HPE ALL-IN-ONE DATA PROTECTION STORAGE SOLUTIONS WITH VEEAM

Fast, flexible, and affordable data protection for all your workloads

The cost and risk of data loss can be catastrophic:

95%

of organizations experience unexpected outages.[1]

$64,647

is the average cost of one hour of application downtime.[2]

51%

of companies claimed loss of customer confidence due to outages.[3]

THE DATA PROTECTION CHALLENGE

As the amount and types of data that your business owns continue to grow, there is an immediate and critical need to protect this data reliably. At the same time, the risk of data loss and variety of threats are increasing. In addition to ransomware threats and cyberattacks, network and power outages, component failure, human error, willful malevolence, data corruption, software bugs, site failures, and even natural disasters are just a few sources of application downtime and data loss.

Traditional data protection solutions are not designed for today's dynamic business environment. A highly automated yet reliable data backup system is critical to keeping the business running, meeting ever-evolving user expectations, and remaining competitive.

Typically, businesses face a three-fold data protection challenge:

1. Can we find a data protection solution that meets our requirements and fits our budget?

2. How easy is it to run backups and restores without additional IT staffing?

3. How reliable is our data protection solution in reducing downtime?

THE HPE AND VEEAM DATA PROTECTION SOLUTION

Hewlett Packard Enterprise and Veeam jointly offer data protection reference configurations that include the Veeam Availability Suite, and HPE Apollo servers as well as HPE ProLiant DL345 servers. These reference configurations are verified by HPE and Veeam and provide multiple configurations specifically built, tuned, and tested for Veeam with different performance and capacity.

The solutions offer fast and cost-effective data protection infrastructure for any workload, delivering the following benefits:

- **Rapid backups and restores:** This all-in-one solution can run all Veeam Backup and Recovery components in a single server and write backup data directly to local storage in the HPE Apollo server or HPE ProLiant DL345 server. As opposed to traditional solutions based on multiple servers and storage systems communicating via SAN and LAN, the solution is optimized for performance and efficiency.

- **Scalability and simplicity:** The solution is designed for small to very large environments as shown in Figure 1. Small environments in small and medium business (SMB) and State and Local Government and Education (SLED) market segments can use the HPE ProLiant DL345 solution for Veeam. Medium-sized environments can use the HPE Apollo 4200 and large environments can use the ultra-dense HPE Apollo 4510 and then scale out, adding more nodes as building blocks of a larger solution. This process is simple because each unit has a balanced mix of storage, compute, and connectivity.

- **Cost-efficiency:** In addition to reduced connectivity costs, no additional storage licenses are required to deploy the storage capacity of the HPE Apollo server or HPE ProLiant DL345 server.

- **Proven protection:** HPE and Veeam jointly designed configurations specifically tuned for Veeam workloads and with known performance characteristics. These configurations simplify deployment while meeting performance expectations.
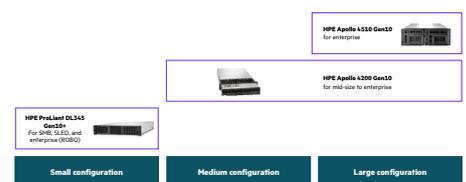

FIGURE 1: HPE all-in-one protection solutions for Veeam

[1,2,3] 2020 Data Protection Trends, Veeam

HPE AND VEEAM DATA PROTECTION SOLUTION CONFIGURATIONS

The following table summarizes the various configurations for the HPE and Veeam data protection solution based on HPE Apollo and HPE ProLiant DL345 servers and the Veeam Availability Suite. The HPE ProLiant DL345 solution has options to include Veeam Backup & Replication or Veeam Backup for Microsoft 365 solutions in addition to Veeam Availability Suite. Beyond these configurations, the HPE Apollo 4000 server family offers countless customization options such as using different disk sizes and types including SSD disks, doubling the number of installable disks. This flexibility makes this platform suitable for different workload profiles including those demanding the most random I/O.

Veeam Availability Suite V11 delivers the following enhancements for HPE Apollo 4000 servers:

- NUMA awareness with enhanced performance leveraging all compute resources

- Unbuffered writes leading to more efficient I/O operations

- Shared memory transport to increase backup data processing without increasing resources

SUMMARY

The HPE and Veeam all-in-one data protection solutions feature HPE Apollo 4000 and HPE ProLiant DL345 servers as backup targets. The combination of HPE ProLiant-like compute ability and high-density storage in the same chassis makes the HPE Apollo 4000 server the clear choice for implementing a simple, affordable, and reliable data protection solution. The HPE ProLiant DL345 server solution offers an entry-level backup target for Veeam with less capacity at a lower price point than HPE Apollo 4200 and 4510 servers. In addition, Veeam software solutions integrate with HPE primary storage snapshots to significantly reduce the impact of data protection on production environments. As shown in Figure 2, HPE and Veeam deliver end-to-end data protection solutions that maximize data and application availability, ensuring data is always available and always protected.
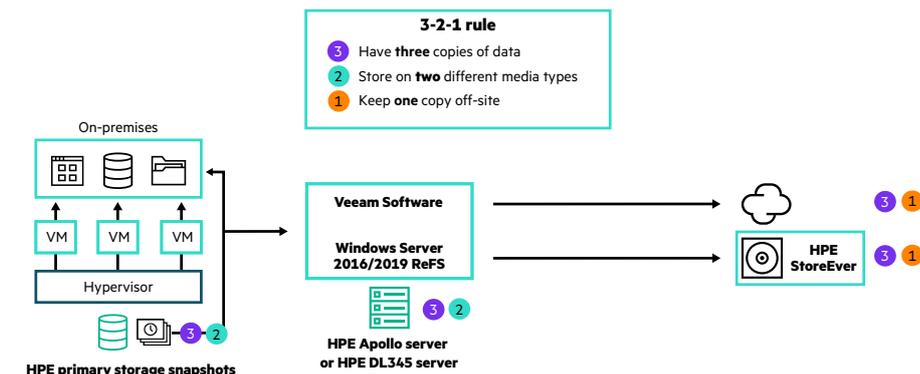
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FIGURE 2. HPE and Veeam end-to-end data protection solutions for 3-2-1 best practice

TABLE 1. HPE and Veeam all-in-one data protection configurations

HPE Apollo server configuration	Small	Medium	Large
HPE server model	HPE ProLiant DL345 Gen10	HPE Apollo 4200 Gen10	HPE Apollo 4510 Gen10
Number of SSDs[4] (OS and vPower NFS)	2 (RAID 1 mirror)	2 (RAID 1 mirror)	2 (RAID 1 mirror)
Number of LFF HDDs[5] (main data volumes)	12+0 spare (18 TB example)	24+1 spare or 2 spares (18 TB example)	56+2 spare or 4 spares (18 TB example)
Raw capacity HDDs	216 TB	450 TB	1044 TB
Usable capacity HDDs	180 TB	360 TB	864 TB
Storage configuration	RAID 6 (10+2)	RAID 60 (10+2) x 2	2 x RAID 60 (12+2) x 2
File system	ReFS/XFS single volume	ReFS/XFS single volume	ReFS/XFS 2 volumes
RAID controller[6]	P816i-a	P816i-a	2 x P408i-p + P408i-a
CPU—2 sockets	1 x 16 cores	2 x 16 cores	2 x 24 cores
Memory	64 GB (8 GB x 8)	96 GB (8 GB x 12)	192 GB (16 GB x 12)
Fibre Channel ports	2 x 16 Gb/s	2 x 32 Gb/s	2 x 32 Gb/s
Network ports	2 x 10/25GbE + 2 x 1GbE	2 x 100GbE + 2 x 1GbE	2 x 50/40/10GbE + 2 x 1GbE
Operating system	Windows Server, Linux® proxy only	Windows Server, Linux proxy only	Windows Server, Linux proxy only

[4], [5] The list of compatible drives is constantly updated. Different size options can be deployed as long as they comply with the following guidelines:
– SSD: 2 SFF disks of same capacity, 800 GB or wider. Avoid read-intensive.
– HDD: LFF disk of same capacity, SAS 12G. Avoid SATA and 6G.

[6] All RAID controllers are battery powered and support write back cache saving to internal flash memory.

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