



Solution Brief:

Advanced data protection with Veeam and Lenovo technology

The challenge

For years, customers with stringent recovery point objectives (RPOs) have used snapshots to protect stored data without affecting performance or significantly increasing the amount of storage space consumed. Lenovo ThinkSystem DM Series storage snapshot copies provide several advantages: You can use them for "point-in-time" recovery and create a large number of restore points frequently without impacting production workloads, even during working hours. You can also use these snapshot copies to protect data in certain disaster scenarios. You can replicate them to a secondary and often remote storage system for disaster recovery (DR) with SnapMirror replication technology, or back up and archive them with SnapVault software. Both of these are standard features that are included with DM Series storage systems. In short, Lenovo storage snapshot technology combines performance, scalability and efficient storage utilization to deliver fantastic RPOs.

Now, there is a way to get even more from your storage snapshot copies; a way that allows you to use both storage and hypervisor-based snapshots and achieve the lowest possible RPOs, harness Lenovo ThinkSystem DM Series All-Flash and Hybrid Flash Arrays, dramatically improve recovery time objectives (RTOs) and leverage the storage-efficient Lenovo DM Series.

The solution

Lenovo and Veeam® have partnered to integrate support for Lenovo Storage Snapshot technology into Veeam Availability Suite™. This integration provides customers with a deeper level of protection and availability across Lenovo ThinkSystem DM Series and its storage platforms. The integration of Veeam backup and recovery with Lenovo Storage Snapshot technology allows you to achieve:



Faster backups

Back up VMware virtual machines (VMs) directly from Lenovo storage snapshot copies.



Quick recovery

Recover entire VMs or individual items from Lenovo Storage Snapshots and SnapMirror software.



Improved protection

Create instant secondary backups from Lenovo Storage Snapshot copies.



Enhanced scalability

Scale efficiently and effectively, regardless of the size of your environment and number of VMs.



Better return on Lenovo storage investments thanks to Veeam DataLabs™ capabilities.

Use Lenovo storage snapshots and FlexClone technology to create completely isolated copies of your production environment in just a few clicks. This helps with application development and testing, data analytics, rapid DR compliance testing and more.



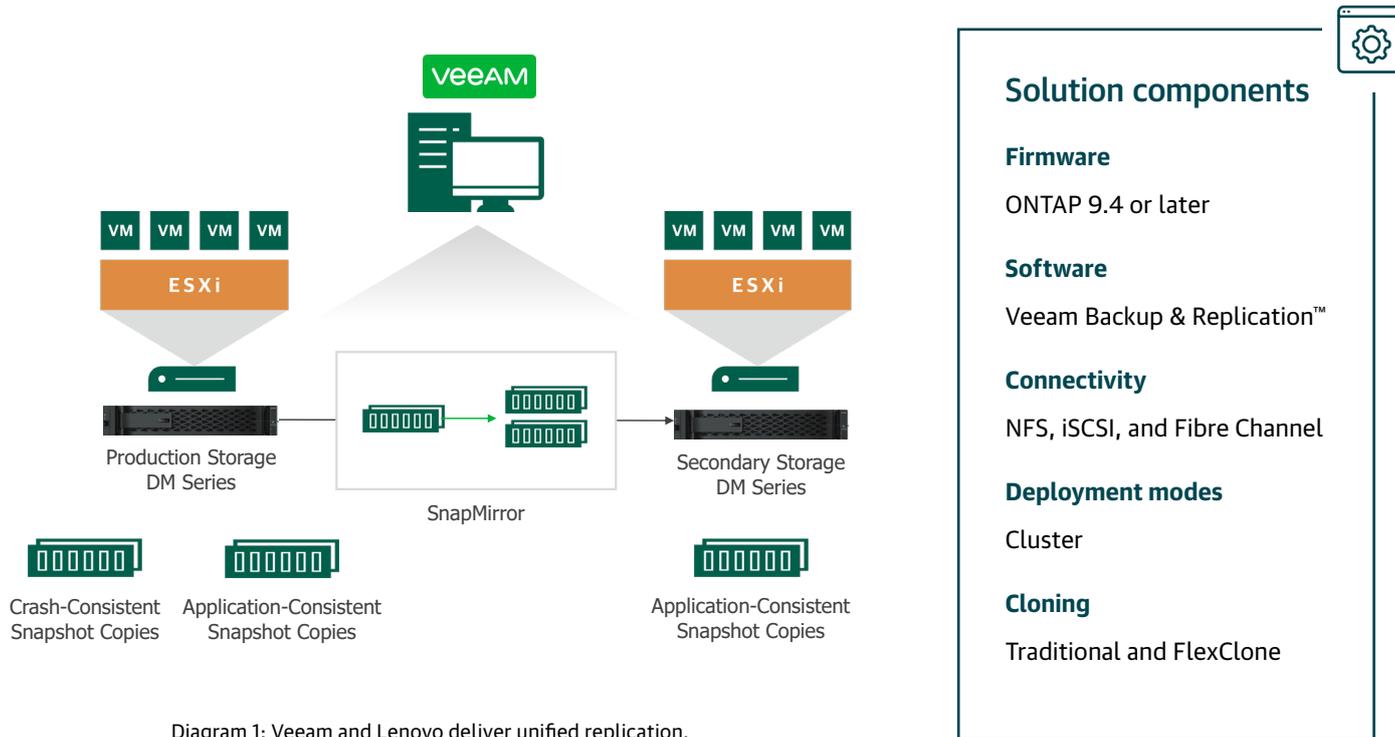
Smooth implementations

Veeam Platform and Lenovo DM Series is easy to deploy and manage with no agents required.

Key features

- Create backups from Storage Snapshots up to 20 times faster than competing offerings.
- Recover individual items quickly and efficiently from Lenovo Storage Snapshot and SnapMirror software.
- Improve DR protection by creating instant secondary backups from Storage Snapshots.





Lenovo and Veeam technologies combine to deliver the low RPOs enabled by Lenovo Storage Snapshots with the fast RTOs delivered by Veeam Backup & Replication. Veeam Backup from Storage Snapshots transforms Lenovo Storage Snapshot copies into backups for quick VM recovery and efficient file-level recovery in VMware environments. Data can be read directly from Lenovo Storage Snapshot copies without needing a VMFS resignature, temporary VM registration, host cleanup or "proxying" the VMware ESXi server. Veeam does this by using VMware vSphere Changed Block Tracking (CBT), which allows snapshot-derived backups to be created quickly – up to 20 times faster than other offerings. In addition, you can replicate these Storage Snapshot copies to secondary storage systems, whether they be local or remote, by using SnapMirror. This approach provides customers with the shortest possible backup windows, the lowest impact on production VMs and the maximum RPOs.

Granular recovery from Lenovo Storage Snapshot copies

Regardless of how much care you take in protecting your organization from data loss, you'll ultimately be called on to restore VMs and application items to a previous state. Legacy backup tools weren't designed to deal with the demands of today's virtual environment, which requires constant availability. Veeam Explorer™ for Storage Snapshots lets you to take advantage of the low overhead that periodic array-based snapshots offer by allowing you to quickly restore guest OS files, application items or an entire VM in minutes directly from native Lenovo Storage Snapshot copies. Users can also restore data directly from these Storage Snapshot copies, which eliminates the need for staging. In addition, data and application recoveries can be performed directly from Lenovo Storage Snapshot copies on primary or secondary Lenovo DM Series storage. This helps maximize your Lenovo storage investments, and Veeam helps reduce the time needed to mount your Storage Snapshot copies by a factor of 10 or more, compared to manual processes.

This time efficiency helps lower your RTOs while avoiding human errors that can occur during critical recovery steps, like mounting Storage Snapshot copies. The process is simple: Just a few clicks on the Veeam Backup & Replication interface is all it takes to restore your data.

A complete and effective data protection solution

One of the best ways to protect data is to follow the 3-2-1 Rule; Keep three copies of your data stored on two different sets of media with at least one copy stored offsite. Veeam provides an easy and efficient way for system administrators to implement a comprehensive data protection strategy.

Veeam backup snapshot vaulting creates primary and secondary backups directly from Lenovo Storage Snapshot copies by instantly storing one of the copies in SnapVault. To do this, Veeam Backup & Replication first creates an application-aware VM snapshot copy followed by a Storage Snapshot copy. Once the Storage Snapshot copy is created, the VM snapshot will be released and the Veeam proxy server will create a new backup file.

By combining the low RPO capabilities of Storage Snapshot copies with Veeam's fast RTO enablement, Veeam and Lenovo provide customers with unprecedented levels of data protection and a simple, easy-to-manage suite of capabilities that deliver affordable, industry-leading performance.

Veeam Explorer™ for Microsoft Exchange and Veeam Explorer™ for Microsoft SharePoint provide instant visibility and granular recovery of individual items. Veeam provides this same fast, agentless and easy recovery to Microsoft SQL Server databases and Microsoft Active Directory, which makes item-level recovery even easier while continuing to deliver the lowest RPOs and RTOs available. Veeam Explorer™ for Oracle can also be leveraged by administrators to get fast, transaction-level recovery across Oracle database environments. The integration of Lenovo Storage Snapshot capabilities in Veeam Backup & Replication helps customers get more value out of their backup data by reducing operational and management costs while delivering advanced data protection for the modern data center.

Enterprise scalability

The exponential growth of data and provisioned IT services is forcing businesses and enterprises of all sizes to rethink their availability strategy.

Veeam scales efficiently and effectively, while providing benefits that include:

- Backup acceleration technologies that double I/O performance and shorten backup windows by up to five times, all while reducing load on primary storage, backup storage and vCenter Servers.
- Full VM restore acceleration technologies with custom-tailored logic for raw disk, deduplicating storage and tape, which greatly improves VM restore performance processing engine enhancements that let you scale for large environments and efficiently process jobs that contain thousands of VMs or millions of files.

Veeam On-Demand Sandbox for Storage Snapshots

Veeam On-Demand Sandbox™ for Storage Snapshots integrates with NetApp Snapshot and FlexClone technology, giving you another way to leverage your NetApp storage investment.

With this capability, you can provision a complete, isolated copy of your production environment in just a few clicks by running copies of production VMs directly from FlexClone copies on NetApp primary or secondary storage. This allows you to test updates or troubleshoot your production environment, as well as a number of other use cases, at the full speed and scale of production storage.

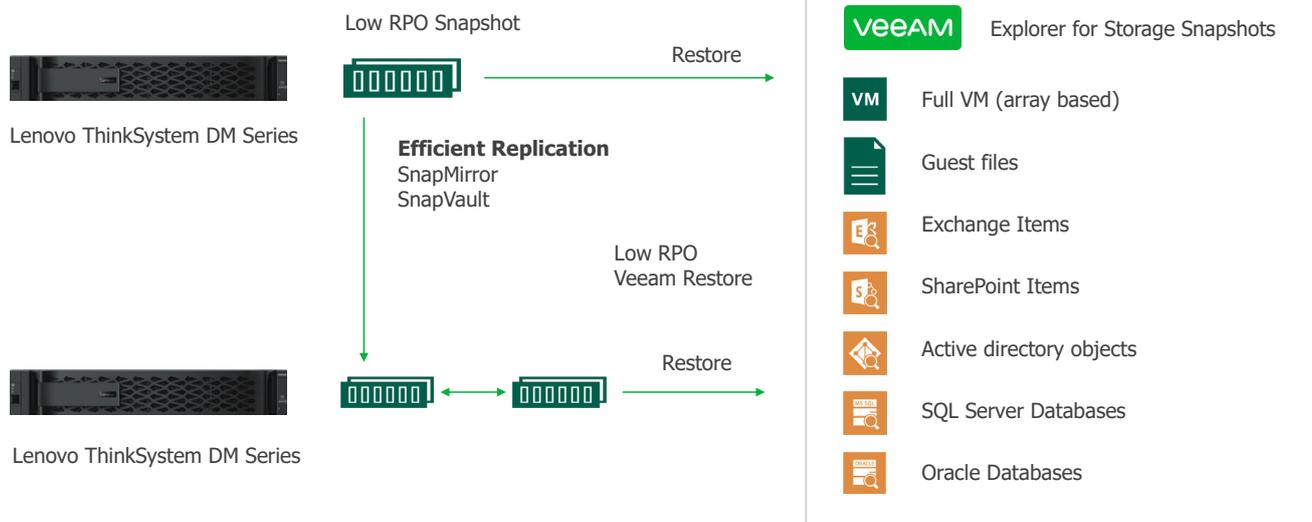


Diagram 2: Veeam Explorer for Storage Snapshots used with Lenovo snapshot copies.

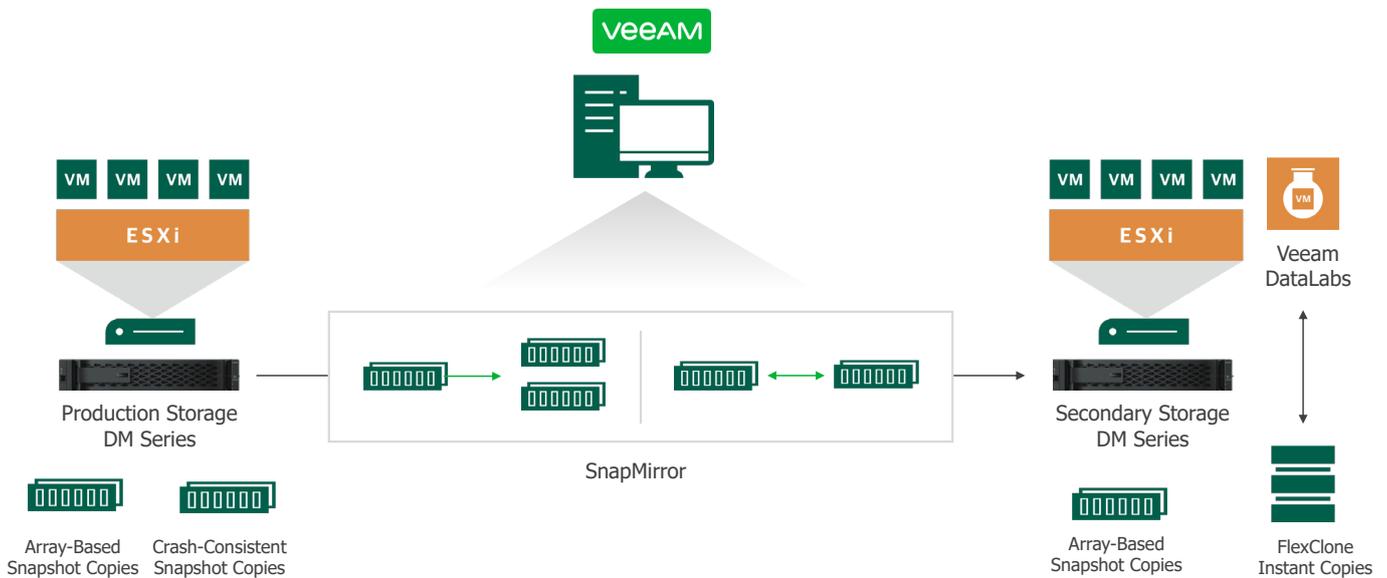


Diagram 3: Veeam on-demand sandbox with Lenovo snapshot and flexclone technology

Ease of implementation

As an agentless architecture that directly integrates with VMware vSphere and Microsoft Hyper-V, Veeam Backup & Replication is easy to install and manage. When Veeam is combined with Lenovo-powered storage solutions, businesses can simplify IT operational management, significantly improve application availability and mitigate risk.

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a \$45 billion Fortune Global 500 company and a global technology leader in driving intelligent transformation through smart devices and infrastructure that create the best user experience. Visit our website at <http://www.lenovo.com/>.

About Veeam Software

Veeam is the leader in backup, recovery and data management solutions that deliver Modern Data Protection. We provide a single platform for cloud, virtual, SaaS, Kubernetes and physical environments. Our customers are confident their apps and data are protected and always available with the most simple, flexible, reliable and powerful platform in the industry. Veeam protects over 400,000 customers worldwide, including more than 82% of the Fortune 500 and over 60% of the Global 2,000.

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