ON DEMAND PFS

ROBUST & HIGH PERFORMANCE PARALLEL FILE SYSTEM STORAGE FOR HPC & AI

On Demand PFS is an appliance based preconfigured Parallel File System Storage solution built on BeeGFS a parallel cluster file system, aimed at small to midsized HPC/AI installations.

On Demand PFS provides high throughput specially aimed at AI workloads and can be easily scaled horizontally by adding more nodes thus increasing performance and capacity. The customers have the flexibility to choose OPEX or CAPEX business models.

SYSTEM HIGHLIGHTS

On Demand PFS consists of tightly coupled and pre-integrated stack using Rocky Linux, BeeGFS File System, XiRAID and Prometheus/Grafana monitoring tools. The system is built using industry standard hardware, HPE server/storage, Nvidia Mellanox InfiniBand switches and adapters.

Hardware:

- HPE ProLiant Servers
- HPE Aruba Ethernet Switch
- Nvidia Mellanox InfiniBand Adapters
- Nvidia Mellanox InfiniBand Switches

Software Stack : Rocky Linux · BeeGFS · XiRAID · Prometheus/Grafana

KEY BENEFITS

Achieve HPC Performance

Unmatched Performance, Scalability, Robustness & Ease of use! Performance that is well balanced from small to large files. On Demand PFS is built on highly efficient and scalable multithreaded core components with native RDMA support.

Eliminate Bottlenecks

By distributing file contents and metadata across multiple storage and metadata servers, On Demand PFS makes it possible to avoid architectural bottlenecks. The system can scale to any workload requirement in terms of throughput and I/O requirements.

Seamless Concurrent Access

On Demand PFS lets you avoid the usual performance problems and was built to deliver optimal performance when the I/O load is high.

Simplify Management

On Demand PFS eliminates the complexity of managing open-source parallel file systems. With patchless kernel module and user-space server daemons, it lets you easily scale and manage systems using graphical tools and monitoring.

Availability

On Demand PFS supports both InfiniBand and Ethernet connections, serving RDMA (InfiniBand), RoCE and TCP/IP simultaneously. It automatically switches to a redundant path if any connection fails.

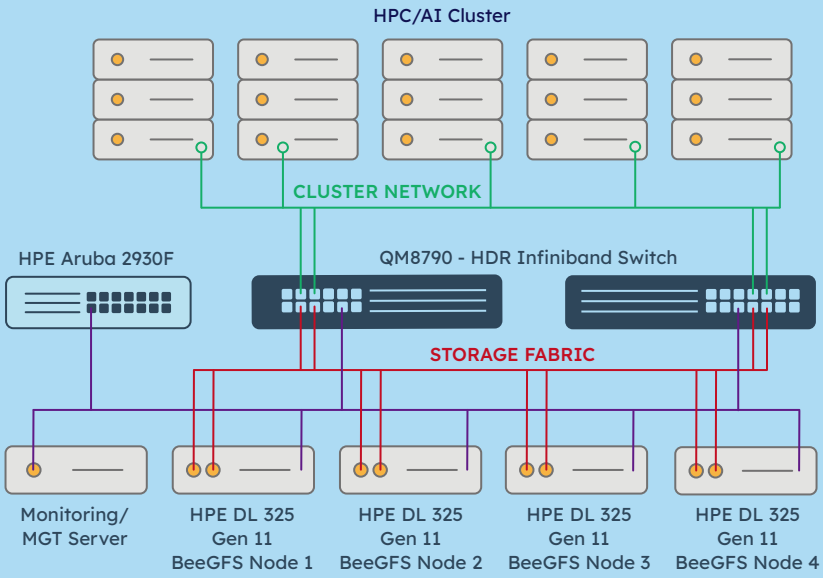
KEY FEATURES

1. All Flash storage for demanding HPC/AI workloads.
2. Redundant configuration consisting of 4x BeeGFS nodes and with 8x uplinks to IB Switches.
3. System monitoring stack is included, Virtual Machines based monitoring is supported.
4. Central syslog server integration if required.
5. Based on xiRAID – the fastest RAID engine. Industry fastest drive rebuild time.
6. Nvidia Mellanox IB Switches are included for dedicated storage fabric. The system can leverage existing IB Switches as well.
7. All Software are included with 3 years subscription/licenses with support.
8. 3 year hardware support is included.
9. Optionally RHEL subscription can be included instead of Rocky Linux.
10. On Demand PFS is available in 3 configurations: 100TB/ 200TB/ 600TB.

SYSTEM ARCHITECTURE

The unique userspace architecture concept allows users to keep the metadata access latency (e.g., directory lookups) at a minimum and distributes the metadata across multiple servers so that each of the metadata servers stores a part of the global file system namespace.

By increasing the number of servers and disks in the system, it is possible to scale performance and capacity of the filesystem to the level that you need, seamlessly from small clusters up to enterprise-class systems with thousands of nodes.



ON DEMAND systems

ODS provides Secure High Performance Computing (HPC) and Artificial Intelligence (AI) infrastructure solutions. We provide end-to-end services from conceptualisation, design, and deployment to management. The HPC/AI solutions and services are complemented with identity and access management software and cloud-based Identity-as-a-Service that allows enterprises to securely manage identities and secure access across computer networks and cloud computing environments.

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