

MULTI-PROTOCOL ARCHIVAL STORAGE SYSTEM FOR HPC & AI

On Demand Archive is a preconfigured, appliance-based archival solution, built on Ceph storage, designed for midsized HPC/AI environments to safeguard research and user data. With easy horizontal scalability, it allows seamless performance and capacity expansion by adding more nodes. The solution offers flexibility, allowing customers to choose between OPEX or CAPEX business models to best suit their needs.



SYSTEM HIGHLIGHTS

On Demand Archive features a tightly integrated stack with Rocky Linux, Ceph, and advanced monitoring tools.

Built on industry-standard hardware, it leverages HPE server/storage, Nvidia Mellanox Ethernet switches (with 100GbE and 200GbE options), and adapters for reliable performance. The system is equipped with 2x Nvidia Mellanox Ethernet switches, ensuring high-speed data transfer and optimal connectivity.

Hardware:

HPE Aruba Ethernet Switch

HPE Alletra Storage Server

Nvidia Mellanox Ethernet Adapters

Nvidia Mellanox Ethernet Switches

Software Stack :

Rocky Linux

Ceph Storage (Option for supported Ceph Distribution)

Prometheus/Grafana

True Cost-Effectiveness

The open-source architecture eliminates license fees, while the ability to run on commodity hardware reduces hardware costs. Coupled with its scalability and efficiency, On Demand Archive maximizes resource utilization, driving down operational expenses and delivering long-term value.

Rapid Scalability

Easily scale your storage by adding or removing nodes as needed. Ceph automatically adjusts data distribution, ensuring optimal performance and seamless expansion without manual intervention.

Supreme Flexibility

On Demand Archive offers complete freedom with no vendor lock-in or restrictions, ensuring users are not forced to replace storage after adoption. Hardware updates or replacements can be carried out seamlessly, with zero downtime, ensuring continuous operation and adaptability.

Outstanding Reliability

On Demand Archive ensures data integrity, with guarantees that all data is stored correctly on the underlying media. Features like scrubbing are implemented to prevent bit rot, ensuring long-term reliability and data protection.

KEY FEATURES

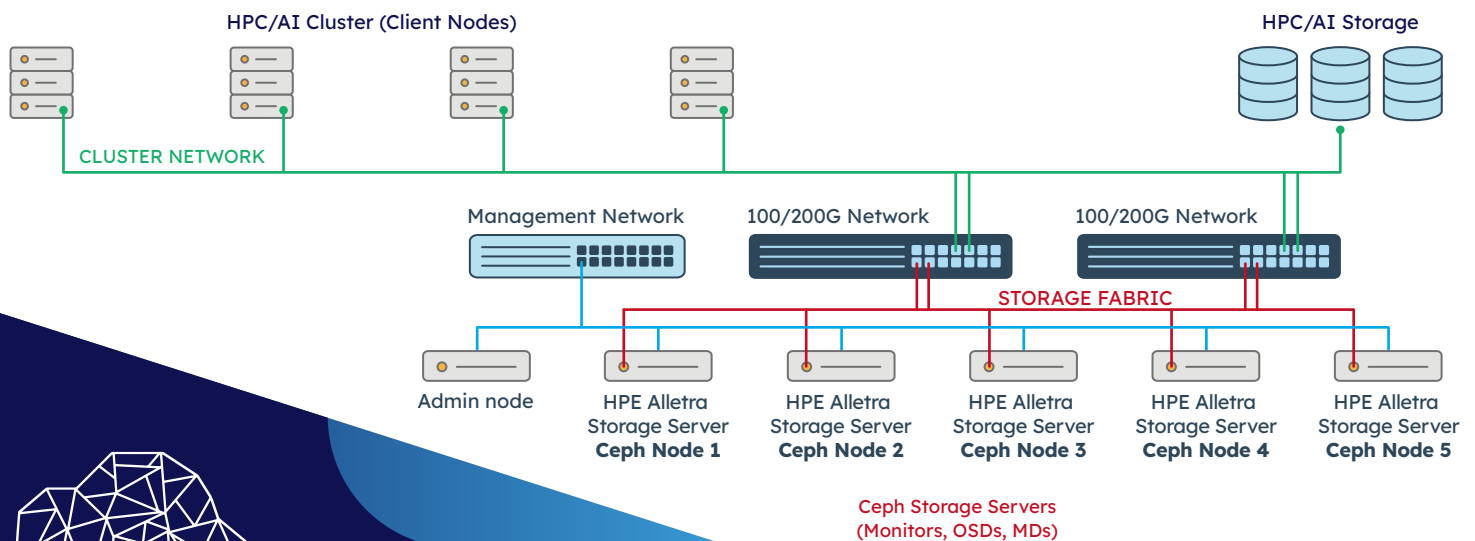
- Integrated with On Demand PFS for seamless offloading of data to the archival tier.
- Redundant System with 5 or 7 Ceph nodes and redundant links to high-speed switches for enhanced reliability.
- 2x Nvidia Mellanox 100/200Gbe Ethernet Redundant Switches for high-performance connectivity.
- System Monitoring Stack included for proactive monitoring.
- Central Syslog Server Integration is available upon request.
- Software Defined with support for multiple storage types.
- Snapshots can be taken at the block device or entire pool level for flexible data protection.
- Disaster Recovery ensured through multi-site replication, guaranteeing data availability.
- All Software Licenses included with a 3-year subscription/licenses and support.
- On Demand Archive available in 3 configurations: 1PB/ 2PB/ 3PB.
- Optional RHEL Subscription can be included in place of Rocky Linux for greater flexibility.

SYSTEM ARCHITECTURE

On Demand Archive is powered by Ceph Storage, designed for production environments where performance, security, scalability, and manageability are crucial. Ceph enhances data durability with erasure coding technologies and provides the ability to replicate data across nodes for increased availability. With dynamic block resizing, Ceph block devices can be expanded or contracted without any downtime. The snapshot feature allows you to capture snapshots of block devices or entire pools, enabling easy recovery to an unaffected state in case of issues.

Ceph is both self-healing and self-managing, continuously monitoring for failed nodes. In the rare event of a failure, it automatically replaces the affected node with a replicated one, ensuring minimal disruption. The architecture is designed for high reliability and fault tolerance.

Disaster Recovery is critical for modern businesses, and Ceph offers robust disaster recovery solutions. Notably, multisite replication replicates data across locations, providing a safeguard against potential failures and ensuring data protection.



On Demand Systems Pte Ltd provides Secure High Performance Computing (HPC) & Artificial Intelligence (AI) infrastructure solutions. We provide end-to-end services from conceptualization, design and deployment to management.

Our HPC/AI solutions, including On Demand PFS, On Demand ObjectStor, and On Demand Archive, are engineered to optimize performance for data-intensive workloads. On Demand PFS offers high-throughput parallel file systems, while On Demand ObjectStor ensures scalable, efficient object storage for massive datasets. On Demand Archive provides a scalable, secure archival solution, enabling enterprises to protect research data with flexibility and reliability. Together, these solutions empower enterprises to handle HPC & AI workloads seamlessly.

In addition, the HPC/AI solutions and services are complemented with identity and access management software and cloud-based Identity-as-a-Service, enabling enterprises to securely manage identities and control access across computer networks and cloud computing environments.

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