

8th March, 2019

Minutes

PRE-BID MEETING FOR SPECIAL PURPOSE STORAGE FOR LIGO-INDIA AT IUCAA

The Pre-bid meeting for procurement of Special purpose storage for LIGO-India at IUCAA was held on 5th March, 2019 at 1500 hrs in Seminar A1. The following members were present:

1. Dr. Sanjit Mitra
2. Mr. Yogesh Thakare
3. Mr. Ajay Vibhute
4. Dr. Deepak Bankar
5. Ms. Sarah Ponrathnam
6. Mr. B. V. Sawant

A total of 3 representatives from one bidder along with his OEM attended the meeting. The questions raised by the agencies were satisfactorily clarified by IUCAA. The queries with responses are enclosed in Annexure – I and the list of representatives present as Annexure – II.

B. V. Sawant

Yogesh Thakare

Ajay Vibhute

Deepak Bankar

Sanjit Mitra

Sarah Ponrathnam

Annexure I

Following points were discussed in pre-bid meeting held on 05.03.2019 at 1500 hrs at A1 Seminar Room for tender “Special Purpose Storage for LIGO-India at IUCAA”.

SI	Name of the Agency	Tender Condition & RFP Clause	Query	Clarification given by IUCAA
1	Mr. Deepak Nemade M/s. Concept Information Technologies (I) Pvt. Ltd. Pune-411038 E-mail- deepak_n@citilindia.com M.- 9011075754 Query received through mail.	Annexure I - Eligibility Criteria - Point 1 Bidder has to have minimum 2 installations of 100TB Parallel Filesystem storage in India in last 5 years. Documentary evidence must be submitted along with the bid.	we request you to relax this clause to 1 order of 100TB PFS from 1st January 2016 instead of 2 nos or allow 2 PO copies of 60TB PFS along with installation report	Amendment in Annexure I – Eligibility Criteria – Point 1, is as follows: “Bidder should have at least two purchase orders of 100 TB parallel file system storage, in India over last 5 years. Documentary evidence for the same, along with at least 1 successful installation report for one of those orders, should be submitted with technical bid.”
2	Mr. Chirag Chande M/s. DDN Email: cchande@ddn.com M. +91 7387711777	Annexure II Bidder (OEM) should run the benchmark on 64 node PFS clients over 10/25/40G Eth	We request IUCAA to allow us to run on 32 Number of nodes. Remark: we have facility with 32 nodes.	Accepted. Amendment in Annexure II is as follows: “Bidder (OEM) should run the benchmark on 32 node PFS clients over 10/25G Ethernet”
		Annexure II Bidder (OEM) should run the benchmark on 64 node PFS clients over 10/25/40G Eth	We understand from the compute RFP with IUCAA is buying 25G network and running benchmarks on 40G Ethernet network would give different performance as compare to 25G. Hence we request IUCAA to consider 25G network for benchmarks.	Accepted. As mentioned above

3	<p>Ms. Seema Mhatugade M/s. Micropoint Computers Private Ltd. Andheri (east), Mumbai-400093</p> <p>Email: seema@mpcl.in Phone: +91 22 40 956339</p>	<p>Annexure II Storage system should be scalable to a usable capacity of 4PB just by adding disks and enclosures</p>	<p>To be proposed solution is an appliance and modular so future doubling of capacity can be offered by adding new module to the existing switch under same file system namespace. Such appliance based Storage solution offering is available from OEM like Cray, IBM, and Lenovo. Request for acceptance.</p>	<p>No change RFP.</p>
		<p>Annexure II The proposed solution must fit within a rack space of 20U</p>	<p>To be proposed solution will fit in 24U Rack space. Tender ask can be met by only one OEM solution which prevents competition solution to be quoted. Request for acceptance.</p>	<p>Accepted. Amendment in Annexure II is as follows: The proposed solution must fit within a rack space of 24U</p>
		<p>Annexure II Same controller and enclosure should support NL-SAS, SAS and SSD types of drives. 15TB usable capacity with RAID 1 or better to be quoted as metadata on 10K RPM SAS Disks</p>	<p>This request is more inclined to Lustre as Parallel File System. In GPFS based solution requested 15TB Metadata can be proposed using same disk as that is used for Data (NL SAS Disk). Metadata in GPFS based solution is in Declustered RAID solution is spread across all the disk proposed in the Storage system thereby enabling super fast disk rebuild time for critical data which is less than 10 Minutes. Proposed disk enclosure has therefore support for NLSAS and SSD disk. Request for acceptance.</p>	<p>Accepted.</p>

<p>Ms. Seema Mhatugade M/s. Micropoint Computers Private Ltd. Andheri (east), Mumbai- 400093</p> <p>Email: seema@mpcl.in Phone: +91 22 40 956339</p>	<p>Annexure II 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.</p>	<p>Declustered RAID technology based Storage is in offer from OEM like IBM, Lenovo, Cray and there is Storage installation of Storage with Declustered RAID technology is in Country at some of prestigious clients like IITM NCMRWF, LPSC, TCS totaling to more than 30PFlop. We request IUCAA to allow Declustered RAID technology based to be quoted. Declustered RAID technology based Storage comes with huge benefit compared to Traditional RAID based Storage. Declustered RAID technology supports 2-disk fault and 3-disk fault tolerance. Supports End-to-end checksum & dropped write detection. Supports Asynchronous error diagnosis while affected IOs continue. Supports live replacement of disks. Disk rebuilt time for critical data is less than 10 minutes. Request for acceptance for Declustered RAID technology based Storage System as current ask can be met by only one OEM. Declustered RAID technology based Storage is in operation at IITM Pune since 2013 (6PB) & 3PB (NCMRWF). Cray just year back implemented 200PB PFS Storage to IITM Pune which is Declustered RAID Technology based.</p>	<p>Accepted.</p>
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<p>Ms. Seema Mhatugade M/s. Micropoint Computers Private Ltd. Andheri (east), Mumbai- 400093</p> <p>Email: seema@mpcl.in Phone: +91 22 40 956339</p>	<p>Annexure II 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.</p>	<p>IO Servers in Declustered RAID technology based Storage inbuilt to the solution and is part of appliance</p>	<p>Accepted. Subjected to no Single point of Failure.</p>
	<p>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</p>	<p>Submitting IOR benchmark with Ethernet as interconnect is unique ask as entire Industry has setup of Storage on IB or OPA switch. Under such a circumstances we would like to request IUCAA to allow this request to be part of acceptance test at site. Along with bid OEM to be allowed to submit undertaking letter towards performance benchmark ask for reproduction during acceptance at site</p>	<p>You can submit the Benchmark generated by the OEM. Same should be reproduced and demonstrated at the site at the time of final acceptance. Undertaking for the same should be submitted with the technical bid.</p>

Amendment in Annexure II:

Currently we are having servers with 311 sockets populated, and we are in the process of procuring servers with minimum 188 sockets. Therefore, bidders shall quote for minimum 499 socket base GPFS client licenses, if any. Bidders shall quote a unit price for socket based GPFS client license in bill of material as a separate line item.

