

Veeam Backup & Replication V12 at a glance

Veeam Components

Backup Server

Windows based installation (physical or virtual)

Central command center to:

- manage jobs
- manage physical agents
- check job history
- manage backup components
- (repositories, proxies,...)
- perform restores
- and many more

Backup Proxy

Windows or Linux based (physical or virtual)

Implement as many proxy servers as necessary

It's a data mover:

- between data source and target
- processes jobs
- Delivers backup traffic
- responsible for data reduction and encryption

Backup Repository

Storage location to store: backup files, copies of VM's and metadata for replicated VM's

Usable storage types:

- Object Storage (S3 compatible)
- direct attached storage (DAS)
- Windows and Linux server
- SAN Storage
- network attached storage (NAS) -> SMB shares
- deduplication storage devices

Scale-out Backup Repository

Logical entity containing one or more backup repositories

Advantages:

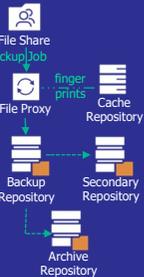
- simplifies backup job management
- improves backup and restore performance
- easy to add new repositories
- easy to remove repositories

Add object storage for long time retention (capacity and archive tier)

Veeam NAS Backup

Supports backup of files from:

- SMB file share (SMB 1, 2, 3)
- NFS file share
- Windows- or Linux-managed server file share



- scalable architecture
- support of immutable backups
- storage-agnostic changed file tracking
- storage snapshots support
- object storage support everywhere

Various restore options:

- restore entire file share
- rollback to a point in time
- restore single files and folders
- Instant file share recovery (read/writeable)

- NAS Backup to tape (new with V12)
- Backup NAS directly to tape (new with V12)

Storage Integration (VMware only)

Available for supported storage systems:

Depending on the storage system types, various operations are available:

- backup/restore from primary storage array
- backup/restore from secondary storage array
- snapshot only jobs for primary and/or secondary storage array

- Veeam Explorer for restore from storage snapshots
- on demand Sandbox for storage snapshots

Important: using storage integration, the impact of VMware snapshots to virtual machines during the backup process is reduced to a minimum.

Follow the 3-2-1-1-0 rule

You must have at least **three** copies of your data: the original production data and two backup copies.

You must use at least **two** different types of media to store the copies of your data. For example, local disk and tape.

You must keep at least **one** backup offsite. For example, in the cloud or in a remote site.

Ensure, that at least **one** of these copies is **offline, air-gapped or immutable**

Be sure to have verified backups with **zero** errors

Backup virtual and physical workloads on-premises and in the cloud

VMware vSphere and Microsoft Hyper-V VM's:

- agentless
- application-aware processing
- leveraging change block tracking (CBT)
- backup entire VM
- backup individual disks
- exclude disks
- exclude files and/or folders
- backup VM templates

Backup of physical servers and workstations:

- standalone and managed operations mode
- change block tracking (CBT) for Linux and Windows
- volume-level backup
- file-level backup
- application-aware processing
- Microsoft failover cluster support
- Storage Integration available for Veeam Agent for Windows

Enterprise Applications

SAP HANA Plugin

- transactionally consistent backup and restore of SAP HANA databases
- SAP certified
- supports immutable backups

Oracle RMAN Plugin

- Oracle Recovery Manager (RMAN) interacts directly with Veeam backup repositories
- ASM and RAC support
- Oracle certified
- supports immutable backups

Version 12: Security enhancements

- Multi Factor Authentication (MFA) for the console
- Auto log-off for the console
- more Kerberos support
- Grouped managed service accounts (gMSA) support
- Hardened Repository enhancements (dedicated installer wizard, Hardened repository update service)

Backup Copy Job

Copies backup data at block level to secondary location.

Two modes are available:

Immediate copy (mirroring)

- copies restore points as soon as they appear on source
- can process transaction log backups (SQL and Oracle)
- can process SAP HANA and Oracle RMAN plugin backup data
- optional GFS retention policy to create weekly, monthly, quarterly and yearly full backups

Periodic copy

- copies restore points once per backup copy interval
- parallel processing of VM's
- creates a new forever forward incremental backup chain
- define a dedicated retention policy
- optional GFS retention policy to create weekly, monthly, quarterly and yearly full backups

Replication

Replication of virtual machines to DR site

- provides best recovery time objective (RTO) values
- agentless
- failover, fallback and undo capabilities
- planned failovers
- start replicas even without Veeam

Continuous Data Protection (CDP)

CDP creates replicas with near-zero RPO's for mission critical workloads:

- leveraging vSphere API for I/O filtering (VAIO)
- VMware only

Restore Options

VMware virtual machines

- instant VM recovery (to VMware & Hyper-V)
- VM files restore (.vmx, nvram, vmdk)
- entire VM restore
- virtual disk restore (vmdk)
- file level restore (Windows and Linux)
- application items restore (SQL, Active Directory, Oracle, Exchange, Sharepoint)
- secure/staged restore
- restore to Amazon EC2/Azure/Google Cloud Platform
- restore to Nutanix AHV

Microsoft Hyper-V virtual machines

- instant VM recovery (to Hyper-V and VMware)
- VM files restore (.vhd/.vhdx, .xml and others)
- entire VM restore
- file level restore (Windows and Linux)
- application items restore (SQL, Active Directory, Oracle, Exchange, Sharepoint)
- secure/staged restore
- restore to Amazon EC2/Azure/Google Cloud Platform
- restore to Nutanix AHV

Physical Servers (Agent for Windows and Linux)

- instant recovery to VMware
- instant recovery to Hyper-V
- bare metal restore
- volume restore
- file level restore (Windows and Linux)
- virtual disks export (.vmdk, .vhd, .vhdx)
- application item restore (SQL, Active Directory, Oracle, Exchange, Sharepoint)
- restore to Amazon EC2/Azure/Google Cloud Platform
- restore to Nutanix AHV

Application item restore using Veeam Explorers

Veeam Explorer for Active Directory

- granular restore and export of Active Directory Objects
- compare with production available to identify changed/deleted objects fast

Veeam Explorer for Exchange

- granular restore of Microsoft Exchange objects
- compare with production available to identify changed/deleted items fast

Veeam Explorer for SQL Server

- Instant SQL database recovery
- Restore of SQL databases
- restore of database schema, data and tables
- restore latest or point-in-time state + transaction log restore
- publish a DB temporarily to a SQL server without restoring it
- export a DB as .bak or .mdf file
- export schema and data

Explorer for granular restore are also available for:

- Veeam Explorer for Oracle (NEW: Instant Database Recovery for Oracle)
- Veeam Explorer for Sharepoint
- Veeam Explorer for PostgreSQL (Linux only)

Guest OS file recovery

Recover individual VM guest OS files and folders from VM backups and replicas:

- restore from Microsoft Windows VM's with NTFS, FAT and ReFS file systems
- restore from Linux, Solaris, BSD, Novell Storage Services, Unix, Mac and other file systems

Veeam Backup Enterprise Manager

Veeam Backup Enterprise Manager is a web portal providing various advantages:

- self-service restore portal
- vSphere self-service backup portal
- manage multiple Veeam backup servers from a single web console
- manage backup jobs
- manage and update licenses centrally
- manage encryption keys

Veeam DataLabs

A Veeam DataLab is an isolated virtual environment to bring backup data and replicas to life.

The VM image of the selected VM's are mounted directly to the host from the compressed and deduplicated backup file in the Veeam backup repository. There is no need to perform a restore.

This isolated virtual environment can be used for:

Automatic backup verification tests (SureBackup)

SureBackup performs the following tests:

- ping test
- heartbeat test
- application test

Automatic verification of replicas (SureReplica)

On-demand Sandbox

Start one or more VM's in an On-demand Sandbox to test patches, to do security analysis, penetration-testing, or application tests.

Direct restore to Microsoft Azure, Amazon AWS and Google Cloud Platform

The following types of backups can be restored:

- Microsoft Windows and Linux VMs
- Veeam Agent for Microsoft Windows
- Veeam Agent for Linux
- Nutanix AHV VM's created with Veeam Availability for Nutanix AHV
- backups created with Veeam Backup for Azure
- backups created with Veeam Backup for Amazon AWS
- backups created with Veeam Backup for Google Cloud Platform

Object Storage (everywhere) support

Object Storage as primary backup target and/or backup copy job target:

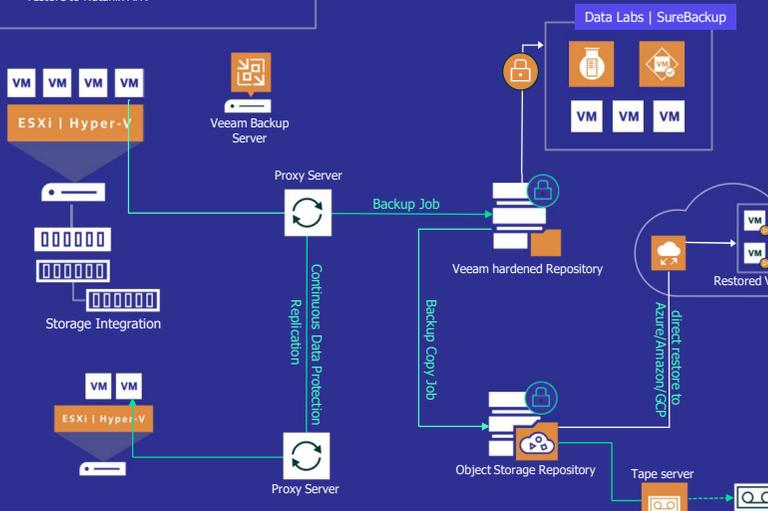
- S3-compatible storage
- Amazon S3 storage
- Azure Blob Storage (hot/cold)
- Supported for Hyper-V, VMware, AHV and RHV VM backups, Veeam Agent for Linux, Windows and MAC backups, NAS Backup, Enterprise Database Plug-ins (Oracle RMAN, SAP HANA, SAP on Oracle, SQL), SQL, Oracle and Postgres transaction logs and all backup copy jobs (including Veeam backup for AWS, Azure and Google)

Offload backups from Scale-out backup Repositories to object storage:

- move backups older than x days
- move backups depending on capacity thresholds of repository
- copy backups to object storage as soon as they appear
- combination of move and copy mode

Archive Tier: Additional storage tier for long term retention of rarely used data on cheaper cloud based object storage:

- Amazon S3 Glacier
- Microsoft Azure Archive Storage



Veeam Hardened Repository

Dedicate repository type, offering immutability for backup data:

- dedicated hardware, Linux based
- use XFS as filesystem to utilize reflink
- no other roles allowed (except proxy server role using NBD)

can store the following types of backups:

Microsoft Windows and Linux VMs, Veeam Agent for Windows and Linux, Nutanix AHV VMs, backups created by Veeam Backup for AWS/Azure/Google Cloud Platform, NAS Backup Veeam Enterprise Plugin backups

Backup to tape

- Tapeserver: Windows or Linux based
- LTO-3 or higher
- support for WORM tapes
- tape parallel processing support

Veeam WAN Accelerator

Optimizes data transfer of backup copy jobs and replication jobs over WAN

