup Infrastructure		
1 job	Connected to: localhost Build: 11.0.0.825 Enterprise Plus Edition License expires: 116 da	ys remaining

3. At the **Name** step of the wizard, specify a name and description for the replication job. For other settings, leave the default values.

	New Replication Job	x				
Job Specify the name and description for this job, and provide information on your DR site.						
Job	Name:	_				
Virtual Machines	Replication Job	_				
Destination	Description: Daily Replication Job					
Job Settings						
Data Transfer	Describe your DR site:	_				
Guest Processing	 Low connection bandwidth (enable replica seeding) Separate virtual networks (enable network remapping) 					
Schedule	Different IP addressing scheme (enable re-IP)					
Summary						
	< Previous Next > Finish Cancel					

4. At the Virtual Machines step of the wizard, click Add. From the list, select VMs that you want to replicate.

You can also replicate VM containers: Hyper-V hosts, clusters, SCVMM and so on. If you add a new VM to the container after the replication job is created, Veeam Backup & Replication automatically updates the job to include the new VM.

		Add Objects	x
Virtual Machin Select one or r	Select objects: Name	💽 📑	am replication.
Job	oracle02	VM VM	
Virtual Machines			Add Remove
Job Settings			Exclusions
Data Transfer			
Guest Processing			t Up
Schedule			↓ Down
Summary			
			Recalculate
	米 → oracle		Total size: 0B
		Add	ncel nish Cancel

- 5. At the **Destination** step of the wizard, do the following:
 - Click Choose next to the Host or cluster field and select a host on which the VM replica must be registered.

 Click Choose next to the Path field and specify a path to a location where VM replica files should be stored.

	New Replication Job	x
Destination Specify where replica	is should be created in the DR site.	
Job Virtual Machines	Host or cluster: hyperv02	C <u>h</u> oose
Destination	Path:	
Job Settings Data Transfer Guest Processing	D:\Replicas [1.7 TB free] Pick path for selected virtual disks	Ch <u>o</u> ose
Schedule Summary		
	< <u>Previous</u> <u>N</u> ext > <u>F</u> inish	Cancel

- 6. At the **Job Settings** step of the wizard, do the following:
 - In the **Repository for replica metadata** list, select the backup repository where you want to store the metadata file.
 - In the Replica name suffix field, specify the suffix that will be appended to the name of the original VM.

• In the **Restore points to keep** field, define the number of restore points to keep.

When this number is exceeded, the earliest restore point is removed. Due to Microsoft Hyper-V restrictions, the maximum number of restore points for snapshot replicas is limited to 47.

	New Replication Job					
Job Settings Specify backup repository located in the source site to host metadata in, replica suffix and retention policy, and customize advanced job settings if required.						
Job Virtual Machines Destination	Repository for replica metadata: Default Backup Repository (Created by Veeam Backup) 100 GB free of 119 GB Replica settings 					
Job Settings	VM name suffix: _replica					
Data Transfer Guest Processing Schedule Summary	Retention policy Restore p <u>o</u> ints: 14					
	To view or edit additional backup job settings, click Advanced.					
	< <u>P</u> revious <u>N</u> ext > <u>Finish</u> Cancel					

- 7. At the **Data Transfer** step of the wizard, leave the default settings.
- 8. At the **Guest Processing** step of the wizard, leave the default settings if you do not need transactionally consistent replicas. Otherwise, select the **Enable application-aware processing** check box and specify credentials of a user account to connect to the VM guest OS. The user account must have Administrator permissions.

To specify advanced options for VSS processing, click **Applications**. Select a VM in the list and click **Edit**. In the opened window on the **General** tab, do the following:

 In the Applications section, select Try application processing, but ignore failures to continue the replication job even if VSS errors occur. If VSS processing fails, the created replica will not be transactionally consistent but crash consistent. • In the Transaction logs section, check that the Process transaction logs with this job option is selected.

	_	New Replication Job		x
Gues	st Processing	oracle02 Processing Settings		
Choo	ose guest OS	General SQL Oracle File Exclusions Scripts Applications	Y	
Job Virtual Machir	Specify app	Application-aware processing detects and prepares applications for consistent backup using application-specific methods, and configures the OS to perform required application restore steps upon first boot.		and
Destination	Object oracle oracle	Require successful processing (recommended) Try application processing, but ignore failures	Add in Edit	s
Network		 Disable application processing 	Remove	
Re-IP		Transaction logs		
Job Settings Data Transfer		Choose whether this job should process transaction logs upon successful backup. Logs pruning is supported for Microsoft Exchange, Microsoft SOL Server and Oracle		·
Seeding		Process transaction logs with this job (recommended) Perform copy only (lets another application use logs)		· ·
Guest Process				
Schedule				
Summary			Cancel	
		OK Cancel	sh Cancel	

- 9. At the **Schedule** step of the wizard, do the following:
 - a. Select the **Run the job automatically** check box. If you do not select this check box, you will have to launch the job manually. For details, see **Start Replication Job Manually**.
 - b. Select the schedule type: daily, monthly or periodically.

In the **Periodically every** field, you can select **Continiously** to run the job in a non-stop manner. A new session of the job will start as soon as the previous job session completes.

c. Make sure the **Retry failed VM processing** check box is selected.

New Replication Job					
Schedule Specify the job sched	duling options. If you do not set the schedule, the job will need to be controlled manually.				
Job	<u> Run the job automatically</u>				
Virtual Machines	● Daily at this time: 10:00 PM 🔦 Everyday 🗸 Days				
Destination	○ Monthly at this time: 10:00 PM 💮 Fourth 🗸 Saturday 🗸 Months				
Leb Cettinger	O Periodically every: 1 V Hours V Schedule				
Job Settings Data Transfer Guest Processing	 After this job: Apache Backup (Daily Backup Job) ✓ Automatic retry Retry failed VMs processing: 3 ♀ times 				
Schedule	Wait <u>b</u> efore each retry attempt for: 10 🔷 minutes				
Summary	Backup window ☐ Terminate job if it exceeds allowed backup window If the job does not complete within allocated backup window, it will be terminated to prevent snapshot commit during production hours.				
	< <u>Previous</u> App <u>ly</u> Einish Cancel				

- 10. At the **Summary** step of the wizard, select the **Run the job when I click Finish** check box and click the **Finish** button.
- 11. In the inventory pane of the **Home** view, expand the **Last 24 Hours** node to see the created job.
- 12. Open Hyper-V Manager and make sure that the replica appeared on the target host.

Reference

For more information on replica creation, see Creating Replication Jobs in the Veeam Backup & Replication User Guide.

Monitoring Job Performance in Real Time

When the job is running, you can view job statistics in real time. Statistics include job progress, duration, processing rate, performance bottlenecks, the amount of read and transferred data, and other details of the job performance.

To view the job statistics, do the following:

- 1. In the inventory pane of the **Home** view, select the **Jobs** > **Replication** node.
- 2. In the working area, right-click a job and click **Statistics**.
- 3. In the opened window, select a VM to view its statistics.

🚯 Server Replication (In	icremental)					×
Job progress:			38%			0 of 1 VMs
SUMMARY		DATA		STATUS		
Duration:	03:02	Processed:	6.1 GB (38%)	Success:	0	
Processing rate:	78 MB/s	Read:	6.1 GB	Warnings:	0	
Bottleneck:	Source	Transferred:	576.4 MB (10.8x)	Errors:	0	
Name	MIN) Status () 38%	Action Job started at 2 Building list of Mairing 15 GB	/20/2021 5:13:20 AM machines to process			Speed: 76 MB/s Duration 00:04
		Changed block Changed block Processing ubu All VMs have b	tracking is enabled ntusrv20 een queued for processir	ng		02:36 00:00
Hide Details						ОК

Note that the job must complete with the *Success* or *Warning* status. If the job completes with the *Failed* status, Veeam Backup & Replication does not create a replica and is not able to perform failover and failback operations.

You can configure email notifications to get job results. For details, see Configuring Global Email Notification Settings in the Veeam Backup & Replication User Guide.

Start Replication Job Manually

If you do not schedule a replication job, you must start it manually. To start the job, do the following:

- 1. Open the **Home** view.
- 2. In the inventory pane, select **Jobs** > **Replication**.
- 3. In the working area, right-click the job and select **Start**. Wait for the job to complete. Note that the job must complete with the *Success* or *Warning* status.
- 4. Open Hyper-V Manager and make sure that a VM replica is created.

跑	Job Tools	Veeam Backup and Replication									×
∃• Home View	Job										?
Start Stop Retry Job Control D	ics Report Edi	it Clone Disable Delete Manage Job									
Home		Q Type in an object nam	e to search for		>	<					
 ▲ Sobs		Name T	Status Stopped	Tar	get Start Stop Retry Statistics Report Disable Clone Delete						
A Home		SUMMARY Duration:	11:35	DATA Proces	Edit sed:	37.5 GB (100%)	STATUS Success:	1	0	THROU	GH 18/s
Backup Infrastructure		Processing rate: Bottleneck:	124 MB/s Source	Read: Transfe	erred:	13.6 GB 13 GB (1x)	Warnings: Errors:	0 0			
	向 🗅 🕼 👻	Manua	A	A							^
1 job selected			Connected to: I	ocalhost	Build: 11.0	1.0.819 Enterprise	e Plus Edition	License expires	: 101 days	remaining	

Replica Failover and Failback

If the original VM in the production site becomes unavailable, you can quickly restore services by failing over to its replica. When you perform failover, the VM replica takes the role of the original VM. All processes shift from the original VM on the production host to the VM replica on the secondary host. You can fail over to the latest state of a replica or to any of its restore points.

When you fail over to the VM replica, Veeam Backup & Replication changes the replica state from *Normal* to *Failover*.

Failover is an intermediate step that needs to be finalized. Depending on a disaster recovery scenario, you can do one of the following:

• Undo failover

When you undo failover, you switch back to the original VM and discard all changes made to the VM replica while it was running. The state of the VM replica gets back to *Normal*. You can use the undo failover scenario if you have failed over to the VM replica for testing and troubleshooting purposes and you do not need the changes made to the VM replica.

• Perform failback

When you perform failback, you switch back to the original VM and transfer all changes that took place while the VM replica was running to the original VM. If the source host is not available, you can restore the original VM to a new location and switch back to it.

When you perform failback, changes are only transferred but not published. You must test whether the original VM works with these changes. Depending on the test results, you can do the following:

- **Commit failback**. When you commit failback, you confirm that the original VM works as expected and you want to get back to it. The state of the VM replica gets back to *Normal*.
- **Undo failback**. If the original VM is not working as expected, you can undo failback and get back to the VM replica. In this case, the state of the VM replica returns to *Failover*.

• Perform permanent failover

When you perform failover, you permanently switch from the original VM to a VM replica and use this replica as the original VM. This scenario is acceptable if the original VM and VM replica are located in the same site and are nearly equal in terms of resources.



Veeam Backup & Replication supports failover and failback operations for several VMs simultaneously. In case one or several hosts fail, you can use batch processing to restore operations with minimum downtime.

Performing Replica Failover

Before You Begin

Before you perform failover, consider the following:

- For original VMs and replica VMs located in the same network. If you plan to perform replica failover while the original VM is running, consider temporarily disconnecting the original VM from the network to avoid IP addresses and/or machine names conflicts.
- To successfully fail over to a VM replica, make sure that this replica has at least one successfully created restore point.

To check whether restore points are created, open the inventory pane of the **Home** view and select the **Replicas** node. Then, select the VM and verify that there is at least one restore point available for the VM.

Performing Failover

To fail over to a VM replica, do the following.

- 1. In the inventory pane of the **Home** view, select the **Replicas** node.
- 2. Right-click the replicated VM and select Failover Now to launch the Hyper-V Failover Wizard.

Replica Tools	Veeam Backup and Replication —								
∃• Home Replica		?							
Failover Planned Undo Permanent Now Failover Failover Failover Failover	ailback to Undo Commit Failback Failback Failback Failback Failback								
Home	Q. Type in an object name to search for								
 Image: Second sec	Name Job Name Type Status in winsrv29 Replication Job 3 Regular Ready in windows001 in Failover now Ready in windows001 in Failover now Ready in Add to failover plan in Failback to production in Restore guest files in Remove from configuration in Delete from disk in Properties								
A Home									
E Inventory									
- 6 D G	».								
1 object selected	Connected to: localhost Build: 11.0.0.819 Enterprise Plus Edition License expires: 101	days remaining							

3. At the Virtual Machines step of the wizard, select the VM from the list, click **Point** and choose the restore point to which you want to fail over.

	Hyper-V Failover Wizard	x
	Restore Points	
	Available restore points for oracleO3:	
Virtual M Reason Summar	Job Type Cracle Replication Sess than a day ago (10:02 PM Monday 1/9/2017) Snapshot Sess than a day ago (6:47 AM Monday 1/9/2017) Snapshot T day ago (10:05 PM Sunday 1/8/2017) Snapshot T day ago (10:05 PM Sunday 1/8/2017) Snapshot	
	OK Cancel	

- 4. At the **Reason** step of the wizard, specify the reason for failover.
- 5. At the **Summary** step of the wizard, click **Finish** to fail over to the VM replica.

Reference

For more information on failover, see the Replica Failover section in the Veeam Backup & Replication User Guide.

Performing Permanent Failover

To perform permanent failover, do the following:

- 1. In the inventory pane of the Home view, click the Replicas node.
- 2. In the working area, right-click the VM replica and select **Permanent Failover**.
- 3. In the opened window, click Yes to confirm the operation.

문화 Replica Tools		Veeam Backup and Replication								
E+ Home Replica			?							
Failover Planned Undo Permanent Now Failover Failover Failover Failover	ck to Undo Commit ction Failback Failback Failback	Suest Application iles * Items * Restore Kentore Manage Replica								
Home	Q. Type in an object no	me to search for 🔀								
 % Jobs Backups P Replicas Ready Failover Plans Last 24 Hours 	Name 1 srv11 windows001	Job Name Type Status Replication Job 2 Regular Ready Failover now Ready Planned failover Add to failover plan Failback to production								
		Image: Section 2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1								
A Home										
Inventory										
Backup Infrastructure		Connected to: localhost Build: 11.0.0.825 Enterorise Plus Edition Licer	ise expires: 116 days remaining							

Reference

For more information on permanent failover, see the Permanent Failover section in the Veeam Backup & Replication User Guide.

Undoing Failover

To undo failover, do the following:

- 1. In the inventory pane of the **Home** view, select the **Replicas** node.
- 2. In the working area, right-click the VM replica and select Undo Failover.
- 3. In the opened window, click Yes to confirm the operation.

문 Replica Tools	Veeam Backup and Replication								
E → Home Replica		?							
Failover Planned Undo Now Failover Failover Failover Failover	k to Undo Commit tion Failback Failback Failback Restore Restore Manage Replica								
Home	Q Type in an object name to search for								
 ▷ [*]‰ Jobs ▷ Backups ○ Replicas ② Ready ③ Active (1) ④ Failover Plans ▷ ③ Last 24 Hours 	Name Job Name Type 1 Status Restore Points is srv11 Failover now Failover now Failover 7 image: Permanent failover Permanent failover Failover 7 image: Permanent failover now Failover Failover image: Permanent failover now Failover Failover image: Permanent failover now Failover Failover image: Properties Properties Failover								
A Home									
Inventory									
📬 Backup Infrastructure									
i object selected	Connected to: Ioralhost Build: 11.0.0.825 Enternice Plus Edition License e	xpires: 116 days remaining							

Reference

For more information on undoing failover, see the Undo Failover section in the Veeam Backup & Replication User Guide.

Performing Failback

You can fail back to a VM in the original or new location. In this section, you will learn how to fail back to the original VM on the source host. For more information on how to do this on another host, see the Performing Failback section in the Veeam Backup & Replication User Guide.

Before You Begin

Make sure that the VM replica for which you want to perform failback is in the *Failover* state. The replica gets into this state after you perform replica failover.

Performing Failback

To fail back from VM replica to the original VM on the source host, do the following:

- 1. In the inventory pane of the **Home** view, select the **Replicas** node.
- 2. In the working area, right-click the VM replica and select **Failback to production** to launch the **Failback Wizard**.

Replica Tools	Veeam Backup and Replication —								
∃ - Home Replica		?							
Failover Plainover Failover Failover Failover Failover Failover Failover	iback to Undo Commit oduction Failback Failback Restore								
Home	Q Type in an object name to search for								
∖ ∰e lobr	Name Type Status								
Backups Backups Backups Replicas Ready Active (1) Bilover Plans Last 24 Hours	Failover now Planned failover Permanent failover Undo failover Add to failover plan Failback to production Restore guest files Remove from configuration Delete from disk								
A Home	Properties								
Rackup Infrastructure									
	»								
T object selected	Connected to: localnost Build: 11.0.0.819 Enterprise Plus Edition License expires: 101 days ren	naining							

3. At the **Replicas** step of the wizard, click **Next**.

4. At the **Destination** step of the wizard, select **Failback to the original VM**.



5. At the **Summary** step of the wizard, select the **Power on VM after restoring** check box and click **Finish**.

Reference

For more information on failback, see the Replica Failback section in the Veeam Backup & Replication User Guide.

Committing Failback

To commit a failback, do the following:

- 1. In the inventory pane of the Home view, select the Replicas node.
- 2. In the working area, right-click the VM replica and select **Commit Failback**.
- 3. In the opened window, click Yes to confirm the operation.

문화 Replica Tools	Veeam Backup and Replication								
∃• Home Replica		?							
Failover Planned Undo Now Failover Failover Failover	Iback to Undo Commit Guest Application Properties Remove Iduction Failback Failback Restore Manage Replica								
Home	Q. Type in an object name to search for								
 b Solos b Backups a Replicas c Ready c Active (1) a Failover Plans b Last 24 Hours 	Name Job Name Type î Status Restore Points image: status Failover now Failoack 2 image: status Failoack to production image: status 2 image: status Failback 2 image: status Failback to production image: status image: status Image: status image: status image: status image: status								
	Properties								
A Home	- indecident								
Inventory									
Backup Infrastructure									
🧟 🗅 🕞	».								
1 object selected	Connected to: localhost Build: 11.0.0.825 Enterprise Plus Edition License expires	: 116 days remaining							

Reference

For more information on committing failback, see the Commit Failback section in the Veeam Backup & Replication User Guide.

Undoing Failback

To undo a failback, do the following:

- 1. In the inventory pane of the **Home** view, select the **Replicas** node.
- 2. In the working area, right-click the VM replica and select Undo Failback.
- 3. In the opened window, click Yes to confirm the operation.

Replica Tools	Veeam Backup and Replication	– 8 ×
E▼ Home Replica		?
Failover Pailover Failover	ack to Undo Commit uction Failback Failback Restore Failback Restore	
Home	Q. Type in an object name to search for	
⊳ 🖏 Jobs	Name Job Name Type T Status Restore Points	
 Backups Replicas Ready Active (1) Failover Plans Last 24 Hours 	image: state windows001 Failover now Failback 2 Planned failover Add to failover plan image: state s	
A Home	Properties	
Inventory		
The Backup Infrastructure		
i 🛱 🖞 👘	۶ ۲	
1 object selected	Connected to: localhost Build: 11.0.0.825 Enterprise Plus Edition License exp	ires: 116 days remaining

Reference

For more information on undoing failback, see the Undo Failback section in the Veeam Backup & Replication User Guide.

Enterprise Manager

If you have a geographically dispersed virtual environment with multiple Veeam Backup & Replication servers, you can use Veeam Backup Enterprise Manager. Veeam Backup Enterprise Manager is a solution that helps manage multiple backup servers from a single web UI.

You can use Veeam Backup Enterprise Manager to perform the following tasks:

- Manage jobs configured on different backup servers from a single web console
- Edit and clone jobs
- Monitor the state of jobs
- Generate reports on jobs and backup servers
- Search for guest OS files in all backups and restore these files in one click

For the full list of the Veeam Backup Enterprise Manager capabilities, see About Veeam Backup Enterprise Manager in the Enterprise Manager User Guide.

NOTE:

Veeam Backup Enterprise Manager is not shipped with the Community edition. For more information, see Editions Comparison.

Installing Veeam Backup Enterprise Manager

Before You Begin

Consider the following:

- The machine on which you plan to install Veeam Backup Enterprise Manager must meet the system requirements. For details, see System Requirements in the Enterprise Manager User Guide.
- It is recommended to install the same product version on the Veeam Backup Enterprise Manager server and Veeam Backup & Replication backup servers.
- If you plan to install Veeam Backup Enterprise Manager on the same machine where the backup server runs, you must disable all backup and replication jobs and close the Veeam Backup & Replication console.
- Make sure that all necessary ports are opened. For details, see Used Ports in the Enterprise Manager User Guide.

Installing Enterprise Manager

To install Veeam Backup Enterprise Manager, perform the following:

- 1. Download the latest version of Veeam Backup & Replication installation image from the Download Veeam products page.
- 2. Mount the installation image to the machine on which you plan to installVeeam Backup Enterprise Manager or burn the image file to a flash drive or other removable storage device.
- 3. Run the Setup.exe file from the image or disk to open the splash screen.

4. On the splash screen, click the **Veeam Backup Enterprise Manager** tile in the **Standalone components** section to launch the **Veeam Backup Enterprise Manager Setup** wizard.

Standalone components:
Veeam Backup & Replication Install
Veeam Backup Enterprise Manager Install
Veeam Backup & Replication Console Install
Enterprise Applications Plug-ins Open

5. At the **License Agreement** step of the wizard, read the license agreements and select check boxes to accept the terms.

6. At the **Provide License** step of the wizard, specify the path to the license key.

If you install Veeam Backup Enterprise Manager on the backup server, you can proceed without providing a license file. In this case, Veeam Backup Enterprise Manager will use the license that is already installed on the backup server.

Veeam Backup Enterprise Manager	- ×
License	
Provide license file for Veeam Backup Enterprise Manager.	
License file:	
$eq:c:license_subscr_backup_cc-no_instances-100.license_subscr_b$	Browse
 Update license automatically (enables usage reporting) 	
Download and install new licenses automatically when you renew or expand your contract. sending the license ID, the installation ID, and workload usage counters to the Veeam licens periodically. Successful usage reporting doubles the number of workloads you can exceed y license by.	This requires ;ing servers /our installed
Back Next	Cancel

7. At the **System Configuration Check** step of the wizard, install missing software components and enable missing features, if any.

8. At the **Ready to Install** step of the wizard, click **Install** to begin installation.

记 Veeam Backup Enterprise Mana	ger	_	\times
Ready to Install			
Installation will begin with the f	ollowing settings.		
Installation folder:	C:\Program Files\Veeam\Backup and Replication		
Guest catalog folder:	C:\VBRCatalog		
Service account:	LOCAL SYSTEM		
Database engine:	PostgreSQL		
Database name:	VeeamBackupReporting		
SQL server:	winsrv88:5432		
Catalog service port:	9393		
Service port:	9394		
Web UI ports:	9080 (HTTP), 9443 (HTTPS)		
REST API service ports:	9399 (HTTP), 9398 (HTTPS)		
Certificate:	Self-signed certificate will be generated automatically		
Check for product updates:	Automatically		
Customize Settings	Back	Cano	ol
Customize Settings	Dack	Cano	.ei

9. When the installation process completes, click **Finish** to close the wizard.

Adding Backup Servers

To manage backup servers from a single web console, you must add them to Veeam Backup Enterprise Manager.

To add a backup server to Veeam Backup Enterprise Manager, do the following :

1. From the Microsoft Windows **Start** menu, select **Programs** > **Veeam Backup Enterprise Manager to launch** Veeam Backup Enterprise Manager.

To access Veeam Backup Enterprise Manager remotely, use the following address: https://enterprise_manager_server_address:9443

- 2. In the **Username** and **Password** fields, specify credentials of the user with local Administrator rights or the user who installed Veeam Backup Enterprise Manager.
- 3. Click Login.
- 4. At the top right corner of the opened window, click **Configuration** to open the **Configuration** view.
- 5. Select the **Backup Servers** tab. In the working area, click **Add** to open the **Backup Server Settings** window.

	Dashboard	Reports	Jobs	File Shares		Machines	Files	ltems	Requests	VEMU4\Administrator	• ?
¢) Exit Configurati	on	Start	Collecting	6* /	<u>Add</u> ₿	▹ Edit	😹 Remove	E Schedule	📲 Export	ۯ Refresh
跑	Backup Servers		Name		Ť	Login		Versio	on Server De	scription	
Ø	vCenter Servers										
∖	Self-service										
Eq.	Search Servers										
Ŀ	Sessions										
2	Roles										
Ж	Settings										
9	Licensing										
₽	Notifications										
P	Key Management										
0	About										

6. In the opened window, specify the DNS name or IP address of the backup server you want to add. Provide the name and password of the user account with local Administrator rights on the added backup server.

Backup Ser	ver Settings	×
DNS name o	r IP address of the Veeam Backup server:	
Server descr	iption:	
Backup sei	ver	
Username:	backup01\administrator	
Password:		
Port:	9392	
	OK Cancel	

7. Click OK.

Veeam Backup Enterprise Manager will start collecting data about all backup and replication jobs on the added backup server.

Reference

For more information on adding backup servers, see Managing Veeam Backup Servers in the Enterprise Manager User Guide.

Managing Jobs

Veeam Backup Enterprise Manager allows you to manage jobs that were configured on backup servers: start, stop, retry, edit and clone jobs.

In this section, you will learn how to clone and then edit jobs. When you clone a job, you create its exact copy. Configuration details of the created job copy are written to the same Microsoft SQL database where details of the original job are stored. You can work with the created job both in Veeam Backup Enterprise Manager and in the Veeam Backup & Replication console on the backup server.

Before You Begin

Consider the following:

- Make sure that you have successfully connected backup servers to Veeam Backup Enterprise Manager and collected data from them. For details, see Adding Veeam Backup Server.
- You have created jobs on the backup server.

Cloning and Editing Job

To clone a job, perform the following.

- 1. In Veeam Backup Enterprise Manager, click the **Jobs** tab.
- 2. Select the required job from the list, click **Job** at the top of the working area and click **Clone**.

The cloned job has the same name as the original job plus the _cloned suffix.

Backup server: backup01.tech.local	Dashboard	Reports	Jobs	File Shares	Machines	Files	ltems	Requests	VEMU4\Administrator 🗸	Configuration
earch by job name Q Start Stop C Retry S Job V Export O Retry Status Job V Export O Retry Status Replication Job Replica VMWare S Succe Ackup Job Backup VMWare S Succe Ackup Job Backup VMWare S Succe C Created by Administrator.	Backup server: bac	kup01.tech.loca	il		~	T Sta	itus (All)			
Name Type Platform Status Relit Run Description Replication Job Replica VMWare Succe Image: Constraint of the constraint of t	Search by job name		Q	🕨 Start 🛛 🔳	Stop C	Retry	🧔 Job 🗸			🚺 Export 🛛 🙋 Refre
Replica VMWare Succe Disable cheduled Created by Administrator. Weekly Backup Job Backup VMWare Succe Image: Clone for the c	Name	Туре		Platform		Status	🔅 Edit	Run	Description	
Weekly Backup Job Backup VMWare Succe Image: Clone of the clone of	Replication Job	Replica	i	VMWare		Succes	Disable	cheduled	Created by Administrate	or.
Backup Job Backup VMWare O Succe Cheduled Created by Administrator.	Weekly Backup Job	Backup)	VMWare		Succes	🧳 Clone ត្រ	cheduled	Created by Administrate	or.
	Backup Job	Backup	0	VMWare		Succes	X Delete	") cheduled	Created by Administrate	or.
Jaily Backup Job Backup Hyper-V 😵 Failed Not Scheduled Created by Administrator.	Daily Backup Job	Backup)	Hyper-V		🕄 Failed		Not scheduled	Created by Administrate	or.

3. Select the cloned job from the list.

4. At the top of the working area, click **Job** and select **Edit**.

Dashboard Reports	Jobs File Shares	Machines Files	ltems Requ	ests 🔹 VEMU4\A	dministrator 🗸 🖧 Configuratior 🤇 🕐
Backup server: backup01.tech.lo	cal	✓ ▼ Sta	itus (All)		
Search by job name	Q Start	Stop (C ⁴ Retry	🔯 Job 🗸		📲 Export 🛛 🔇 Refresh
Name	⊤уре	Platform	🔅 Edit	Next Run	Description
Replication Job	Replica	VMWare	Disable	Not scheduled	Created by Administrator.
Weekly Backup Job	Backup	VMWare	🛷 Clone	Not scheduled	Created by Administrator.
Backup Job	Backup	VMWare		Not scheduled	Created by Administrator.
Daily Backup Job	Backup	Hyper-V	🕴 Failed	Not scheduled	Created by Administrator.
Backup Job_clone	Backup	VMWare	▶? Never started	Not scheduled	Created by Administrator.

5. Follow the steps of the wizard and edit the job settings as required.

Dashboard	Edit Backup Job							×	Configuration
Backup server: All Se	Job Settings	Specify the job scheduling options							
Search by job name	Virtual Machines	Run the job automatically:							Export 🛛 🔇 Refresh
Name	Guest Processing	Daily at this time:	10:00 pm	~	Everyday		~	[7] Days	Description
Replication Job	Job Schedule	O Monthly at:	10:00 pm	~	Fourth 🗸 🗸	Saturday	~	30 Months	
Weekly Backup Job		O Periodically every:	1	~	Hours		~	Schedule	
Backup Job		After this job:	Backup Job	for sr	mb3 (off-host proxy)			~	
Daily Backup Job									
Backup Job_clone1		Automatic retry							
		Retry failed machine processing: 3 10 Wait before each attempt for: 10 10							
		Backup window							
		Terminate job if it gets out of allowed backup window 📰 Window							
					Previous	ext F	Finish	Cancel	

6. At the last step of the wizard, click **Finish**.

Reference

For more information on managing jobs, see Managing Backup Jobs in Veeam Enterprise Manager in the Enterprise Manager User Guide.

Performing 1-Click File Restore

Veeam Backup Enterprise Manager allows you to search through Microsoft Windows and Linux guest files in backed up VMs. Once you find the required file, you can immediately restore it using 1-Click file restore capability. The file can be restored to its original location or saved to a local machine.

Before You Begin

Consider the following:

- The Enterprise or Enterprise Plus license is installed on the Veeam Backup Enterprise Manager server.
- Make sure that you have successfully connected backup servers to Veeam Backup Enterprise Manager and collected data from them. For details, see Adding Veeam Backup Server.
- You can search files on machines that have at least one successfully created backup with guest file indexing enabled. For details, see Creating Application-Aware Backup Job.

Performing 1-Click Restore

To restore a guest OS file, perform the following:

- 1. In the main view of Veeam Backup Enterprise Manager, click the **Files** tab.
- 2. In the **Type in machine name** field, specify the name of the backed up VM whose file system you want to browse.
- 3. In the field with the calendar icon, enter or choose a date and time of a restore point from which you want to restore files.
- 4. Click the **Mount** link and wait for Veeam Backup & Replication to mount the content of the backup file to the backup server.

After the backup is mounted, you can browse the guest OS files.

5. Select the necessary file from the list.

6. At the top of the working area, click **Restore** > **Keep**.

The original and restored files will be kept. The restored file will have the *Restored* prefix.

Dashboard Reports Jobs	Policies File Shares Machines	Files Items	Requests	ECH\sheila.d.cory • Configuration ?
Search backups of: winsrv88	X Pick from List			
2/8/2021 09:33:09 pm 🗙 🔛	Type in a file name to search for	Q T No Filter	Search 🖉 Restore 🗸 👱 Download	Add to Restore List 🕙 History
🚔 🚰 sheila.d.cory	Name		Size	Modified
AppData	Draft01 docx		387.9 KB TECHIsheila d conv	1/28/2021 12:20:56 am
Application Data	Draft07 docx		41.9 KP TECHIsheila dicory	1/27/2021 01:46:57 am
Contacts	Drait02.000x		410 2 KB TECHIshela dicasi	11/17/2020 04/27/24 pm
Cookies	Direject03.pdf		214.6 KR TECHIshella.d.cory	8/36/2020 04:44:40 pm
🚔 📻 Desktop			4.2 MB TECHNIela.u.cory	4/48/2020 04-44-40 pm
🖆 Projects	projectos.pdi		1.2 WB TECHISTERIA.G.COTY	1/16/2021 12:57:02 pm
🛞 💼 Reports				
🖶 📫 Documents				
Downloads	1			
Favorites				
Einks				
Local Settings	1			
🗰 💼 Music				
My Documents				
RetHood	1			
Pictures	1			
PrintHood	1			
Recent	1			
Saved Games	1			
searches	1			
sendTo				
start Menu				
https://enterprise05.tech.local:9443/index.aspx#	×			

7. Click **Yes** to confirm the operation.

Reference

For more information on 1-click file restore, see Performing 1-Click File Restore in the Enterprise Manager User Guide.

Performing Self-Restore of VM Guest OS Files

Self-restore allows you to delegate guest OS file restore from backup administrators to users with local Administrator privileges on VMs. Users do not have to wait for backup administrators to recover deleted or modified files and folders.

For self-restore, Veeam Backup Enterprise Manager provides the Self Service File Restore portal. When users log on to the portal, they see only those VMs where they are members of local Administrators group. Other VMs are not visible to the users.

Before You Begin

Consider the following:

- The Enterprise Plus license is installed on the Veeam Backup Enterprise Manager server. You can use a valid trial license or paid license.
- The user account under which you plan to perform self-service restore belongs to a trusted domain or the same domain as the Veeam Backup Enterprise Manager server. Users from untrusted domains cannot use the self-restore capability.
- The user must be a member of local Administrators group on the VM whose guest OS files you plan to restore.

The user has access to restore points created after this user gets local Administrator privileges.

- You have successfully connected backup servers to Veeam Backup Enterprise Manager and collected data from them. For details, see Adding Veeam Backup Server.
- You have at least one successfully created backup with guest file indexing enabled. For details, see Creating Application-Aware Backup Job.
Performing Self-Restore

To restore VM guest OS files using the Veeam Self-Service File Restore portal:

1. Log in to the VM whose guest OS files you plan to restore. Make sure that the user account under which you plan to perform self-service restore is added to the local Administrators group on this VM.



- 2. Log in to Veeam Backup Enterprise Manager using the user account under which you installed the program.
- 3. Open the **Jobs** tab and run the job with guest file indexing enabled. You can run the job several times to produce several restore points.
- 4. At the top right corner, click **Configuration** to open the **Configuration** view.

5. Select the **Backup Servers** tab. In the working area, click **Start Collecting**.

Veeam Backup Enterprise Manager will collect data about jobs from the backup server. To check whether collecting data finished, click the **Sessions** tab. Make sure that the data collection session has completed with the *Success* status.

	Dashboard Rep	ports	Jobs	File Shares	Machine	es Files	ltems	Requests	VEMU4\Administrate	or • ?
E) Exit Configuration		Start C	Collecting	🕈 Add	🛃 Edit	🛃 Remove	Schedule	XE Export	🖏 Refresh
闳	Backup Servers		Name	Ť	Login		Versi	on Server Des	cription	
Ø	vCenter Servers		backup	01.tech.local	backup01)	\administrato	r N	NA Backup sen	/er	
7	Self-service									
Eq.	Search Servers									
Ŀ	Sessions									
	Roles									
*	Settings									
0	Licensing									
	Notifications									
P	Key Management									
0	About									

- 6. On another machine, open a browser and use the following address to access Veeam Self-Service File Restore portal remotely:https://enterprise manager server IP address:9443/selfrestore
- 7. Log in to the portal. Specify the user account with local Administrators privileges on the machine for which you plan to restore files. See the first step.
- 8. The portal will display only one tab **Files.** At the top of the working area, click the **pick different machine** link. Select the required VM.
- 9. Click the field with the calendar icon and choose the restore point from which you want to restore data.
- 10. At the top of the working area, click **Mount**.

11. Find the necessary file or folder, select it. At the top-right corner, click **Other Actions** > **Restore** > **Overwrite**.

The original file will be overwritten.

Files				VEMU4\Admir	nistrator 🗸
Type in machine name: serv25	X Pick from List				
22.04.2019 12:49:25 X IIII Image: Comparison of the second section of the	Enter file name Name expenses_feb.xlsx expenses_jan.xlsx expenses_mar.xlsx	Q T No Filter Size 10.4 KB 10.4 KB	Search Owner BUILTIN\Adm BUILTIN\Admi	Other Actions Image: Constraint of the second s	rite
🕷 🔲 Windows	C.	⊢ ← Page 1 of 1	$\rightarrow \rightarrow$	Displaying	1 - 3 of 3

Reference

For more information on self restore, see Using Self-Service File Restore Portal to Restore Machine Guest Files in the Enterprise Manager User Guide.

Backing Up Physical Machines

To back up physical machines, Veeam Backup & Replication uses Veeam Agents: Veeam Agent for Microsoft Windows and Veeam Agent for Linux.

You do not need to install, set up and operate Veeam Agent on every machine whose data you want to protect. Instead, you can perform the whole set of deployment, administration, data protection and disaster recovery tasks on computers remotely from the Veeam Backup & Replication console.

How to back up physical machines

To back up physical machines using Veeam Backup & Replication, you must do the following:

1. Create a protection group

When you create a protection group, you add individual machines or Active Directory containers to the protection group. Veeam Backup & Replication automatically installs agents and other required components on the machines included in the protection group.

2. Create an Agent backup job

In the Veeam Backup & Replication console, create an agent job that will back up machines included in the protection group.

Reference

For more information on agents, see the following topics:

- Licensing Requirements
- Veeam Agent Management User Guide
- Veeam Agent for Linux 3.0 User Guide
- Veeam Agent for Microsoft Windows User Guide

Creating Protection Group

In Veeam Backup & Replication, protection groups are logical containers that pool protected computers of a specific type into groups. For example, you can create a protection group for computers of the same type (laptops, workstations or servers) or computers running the same OS type to simplify their management.

You can add individual machines or Active Directory objects that include several machines to the protection group. In this section. you will learn how to create the protection group with Active Directory objects.

TIP:

If you plan to manage only a small number of computers, you can add the necessary computers directly to a Veeam Agent backup job. Veeam Backup & Replication will automatically add such computers to the **Manually Added** protection group. For details, see **Protection Groups** in the Veeam Agent Management Guide.

Before You Begin

Consider the following:

- Make sure that all computers added to the protection group are powered on and can be accessed over the network.
- If you add an Active Directory container to a protection group, it is not recommended to add a computer that exists in this container to another protection group.

Creating Protection Group

To create a protection group, do the following:

1. In the inventory pane of the **Inventory** view, right-click the **Physical & Cloud Infrastructure** node and select **Add protection group** to launch the **New Protection Group** wizard.



2. At the **Name** step of the wizard, specify a name and description for the protection group.

	New Protection Group	x
Name Type in a name and	description for this protection group.	
Name Type Active Directory Exclusions Credentials Options Review Apply Summary	Name: Windows Servers Description: Protection group for Windows based servers	
	< Previous Next > Finish Cancel	

3. At the Type step of the wizard, select Microsoft Active Directory objects.

Active Directory objects can be the following: entire domain, container, organization unit, group, computer or cluster. Protection groups that include Active Directory objects are dynamic. Veeam Backup & Replication discovers these computers and deploy Veeam Agent on them during the next rescan session.

- 4. At the **Active Directory** step of the wizard, click **Change** near the **Search for objects in this domain field**. In the opened window, do the following:
 - In the **Domain controller or domain DNS name** field, type a name of the domain controller or domain whose objects you want to include in the protection group.
 - In the **Port** field, leave the default value.
 - Near the **Account** field, click **Add** and specify user credentials. This user must be a member of the *DOMAIN* (*Administrators* group. Click **OK**.

• Click OK.

	New Protection Group	x
Active Dire	ectory crosoft Active Directory containers and objects to include in this protection group.	
Name	Search for objects in this domain:	
Туре	<click change="" domain="" select="" to=""> Change</click>	je
Active Directory	Selected objects: Object Type Add.	
Exclusions	Specify Domain Remo	ve
Credentials Options Review Apply Summary	Domain controller or domain DNS name: Port: tech.local 389 Account: Account: •••••••••••••••••••••••••••••	
	< Previous Next > Finish Canc	el

- 5. Click Add near the Selected objects field. In the Add Objects window, select the necessary Active Directory object and click OK.
- 6. At the **Exclusions** step of the wizard, leave the default settings.
- 7. At the **Credentials** step of the wizard, specify credentials to connect to computers included in the protection group.

If you want to use the same credentials for all computers in the protection group, select the necessary user account from the **Master account** list. The account must have administrative permissions on all computers that you have added to the protection group.

You can also specify credentials for individual computes. For details, see Specify Credentials in the Veeam Agent Management Guide.

New Protection Group							
Credentials Specify the master account for all hosts in this protection group. You can also customize credentials for individual computers. The specified account must have Local Administrator privileges on the protected computers.							
Name	Master account:						
Туре	💦 tech\william.fox (tech\willia	🕅 tech\william.fox (tech\william.fox, last edited: less than a day ago)					
Active Directory	Manage accounts Use custom credentials for the following objects:						
Exclusions	Object	Account	Add				
Cue de utilete	Computers	<master account=""></master>	Edit				
Creuentials			Remove				
Options			Default	5			
Review				_			
Apply							
Summary							
Click Test Now to validate the specified credentials.							
< Previous Next > Finish Cancel							

- 8. At the **Options** step of the wizard, leave the default settings.
- 9. At the **Review** step of the wizard, review the components that will be installed. Click **Apply**.
- 10. At the **Apply** step of the wizard, Veeam Backup & Replication creates the configured protection group. Wait for the operation to complete and click **Next**.
- 11. At the **Summary** step of the wizard, select the **Run discovery when I click Finish** check box and click **Finish**.

Reference

For more information on creating protection groups, see Creating Protection Groups in the Veeam Agent Management Guide.

Creating Veeam Agent Backup Job

To back up physical machines, you must configure a Veeam Agent backup job in the Veeam Backup & Replication console. In Veeam Backup & Replication, you can create Veeam Agent backup jobs of the following types:

• Backup job

The backup job runs on the backup server, like VM backup jobs. The backup job is intended for computers that are connected to the backup server. This connection must not be interrupted.

• Backup policy

The backup policy describes configuration of individual Veeam Agent backup jobs that run on protected computers. The backup policy is intended for computers that are connected to the backup server. The connection may be interrupted for short periods of time. For example, when you move your laptop from one location to another. Veeam Backup & Replication uses the backup policy as a template and applies settings from the backup policy to Veeam Agents that run on computers specified in the backup policy.

In this guide, we do not detail backup policy. For more information, see Creating Veeam Agent Backup Policy.

Veeam Backup & Replication lets you create backup jobs for Microsoft Windows and Linux computers. In this section, you will learn how to create a Veeam Agent backup job for Microsoft Windows computes. For details on how to create back jobs for Linux computes, see Creating Agent Backup Job for Linux Computers in the Veeam Agent Management Guide.

Before You Begin

Consider the following:

- You must have at least one protection group. For details, see Creating Protection Group.
- You can create Veeam Agent backups on a Veeam backup repository only. Other types of target locations are not supported.
- Veeam Agent for Microsoft Windows does not back up data to which symbolic links are targeted. It only backs up the path information that the symbolic links contain. After restore, identical symbolic links are created in the restore destination.

Creating Veeam Agent Backup Job

1. On the Home tab, click Backup Job > Windows computer to open the New Agent Backup Job wizard.

원회 Ξ· Home View	Veeam Backup and Replication	-	□ × ?
Backup Replication CDP Job • Policy • CDP Copy • Job	y Restore Failover Import Export Best Practices Y Plan - Backup Backup Analyzer		
 Windows computer Windows computer Mac computer Mac computer Application File share 	Q Type in an object name to search for X All jobs Name 1 登记oud Director Backup Job 意 Daily Backup Job		
A Home			
Inventory			
Backup Infrastructure			
Storage Infrastructure			
🖞 🕞 🖏			

- 2. At the **Job Mode** step of the wizard, specify protection settings for the backup job:
 - In the **Type** list, select **Server** to add to the backup job standalone servers that have permanent connection to the backup server.

• In the Mode list, select Managed by backup server.

When you create a Veeam Agent backup job managed by the backup server, Veeam Backup & Replication saves the job settings in its database. Veeam Backup & Replication performs all management tasks for the Veeam Agent backup job: starts a job upon the defined schedule, allocates backup infrastructure resources and so on.

	New Agent Backup Job	x
Job Mode Specify protected co	nputer type and backup agent management mode.	
Job Mode Name Computers Backup Mode Storage Guest Processing Schedule Summary	 Type: Workstation Server Failover cluster Mode: Managed by backup server Veeam backup server schedules and executes backups on the protected computers. This mode recommended for always-on workloads with a permanent connection to the backup server, su as servers or clusters located in the same data center. Managed by agent Veeam backup server deploys the protection policy to all agents, however the job is managed I the agent itself. This mode is recommended for workstations and servers located in remote site with poor connectivity to the main data center.	e is ich by ≊s
	< Previous Next > Finish Cance	٤l

3. At the **Name** step of the wizard, specify a name and description for the backup job.

4. At the **Computers** step of the wizard, click **Add** and select one or several protection groups and/or computers in the list. Click **OK**.

	New Agent Backu	dol qi	x
Computers Specify individual c	Select Objec	ts X	ased protection groups, you
have the flexibility t	Select objects:	<u>כ</u>	
Job Mode	Protected computers		
Name	▷ Inux DB Servers		Add
	 Inducer left Image of the servers 		Remove
Computers	▷ is Windows Servers		
Backup Mode	Windows Workstations		
Storage			
Guest Processing			♠ Up
Schedule			↓ Down
Summary			
	米 - Type in an object name to search for	Q	
		OK Cancel	
L			Finish Cancel

5. At the **Backup Mode** step of the wizard, select **Entire computer**.

When you restore data from such a backup, you are able to recover the entire computer image as well as data on specific computer volumes: files, folders and application data.

	New Agent Backup Job	x
Choose what data yo	ou want to backup from selected computers.	
Job Mode Name Computers Backup Mode Storage Guest Processing Schedule Summary	 Entire computer Back up entire computer image for fast recovery on any level. Deleted, temporary and page files are automatically excluded from the image to reduce the backup size. Include external USB drives Volume level backup Back up images of specified volumes, for example only data volumes. Deleted, temporary and page files are automatically excluded from the image to reduce the backup size. File level backup (slower) Back up selected files and directories only. This mode still produces an image-based backup, but only with protected file system objects included in the image. 	
	< Previous Next > Finish Cancel]

- 6. At the **Storage** step of the wizard, select the backup repository where you want to store your backups. For other settings, leave the default values.
- 7. At the **Guest Processing** step of the wizard, leave the default settings.
- 8. At the **Schedule** step of the wizard, define scheduling settings for the job.
- 9. At the **Summary** step of the wizard, select the **Run the job when I click Finish** check box and click the **Finish** button.
- 10. In the inventory pane of the Home view, expand the Last 24 Hours node to see the created job.

Reference

For more information on creating Veeam Agent backup jobs for Microsoft Windows computers, see Creating Agent Backup Job for Windows Computers in the Veeam Agent Management Guide.

Restoring Data of Physical Machines

Veeam Backup & Replication allows you to restore data of physical machines. You can perform the following data restore tasks with Veeam Agent backups:

- Restoring Veeam Agent Backup to vSphere VM
- Restoring Veeam Agent Backup to Hyper-V VM
- Restoring to Microsoft Azure
- Restoring to Amazon EC2
- Restoring to Google Cloud Platform
- Restoring Volumes
- Restoring Files and Folders
- Restoring Application Items

In this section, you will learn how to restore computer files and folders. For more information on other restore processes, follow the links in the list.

Restoring Files and Folders

The procedure of file-level restore from a Veeam Agent backup is similar to the same procedure for a VM backup. The difference is that you select a Veeam Agent backup instead of a VM backup in the **File Level Restore** wizard. To learn more, see **Restoring VM Files**.

