

ANNEXURE - II

Specifications

Special purpose storage for LIGO-India

- Hardware RAID 6 (8+2) based Parallel File System (PFS) Storage with a minimum usable capacity of 2 PetaByte (PB) and 15 GB/s write/read performance.
- Storage should give consistent 15 GB/s throughput for read and 15 GB/s write.
- Storage system should be scalable to a usable capacity of 4PB just by adding disks and enclosures. All the required necessary components like controllers, licenses, servers etc required for 4PB capacity to be quoted now.
- The proposed solution must fit within a rack space of 20U.
- Storage solution must have a minimum of two active controllers, battery-backed & mirrored cache, hot swappable redundant power supplies and fans.
- Only OEM commercially supported IBM GPFS
- The OEM will be responsible for Supply, installation, configuration, commissioning, testing, maintenance and support for both hardware and software during the warranty period.
- The installation/ integration should be done by OEM engineers only. OEM should submit engineers details such as engineer name, employee code, total years of experience in PFS, and number of PFS installations carried out by that particular engineer on their letter head. A copy of installation report must be enclosed with the technical bid.
- NFS, SMB/CIFS, FTP, HTTP protocols must be supported. Additionally, solution should support OpenStack Swift as well as Hadoop connectors.
- File system should support features like: Snapshots, compression, Tiering, Quotas (User, Group)
- Disk Type storage should consist of NL-SAS/SAS 4TB or higher capacity disks only.
- Same controller and enclosure should support NL-SAS, SAS and SSD types of drives.
- 2% of disk drives of PFS should be configured as hot online spare drives.
- 15TB usable capacity with RAID 1 or better to be quoted as metadata on 10K RPM SAS Disks
- Storage should have native 100 GbE ports which can support 40/25/10G Eth. Vendor shall provide all required hardware to connect clients over 100G Eth.
- Bidder must provide peak power in KW, heat in BTU/Hr, weight in Kg and air flow in CFM for cooling of the storage solution.
- Solution should be balanced to manage failure (No Single point of Failure) and there must be minimum one pair highly available I/O servers for every storage array with active-active hardware RAID controllers.
- Necessary cable and connectors as per solution requirement should be provided.
- Fast rebuilds: Storage must offer fast rebuild capability for replacing failed drives. Bidders must demonstrate rebuilding 4TB or higher capacity drive in less than 10 hours.
- Bidder should submit the IOR benchmark for 15 GB/s write performance and 15 GB/s read performance with 1 MB block size and file size must be double than storage & I/o servers memory.
- Bidder (OEM) should run the benchmark on 64 node PFS clients over 10/25/40G Eth
- Detailed benchmark report should be submitted along with the bid.
- The storage management software should provide proactive notification of actual or impending component failure. Bidder should provide required hardware/software components, if any.
- 24x7 comprehensive onsite warranty for 5 years must be included.