

A 4-TIER APPROACH TO MODERN DATA PROTECTION

HOW NETAPP & VEEAM PULLS IT ALL TOGETHER

VEEAM



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Data protection is changing. Today backup software can recover in-place, instantiating volumes directly on the backup storage which enables organizations to significantly reduce recovery windows. Consequently, the performance of the backup storage hardware matters more than ever. At the same time backup software can scale to manage petabytes of stored backup data, so keeping the hardware costs associated with storing this data in check is also critical. Finally, new compliance

regulations mean that data within backups must meet both retention requirements and new data privacy demands.

Software applications like the Veeam Availability Platform™ provide the capabilities for organizations to meet all of these requirements. The challenge for organizations is to update the hardware components within their data protection architecture so that the software can meet its fullest potential.

THE COMPONENTS OF A MODERN DATA PROTECTION INFRASTRUCTURE

TIER 0 — SNAPSHOT BASED INSTANT RECOVERY

Snapshots have been available as a form of recovery for over a decade. The problem is that snapshots are not typically integrated into the data protection process. Storage system snapshots need to be integrated with and managed by the data protection software so that IT administrators have a single point of truth when trying to determine which is the most appropriate data set to recover.

When snapshots are integrated into the data protection solution, it is possible to perform near instant application recoveries directly off the primary storage system - allowing for greatly enhanced recovery points and recovery time objectives. The result should be a seamless application performance experience.

Several storage systems on the market can retain almost unlimited snapshot copies. The challenge is finding the right data within all those snapshots. Integrating the snapshots with the backup solution enables searching of those snapshots via the backup solution's search capabilities.

The downside of using snapshots as a data protection solution is that they are dependent on the primary storage system and its volume to remain viable. If the storage system fails, then both the primary volume and its snapshots are also unavailable. For these reasons, IT administrators should use snapshots alongside other data protection tiers.



TIER 1 — RECOVERY-IN-PLACE FROM ALL-FLASH BACKUP

The next tier in recovery is new to many IT planners, an all-flash backup tier. For most organizations, this tier can be relatively small in terms of capacity because it only needs to store enough information to recover the latest copy of an application or dataset. Not all data needs to be sent to this tier. The backup process should only store protected data from workloads that need extremely rapid recovery, and performance similar to production. All other data can directly write to Tier 2, a higher capacity and lower cost but slower performance tier. Also, the storage making up this tier shouldn't require many features since it is designed to be a temporary production system. The system used for Tier 1 though should be reliable with multiple points of redundancy

since these systems could host production workloads for a period until the production system is repaired or replaced.

The backup software should be intelligent enough to automatically copy data from the snapshot to this Tier 1 storage area, which means that IT administrators can perform backups without impacting production applications. In the event of a storage system failure or problem with the actual disk volume, IT administration can redirect the impacted applications to the Tier 1 system and execute an in-place recovery. The Tier 1 system should provide performance as good, if not better, than the primary storage system.



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TIER 2 — LONG TERM RETENTION FROM ON-PREMISES OBJECT STORE

The chances of an organization needing to restore backup data after even a few weeks of it being created become increasingly rare—and the need to perform an in-place recovery becomes even rarer. At the same time, organizations want to retain data in backups for months or even years to meet internal requirements and external compliance and regulations. Recovery of this retained data though is frequent enough that keeping the data on-premises is more practical than recovering all data from the cloud. Cloud storage becomes more expensive over


time, and many restores from a cloud tier may incur significant egress fees.

An on-premises network attached storage system or an object storage system are both viable candidates for this long term retention. An on-premises network attached storage (NAS) or Object Storage system using high capacity hard disk drives can provide the organization with cost-effective long term storage. The backup software can manage moving this data to the high capacity storage tier as it ages.

TIER 3 — CLOUD STORAGE

IT planners can use the cloud storage tier in several ways. The most obvious way is to use cloud storage as a vault for long term data retention and where data is not accessed again unless multiple disasters occur. The infrequency of access enables organizations to use the least expensive cloud storage tier without worrying about excessive egress fees. It becomes the recovery point of last resort in case a site-wide disaster eliminates all the other copies of data.

The other use case for cloud storage, disaster recovery, also involves using cloud computing. In this use case, data is pre-positioned in a storage area accessible by cloud computing resources. This area of cloud storage is higher performance than the vault use case, but it only needs to be large enough to support critical applications where rapid recovery is needed during a site-wide disaster. More than likely it is similar in size to the Tier 1 storage area described above.



NETAPP AND VEEAM — PULLING THE TIERS TOGETHER

The challenge with any multi-tier architecture is assembling the parts and then managing data movement between the tiers. A multi-tiered data protection architecture like the one described above, often requires dealing with multiple storage vendors and data protection software solutions. NetApp and Veeam can deliver all of these capabilities through an integrated hardware and software solution. NetApp has multiple high-performance storage solutions for primary storage that directly integrate with Veeam Backup and Replication. Veeam can execute and manage the NetApp snapshot process as well as

instantiate recovery volumes from them. NetApp also has an ideal set of solutions for Tier 1, its FAS and E-Series hybrid flash storage platforms. For Tier 2, NetApp provides both high capacity network attached storage and its Object Storage System, StorageGrid. Veeam can move data, through Veeam Cloud Tier, from the snapshot tier to Tier 1 and then subsequently to high capacity NAS or Object Storage. Veeam can even move or copy data to the cloud for long term data vaulting or cloud disaster recovery while minimizing data egress costs through highly efficient data transfer capabilities.



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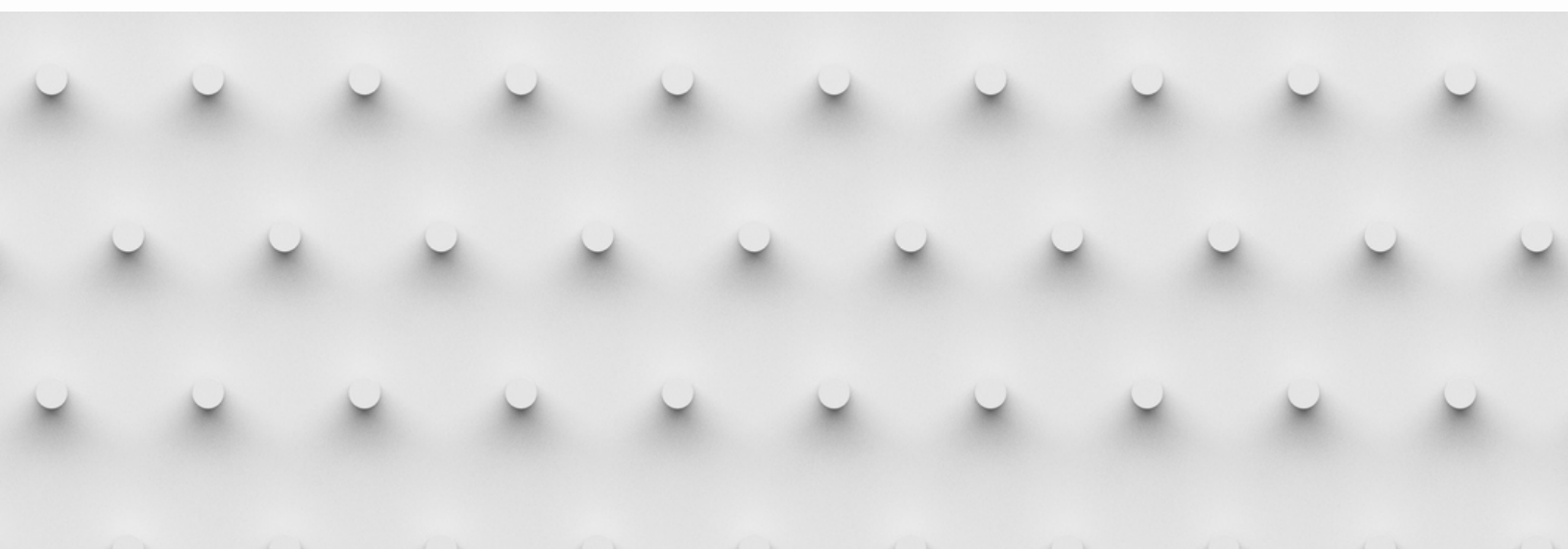


STORAGESWISS TAKE

Users, application owners, and organizations are all demanding much more from the data protection process. These demands come down to recovering faster and retaining data longer. Software solutions like Veeam's Availability Platform can meet both rapid recovery demands and long term data retention requirements. NetApp is one of the few companies that can provide an entire range of hardware solutions both for primary storage and for the various tiers of the data protection architecture. The combination of NetApp and Veeam make the cost-effectiveness of a multi-tiered data protection architecture a reality by keeping something that could become very complicated, very simple.

NetApp and Veeam can deliver a complete, modern data protection storage platform with data tiering capabilities through an integrated storage and software solution. NetApp has high-performance solutions for primary, secondary and cloud storage that directly integrate with Veeam Backup and Replication. Veeam can execute and manage the NetApp snapshot and replication process to create backup copies, instantiate recovery volumes and copy data management from them.

Visit the NetApp and Veeam resource hub to learn more: <https://go.veeam.com/netapp-veeam-digital-hub>



ABOUT US



Storage Switzerland is the leading storage analyst firm focused on the emerging storage categories of memory-based storage (Flash), Big Data, virtualization, and cloud computing. The firm is widely recognized for its blogs, white papers and videos on current approaches such as all-flash arrays, deduplication, SSD's, software-defined storage, backup appliances and storage networking. The name "Storage Switzerland" indicates a pledge to provide neutral analysis of the storage marketplace, rather than focusing on a single vendor approach.



Veeam is the leader in Backup solutions that deliver Cloud Data Management. Veeam Availability Platform is the most complete backup solution for helping customers on the journey to achieving success in the 5 Stages of Cloud Data Management. Veeam has 350,000+ customers worldwide, including 82% of the Fortune 500 and 67% of the Global 2,000, with customer satisfaction scores at 3.5x the industry average, the highest in the industry. Veeam's global ecosystem includes 64,000 channel partners; Cisco, HPE, NetApp and Lenovo as resellers; and 22,500+ cloud and service providers. Headquartered in Baar, Switzerland, Veeam has offices in more than 30 countries. To learn more, visit <https://www.veeam.com> or follow Veeam on Twitter [@veeam](https://twitter.com/veeam).



NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation, and optimize their operations. For more information, visit www.netapp.com.