

Say Goodbye to Your Ransomware Worries, Veeam has Your "Immutable Back" with 30+ Object Storage Choices



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Agenda

- Immutability types
- Choose your adventure!
- Veeam ONE to the rescue
- Adventure 1 – On-premises immutable options
- Adventure 2 – To the cloud!
- Adventure 3 – Did someone say tape?
- Veeam® ONE™ ready
- Q&A

Immutable storage – Veeam

Veeam® ready – object with immutability on-premises

- Cloudian Inc. – Cloudian Hyperstore & HyperStore Object Storage
- DataCore – SWARM
- Dell Technologies – ECS
- Hitachi Vantara – HCP & HCP for Cloud Scale
- IBM – IBM Cloud Object Storage & IBM COS Slicestor 2448
- Infortrend Technology, Inc.- EonStor GS Family & GS 3016 Gen2
- iTernity GmbH – iCAS FS & ICAS FS
- MinIO – MinIO Release.2020-07-12T19-14-17Z*
- NetApp – StorageGrid
- Nexsan – Unity Series 2200
- Nutanix, Inc. – Nutanix Objects Objects 3.0
- Object First – ObjectFirst Storage Appliance
- OSNEXUS – QuantaStor & QuantaStor 5
- QNAP Systems, Inc. – QuObjects & QuObjects 2.4.1443 & 2.4.1446 (TVS-h1288X)
- Quantum Corporation – ActiveScale x100
- Pure Storage – Flashblade Object*
- Scality – Scality Ring
- Scality – ARTESCA
- SoftIron – HyperDrive HD11120
- Spectra Logic Corporation – Black Pearl & Black Pearl S3
- StoneFly, Inc. – DR365 & DR365V
- SUSE – Enterprise Storage & Enterprise Storage 6
- VAST Data – VAST Data Universal Storage & VAST DF-5630
- Zadara – VPSA Object Storage & VPSA Premium Object Storage

Veeam ready – object with immutability

- Amazon – Amazon S3
- Backblaze – B2 Cloud Storage
- OVHcloud – OVHcloud Object Storage & High-Performance tier.
- RSTOR – RSTOR Space All
- Seagate Technology – Lyve Cloud
- Wasabi Technologies – Wasabi Hot Cloud Storage All

Object with immutability*

- Microsoft – Azure Storage All

Disk storage with immutability

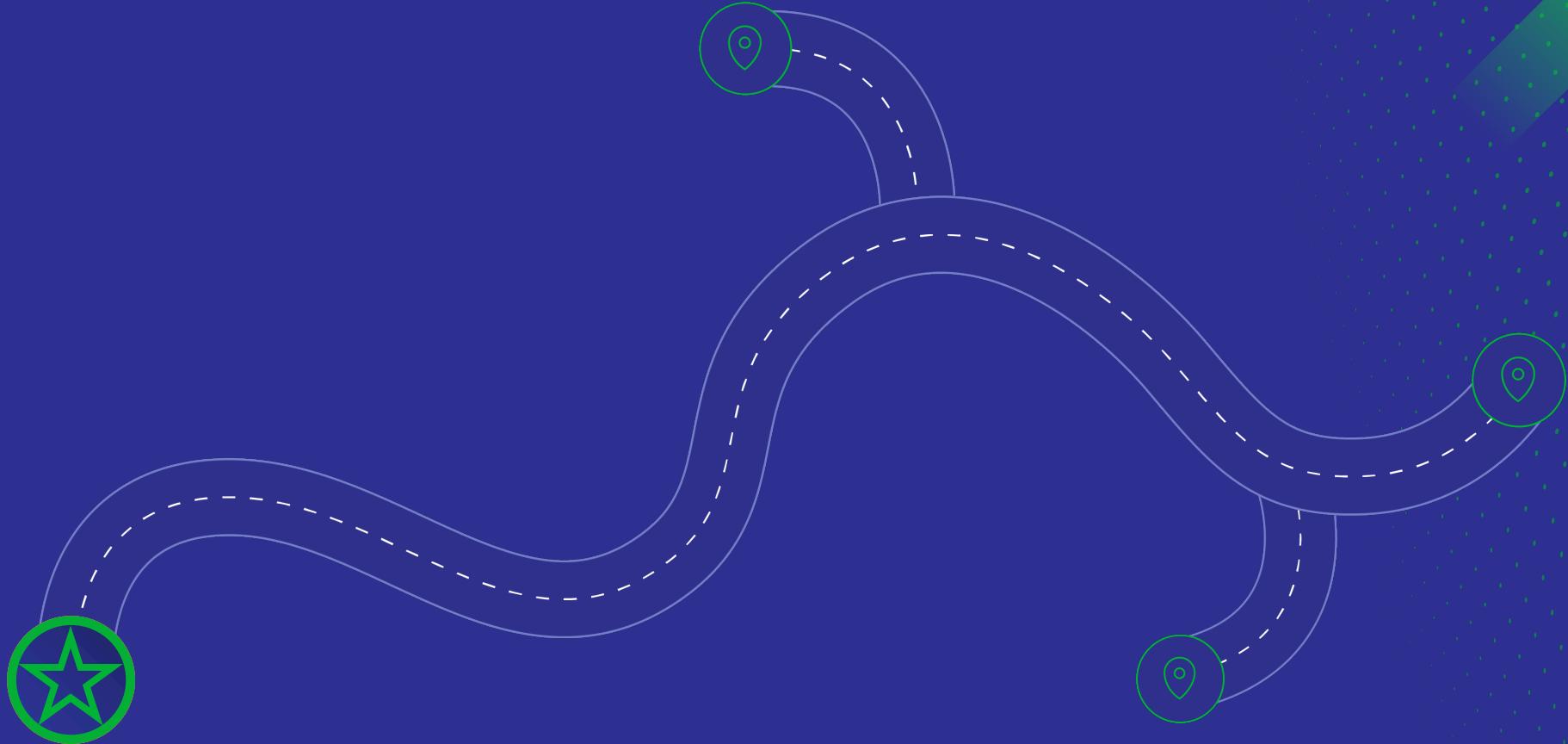
- Linux Hardened Repository – Choose Server Vendor
- HPE StoreOnce
- ExaGrid – Retention Lock
- Pure Storage FlashArrays with Safe Mode & Flashblade NFS with SafeMode
- Quantum Corporation – Dxi Secure Snapshot

Tape

- Microsoft Windows & Linux Drivers

*Implemented and Supported – qualification coming soon

Choose your own adventure...



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Veeam ONE



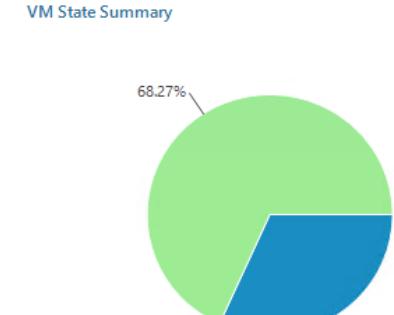
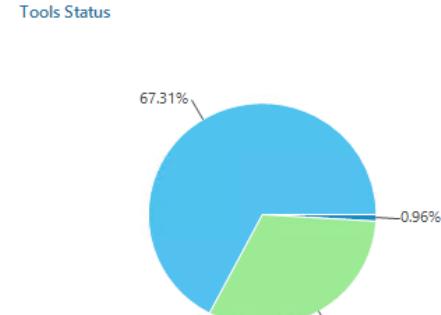
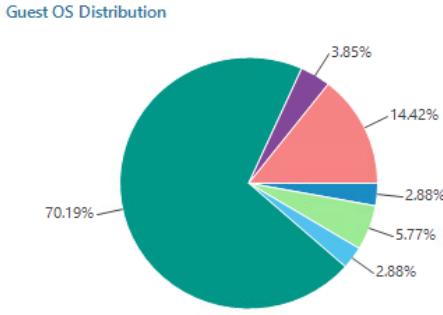
Use Veeam ONE for capacity planning

VMs Configuration

Details

vCenter Server: vcsa.vps.veeam.local

Host	Resource Pool/vApp	VM Name	Computer Name	Guest OS	vCPUs	Memory (GB)	Storage Allocated (GB)	Used Storage (GB)
Cluster: Primary		104			277	973.00	15,939.74	11,893.41



CentOS 7 (64-bit)
CentOS 8 (64-bit)
Microsoft Windows Server 2019 (64-bit)

Microsoft Windows Server 2022 (64-bit)
Other
Ubuntu Linux (64-bit)

Not Installed
Not Running
Ok

Powered Off
Powered On

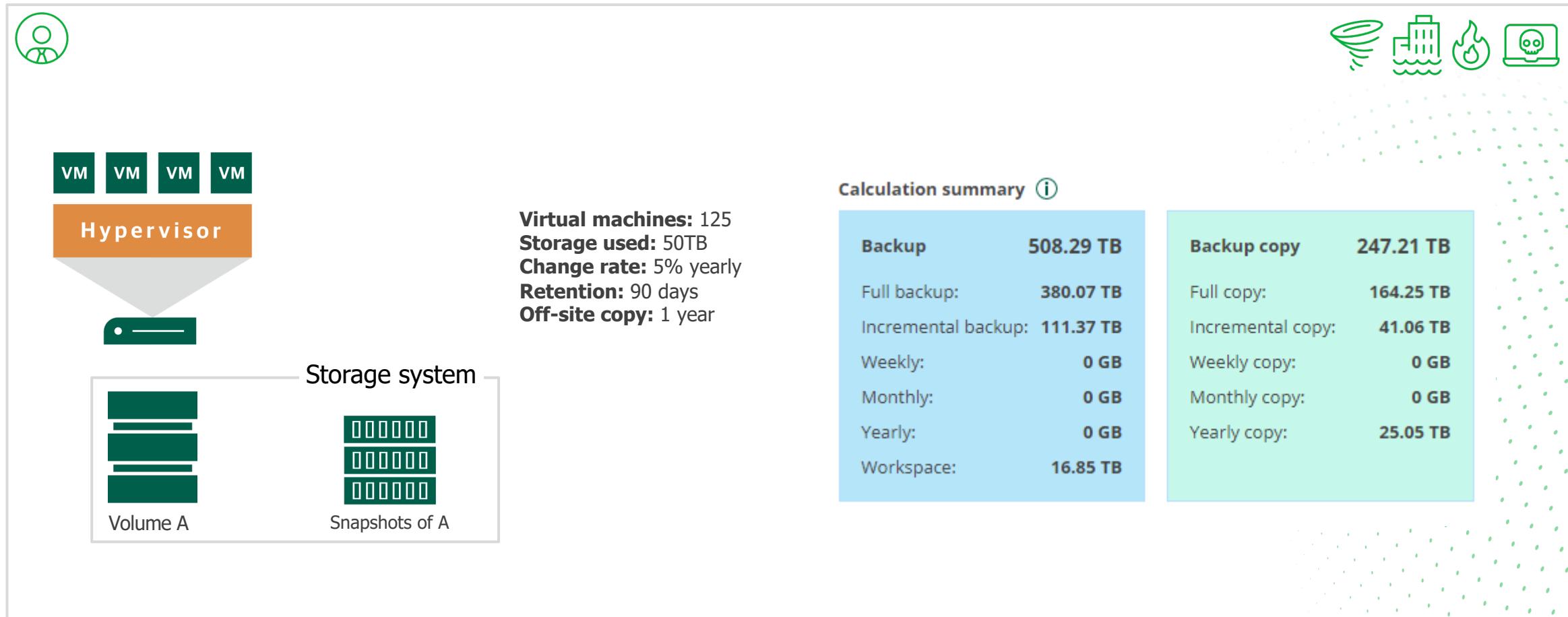
[Details](#)

[Details](#)

[Details](#)

Scenario

Production



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On-premises



Comprehensive immutability options

On-premises copy



Hardened repository



S3 compatible



Dedupe appliance

Hardened repository

Linux based – XFS supported
Choose server vendor – HPE/Cisco/Dell/Lenovo...
Veeam support
Price \$ per TB

S3 compatible

S3 only
Some support erasure coding (dedupe benefits)
Veeam support
Replication/imutable benefits DR
Price \$ per TB

Deduplication appliance

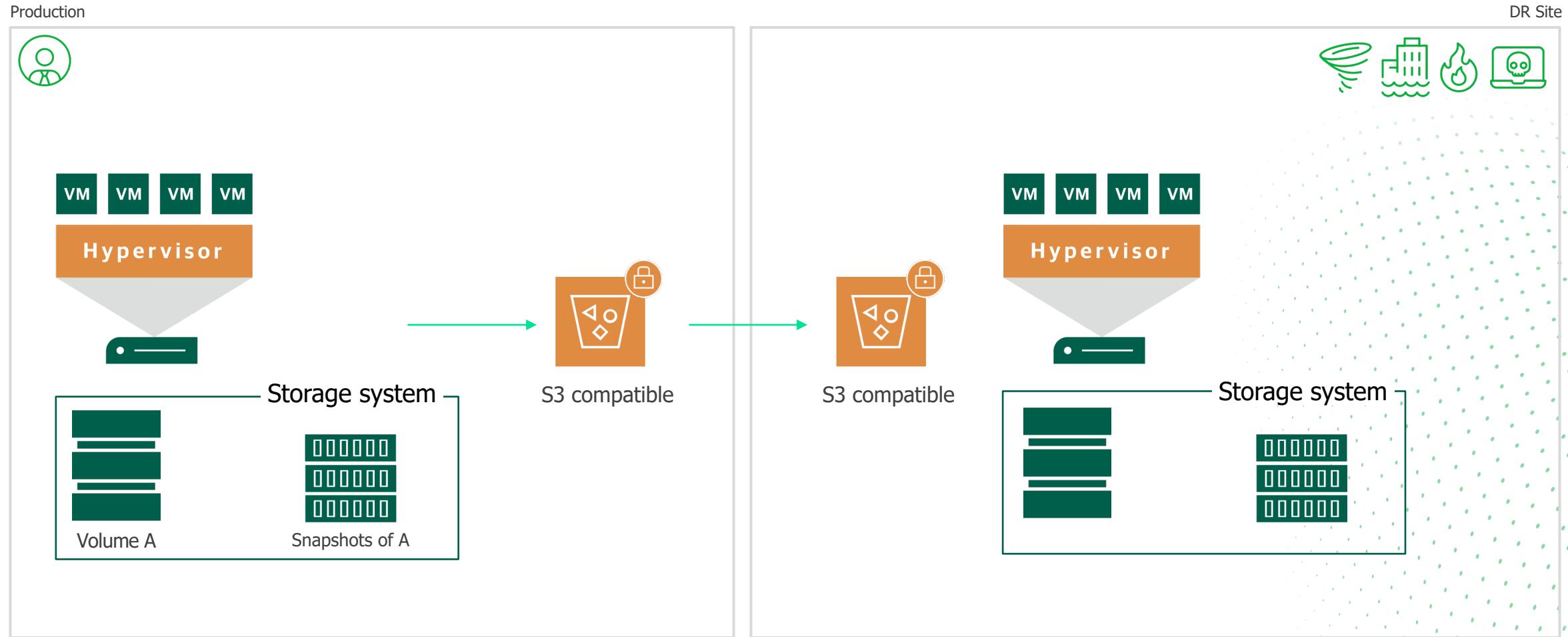
Separate GUI
Best dedupe
Veeam support
Replication/imutable benefits DR
Price \$ per TB



Stop and contemplate

Workload support
Speed of recovery
Budget
Ease of use
Changing BC/DR strategies

Scenario

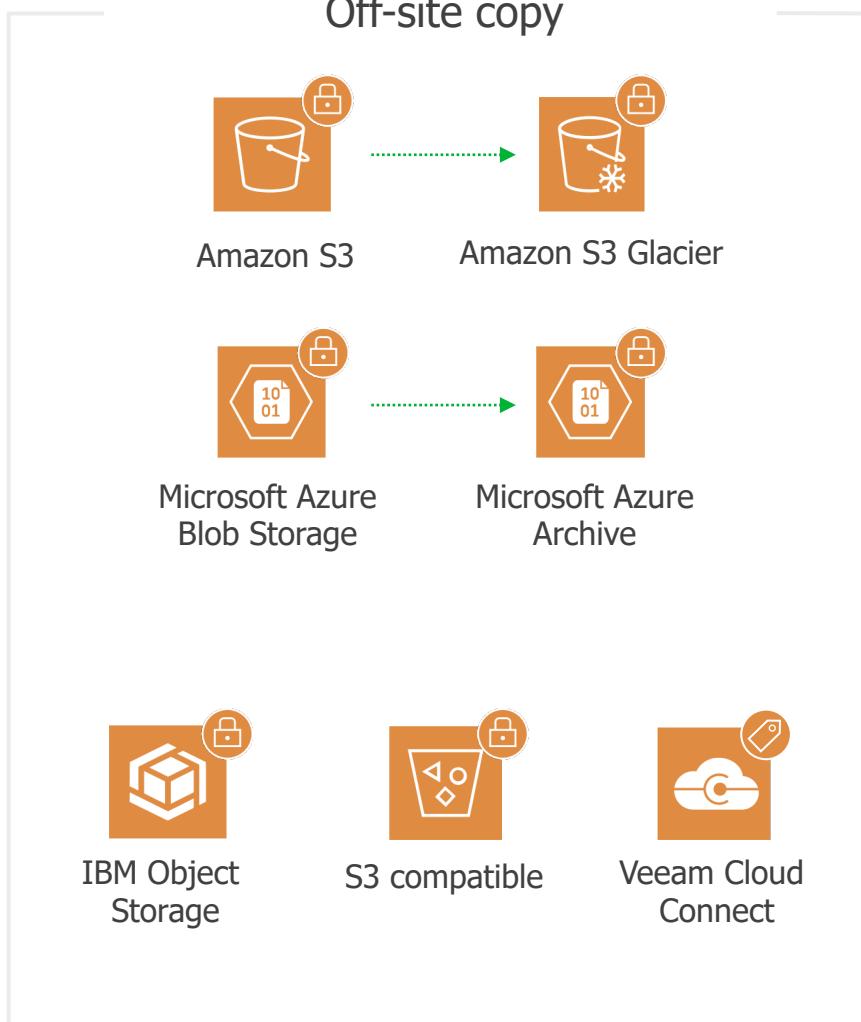


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Cloud



Comprehensive immutability options



Public providers*

- Hybrid environment – lift/shift/testing etc.
- Archive capabilities
- Contract usage
- No hardware management
- Accelerated go live

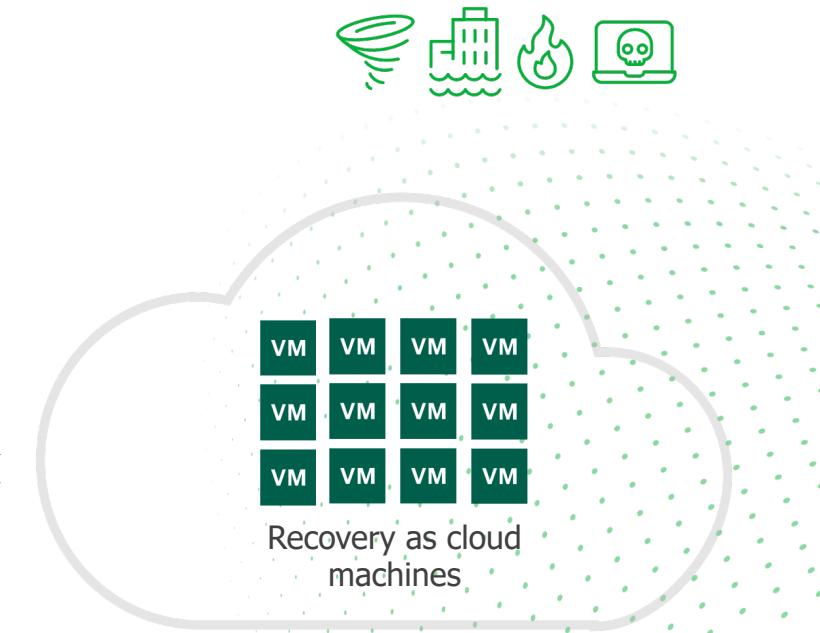
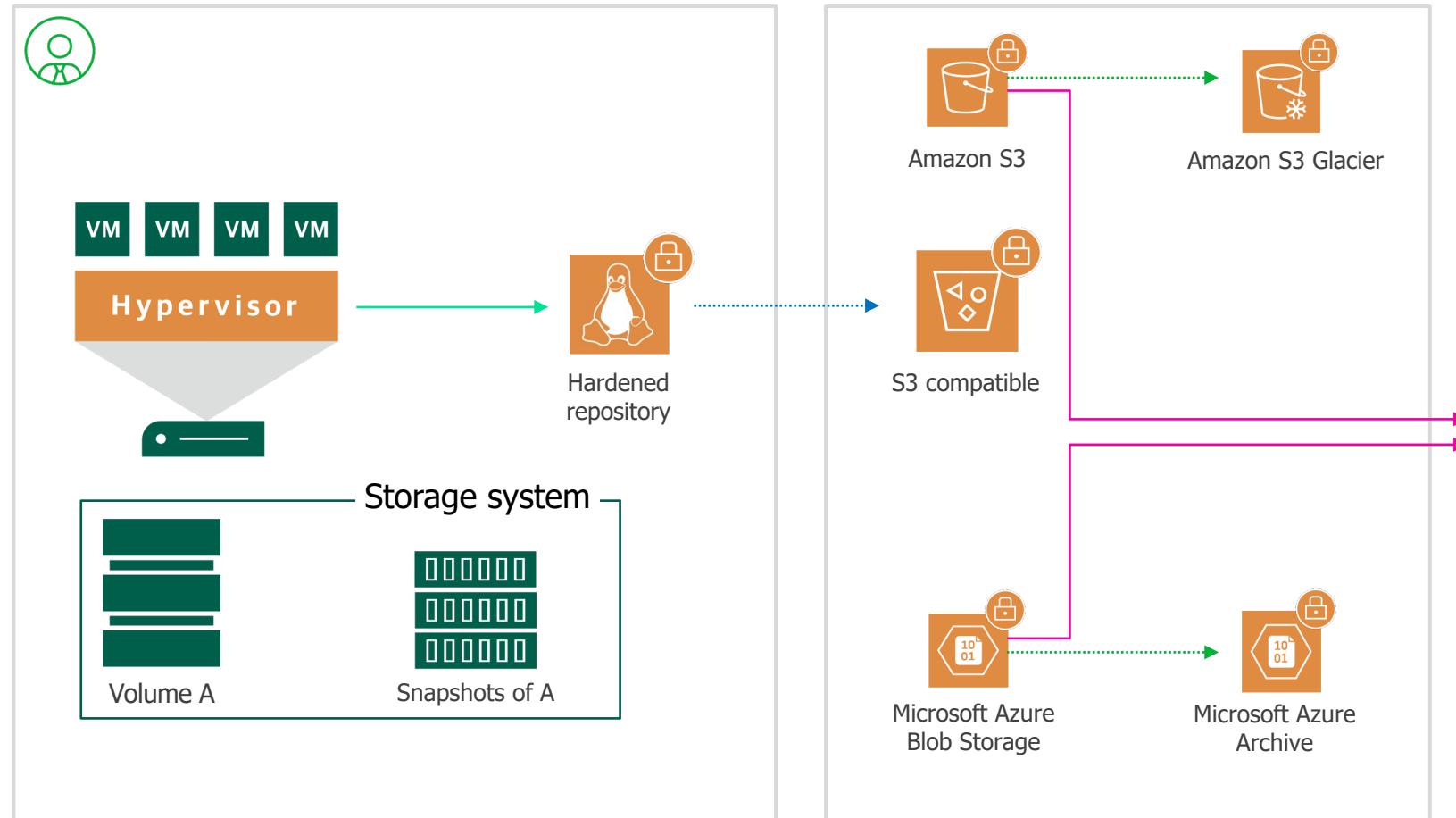


Stop and contemplate

- Networking – upload/download speeds
- Verified
- Transaction costs – (costs per request)
- Ease of use
- Changing BC/DR strategies

Scenario

Production

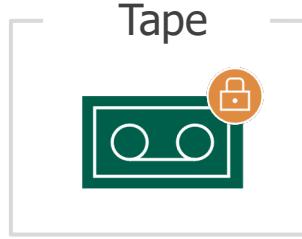


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Tape



Comprehensive immutability options



Tape

Original immutable backup option – WORM/AirGap
Microsoft/Linux drivers supported
LTO 9 – 17 9s reliability
18TB Native & 45TB compressed
SAS or FC
Veeam enhancements in V12

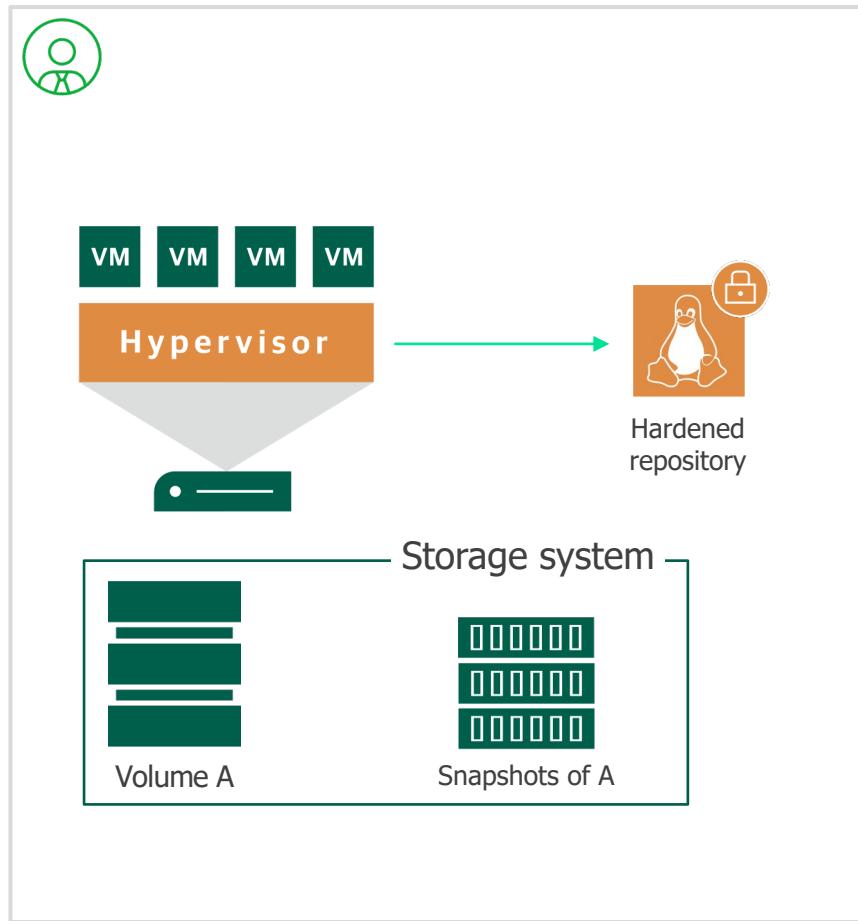


Stop and contemplate

Workload support
Speed of recovery
Budget
Ease of use
Changing BC/DR strategies

Scenario

Production



Calculation summary i

Backup	508.29 TB
Full backup:	380.07 TB
Incremental backup:	111.37 TB
Weekly:	0 GB
Monthly:	0 GB
Yearly:	0 GB
Workspace:	16.85 TB

Backup copy	247.21 TB
Full copy:	164.25 TB
Incremental copy:	41.06 TB
Weekly copy:	0 GB
Monthly copy:	0 GB
Yearly copy:	25.05 TB





Veeam ONE monitoring

Immutability monitoring

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Dashboards

Report Templates

All Templates

- Custom Reports
- Infrastructure Charge
- Offline Reports
- Veeam Backup Agent
- Veeam Backup Asses:**
- Veeam Backup Billing
- Veeam Backup Capacity
- Veeam Backup Monitor
- Veeam Backup Overview
- Veeam Backup Tape
- Veeam Enterprise Appliance
- vSphere Capacity Plan
- vSphere Configuration
- vSphere Infrastructure
- vSphere Monitoring
- vSphere Optimization
- vSphere Overview

Immutable Workloads

Description

This report lists workloads and their backups that do not have at least one immutable restore point or are not compliant with the desired immutability targets. This helps to make sure backups being safely protected against ransomware and other malicious and erroneous deletions.

Report Parameters

Scope:	Backup Infrastructure
Protected workloads:	All workload types
Job types:	All job types
Jobs:	All jobs
Excluded workloads:	-
Group by:	No grouping

Summary

Total workloads:	174
Immutable workloads:	1
Mutable workloads:	173
Workload immutability ratio:	0.57%
Total restore points:	3946
Immutable restore points:	27
Mutable restore points:	3919
Restore point immutability ratio:	0.68%

Workloads by Immutability

99.43% 0.57%

Immutable workloads Mutable workloads

Restore Points by Immutability

99.32% 0.68%

Immutable restore points Mutable restore points

Immutability monitoring

Details

Immutable Workloads

Workload	Platform	Job Name	Job Type	Repository	Available Restore Points	Immutable Restore Points	Oldest Immutable Restore Point	Oldest Immutable Restore Point Until	Latest Immutable Restore Point	Latest Immutable Restore Point Until
\\vps-files\fileshare	SMB Share	Example 2 - File Share to VHR	File backup	vps-rvrtm\Linux - Veeam Hardened Repository	27	27	3/22/2023	4/24/2023	4/17/2023	4/24/2023

Mutable Workloads

Workload	Platform	Job Name	Job Type	Repository	Available Restore Points	Immutable Restore Points	Oldest Immutable Restore Point	Oldest Immutable Restore Point Until	Latest Immutable Restore Point	Latest Immutable Restore Point Until
\\172.31.119.186\sample	SMB Share	Example 9 - Aaron Murphy - File Backup Linux	File backup	vps-rvbrprod\Scale-out Backup Repository	11	0	N/A	N/A	N/A	N/A
\\vps-files\fileshare	SMB Share	Example 1 - File Share Backup	File backup	vps-rvrtm\NAS Share - NFS	27	0	N/A	N/A	N/A	N/A
\\vps-files\TEMP-REPO\interlabbing	SMB Share	Example 2 - Rick Vanover File Share	File backup	vps-rvbrprod\Scale-out Backup Repository	10	0	N/A	N/A	N/A	N/A
\\vps-files\TEMP-REPO\interlabbing	SMB Share	Example 1b - File Share Index	File backup	vps-rvrtm\Object Storage - Standard	1	0	N/A	N/A	N/A	N/A
dc01	vSphere	Example 1 - Core Infrastructure	VM backup	vps-rvbrprod\Scale-out Backup Repository	10	0	N/A	N/A	N/A	N/A
dc01	vSphere	Example 1 - Core Infrastructure	VM backup	vps-rvbrprod\Scale-out Backup Repository	1	0	N/A	N/A	N/A	N/A
dc02	vSphere	Example 1 - Core Infrastructure	VM backup	vps-rvbrprod\Scale-out Backup Repository	10	0	N/A	N/A	N/A	N/A
jpam	vSphere	Example 1 - Core Infrastructure	VM backup	vps-rvbrprod\Scale-out Backup Repository	10	0	N/A	N/A	N/A	N/A

Immutability monitoring

Veeam ONE Client (VPS\Emilee.Tellez)

Configuration issue (1 detected). [Show details](#)

Alarm Management

Search...

Type	Name	Source	State	Assignment	Resolution
File	Immutability state	Predefined	Enabled	Backup Infrastructure	Automatic
File	Immutability change tracking	Predefined	Enabled	Backup Infrastructure	Manual
File	Backup job failed to complete with "Unable to perform the operation: a backup file is immutable"	Predefined	Enabled	Backup Infrastructure	Manual

Actions

- New...
- Disable
- Edit...
- Copy
- Delete
- Edit Assignment...
- Edit Exclusions...
- Show All Exclusions...

Alarm Details

Knowledge
The configured immutability period has been changed on one or several backup repositories or scale-out backup repository extents

Cause
Veeam Backup & Replication provides several capabilities to make the protected data immutable, thus resilient to cyber threats such as ransomware and malicious deletions. These capabilities include:

- WORM-compliant immutability for Linux Hardened Repositories and Linux performance tier extents of scale-out backup repository
- S3 Object Lock immutability for object storage repositories

When the immutability period of these repositories changes, this alarm triggers.

Resolution
Make sure the immutability setting of the affected backup repositories is configured according to the internal security policy. To view the configuration settings:

- In Veeam ONE Client, open the summary tab of the corresponding backup repository or scale-out backup repository extent
- In Veeam ONE Client or Veeam ONE Web Client, generate the Scale-Out Backup Repository Configuration report

To investigate immutability setting changes, generate Backup Infrastructure Audit or Backup Objects Change Tracking reports using Veeam ONE Client or Veeam ONE Web Client and determine by whom and when it was enabled or disabled.



Thank you

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