Hewlett Packard Enterprise

HPE tiered data storage solutions

Data management for HPC environments

In high-performance computing (HPC) environments data is growing quickly in size and filling expensive tier-1 storage platforms. To avoid excessive spending on fast storage for data that's sitting around, policy-based data management offloads data to appropriate storage tiers. Automating the placement of data helps to reduce the capacity needed on higher performing tiers and offloading colder data to archive storage options. This ultimately produces a cost-effective and efficient HPC environment.

This use of hierarchical storage management (HSM) provides an environment with data assurance, efficient storage cost management, and streamlined data workflows. A tiered storage model using a policy-driven data movement engine enables automated placement of data to specified storage resources.

Hewlett Packard Enterprise provides an integrated solution for HPC environments with transparent data movement controlled by the administrator directly or indirectly

via APIs. This means hot data requiring immediate access can be allocated to a flash storage tier while warm to cold data can be archived to software-defined storage or a tape library. This creates a flexible, efficient storage environment that meets varying size, location, and accessibility requirements.

Tiered data management

Building an automated tiered storage environment starts with **HPE Data Management Framework** (DMF), which provides a large-scale, hierarchical storage, and data management platform specifically engineered to manage and protect the petabytes of structured and unstructured fixed content generated by highly scalable and extremely dynamic HPC and data analytics applications.

HPE DMF combines industry-leading traditional, cloud, and cost-optimized storage devices with software-defined storage

management features to create a powerful HSM environment. As such, HPE DMF is a major enabling technology component in support of data-intensive compute environments reducing storage costs, simplifying long-term data management, and improving the levels of data protection for critical projects.

HPE DMF enables the intelligent blending of high-performance storage located close to the point of compute with cost-managed, high-capacity storage based on multiple technologies that can include object storage, cloud storage, and library-based tape. An HPE DMF-based approach allows data to be stored on less expensive storage media than expensive tier-1 drives, such as SSDs or fast hard drives while also meeting target storage performance service levels. HPE DMF is fully integrated with HPE StoreEver tape libraries as well as the HPE T950 tape libraries and HPE TFinity ExaScale tape libraries.

Actively access archived data

Today's enterprises struggle with rapidly increasing demands for storage in petabytes and beyond. Traditional storage systems can't keep pace with storing, processing, and managing the massive data growth rates within the enterprise. Using on-premises object storage for backup or archival of structured and unstructured data provides immediate access to data. With an active archive tier, everything is online, fully accessible, with near infinite scalability.

[1] Using 2.5:1 compression ratio with LTO-8 drives and media

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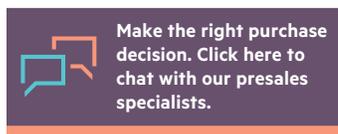
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HPE Scalable Object Storage with Scality RING scales at your pace—from terabytes to hundreds of petabytes of capacity, to trillions of objects, and supporting millions of users while enabling global data protection and durability at massive scale. Scality RING serves, manages, and protects your data as objects. When using HPE DMF to tier data to Scality RING, you may choose either the RING's S3-compatible interface or the RING's sproxyd native object interface. With security in mind, global policies for erasure coding and geo-replication provide incredibly efficient and durable storage.

HPE Scalable Object Storage solutions are built on density-optimized **HPE Apollo 4000 systems** designed specifically for Big Data analytics and petabyte-scale object storage. These fully integrated systems allow for cost-effective storage and analysis of growing data volumes—while also meeting data center challenges concerning space, energy, and accessibility demands.

Long-term data protection and retention

Traditional tape storage continues to offer customers a low-cost, low-risk, long-term retention solution. The added layer of protection against cybercrime and ransomware attacks lowers data center risk with reliable offline and off-premises data protection.

With a media shelf life of over 30 years, its longevity significantly exceeds the retention period of any other data center digital storage solution. Tape is being increasingly used for data availability and improving overall data center efficiency by complementing existing ecosystems with tape technology tiers for cold data. As tape cartridge capacity

continues to improve along an unprecedented trajectory, LTO-8 tape cartridges are able to hold up to 30 TB of compressed capacity and 12 TB native.[1]

HPE offers a full range of tape solutions to complement HPE DMF environments delivering simplified management and scalability to create the ultimate solution for data preservation. **HPE StoreEver MSL tape libraries** meet demanding storage requirement of businesses needing unattended tape backup, disaster recovery, or low-cost, long-term archive capability. With added software protection from HPE StoreEver TapeAssure Advanced, HPE StoreEver Data Verification, and HPE Command View for Tape Libraries, HPE StoreEver becomes even more powerful and simple for your long-term data retention and archiving needs. The portfolio extends to enterprise offerings with the low total cost of ownership of the **HPE T950 tape library** and the unsurpassed storage density of the **HPE TFinity ExaScale tape library** addressing your business' long-term retention and compliance needs with HPE enterprise tape solutions, software, and services.

End-to-end HPE solutions

HPE affordable active archive and long-term retention solutions for tiered data management help minimize risk with a proven end-to-end integrated infrastructure and diversify data protection with added flexibility for mixing and matching these solutions on-site and off-site.

Learn more at
hpe.com/info/hpc-storage