10th March, 2021

Minutes

PRE-BID MEETING FOR "SUPPLY, INSTALLATION, TESTING and COMMISSIONING of 1PB Usable Archival Storage (for MALS) at IUCAA

The Pre-bid meeting for Supply, Installation, Testing and Commissioning of 1PB Usable Archival Storage (for MALS) at IUCAA was held on 5th March, 2021 at 11am through Zoom application. The following members were present:

1. Mr.Yogesh Thakare
2. Dr.Ajay Vibhute
3. Ms.Varsha Surve
4. Mr.Vijay Barve

There were various representatives who attended the meeting from different organisations. The questions raised by the agencies were satisfactorily clarified by IUCAA. The queries with responses are enclosed as Annexure – I and the list of representatives from different companies is enclosed as Annexure – 2.

Vijay Barve   Varsha Surve   Ajay Vibhute   Yogesh Thakare

Annexure – I

Party name	Tender Condition	Query	Response to Query by IUCAA
M/s Locuz Enterprise Solutions Ltd, 3rd Floor, Devi House, Plot # 37, Besides Pride Hotel, Shivaji Nagar, Pune 411005, Email:-rohan.sathe@locuz.com, Mobile No: +91 8554992365	The storage should be fully symmetric and distributed clustered architecture with scale out model.	We request IUCAA to remove "scale-out" requirement here. DDN can provide more than 8PB scalability in a single NAS system with higher performance than requested in the RFP.	We are expecting linear scalability of performance with time. In future, we may need more space than 8PB. In scale-in model, at some point, there will be a limitation on the performance as well as the scalability, these factors are very important for us. Hence, no change in RFP.
	All storage nodes must be active for all storage shares, contributing in performance.	We request IUCAA to change this to all storage controllers/nodes must of active and ability to export shares.	Accepted.
	Storage should support SSD, SAS, SATA, NLSAS disk types to create multiple tiers of storage, if required as a part of single filesystem	We request IUCAA to modify "SSD, SAS, SATA, NLSAS" to "SSD and NL-SAS" as 10K RPM SAS disks are superceded by SSDs and SATA disks are superceded by NL-SAS disks in modern storage architectures.	As long as we are getting the performance mentioned in the RFP, the mentioned type of dives is acceptable to us. Hence, no change in RFP.

	The storage should have a single file system, i.e., total space should be configured with single file system, for whatever be capacity in future (for 8PB).	We request IUCAA to modify statement "for whatever be capacity in future" to "capacity requested in this RFP". Current statement is ambiguous. Given that no single file is as large as 8PB in a NAS environment, asking for single filesystem won't be useful	Accepted. The storage should have a single file system. The total space should be configured with a single file system for 8PB.
	The storage should be capable of giving minimum 3 Giga Byte Per Second throughput for read on NFS. The storage should be capable of giving minimum 1 Giga Byte Per Second throughput for write on NFS. The performance should not degrade by more than 25% on failure of a single controller/node. The performance should be demonstrated by running IOR with 1MB record size or transfer size, for a total file size should be at least thrice the cache.	We request IUCAA to supply information on how many and which NAS clients will be used to demonstrate performance during acceptance with details on their operating system versions, network connectivity and network topology (with details on blocking factors if any).	The NAS clients are with following configuration, Dual Intel (SkyLake) Xeon Gold 6126 Processor (2.60 GHz; 12 cores; 24 threads), 384 GB RAM, EDR 100 Gb/s as InfiniBand interconnect will be used.

Bidder should run benchmark using IOR process less than or equal to total the number of storage nodes,	We request IUCAA to modify statement "less than or equal to total the number of storage nodes" to "minimum 8 clients". Current, statement puts restriction on number of benchmark clients to match number of storage controllers/nodes. Given that network connectivity here is 10Gbps Ethernet, minimum 8 client nodes would be required to meet 3 GB/s performance.	Accepted. However, each client should not run more than 8 IOR processes.
The array should have a minimum of 8 X 10G Ethernet Ports with SFP+ modules across the controllers.	We request this requirement to be modified to 8x 10G or 4x 40G/100G Ethernet ports. Or allow us to quote 4x 40G/100G Ethernet ports.	Accepted.
The backend internal connectivity between storage nodes should be using minimum 10/40 GigE (or better) network with no single point of failure.	We request this requirement to be modified to "10/40 GigE or 12Gbps SAS (or better)" network since not all suppliers use Ethernet for backend connectivity.	Accepted.

| | The storage should have dataset management software for high-speed scanning and indexing on offered storage. The software should scan the metadata only; it should not scan any data stored on the storage. The software should allow bi-directional movement of data between multiple file storages and should support storages from multiple OEMs. The software should have the functionality to find the duplicate data in all managed storages. The software license should be for entire capacity, and it should be perpetual in nature. | We request IUCAA to remove this requirement as it nowhere related to NAS storage and neither there is clarity on how this feature will be used by NAS clients in archival workflow. | We currently have PFS-based storage provided by M/s DDN attached to our cluster. The actual data will be processed on the DDN storage, and the processing will generate a large amount of data/results. These results will be moved to the proposed storage. We need metadata-based information to check which data is used frequently and which is not. Based on the frequency of uses we are planning to take further call such as move file to tape storage or delete it. We already have storage in place, so the proposed software should support storages from various OEMs and find duplicate data to utilise the storage space efficiently.

Hence, we require specified features in the software, no change in RFP. |
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		The storage should support data deduplication.	We request IUCAA to include snapshots, compression, thin provisioning and always on encryption requirements along with de-duplication. These are standard features of enterprise NAS. Features like compression are very useful for archival workflow and encryption for security reasons.	These are additional features in case a bidder provides it, it is acceptable to us.
		In the event of addition of storage node to storage solution, existing data should be rebalanced across all nodes of storage automatically. This auto balancing should be done with low priority avoiding any impact to client performance.	We request IUCAA to modify this statement to "In the event of addition of storage node or storage enclosure or disks to storage solution".	Accepted.
		The storage should support data deduplication.	If removing scale out is not possible, please remove deduplication.	You can provide a software tool which does the deduplication or gives a list of duplicate files along with the metadata information.

M/S JEDI SERVICES PRIVATE LIMITED, 2501 Marvela, Hiranandani Estate Rodas Enclave G. B. Road, Thane 400607, Email:- vivek@jediservices.in, Mobile No:-+91 9820303071	The storage should be fully symmetric and distributed clustered architecture with scale out model.	OEM has different architecture to support performance and scalability for scale out architect, hence, request you to kindly amend the point as below - The storage should be fully symmetric/distributed clustered architecture with scale out model.	Considering future expansion, the scope of the project, we need fully symmetric and distributed clustered architecture with a scale-out model. Hence, there is no change in the RFP.
	The storage must be configured with minimum 128 GB globally coherent Cache memory across nodes. The memory should be upgradable to minimum 512 GB	Cache architecture is different in different OEM to support Performance and Availability, hence please amend the point as below The storage must be configured with minimum 128 GB globally coherent/distributed Cache memory across nodes. The memory should be upgradable to minimum 512 GB	Accepted.

	The complete 1PB storage solution should fit in 14U rack space. The solution must be implemented within the already existing racks, PDUs available at the IUCAA data centre. The bidder may inspect IUCAA facilities before quoting	Every storage had its own standard dimensions and parameters which rack should be compatible with, if not than please allow the rack to be customized by OEM	We will be installing the storage in the existing racks build as per international standards. These racks are already hosting other hardware provided by various OEMs. Hence, we cannot allow customizing the existing racks. Also, we have already populated the existing data centre set-up, so we will not be able to host any additional rack in our data centre. Hence, no change in RFP.
	The total capacity of storage should be 1 PB usable using 12 TB or higher NL-SAS drives in RAID-6 (8+2) or equivalent with minimum of 5% capacity as global hot spare.	Additional protection of erasure coding other than RAID 6 will be added advantage which can sustain HDD failure up to 6 HDD. Kindly allow erasure coding	The data stored is of critical nature and we cannot compromise on the chances of hard disk failure. No change in RFP.
	The storage should have a single file system, i.e., total space should be configured with single file system, for whatever be capacity in future (for 8PB).	single file system can be reachable up to 1PB hence the desired 8PB capacity can be achieved on cluster mode. So kindly amend as below The storage should have a single file system/per cluster, i.e., total space should be configured with single file system/per cluster, for whatever be capacity in future (for 8PB).	We have a running application which is designed to take data from only one file system. Also, in multiple file systems, we may not be able to manage our data very efficiently. We may need to keep records of which data is stored in which filesystem. Hence, no change in RFP.

	The storage should be capable of giving minimum 3 Giga Byte Per Second throughput for read on NFS. The storage should be capable of giving minimum 1 Giga Byte Per Second throughput for write on NFS. The performance should not degrade by more than 25% on failure of a single controller/node. The performance should be demonstrated by running IOR with 1MB record size or transfer size, for a total file size should be at least thrice the cache.	OEM does use S3 protocol for Archival solutions so please amend NFS with S3 protocol	We will use this storage to host the home-grown applications. Hence, the only NFS protocol serves the purpose. No change in the RFP.
	Pre-Bid Meeting : ON 5/3/21 AT Pune Office	We request to kindly conduct Prebid Meeting on Zoom or other medium, as due to current Pandemic Situation and rising cases in and around Pune, it is difficult for our technical Person to visit at site	Accepted.

	The bidder should provide a documentary evidence of purchase order (PO) for successful storage installation of at least 500GB usable at Govt. Organizations / Govt. Research labs / Defense Labs/Autonomous Institutes in India in a single order. Submit 1 such order in last 3 years. (01-April-2018 to 31-Mar-2021)	AS the project is of 1PB Storage , it requires an Substantial High Skill to Install/Implement the Project . As per our Understanding Only The OEM has the Best technical Resources to successfully execute the Project and the Bidder is An enabler to front end the project . Hence we request you to change the clause to Bidder/OEM (Either Bidder or OEM) ilo Bidder having storage Installation of 500GB Also as mentioned in Clause C, Annexure-1 - Installation Points 1,2,3, that the OEM is responsible to do Implementation. Installation and Support , hence by this clause the Bidder is only an Enabler to facilitate the financial Transaction	In case of an issue, the bidder is expected to co-ordinate with OEM, collect logs and share required details for analysing the issue. We will be hosting very important data on the proposed storage. Hence, the bidder should have some expertise/experience in the storage domain. No change in the RFP.
	Both OEM and bidder should have a service center with technical staff in Pune. Submit the address of service center address along with the bid.	Request to amend to Bidder/OEM (Bidder or OEM)	In case of an issue, the bidder is expected to co-ordinate with OEM as well as IUCAA team, collect logs and share required details for analysing the issue. To resolve the issue in a timely manner, the bidder should be from Pune. No change in RFP.

	Both OEM and bidder should be in the storage business for at least last 5 years in India.	Request to amend to Bidder/OEM (Bidder or OEM)	As we will be hosting critical data on the proposed storage, we need both OEM and bidder to have five years of experience. No change in the RFP.
	The OEM will be responsible for supply, installation, configuration, commissioning, testing, maintenance and support for both hardware and software during the warranty period. The OEM should submit an authorization letter to IUCAA on the OEM's letterhead stating that "The OEM will supply, configure, install, test, commission and provide next business day (NBD) on-site support for the complete Hardware and Software solution during the full 3 years of warranty period."	Request to amend to Bidder/OEM (Bidder or OEM)	In order to execute project on timely manner, without any issues in installation and to get required performance, installation and support by OEM is essential. Hence, no change in RFP.
	The installation will be done only by the OEM engineers. Submit the details of engineers such as number of installations carried out, years of experience.		

	During the warranty period, OEM will have to undertake comprehensive maintenance of the entire hardware and its components.		
	100% of the material cost as well as full amount of Installation & Commissioning if any shall be made within 15 days only after successful completion of the project (Supply, Installation, Testing and Commissioning of 1 PB Usable Archival Storage as per tender conditions regarding testing and performance) and against acceptance certificate issued by competent authority from IUCAA.	Kindly Amend to 70% on Delivery, 20% on Installation and Balance 10% on Implementation and Commissioning	No change in RFP
M/s Concept Information Technologies (I) Pvt. Ltd, 101, Giridhar Avenue, Opp. Big Bazaar, Kothrud Pune- 411038., Email:- ajay_k@citilindia.com, Mobile No:- 9011085109.	The storage should have minimum two controllers/storage nodes of the same type	The storage should have minimum four controllers/storage nodes of the same type	One can provide a solution which provides a better performance than the performance mentioned in the RFP. In this case, if one controller fails, still solution will be able to deliver minimum required performance. No change in RFP

The storage must be configured with minimum 128 GB globally coherent Cache memory across nodes. The memory should be upgradable to minimum 512 GB.	The storage must be configured with minimum 256 GB globally coherent Cache memory across nodes. The memory should be upgradable to minimum 512 GB.	We have mentioned minimum required configuration; one can provide higher cache memory. No change in RFP.
The total capacity of storage should be 1 PB usable using 12 TB or higher NL-SAS drives in RAID-6 (8+2) or equivalent with minimum of 5% capacity as global hot spare.	The total capacity of storage should be 1 PB usable using 12 TB or higher NL-SAS/SATA drives in RAID-6 (8+2) or equivalent with minimum of 5% capacity as global hot spare.	As long as the minimum required performance is delivered, it is acceptable.
Storage should support SSD, SAS, SATA, NLSAS disk types to create multiple tiers of storage, if required as a part of single filesystem	Storage should support SSD, SAS, SATA/NLSAS disk types to create multiple tiers of storage, if required as a part of single filesystem	As long as the minimum required performance is delivered, it is acceptable.
The storage array should provide multiple levels of access control including role-based security and auditing capability. There should be provision to apply role-based disk quota.	The storage array should provide multiple levels of access control including role-based security and auditing capability for system configuration events and data access protocols. There should be provision to apply role-based disk quota.	You can provide auditing capability for system configuration events and data access protocols.

	Additional Point	Request that benchmark on smaller subset of configuration be allowed, since exact configuration is difficult to arrange. Eg half the controllers proposed should provide half the committed performance for benchmark submission	Accepted. Submit a undertaking that the required performance as per RFP conditions will be demonstrated after the installation.
	Additional Point	Request that submission date be extended by 2 weeks, to 1st April 2021 to enable benchmarking	No change in RFP

Annexure – II

Sr. No.	Name of the Agency	Name of Representative
1	M/s. Concept Information Tech.(I) Pvt. Ltd.	Mr.Kiran Kirtane
2	M/s. Concept Information Tech.(I) Pvt. Ltd.	Mr.Ajay Koot
3	M/s. Concept Information Tech.(I) Pvt. Ltd.	Mr.Prashant Pande
4	M/s DDN STORAGE	Mr.Atul Vidwansa
5	M/s DDN STORAGE	Mr.Chiraj Chande
6	M/s.Locuz Enterprise Solutions Ltd	Mr.Rohan Sathe
7	M/s. Magnamious System	Mr.Lalit Rane
8	M/s. Jedi Services Private Limited	Mr.Vivek Makhijani
9	M/s. Hitachi (OEM)	Mr.Atul Soni
10	M/s.Dell	Mr.Samarjeet R Singh
11	M/s.Dell	Mr.Harindra Singh