Oracle's HPC Archive Solutions

Unlock Value Through Intelligent Data Archiving

As more organizations and enterprises turn to high performance computing to solve their advanced data analytics challenges, such as personalized medicine, artificial intelligence, fraud detection, and affinity marketing, HPC applications and users are increasing and driving exponential data growth. In addition to faster compute and new data-intensive workloads, today's high-performance computing environments not only must keep up with storage growth, but also they must improve access to data to enable their organizations to gain valuable insights. Oracle's HPC archive solutions help you unlock the value of your data with intelligent data archiving. The integration of Oracle's software, hardware, and cloud services empowers you to improve performance, efficiency, and scale, while simultaneously lowering the overall costs of your archive. With built-in policies for data management, movement, integrity, and self-healing, you can ensure access your data to gain insights.

Manage Exascale Growth With Less

As HPC applications and users expand, IT organizations are challenged with not only keeping more data for longer, but managing that data with fewer resources and smaller budgets. Placing the right information on the right storage can significantly lower storage costs. However, utilizing tiered storage effectively requires an intelligent storage manager that will automatically place data on the right tier of storage, make copies, check data integrity, and self-heal, all based on user-defined policies. All of these capabilities are available with Oracle Hierarchical Storage Manager (Oracle HSM) software.

Oracle HSM efficiently manages the movement of data from your applications to and across unlimited storage tiers. As information is written by applications, it is automatically and transparently placed on the most cost-effective storage—based on specified retention and retrieval policies—to align archiving costs with business priorities and to ease the overall management burden. With support for the Oracle Storage Cloud-Archive Service, you can easily and economically store your vast amounts of HPC archive data on the industry's lowest cost archive storage ($0.001/GB/month). Having a powerful, intelligent solution that puts your critical research data on the right tier of storage at the right time lets you effortlessly manage your archive and keeps your researchers focused on advanced modeling and analytics, instead of IT.

ORACLE STORAGETEK

ORACLE'S HPC STORAGETEK ARCHIVE SOLUTIONS

Designed to help you improve efficiencies, unlock value and ensure access, and lower costs Oracle's StorageTek archive solutions include:

- Oracle Hierarchical Storage Manager
- Oracle FS1 Series
- Oracle ZFS Storage Appliance
- Oracle StorageTek tape portfolio
- Oracle Storage Cloud Archive Service

Optimize Performance and Scalability

Oracle HSM software provides ready access to your HPC data throughout its lifecycle, whether it is stored on flash, disk, tape, or in the cloud. When a file is accessed, in accordance with user-defined policies, Oracle HSM retrieves data from the storage tier with the fastest response time. With Oracle HSM's horizontal scaling feature you can boost your I/O to several petabytes per day, increasing the rate and amount of data movement to and from the archive. A faster restore rate from the archive means you can start completing your complex modeling and simulations sooner. Being able to move your data throughout your archive quickly allows you to optimize your use of scalable tiered storage and promotes faster collaboration and analysis.

Oracle's best-in-class SAN and NAS disk storage products offer ideal tier one, high throughput storage platform your HPC archiving infrastructure requires. Oracle's FS Series storage helps you simplify the management, protection, and archiving of data with unique quality of service capabilities. Oracle ZFS Storage Appliance optimizes storage efficiency and manageability of archive data with superior performance, high compression ratios, and unlimited snapshots and clones.

Oracle's market-leading StorageTek portfolio is engineered for archiving. Oracle's StorageTek tape libraries offer 24/7 availability, fast robotic performance, and scalability options to support entry-to-enterprise customers. Combining StorageTek hardware with StorageTek Tape Analytics simplifies tape management and health management providing the lowest total cost of ownership for archival storage.

Ensure Future Data Access

When research or business data is preserved for long periods of time, you need a simple way to verify that data is still accurate and accessible. Oracle HSM provides a solution to automatically audit the archive, verify the integrity of all data, and self-heal if a problem is found.

For storing data on tape, Oracle's StorageTek T10000C and T10000D tape drives, as well as StorageTek LTO 5, 6, and 7 tape drives, support the drives' integrity validation feature to provide end-to end protection of data during a transfer. A checksum can be generated by Oracle HSM and stored with each record on tape. Through Oracle HSM, you can create policies to automate the verification of data on tape at any time. The software also can be configured to create new copies of the data automatically if a data error is found, giving the archive not only the ability to self-audit, but also to self-heal. Furthermore, you can know your data is secure with Oracle's enterprise tape drives, which offer data integrity validation, linear tape file system (LTFS) support, and built-in encryption.

Integrate Seamlessly, Collaborate Effortlessly

In order to easily share data among researchers and collaborate across sites, your HPC archive needs to integrate seamlessly with your existing environment. Oracle HSM supports a host of industry standard interfaces for moving data into and out of your archive, including POSIX, CIFS, NFS, FTP, and Swift – the OpenStack Object Store project. Swift is designed to store extremely large amounts of unstructured data

"This [Oracle] solution provides quick access to data, reduces the cost of gene-sequencing storage, provides a more manageable archive system, and improves long-term, gene-data integrity and validation."

JAMES LOWEY
VICE PRESIDENT OF TECHNOLOGY, TRANSLATIONAL GENOMICS RESEARCH INSTITUTE

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Integrated Cloud Applications & Platform Services

reliably and cost effectively, and it is optimized for multi-tenancy and high concurrency. The Swift interface for Oracle HSM provides users the ability to work with APIs they are familiar with and build private clouds, all while taking advantage of the low cost and high reliability of tiered storage.

Unlock Value

Whether you're making the next big scientific discovery or sharpening your business intelligence, Oracle StorageTek offers a complete solution to help you harness your big data and unlock transformational results. With the right storage mix, you can affordably keep and maintain access to that important research project or market information available for decades. Oracle's HPC Archive solutions provide you the flexibility, scalability, and deployment choice to achieve and manage your research and business initiatives.

CONTACT US

For additional details on Oracle's archive, please visit www.oracle.com/goto/archive or call +1.800.ORACLE1 to speak to an Oracle representative.

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