HPE + Veeam = better together

Mariusz Rybusiński
Veeam
3-2-1 Rule
avoiding recovery failure

Backup specialists agree that in order to ensure recoverability you need:

- 3 copies of your data
- Store this data using at least 2 different media types
- Store at least 1 copy offsite
- Allow for “0 errors” by using automatic recovery verification using SureBackup and SureReplica
Why integration was done and how it benefits HPE:

Integration was done to solve customer issues with backup performance, remove data protection challenges when highly transactional applications are virtualized and improve customer recovery point objectives by providing Near Continuous Data Protection without the cost.

Veeam’s integration can be leveraged across HP’s focus products

- 3PAR StoreServ
- StoreVirtual VSA and StoreVirtual
- StoreOnce
- ConvergedSystems (CS 700)
- Hyper Converged (HC- 250)
- Cloud Systems
Veeam Backup with HPE
Veeam Backup with HPE

CS, StoreVirtual, 3PAR

Data Center
CS, StoreVirtual, 3PAR

Data Center
Catalyst
Backup
CS, StoreVirtual, 3PAR
StoreOnce
Data Center
CS, StoreVirtual, 3PAR
StoreOnce
VSA
Catalyst Backup
Backup Data Mover
Data Center
Off-site / Archival
StoreEver, StoreOnce
Veeam Cloud Connect
Comprehensive Data Availability
with Veeam and HPE

Data Center
- CS, StoreVirtual, 3PAR
- StoreOnce
- Catalyst Backup
- Backup Copy
- VM Replication

Remote Office
- CS, StoreOnce VSA, ProLiant
- VM Replication

Private or Hosted DR
- CS, StoreVirtual, 3PAR, Veeam
- DRaaS & Veeam Cloud Connect

Off-site / Archival
- StoreEver, StoreOnce
- Veeam Cloud Connect

Backup Data Mover
- Backup

Integration
- Veeam

Veeam Cloud Connect
High-speed Recovery
instant VM recovery
Data Loss Avoidance
VM/Backup Replication with WAN Acceleration
Leverage Data
use backup to spin up test environments

Start VMs from a backup file (SureBackup) or replica, using a virtual lab proxy to separate network traffic.

The internal IP address of the virtual lab should be set to the default gateway in production. It is also possible to allow internet traffic through or map an IP address (static mapping) to allow production access to a VM.
Verified Protection and Leveraged Data
SureBackup and On Demand Sandbox
Backup from storage snapshots
Reduce impact on production VMs
Traditional VM backup

Heavy load on source storage during snapshot commit
Can take a while in some cases
Backup from HPE Snapshots

- **No temporary datastore mount** on an ESXi server
- **No VMFS resignature**
- **Leverages** VMware CBT
- **Up to 20 times** faster than competition
Backup from HPE Snapshots

Much smaller VM snapshot
Near instant VM snapshot commit
Use of storage snapshot for backing up VM data
Veeam Backup from Storage Snapshots

Reliable backups from HPE storage Snapshot

**How it works**

1. VM data are acquired from infrastructure (VADP)
2. Sending request to VMware to create snapshot
3. Sending request through storage API to create storage snapshot volume with VM
4. Sending request to VMware to delete snapshot
5. Storage snapshot is mounted to Veeam Proxy, we are ending backup
6. When finish, sending request to HPE to delete storage snapshot
Backup to StoreOnce

Long-term retention
HPE StoreOnce & Veeam

Before Catalyst support (pre-v9) – Use as a shared folder

Data is sent to StoreOnce in its native format.
1) No bandwidth reduction. Deduplication occurs at destination.
2) Synthetic full backup is slow.
3) Remote backups over WAN are NOT effective via CIFS.
4) Backup data can be replicated using StoreOnce NAS replication
Catalyst: more performance and scalability.

1) Bandwidth reduction: get 10Gbps throughput from a 1Gbps link.
2) Synthetic full backup is 10-20X faster than a traditional full backup.
3) Remote backups over WAN and LAN-free backups (Catalyst over FC).
4) Backup data can be replicated leveraging Backup Copy jobs with Catalyst.
Pre v9: Single write process for all VMs in a Job

Limitations:
- Less performance (requires tuning)
- Less StoreOnce deduplication (Interleaved data – multiplexing)
v9: Multi-streamed Write (Per-VM Backup Files)

**Benefit:** Up to 10X Faster Throughput

- **VMware**
- **Hyper-V**

One Backup job

Multi-streams (v9)

- Stream 1
  - VM
  - VBK
  - VIB
- Stream 2
  - VM
  - VBK
  - VIB
- Stream 3
  - VM
  - VBK
  - VIB
- Stream ...
  - VM
  - VBK
  - VIB
StoreOnce: Global Deduplication

**Benefit:** Great StoreOnce dedupe ratio

VM | VM | VM | VM | VM | VM | VM | VM | VMware | Hyper-V

**Improvements:**
- Optimal deduplication: no multiplexing
- Deduplication across all VMs and Jobs
- Faster throughput

One Backup job
Multi-streams (v9)

HPE StoreOnce
Virtual Synthetic Full: A full backup for the load of an Incremental

Benefit: 10-20 X Faster concurrent Full-backups. Less load on primary storage.

This process works concurrently for each VM in the Job!

1. A new incremental backup runs
2. Veeam sends a “plan” to StoreOnce (offload full backup creation)
3. StoreOnce builds the Synthetic full **arranging pointers** instead of making resource intensive data moving
4. Veeam updates its database
Recovery

Recover what you want, the way you want
On-Demand Sandbox for Storage Snapshots:

Use storage snapshots to create an isolated environment, that allows you to run tests, troubleshooting, trainings....
Veeam Explorer for Storage Snapshots

- Veeam discovers existing storage snapshots and can create new ones
- Veeam discovers VMs in the storage snapshots
- Granular recovery of an individual VM, files and folders or application items
- Instant VM Recovery

3PAR StoreVirtual

Backup

Intelligent Snapshots

NOT PROTECTED

8 PM 8 AM 9 AM 10 AM 11 AM 12 PM 1 PM 2 PM 3 PM 4 PM 5 PM 8 PM
Recover from storage snapshots
Recovery from Offsite Backup

Off-site/Archival

StoreEver

StoreOnce

Veeam Cloud Connect, BaaS
Recovery from Offsite Backup

StoreOnce and Cloud Connect
• Application Items
• Full VM (no IVMR)
• Guest OS files

Tape
• Full VM
• Backed up files
• Veeam Backups
Recovery from Disasters

DR Site

Converged Systems

3PAR StoreServ, StoreVirtual

Veeam Cloud Connect, DRaaS
Recovery from Disasters

• Failover Plans
• Incremental Failback
• Re-IP of Windows VM’s
• Re-mapping of virtual networks
Recovery for Remote Office

Remote Office

- ProLiant
- Hyper Converged
- StoreOnce VSA
Recovery for Remote Office

- Restores from snapshots and local backups
- Restore from offsite backups
- Failover to replicas
Veeam Agent for Microsoft Windows
Veeam Agent for Linux
Key Challenges

Backing up and recovering Windows and Linux instances that reside in the cloud is often cumbersome or expensive.

Providing robust backup for physical servers and workstations that cannot be virtualized, due to complex hardware configurations or regulatory compliance requirements.

Providing low RPOs for roaming laptops and tablets belonging to traveling users and those in home offices.
Why Agents?

Agents are needed to interact with public cloud architectures.

Agents allow for better interaction with physical servers and workstations.

Agentless solutions, such as Veeam Availability Suite™, are designed for virtualized environments.
Veeam Agents

Protect servers and workstations on-premises and in the cloud
Veeam Endpoint Backup FREE

Provides a simple solution for backing up Windows-based desktops and laptops

Back up to an external hard drive, NAS (network-attached storage) share or a Veeam Backup & Replication™ repository

Recover what you need in minutes
Veeam Agent for Microsoft Windows

Free Edition

NEW in v2:

Instant Recovery to Hyper-V VM

Direct Restore to Microsoft Azure

Source-side encryption

Flexible backup modes
Veeam Agent for Microsoft Windows

NEW Workstation Edition

Free Edition, plus...

24.7.365 technical support

Remote configuration and management API

Endpoint protection for mobile users

Back up directly to Veeam Cloud Connect repository
Veeam Agent for Microsoft Windows

NEW Server Edition

Workstation Edition, plus…

FULL server support!

- Application-aware processing
- Transaction log backup
- Guest file system indexing and catalog search
### Veeam Agent for Microsoft Windows

<table>
<thead>
<tr>
<th>Feature</th>
<th>Free</th>
<th>Workstation</th>
<th>Server</th>
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</thead>
<tbody>
<tr>
<td>Instant Recovery to Microsoft Hyper-V VM</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Direct Restore to Microsoft Azure</td>
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<td>Transaction log backup for databases</td>
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<td>Guest file indexing and search</td>
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Veeam Agent *for Linux*

Simple and free backup agent for Linux — anywhere

- Protect entire computer, or create volume-level and file-level backups

- Built-in snapshot and change tracking drivers delivered as a dynamically loadable kernel module

- Integrated directly into Veeam Backup & Replication (backup repository, basic centralized monitoring)
# Veeam Agent for Linux

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<td>Built-in volume snapshot and changed block tracking drivers</td>
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<tr>
<td>File-level, volume-level and bare metal recovery (same or different hardware)</td>
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<td>Backup and recovery using console UI or command line</td>
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<td>Integration with Veeam Backup &amp; Replication</td>
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<td>Pre-freeze/post-thaw snapshot scripts for application processing</td>
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BREAKING NEWS
Nimble Storage Signs Agreement to be Acquired by HPE

By Suresh Vasudevan

March 7, 2017

**Nimble Storage Signs Agreement to Be Acquired by Hewlett Packard Enterprise Company,** to accelerate the global adoption of Nimble Storage’s Innovative Predictive Analytics and leading next-generation flash storage platform

By Suresh Vasudevan
CEO, Nimble Storage

Today is a significant milestone in our company history, as we have signed a definitive agreement to be acquired by Hewlett Packard Enterprise Company ("HPE").

When we were founded in 2007, our vision was that we could leverage flash and cloud-based predictive analytics to eliminate infrastructure constraints and accelerate applications. We believed that we could build a thriving customer community through products that exceeded expectations, integrity in every customer interaction, and by delivering an unmatched support experience. Perhaps most significantly, our aspiration was to bring together an incredibly talented pool of people under one roof working collaboratively as a team to take on audacious goals.

As we look back, we are proud of our accomplishments. We have built a customer base of 10,000 customers in under 7 years of shipping products. “Six 9s” of measured availability and predictive support driven by InfoSight have resulted in an extremely happy customer base, as reflected by our Net Promoter Score (NPS) of 85. Numerous industry awards reflect the long list of innovations and “industry firsts” as part of our Predictive Cloud Platform. We were named a Leader in Gartner’s Magic Quadrant for General Purpose Storage Arrays for the second consecutive year.
Backup from Storage Snapshots

Primary

Nimble Primary Storage

VMware

Snapshot

Application Consistent Snapshot

Store

Nimble Secondary Storage

Backup Repository

Veeam Backup Server
Backup from Storage Snapshots

Secondary

Nimble Primary Storage → Snapshot → Application Consistent Snapshot → Store → Nimble Secondary Storage

Veeam Backup Server → Store → Backup Repository
High-Speed Recovery

Veeam Explorer™ for Storage Snapshots

Nimble Storage

Low RPO Snapshot

Nimble Replicated Copies

Restore

Nimble Storage

VM
- Full VM (array based)
- Guest Files
- Exchange Items
- SharePoint Items
- Active Directory Objects
- SQL Server Databases
- Oracle Databases
On-Demand Sandbox™

1. Veeam orchestrated storage snapshot creation
2. Veeam orchestrated replicated storage snapshots
3. Veeam On-Demand Sandbox creation
4. VMs powered on in Virtual Lab
Thank You 😊