

Veeam Backup & Replication 9.5 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 based installation (physical or virtual)
Implement as many proxy servers as necessary

It's a datamover:

- between the 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 VMs and metadata for replicated VMs

Usable storage types:

- Direct attached storage (DAS):
 - Windows and Linux servers
 - SAN Storage
- Network attached storage (NAS) -> SMB (CIFS) 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 (Cloud Tier)

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:
Veeam Agents for Windows
Veeam Agents for Linux

- 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

Enterprise Applications:
SAP HANA Plugin

- transactionally consistent backup and restore of SAP HANA databases
- SAP certified

Oracle RMAN Plugin

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

Restore Options

VMware virtual machines

- Instant VM recovery
- VM files restore (vmx, nvram, vmdk)
- entire VM restore
- virtual disks restore (vmdk)
- file level restore (Windows and Linux)
- application items restore (SQL, Active Directory, Oracle, Exchange, Sharepoint)
- secure/staged restore
- restore to Amazon EC2
- restore to Azure

Microsoft Hyper-V virtual machines

- Instant VM recovery
- 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
- restore to Azure

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

- 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
- export schema and data

Explorer for granular restore are also available for:
Veeam Explorer for Oracle
Veeam Explorer for Sharepoint

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

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

Physical Servers (Agent for Windows and Linux)

- Instant Recovery to Hyper-V
- bare metal restore
- volume restore
- file level restore (Windows and Linux)
- virtual disks export (VMDK, VHD, VHDX)
- application items restore (SQL, Active Directory, Oracle, Exchange, Sharepoint)
- restore to Amazon EC2
- restore to Azure

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

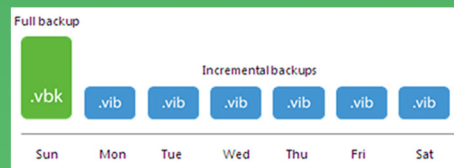
Direct Restore to Microsoft Azure and Amazon AWS

The following types of backups can be restored:

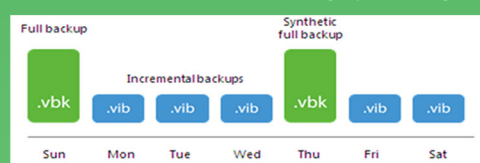
- Microsoft Windows and Linux VMs
- Veeam Agent for Microsoft Windows
- Veeam Agent for Linux
- EC2 instances created with N2WS Backup & Recovery
- Nutanix AHV VMs created with Veeam Availability for Nutanix AHV

Veeam Backup Methods

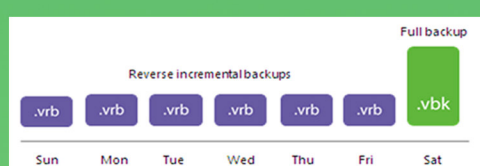
Forever Forward Incremental Backup



Forward Incremental Backup (with synthetic or active fulls)



Reverse Incremental Backup



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 Storage Snapshots
- on demand sandbox for storage snapshots

Important: with Storage Integration, the impact of VMware snapshots to virtual machines is reduced to a minimum.



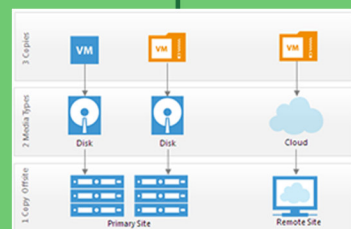
Follow the 3-2-1 rule

For successful data protection follow the 3-2-1 rule:

You must have at least **three** copies of your data. The original production data and two backups.

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

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



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 is 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 (Sure Backup)

SureBackup performs the following tests:

- ping test
- heartbeat test
- application test

Automatic verification of replicas (SureReplica)

On-demand Sandbox

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

Veeam Cloud Tier

Offload backups for long term retention to:

- Amazon S3 storage
- Azure Blob Storage
- S3 compatible storage

- Policy-based
- Transparent
- Space efficient
- Self-sufficient

Available offload options:
Move backups older than x days.
Force data transfer if a specified capacity threshold is exceeded.

Veeam Cloud Provider (VCSP)

VCSP offer Backup as a Service (BaaS) to store backup data and Disaster Recovery as a Service (DRaaS) to store replica data off-site.

Veeam WAN Accelerator

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

Branch Office Backup

Backup branch office workload to a local repository for fast restores. Use eg. backup copy job or Veeam Cloud Tier to follow the 3-2-1 rule.



WAN

Back Copy Job

Backup Copy Job (BCJ)

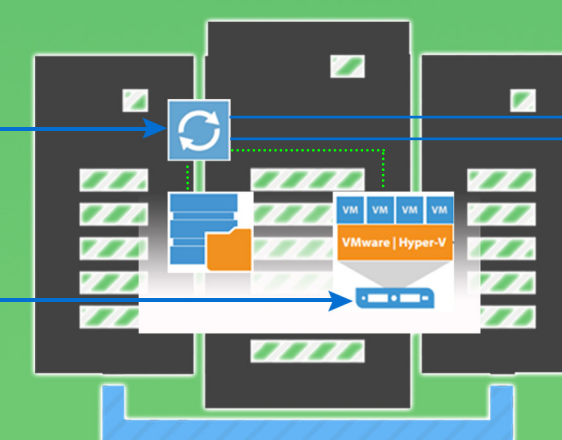
Copies backup data at blocklevel to secondary location

- parallel processing of VMs
- 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.

Data Center 1



Data Center 2



Backup Copy Job

Replication

Replication

Replication of virtual machines to DR site

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

Backup to tape

- LTO-3 or higher
- support for WORM tapes
- tape parallel processing support

